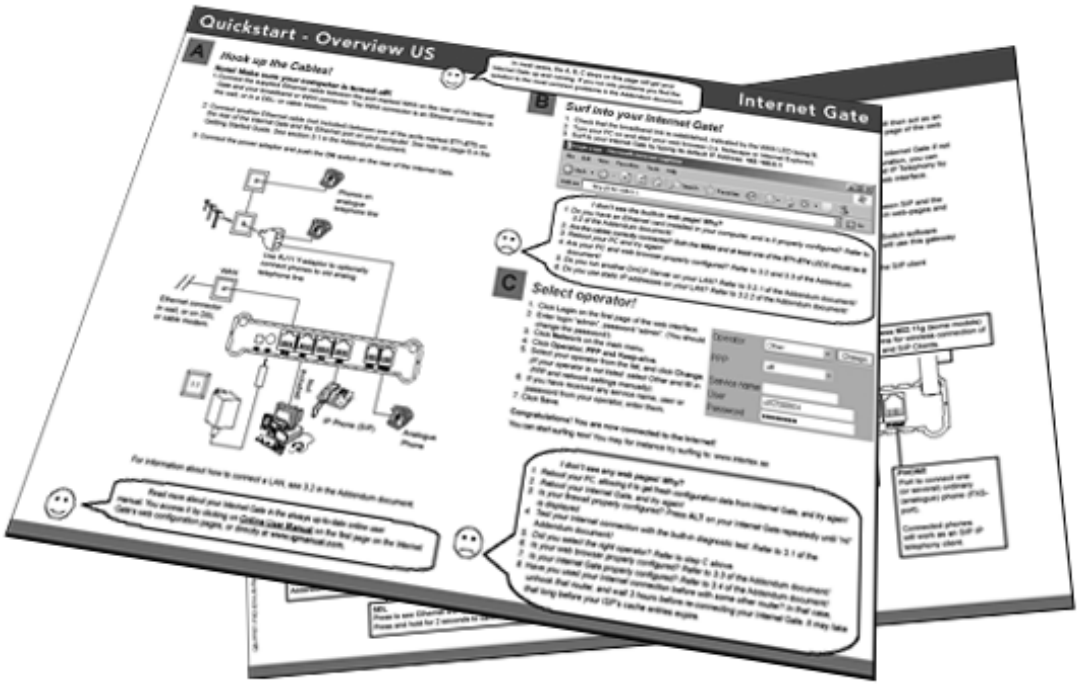
Addendum to the Quickstart - Overview Sheet



To install your ADSL Internet Gate, follow the A, B and C steps of the Quickstart sheet!

If you run into problems or need further information, this Addendum will help with the most common issues.

After the installation, you can configure the ADSL Internet Gate for your specific needs through the built-in web interface. For detailed instructions, use the Online User Guide on the Internet: www.igmanual.com.

Contents

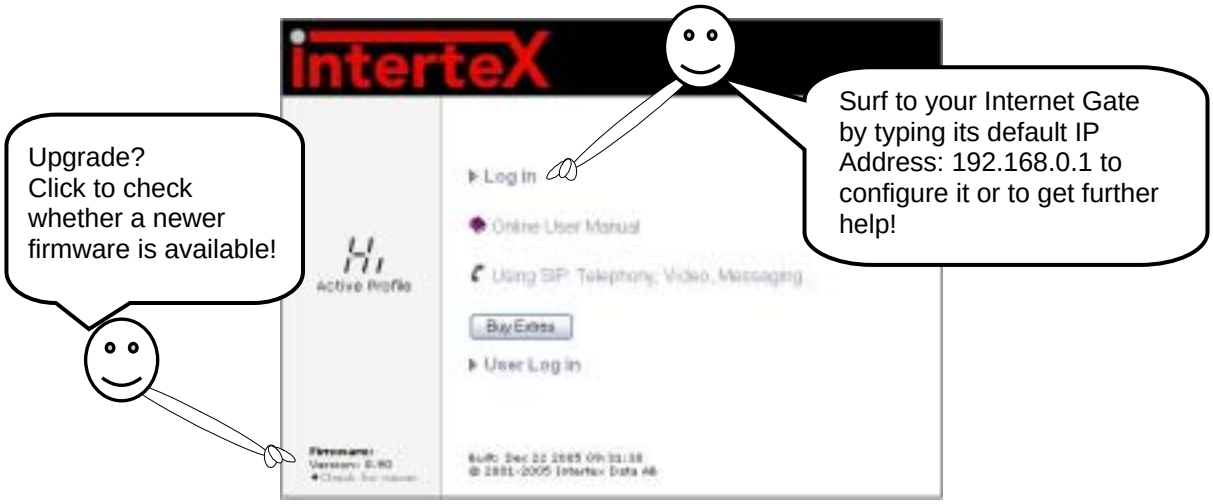
1 Basic Set Up

Please refer to steps A, B and C of the Quickstart sheet for the basic set up of your ADSL Internet Gate. It will guide you in installing your ADSL Internet Gate and in doing the necessary settings.

2 Getting Help

There are several ways to get information about the ADSL Internet Gate:

- **Quickstart Overview Sheet** – Helps you install and do some basic configurations.
- **Addendum to the Quickstart – Overview Sheet** (this document) – Helps you to troubleshoot the most common issues.
- **Built-in Help** – Every configuration page on the built-in web interface has help texts that describe the different parameters. Just click the question marks.
- **Online User Manual** – In the online manual, you will find the latest information tailored for your specific version of your ADSL Internet Gate. You access it via links in the Built-in Help, via the link on the first web page of your ADSL Internet Gate or directly at www.igmanual.com.
- **Support** – If you experience problems when installing or using your ADSL Internet Gate that cannot be solved by the help indicated above, contact your retailer for assistance.
- **Using SIP: Telephony, Video, Messaging...** – This online information accessible from the first page of the web interface helps you get your IP Telephony and SIP environment up and running.



3 Detailed Instructions

Do you have problems getting your ADSL Internet Gate to work? Read the installation tips and the detailed instructions on the following pages for help!

3.1 Connecting a Local Network (LAN)

If you have a Local Area Network (LAN) with several computers you may connect these to the Ethernet ports of your ADSL Internet Gate. In case there are too few Ethernet ports on your ADSL Internet Gate, you can connect an Ethernet hub or switch to one of the LAN Ethernet ports and allow all computers to share the Internet connection.

If your network uses dynamic IP-addressing (recommended), then the built-in DHCP server of your ADSL Internet Gate will provide IP addresses to all PC:s on the LAN. Refer to 3.2.1 for more information.

Does your network use static IP addresses? Refer to 3.2.2!

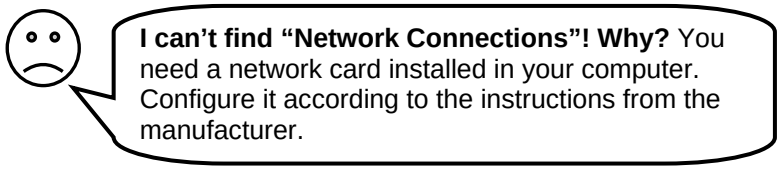
Note:
• The Ethernet port ET4 is a subnet completely separate from the other subnets. It can be used as a DMZ for a secure connection of e.g. servers or an Internet connection instead of ADSL. • The USB port is an option only available one some ADSL Internet Gate models.

3.2 Check Your PC's Settings

The ADSL Internet Gate is delivered with factory defaults that fit most users. If your PC has the default network and web settings, then everything should work at once. If not, please check your PC's settings.

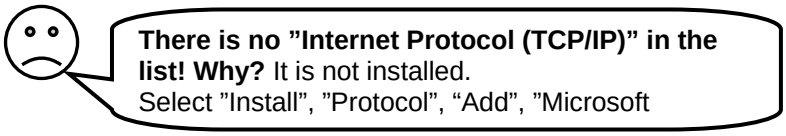
(The steps described here are for Windows XP. Other operating systems have similar menus and options, though accessing them may be done differently.)

- Select **Network Connections** in Windows Control Panel (click Start and choose Control Panel). Right click on **the network connection that you use** and select **Properties**.

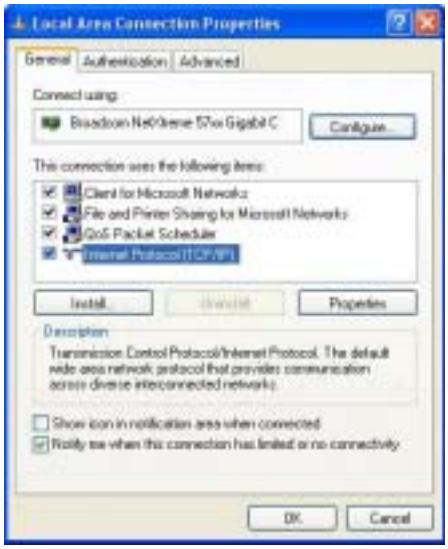


I can't find "Network Connections"! Why? You need a network card installed in your computer. Configure it according to the instructions from the manufacturer.

- Double click on **Internet Protocol (TCP/IP)** for your network card on the list that appears.



There is no "Internet Protocol (TCP/IP)" in the list! Why? It is not installed.
Select "Install", "Protocol", "Add", "Microsoft



There are two ways to address computers in a local network (LAN):

a) Either **Dynamic IP addressing**, a DHCP server on the LAN distributes IP addresses to all connected computers,

b) or **Static IP addressing**, all connected computers use a manually assigned IP address.

Check how your computer is configured to receive an IP address:

a) If it is configured to use **dynamic addressing**, the settings look like this:

No configuration is needed. The DHCP server built into your ADSL Internet Gate will distribute correct IP addresses.

Check your settings according to 3.2.1, 3.3, and 3.4.

b) If it uses **static IP addresses** the setting look something like this:

You have two options:

1 (*recommended*): Configure all computers on your LAN to use dynamic IP addressing. Refer to 3.2.1 for more information.

2: Configure your ADSL Internet Gate and your PC:s so they fit your LAN. Refer to 3.2.2 for more information.

3.2.1 Using the ADSL Internet Gate with Dynamic IP Addresses on the LAN

The ADSL Internet Gate is delivered configured for dynamic IP addressing on the LAN. It acts as a DHCP server and provides IP addresses.

(The steps described here are for Windows XP. Other operating systems have similar menus and options, though accessing them may be done differently.)

All PCs on your LAN should be configured like this:

1. Select **Network Connections** in Windows Control Panel. Right click on **the network connection that you use** and select **Properties**.
2. Double click on **Internet Protocol (TCP/IP)** for your network card on the list that appears.
3. Select **Obtain an IP address automatically** and **Obtain DNS server address automatically**.
4. Click **OK** to save and close all windows and reboot the PC.
5. You may check that the built-in DHCP server of your ADSL Internet Gate is enabled, by checking the settings of the LAN ports in the Network Settings web page.

If you already run a DHCP server on your LAN you should turn it off or change its settings to distribute the ADSL Internet Gate as default gateway.

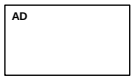
3.2.2 Using the ADSL Internet Gate with Static IP Addresses on the LAN

Note:
This information is intended for advanced users. If you are not familiar with terms like static IP addressing you do not need to read this chapter. Refer to 3.2.1 instead.

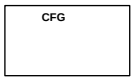
If you want your ADSL Internet Gate to be part of an existing LAN that uses static IP addresses, you have to change its LAN IP address to an unused IP address that fits the same subnet as your LAN.

You can use the keys on the front panel to change the IP address:

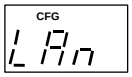
1. Press and hold **SET** pressed for 3 seconds, to enter setup mode.



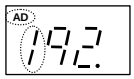
2. Press **SEL** once, so “CFG” is lit.



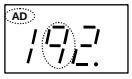
3. Press **SEL** repeatedly until ”LAn” appears in the display



4. Press **SET**.
5. Press **SET**. The first 3 digits of the IP address are shown and the first digit flashes.



6. Press **ALT** repeatedly, until the correct digit is displayed.
7. Press **SEL**. The next digit flashes, and can be changed using **ALT**.

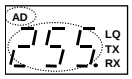


8. Use **SEL** to step through all digits of the IP address.

   Use **SET** to step back to the previous digit if you need to make corrections.

   Use **ALT** to change the value of the flashing digit.

   You can cancel the IP address set-up, without saving any changes, by pressing the **SEL** key and holding it pressed for 2 seconds.
9. After stepping through all digits of the IP address, the subnet mask appears and can be modified. Each subnet mask number can only be set to values 255, 254, 252, 248, 240, 224, 192, 128, or 0.



10. Press **ALT** repeatedly, until the correct value is displayed.
    Press **SEL** to step to the next subnet mask number.
11. When all digits have been displayed the IP address and subnet mask are saved.

12. Complete the installation with the steps on the next page.

(The steps described here are for Windows XP. Other operating systems have similar menus and options, though accessing them may be done differently.)

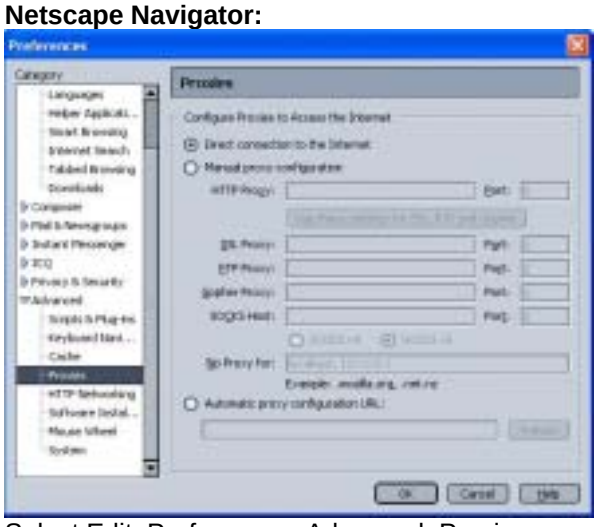
The procedure below has to be performed for **all** computers connected to your local network (LAN).

1. Select **Network Connections** in Windows Control Panel. Right click on **the network connection that you use** and select **Properties**.
2. Double click on **Internet Protocol (TCP/IP)** for your network card on the list that appears.
3. Select **Use the following IP address**.
4. Enter the **IP address** and **Subnet mask** of the computer.
5. As **Default gateway** and **Preferred DNS server** enter the IP address of your ADSL Internet Gate. Either the default 192.168.0.1 or the one you entered in the previous section.
6. Click **OK**.

3.3 Check the Proxy Settings of Your Web Browser

If your web browser is configured to use a proxy server, you may have problems reaching the built-in pages of your ADSL Internet Gate. In that case, disable the proxy server in your browser:

Netscape Navigator:



Select Edit, Preferences, Advanced, Proxies. ”Direct connection to the Internet” should be selected.

Internet Explorer:

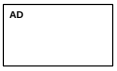
Select Tools, Internet Options, Connections, LAN settings. The checkbox ”Use a proxy-server for your LAN” must not be selected.

3.4 Diagnostic Test

If you cannot access the Internet, your ADSL Internet Gate can attempt to localise the problem.

Start the diagnostic test like this:

1. Press and keep **SET** pressed 3 seconds to enter setup-mode.

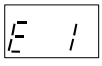


2. Press **SEL** repeatedly until “LQ” is lit.

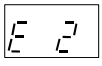
3. Press **SET**.

It takes a couple of seconds to perform the test. Any errors discovered are shown in the display. The diagnostic test can find multiple errors, press **SEL** to flip through all error messages.

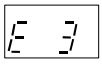
”E 1” to ”E 9” indicate errors in your external Internet connection (WAN):



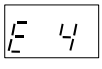
No WAN link connection. Check all cables. Contact your broadband-supplier if the error remains.



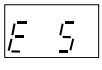
No WAN DHCP server found. This *may* be OK, but check configuration according to 3.4. Reboot your ADSL Internet Gate. Contact your Internet Service Provider (ISP) if the error remains.



No Gateway found. This *may* be OK, but check configuration according to 3.4. Reboot your ADSL Internet Gate. Contact your Internet Service Provider (ISP) if the error remains.

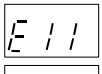


No DNS server found. Check configuration according to 3.4. Reboot your ADSL Internet Gate. Contact your Internet Service Provider (ISP) if the error remains.

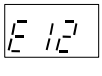


No Internet connection. You do have a connection to your ISP, but they have no Internet connection at the moment. Contact your Internet Service Provider (ISP) if the error remains.

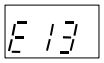
”E11” to ”E19” indicate errors in your local network (LAN):



No Ethernet link. Check the cables connected to the ET ports.



No DHCP addresses requested. The DHCP server of the ADSL Internet Gate is on, but no PC:s on the LAN have requested addresses. This *may* be OK, but check your settings, see 3.2.1.



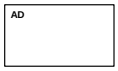
No Ethernet packets at all received. This *may* be OK, but check your settings, see 3.2 and 3.4.

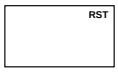
If no error messages are shown, then your Internet connection is OK. Any remaining error is probably due to your PC's settings. See 3.2 for more information!

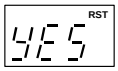
3.5 Reset to Factory Defaults

If you wish to you can reset all settings to their original values, so your ADSL Internet Gate is set up the same way as when delivered from the factory.

1. Press and hold **SET** pressed for 3 seconds, to enter setup mode.
2. Press **SEL** repeatedly until "RST" appears in the display.
3. Press **SET**.
4. The question "Clear all?" appears, and then "no".
5. Press **SEL** to choose "YES".
6. Press **SET**.
7. The ADSL Internet Gate now resets and then restarts.







4 Configuring Your ADSL Internet Gate

Your ADSL Internet Gate is delivered with factory settings that fit most users. In some situations however, you need to change the configuration of your ADSL Internet Gate. All the configuration pages can be reached from the main menu in the ADSL Internet Gate. You can also easily set up the ADSL Internet Gate to fit your specific needs.

In the following sections you will find information about two of the configurable features in the ADSL Internet Gate. For more information refer to the built in help or the online user manual, see also section 2.

Note:
When you have made changes in the GUI, click **Apply** to activate the settings. To save the settings permanently click on **Save permanently** at the top of the page. Changes that are not permanently saved will disappear if the unit is restarted. When there are changes that have not been saved permanently a warning is displayed at the top of the page as well as the text CFG in the display.

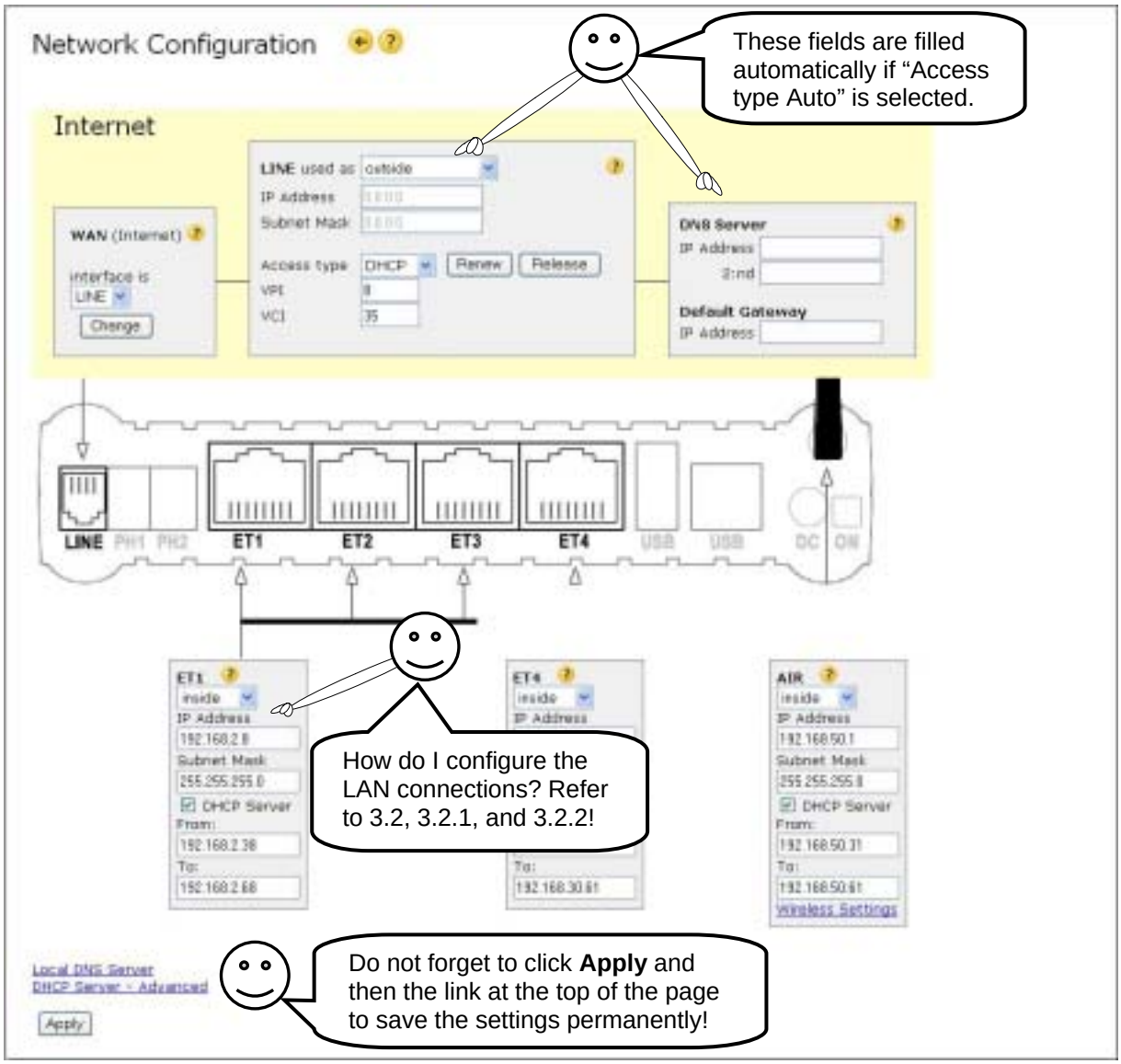
To access the built-in network configuration pages of the ADSL Internet Gate, do the following:

1. Start a web browser, such as Internet Explorer or Netscape Navigator, on your PC.
2. Write the IP address of your ADSL Internet Gate, **192.168.0.1**, in the address field of the browser. The first web configuration page should appear.
3. Click **Log in**.
4. Enter **User name** and **Password**. (At delivery: User name=**admin**, Password=**admin**. You should change the password!)

4.1 Network Settings

You can edit the network settings by choosing **Network** under **Configurations** on the menu page.

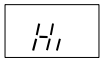
Select access type **DHCP**, **PPPoE** or **PPPoA** depending on the type of connection you have received from your Internet provider. If you are not sure what to select choose **Auto** and click **Search**. If you have received a user name and password from your Internet provider enter those before you click **Search**. To configure the line parameters manually select access type **Manual**.



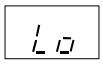
Note:
Each of the interfaces ET1-3, ET4, USB and AIR must reside on separate subnets. Two interfaces cannot have the same IP address – even if one of them is blocked!

4.2 Security Profiles

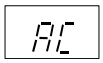
The firewall supervises the data traffic passing through the ADSL Internet Gate and stops unauthorised traffic. The active security level is shown on the front panel display. It can be changed using the **ALT** key, or the menu page on the built in web interface.



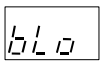
Only web and email traffic is allowed - Highest security, but some applications may have trouble passing through.



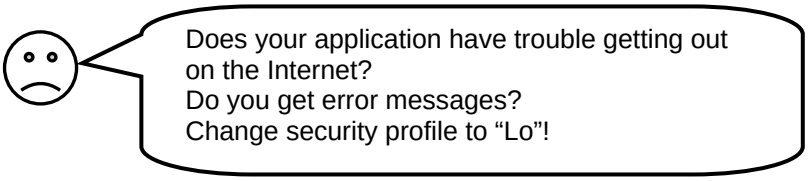
All outgoing and legitimate incoming traffic is allowed - Same security against attacks as the Hi profile, but more applications are allowed to access the Internet.



User editable security profile - The user may edit the details for this security profile.



Blocked - No traffic is allowed to pass. You are disconnected from the Internet.



If you have:

- Servers that you want to make accessible from the Internet,
- a VPN client to work from home, or
- use network games (games played together with other users on the Internet),

you have to configure the firewall to allow such traffic to pass.

You can edit the firewall settings by choosing **Security** under **Configurations** on the menu page. Then choose **AC** to edit the security profile to fit your games or applications.

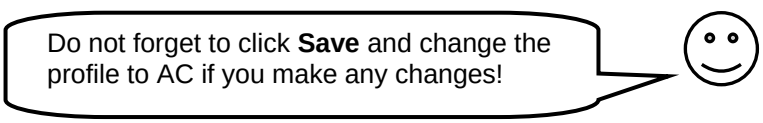
Select the applications and/or protocols you want to allow through the firewall. For some applications you need to state the IP address of the computer on your LAN that will receive the traffic. It is the IP address to your local computer you should enter. In Windows choose **Start**, **Run**, and enter **cmd**. Write **ipconfig** to find out what IP address your computer is assigned to.

Under **Allowed applications** and **Port redirection** you state the applications, ports and protocols you want to allow to pass **in** through the firewall.

Under **Applications from inside** you state applications, ports and protocols that you want to allow to pass **out** through the firewall.

Once an application or protocol has been let through the firewall, a two-way connection is established through the firewall and data can pass in both directions.

Advanced users may manually redirect ports and even edit the rules controlling the firewall in a powerful command language.



5 Telephone Ports

Certain models of this product are equipped with one or two PHONE ports and a LINE port.

Ordinary analog telephones plugged into the PHONE ports (also referred to as FXS ports), become SIP clients that can be used for VoIP (Internet telephony). The PHONE ports are pre-configured to use the internal SIP server, but can easily be changed to use a SIP based IP telephony service from a service provider. The green PH lamp on the front panel will be lit green once your phone has become registered to a SIP server.

The LINE port (also referred to as FXO port), can be connected to your ordinary analog telephone line and then becomes a local gateway between the old telephone system (the PSTN) and SIP based Internet telephony (VoIP).

For additional help please click on the question mark visible on each configuration web page. If the appearing help text is not sufficient, the “Read more online” links might explain further.

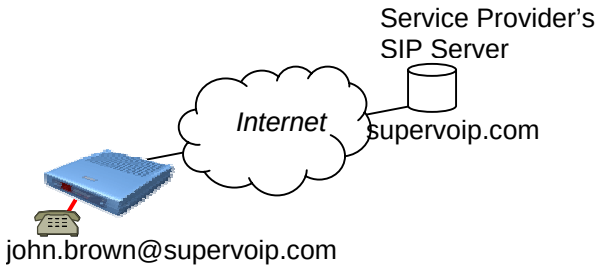
5.1 Using the PHONE Ports with a VoIP Service

If this product has been bundled for use with a special VoIP service, that service provider should have included detailed instructions on how to set up the telephone ports for his service, or the service provider may even use an automatic provisioning system. In these cases, please follow the instructions provided by the service provider!

If you want to connect a PHONE port to a VoIP service that does not have specific instructions for configuring this product, please read the next paragraph!

5.1.1 Setting up the PHONE ports

You should have received a SIP account from the VoIP service provider. To make a PHONE port of this product register to the SIP server of the provider, you shall enter the **SIP address,** the **User ID** and the **Password** on the Telephony Ports page of the ADSL Internet Gate. After pressing **Save**, the PHONE port should be registered to the SIP server and the PH led should turn green.



A **SIP address** is similar to an email address, but many service providers do not expose the SIP address used, but instead give a “phone number” and “SIP proxy” or “SIP server”. The SIP address is then usually the combination of those two with an @ character between.

E.g. if your ”phone number” is 085678123 and the “SIP proxy”, “SIP server” or “SIP registrar” is sipserver.com, then the **SIP address** to enter is 085678123@sipserver.com.

User ID is sometimes called “authentication ID” or just “user name” and is often the same as the phone number or the part before the @-sign in the SIP address.

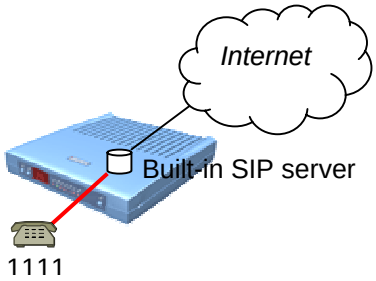
Password is sometimes called “authentication key” or similar.

The configuration may then look like (use any display name you desire):

The ADSL Internet Gate automatically handles the “outbound proxy” function. Only if a service provider really requires his “outbound proxy” to be used, it should be entered on the SIP Switch page.

5.2 Using the PHONE Ports with the Built-in SIP Server

Your unit includes a standalone SIP server. With the factory settings, the PHONE port is given the name 1111, making it automatically register to the internal SIP server, using the SIP address 1111@<ip adress>, e.g. 1111@81.232.123.13. If the unit has a second PHONE port, its factory name is 2222. Phones connected to these ports can reach each other by just dialing these 4-digit numbers followed by the # key.



Please read chapter 6.3 on how to give your SIP server a symbolic domain name and make it globally accessible.

On the Telephone Port page, you can of course change the SIP address of the PHONE port. If only a SIP user name is given (i.e. the @<domain> part left out), the phone will be registered on the internal SIP server. By default, all the PHONE ports and SIP clients on the LAN are allowed to register on the internal SIP server. SIP clients on the outside of the ADSL Internet Gate firewall, need to use their User IDs and Passwords for authentication. This is configured on the SIP Switch page.

5.3 The LINE Port – A Local Gateway to the Telephone Network

The LINE port (connected to your old telephone line) allows SIP clients to reach the ordinary telephone network (PSTN) and vice versa. The functions of the LINE port can be used *in addition* to the PSTN connectivity offered by a VoIP service provider, e.g. for back up, for emergency calls or for receiving incoming calls on your old telephone line. You configure the LINE port on the Telephone Port page, reachable from the main menu.

5.3.1 Outgoing Calls

Normally, a telephone number dialed on a SIP client is sent to the VoIP service provider for handling. However, SIP calls can also be forced to the ordinary telephone network through the LINE port by:

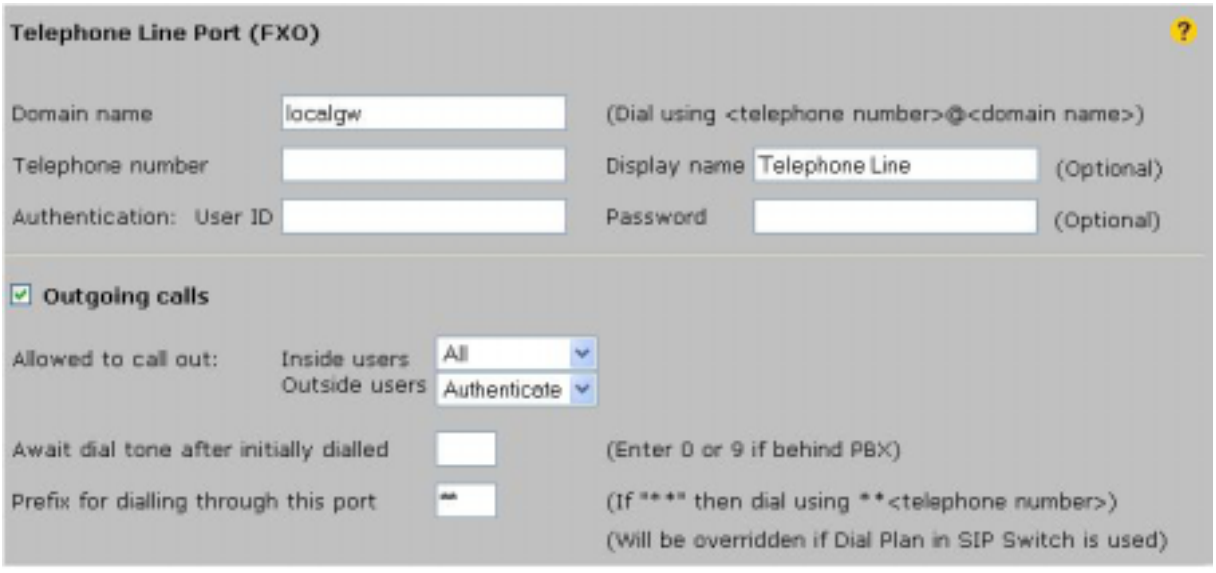
- **Prefix**

  The dial prefix is ** by default, but can be changed on the **Telephone Port** page. Dialing **<telephone number> on any telephone connected to the PHONE ports or on any SIP client on the LAN, will call that telephone number through the LINE port.

- **Virtual domain name**

  The virtual domain name is by default “localgw” but can be changed on the **Telephone Port** page. Any SIP client calling <telephone number>@localgw will dial the stated telephone number through the LINE port*.

  * *Some SIP phones may require entering the local IP address of your unit (by default 192.168.0.1) as “outbound proxy” in their configuration for this feature to work. Alternatively you can enable the built-in DNS server. The* DNS Server *web page is accessible from the main menu through the* Network Configuration *web page. If you own a valid second domain name (other than for your SIP server) you can use that domain name instead of localgw.*



- **Emergency number**

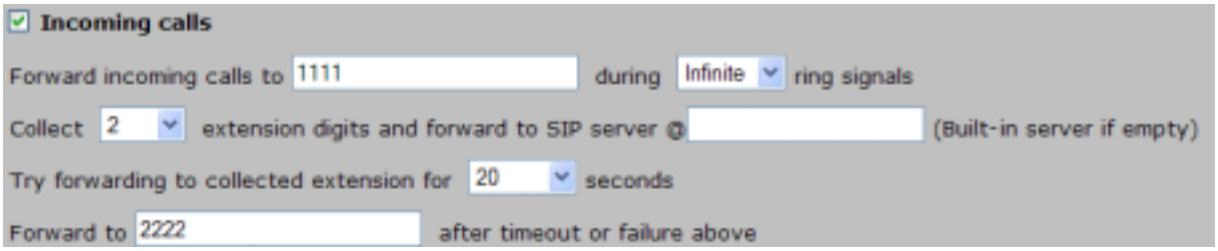
  Emergency numbers are forced to the LINE port as set up on the SIP Switch page.

- **The SIP Switch Dial Plan**

  If you purchase the optional SIP Switch software, the Dial Plan on the SIP Switch page can be used to route telephone calls through the LINE port, in many useful ways.

5.3.2 Incoming Calls

If anyone calls the telephone number of the phone line connected to the LINE port, the call will by default be forwarded to the telephone connected to the PHONE1 port.



This behavior can be changed on the **Telephone Port** page. If you for example have a SIP Client on you laptop PC, with SIP address jonny@smartcompany.com, you just enter that SIP address in the **Forward incoming calls to** field, to allow you to pick up calls on your laptop e.g. while traveling and connected to an Internet connection not blocked for SIP.

You can also set up more advanced functions, like collection of extension digits and directly allow forwarding of incoming calls to certain SIP clients. This works if you have given your SIP clients numeric SIP user names, or if you use the extension number feature of the optional SIP Switch software, see chapter 6.5.

5.4 Making and Receiving Calls

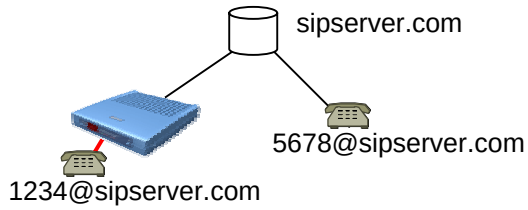
5.4.1 Making SIP Calls on a Telephone Connected to a PHONE Port

An analog telephone connected to a PHONE port becomes a SIP client.

You can call numeric SIP addresses on the same SIP domain as you are registered to by simply picking up the phone and dialing.

Example:

If you are registered on sipserver.com and want to call 5678@sipserver.com all you need to do is pick up the phone and dial 5678#.



When a conventional telephone number is dialed, the VoIP service provider normally detects this and sends the call trough a gateway to the old telephone network, the PSTN.

To speed up dialing it is recommended that you end all your dials by pressing #, to avoid a 4 second delay before the call is placed.

To dial alphanumeric SIP addresses, or full SIP addresses on other SIP domains, you can use the **Call Control** panel on the **Telephone Port** page. Just enter the SIP address and click **Dial**. You can also enter ordinary telephone numbers or extension numbers.

If your phone is On Hook when dialing from the **Call Control** panel, it will ring to remind you to pick-up when a connection is made.

*The same **Call Control** panel can also be reached by clicking on* **User Log In** *on the login page of your unit and entering the SIP name and password you have entered for that PHONE port on the **Telephone Port** page.*

For advanced telephony functions, please refer to chapter 5.5.

5.4.2 Making Calls from a SIP Client on the LAN

No special settings in the ADSL Internet Gate are required for SIP clients on the LAN, since the unit contains a SIP proxy that dynamically controls the firewall and NAT inside the ADSL Internet Gate. **In the clients, make sure STUN and other NAT-traversal methods are turned off.** Configure the clients as if they had a global IP address, disregarding that they are behind the NAT/Firewall in the ADSL Internet Gate. If an "outbound proxy" setting has to be set in the client's configuration, it is best to set it to the local IP address of this unit (by default 192.168.0.1).

By clicking "Using SIP: Telephony, Video, Messaging…" on the login page of the ADSL Internet Gate, you will find guidelines how to configure various SIP Clients and SIP Phones.

5.4.3 Receiving Calls on a Telephone Connected to PHONE Port

The telephone connected to the PHONE port becomes a SIP client. Thus, calling its SIP address from any SIP phone anywhere in the world will make it ring (unless your VoIP service provider has blocked reception of real SIP calls). If you have received an ordinary telephone number from your VoIP service provider, he is responsible for forwarding PSTN calls with that number to your SIP address. Your phone's SIP address is visible on the **Telephone Port** page.

5.4.4 Forcing Calls to the Ordinary Telephone Network through the LINE Port

Dialing ** in front of the telephone number will place the call on the ordinary telephone network using the LINE port. Thus, for example dialing ****5551234#** will call the ordinary telephone at number 555 1234.

This applies to both to phones connected to the PHONE ports and to SIP clients connected to your LAN.

See chapter 5.3.1 how the ** prefix can be changed and learn about other ways of using the LINE port.

5.5 Advanced Telephony Functions Using the PHONE Ports

The telephones connected to the PHONE ports are capable of advanced call control operations like call transfer, 3-way calling, call waiting etc.

You use those functions either by pressing certain keys on the telephone or by using the **Call Control** panel on the **Telephone Port** page (which is easier).

The key combinations to activate different functions are dependant on the **Telephony Keys Style** setting of the Telephone Port page. The description below is for the "US Extended" keys style.

Note:
Your unit may use different dial sequences than described here! To see the dial sequences for your unit please refer to your unit's Telephone Port page: **The sequences to dial from the phone are shown within parenthesis on each button in the Call Control Panel**. The hook flash key is marked R in some countries.

2nd Call

Park active call and start a second call:

Enter the number and click the **Dial** button **OR** Do a hook-flash and dial the number

Hang up waiting or parked call

Click the **Reject** button **OR** Dial **#0** (as stated on the Reject button)

Hang up active call

Click the **Hang up** button **OR** Dial **#1** (as stated on the Hang up button)

Call Alternation

If you have an active and a parked call, or a call waiting, you can swap between them:

Click the **Other Call** button **OR** Dial **#2** (as stated on the Other Call button)

3-way Conference

If you have an active and a parked call you can join them into one 3-way conference call:

Click the **Conference** button **OR** Dial **#3** (as stated on the Conference button)

Attended Call Transfer (Note that the other party needs to support Call Transfer.)

If you want to transfer a call to another number after you have spoken to that person:

Enter the number and click the **Dial** button, wait for an answer, then press the **Transfer** button next to the Conference button. **OR** Do a hook-flash and dial the number, wait for an answer, then dial **#4** (as stated on the Transfer button).

Unattended Call Transfer (Note that the other party needs to support Call Transfer.)

If you want to blind transfer a call to another number:

Enter the number and click the **Transfer** button next to the Dial button. **OR** Do a hook-flash and dial **#90** (as stated on the Transfer button) followed by the number.

"Hook flash for everything"

With certain Telephony Key Styles you can also use the hook flash in the following situations:

Call waiting	Call transfer	3-way Conference
If you hear the "call waiting" beep during a call you can hook flash to switch between the two calls.	When you have received a call, do a hook flash to get dial tone, and dial the third party. Wait for answer then hook flash to transfer the call.	Place the first call, wait for an answer. Hook flash and dial the third party, wait for an answer. Hook flash to join both calls into a 3-way conference call.

(The hook flash key is marked R in some countries)

You can freely mix using Control Panel buttons, dial codes and hook flash in any combination.

6 SIP Support

SIP is a standardized Internet protocol for live person-to-person communication over the Internet. VoIP or IP Telephony is just one application where SIP is used. Other applications, such as SIP based high quality voice, video, presence, instant messaging and more is expected to be the next large usage of the Internet after email and web surfing!

However, SIP (and other similar protocols) does not traverse firewalls and NAT routers, unless the SIP protocol is specifically supported.

Your ADSL Internet Gate unit has full support for SIP!

6.1 SIP Communication to and from Your LAN

To allow SIP communication to and from clients on the LAN, the ADSL Internet Gate contains a full SIP proxy and SIP registrar that dynamically control the NAT and firewall in the ADSL Internet Gate. Thus, SIP clients on the LAN can communicate with other SIP clients over the Internet.

With other NAT routers and firewalls, SIP communication may not be possible, or has to rely on unreliable and insecure methods like STUN to try to keep doors open in your firewall. Some of these methods for NAT/Firewall traversal also locks to only use SIP with a certain service provider. They do not allow you to use the SIP protocol generally.

The SIP support in the ADSL Internet Gate allows for global and secure SIP communication and requires no configuration – it just works! SIP Clients on the LAN just follow the SIP standard. *Make sure that STUN and other NAT traversal methods are turned off in the SIP clients you use!*

For additional help please click on the question mark visible on each configuration web page. If the appearing help text is not sufficient then the “Read more” online links below it might explain further.

6.2 SIP Client Configuration

No special configuration of the ADSL Internet Gate is required for SIP clients on the LAN. In the SIP Client, **make sure STUN and other NAT-traversal functions are turned off**.

Just configure the clients as if they were located on a global IP address and disregard that they are behind the NAT/firewall in the ADSL Internet Gate. If there is any “outbound proxy” setting available in the client’s configuration you may set it to the local IP address of this unit (by default 192.168.0.1), though it is not necessary. SIP clients can register to any SIP servers on the Internet. *(Registering to more than 5 accounts requires purchase of additional licenses.)*

You find guidelines how to configure various SIP clients and SIP phones by clicking “Using SIP: Telephony, Video, Messaging” on the login page of the web interface.

6.3 Using the Built-in SIP Server

Your ADSL Internet Gate can also act as a complete standalone SIP server. You can register both local (LAN) and remote (WAN) SIP clients to your own unit, enabling global SIP communication without using an external SIP server. Note that you can use the internal SIP Server at the same time as being SIP transparent and using a VoIP provider’s SIP services!

You configure your unit to act as a SIP server for your domain on the **SIP Switch** page, reachable from the main menu of the web interface.

Enable **Use as SIP server for domain(s)** and enter the name of your domain! Then click **Save**.

You need to own the domain name you wish to use and the domain name needs to be translated to the IP address of your unit by DNS.

Having done this, you can use SIP addresses like john.brown@example.usesip.com for your SIP clients and communicate with everyone else in the open SIP world!

6.4 Creating Your Own SIP Domain

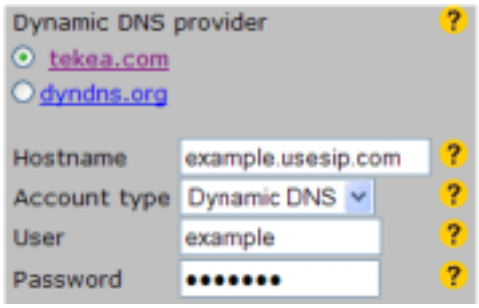
If you do not already own a domain name, you can easily get one at a domain name registrar found on the web. Alternatively, you can directly select a sub domain of some predefined domain name at a DNS service provider like Tekea or dyndns.org. Tekea, found at www.tekea.com provides special SIP support, making it very easy to set up your own SIP domain.

To make your SIP server accessible, your SIP domain name has to be made available in DNS, e.g. by your Internet service provider or by the mentioned DNS service providers.

If you have a fixed IP address, the domain name can be handled by a regular DNS server, but if you have a dynamic IP address (allocated by your Internet service provider by DHCP - an address that may vary from time to time) you need to use dynamic DNS.

You can directly get a dynamic DNS account from Tekea or dyndns.org, and should then use the dynamic DNS client in your ADSL Internet Gate to keep your DNS entry updated.

From the main menu of your unit, select **Network Configuration,** then **Dynamic DNS.** After having created a dynamic DNS account at any of the listed Dynamic DNS providers, you fill in the fields on the **Dynamic DNS** page. Your ADSL Internet Gate will then update your dynamic DNS account, whenever your IP address changes.



6.5 The SIP Switch

The SIP Switch is an additional software for your ADSL Internet Gate, that integrates the usage of soft PC clients, SIP telephones and ordinary telephones, adds PBX functionality and gives a unique connectivity with the old telephone network via common VoIP service provider's SIP accounts.

You can learn more about the SIP Switch by clicking "Using SIP: Telephony, Video, Messaging" on the login page of the web interface.

You purchase the SIP Switch software from the SIP Switch page of the ADSL Internet Gate. You can also evaluate the SIP Switch for free for 10 days. The links for purchase and evaluate are found beside the Dial Plan on the SIP Switch page.

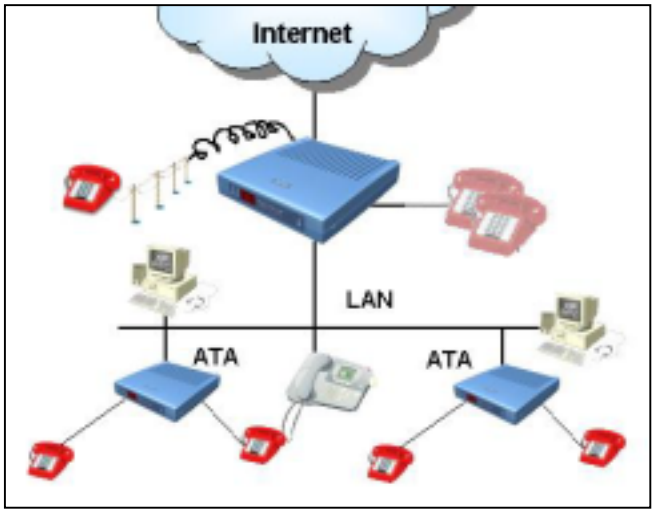
Key functions of the SIP Switch are:

- Convenient dialling between SIP phones, soft SIP clients and ordinary analog telephones, using URLs, E.164 numbers and internal "extension" numbers.
- Unlimited PSTN connectivity (in and out) through a simple VoIP provider account!
- Flexible Dial Plan (Setup wizard and downloadable examples to ease setup).
- Flexible and extensive ENUM lookup.
- Internal "extension" numbers, dial 0 (or 9) for outside.
- User accounts and User's control page.
- Incoming regular phone calls are directly forwarded to the right user.
- Direct mapping to users of incoming PSTN calls.
- Forwarding, forking in parallel and sequence.
- Routing to Voice Mail servers requiring specifics in the request-URI.
- Restriction of incoming callers (Blacklist and/or Allow-list based on various criteria).
- Fallback functionality.

7 Using the ADSL Internet Gate as an Analog Telephone Adapter on the LAN

In some installations, the ADSL Internet Gate may not be used as the Router/Firewall, but instead as an Analog Telephone Adapter (ATA-unit) connected to the LAN.

It is then important that the WAN port of the ADSL Internet Gate is connected to LAN.



Make sure that the address space used on your LAN is not the same as the address space used by the LAN Ethernet ports of the ATA-units. If that is the case, before connecting the ATA-unit to the LAN, you need to go to the Network configuration page of the ATA-units and change address used by their LAN Ethernet ports.

Future firmware may add functionality to simplify the configuration as an ATA-unit and also add useful functionality. Please check the Network configuration page for such enhancements.

It is recommended that an ADSL Internet Gate also is used as the firewall and router for the LAN. Thus, problems with firewalls and routers that do not handle SIP traversal are avoided.

8 Requirements

In order to set up and use your ADSL Internet Gate you need:

- A PC with an Ethernet port.
- A web browser such as the Microsoft Internet Explorer or the Netscape Navigator, version 4 or later, installed on the PC.
- An RJ45 broadband Internet connection, from a wall connector, ADSL or Cable modem.

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DECLARATION OF CONFORMITY

according to EN 45014

The manufacturer Intertex Data AB, Rissneleden 45, 174 44 Sundbyberg, Sweden, herewith declares the firewalls/ADSL modems in the IX78, Powerbit Safegate and SurfinBird series are in compliance with the essential requirements and other relevant provisions of the following EC directives:

1999/5/EC **Radio & Telecommunications Terminal Equipment Directive (R&TTE)**

and that the following harmonised standards and/or technical specifications have been applied:

Electromagnetic Emission:	**EN 61000-6-3:2001, EN 61000-6-3/A11:2004**
- for units with WLAN	**EN 300 328**
Electromagnetic Immunity:	**EN 55024:1998, EN 55024/A1:2001**
Radio Electromagnetic Compatibility	
- for units with WLAN	**EN 301 489-17**
Safety:	**EN 60950-1:2001+A11:2004**
- for units with WLAN	**EN50385:2002**

Stockholm June 18, 2007

Karl Erik Ståhl

Karl Erik Ståhl, President Intertex Data AB

CE

Customer Information *for FCC Part 15*

This device comply with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. the devices may not cause harmful interference, and
2. the devices must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment cause harmful interference to radio or television reception, which can be dermined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.

CAUTION:

1. To comply with FCC RF exposure compliant requirements, a separation distance of at least 20 cm must be maintained between the antenna of this device and all persons.
2. This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Customer Information *as required by ACTA according to FCC Part 68*

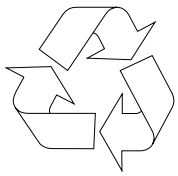
1. This equipment complies with Part 68 of the FCC rules and the requirements adopted by the ACTA. On bottom of this equipment is a label that contains, among other information, a product identifier of US:IXDL01BIX78. If requested, this number must be provided to the telephone company.
2. If this equipment US: IXDL01BIX78 causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice isn't practical, the telephone company will notify the customer as soon as possible. Also you will be advised of your right to file a complaint with the FCC if you believe it is necessary.
3. The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make necessary modification to maintain uninterrupted service.
4. If you experience trouble with this equipment, you should disconnect it from the network until the problem has been corrected or until you are sure that the equipment is not malfunctioning.
5. Please do not alternate or repair any parts of this device.
6. Connection to party line service is subject to state tariffs. Contact the state public utility commission, public service commission or corporation commission for information.
7. If the telephone company requests information on what equipment is connected to their lines, inform them of:
   a. The telephone number that this unit is connected to
   b. The ringer equivalence number REN=0.1
   c. The USOC jack required is RJ11C/W
   d. The FCC Registration Number US: IXDL01BIX78

   Item (b) and (d) are indicated on the label. The ringer equivalence number (REN) is used to determine how many devices can be connected to your telephone line. In most areas, the sum of the RENs of all devices on any one line should not exceed five (5.0). If too many devices are attached, they may not ring properly.
8. If your home has specially wired alarm equipment connected to the telephone line, ensure the installation of this equipment does not disable alarm equipment, consult your telephone company or a qualified installer.

Service Requirements

In the event of equipment malfunction, all repairs should be performed by our Company or an authorized agent. It is the responsibility of users requiring service to report the need for service to our Company or to one of our authorized agents.

Service can be facilitated through our office at: Intertex, 12 Federal Lane, Dennis, MA 02638, USA, Tel: (508) 385-6335



To preserve the environment, you should return the product to where you purchased it or directly to an accredited electronics recycling station.

Intertex uses accredited companies and organisations for recycling and disposion of electronics, packing materials and emballage.

This product is developed and manufactured by Intertex Data AB.

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