G35/G36 SF/G36/i36

Fixed Wireless Terminal for 2G/3GMobile Networks

User Guide

Welcome

Welcome to the User Guide for the G35 / G36 SF/ G36/ i36 Fixed Wireless Terminal.

> **Important information**: Some of the services described in this guide might not be supported by all networks. Please, contact your network operator for information on different network services operational in your GSM/UMTS network.

Disposal of the product

This product shall not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help preventing potential negative consequences for the environment and human health.. For more detailed information, please contact your local council, your waste disposal service or where you purchased the product.

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Declaration of Conformity

Hereby, **Owasys** Advanced Wireless Devices SL (**Owasys**), sited in Parque Tecnológico 207-B, Derio, Spain, declares that this product FWT, models G35, G36 SF,G36 and i36 is in conformity with the requirements and other relevant provisions of the European R&TTE directive 1999/5/EC as well as other requirements as those from ROHS Directive 2002/95/EC .

A complete copy of the Declaration of Conformity can be found at: http://www.owasys.com . (Products/ FWT).

FCC Statement

Before a wireless terminal is available for sale to the public, it must be tested and certified to the FCC that it does not exceed the limit established by the government adopted requirement for safe exposure. This device complies with CFR 47 Parts 15 of the FCC rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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Product Description

The FWT is a flexible and cost-effective solution for connection to the wireless GSM/UMTS network when there is no fixed line infrastructure or if you need additional telephone lines. All models can also be connected to a PBX so you can benefit from the Least Cost routing (LCR) capabilities offered by most PBX vendors to optimize your costs by routing outgoing calls to mobile phones through the GSM/UMTS network.

The FWT allows automatic network searching between GSM 850/1900 or GSM 900/1800 frequencies, ensuring world wide coverage in the GSM networks.

i36 will also allow automatic network searching between UMTS 2100, 1900 or 850 MHz. UMTS will always have preference over GSM network in i36.

Basic features for all models:
- Telephone line providing high quality speech.
- Battery back-up (optional).
- PBX connectivity.

Additional Features for G36 SF, G36 and i36 are:
- EDGE (Enhanced Data Rates for GSM Evolution) is a 2.75G technology that delivers broadband-like speeds to GSM devices. This is available in G36 SF,G36 and i36.
- GPRS (General Packet Radio Service), which keeps you always connected and facilitates rapid transmission of data (ideal for email and Internet browsing). Available in G36 SF,G36. For i36 as fall back access.
- Embedded modem available over the USB port in G36 SF,G36 and i36.
- HSDPA (High Speed Data Packet Access), as primary access, only for i36.

Additional Features for G36:
- Telephone line providing G3 fax and up to V.32b data transmission.

Summary of products:

ITEM	G35	G36 SF	G36	i36
Air Interface	Quad Band GSM 850/900/1800/1900	Quad Band GSM 850/900/1800/1900	Quad Band GSM 850/900/1800/1900	Quad Band GSM 850/900/1800/1900 Penta Band UMTS 800/850/900/1900/2100

ITEM	G35	G36 SF	G36	i36
Data Service	GPRS UL/DL 85.6 Kbps CSD 9.6Kbps	EDGE UL/DL 236.8Kbps, GPRS UL/DL 85.6 Kbps CSD 9.6Kbps	EDGE UL/DL 236.8Kbps, GPRS UL/DL 85.6 Kbps, CSD 9.6Kbps	HSDPA UL 384kbps, DL 7.2Mbps WCDMA UL/DL 384kbps, EDGE UL/DL 236.8Kbps, GPRS UL/DL 85.6 Kbps, CSD 9.6Kbps
PBX	Yes	Yes	Yes	Yes
Analog Data/ Fax Modem	-	-	Yes	No

Supplied Parts
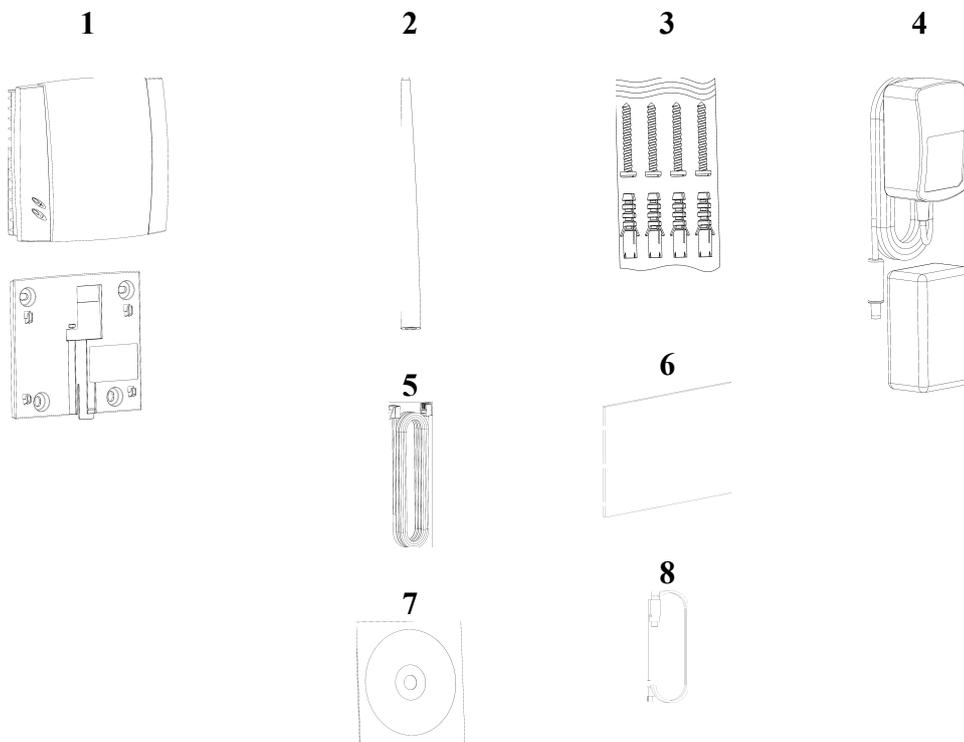
List of Components

After unpacking, please check that the following parts and list of components are included:
1. FWT unit and wall mount bracket (as assembled in your package)
2. Antenna
3. 4 x mounting screws
4. AC/DC adapter with plug(s) (USA, UK, EU or AUS)

5. Telephone cable
6. User Guide
7. CD with USB driver (only for G36 SF, G36 and i36)
8. USB cable (only for G36 SF, G36 and i36)

External Connector and Indicators

Antenna
Connector

Radio LED
(green)

Power LED
(red/green))

Telephone
connector
(Rj11)

USB
connector

Reset

Service

O&M Rs232
connector

DC
connector
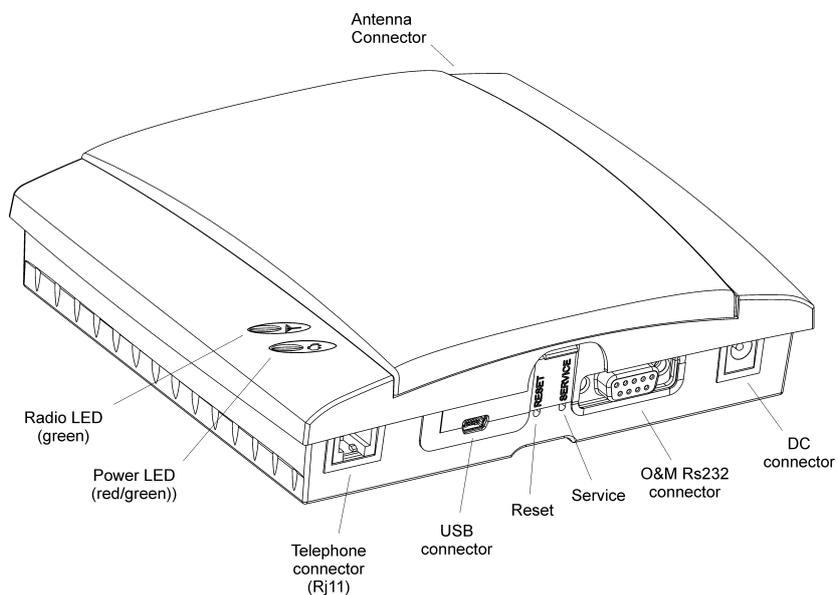
SIM Card

Your network operator provides you with a SIM/USIM
(Subscriber Identity Module) card. The SIM card contains
information about your telephone number and the services
included in your subscription.

Preparing Your FWT

You need to follow these steps before you install the FWT
on the wall and finalize all connections.

> Warning: The FWT should be switched off before
> inserting or removing your SIM card, and/or
> connecting or disconnecting the battery and/or
> connecting or disconnecting any devices to the
> FWT.

Assembly

1. Connect the antenna.
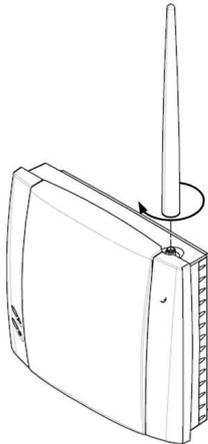
2. Remove the front cover, by pressing down and pushing
   the small tab that is in the center of the bottom part
   of the FWT. Open the SIM Card holder and insert the
   SIM Card.
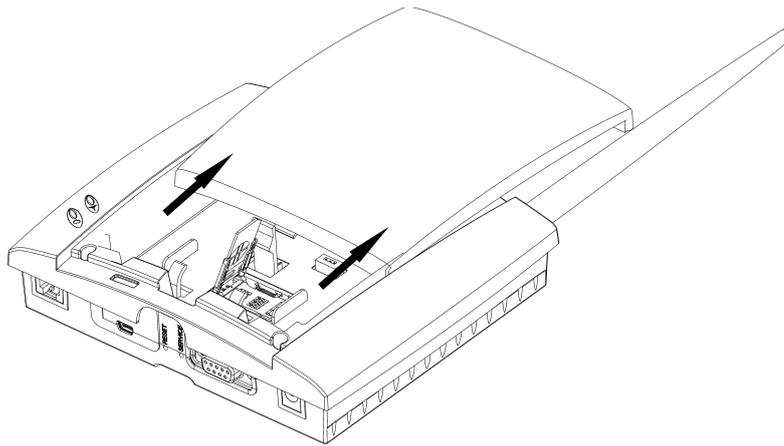
3. Close the SIM Card holder, placing it horizontally and securing it with the sliding part of the holder.
4. Install the battery (optional) in the battery compartment (over the SIM Card). To do so, connect the battery cable to the FWT connector (connection is only possible in the right way).
5. Replace the front cover.

Connecting a telephone to the FWT

Connect an analog telephone to the line interface (RJ11) of the FWT.

> Important: You may have to use this telephone to enter the PIN code.
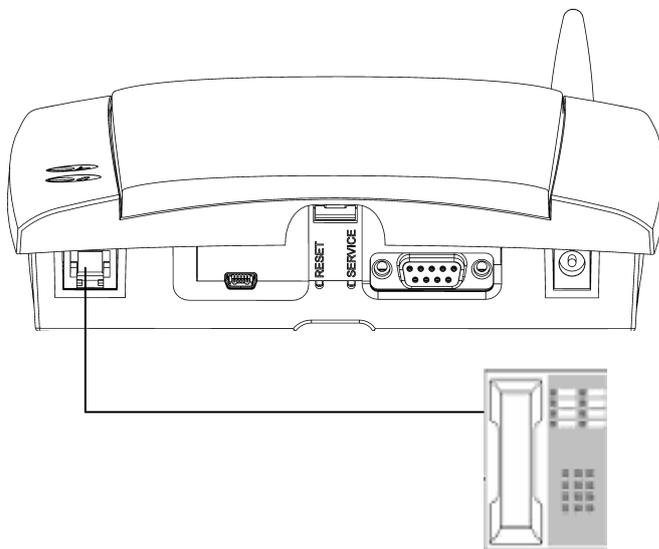
Switch on the FWT

Connect the power supply. The FWT switches on automatically and the LED indicators start flashing.

> Note: If the Power LED is off, there is a problem with the power supply. Please refer to the topic Troubleshooting documented on page 41 for more detailed information.

Enter PIN

Most SIM cards are protected with a PIN (Personal Identity Number), which you get from your network operator and which you need in order to access the network. If the SIM card is not protected by a PIN code, then you do not need to enter a PIN.
If the SIM card is protected by the PIN code, then the LEDs will flash simultaneously. Use the telephone to enter the PIN code.
The FWT starts the network search automatically.

Via telephone

Please follow these steps before you enter your PIN:
1. Pick up the telephone and dial the PIN code. Press the # key on your telephone and wait until you hear a beep tone.
2. If you make a mistake while entering your PIN, hang up the telephone and try again.

If the PIN is correct, you will hear a beep over the telephone (positive indication tone). If it is incorrect, a deep tone will sound (error indication tone).

> Note: Once you have entered the PIN code for the first time, you will not have to enter it again unless you change your SIM card. The FWT performs this operation automatically in case of power failure.

Network Search

After you have switched on your FWT and entered the PIN, the FWT automatically searches for a network.
When a network is found, the Radio LED is on or flashes depending on the signal strength.

> Note: If the Radio LED is off, you do not have access to the network at your present location.

Please, follow the instructions below for complete wall installation.

Installing the FWT on the Wall

FWT Location

The GSM signal strength available at the FWT location affects the performance of the unit. The stronger the signal, the better the FWT will perform.

> Tip: Test several potential locations by moving the FWT while looking at the Radio LED. Select the location where the Radio LED is continuous steady, or the location with the highest amount of flashes.
>
> Note: Moving the FWT as little as 20 cm can affect the reception quality.

Location Testing	
Number of Radio LED flashes	Location Status
0 OFF	Unacceptable
1 - - -	Acceptable
2 -- -- --	Good
3 --- --- ---	Very Good
Continuously -----------------	Excellent

Please consider the following recommendations:

- Always select an indoor location, preferably close to a window and as high as possible in the building. Generally, you will experience better GSM signal strength in these places.
- Do not install the FWT in a wet or damp location.
- Do not install the FWT in an outdoor location.
- Do not install the FWT on walls or in rooms that contain large amounts of metal, steel or wiring.
- Do not expose the FWT to extreme temperatures (near radiators, cooling vents, etc).

If you experience poor reception quality, an outdoor antenna may improve reception.

Wall mounting

Please proceed as indicated in the following pictures.

1. Unfix the wall bracket packed assembled with your FWT by slightly pressing the tab downwards (step 1) and then sliding it forward (step 2), then it releases (step 3).
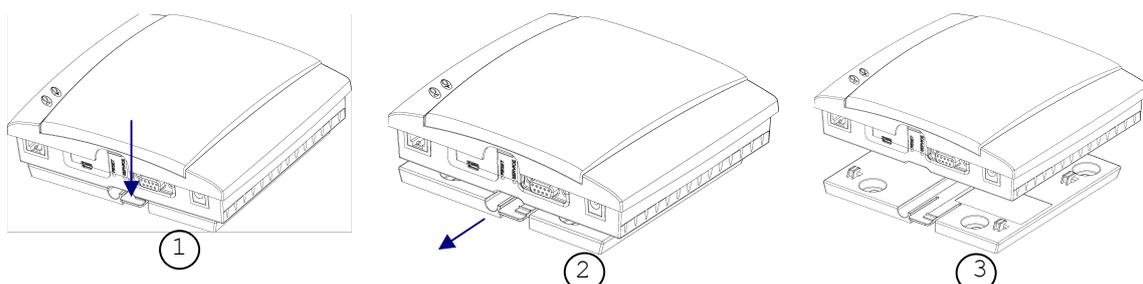
2. Fix the wall-mounting bracket on the wall.
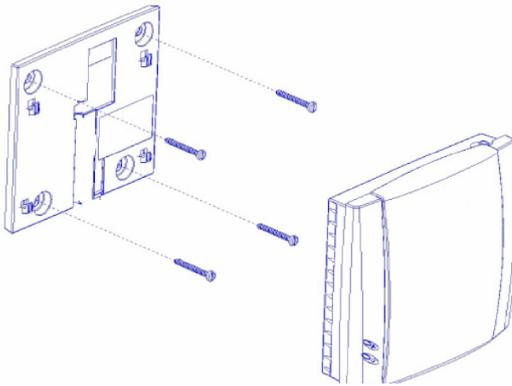
3. Place the FWT against the wall-mounting bracket.
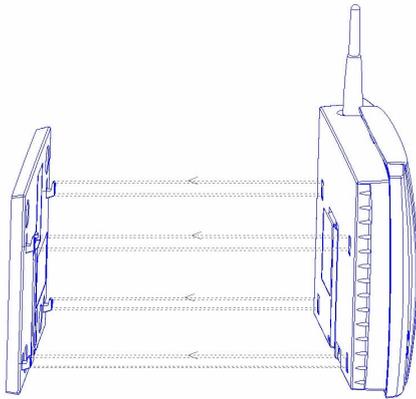
4. Slide the FWT downwards.

Warning: Once you have fixed the FWT to the wall
and switched it on, check the final status of the
LEDs. If either one is off, then there is a problem
with the power supply or the GSM signal.

Now the FWT is ready for connecting devices and making
calls.

Note: If you want to remove the FWT from the wall
bracket, then you have to press the tab (step 1) as
indicated in the following picture and then slide
the FWT upwards (step 2).

Connecting Devices to the FWT

Connect the devices to the FWT (RJ11 connector) in the same way as with an analog telephone line. The devices must be connected in parallel.

You can connect the devices directly to the FWT telephone line connector (RJ11) or make an internal telephone wiring, use RJ11 splitters or similar connectors.
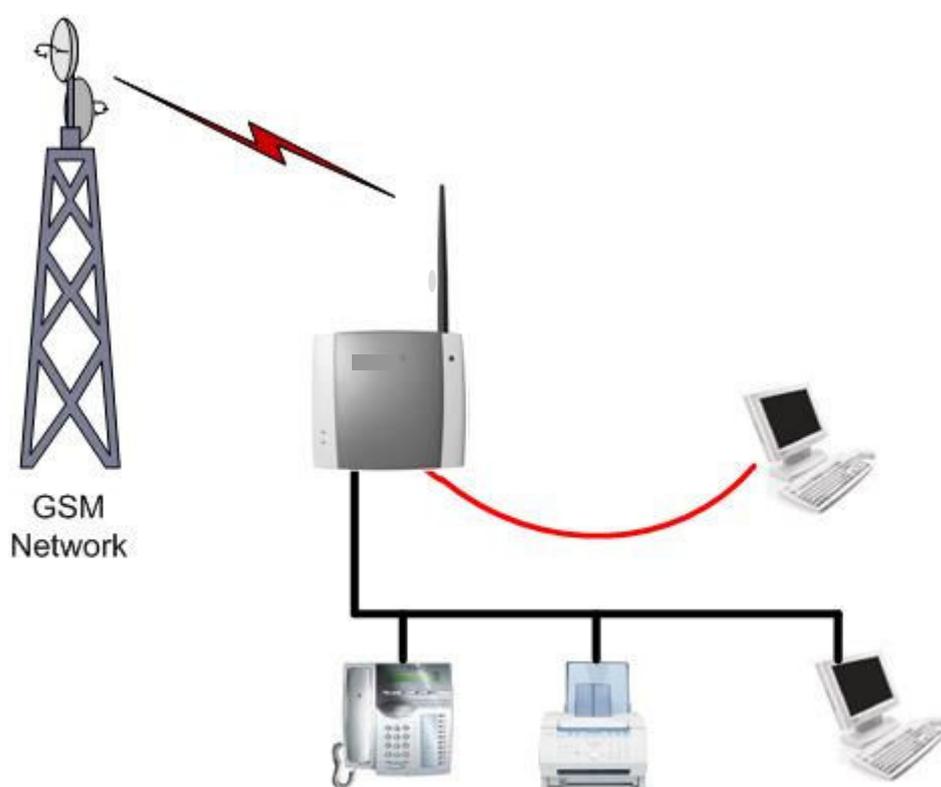
Models G36 SF, G36 and i36 provide a USB connection that allows using them as Modems.

> Note: When making the connections, the two-wire telephone cable polarity does not matter.
> Warning: Do not connect the line (RJ11) of your FWT to the connection point of the Public Switched Telephone Network (PSTN).
> Note: The telephone wire must be installed indoors.
> Note: The telephone wire should not exceed 600 meters.

Checking the connections

Once the devices (up to 3) have been connected, check that the connection is correct. For this purpose, lift every telephone so you can hear the dial tone. For more information on this refer to the topic Audible Tones in page 44.

> Tip: If you don't hear the dial tone in any of the telephones, check your telephone cable layout and connections to make sure that all devices are properly connected.

Checking the quality of the calls

Use any of the telephones connected to the FWT terminal to make a call.
Check the speech quality and ask the receiver to call you back to confirm that you can also receive calls.
If you have problems, please refer to the topic Troubleshooting documented on page 41 for more detailed information.

Installing the FWT as a telephone line

The FWT is designed to provide a telephone line (RJ11 connector) to which up to three (3) Fixed Line devices can be connected in parallel. The FWT provides a single telephone line, which means that only one communication can take place at a time, in the same way as an ordinary fixed line.
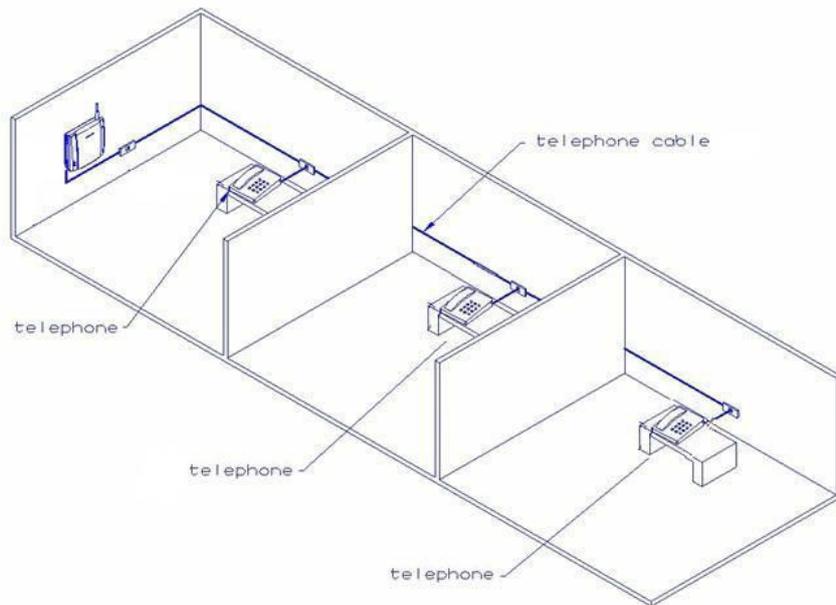
Warning: In order to avoid GSM interferences (noise), place the FWT at least three (3) meters (horizontal) away from electronic devices, including the telephone equipment connected to the FWT, or other household electronic devices such as televisions or radio receivers. The difference in height should be at least 2 meters (vertical). This is not necessary if you use telephone devices that fulfil the Immunity Characteristics settled by the IEC CISPR-24 standard. In this case, a minimum security distance of 20 cm is required.

Connecting the FWT to a PBX

FWTs are designed to provide a telephone line (RJ11 connector) that behaves in the same way as an analog trunk.

Generic requirements

The PBX should meet the following generic requirements for FWT connectivity:
- The PBX must provide analog trunks.
- One position of the trunk must be assigned to each FWT.
- The trunk card must support either Busy Tone Detection (BTD) or Polarity Reversal Detection on answer and release.
- The PBX can be programmed to utilize Least Cost Routing (LCR), if available, to automatically choose the trunk where the FWT is connected.

• If the PBX does not offer LCR, choose the trunk
where the FWT is connected manually with a
special dialled prefix. Check the installation in
the same way as before.

The FWT is compatible with most analog PBXs on the market.
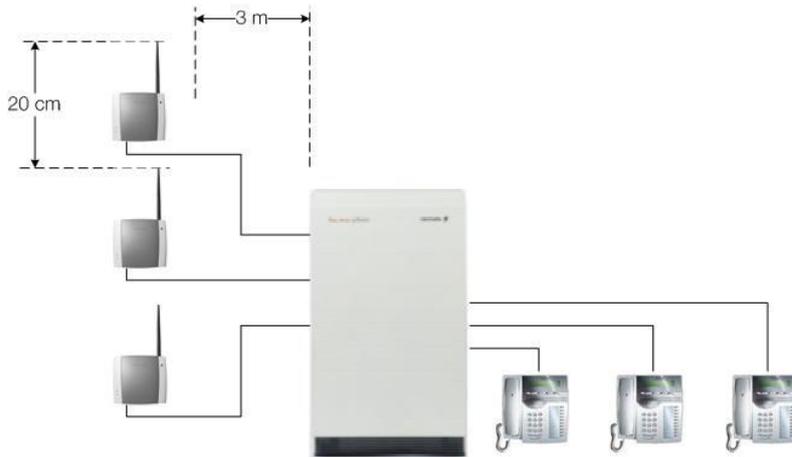
FWT connectivity to the analog trunk of the PBX

If the PBX fulfils the requirements for FWT connectivity,
listed above, follow all the installation steps as
described in the topic Installing the FWT on the Wall
documented on page 11.

Note: A minimum distance of 3 meters between the
FWT and the PBX is recommended. The cable
distance between the PBX and the FWT should not
exceed 600 meters, and the connection cable
should be at least 0.4mm2 in diameter.

Warning: If you install more than one FWT to a
PBX, their antennas have to be separated by 20 cm
in height or 2 meters in the horizontal.

If you are using an analog PBX — disconnect the telephone
you have used to enter the PIN and test the FWT, and
connect the analog trunk cable from the PBX to the FWT
telephone line interface.

Check your PBX programming guide to see how to program your
PBX to route certain calls through the FWT trunk if you are
using a Least Cost Routing (LCR) programmed PBX. Once LCR
is programmed, make a call to a mobile telephone number.
See if the call is established through the FWT and check
the speech quality.

If the PBX does not offer the LCR option, choose the FWT
trunk manually with a specific prefix. Check the

installation in the same way as before. If you encounter problems, contact your distributor or network operator.

> Warning: The PBX may require specific programming: both programming and installation should be done by specialized service personnel.

Using telephones

Telephones connected to the FWT work in the same way as if they were connected to a fixed line network.

> Warning: You will not be able to make or receive data or fax calls while a speech call is ongoing.

Using fax machines (G36)

The G36 FWTs allow the connection of Group 3 analog fax machines to the telephone line interface, in the same way as a telephone.

> Note: The fax communication service has to be registered with and provided by your network operator. Otherwise, the network will not allow faxes to be sent or received.
>
> Note: You will not be able to make or receive other calls while a fax communication is established.
>
> Note: Most 3G networks and some 2G networks do not support analog fax functionality, Check with your service provider to make sure that the network supports analog fax, and also that your SIM is enabled for this service.

Sending a fax (G36)

The G36 FWT is prepared so as a fax can be connected via RJ11 line connector. For sending a fax the user should include dial the sequence ***01*** before the destination number (B-number) in order to inform the FWT that the next call is a fax call (Example: *01*B-number).

Receiving a fax (G36)

Incoming faxes are received in the same way as using a fixed line.

> Note: If you have a SIM card that does not support separate voice and fax numbers, the FWT does not recognize the type of incoming call. This means that the calling party will have to inform you each time a fax is about to be sent. In this case, dial ***9901#** to prepare your FWT to receive a fax call Dial *9903# to change back to voice.

Connecting PCs (G36 SF, G36 and i36)

You can configure the G36 SF or G36 or the i36 FWT to act as a modem. Then you need:
- USB cable for connection to FWT USB port.
- A PC equipped with the appropriate computer program (Web Browser, e-mail, etc) and where you need to install the FWT modem drivers.
- A SIM card that supports data transmission over the GSM network.
- A G36 FWT or G36 SF or i36 FWT to be connected to your PC via USB port.

The FWT should be pre-configured with the settings from your network operator. For detailed information on the FWT data configured settings, please consult your distributor or network operator.

You can choose between the following two connection methods:

HSDPA data (i36) and EDGE/GPRS data (G36 SF, G36 and i36)

Warning: The HSDPA data communication service will only be available with i36. The i36 will use this connectivity as primary access, while GSM/GPRS/EDGE connection will only be used as fall back. Otherwise, G36 SF and G36 will only provide EDGE/GPRS data connection.

HSDPA/EDGE/GPRS data allows you to be always online as you are not charged for the connection time but for the amount of data that you exchange.

You need a USIM card that supports HSDPA in case of i36, or a SIM card that supports EDGE/GPRS for G36 SF and G36. Please contact your network operator for charging subscription details.

Your network operator provides you with an Internet connection as part of the service.

Warning: The data communication service has to be registered with your network operator. Otherwise, the network will not accept this type of connections.

If your USIM/SIM card supports HSDPA/EDGE/GPRS, your network operator will supply you with a user name and password in order to access the network if necessary, and optionally, to improve the Internet connection, a DNS address and a proxy address. All these settings will allow you to configure the Dial-up Networking program in your PC in order to establish a connection.

Note: This procedure is similar to the way you configure an Internet connection from a specific ISP (Internet Service Provider).

If your network operator has provided you with an installation guide, please follow the instructions included in the guide. Otherwise, the present manual explains the installation process. Please refer to the topic PC Data Configurations documented on page **29** for more detailed information.

If you encounter problems during installation, please contact your distributor or network operator.

GSM data (G36 and i36)

This option will require an analog modem. .Only G36 or i36 FWTcan be used for this purpose. Analog modems connected to the G36 or to the i36 FWT telephone line interface work in the same way as if they were connected to a fixed line. In this way, you can use your PCs standard analog modem (or other) to make data calls (Internet browsing, e-mail, etc.) through the G36 and i36 (only) FWT line interface.

> Note: Most 3G networks and some 2G networks do not support analog modem functionality, Check with your service provider to make sure that the network supports analog modem, and also that your SIM is enabled for this service.

To be able to send and receive data calls, you need:

- A PC equipped with an analog modem (or a external one) and the appropriate computer program (Web Browser, e-mail, etc).
- A SIM card that supports CSD data transmission over the GSM network.
- A G36 or i36 FWT where PC analog modem can be connected via line interface (RJ11).
- A network operator providing this CSD data service.

GSM data is charged by time, this means you pay for the time you are connected. You need a SIM card that support GSM data.

The GSM data access type allows you to make both incoming and outgoing data calls, in the same way as with a fixed line. Therefore, you can connect to the Internet using the same ISP (Internet Service Provider) that you would use with a fixed line.

> Note: You will not be able to make or receive other calls while a GSM data communication is established.

The SIM card must support GSM data. The network operator does not need to supply any specific information, and it is your ISP who provides you with the user name, password and installation information in order to establish an Internet connection. Please contact your ISP for installation instructions.

> Note: Your PC should be configured in the same way as if using a fixed line, please check also

that you are using the latest driver for the modem.

Tip: If you already have an Internet connection configured for a fixed line, you do not need to make any changes, just connect your PC to the G36 or i36 FWT line (RJ11) instead of a fixed line.

Note: You should include ***02*** before the destination number (B-number) in order to indicate to the G36 FWT that the call to be made is a data call (Example: *02*B-number).

Incoming data calls are received in the same way as using a fixed line.

Note: If you have a SIM card that does not support separate voice and data numbers, the FWT do not recognize the type of incoming call. This means that the calling party will have to inform you each time a data call is about to be made. In this case, dial ***9902#** to prepare your FWT to receive a data call, Dial ***9903#** (to change back to voice).

Advanced Features

If a DTMF telephone is connected to the FWT, the following features can be accessed.

Changing Volume

During a call, you can increase or decrease the reception volume level.
- Increase volume: dial R####
- Decrease volume: dial R****

Call Divert

You can divert incoming calls to another phone number when you are unable to answer.
The following table shows the divert alternatives as well as the way to proceed to manage this function.

> Note: These dialling sequences may vary depending on your network operator. If these do not work, please consult your network operator or check the user guide provided with your subscription.

To manage diverting calls	With Function …	Dial….	You will hear
When no answer	Activate	**61*Phone_number#	1 beep
	Deactivate	##61#	3 beeps
	Check Status	*#61#	1 beep if activated 3 beeps if deactivated
When out of reach	Activate	**62*Phone_number#	1 beep
	Deactivate	##62#	3 beeps
	Check Status	*#62#	1 beep if activated 3 beeps if deactivated
Unconditionally	Activate	**21*Phone_number#	1 beep
	Deactivate	##21#	3 beeps
	Check Status	*#21#	1 beep if activated 3 beeps if deactivated
When busy	Activate	**67*Phone_number#	1 beep
	Deactivate	##67#	3 beeps
	Check Status	*#67#	1 beep if activated 3 beeps if deactivated
All	Deactivate	#002#	3 beeps

Note: If instead of hearing beeps you can hear a deep tone, this means that there has been an error in the activation or the deactivation.

Call Restriction / Call Barring

You can restrict certain types of calls that can be made or received. You need a password to turn a call restriction on or off. Initially, this password will be **0000**.
We recommend you to change it by dialling:
03OLD_PASSWORD*NEW_PASSWORD* NEW_PASSWORD#
The following table shows the restriction alternatives as well as the way to proceed to manage this function.

Note: These dialling sequences may vary depending on your network operator. If these do not work, please consult your network operator or check the user guide provided with your subscription.

To manage restriction of calls	With Function …	Dial …	You will hear…
All outgoing calls	Activate	**33*Password#	1 beep
	Deactivate	##33*Password#	3 beeps
	Check Status	*#33#	1 beep if activated 3 beeps if deactivated
All outgoing international calls	Activate	**332*Password#	1 beep
	Deactivate	##332*Password#	3 beeps
	Check Status	*#332#	1 beep if activated 3 beeps if deactivated
All outgoing international calls except your home country	Activate	**333*Password#	1 beep
	Deactivate	##333*Password#	3 beeps
	Check Status	*#333#	1 beep if activated 3 beeps if deactivated
All incoming calls	Activate	**35*Password#	1 beep
	Deactivate	##35*Password#	3 beeps
	Check Status	*#35#	1 beep if activated 3 beeps if deactivated
All incoming calls when you are abroad	Activate	**351*Password#	1 beep
	Deactivate	##351*Password#	3 beeps
	Check Status	*#351#	1 beep if activated 3 beeps if deactivated
All	Deactivate	#330*Password#	3 beeps

Note: If instead of hearing beeps you hear a deep tone, this means that there has been an error in the activation or deactivation

Call waiting service

If you wish to be able to receive a second call while another call is in progress, you must turn on the call waiting service.

Note: If you are making a fax or a data call, any incoming call will be rejected.

Note: These dialling sequences may vary depending on your network operator. If these do not work, please consult your network operator or check the user guide provided with your subscription.

To manage Call waiting Function …	Dial …	You will hear
Activate	*43#	1 beep
Deactivate	#43#	3 beeps
Check Status	*#43#	1 beep if activated 3 beeps if deactivated

Note: If instead of hearing beeps you hear a deep tone, this means that there has been an error in the activation or deactivation.

Receiving a Second Call

If the call waiting service is on, you hear a tone in the telephone when you receive a second call.

• To ignore the waiting call, take no action.

• To continue with the ongoing call and reject the waiting call (give a User Busy indication tone to the waiting call): press **R0**.

• To end the ongoing call and answer the waiting call: press **R1**.

Note: If you hang up the telephone, you will also end the ongoing call and the telephone will ring again so that you can answer the waiting call as a normal call.

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Sending Tone Signals

During a call, you can press keys 0-9, * and # to perform interactive services, for example banking by phone or control of an answering machine.

Minute Minder

If the minute minder is activated, you hear a beep once every minute during a call as a reminder of the duration of the ongoing call.

To manage minute minder function ….	Dial …	You will hear…
Activate	**42*1#	1 beep
Deactivate	#42*1#	3 beeps
Check Status	*#42*1#	1 beep if activated 3 beeps if deactivated

> Note: If instead of hearing beeps you hear a deep tone, this means that there has been an error in the activation or deactivation

SIM Card Security

To Manage your SIM Card

Most SIM cards are locked at the time of purchase. If the SIM card lock is on, you have to enter your PIN (Personal Identity Number) the first time you use your FWT. Please refer to the topic Enter PIN documented on page 13 for more detailed information.

> Note: Once you have entered the PIN code for the first time you will not have to enter it again unless you change your SIM card. The FWT performs this operation automatically in case of power failure.

If you enter your PIN incorrectly three times in a row, the SIM card will be blocked and the PUK code must be entered to unlock the SIM card.
Please refer to topic To Unblock your SIM Card documented on page 27 for more detailed information.

To Change your PIN

You can change the PIN in the SIM card by dialling from the analog telephone connected to the FWT with the following sequence:
**04*OLD_PIN*NEW_PIN*NEW_PIN#

> Note: If instead of hearing 3 beeps you can hear a deep tone, this means that there has been an error in the activation or the deactivation.

To Unblock your SIM Card

To unblock your SIM card, you need to enter your PUK (Personal Unblocking Key), which can be supplied by your network operator.

The procedure to enter the PUK is exactly the same as for entering the PIN.

> Note: If you enter the wrong PUK ten times in a row, your card will be permanently blocked. If this happens, you should contact your network operator.

In order to unblock your SIM card and change the PIN at the same time, please dial the following sequence:

**05*PUK*NEW_PIN*NEW_PIN#

> Note: If instead of hearing 3 beeps you can hear a deep tone, this means that there has been an error in the activation or the deactivation.

To Enable the PIN check

To enable the PIN check of the SIM card so the PIN code is requested next time the FWT is started, please dial the following sequence:

**0006*PIN#

> Note: If instead of hearing 1 beep you can hear a deep tone, this means that there has been an error in the activation or the deactivation.

To Disable the PIN check

To disable the PIN check of the SIM card so it is not requested when the FWT starts, please dial the following sequence:

#0006*PIN#

> Note: If instead of hearing 3 beeps you can hear a deep tone, this means that there has been an error in the activation or the deactivation.

To ask if the PIN check is enabled

To know whether the PIN check is enabled or not please dial the following sequence:

*#0006#

> Note: 1 beep means the feature is activated. 3 beeps means the feature is deactivated.

PC Data Configurations

The described PC data configurations displays are for Windows™ XP, but they may differ slightly depending on the Operative System.

Windows™ XP HSDPA/EDGE/GPRS

Installing the FWT (G36 SF, G36 and i36) modem drivers

> Note: These drivers will be provided with your G36 SF or G36 or i36 unit.

To install the FWT modem drivers, follow these steps:
1. Save the drivers supplied with your FWT in C:\ drivers\FWT
2. Switch on the FWT. Connect all the cabling and power supply for the FWT. Refer to the topic Installation on page 11 for more details on it.
3. Connect the USB cable to the FWT USB port at one end, and to PC USB port at the other end. Once connected, PC will automatically detect New Hardware
4. In the New Hardware Assistant screen displayed, click on the option **Install from a list**, and choose the path where drivers were saved. Click on the Next button.
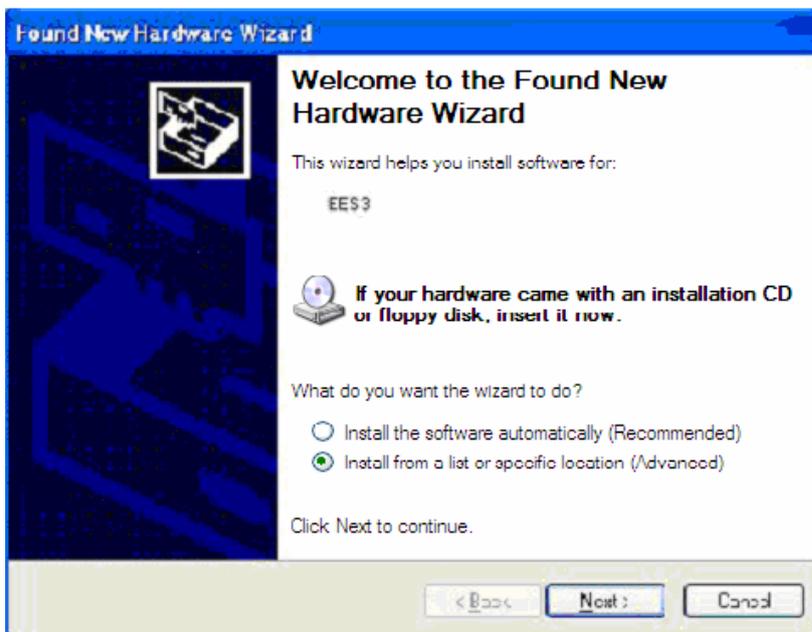
5. Write the complete path where drivers were saved, and click on the Next button.
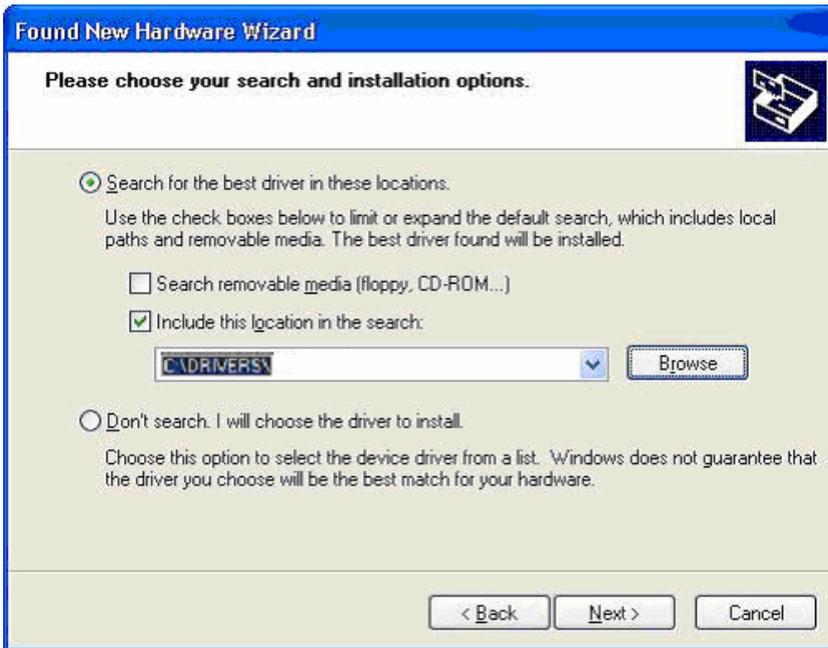
6. Drivers will be installed in your PC. Once installation is over, a Finalization screen will appear. Click on the Finalize button.

FWT modem drivers are successfully installed in your PC. For i36, this process will be repeated thrice as there are three drivers to install.

HSDPA/EDGE/GPRS Internet connection set-up

Warning: This instruction can differ depending on which Windows™ version and service pack is installed on the PC.

Note: This configuration is described for Windows™ XP. Other Windows O.S. will require the same steps for configuration, though some of the screens might display some differences.

To configure your HSDPA/EDGE/GPRS connection for a PC with Windows™ XP operating system, follow the provided steps:

1. Click on the Start button.
2. Click on the Settings option and then click on the Control panel option.
3. With the Control Panel window displayed, locate and double-click on Network Connections icon.
4. With the Network Connections window displayed, click on the File menu and then click on the New Connection option.
5. With the Welcome to the New Connection Wizard screen displayed, click on the Next button.

6. With the Network Connection Type screen displayed, select the **Connect to the Internet** option and click on the Next button.

7. With the Getting Ready screen displayed, select the **Set up my connection manually** option and click on the next button:

8. With the Internet Connection screen displayed, select the **Connect using a dial-up modem** and click on the Next button:
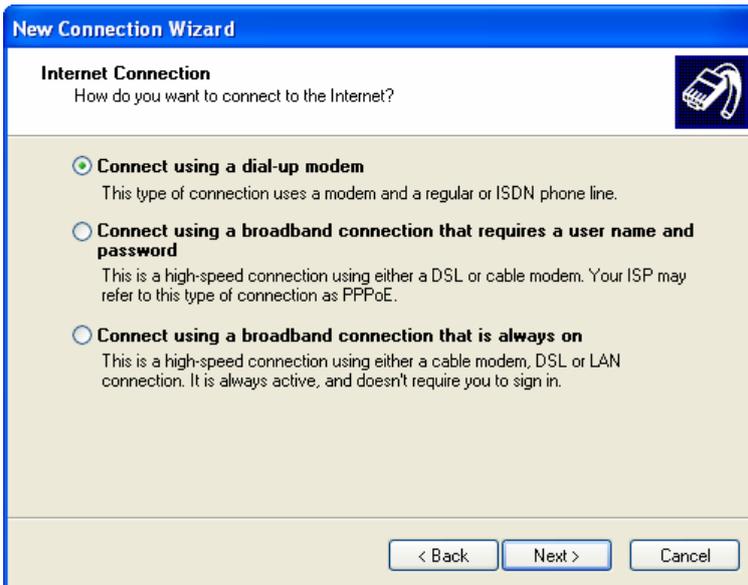
9. With the Connection Name screen displayed, type the ISP Name you require in the **ISP Name** field and click on the Next button.

10. With the Phone Number to Dial screen displayed, type the phone number you will use during the dial up process in the **Phone number** field. Click on the Next button.

New Connection Wizard

Phone Number to Dial
What is your ISP's phone number?

Type the phone number below.

Phone number:
* *99***1#

You might need to include a "1" or the area code, or both. If you are not sure you need the extra numbers, dial the phone number on your telephone. If you hear a modem sound, the number dialed is correct.

[< Back] [Next >] [Cancel]

> Note: To Access the web-based configuration pages enter the phone number ***99***1#.**

11. With the Connection Availability screen displayed, select the **Anyone's use** option and click on the Next button.

New Connection Wizard

Connection Availability
You can make the new connection available to any user or only to yourself.

A connection that is created for your use only is saved in your user account and is not available unless you are logged on.

Create this connection for:
(•) Anyone's use
( ) My use only

[< Back] [Next >] [Cancel]
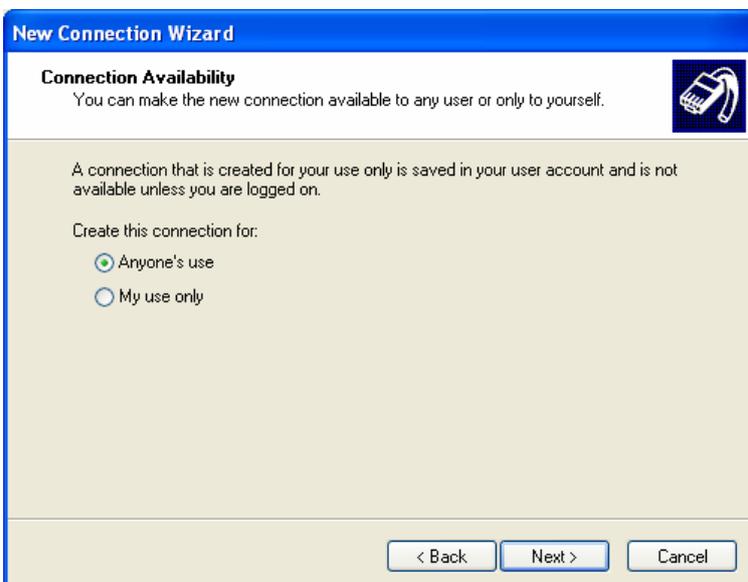
12. If your operator requires certain Internet Account information when you do a dial up, you have to complete all the relevant information on the displayed Internet Account Information screen. Once you have completed all the required information, click on the Next button.
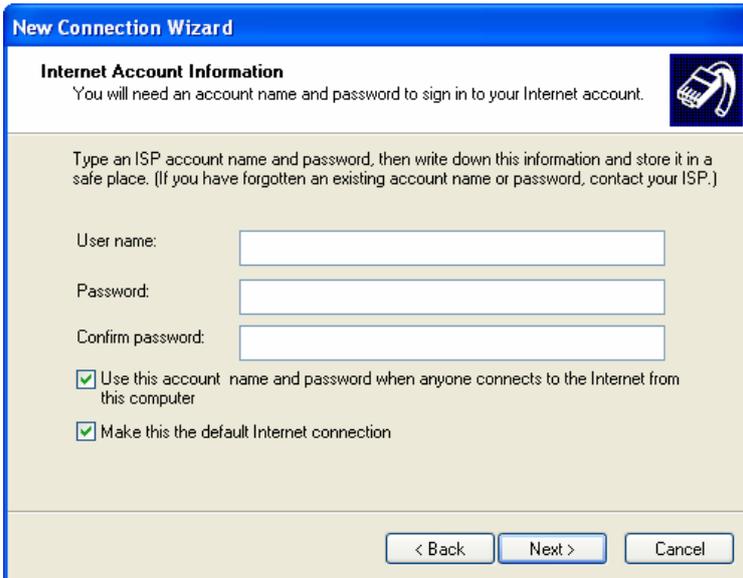
13. With the Completing the New Connection Wizard screen displayed, ensure that you select the **Add a shortcut** to this connection to my desktop check box option. Click on the Finish button.

You have now successfully configured a new dial up connection using the Windows™ New Connection Wizard.

14. Locate and double-click on the newly created HSDPA/EDGE/GPRS connection icon.

15. With the **Connect** screen displayed, confirm all the displayed information and click on the Dial button.

Note: To Access the web-based configuration pages enter the phone number ***99***1#.**

Configuring the connection

1. To configure the created connection, open the **Control Panel**. Click on **Telephone and modem Options** button.
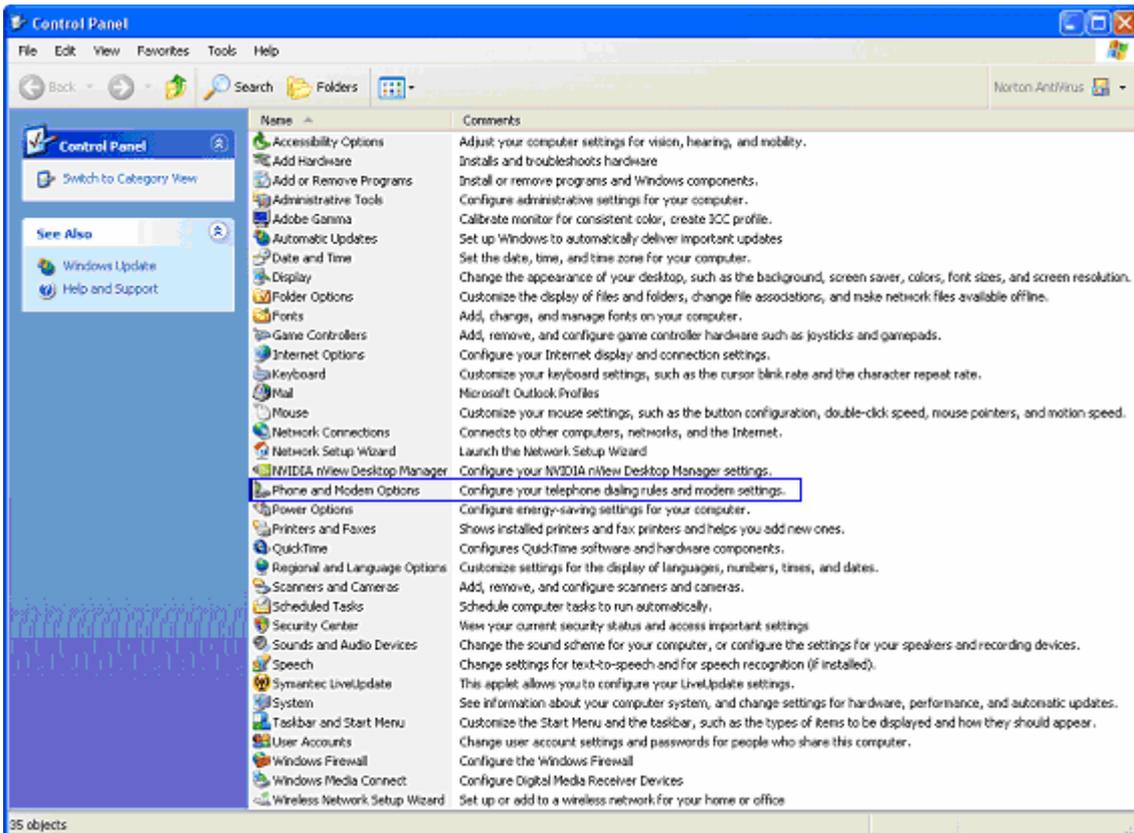
2. On next screen, select the **Modems** option. Click on **Properties** button:

On the properties screen, choose **Cinterion USB Modem**, for G36 SF and G36, or the **Telit USB Modem** for i36, and click on Advanced Properties button. Write the following initialization command:
AT + CGDCONT = 1,ip,APN_provider

Click on **OK** button.
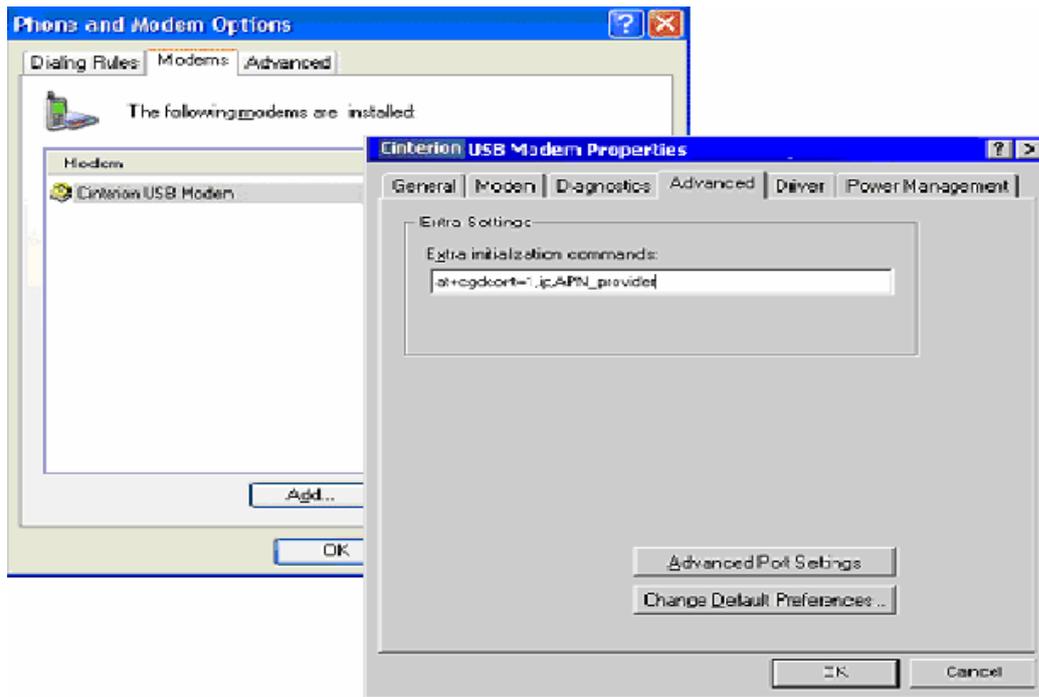
Connection is configured.

Establishing the Internet connection

1. Once connection has been created and configured, open the **Control Panel** and choose the **Network Connection** Option. The created new connection will appear. Click it.
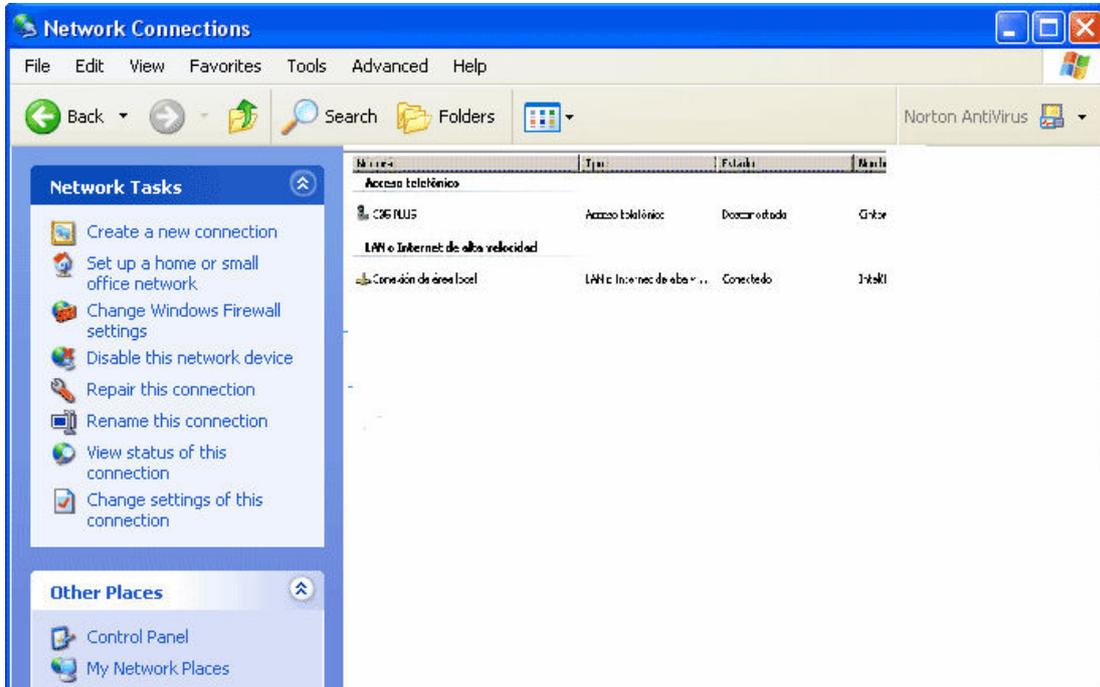
2. On the next screen you will be prompted to write the user name and password of your new created connection. Write your data (if any, otherwise leave it in blank) and click on **Dial** button.

A dialling and registration process will begin, and if ok, connection icon and data rate will appear on the low right corner of your PC.

Troubleshooting

This chapter describes the procedures to identify and, if possible, correct problems that might occur with the FWT or its installation. Some problems require that you call your network operator, but most problems you may encounter can be easily corrected.

LED indicators

The FWT has two LED indicators: The Radio LED (green) indicates the network signal strength, according to the following table:

Colour	Number of flashes	Network signal strength
OFF	0	Unacceptable (no networks)
Green	1 - - - -	Acceptable
Green	2 -- -- -- --	Good
Green	3 --- --- --- ---	Very Good
Green	Continuous --------	Excellent

The Power LED (red and green) indicates the FWT power supply status:

Colour	Power supply situation
Green	Power supply is ON (AC adapter)
Red	The FWT is powered from the battery back-up
OFF	Power if OFF

When both LEDs are flashing simultaneously, it means that the FWT is under alarm conditions. In this situation, ONLY EMERGENCY CALLS can be made.

Simultaneous flashing	Alarm status	Do this…
1 flash synchronized Power LED - - - Radio LED - - -	ENTER PIN	Insert the PIN. Please Refer to the topic Enter PIN on page 13.
	ENTER PUK	Insert the correct PUK.
	INSERT SIM	Insert the SIM card in the FWT.
	SIM ERROR	SIM failure. Check the SIM or contact your network operator.
3 flashes synchronized Power LED --- --- --- Radio LED --- --- ---	FWT Failure	Check connections of the FWT or contact your distributor/ network operator.

The following table summarizes the different operating
status of your FWT depending on the LEDs, and what to do if
a problem is encountered. If the problem persists, please
contact your distributor or network operator.

LED indicators status		
If you see…	It means…	Do this…
Power LED Green Radio LED ON or flashing	• AC power on. • The FWT is connected to the cellular network and available for use. • Normal operation mode.	• Start using your FWT. • If Radio LED is flashing, please refer to the topic FWT Location on page 14. • If you are unable to make a call, check the telephone cable connection or the PBX connections and program.
Both LEDs OFF	• AC Power is OFF	• Verify that the AC plug in the AC adapter is securely connected to the AC power outlet. • Check that the DC power cord is connected to the FWT. • Check the circuit breaker or fuse for the AC electrical circuit that supplies power to the AC outlet that the FWT is connected too.
Power LED Green Radio LED OFF	• AC Power is ON • The FWT is not connected to the cellular network. The FWT is not available for use.	• Verify that the antenna is properly installed. • Verify you have installed the FWT in the best location and that the antenna is properly connected. Please refer to the topic FWT Location on page 14.
Power LED Red Radio LED Green or flashing	• AC power is OFF. The FWT is operating using the battery back-up power. • The FWT is connected to the cellular network and available for use.	• Verify that the AC power cords are securely connected to the AC power outlet. • Check that the power cable is connected to the FWT. • Check the circuit breaker or fuse for the AC electrical circuit that supplies power to the AC input of the FWT power

LED indicators status		
If you see…	It means…	Do this…
		supply.
Power LED Red Radio LED OFF	• AC power is OFF. The FWT is operating using the battery back-up power. • The FWT is not connected to the cellular network. The FWT is not available for use.	• Verify that the AC power cords are securely connected to the AC power outlet. • Check that the power cable is connected to the FWT. • Check the circuit breaker or fuse for the AC electrical circuit that supplies power to the AC outlet that the FWT is connected to.
Both LEDs Flashing (simultaneously)	• Alarm Status. • The FWT is locked or it has an internal fault.	• Check the alarm status table above. • Contact your distributor or network operator for assistance.

Audible Tones

The FWT generates audible tones in your telephone set, thus providing the same service characteristics as the one given by the traditional fixed line network.
The following table describes the nature of the main tones you will get when using the unit. Other standard call progress tones, such as busy tone, number obtainable or ring back tone, are provided directly by the network.

Note: Some tones can vary depending on your network operator.

Tone	Name	Nature	It means…
1	Dial	Regular tone when picking up the phone	The phone is in service and you can start your call.
2	Busy	Intermittent short cadenced tone when picking up the phone	No service available.
3	End of call	Intermittent long cadenced tone	Call is over, the other end's hung.
4	Minute minder	1 beep every minute while in conversation	It tracks the duration of the call.
5	Positive	1 beep	Subscriber service successfully activated or positive interrogation indication.
6	Negative	3 beeps	Negative interrogation indication.
7	Error	1 deep tone	Subscriber service not activated or programming procedure not successfully performed.

Air Interface

Frequency Bands:	
GSM (G35, G36 SF, G36 & i36):	GSM 850/900/1800/1900
UMTS (I36):	UMTS 2100 Band I, 1900 Band II, 850 Band V
	TX 824-849 MHz, RX 869-915MHz
GSM 850 Frequencies:	TX 880-915 MHz, RX 925-960 MHz
EGSM 900 Frequencies:	TX 1710-1785 MHz, RX 1805-1880 MHz
GSM 1800 Frequencies:	TX 1850-1910 MHz, RX 1930-1990 MHz.
GSM 1900 Frequencies:	TX 1922-1978 MHz, RX 2112-2168 MHz
UMTS 2100 Frequencies:	TX 1852-1908 MHz, RX 1932-1988 MHz
UMTS 1900 Frequencies:	TX 826-847 MHz, RX 871-892 MHz
UMTS 850 Frequencies:	
	Class 4 (+33dBm ±2dB) for GSM850/900 (2W)
RF power:	Class 1 (+30dBm ±2dB) for GSM1800/1900 (1W)
	Class E2 (+27dBm ± 3dB) for GSM 850/900 8-PSK
EDGE Power (G36 SF & G36 & i36):	
	Class E2 (+26dBm +3 /-4dB) for GSM1800/1900 8-PSK
UMTS Power (i36):	Class 3 (24dBm +1/- 3dB) for UMTS 800/850/900/1900/2100 (0,250W)
Data Capability (G36 SF,G36 & i36):	
	Multi-slot EDGE/GPRS Class 12 (data rate depending on network operator) Mobile Station class B GPRS Coding scheme 1-4. UL/DL: 85.6 Kbps EDGE Modulation & Coding scheme MCS 1-9. UL/DL: 236.8 Kbps
(i36):	
	HSDPA UL: 384 Kbps DL: 7.2 Mbps WCDMA: UL/DL: 384 Kbps
Analog Data:	CSD (2.4, 4.8, 9.6, 14.4kbps)
Fax (G36):	Group 3 fax
	Full Rate, Enhanced Full Rate, Half Rate and Adaptive Multi-Rate (AMR)
Speech codec:	

FWT Interfaces

Basic Kit

The Basic Kit consists of: FWT unit, power supply AC adapter, wall mount bracket, antenna, Quick Installation Guide and User Guide manuals and telephone cable.

- Size: Height 148 mm, Width 165 mm, Depth: 45 mm
- Weight: 317 grs
- SIM card: Small plug-in card, 1.8V or 3V type

Telephone Interfaces

- Telephones: RJ11 (a/b 2-wire line); telephone interface
- Analog Fax: Group 3 fax transmission (only G36)
- Analog Data: V.32bis, V.32, V.22bis, V.22, V.23, V.21, Bell 212A & 103 (only G36)
- CLI
- Line Impedance: 600 ohm (default)
- Loop Current: 20 mA (off-hook)
- Open loop voltage: 48 V (on-hook)
- Loop resistance: < 650 ohm (off-hook)
- Ringing voltage: 45 Vrms
- Ring Load: 3 REN; up to 3 telephone devices
- Call Control signalling; polarity reversal and loop-break

USB Interface

- USB 2.0 (mini-B female)
- Data services. All applicable to GSM 7.07 AT commands
- SMS: All applicable to GSM 7.05 AT commands

GSM Antenna

- SMA plug male (50 ohm)
- GSM Frequency Bands: GSM 850/1900 – GSM 900/1800
- UMTS Frequency Bands: UMTS 2100 Band I, 1900 Band II, 850 Band V
- Characteristics: omni directional

Power Supply

- Power Input VDC: 5 VDC; 2 A (class IV, female)
- AC Input: 100 - 240 VAC; 50 - 60 Hz AC inlet connector (IEC 320 power inlet)
- Available plugs: EU, UK, USA, and AU

Environmental Conditions

- Operating Temperature: -10°C to +55°C
- Operating Humidity: 20 — 75 %
- Storage Temperature: -40°C to +85°C. Battery: -20°C to +25°C
- Storage Humidity: 5 - 95%

Accessories

Only approved accessories can be used for the G3x FWT series.

Battery

The FWT can be installed with a backup battery:
• Rechargeable li-ion battery: 3,7V, 1800 mAh with 3 hours continuous conversation, 10 hours stand-by.

> Warning: Manufacturer recommends precaution when handling li-ion batteries, and also special attention over storage issues. Please refer to the topic Product Care and Safety documented on page 48 for more detailed information.
>
> Note: Use only the original battery supplied by manufacturer.

The battery is supplied with a cable for its connection to FWT. Only one possible-way of connection is possible.

USB Cable

The USB cable can be used to connect the FWT to a PC, in which case the FWT acts as a modem for data transmission (G36 SF, G36 and i36 models). Use USB cable as short as possible (no longer than 3 meters).

Product Care and Safety

Note: Please read this information before using your FWT.

Save this User Guide since it contains important safety information and operating instructions.

Product care

- Treat your product with care. Keep it in a clean and dust-free place.
- Do not expose your FWT to liquid or moisture or high humidity.
- Do not expose your FWT to extreme high or low temperatures; refer to the topic Technical Data documented on page 45 for more detailed information.
- Do not expose your FWT to open flames or lit tobacco products.
- Do not use the FWT in an area where a potentially explosive atmosphere exists.
- Do not attempt to disassemble your FWT. A broken warranty seal will void the warranty.
- The product does not contain consumer serviceable components. Only Certified Service Centers should perform service.
- Do not use any accessories other than those supplied with your product. Use of non original, or non-approved accessories, may result in loss of performance, damage to the product, fire, electric shock or injury and may violate regulations. The warranty does not cover product failures that have been caused by use of non-original or non-approved accessories.

Antenna care

- Use only an antenna that has been approved for your FWT. Use of unauthorized antennas, modifications, or attachments could damage the FWT and may violate the appropriate regulations, causing loss of performance and radio frequency (RF) energy above the recommended limits.
- Do not hold or touch the antenna when the FWT is in use. Holding or touching the antenna affects call quality.
- Do not use the FWT if the antenna or antenna cable is damaged or missing.
- Do not place the telephone cord or the power supply cord on or near the FWT antenna or antenna cable.
- Do not cover or place an obstruction on or around the antenna.

- Do not use the product with a damaged antenna because when the antenna comes into contact with the skin, a minor burn may result. Replace the antenna immediately.

Radio wave exposure information

This fixed wireless access terminal is a low-power radio transmitter and receiver. During use, it emits low levels of radio frequency energy (also known as radio waves or radio frequency fields).

Governments around the world have adopted comprehensive international safety guidelines, developed by scientific organizations, e.g. ICNIRP (International Commission on Non-Ionizing Radiation Protection) and IEEE (The Institute of Electrical and Electronics Engineers Inc.) through periodic and thorough evaluation of scientific studies. These guidelines establish permitted levels of radio wave exposure for the general population. The levels include a safety margin designed to assure the safety of all persons, regardless of age and health, and to account for any variations in measurements. Specific Absorption Rate (SAR) is the unit of measurement for the amount of radio frequency energy absorbed by the body.

The antenna must be mounted in such a position that no part of the human body rests close to any part of the antenna. The product is intended to be used with an external GSM antenna, located at least at 20 cm away from any part of the human body. Those installations not complying with this statement are responsible for providing SAR measurement reports and corresponding declaration.

Personal medical devices

Radio waves may affect the operation of cardiac pacemakers and other implanted equipment. If a minimum distance of 15 cm is kept between the antenna and the pacemaker, the risk of interference is limited. If you have any reason to suspect that interference is taking place, immediately move away from the antenna. Contact your cardiologist for more information. For other medical devices, please consult the manufacturer of the device.

Potentially explosive atmospheres

Do not use your product in an area where a potentially explosive atmosphere exists.

Power supply

- Ensure that your AC power outlet is adequately grounded, it is situated near the FWT and it is easily accessible.

• Connect the power supply cord only to the AC power outlet that meets the specifications marked on the FWT power supply.

• Never alter the AC power cord or plug. If necessary have the correct outlet installed by a qualified electrician or call your service provider for assistance.

• To reduce risk of damage of any electric cord, remove it from the outlet by holding onto the AC adapter rather than the cord.

• Make sure the cord is positioned so that it will not be stepped on, tripped over or otherwise subjected to damage or stress.

• Use only original Power Supply provided by the FWT manufacturer.

Children

DO NOT ALLOW CHILDREN TO PLAY WITH YOUR FWT SINCE IT CONTAINS SMALL PARTS THAT COULD BECOME DETACHED AND CREATE A CHOKING HAZARD.

Battery information

• Do not expose the battery to extreme temperatures, never above +60°C. For maximum battery capacity, use the battery in room temperature.

• Do not expose the battery to open flames. This could cause the battery to explode.

• Do not expose the battery to liquid.

• Do not allow the battery to be put into the mouth. Battery may be toxic.

• Do not puncture or burn the battery. The battery may contain corrosive liquids and materials.

•Turn the equipment OFF always before removing or replacing the battery.

• DANGER.

RISK OF EXPLODING IF THIS BATTERY IS REPLACED BY THE WRONG TYPE.USE ONLY THE BATTERY SUPPLIED WITH THIS EQUIPMENT.

• This product shall not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is **disposed of correctly**, you will help preventing potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. The recycling of materials will help to conserve natural resources. For more detailed

information about recycling of this product, please contact your local council, your waste disposal service or where you purchased the product.

Moving or Storing the FWT

Turn off the FWT by firstly disconnecting the power supply and then the battery (if one is installed). If you are transporting the FWT on an aircraft, you will be asked to remove the battery from the unit. For updated information about the transportation and use of wireless communication equipment, contact the appropriate local and national regulatory agency or your service provider.

Accessing the battery compartment

The terminal should always be switched off before attempting to access the battery compartment.

Limited Warranty

Thank you for purchasing this product. To get the maximum use out of your new product, we recommend that you follow a few simple steps:
• Read the Guidelines for safe and efficient use.
• Read all of the terms and conditions of the Warranty listed below. Save your original receipt, this is necessary for warranty repair claims. Should your product need warranty service, you should return it to the dealer from whom it was purchased.

Warranty

Owasys Advanced Wireless Devices SL, warrants this Product to be free from defects in material and workmanship at the time of its original purchase by a customer, and for a subsequent period of one year (12 months). All accessories for the Product are covered by a warranty period of six (6) months from the date of original purchase by a customer.

What Supplier will do

If, during the warranty period, this Product fails to operate under normal use and service, due to improper materials or workmanship, Supplier, authorized distributors, or authorized service partners will replace the Product in accordance with the terms and conditions stipulated herein. For efficiency purposes, Customers are reminded that should their Product need warranty service, they should return it to the dealer from which it was purchased.

Conditions

1. The warranty given herein is only valid if the original receipt issued by the dealer to the original purchaser, specifying the date of purchase and serial number, is presented along with the Product to be replaced. Warranty service may be refused if this information is not available or has been removed or changed after the original purchaser of the Product from the dealer.
2. Any replaced Product will be warranted for the remainder of the original warranty period. Replacement may be via functionally equivalent reconditioned units. Replaced faulty parts or components will become the property of manufacturer.
3. This warranty does not cover any failure of the Product due to normal wear and tear, misuse including, but not limited, to use in other than a normal and customary manner

in accordance with given instructions for use and maintenance of the Product, accident, modification or adjustment, acts of God, vandalism, robbery, improper installation or damage resulting from liquid.

4. This warranty does not cover product failures due to repair installations, modifications, non authorized software installations or improper service performed by a non authorized service workshop, opening of the Product by a non authorized person or use of non original accessories.

5. Batteries are not covered by this warranty.

6. Tampering with any of the seals on the Product will void this warranty.

7. THERE ARE NO OTHER EXPRESS WARRANTIES, WHETHER WRITTEN OR ORAL, OTHER THAN THIS PRINTED LIMITED WARRANTY. ALL IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO THE DURATION OF THIS LIMITED WARRANTY. IN NO EVENT WILL MANUFACTURER BE LIABLE FOR LOSS OF PROFITS, COMMERCIAL LOSS, INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY NATURE; TO THE FULL EXTENT THOSE DAMAGES CAN BE DISCLAIMED BY LAW.

Some countries do not allow for the exclusion or limitation of loss of profits, commercial loss, incidental or consequential damages, or limitation of the duration of implied warranties, so the preceding limitations or exclusions may not be applicable in certain cases. This warranty gives specific legal rights, and depending on the country, other rights may be available as well.

Warranty Certificate

Data to be filled in by the vendor.

Terminal Data

Model:
Serial Number:

Vendor Data

Name:
Address:
Date of purchase:

Vendor's Signature and Stamp

Glossary

The following definitions are supplied in order to better understand certain concepts included in this manual:

B-number

The B-number refers to the number that you dial. It is also commonly referred to as destination number, called number, called party number.

Fixed Line Device

Any analog device that can be connected to the analog fixed line:
• Fixed Telephones- ordinary telephones for a fixed line.
• G3 Faxes- ordinary fax machines available on the market.
• CLI devices- ordinary displays or telephones equipped with displays that show the caller number for incoming calls.
• Modems- standard modems for PCs used to make data connections over the ordinary fixed line.

EDGE

Enhanced Data rates for GSM Evolution is a 2.75G technology that delivers broadband-like data speeds to mobile devices. It allows consumers to connect to the Internet and send and receive data, including images, web pages and photographs, three times faster than possible with an ordinary GSM/GPRS network.

FWT (Fixed Wireless Terminal)

The FWT is a flexible and cost-effective solution for connecting your telephone system to the wireless GSM network when there is no fixed infrastructure or if you need additional telephone lines.

GPRS

General Packed Radio Service: this is a technology for data communications that is ideal for e-mail or Internet access as it provides a high speed "always online" connection. This means that, although you are always attached to the network, you only pay for the amount of data that you really transmit.

HSDPA

High-Speed Downlink Packet Access. It's an enhanced [3G](3G) (third generation) mobile telephony communications protocol, also coined 3.5G, 3G+ or turbo 3G, which allows networks based on UMTS to have higher data transfer speeds and capacity. Current deployments support down-link speeds of 1.8, 3.6, 7.2 & 14.0 Mbit/s.

LCR

Least Cost Router: diverts calls to the cheapest package available.

PBX

Private Branch Exchange is a private telephone system that allows extension to connect to each other as well as the outside world.

PDP

Packet Data Protocol (PDP). The PDP context is a data structure present on both the SGSN (Serving GPRS Support Node) and the GGSN (Gateway GPRS Support Node) which contains the subscriber's session information when the subscriber has an active session. When a mobile wants to use GPRS, it must first attach and then activate a PDP context.
This allocates a PDP context data structure in the SGSN that the subscriber is currently visiting and the GGSN serving the subscribers access point.

PIN

Personal Identity Number. This is the number you get from your network operator and which you need to access the network. It will prevent the SIM card to be used by unauthorized people.

PUK

Personal Unblocking Key. This is the number you get from your network operator and which is used to unblock your SIM card if an incorrect PIN has been entered three times in a row.

SIM

Subscriber Identity Module. SIM card provided by your network operator, you need to insert in your GSM FWT in order to make and receive calls. It contains all the information from your subscription characteristics.

Switch-off

Power down the FWT by disconnecting the AC power supply or removing the battery.

Switch-on

Power up the FWT by connecting the AC power supply or a charged battery.

Telephone Line

This is the line provided by the FWT (RJ11 connector) that behaves in the same way as the ordinary fixed line.

Telephone Line Wiring

This is the cable layout that has to be available in order to distribute telephone lines within a house or office.

UMTS

Universal Mobile Telecommunication System. It's a third-generation ([3G](#)) [broadband](#), [packet](#)-based transmission of text, digitized voice, video, and multimedia at data rates up to 2 megabits per second ([Mbps](#)).