Nera WorldPhone

User`s Manual

NERA

enabling a wireless future

RADIATION WARNING

RADIO FREQUENCY RADIATION
HAZARD - KEEP CLEAR
1 METRE MINIMUM

High levels of radio frequency radiation are considered health hazardous. Although no single value of "safe radiation level" has been agreed upon by all countries, the American National Standards Institute (ANSI/LEEE C95.1-1992) recommends that people should not be exposed to radiation stronger than 1 milliwatt per square centimetre at the frequencies used in the WORLDPHONE terminal. Accordingly, the operator of the terminal should ensure that the area extending 1 metre from the front of the antenna be kept clear of personnel when the terminal is transmitting.

OBTAINING LICENSING FOR INMARSAT TERMINALS

Under rights given under ITU Radio Regulations, local telecommunications administrations establish and enforce national rules and regulations governing types of emissions, power levels, and other parameters that effect the purity of signal, which may be radiated in the various frequency bands of the radio spectrum.

To legally operate an Inmarsat terminal, it is necessary to obtain permission from the local telecommunications regulatory authorities of the country you are operating within. Using your terminal in any country without permission causes you to run the risk of confiscation of the terminal or legal action from local authorities. Normal practice for taking telecommunications into another country is to apply for a license before travel. If a license has not been obtained before travel, the equipment may be put into storage by local authorities until such time as a license is obtained.

All specifications are subject to change without notice.

A MEMBER OF CIRM

Chapter 1. Getting Started

Chapter 2. Operation

Advanced functions:

Cont`d on next page

1. Getting Started

2. Operation

3. Telefax Service

4. Data Service

5. Appendices

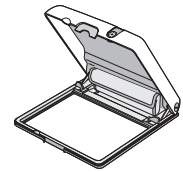
General

The WorldPhone communication terminal provides access to the international dial-up telephone, facsimile and data networks via the INMARSAT satellite system.

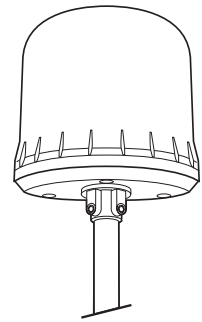
- The terminal **Telephone Unit** (**TPU**) *can be operated with any of the below six WorldPhone antennas:*

- **WorldPhone Portable** antenna with RF transceiver built into the lid.

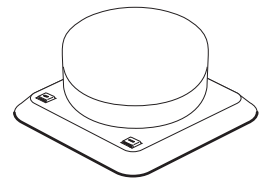
  The antenna also allows semi- or fixed mounting on a flat surface, or tripod.



- **WorldPhone Marine**, a tracking antenna designed for use on marine crafts, leisure yachts and work boats alike.

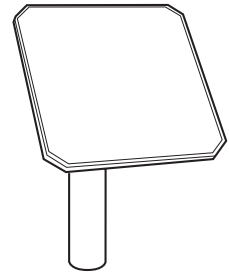


- **WorldPhone Voyager**, a tracking antenna designed for use on vehicles, trains or riverboats.



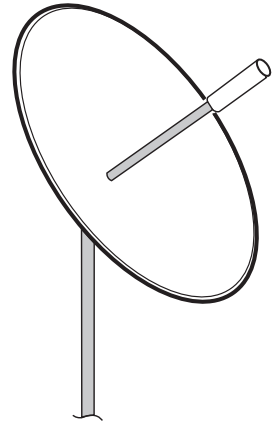
Introduction cont'd

- **WorldPhone Provident**, a fixed mounted antenna designed to provide telecommunication services for remote villages, farms, businesses, construction sites etc.



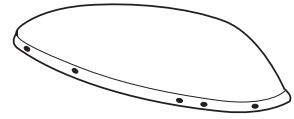
- **WorldPhone Expander**, which allows simultanous operation of up to six WorldPhone Telephone Units through a one meter parabolic dish antenna.

See separate information.



- **WorldPhone Aero**, intended for use on the small to medium size aircraft.

See separate information.



Note!
It is advisable to turn off the equipment prior to switching antenna.

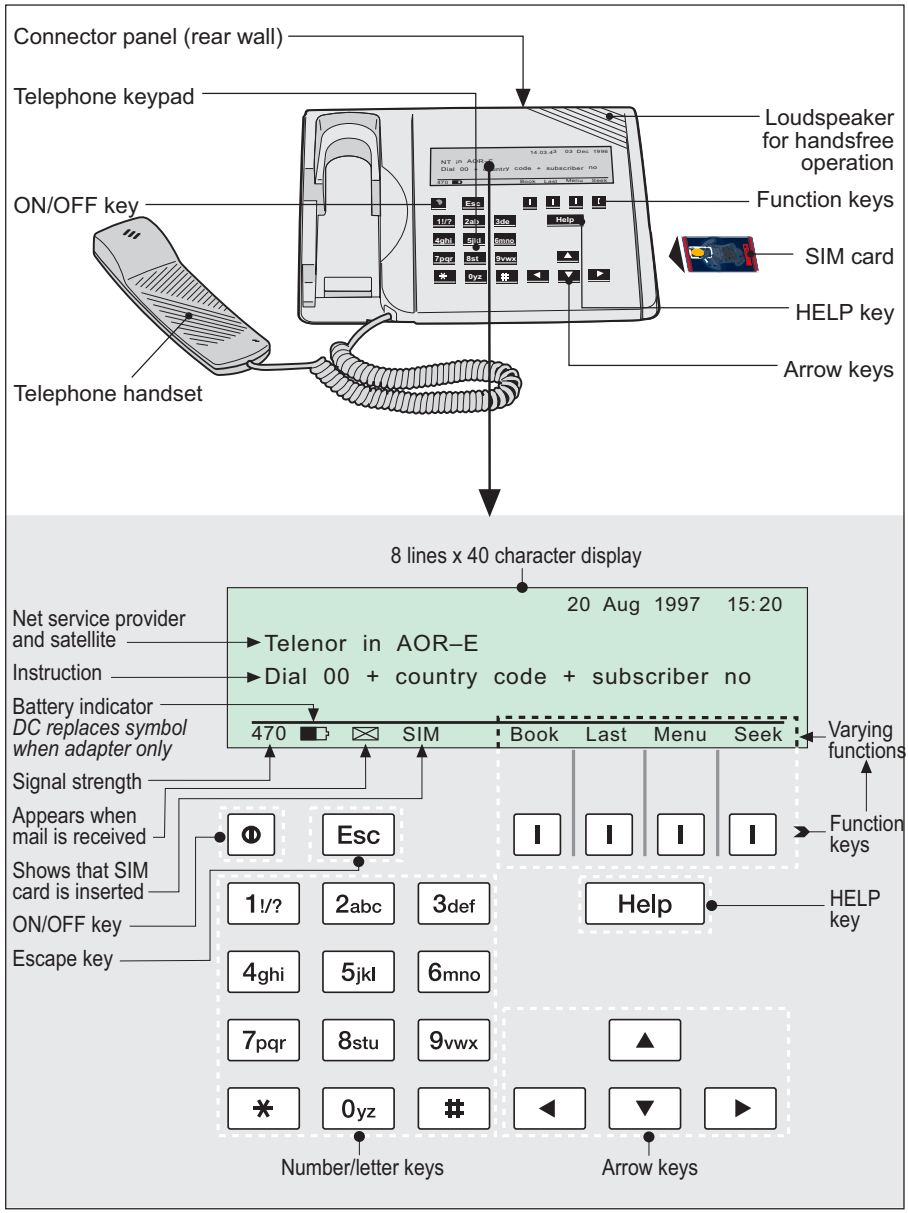


Figure 1.1 WorldPhone Telephone Unit (TPU).

Telephone Unit (TPU) cont'd

SIM card

The SIM card (Subscriber Identity Module) carries subscription information from your Inmarsat Service Provider (ISP) or Net service provider on an integrated circuit. The WorldPhone used with the SIM card assumes the identity of the SIM card.

The SIM card has its own set of numbers on which the user can be contacted irrespective of the WorldPhone used. All outgoing calls will be billed to the owner of the SIM card.

The SIM card is protected by means of a lock code. When buying a SIM card you will receive a Personal Identification Number (PIN) that will contain up to 8 digits. Contact your dealer if you do not have your PIN code.

If the PIN code entered does not match the PIN code on the SIM card, operation with that particular SIM card will lock-up after three failed attempts. You must then use the SIM un-block code (PUK code) provided by your ISP to un-lock the card. Contact your dealer if you do not have the PUK code.
Note! When using the PUK, the SIM PIN is set to 1 2 3 4.

To change or disable the PIN code, *see "**User access**" in chapter 2. Operation.*

The SIM card can store miscellaneous information, f.ex.:

- PIN code (Personal Identification Number)
- Last number list (previously called numbers)
- Phone book
- Allowed and preferred Net service providers

Note! When using SIM card, the accessibility of the functions described in this manual will depend on the card supplier.

PIN code

The user is prompted for the 4-8 digit Personal Identification Number each time the WorldPhone is switched on:

- SIM PIN? (with SIM card).
- Phone PIN? (without SIM card).

*Be aware that the PIN protection may have been disabled, see "**User access**" in chapter 2. Operation.*

Mail service

The Internet Messages Service (**NIMS**) allows a message of maximum 1024 characters to be sent *to* the WorldPhone from a website, or *from* the WorldPhone to an e-mail address or another WorldPhone.

NIMS messages are addressed to a response NIMS IMN number.
*See also **appendix G.***

Telephone Unit (TPU) cont'd

Telephone

A DTMF telephone, cordless base station or PABX may be connected to the WorldPhone. This additional telephone is assigned a separate incoming call number.

Telefax service

The **Telefax** facility supports Group 3 fax transmission at a rate of 2.4 Kbps. The telefax is assigned a separate incoming call number.

Data service

The built in **Data Transmission Service** is capable of transferring data at 2.4 Kbps. It allows the WorldPhone to interface with a PC without the aid of a modem or data card.

The Asynchronous Data (ASD) system provides data transfer between two WorldPhones, or between a WorldPhone and the fixed international network.

The data facility is assigned a separate incoming call number.

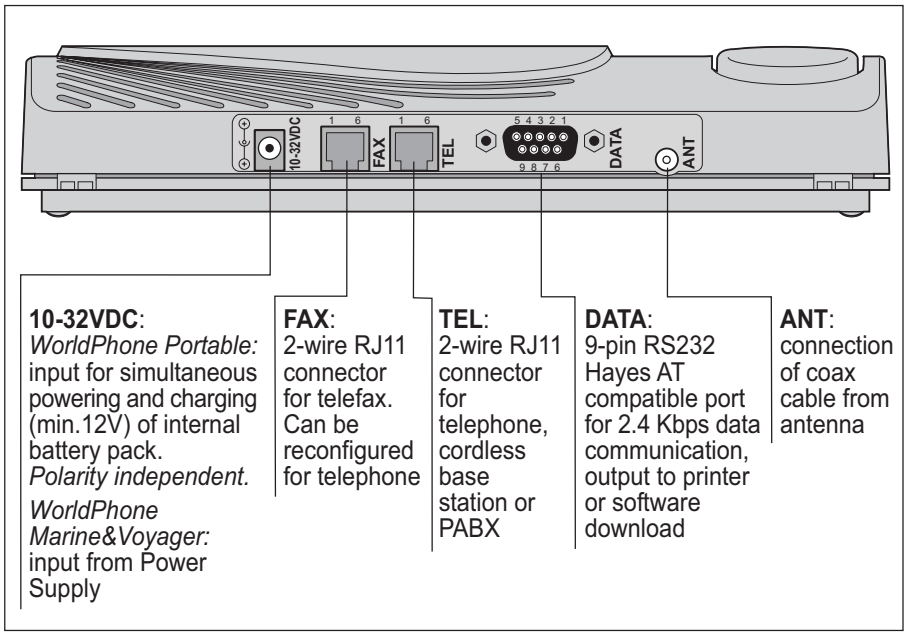


Figure 1.2 Telephone Unit connector panel

WorldPhone Portable

General

The WorldPhone Portable terminal consists of two main units housed in a lightweight and portable carrying case:

- The antenna and RF transceiver integrated into the lid.
- The Telephone Unit (and battery pack) that is detachable and rain resistant.

The WorldPhone uses a coax cable to link the two units together. The case is equipped with a handle for transport. The screw socket in the lid allows the antenna to be tripod mounted, or attached to a window using a suction fitting. The total weight of the WorldPhone is 2.7 kgs (including battery pack).

The **Telephone Unit** can easily be shifted for operation with any of the other WorldPhone antennas, *see "**Introduction**" in this chapter.*

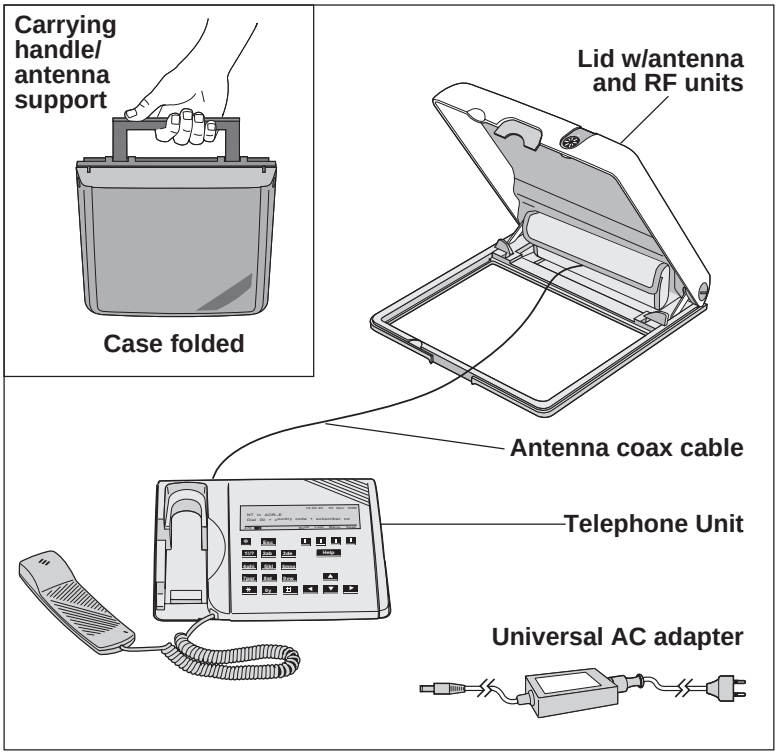


Figure 1.3 WorldPhone Portable, complete.

Internal battery

The battery indicator on the display indicates the internal charge level:

The amount of shading represents the current charge level.

A completely shaded indicator indicates a fully charged battery. As the battery charge level decreases the amount of shading on the battery indicator will also decrease.

A flashing battery indicator indicates that the battery level is low.

Figure 1.4 WorldPhone Portable, identification.

WorldPhone Portable cont'd

The WorldPhone turns off automatically once the battery has discharged, to avoid damaging the cells. It must now be powered from an external source for operation and recharging of the battery.
The WorldPhone may be connected to an AC source using the Universal AC Adapter, or directly to a 12-32 V rated DC source.

The battery is charged even if the WorldPhone is turned off.
The indicator shading increases as the battery re-charges.

For charging and replacement of the battery, see ***appendix C****.*

Warning! Problems with the transmission may occur when the battery charge level is low.
Avoid exposing the WorldPhone to extreme heat or cold. Very high or low temperatures reduce the battery capacity.

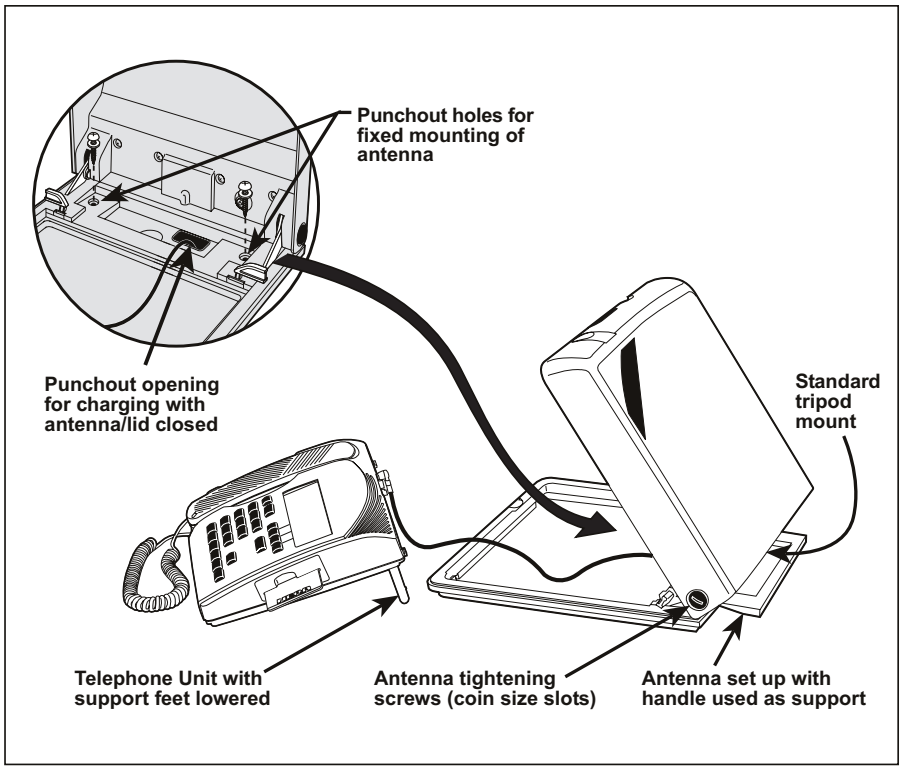
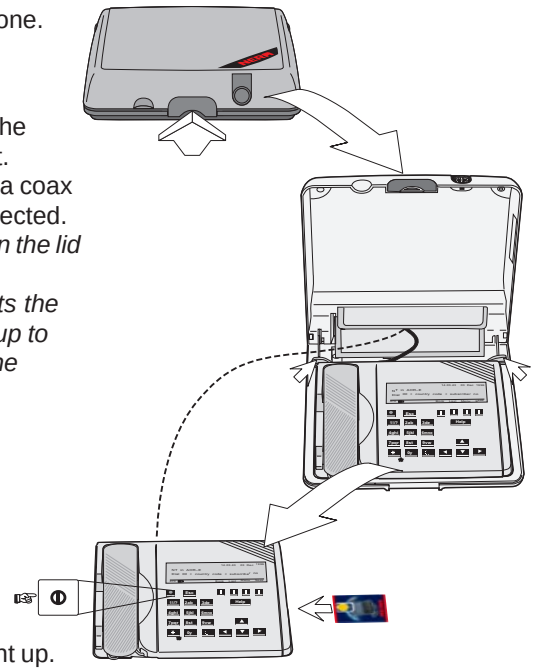


Figure 1.5 WorldPhone Portable connected up.

Setting up

1 Open the WorldPhone.

2 If needed, release the telephone and lift it out. Check that the antenna coax cable is properly connected.
Swing out the handle in the lid for antenna support.
The coax cable permits the antenna to be placed up to 3 metres away from the Telephone Unit.



3 Insert the SIM card (if SIM operated).

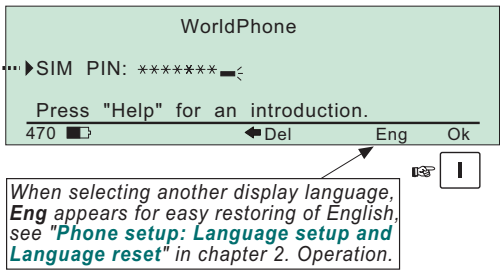
4 Press and hold the ON/OFF key for 2 seconds.

The display should light up.

5 Check for sufficient battery capacity.
If low, connect the WorldPhone for recharging from external source, *see* ***appendix C***.

6a Enter the SIM PIN code, and press **Ok**: ☞ 1!/?

If necessary, adjust display brightness: ☞ ▲ ▼



When selecting another display language, ***Eng*** *appears for easy restoring of English, see* ***"Phone setup: Language setup and Language reset"*** *in chapter 2. Operation.*

6b If no SIM card is inserted, the "Phone PIN" will be prompted for.
Default Phone PIN: 1 2 3 4 5 6

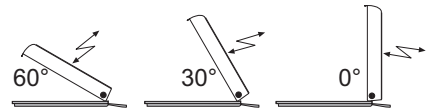
WorldPhone Portable cont'd

7 During the satellite search, beep tones will be heard from the loudspeaker (provided the **Tone** is ON, *see next page*):

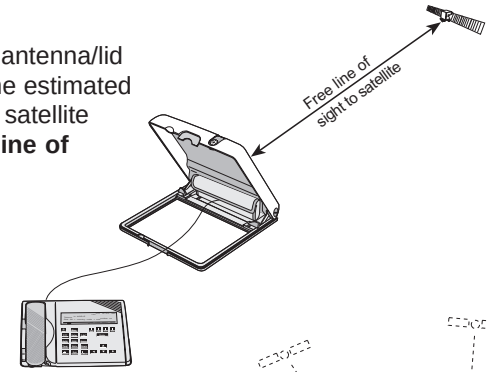
- - - - - - - - slow intermittent tones when searching for **any satellite**.

- - - - - - - - - - - - - - - - rapid intermittent tones when searching for a **specific satellite** *(faster when searching for a single satellite).*

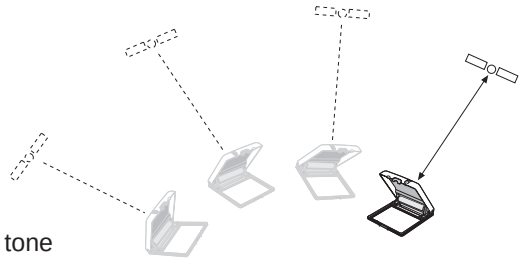
8 To find the correct vertical angle to the satellite, try with the antenna adjusted to 60°, 30° or 0° as indicated.



9 Aim the antenna/lid towards the estimated position of satellite with **free line of sight**.



Or make a slow scan across the hemisphere.

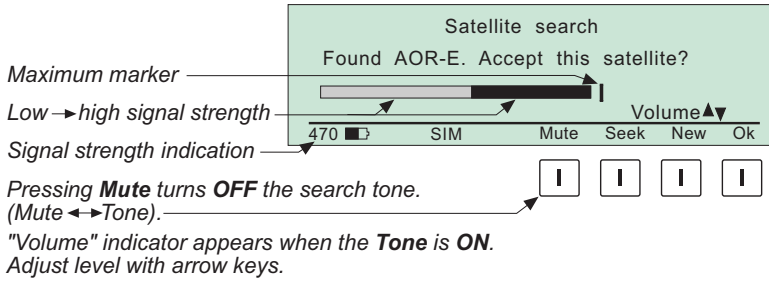


When receiving a satellite signal, a short tone will sound. If it is an Inmarsat satellite, a continuous tone will sound with varying frequency *(provided the **Tone** is ON, see next page)*.

*The WorldPhone always starts with **Tone off** and "**any satellite**" search. See step 10.*

When closing in on a satellite, turning the antenna/lid horizontally and adjusting its vertical angle, the tone should increase in frequency.

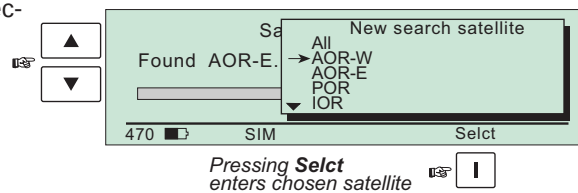
10 A shaded signal strength bar will appear in the display.
The longer the signal bar or higher the signal strength indicator value, the better the signal quality. The bar becomes solid when the signal strength value reaches 400.
The maximum marker indicates the highest signal strength achieved during the current search.



11 Pressing the **Seek** function key starts the search again.

New allows selection of a specific satellite:

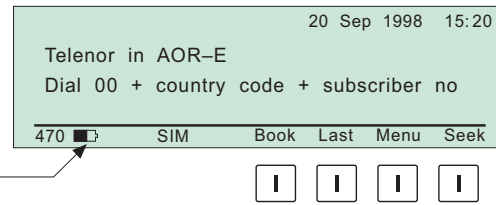
Scroll down to desired satellite and select:



*Note! Searching for a **New** satellite should be done under special circumstances only.*
*Searching for **any satellite** is the normal mode of operation (default).*

12 Pressing **Ok** initializes the system.

13 The equipment is ready for use when the **Main window** appears:



WorldPhone Provident

General

WorldPhone Provident comprises:

- ***Outdoor Equipment – ODE***
  including fixed mounted antenna and RF transceiver.
- ***Indoor Equipment – IDE***
  including Telephone Unit and Power Supply.

A single coax cable links the ODE and IDE.

*For installation, see **appendix B**.*

*For operation of the Telephone Unit, see "**WorldPhone Portable: Setting up**" step 1 through 6.*

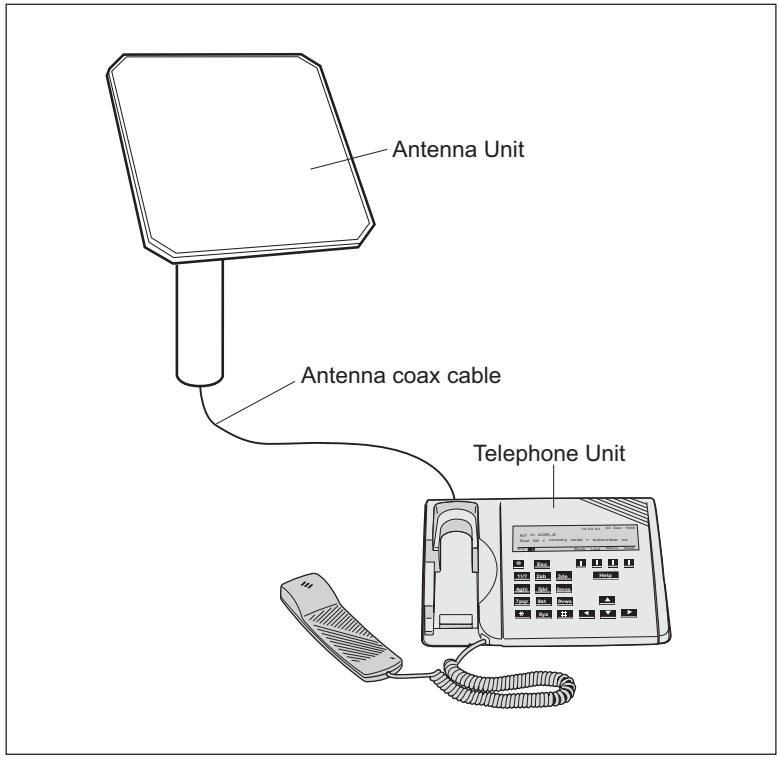


Figure 1.6 WorldPhone Provident terminal.

General

WorldPhone Marine comprises:

- ***Above Deck Equipment – ADE***
  including stabilized antenna and RF transceiver.
- ***Below Deck Equipment – BDE***
  including Telephone Unit and Power Supply.

A single coax cable links the ADE and BDE.

*For installation, see **appendix B**.*

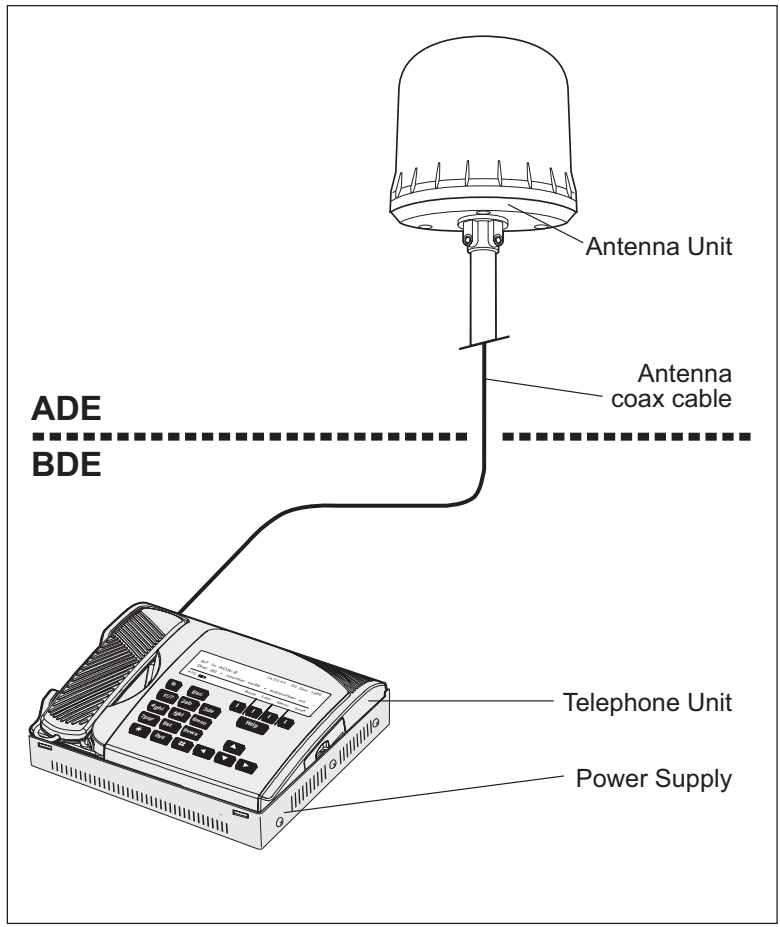


Figure 1.7 WorldPhone Marine terminal.

WorldPhone Marine cont'd

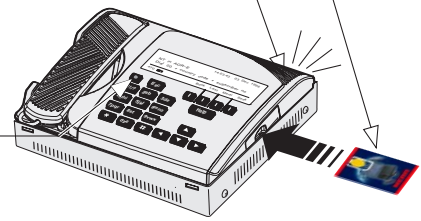
Setting up

1 Insert the SIM card (if SIM operated):

2 Switch ON the power supply:

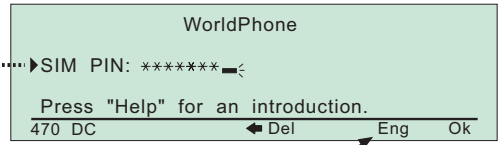
3 Press and hold the telephone ON/OFF key for 2 seconds:

The display should light up.



4a Enter the SIM PIN code, and press **Ok**:

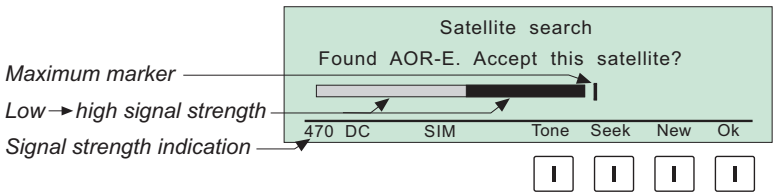
Adjust display brightness:



*When selecting another display language, **Eng** appears for easy restoring of English, see **"Phone setup: Language setup and Language reset"** in chapter 2. Operation.*

4b If no SIM card is inserted, the "Phone PIN" will be prompted for.

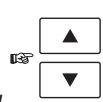
5 A shaded signal strength bar will appear in the display.
The longer the signal bar or higher the signal strength indicator value, the better the signal quality. The bar becomes solid when the signal strength value reaches 400.
The maximum marker indicates the highest signal strength achieved during the current search.

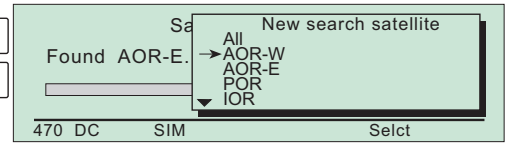


6 Pressing **Ok** initializes the system with the displayed satellite.

7 Pressing the **Seek** function key starts the search again. **New** allows selection of a specific satellite:

Scroll down to desired satellite and select:



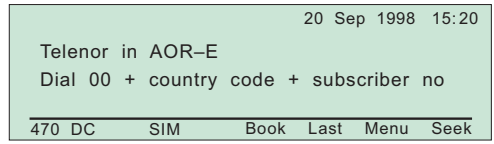


*Note! Searching for a **New** satellite should be done under special circumstances only.*

*Pressing **Selct** enters chosen satellite*

*Searching for **any satellite** is the normal mode of operation (default).*

8 The equipment is ready for use when the **Main window** appears:



WorldPhone Voyager

General

The WorldPhone Voyager comprises:

- ***Outdoor Equipment – ODE***
  including Antenna Unit and magnetic mounting bracket.
- ***Indoor Equipment – IDE***
  including Telephone Unit and Power Supply.

A single coax cable links the ODE and IDE.

For installation, see ***appendix B****.*

Setting up

Apply the setting up and satellite search procedure described for WorldPhone Marine. *See previous pages.*

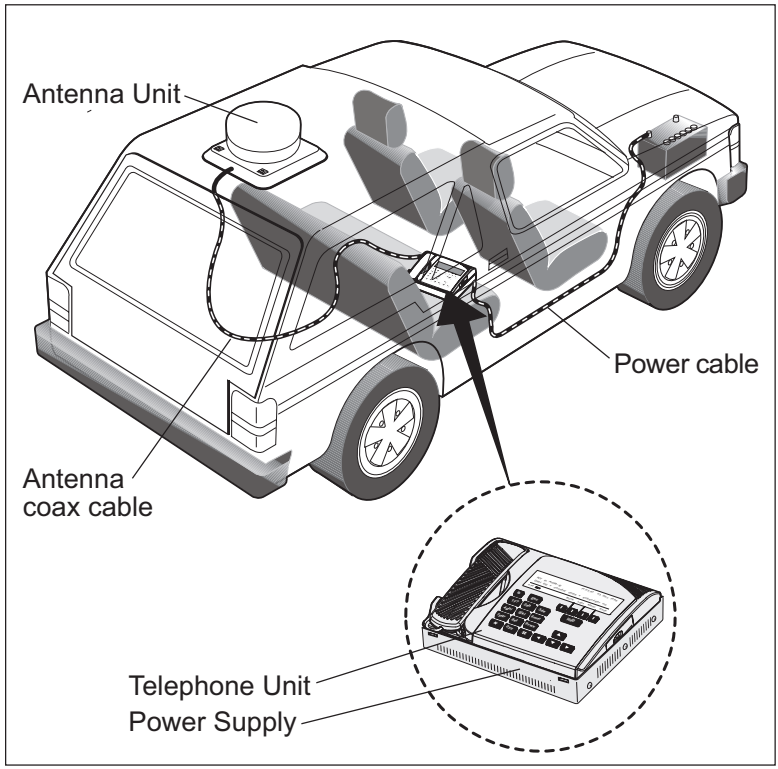


Figure 1.8 WorldPhone Voyager terminal.

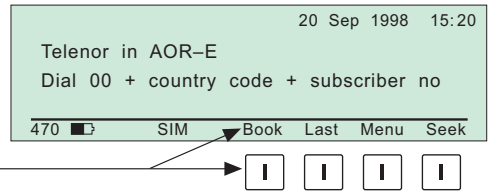
Advanced functions:

General

The display and all controls on the WorldPhone are accessible via the front telephone panel. *See figure 1.1.*
The light in the display and the screen picture may be timed for automatic switching off for power saving. Pressing any key turns the display on again.
The display contrast can be altered using the arrow keys when the PIN window or main window appears. *See "**Phone setup**" for further details.*

Function keys

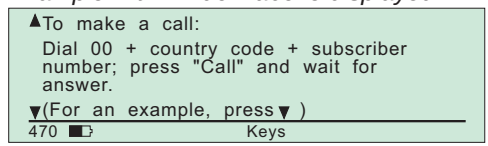
The text in the display shows the function currently assigned to each function key:



Help

Whenever needed, press the Help key for assistance.

Example with window above displayed:



Press **Keys** to go direct to the explanation of the various tasks performed by the four function keys.

PIN code

The user is prompted for the 4-8 digit Personal Identification Number each time the WorldPhone is switched on:

- SIM PIN? (with SIM card).
- Phone PIN? (without SIM card).

*Be aware that the PIN protection may have been disabled, see "**User access**" in this chapter.*

Keying letters

The three letters on each number key are accessible when on display lines requiring letters. Press the desired key for the first letter, and continue rapid selection of following letters/numbers:

*For complete character map, see **appendix F**.*

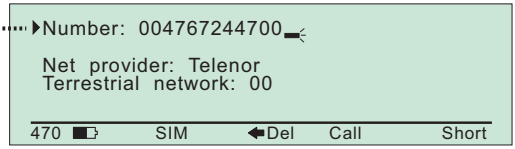
Making a call

Procedure

1 Dial 00 and the country code, followed by the subscriber number (max. 22 digits).

For explanation of call numbers and list of country codes, see ***appendix A****.*

Key in: ☞ [0yz]



See also ***"Call via alternative Net service provider or terrestrial network"****.*

2 Pressing the **Del** function key deletes the digit to the left of cursor:

3 Pressing the **Call** function key sends the dialed number:

(or press the [#] *-key)*

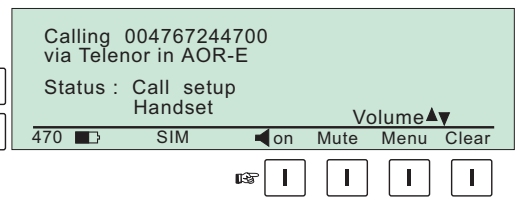
4 If the subscriber is listed in the phone book, enter the short number in the **Number** field and press **Short** to make the call:

The ***Short*** *function key is only visible when less than 3 digits have been entered (max short number).*

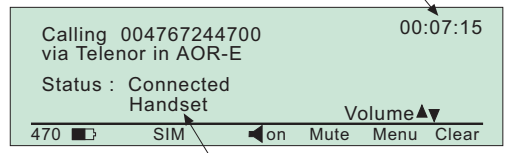
5 Lift handset and wait for answer.
Handsfree *mode with handset in place.*

6 Pressing the **Esc** key restores number field (if edited), or reverts to main window.

7 Use up/down arrow keys to adjust **Volume** during the call.



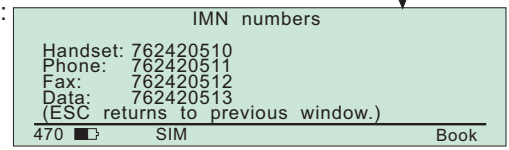
*The **call duration** is displayed when connected.*



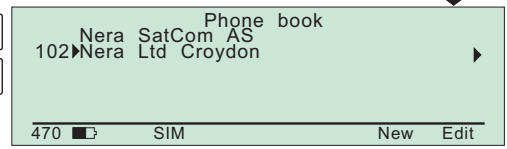
*For **handsfree** mode, and use of **loudspeaker** etc, see "**Modes of operation**".*

Alt.: Handsfree, Loudspeaker

8 Pressing **Menu** displays IMN numbers:



Book then opens phone book, allowing selection of subscriber:



Edit allows editing subscriber data.

New allows entering new data:

*See **Phonebook***

9 To disconnect the call, put down the handset.
*In **Handsfree** mode, press **Clear**.*

To call the WorldPhone

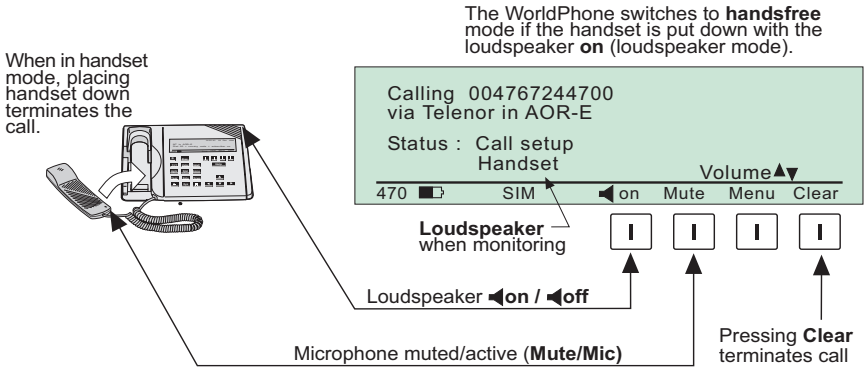
Dial the international prefix (normally 00) followed by **870** and the IMN number, f.ex. 00 **870** 762420510.
*The common Ocean Region access no. **870** connects the call to the dialed WorldPhone regardless of the Ocean Region the user currently communicates through.*
*If the Net service provider does not support access no. **870**, call the Ocean Region directly:*

871 – **AOR-E** (Atlantic Ocean Region East)
872 – **POR** (Pacific Ocean Region)
873 – **IOR** (Indian Ocean Region)
874 – **AOR-W** (Atlantic Ocean Region West)

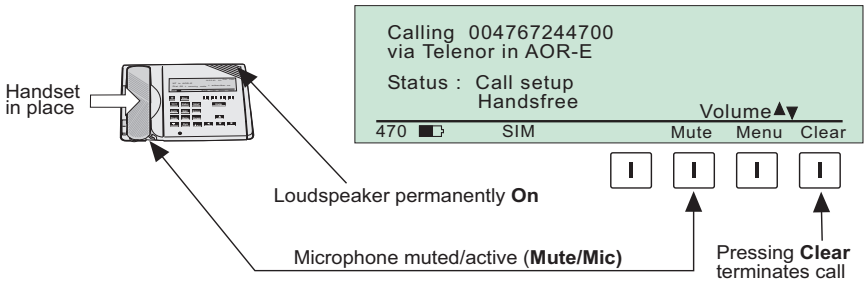
Making a call cont'd

Modes of operation

Call with handset lifted



Handsfree call mode

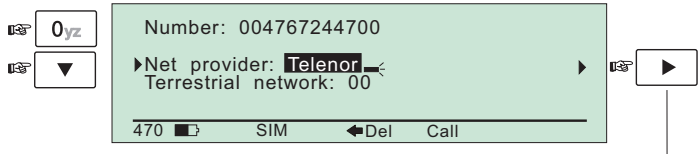


Call via an alternative Net service provider or terrestrial network

Although default settings normally can be used, a different Net service provider, or an other terrestrial network, may be selected as follows:

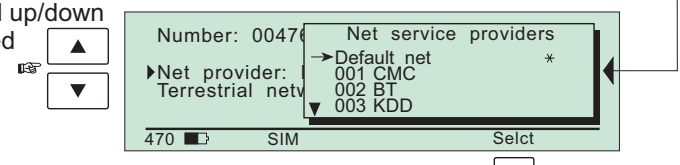
Alternative Net service provider:

1 Dial subscriber number.



2 Scroll down to **Net provider** and key in reference number, or press **right arrow** to display list of accessible Net service providers:

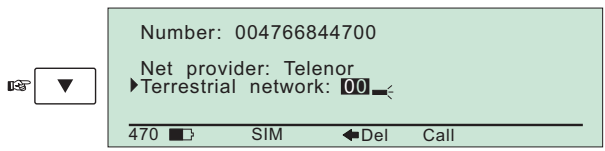
3 Scroll up/down to wanted Net:



4 and press **Selct**:

Alternative terrestrial network:

1 Scroll down to **terrestrial network** and key in reference number.

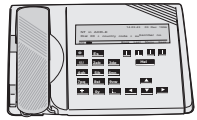


*Continue with "**Making a call**", step **3***

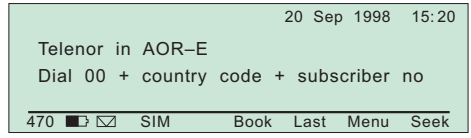
NB! A Net service provider may also be specified by starting the telephone number with its reference code, e.g. BT:

2abc * 0yz 0yz 4ghi 7pqr 6mno 7pqr 2abc 4ghi 4ghi 7pqr 0yz 0yz #

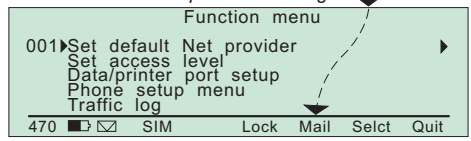
Sending NIMS message



Note!
Sending and receiving NIMS messages is only possible through service providers that support the NIMS service.



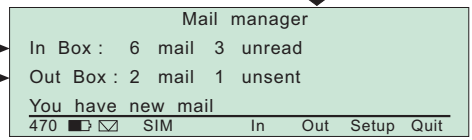
*Press **Menu** and then **Mail** to open Mail manager.*



Example:

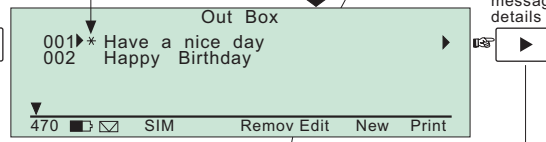
You have received 6 messages, 3 are not read

One message is not sent



*Pressing **In** opens In Box, see **Receiving a call: Receiving NIMS message**.*

*Indicates that the message is not yet **Sent***



message details

***Remov** erases selected message.*

***Print** outputs message to printer. Appears only if a printer is enabled, see "Data/printer port setup".*

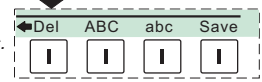
See next page

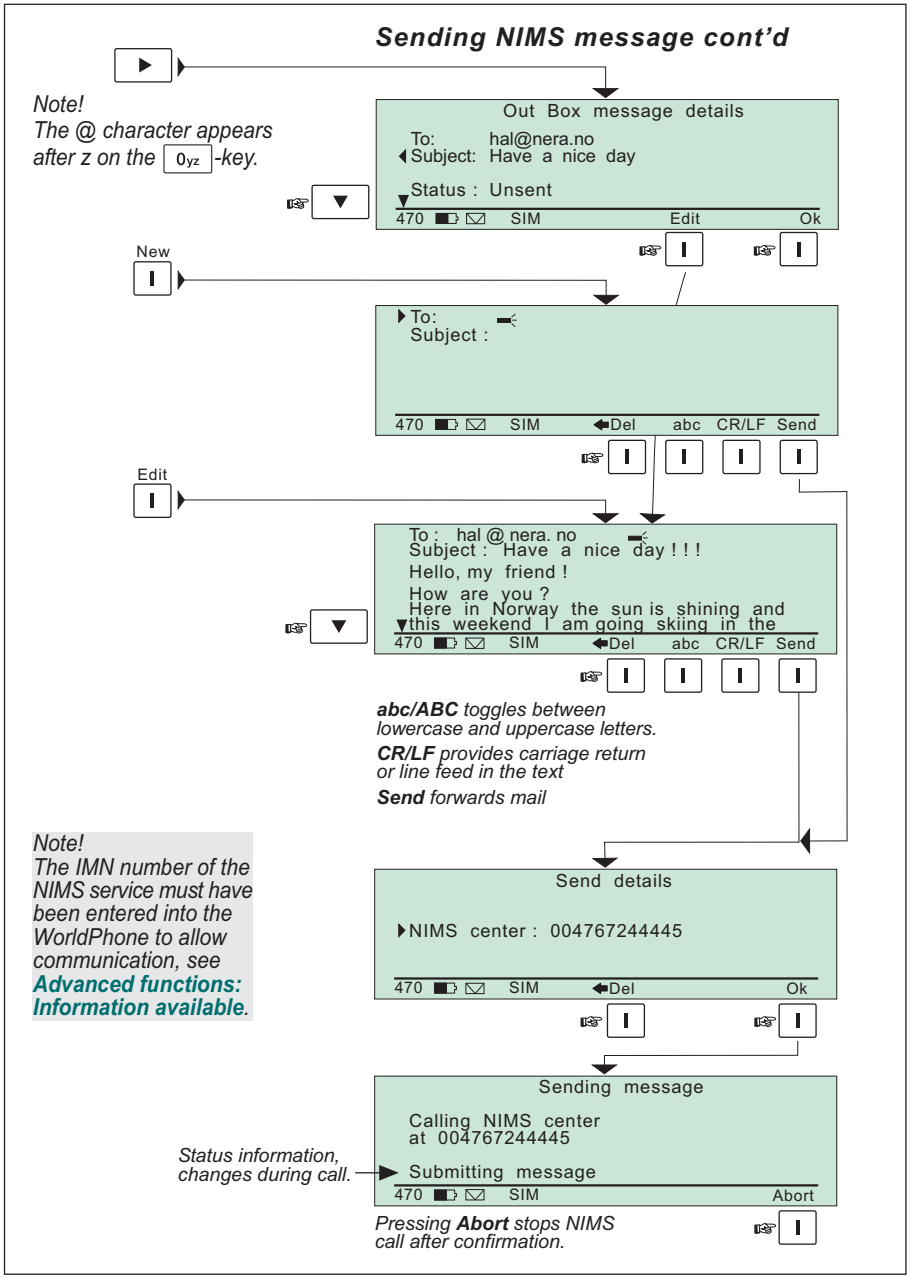
*Pressing **Edit** changes the function keys to allow modifications:*

***Ok** reverts to mail manager*

***ABC/abc** selects lower/uppercase letters.*

***Save** stores changes.*




Sending NIMS message cont'd
Note!
The @ character appears after z on the 0yz -key.
Out Box message details
To: hal@nera.no
Subject: Have a nice day
Status : Unsent
470 SIM Edit Ok
New
To:
Subject :
470 SIM Del abc CR/LF Send
Edit
To : hal @ nera. no
Subject : Have a nice day ! ! !
Hello, my friend !
How are you ?
Here in Norway the sun is shining and
this weekend I am going skiing in the
470 SIM Del abc CR/LF Send
abc/ABC toggles between lowercase and uppercase letters.
CR/LF provides carriage return or line feed in the text
Send forwards mail
Note!
The IMN number of the NIMS service must have been entered into the WorldPhone to allow communication, see Advanced functions: Information available.
Send details
NIMS center : 004767244445
470 SIM Del Ok
Sending message
Calling NIMS center at 004767244445
Submitting message
470 SIM Abort
Status information, changes during call.
Pressing Abort stops NIMS call after confirmation.

Call from telephone

General

A telephone is used for basic telephone calls. Control of functions and other facilities must be done from the WorldPhone.

Call through default Net service provider

0 0 4 7 6 7 2 4 4 7 0 0 # routes the call via the default Net service provider for the satellite (Ocean Region) you are using.

Call through selected Net service provider

4 * 0 0 4 7 6 7 2 4 4 7 0 0 # routes the call via the Net service provider Telenor (4) in Norway.

Last number redialing

0 # retransmits the last number.

Last number redialing through selected Net service provider

4 * 0 # retransmits the last number via the selected Net service provider (Telenor=4).

Short number dialing (prefix 23)

2 3 1 0 5 # fetches and sends the telephone number stored on the SIM card under short number 105.

Short number dialing (prefix 23) through selected Net service provider

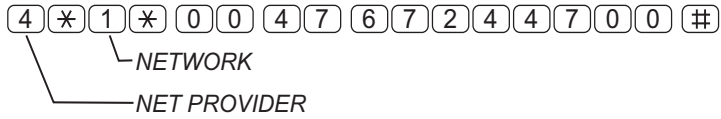
4 * 2 3 1 0 5 # fetches and sends the telephone number stored under short number 105 via the selected Net service provider (Telenor=4).

Call through selected Net service provider and terrestrial network

Dialing via a terrestrial network is only possible using a selected Net service provider.

The number may be in the range 0 to 127.

Example of a call through selected Net, e.g. Telenor, and terrestrial network 1:



Service calls

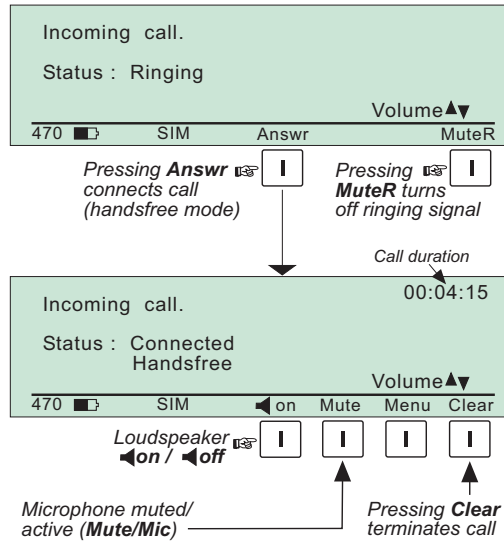
Special information services are accessible with 2-digit service address code. *See* ***appendix A****.*

Example of obtaining assistance from the International Operator:

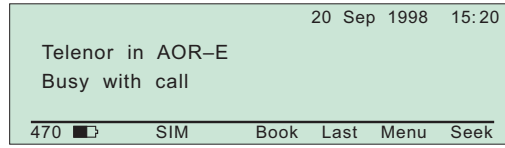
Dial: 1 1 #

Telephone call

Lifting handset connects call (handset mode)

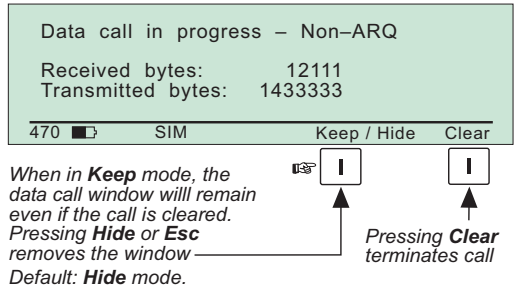


Fax call (and 2-wire telephone call)



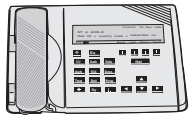
See also
chapter 3. Telefax Service

Data call



See also
chapter 4. Data Service

Receiving NIMS message



20 Sep 1998 15:20
Telenor in AOR–E
Dial 00 + country code + subscriber no
470 SIM Book Last Menu Seek

*Flashing symbol indicates that **NIMS message** or **mail alert** has been received.*

*Press **Menu** and then **Mail** to open mail manager.*

Function menu
001 Set default Net provider
Set access level
Data/printer port setup
Phone setup menu
Traffic log
470 SIM Lock Mail Selct Quit

Mail manager
In Box : 6 mail 3 unread
Out Box : 2 mail 1 unsent
You have new mail
470 SIM In Out Setup Quit

*Indicates that the message is not yet **Read***

*See "**Making a call: sending NIMS message**".*

In Box
001 * Hello !
002 Voice mailbox message
003 Fax mailbox message
004 * Mail me !
005 * Information from Service Provider
470 SIM Print Remov Read Get

***Print** outputs message to printer. Appears only if a printer is enabled, see "**Data/printer port setup**".*

***Remov** erases message*

See next page

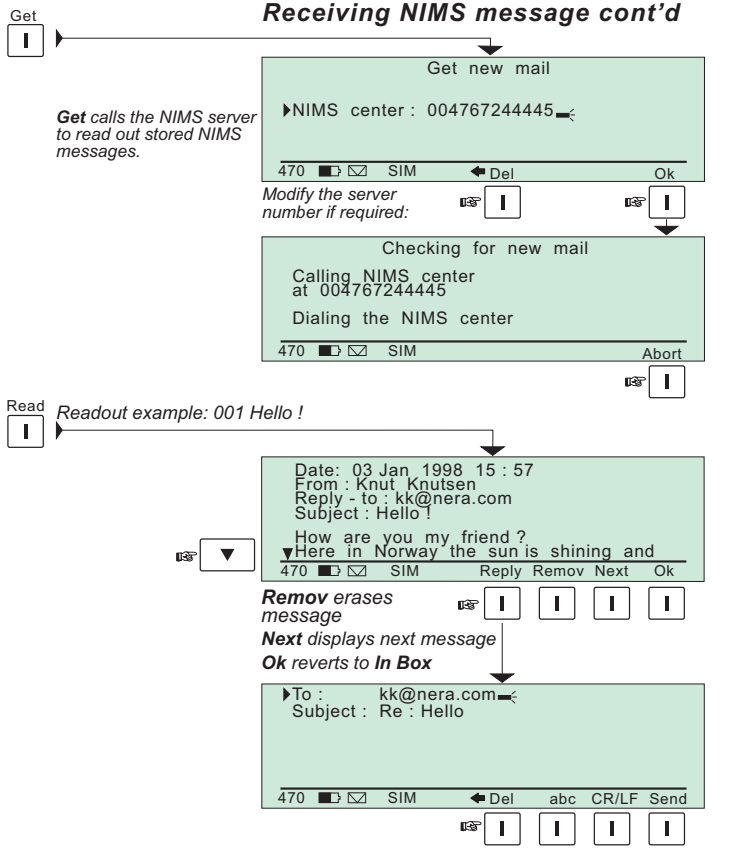
In Box message details
Type: NIMS
From: Knut Knutsen
Sent: 03 Jan 1998 15:57
Arrived: 03 Jan 1998 15:58
Status : Unread
470 SIM Read Ok

Ok** reverts to **In Box

See next page

Receiving a call cont'd

Receiving NIMS message cont'd



Get *calls the NIMS server to read out stored NIMS messages.*

Modify the server number if required:

Readout example: 001 Hello !

Remov *erases message*

Next *displays next message*

Ok *reverts to* ***In Box***

abc/ABC *toggles between lower and uppercase letters*

CR/LF *provides carriage return or line feed in the text*

Send *returns mail, see "**Making a call: sending NIMS message**".*

Readout example: 002 Voice mailbox message

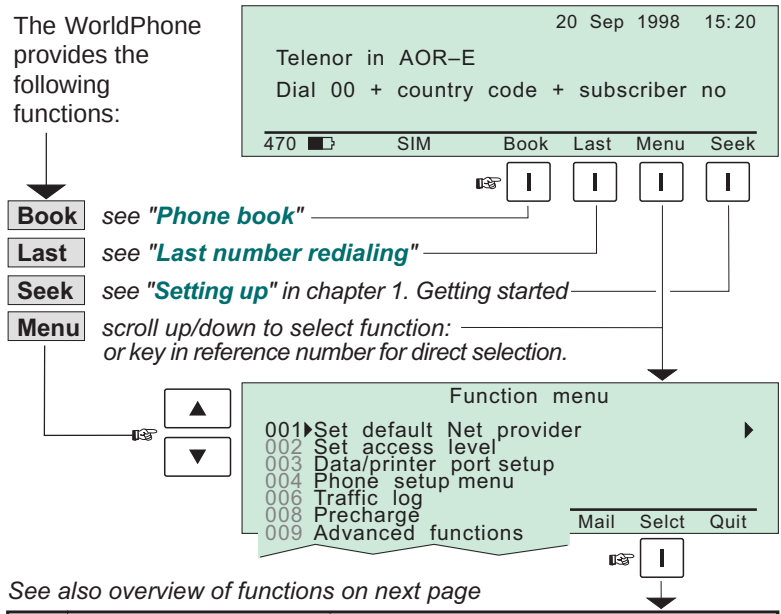
Remov *erases alert message*

Call *dials the mailbox to read out the voice message*

Ok *reverts to* ***In Box***

General

The WorldPhone provides the following functions:

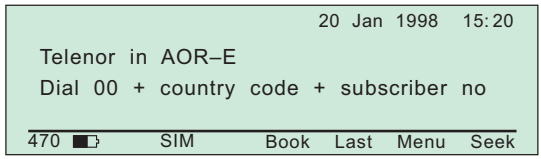


See also overview of functions on next page

Ref.	*Function*	*Features*
001	**Set default Net provider**	*Allows changing Net service provider and terrestrial network. See "**Selecting default Net service provider**".*
002	**Set access level**	*Allows shifting between • user level, and • owner / CHV2 level (non-SIM / SIM operation), changing phone / SIM PIN code and owner / CHV2 password. See "**User access**".*
003	**Data/printer port setup**	*Enables port for connection of printer or PC, and sets transfer bit rate. See "**Data/printer port setup**".*
004	**Phone setup menu**	*Sets display backlight and contrast, receive volume, system clock, key lock code, language and mailbox access numbers. See "**Phone setup**".*
006	**Traffic log**	*Logs outgoing calls and provides detailed printout. See "**Traffic log**".*
008	**Precharge**	*Allows preprogramming of total call duration. See "**Precharge**".*
009	**Advanced functions**	*See overview on next page.*

Functions cont'd

Overview of menu functions



Function menu

- 001 **Set default Net provider**
- 002 **Set access level**
- 003 **Data/printer port setup**
- 004 **Phone setup menu**
- ★★ 006 **Traffic log**
- ★★ 008 **Precharge**
- 009 **Advanced functions**

4 – Phone setup menu

- 001 Backlight control
- 002 Contrast control
- 003 Volume control
- 004 Set system clock
- 005 Key lock code
- 006 Language setup
- 007 Mailbox access numbers
- 008 Call charge setup

9 – Advanced functions menu

- 001 Access control
- 006 Satellite setup
- 007 Configuration
- 008 Information available
- ★ 009 Install

91 – Access control menu

- ★★ 001 Restrict dial
- ★★ 002 Access code
- ★★ 003 Restrict SIM usage

97 – Configuration menu

- ★★ 001 Port configuration
- ★★ 002 Net service providers
- 003 Power conservation
- 004 Set diagnostics
- SIM+ 005 Set preferred Nets
- SIM+ 006 Set allowed Nets
- SIM+ 007 Set S/A preferred Nets
- SIM+ 008 Set S/A allowed Nets
- ★★ 009 Charge tone

98 – Information available

- ★★/SIM+ 001 IMN numbers
- 002 Misc. version Id information
- ★ 009 Network status information

99 – Installation menu

- ★ 001 Paid functions
- ★ 002 Phone name setup

★ *Only appears in OWNER level (non-SIM operation).*

★★ *Only editable in OWNER level (non-SIM operation).*

SIM Only accessible with SIM card.

SIM+ May be restricted to higher SIM levels.

General

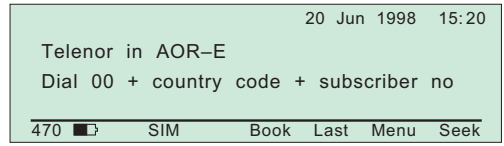
The last **10 numbers** called are stored in the WorldPhone memory or on the SIM card. Each number may comprise up to **22 digits**.
If the number is already stored in the phone book, the subscriber's name appears in the list.

Any extra telephone or fax can only redial its own most recent number dialed.

The last used number list stored on the SIM card replaces that of the phone when inserting the card. (It is restored when removing the SIM).

Redialing:

1 Press the **Last** function key to open the last number list window:



2 Scroll up/down to the wanted number:

3 **Call** sends the selected number:

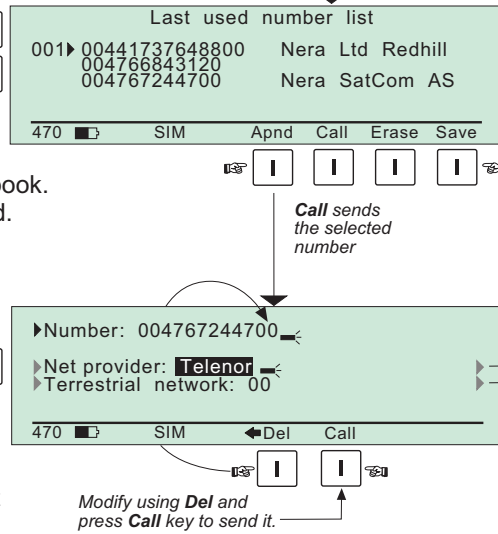
4 **Save** copies the number to the phone book. Name will be prompted.

5 **Erase** deletes **all** entries in Last used number list.

6 **Apnd** permits modifying selected number before making the **Call**:

7 **Del** deletes the digit to the left of cursor:

8 **Call** sends the modified number:



*Note! To call via another net or network, see "**Making a call: Call via an alternative Net service provider or terrestrial network**".*

General

The following may be stored for abbreviated dialing:

- **99 entries** with names of up to **29 characters** in the WorldPhone.
- Up to **100 entries** (no.100 and up) with names of up to **10 characters** on the SIM card (varies with type).

The list is sorted by name. The SIM card entries and "phone" entries merge when the card is inserted.

Abbreviated dialing

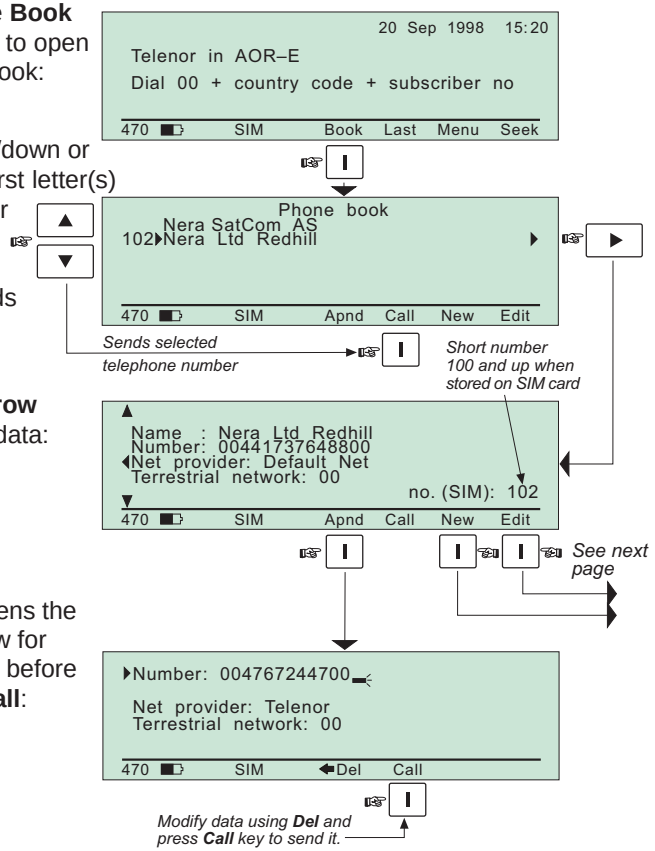
1 Press the **Book** function key to open the phone book:

2 Scroll up/down or search for first letter(s) of subscriber name:

3 **Call** sends the selected number:

4 **Right arrow** displays all data:

5 **Apnd** opens the entry window for modification before making a **Call**:



Editing entry

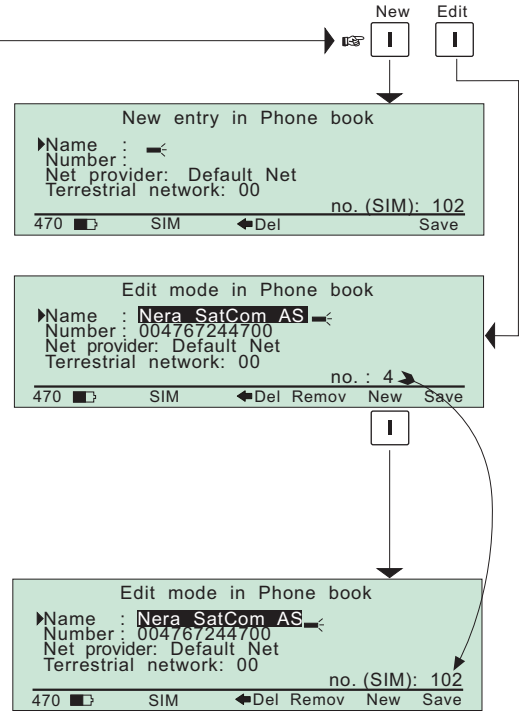
6 **New** opens new entry window:

7 **Edit** opens existing entry window.

8 **Del** deletes the digit to left of cursor.

9 **Save** stores phone book entry.

10 **Remov** deletes phone book entry.



Copying entry from f.ex. non-SIM book to SIM book

11 Press **New** with entry in Edit mode.

The entry is assigned the first free short number on the SIM card.

Key lock

Menu

General

The key lock function prevents unauthorized use when the WorldPhone is on, but still allows reception of incoming calls.

When the lock is set no dial tone is produced, and PC AT commands are unavailable.

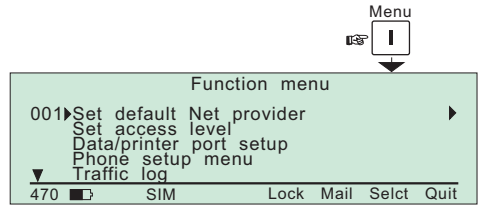
Entering a login password (Phone PIN / SIM PIN) will still unlock the phone. *(If Phone PIN / SIM PIN is disabled, turning power off and then on will not unlock the phone.)*

The facility is only accessible when the WorldPhone is restricted for use with a **specific SIM**, or with **no SIM**. *See **Advanced functions: Access control**.*

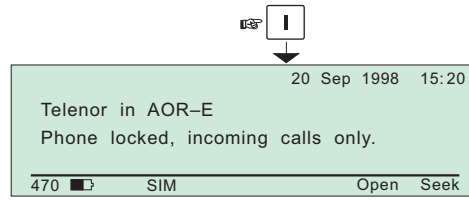
*To initiate the key lock and enter or change the unlock code, see **Phone setup: setting key lock**.*

Locking

1 Press the **Menu** function key:



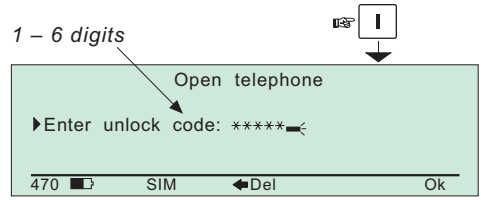
and then **Lock**:



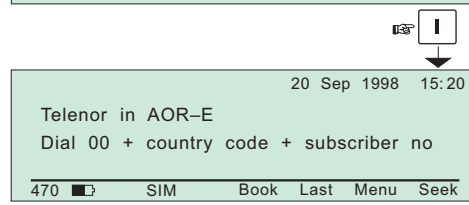
A warning is displayed in the main window:

Unlocking

2 Press **Open** and enter the unlock code:



3 Pressing **OK** opens the normal main window:



General

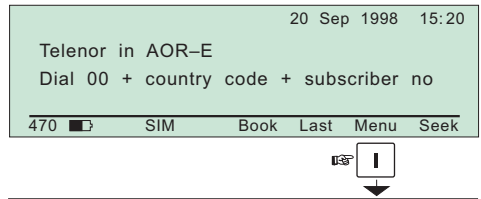
The default Inmarsat Net service provider (ISP) for a satellite (Ocean Region) is automatically used if the user does not select another one when making a call.

When using SIM card, selection of an ISP is restricted to one of the allowed Net service providers!

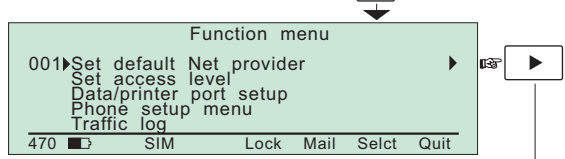
When the Restricted Net function is enabled, and with some SIM cards, selection of default Net service provider is not possible. The entry "001 Set default Net provider" will then not appear in the Function menu.

Setting default Net service provider

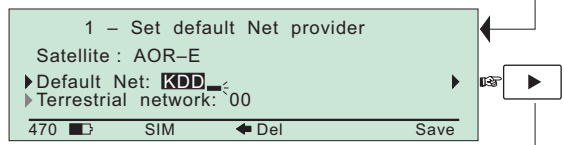
1 Press the **Menu** function key:



2 **Selct** or **right arrow** opens **Set default Net provider** window:

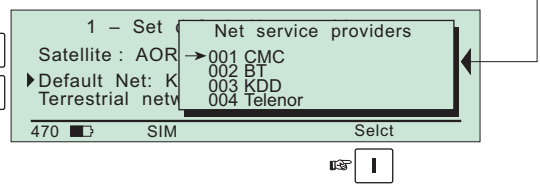


3 Key in Net service provider code, or press **right arrow** to display list of available Nets:



4 Scroll up/down to select Net:

5 **Selct** enters the chosen Net:



6 Return to step 3, scroll down and key in Terrestrial network code.

7 **Save** stores the selected Net service provider and Terrestrial network as default.

User access Menu

General

The WorldPhone user program is accessible from two levels:

- **USER LEVEL** – accessed by Phone PIN or SIM PIN.

> *Note! If the Phone PIN is accidentally lost, it is possible to reset the user's password to default by logging in as owner:*
>
> "Phone PIN: ✱ + owner's password"
>
> *(Resetting is not possible on SIM card.)*

- **CHV2 LEVEL / OWNER LEVEL** – accessed by CHV2 or owner level passwords. With a SIM card inserted, the password allows access to **CHV2 level SIM** functions. Without a SIM card the password allows access to **owner level** phone resident functions.

Warning!
To prevent misuse, passwords other than default must be entered before putting the WorldPhone in operation.

User level / changing PIN code (SIM or Phone PIN):

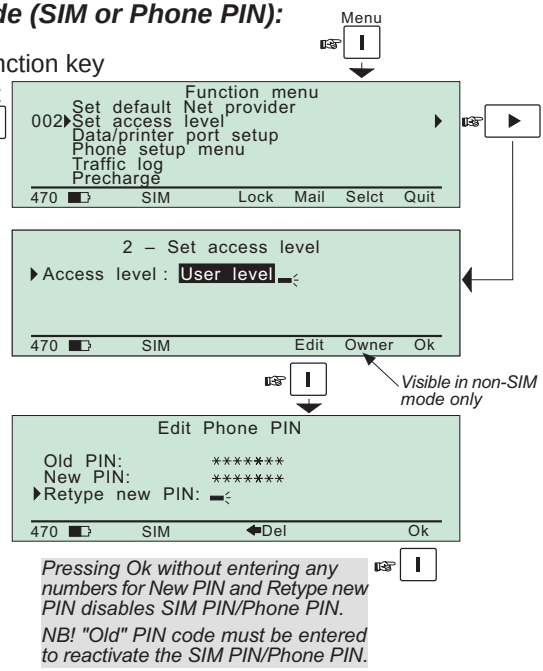
1 Press the **Menu** function key and scroll down to **Set access level**:

2 **Selct** or **right arrow** opens the Set access level window:

3 **Edit** opens the PIN code window:

4 Key in:
- Current PIN code
- New PIN code
- Retype to confirm

Press **Ok** following each entry, and to store new PIN code:



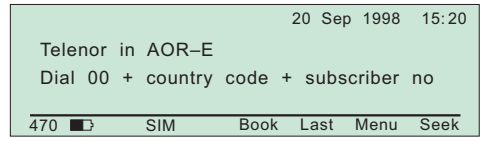
Pressing Ok without entering any numbers for New PIN and Retype new PIN disables SIM PIN/Phone PIN.

NB! "Old" PIN code must be entered to reactivate the SIM PIN/Phone PIN.

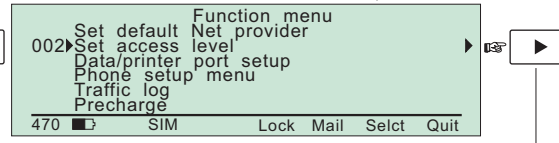
To shift to CHV2/OWNER level and change password, continue on following pages . . . . . .

Shifting to CHV2 level / changing password:

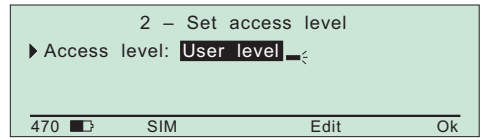
1 Press the **Menu** function key:



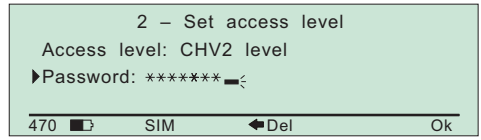
2 Scroll down to **Set access level**:



3 **Selct** or **right arrow** opens the Set access level window:



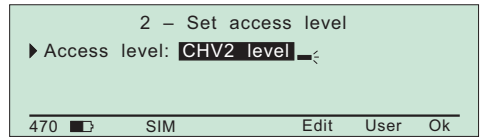
4 Key in **2002** to open the window for entering password:



5 Key in password. Pressing **OK** activates the **CHV2 level**:

Changing password:

6 Open set access level window again:



7 **Edit** opens password window:

Key in:

- Current password
- New password
- Retype to check

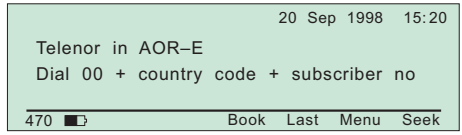
Press **Ok** following each entry:

To revert to **User level**, reselect the "**Set access level**" function and press **User**

User access cont'd

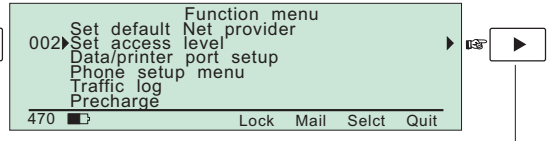
Shifting to owner level / changing password:

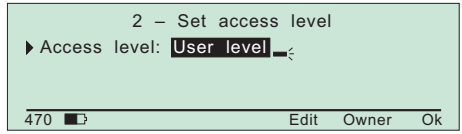
1 Press the **Menu** function key:



2 Scroll down to **Set access level**:

3 **Selct** or **right arrow** opens the Set access level window:

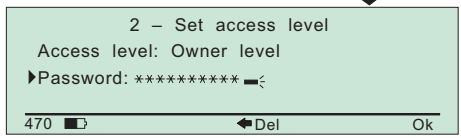




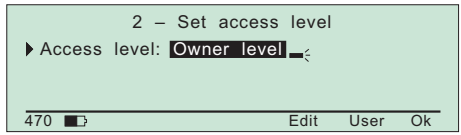
4 **Owner** opens the window for entering the password:

*Note! The **default** password is:*

1 2 3 4 5 6 7 8 9 0



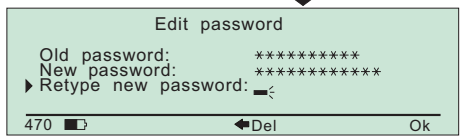
5 Key in password. Pressing **OK** activates the **Owner level**:



Changing password:

6 Open set access level window again:

7 **Edit** opens password window:



Key in:

- Current password
- New password
- *(10 – 12 digits)*
- Retype to check

Press **Ok** following each entry:

To revert to **User level**, reselect the "**Set access level**" function and press **User**

General

The **DATA** port may be set to operate with a PC or, for instance, to output a Traffic log directly to a printer.

Note! The bit rate setting applies for both PC and printer transfer.

Setup for data communication

- Speed as selected on next page, normally 9600 bps.
  Note! The bit rate set between the PC and the WorldPhone must be higher than the nominal 2400 bps WorldPhone-to-satellite bit rate to ensure maximum speed transfer.
- No parity *
- 8 data bits *
- 1 stop bit *

** These parameters can only be changed using AT commands, see* ***appendix D****.*

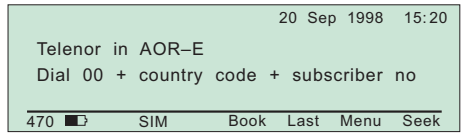
Setup for output to printer

A printer must have serial interface, and is set as follows:

- Speed as selected on next page, i.e. the bit rate specified for the printer to be connected.
- No parity
- 8 data bits
- 1 stop bit

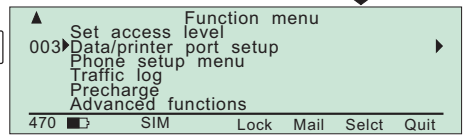
Procedure

1 Press the **Menu** function key:



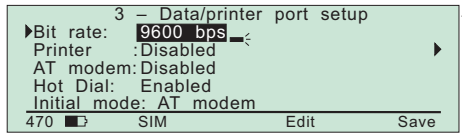
2 Scroll down to **Data/printer port setup**:

3 **Selct** or **right arrow** selects the **Data/printer port setup** window:



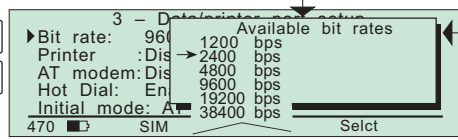
Bit rate:

4 **Edit** or **right arrow** opens list of bit rates:



5 Scroll up/down to required data/ printer bit rate:

6 **Selct** enters the chosen rate:

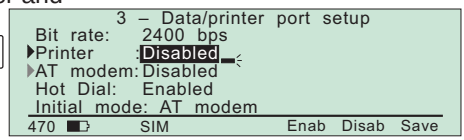


Note! It is recommended to use 9600 bps for data communication.

Printer:

*For output to printer, select **bit rate** according to printer specifications.*

7 Scroll down to printer and **Enab**le/**Disab**le the port for printing:



AT modem:

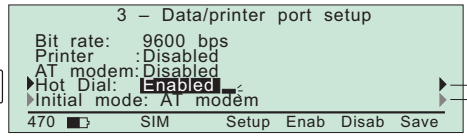
8 Scroll down and **Enab**le/ **Disab**le the port for AT modem:

Recommended port setup			
Mode	*Output to printer*	*Data com. (AT)*	*Data com. (DTR dialing)*
Printer:	Enabled	Disabled	Disabled
AT modem:	Disabled	Enabled	Disabled
Hot dial:	Disabled	Disabled	Enabled

Hot dial:

When enabled, this function monitors the DTR-pin on the DATA port. When the DTR-pin is pulled high by equipment connected to the DATA port, a data call is automatically initiated to a pre-programmed number. The number is automatically stored under short number 99.

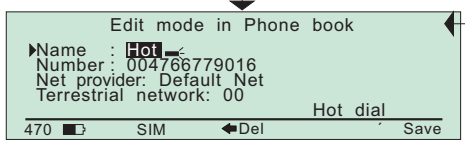
9 Scroll down to Hot Dial:



10 **Setup** opens the Phone book editing window.

Enter name, f.ex. "Hot".

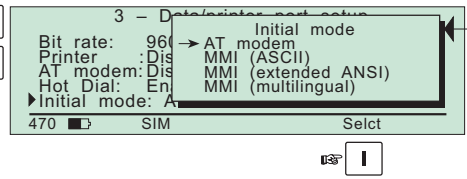
Fill in required number, and change provider and network, if needed.

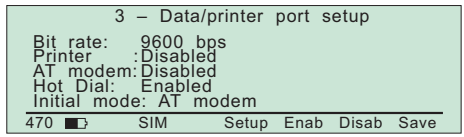


Initial mode:

The mode is set to AT modem as default.
With a PC running a terminal program connected to the WorldPhone (f.ex. Windows HyperTerminal), the menu is displayed on the screen. When selecting any of the MMI (Man Machine Interface) settings, the PC screen automatically displays the WorldPhone picture.

11 Scroll down to Initial mode (step 9). Pressing **Selct** allows choosing MMI interface:





12 **Save** stores the chosen settings.

Phone setup

Menu

General

This function sets as follows:

- The ON-time of the display illumination and the screen picture. When OFF, pressing any key turns the display back ON.
- Default display contrast, ***see following pages***.
- Default level of ringing tone and loudspeaker, ***see following pages***.
- Date and time, ***see following pages***.
- Key lock, which prevents unauthorized use, ***see following pages***.
- Language
- Mailbox access numbers

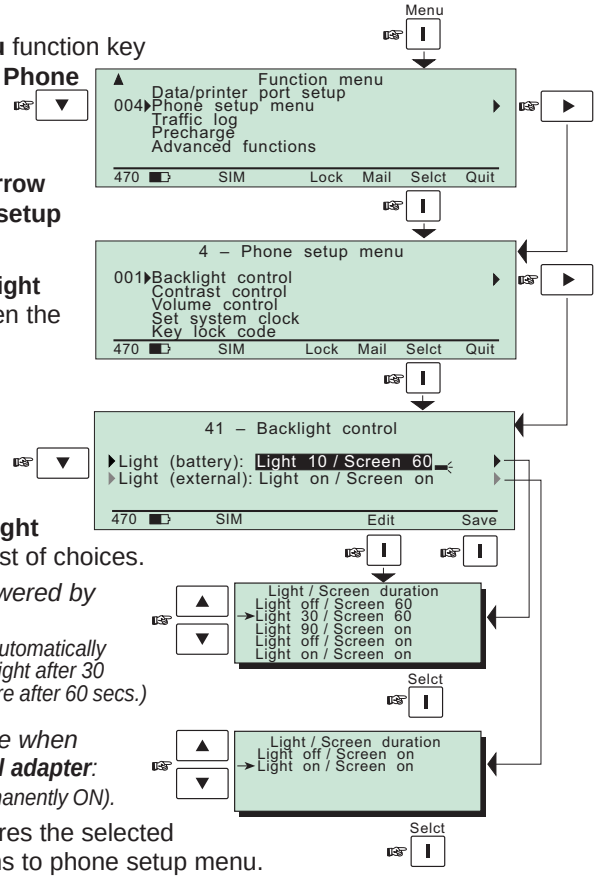
Procedure

1 Press the **Menu** function key and scroll down to **Phone setup menu**:

2 **Selct** or **right arrow** opens the **Phone setup menu** window:

3 Press **Selct** or **right arrow** again to open the **Backlight control** window:

Timing of display light and screen picture:



Pressing **Edit** or **right arrow** opens the list of choices.

*Example when powered by **battery pack**:*
(Light 30 / Screen 60 automatically switches OFF display light after 30 secs, and screen picture after 60 secs.)

*Example applicable when powered by **external adapter**:*
(Light and screen permanently ON).

Pressing **Save** stores the selected settings and returns to phone setup menu.

Setting default contrast and ringing volume

1 Press the **Menu** function key:

2 Scroll down to **Phone setup menu**:

3 **Selct** or **right arrow** opens **Phone setup menu** window:

4 Scroll down to **Contrast control**:

5 Press **Selct** or **right arrow** to open the **Contrast control** window:

Adjust with arrow keys.

Save stores the setting.

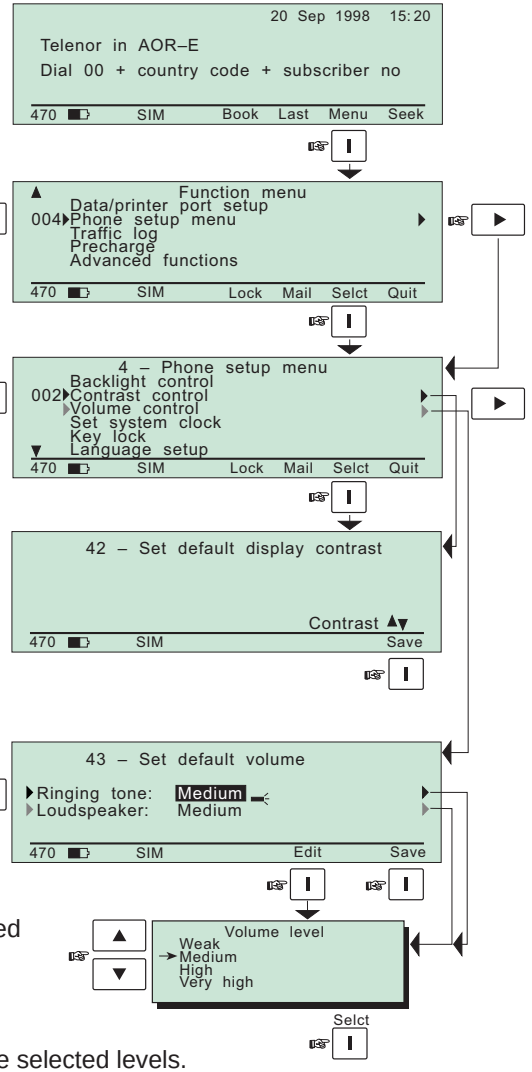
6 Repeat step 4 for **Volume control**:

Press **Edit** or **right arrow** to set **ringing** tone level.

Scroll up/down to required setting and press **Selct**:

Repeat procedure for **loudspeaker** volume.

Pressing **Save** stores the selected levels.



Setting date and time

The date and time is set to UTC (GMT) at the factory. It is recommended to leave this setting if correct.

Warning!
The system is automatically restarted when accepting new time settings. All calls will be disconnected.

Example

1 Press the **Menu** function key:

2 Scroll down to **Phone setup menu**:

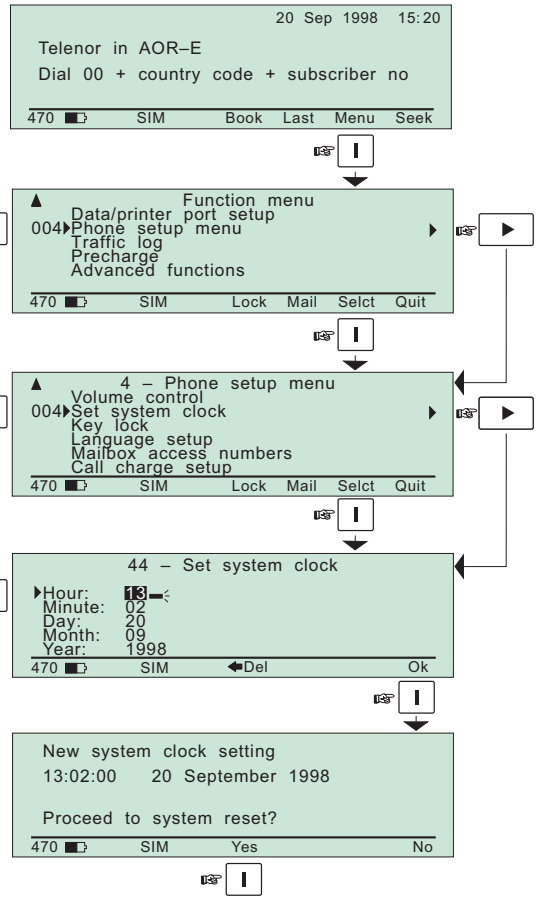
3 Press **Selct** or **right arrow** and scroll down to **Set system clock**:

4 Continue with **Selct** or **right arrow** to select function and key in new data:

Move down using **down arrow**.

5 Press **OK** and confirm with **Yes** if settings are correct.

Note! The WorldPhone is now restarted.

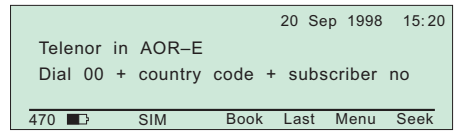


Setting key lock

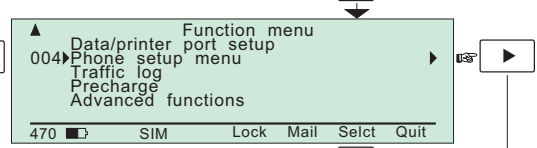
The WorldPhone must be set for use with a **specific SIM**, or with **no SIM**. *See* ***Advanced functions: Access control****.*

Procedure

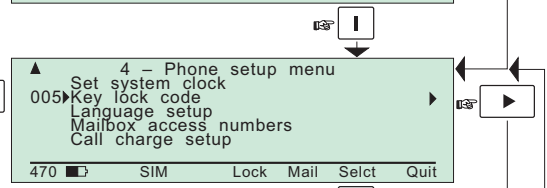
1 Press the **Menu** function key:



2 Scroll down to **Phone setup menu**:



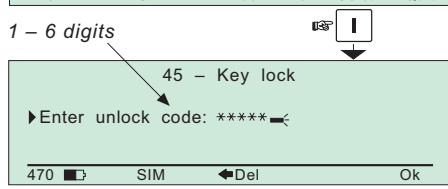
3 Press **Selct** or **right arrow** and scroll down to **Key lock**:



4 Continue with **Selct** or **right arrow** to **Key lock** window.

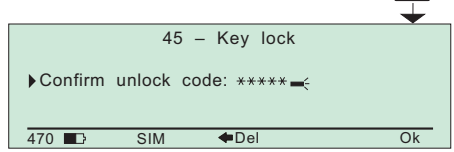
Enter unlock code: *(1 - 6 digits)*

and press **OK:**



5 Repeat code to confirm:

and press **OK** again:



Phone setup cont'd Menu

Language setup

The display language may be changed as described below.

Example

1 Press the **Menu** function key:

2 Scroll down to **Phone setup menu**:

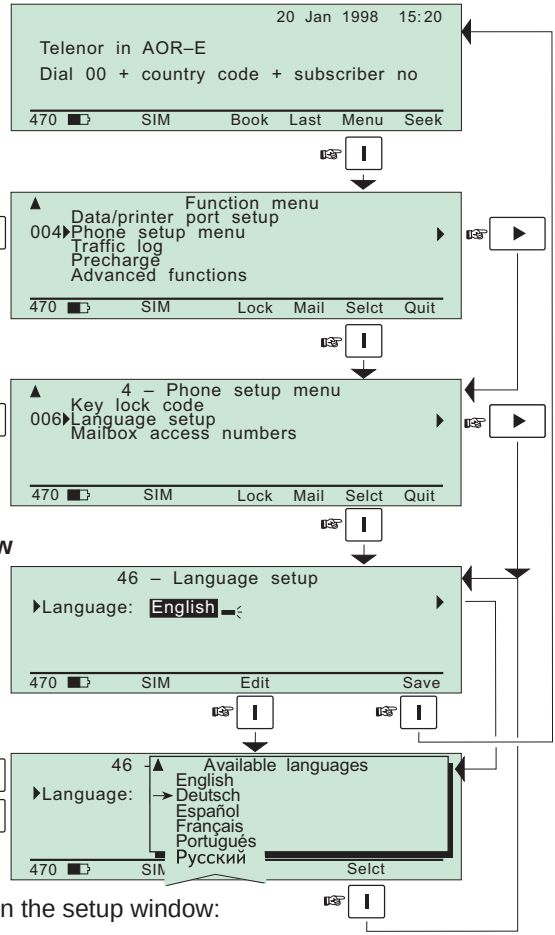
3 Press **Selct** or **right arrow** and scroll down to **Language setup**:

4 Continue with **Selct** or **right arrow** to select function.

5 Press **Edit** and scroll up/down to wanted language:

Pressing **Selct** reads out the selected language in the setup window:

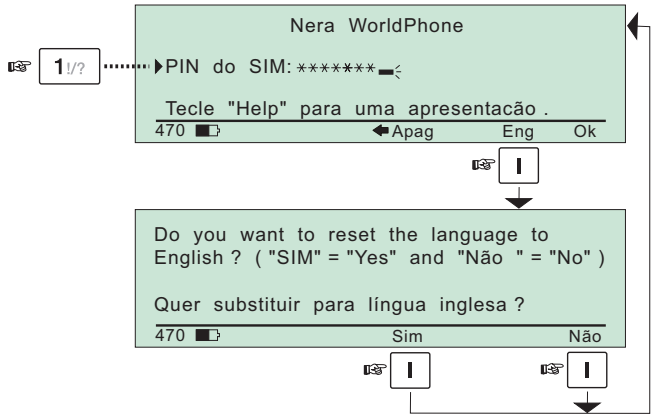
Pressing **Save** changes the display text to the selected language.



To easy restore English, see next page.

Language reset

When starting the WorldPhone with the display language set to f.ex. Portuguese, the **Eng** function key provides an easy way to restore the default English display language:



Mailbox access numbers

When receiving a mail alert (voice, fax or data), the user must call the server mailbox to retrieve the message. To call the mailbox, normally the default number 57 can be used.

The mailbox dial-up number may be changed as described below.

Example

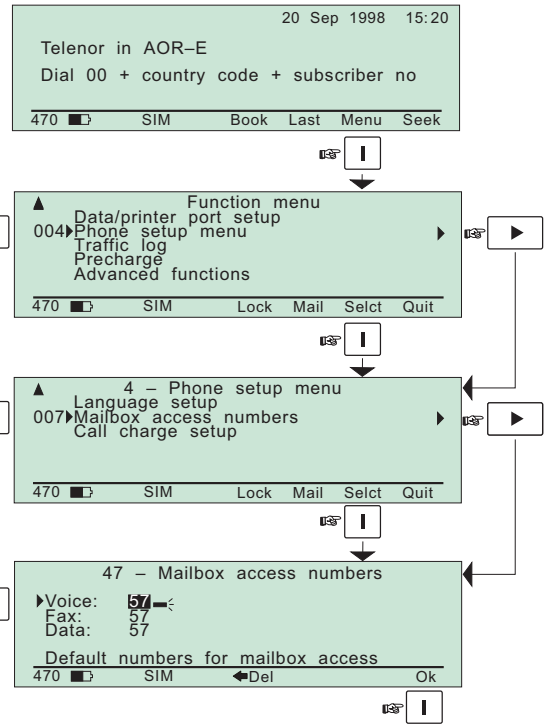
1 Press the **Menu** function key:

2 Scroll down to **Phone setup menu**:

3 Press **Selct** or **right arrow** and scroll down to **Mailbox access numbers**:

4 Continue with **Selct** or **right arrow** to select function and key in new numbers:

5 Pressing **OK** stores the new mailbox number(s).



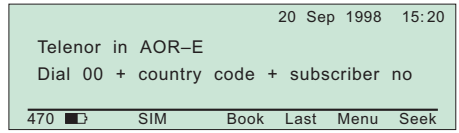
Call charge setup

With the Call charge function enabled the cost of the call will be displayed during the call and for 10 seconds after the call is terminated. Later the charge can be fetched using the Traffic log function.

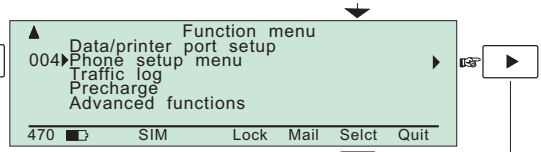
The price per unit and minimum charge time is set as described below.

Example

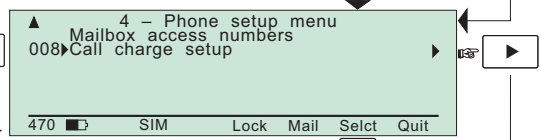
1 Press the **Menu** function key:



2 Scroll down to **Phone setup menu**:



3 Press **Selct** or **right arrow** and scroll down to **Call charge setup**:

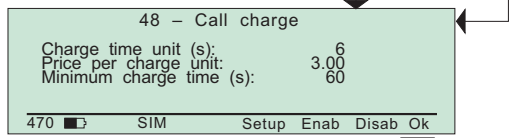


4 Continue with **Selct** or **right arrow** to select the **Call charge** function.

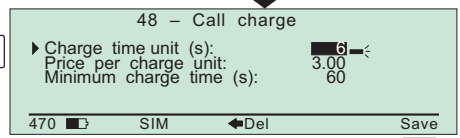
Enab activates the values set below. *See* ***Making a call*** *previously in this chapter.*

Disab disables the Call charge indication.

Ok activates the call charge indication.



5 Press **Setup** to modify entries:



Save stores the new values:

General

This function logs all outgoing calls both with and without SIM card inserted. Every call is logged with:

- subscriber number, start time and duration
- service (voice, fax, data, NIMS)
- Net provider and satellite
- user name (if access code is enabled) / SIM card FWD

The WorldPhone *owner* may set the log output mode as follows, *(see "**Traffic log settings**")*:

- off (stops logging)
- cleared (stops logging and clears the log)
- for automatic printout after 1 or 10 calls (auto print limit).
- for display on the screen
- logging of incoming calls

Traffic log readout

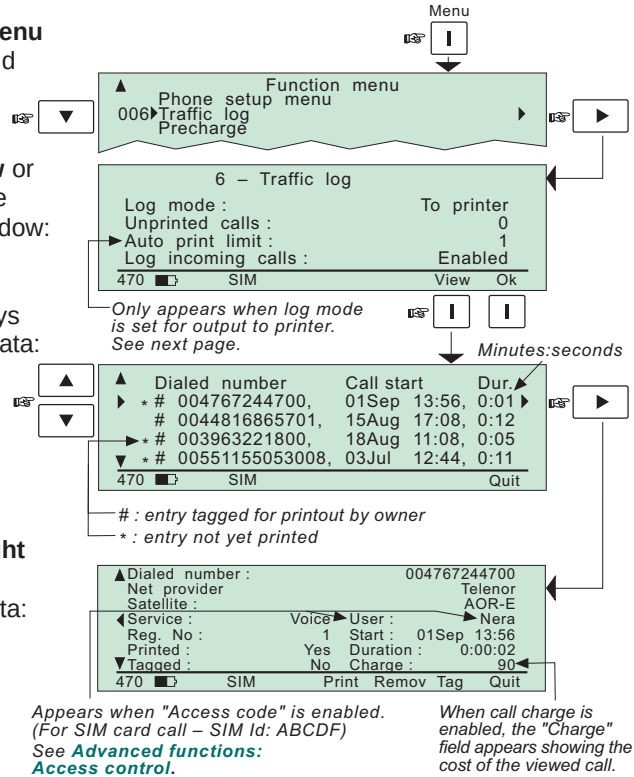
1 Press the **Menu** function key and scroll down to **Traffic log**:

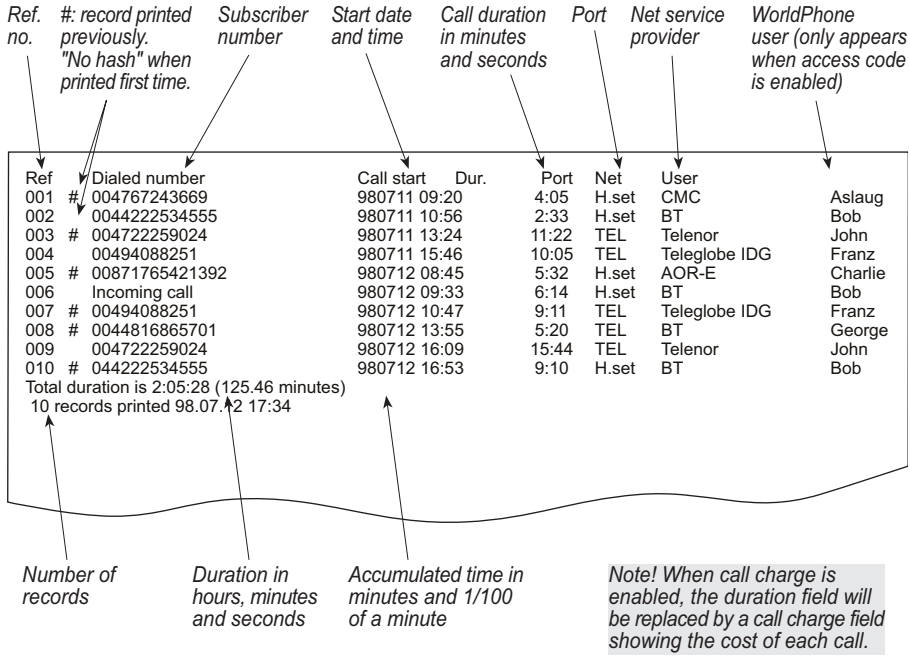
2 **Right arrow** or **selct** opens the **Traffic log** window:

3 **View** displays the list of call data:

Scroll up/down to wanted call:

4 Pressing **right arrow** shows detailed call data:



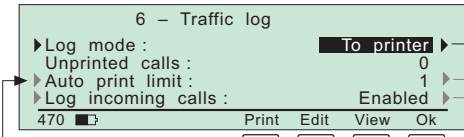


Example of traffic log printout.

Traffic log settings (owner level only)

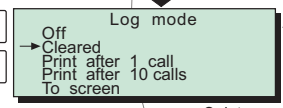
1 Open the **Traffic log** window: ☞ ▼

Print outputs all unprinted and tagged entries.
See previous page.



Only appears when log mode is set for output to printer.

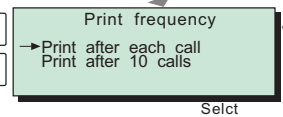
2 Press **Edit** or **right arrow** for setting of Log mode. Scroll up/down and press **Selct** at wanted output mode:



No calls are logged when set to Off or Cleared. All existing entries are deleted when set to Cleared.

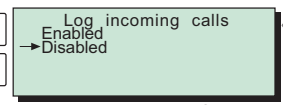
Selct

Auto print limit can easily be toggled between 1 and 10:



Selct

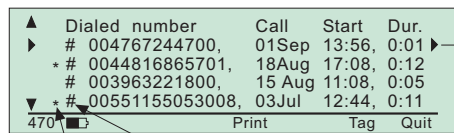
Logging of incoming calls can enabled/disabled:



Selct

3 **View** displays the list of calls: ▲ ▼

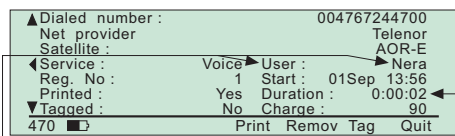
Scroll to wanted call and press **Tag** to tag entry:
Press again to untag.



Not printed

Tag for printout ☞

Pressing **right arrow** shows detailed call data of selected number:



Hours:minutes:seconds

Print outputs the selected entry to the printer without header and footer.

Remove erases the entry from the log.

Appears when "Access code" is enabled. See ***Advanced functions: Access control.***

Quit reverts to main window.

General

*For use with SIM, see "**Precharge on SIM card**".*

The WorldPhone can be preprogrammed with a total call duration limit of up to **44640 minutes** (744 hours).

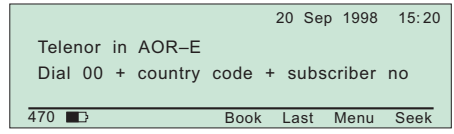
The owner stores a special telephone number under short number **00**. This allows the user to call the owner to buy more time even when having exceeded the time limit.

During a call the remaining time is displayed next to the call duration in hours and minutes (seconds for the last minute).

For users, the Precharge function only appears in the menu when enabled, i.e when bought time is loaded, see following pages.

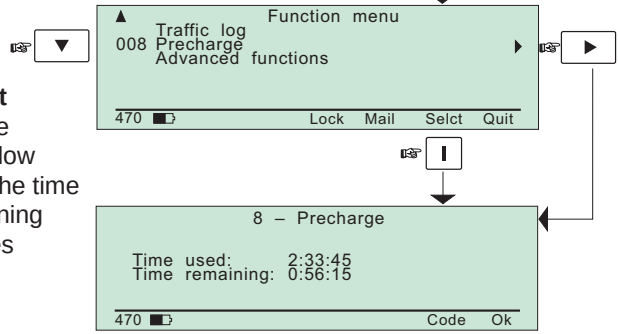
Precharge readout

1 Press the **Menu** function key:

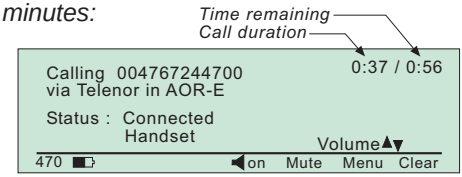


2 Scroll down to **Precharge**:

3 **Selct** or **right arrow** opens the **Precharge** window which displays the time used and remaining in hours, minutes and seconds:



Example of call window with call duration and remaining time displayed in hours and minutes:



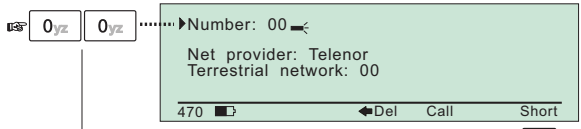
Buying more remaining time

There are three ways to load precharge time:

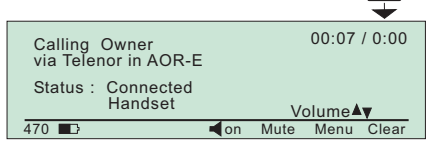
- ***Call the owner*** via short number 00 and get the buy code during the conversation. *(Calling short number 00 can be done even if exceeding the remaining time limit and does not influence the limit value). See below.*
- ***Fax or mail*** the Forward ID and Index to the owner who generates the buy code and returns this by fax, mail, etc. *See next page.*
- ***The owner*** loads the new Precharge limit into the WorldPhone.

Buying time by calling the owner

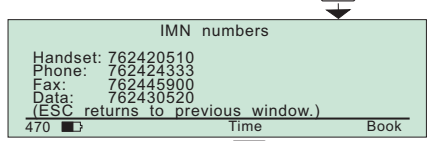
1 Dial 00:



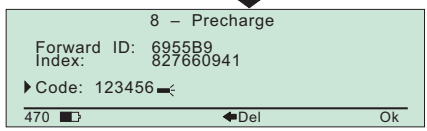
and press **Short**:



2 Pressing the **Menu** function key displays IMN numbers:



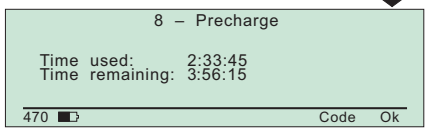
3 Pressing **Time** opens the **Precharge** window displaying the Forward ID, Index and user code entry field:



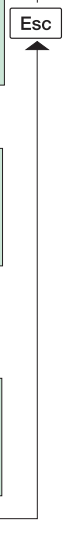
Read the Forward ID, Index and the new call duration you want to buy to the owner.

Then key in the code he reads back to you. The code contains the time information.

Pressing **Ok** loads the new remaining time limit:

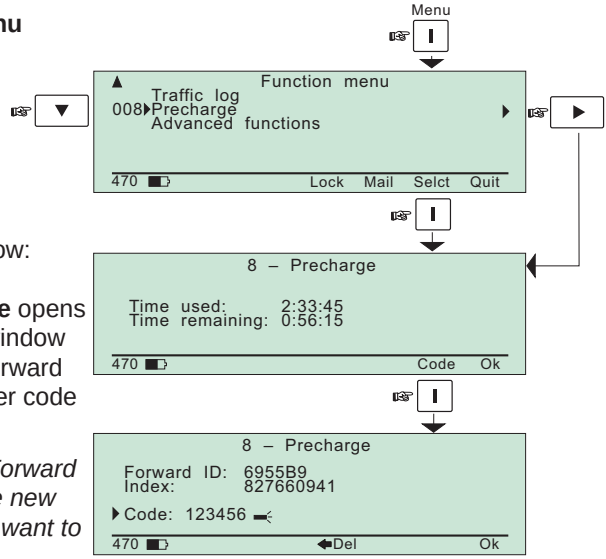


4 Press **Ok** again and then **Esc** to return to the conversation window:



Buying time via fax or mail

1 Press the **Menu** function key and scroll down to **Precharge**:



2 **Selct** or **right arrow** opens the **Precharge** window:

3 Pressing **Code** opens the **Precharge** window displaying the Forward ID, Index and user code entry field:

Fax or mail the Forward ID, Index and the new call duration you want to buy to the owner.

Key in the code he faxes or mails back to you. The code contains the time information.

Pressing **Ok** loads the new remaining time limit.

Precharge cont'd Menu

Owner loads Precharge time

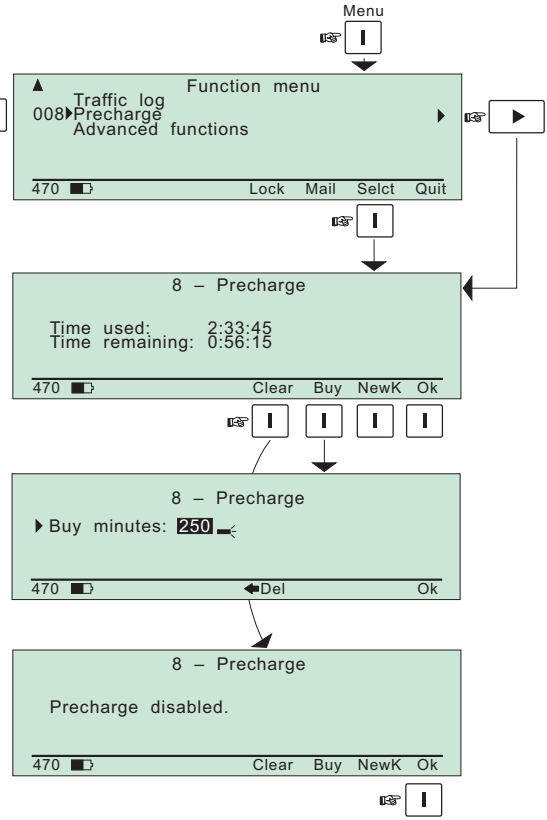
*The WorldPhone must be set in **owner level**.*

1 Press the **Menu** function key and scroll down to **Precharge**:

2 **Selct** or **right arrow** opens the **Precharge** window:

3 Pressing **Buy** allows keying in a new time limit:

4 Pressing **Clear** *disables* the Precharge function:
The Precharge menu entry is now no longer visible from user level.



Precharge is *enabled* when buying minutes.

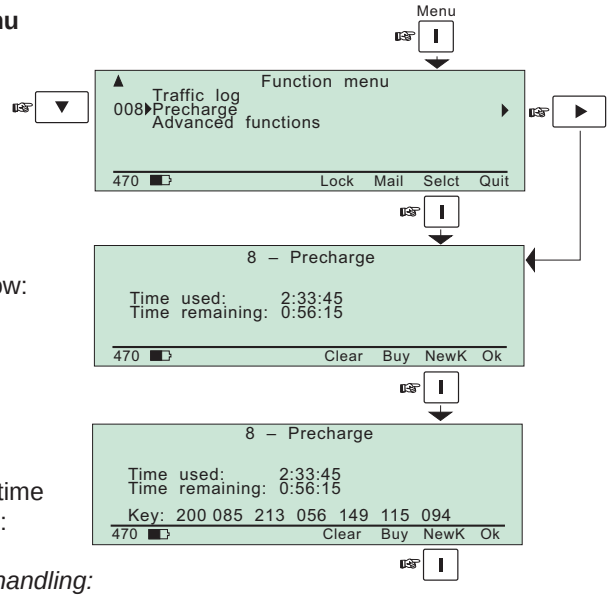
*NB! Remember to revert to **user level**.*

Key readout

*The WorldPhone must be set in **owner level**.*

Using the Precharge Administrator program (QPRG 9110039) to generate a buyer's Precharge code requires both the owners password and a "key" generated by the WorldPhone, as follows:

1 Press the **Menu** function key and scroll down to **Precharge**:



2 **Selct** or **right arrow** opens the **Precharge** window:

3 A new "key" is generated every time **NewK** is pressed:

Precharge code handling:

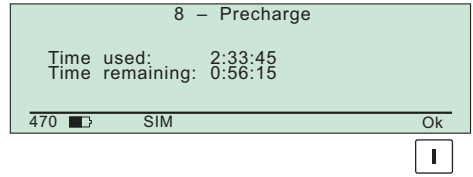
OWNER	USER
• Before a WorldPhone may be rented, the owner must derive its specific key (**NewK**) and store it in the data base of the Precharge Administrator program, which is used to generate more precharge minutes for the user. *See above.* At changes, the NewK must be updated in the data base. The owner also needs to register the WorldPhone's owner password with the Precharge Administrator program.	*More call time is needed:* When wanting to buy more call time, the user conveys the **Forward ID**, **Index** and the requested **call time** to the owner:
• The owner uses the Precharge Administrator program to generate the **Precharge code** for the user on basis of the above **NewK**, owner's password and the information received from the user.	• the user calls the owner via short number 00, • or sends telefax or mail.
• The owner reads or sends the new **Precharge code** to the user.	The user keys in the new **Precharge code** provided by the owner.

Precharge on SIM card

When using SIM card, any Precharge set on the telephone itself is overridden. If no Precharge is set on the SIM card, the WorldPhone may be used freely.

Readout on SIM

The procedure is the same as described previously for the telephone (except for the Code function which now is not required), *see "**Precharge readout**"* :



During a conversation, the time remaining and call duration are displayed as for calls without using SIM card.

Some SIM cards may have a prepaid option. Contact your SIM vendor for more information on how to upgrade your SIM card.

Overview

Some of the Advanced functions are accessible from **Phone OWNER LEVEL** or **CHV2 LEVEL** only.

The OWNER LEVEL and CHV2 levels are protected by passwords.

For shifting to owner/CHV2 level and assignment of password, *see "**User access**".*

The Advanced functions include as follows:

- **Access control**:
  - Restrict dial
  - Access code
  - Restrict SIM usage
- **Satellite setup**
- **Configuration**:
  - Port configuration
  - Net service providers
  - Power conservation
  - Set diagnostics
  - Set preferred Nets *(with SIM card only)*
  - Set allowed Nets *(with SIM card only; CHV2 level or higher)*
  - Set S/A preferred Nets *(with SIM card only)*
  - Set S/A allowed Nets *(with SIM card only; CHV2 level or higher)*
  - Charge tone
- **Information available:**
  - IMN numbers
  - Misc. version Id information
  - Oscillator Compensation, Network status information } *(owner level, or in user level when diagnostics is ON, see **Configuration: Set diagnostics**)*
- **Install: Installation and debug menu**:
  - Paid functions *(owner level)*
  - Phone name setup *(owner level)*

Advanced functions: Access control

Menu

Introduction

The following functions are available for controlling the use of the WorldPhone:

- **Restrict dial** which allows the owner to establish a Barred list of subscriber numbers that cannot be called, or set the WorldPhone for dialing from Phone Book only.
  See next page.
- **Access code** which opens the WorldPhone for up to 25 authorized users. *See following pages.*
- **Restrict SIM usage** which permits controlling the use of SIM card with the WorldPhone. *See following pages.*

The functions are editable in owner level only.

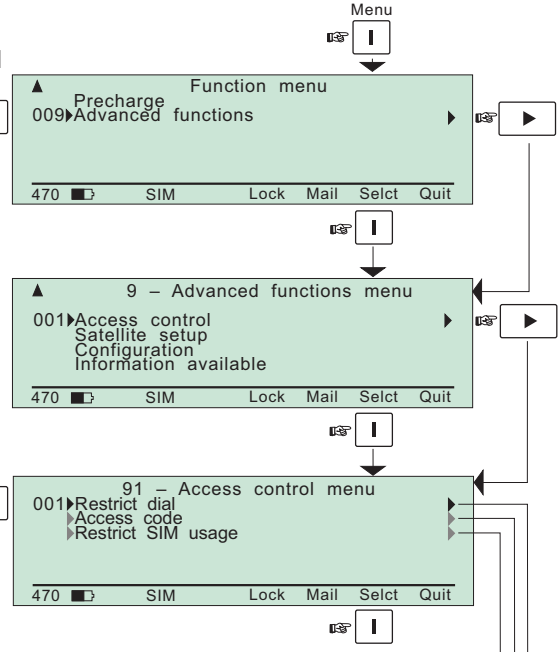
Procedure:

1 Press the **Menu** function key and scroll down to **Advanced functions**:

2 **Selct** or **right arrow** opens the **Advanced functions menu**:

3 Pressing **Selct** or **right arrow** again opens the **Access control menu:**

allowing selection of the submenus:



***Restricted dialing**, see next page*
***Access code**, see following pages*
***Restricted SIM usage**, see following pages.*

Restricted dialing

The WorldPhone provides three choices of controlling calls:

- No restrictions.
- **Barred list**, which may contain up to 10 phone numbers or part of numbers that **can not** be called. F.ex. the entry "0087" in the barred list prevents all mobile-to-mobile calls.
- **Dial from Book only**, which restricts calls to the numbers in the Phone Book (in the WorldPhone). It is still possible to append, i.e. a short number entry with number field "0047" means that it is possible to dial all Norwegian numbers. When a SIM card is inserted, the SIM entries will **not** be merged with the "phone" entries.

The function is active for non-SIM operation and for one specific SIM card, *see "**Restricted SIM usage**".* It applies to all ports of the WorldPhone. Only one of the lists can be activated at one time.

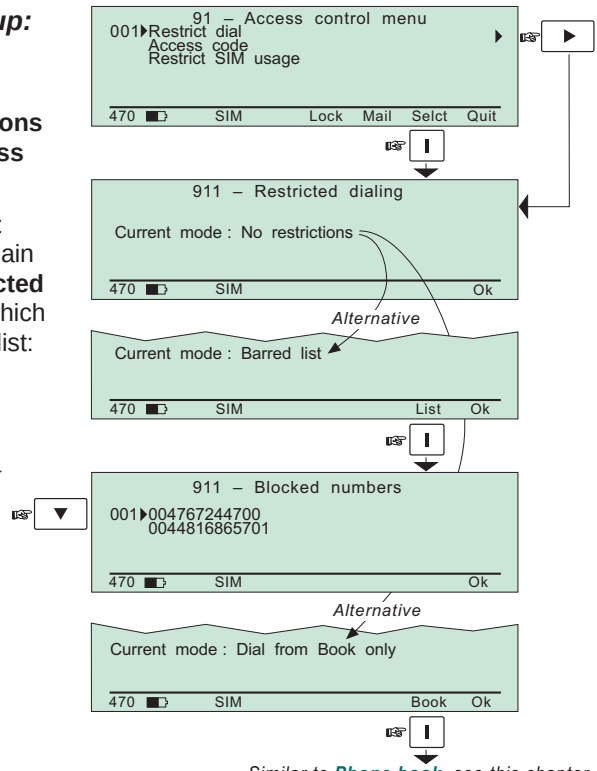
The list to be active is selected by the owner, see next page.

Checking the dialing setup:

1 Press **Selct** or **right arrow** via **Advanced functions** to open the **Access control menu**:

2 Pressing **Selct** or **right arrow** again opens the **Restricted dialing** window which shows the active list:

- *No restrictions*
- *Barred list*
- *Dial from Book only*

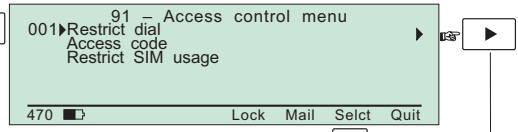


*Similar to **Phone book**, see this chapter.*

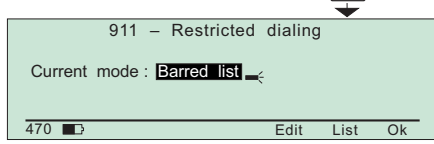
Restricted dialing setup (owner level only)

The "barred list" and the phone book are established as follows:

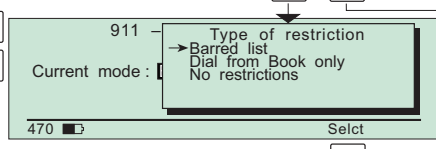
1 Press **Selct** or **right arrow** via **Advanced functions** to open the **Access control menu**:



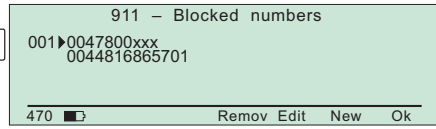
2 Pressing **Selct** or **right arrow** again opens the **Restricted dialing** window which shows the active list:



3 Press **Edit** to select mode of restriction. Scroll up/down to select: **Selct** enters chosen mode.

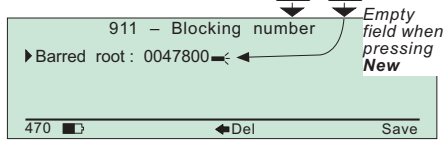


4 Pressing **List** displays the blocked phone numbers:

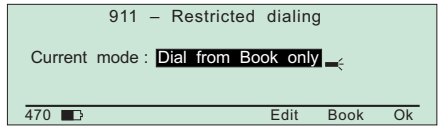


5 Pressing **Edit** allows the selected number to be modified:

The field is empty when pressing **New** to add a phone number to the barred list.
Remove deletes number.
Save stores the changes.



6 When the restriction mode "Dial from Book only" is selected, pressing **Book** allows short numbers to be entered:



*NB! Remember to revert to **user level**.*

*Similar to **Phone book** See this chapter.*

Access code

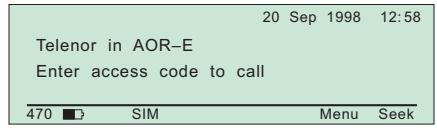
When the access code function has been enabled, the user is prompted for a 1 - 8 digit personal code when making a call.

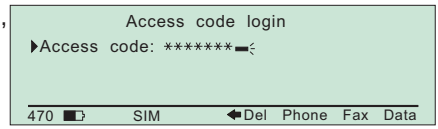
The code opens the WorldPhone for one call. Up to 25 authorized users can be allocated access codes.
The function is active for non-SIM use and for one specific SIM card, *see "**Restricted SIM usage**"*. It applies to all ports of the WorldPhone.

The access code can only be entered from owner level, see next page.

Making a call:

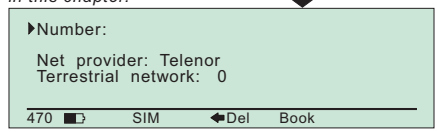
1 At hook-off or when attempting to dial a phone number from the main window, the **Access code login** window opens, prompting the user to enter the access code:



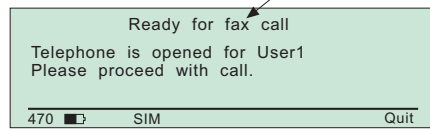


2 Pressing **Phone** opens the window for entering the phone number:

*See **Making a call** in this chapter.*

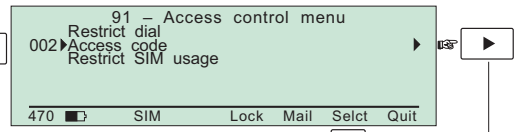


Pressing **Fax** or **Data** shows which users are allowed to make a telefax or data call:

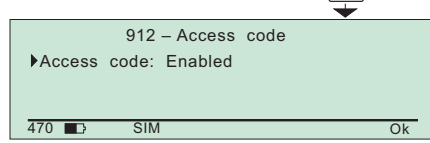


Checking the setup:

1 Press **Selct** or **right arrow** via **Advanced functions** to open the **Access control menu**:



2 Pressing **Selct** or **right arrow** again opens the window which indicates whether **Access code** is **Enabled** or **Disabled**:



Calling from external phone

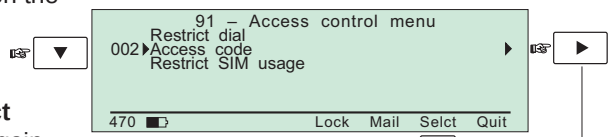
1 Lift handset; enter access code + "#" on external phone.

2 If access code is accepted, a dial tone is heard and the number to be dialed can be entered. Press "#" to initiate the call.

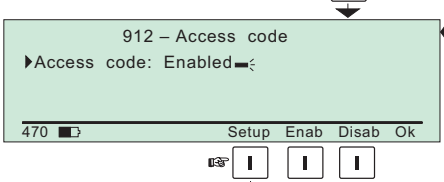
Access code setup (owner level only)

Access code is edited or entered as follows:

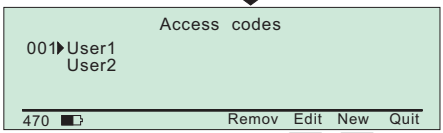
1 Press **Selct** or **right arrow** via **Advanced functions** to open the **Access control menu**:



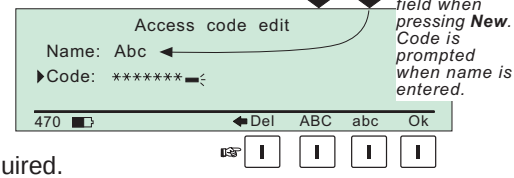
2 Pressing **Selct** or **right arrow** again opens the **Access code** window: Pressing **Enab/Disab** enables/disables the access code function.



3 Pressing **Setup** displays the list of authorized users:



Scroll down to wanted user and press **Edit** to modify the code, or press **New** to add a user to the list:



*Starts with empty name field when pressing **New**. Code is prompted when name is entered.*

Use **Del** to modify. Press **ABC** or **abc** to enter uppercase/ lowercase letters as required.

Ok stores the modified user name.

*NB! Remember to revert to **user level**.*

Restricted SIM usage

Allowed SIM

The WorldPhone can be set to operate from:

- one specific SIM card. Any other SIM users will be rejected.
- no SIM card. All SIM users will be rejected.
- any SIM card.

Restricted SIM

The restrictions "Restrict dial" and "Access code" can be set to be active for:

- one specific SIM card (in addition to non-SIM usage)
- no SIM card (only active for non-SIM usage).

The setting can only be made from owner level, see ***Setting SIM restrictions****. See also* ***Restricted dialing*** *and* ***Access code****.*

When restricted to SIM provider

The service provider can lock the WorldPhone to a specific type of card, e.g. a "MOBIQ" SIM card. The restrictions will then be:

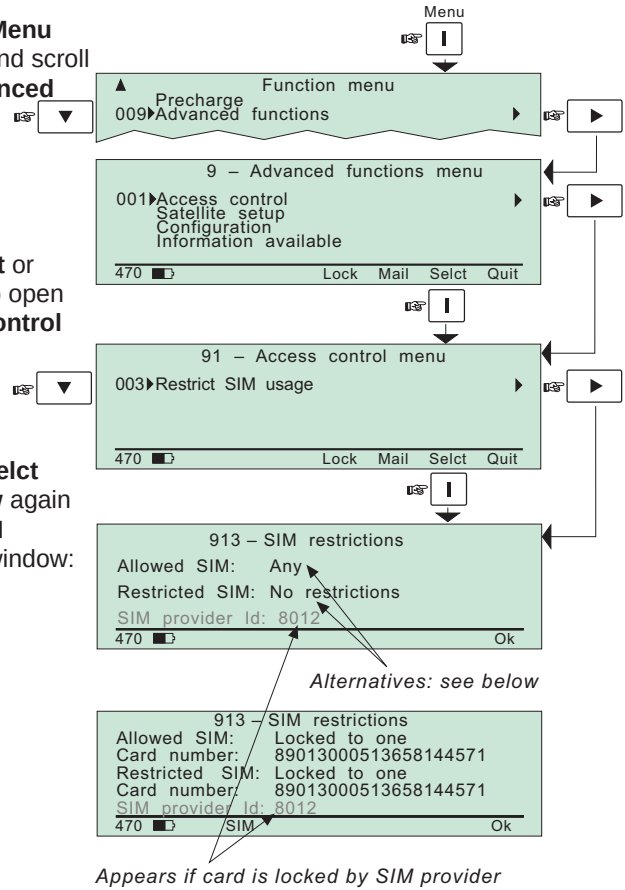
- any "MOBIQ" SIM card.
- one specific "MOBIQ" card.
- no SIM card at all.

Checking SIM restrictions

1 Press the **Menu** function key and scroll down to **Advanced functions**:

2 Press **Selct** or **right arrow** to open the **Access control menu**:

3 Pressing **Selct** or **right arrow** again opens the **SIM restrictions** window:



Alternative restrictions:

*When **Allowed SIM** is set to:*

- **Any**, no restrictions apply
- **No SIM**, SIM cards are not accepted.
- **Locked to one**, one specific card is allowed.

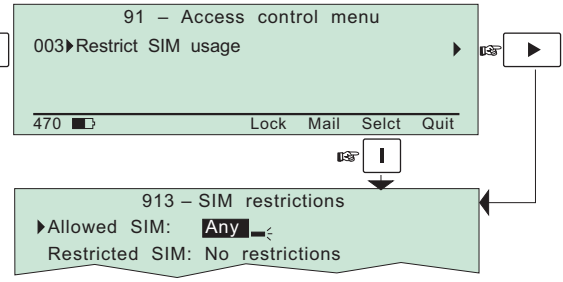
*When **Restricted SIM** is set to:*

- **No restrictions**, Access code and Restricted dial only apply for non-SIM operation.
- **Locked to one**, Access code and Restricted dial apply for non-SIM operation and operation with the specified SIM card.

Setting SIM restrictions (owner level only)

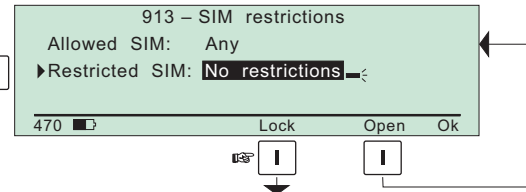
1 Press **Selct** or **right arrow** via **Advanced functions** to open the **Access control menu**:

2 Pressing **Selct** or **right arrow** again opens the **SIM restrictions** window:

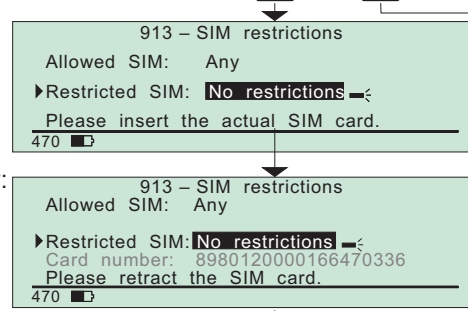


* *Restricted SIM:*

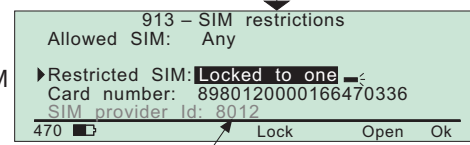
3 Scroll down to **Restricted SIM**:



4 Press **Lock** and insert the actual SIM card.
The WorldPhone can now be operated with that specific card only:



When retracting the card, the Id of the SIM provider is displayed:



Ok stores the settings.

Appears if card is locked by SIM provider

* *Allowed SIM:*

Follow the same procedure as for **Restricted SIM** with the marker remaining at **Allowed SIM.**

Advanced functions: Satellite setup

Menu

General

Allows preprogramming of **default Net service provider**, **S/A operator** (Stand Alone operator) and **terrestrial network** for each satellite region (Ocean Region).

Net service provider and terrestrial network

1 Press the **Menu** function key and scroll down to **Advanced functions**:

2 Pressing **Selct** or **right arrow** opens the list of Satellites and Default Net providers. Scroll up/down to wanted satellite:

Selct initiates search for the specified satellite. (and a new spot beam selection)

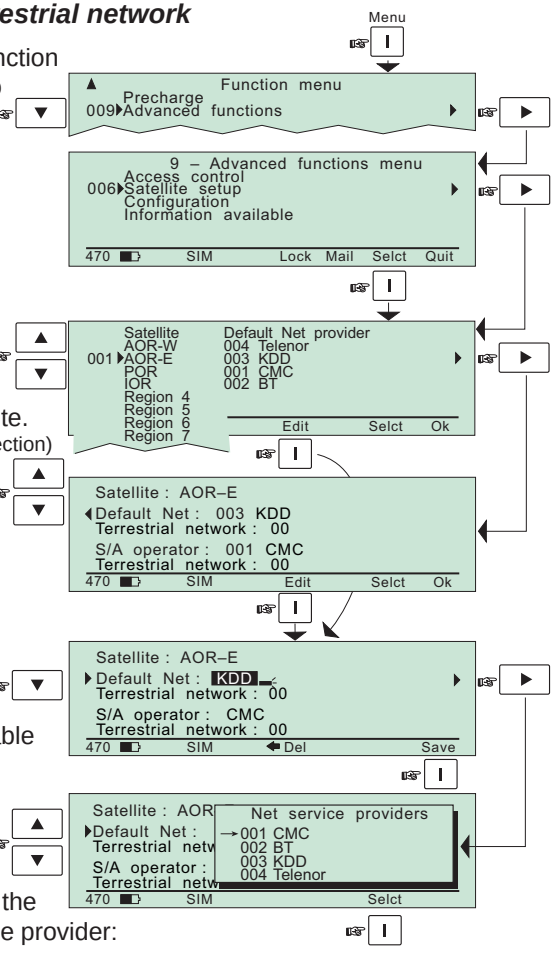
Right arrow displays satellite info:

3 **Edit** opens the setting window for the selected satellite:

4 **Right arrow** opens the list of available Net service providers.

5 Scroll up/down to wanted Net:

Pressing **Selct** enters the new default Net service provider:



6 Return to step 4, scroll down and key in Terrestrial network code. **Save** stores the selected Net service provider and Terrestrial network as the default for that particular satellite.

S/A operator and terrestrial network

Repeat steps 4 - 6 for selection of S/A operator and terrestrial network.

Port configuration

- Displays current configuration. *Reconfiguration can be made in "**owner**" level only (non-SIM operation).*
- With **Broadcast** On, incoming calls initiate ringing on all ports configured for voice communication.
- The secure voice function allows selected port(s) to be used with encrypted telephone. *See **appendix E – Secure voice option**.*

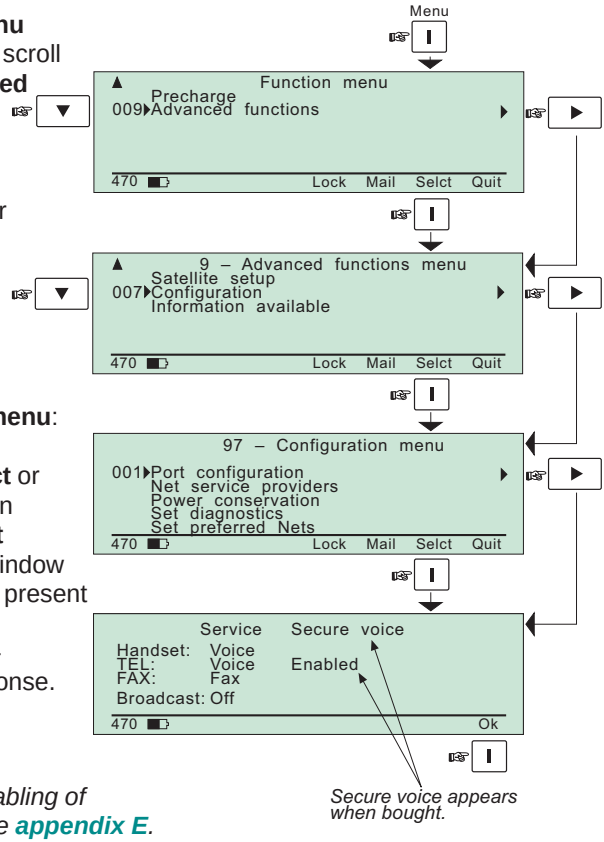
Example

1 Press the **Menu** function key and scroll down to **Advanced functions**:

2 Press **Selct** or **right arrow** and scroll down to **Configuration**:

3 **Selct** or **right arrow** opens the **Configuration menu**:

4 Pressing **Selct** or **right arrow** again displays the **Port configuration** window which shows the present service of the ports, and the incoming call response.



*For enabling/disabling of secure voice, see **appendix E**.*

*For port details, see **appendix B – Connecting up optional equipment**.*

Net service providers

Each Net service provider has a station code. The "Net service provider" window displays a list which matches the codes to the station owners. *Names can be edited in "**owner**" level (non-SIM operation).*

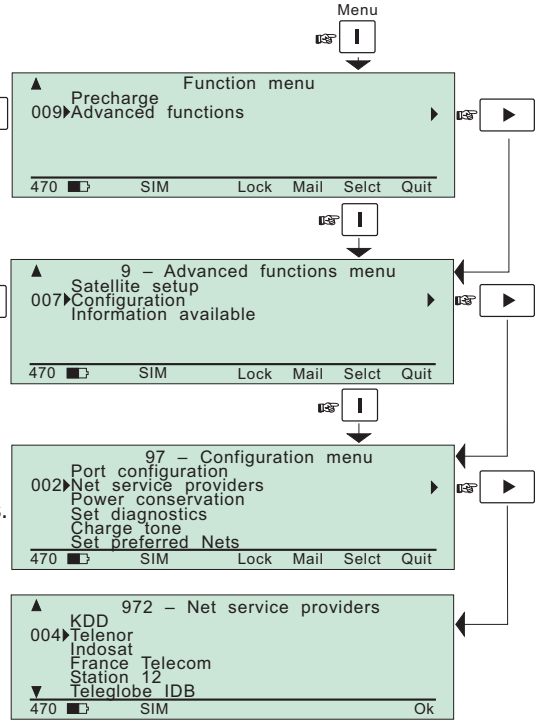
Example:

1 Press the **Menu** function key and scroll down to **Advanced functions**:

2 Press **Selct** or **right arrow** and scroll down to **Configuration**:

3 **Selct** or **right arrow** selects the **Configuration menu**: Press **Selct** or **right arrow** again for **Net service providers**.

4 Scroll up/down to wanted service provider:



Power conservation

Battery power can be conserved during voice calls and/or telefax calls. The conservation can be enabled for voice and/or telefax. When set in **Auto** mode, the conservation facility is automatically enabled when using the internal battery supply and disabled when connected to an external power supply.
The speech quality at the remote end may be slightly impaired with power conservation enabled.

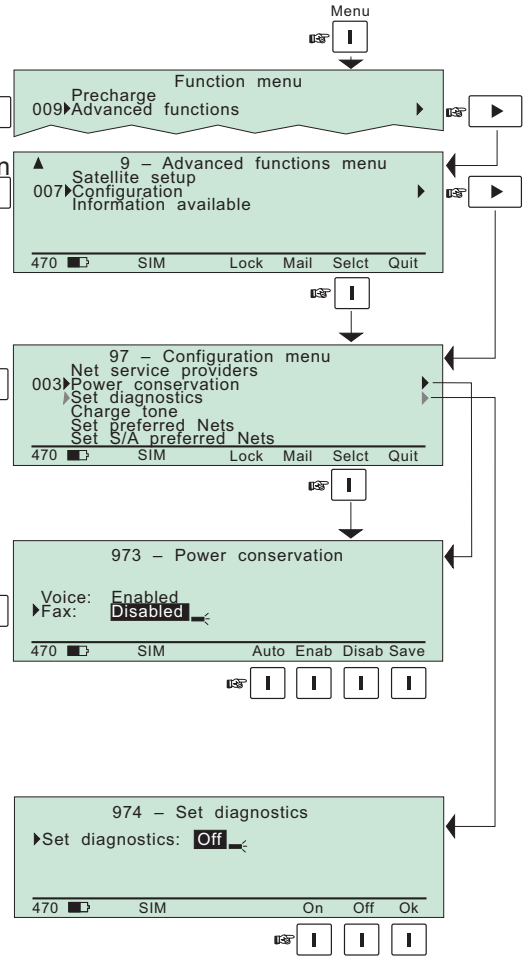
Example

1 Press the **Menu** function key and scroll down to **Advanced functions**: Press **Selct** or **right arrow** and continue down to **Configuration**:

2 **Selct** or **right arrow** selects the **Configuration menu**:

3 Scroll down and press **Selct** or **right arrow** to open the **Power conservation** window:

4 **Enable**/**Disable** power reduction during voice/fax calls, as required.
Auto reduces drain when using battery.
Save stores new entries or modifications:



Set diagnostics

Additional system information is displayed when diagnostics is turned **On**.
Note! Not necessary for normal telephone usage.

Storing of Preferred/Allowed Net service provider and Stand Alone operator on the SIM Card

These functions allow you to store the **preferred** and **allowed Net service provider** and **preferred** and **allowed Stand Alone operator** for each satellite region on a SIM card. *Note! The access level required to operate the functions depend on the SIM card supplier.*

Preferred Net service provider

1 Press the **Menu** function key and scroll down to **Advanced functions**:

2 Press **Selct** or **right arrow** and scroll down to **Configuration**:

3 **Selct** or **right arrow** selects the **Configuration menu**: Scroll down to **Set preferred Nets**:

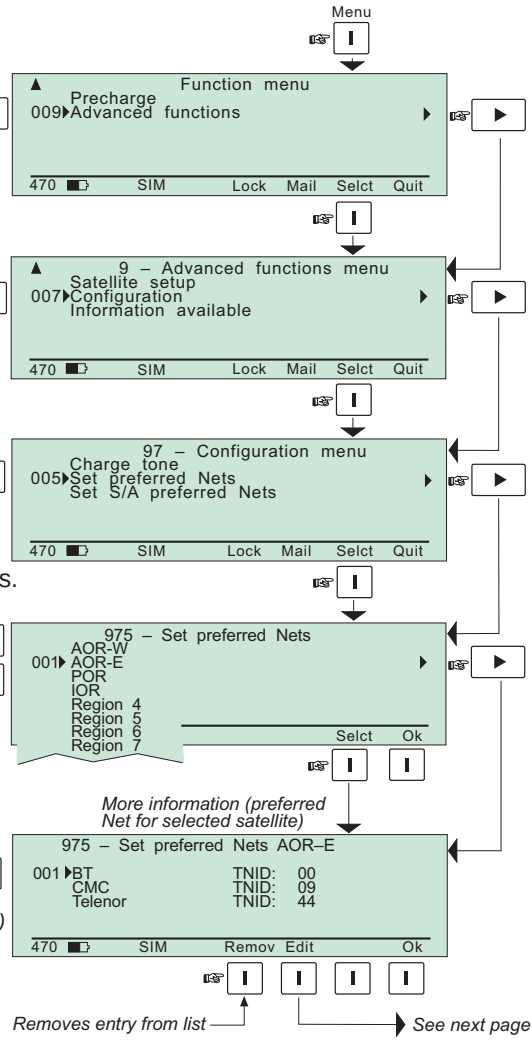
Selct or **right arrow** opens the list of **Set preferred Net** providers.

Scroll up/down to wanted satellite:

4 **Selct** or **right arrow** shows the current Net and TNID for the selected satellite:

(TNID=Terrestrial Network Identification Digits)

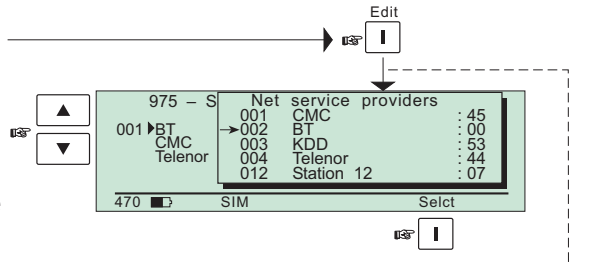
Remove deletes the the Net entry.



5 **Edit** opens list of available Nets:

6 Scroll up/down to wanted Net:

Selct enters new default Net service provider:



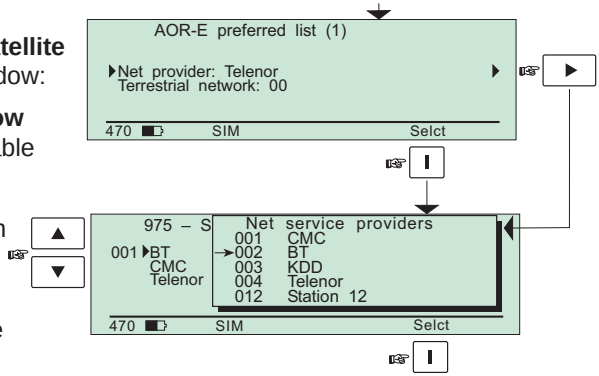
If the SIM card is not "restricted":

5b **Edit** opens **satellite preferred list** window:

Selct or **right arrow** opens list of available Nets.

6b Scroll up/down to wanted Net:

Selct enters new default Net service provider:



Set S/A preferred Net (Stand Alone operator)

Repeat steps 3 through 6.

Set allowed Nets / Set S/A allowed Nets

*Restricted to "**CHV2**" or higher, depending on Net service provider.*
Repeat steps 3 through 6.

Charge tone

When the charge tone function is enabled, a single frequency tone or DTMF is transmitted once the call has been established. The tone informs an external debiting system, f.ex. a pay phone (connected to the TEL port), that charging can start.
*Settings can only be made in **owner** level.*

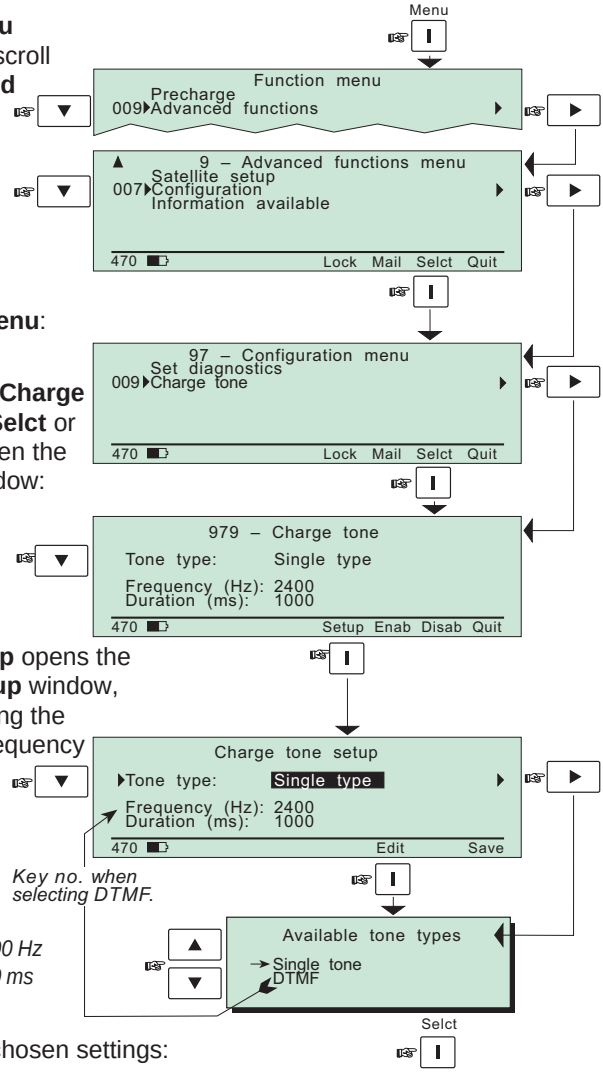
Setup:

1 Press the **Menu** function key and scroll down to **Advanced functions**:

2 **Selct** or **right arrow** opens the **Configuration Menu**:

3 Scroll down to **Charge tone**, and press **Selct** or **right arrow** to open the **Charge tone** window:

4 Selecting **Setup** opens the **Charge tone setup** window, which allows setting the required single frequency tone or DTMF, and its duration in milliseconds.



Valid settings:
Frequency: 400 - 3400 Hz
Duration: 10 - 5000 ms
DTMF key: 0 - 15

Selct enters the chosen settings:

General

The following information and facilities are provided:

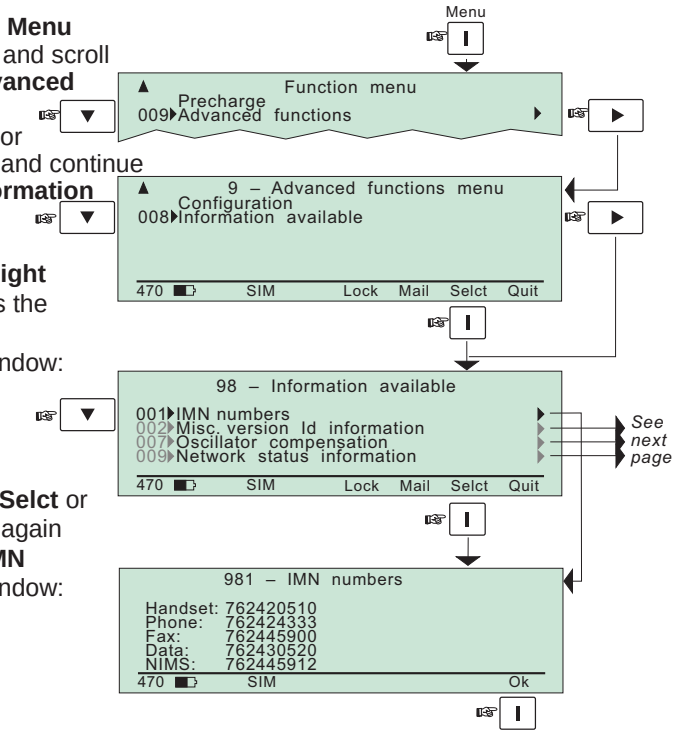
- The IMN numbers assigned to the WorldPhone.
  *Access level must be set to "**owner**" or "**CHV2**" for editing of the numbers on the telephone or SIM card respectively.*
- Forward ID number which identifies your particular WorldPhone and SIM card if installed.
- System version numbers of the internal software programs. *See next page.*
- Restoring communication with the satellite when receiving the alarm: **Not available**, *see "Oscillator compensation" on next page. (The function only appears when "**Set diagnostics**" is **On**).*
- Network status information *(only appears when "**Set diagnostics**" is **On**, or the access level is set to "**owner**"), see next page.*

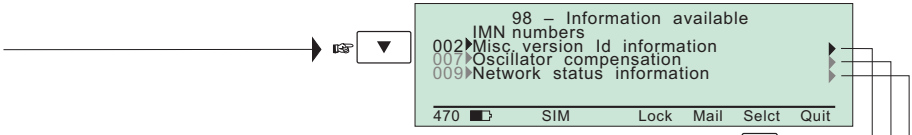
IMN numbers

1 Press the **Menu** function key and scroll down to **Advanced functions**: Press **Selct** or **right arrow** and continue down to **Information available**:

2 **Selct** or **right arrow** opens the **Information available** window:

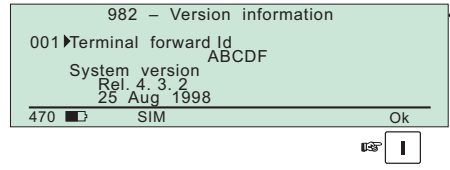
3 Pressing **Selct** or **right arrow** again opens the **IMN numbers** window:





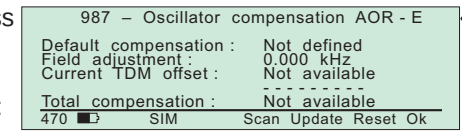
Misc. version ID information

4 Scroll down and press **Selct** or **right arrow** to open **Version information** window.

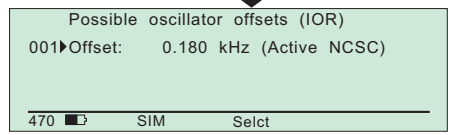


Oscillator compensation

5 Scroll down and press **Selct** or **right arrow** to open **Oscillator compensation** window:

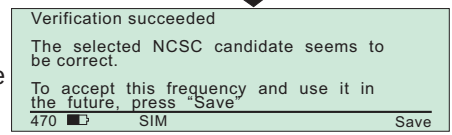


Press **Scan** with the antenna pointed towards the satellite.
(Pointing is automatic on Marine & Voyager antennas. Will take 10-15 minutes.)



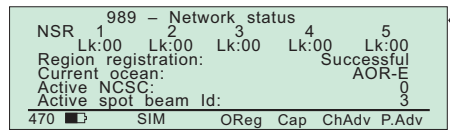
If several choices, scroll down to preferred frequency. Press **Selct**:

When **Verification succeeded** is displayed, press **Save** to update the WorldPhone oscillator.



Network status

6 Scroll down and press **Selct** or **right arrow** for readout of network data.



Paid functions

Only appears in owner level (non-SIM operation).
An enhanced WorldPhone function is activated by entering the "Opening key" provided when purchased:

1 Press the **Menu** function key and scroll down to **Advanced functions**.

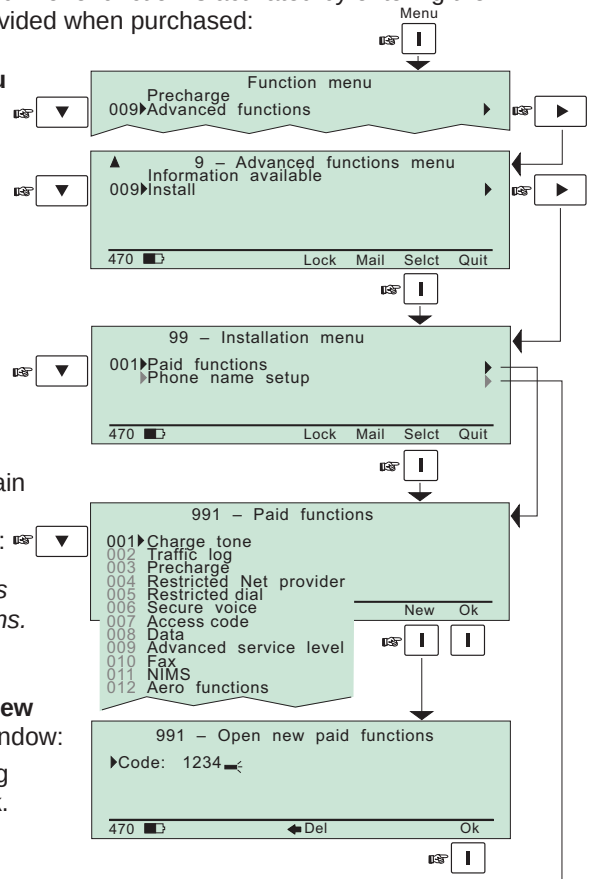
2 **Selct** or **right arrow** opens the **Installation menu** window:

3 Pressing **Selct** or **right arrow** again opens the **Paid functions** window:

The list only shows purchased functions.

4 Pressing **New** opens the **Open new paid functions** window:

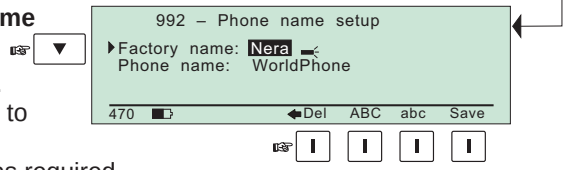
Enter the "Opening key" and press **Ok**.



Phone name setup

Only appears in owner level (non-SIM operation).
Repeat steps 1 and 2 to open **Phone name setup** window:

Use **Del** to modify.
Press **ABC** or **abc** to enter uppercase/ lowercase letters as required.
Save stores the modified phone name.



General

The WorldPhone provides access to a telefax service at a transmisson rate of 2.4 Kbps.

Limitations

The WorldPhone is fully compatible with the world's leading telefax machines and telefax software standards. However, transmission may not be possible through some of the telefax machines available on the market. Please check with your Net service provider before purchasing a telefax for use with the WorldPhone.

Installation

Connect the telefax cable to the **FAX** port on the WorldPhone telephone unit. *For wiring details, see **appendix B – Connecting up optional equipment**.*

*Verify that the FAX port is configured for telefax service, see **"Advanced functions: Port configuration"** in chapter 2. Operation.*

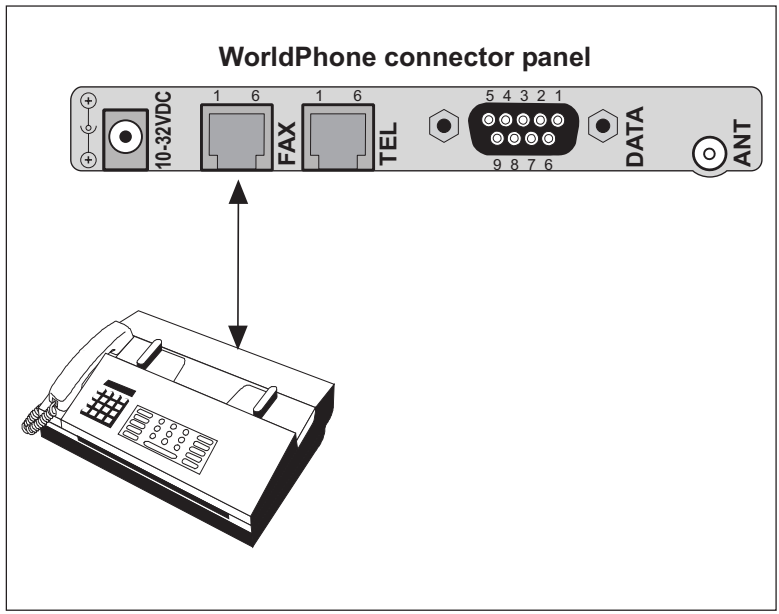


Figure 3.1 Telefax communication with the WorldPhone.

Using telefax with the WorldPhone

Transmission

Telefax calls made by the WorldPhone are *telefax only.* Any telephone handset connected to the telefax machine is for dialing purposes only.

To send a fax, use the same dialing sequence as when making a call, either through the default Net or a selected one.
*See **"Making a call"** in chapter 2. Operation.*

> *Note! On a telefax with keypad, enter* [#] *as the last digit before starting transmission.*

Telefax transmissions normally take 1.5 minutes per standard text page using standard resolution. Using superfine or halftone resolution will double the transmission time. To save time, avoid using a separate cover page.

If a call failure should occur while sending a multi-page document, resend only the failed pages.

General

The WorldPhone provides access to asynchronous data services through its built-in modem capability. The transmisson rate over the satellite is 2.4 Kbps, and any standard PC with a serial port can be used.
For configuration from the PC using AT commands, see ***appendix D****.*

Installation

Connect the RS-232 serial cable between the serial port on the PC and the 9-pin **DATA** port on the WorldPhone telephone unit.

For configuration,
see chapter 2. Operation: ***"Data/printer port setup"****.*

For wiring details,
see ***appendix B – Connecting up optional equipment****,*
or ***appendix D – DTE interface****.*

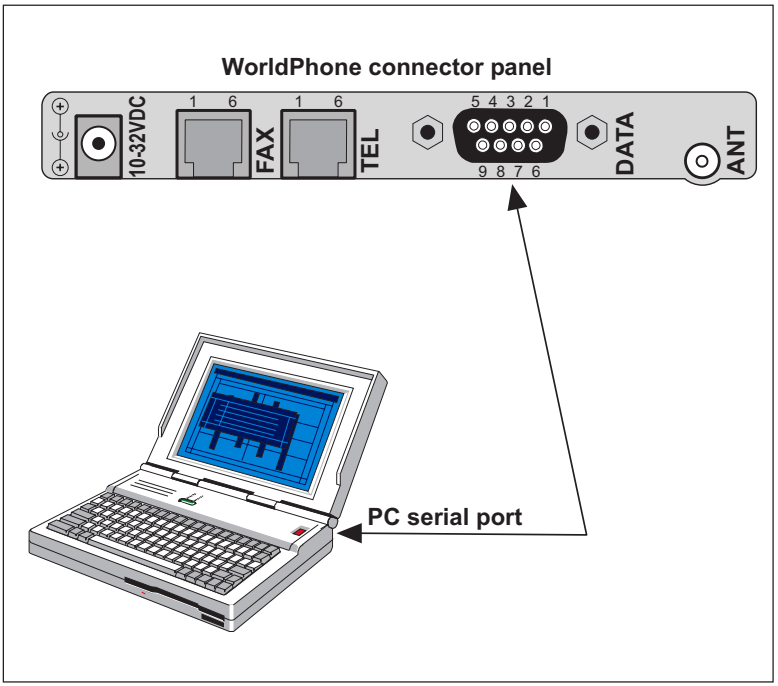


Figure 4.1 The PC is connected to the DATA port.

Testing the installation

Use a PC terminal program.

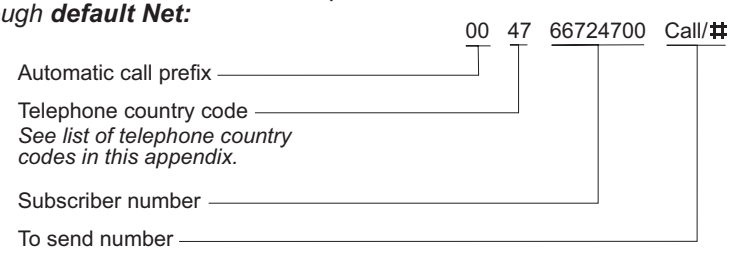
Entering a command on the PC keyboard (f.ex. A T ↵ R) should cause "OK" to be displayed on the screen.

If there is no response, check that the baud rate setting is the same both for the PC and the WorldPhone.
See chapter 2. Operation: ***"Data/printer port setup"****.*

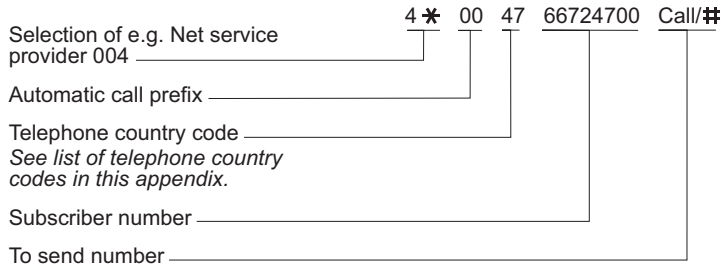
Setting up cont'd

Explanation with examples:

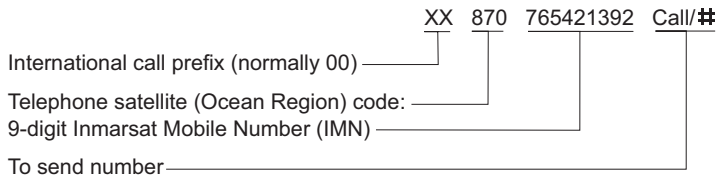
*Mobile - to - fixed subscriber, telephone call through **default Net:***



*Mobile - to - fixed subscriber, telephone call through **selected Net service provider:***



Fixed/mobile - to - Mobile telephone call:



Note! If the Net service provider does not support access no. 870, call the Ocean Region directly:

871 – AOR-E
872 – POR
873 – IOR
874 – AOR-W

Appendix A – Telephone country codes cont'd

Afghanistan (Islamic State of) 93
Albania (Republic of) 355
Algeria (People's Democratic Republic of) 21 b1)
American Samoa 684
Angola (Republic of) 244
Anguilla ..... 1 a)
Antigua and Barbuda ..... 2 a)
Argentine Republic 54
Armenia (Republic of) ..... 374 d)
Aruba 297
Ascension 247
Atlantic Ocean East Region (AOR-E) (Inmarsat) 871
Atlantic Ocean West Region (AOR-W) (Inmarsat) ... 874
Australia 61
Australian External Territories 672
Austria 43
Azerbaijani Republic 994

Bahamas (Commonwealth of the) ..... 1 a)
Bahrain (State of) 973
Bangladesh (People's Republic of) 380
Barbados ..... 1 a)
Belarus (Republic of) ..... 375 d)
Belgium 32
Belize 501
Benin (Republic of) 223
Bermuda ..... 1 a)
Bhutan (Kingdom of) 975
Bolivia (Republic of) 591
Bosnia and Herzegovina (Republic of) 387
Botswana (Republic of) 267
Brazil (Federative Republic of) 55
British Virgin Islands ..... 1 a)
Brunei Darussalam 673
Bulgaria (Republic of) 859
Burkina Faso 226
Burundi (Republic of) 257

Cambodia 355
Cameroon (Republic of) 237
Canada ..... 1 a)
Cape Verde (Republic of) 238
Cayman Islands ..... 1 a)
Central African Republic 236
Chad (Republic of) 235
Chile 56
China (People's Republic of) ..... 86 e)
Colombia (Republic of) 57
Comoros (Islamic Federal Republic of the) . 269
Congo (Republic of the) 242
Cook Islands 682
Costa Rica 506
Croatia (Republic of) 385

Cuba 53
Cyprus (Republic of) 357
Czech Republic ..... 420 c)

Democratic People's Republic of Korea 850
Denmark 45
Diego Garda 246
Djibouti (Republic of) 253
Dominican Republic ..... 1 a)

Ecuador 593
Egypt (Arab Republic of) 20
El Salvador (Republic of) 503
Equatorial Guinea (Republic of) 240
Eritrea 291
Estonia (Republic of) 372
Ethiopia 251

Falkland Islands (Malvinas) 500
Faroe Islands (Denmark) 298
Fiji (Republic of) 679
Finland 358
France ..... 33 c)
French Poiynesia 68

Gabonese Republic 241
Gambia (Republic of the) 220
Georgia (Republic of) ..... 7 d)
Germany (Federal Republic of) 49
Ghana 233
Gibraltar 350
Greece 30
Greenland (Denmark) 299
Grenada ..... 1 a)
Guadeloupe (French Department of) 590
Guam 671
Guatemala (Republic of) 502
Guiana (French Department of) 594
Guinea (Republic of) 224
Guinea-Bissau (Republic of) 245
Guyana 592

Haiti (Republic of) 509
Honduras (Republic of) 504
Hongkong 852
Hungary (Republic of) 36

Iceland 354
India (Republic of) 91
Indian Ocean Region (IOR)(Inmarsat) 873
Indonesia (Republic of) 62
Iran (Islamic Republic of) 98
Iraq (Republic of) 964

Appendix A – Telephone country codes cont'd

Ireland 353
Israel (State of) 972
Italy 39
Ivory Cost (Republic of) 225

Jamaica ..... 1 a)
Japan 81
Jordan (Hashemite Kingdom of) 962

Kazakhstan (Republic of) ..... 7 d)
Kenya (Republic of) 254
Kiribati Republic of) 686
Kuwait (State of) 965
Kyrgyzstan (Republic of) ..... 996 d)

Lao People's Democratic Republic 856
Latvia (Republic of) 371
Lebanon 961
Lesotho (Kingdom of) 266
Liberia (Republic of) 231
Libya (Socialist People's Ubyan Arab Jamahiriya) ... 21b2)
Liechtenstein (Principality of) ..... 41 c)
Lithuania (Republic of) 370
Luxembourg 352

Macau 853
Macedonia (the former Yugoslav Republic of) .. 389
Madagascar (Republic of) 261
Malawi 265
Malaysia 60
Maldives (Republic of) 960
Mali (Republic of) 223
Malta 356
Marshall Islands (Republic of the) 692
Martinique (French Department of) 596
Mauritania (Islamic Republic of) 222
Mauritius (Republic of) 230
Mexico 52
Micronesia (Federated States of) 691
Moldova (Republic of) 373
Monaco ..... 377 c)
Mongolia 976
Montserrat ..... 1 a)
Morocco (Kingdom of) ..... 21b3)
Mozambique (Republic of) 258
Myanmar (Union of) 95

Namibia (Republic of) 264
Nauru (Republic of) 674
Nepal 977
Netherlands Antilles 599
Netherlands (Kingdom of the) 31
New Caledonia 687
New Zealand 64
Nicaragua 505
Niger (Republic of the) 227
Nigeria (Federal Republic of) 234
Niue 683
Northern Mariana Islands (Commonwealth of the) ... 670
Norway 47

Oman (Sultanate of) 968

Pacific Ocean Region (POR)(Inmarsat) 872
Pakistan (Islamic Republic of) 92
Palau (Republic of) 680
Panama (Republic of) 507
Papua New Guinea 675
Paraguay (Republic of) 595
Peru 51
Philippines (Republic of the) 63
Poland (Republic of) 48
Portugal 351

Qatar (State of) 974

Reunion (French Department of) 262
Romania 40
Russian Federation ..... 7 d)
Rwandese Republic 250

Saint Vincent and the Grenadines ..... 1 a)
Saint Luda ..... 1 a)
Saint Kitts and Nevis ..... 1 a)
Saint Helena 290
Saint Pierre and Miquelon (French Department of) . 508
San Marino (Republic of) 378
Sao Tome and Principe (Democratic Repulic of) 239
Saudi Arabia (Kingdom of) 966
Senegal (Republic of) 221
Seychelles (Republic of) 248
Sierra Leone 232
Singapore (Republic of) 65
Slovak Republic ..... 421 c)
Slovenia (Republic of) 386
Solomon Islands 677
Somali Democratic Republic 252
South Africa (Republic of) 27
Spain 34
Sri Lanka (Democratic Socialist Republic of) 94
Sudan (Republic of the) 249
Suriname (Republic of) 597
Swaziland (Kingdom of) 268
Sweden 46
Switzerland (Confederation of) ..... 41 c)
Syrian Arab Republic 963

Appendix A – Telephone country codes cont'd

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Tanzania (United Republic of) 255
Thailand 66
Togolese Republic 228
Tokelau 690
Tonga (Kingdom of) 676
Trinidad and Tobago (Code actually used: +1) .. 296
Tunisia ..... 21b4)
Turkey 90
Turkmenistan ..... 993 d)
Turks arid Caicos Islands ..... 1 a)
Tuvalu 688

Uganda (Republic of) 256
Ukraine ..... 380 d)
United Arab Emirates ..... 971 h)
United States of America, + Puerto Rico, Virgin Islands ..... 1 a)
United Kingdom of Great Britain and Northern Ireland 44

Uruguay (Eastern Republic of) 598
Uzbekistan (Republic of) ..... 7 d)

Vanuatu (Republic of) 678
Vatican City State 379
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Viet Nam (Socialist Republic of) 84

Wallis and Futuna 681
Western Samoa (Independent State of) 685

Yemen (Republic of) 967
Yugoslavia (Federal Republic of) 381

Zaire (Republic of) 243
Zambia (Republic of) 260
Zanzibar (Tanzania) 259
Zimbabwe (Republic of) 263

Notes

a): Integrated numbering area.
b1): Integrated numbering area with subdivisions: 213, 214 and 215 for Algeria.
b2): Integrated numbering area with subdivisions: 218 and 219 for Libya.
b3): Integrated numbering area with subdivisions: 210, 211, 212 (212 in service) for Morocco.
b4): Integrated numbering area with subdivisions: 216, 217 for Tunisia.
c): Integrated numbering plan.
d): Will form part of numbering zone 7.
e): Code 866 has been allocated to the province of Taiwan.
h:) United Arab Emirates (U.A.E.) incl: Abu Dhabi, AJmna, Dubai, Fujeirah, Ras Al, Khaimah, Sharjah, Umm al Oaiwain.

Appendix A – Service address codes

Location of Antenna Unit

Avoid obstructions

The Antenna ideally requires a free line of sight in all directions above an elevation angle of 5 degrees.

Any obstruction will cause blind sectors, and may result in degradation or even loss of communication with the satellite.

Degrading of the communication is only completely avoided by placing the antenna higher than any obstructions. This is often not feasible and a compromise must be made to reduce the number of blind sectors.

The degree of communication degradation depends on the size of the obstructions; the distance to them must therefore be considered.

Preferably, all obstructions within 3 m of the antenna should be avoided. Obstructions less than 15 cm in diameter can be ignored beyond this distance.

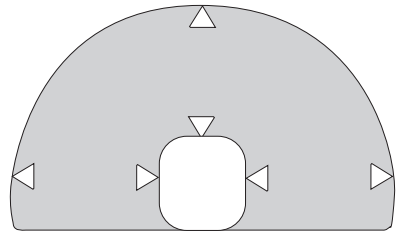
Installation of Antenna Unit on top of mast must be avoided.

Compass safe distance

For installation on Norwegian or British vessels, the Antenna Unit should be located at a distance of at least 1.0 metre from the magnetic steering compass. Be aware that requirements may vary from one country to another.

Radiation precautions

Persons should not be near the antenna when transmitting for periods of more than 1 hour per day.



MICROWAVE RADIATION !
NO ADMITTANCE WITHIN 1 M

Avoid interference

The Antenna Unit should be separated as far as possible from other communication and navigation antennas onboard such as Radar, Satellite, HF/VHF/UHF, GPS antennas etc.. Preferably by 5 metres.

The Antenna Unit should be installed so that severe vibration and shock are avoided. If installed on top of a pipe or signal/radar mast, the mast must be supported by stays.

The equipment is supplied with gasket and a flange for mounting of the Antenna Unit on top of a 42.4 mm outer diameter pipe.

Other installation bracket is optional.

Coax cable

A 12 metre coaxial cable type RG-223 (QRPM 911084-12000) is supplied as standard.
*For greater lengths, see "**Optional antenna cable**".*

The coax cable should be secured by laying the cable in a tube and/ or by fastening the cable to avoid damage.

Telephone Unit (TPU) and Power Supply (PS)

The PS is provided with holes for mounting on desktop or bulkhead with the TPU snapped on top of PS by fastening clips.

The TPU may be installed separately by using 3 metre extension cables between PS and TPU:

- coaxial cable, QRPM 911087-3000
- DC cable, QRPM 911079-3000

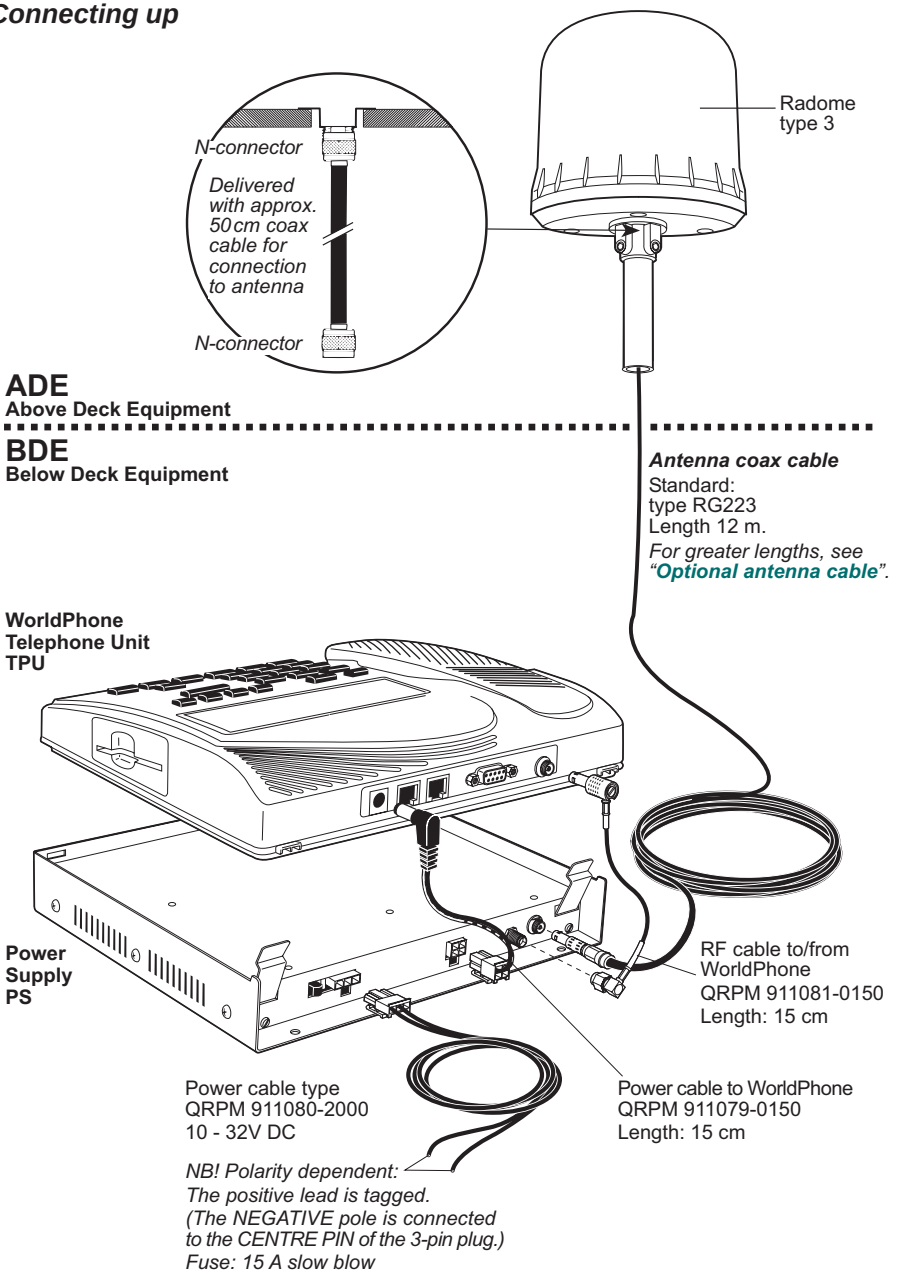
Source of energy

The equipment operates from 10 to 32 Volts DC from any 12V or 24V battery. Maximum average power consumption: 40 W.
Power supply for operation from 230 VAC may be supplied as an option, QBMJ 101002.

Note! *The antenna has been delivered with 3 different types of radomes. The latest version (type 3) is mounted as illustrated on page B-4.*

The earlier versions (type 1 and 2) are mounted as shown on page B-6. Be aware of the condensation drainage through the area around the coax connector for these versions, see illustration.

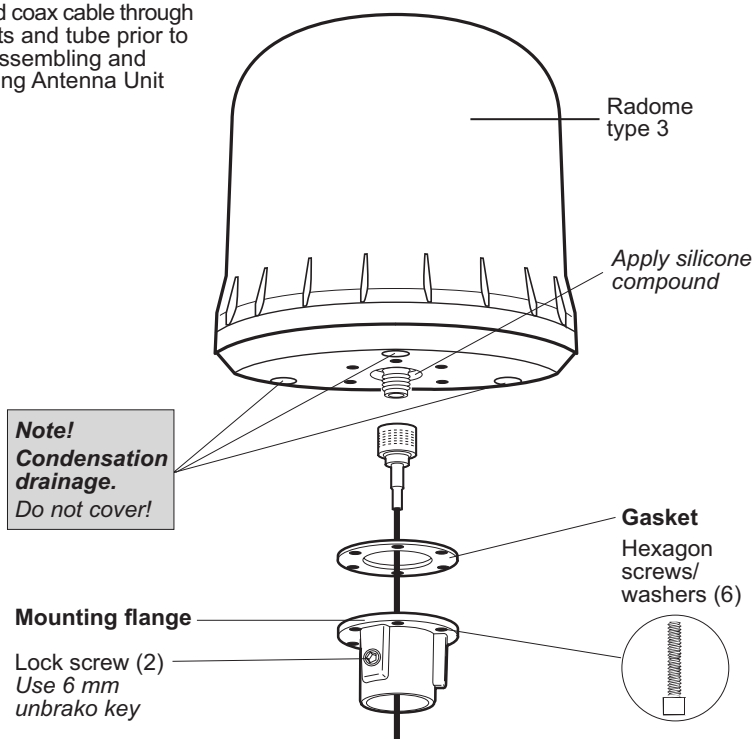
Connecting up



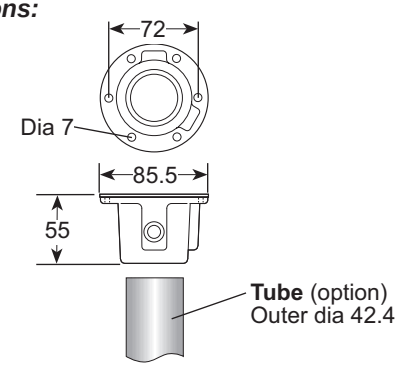
Mounting the Antenna Unit with radome type 3

Procedure:

Thread coax cable through sockets and tube prior to final assembling and installing Antenna Unit

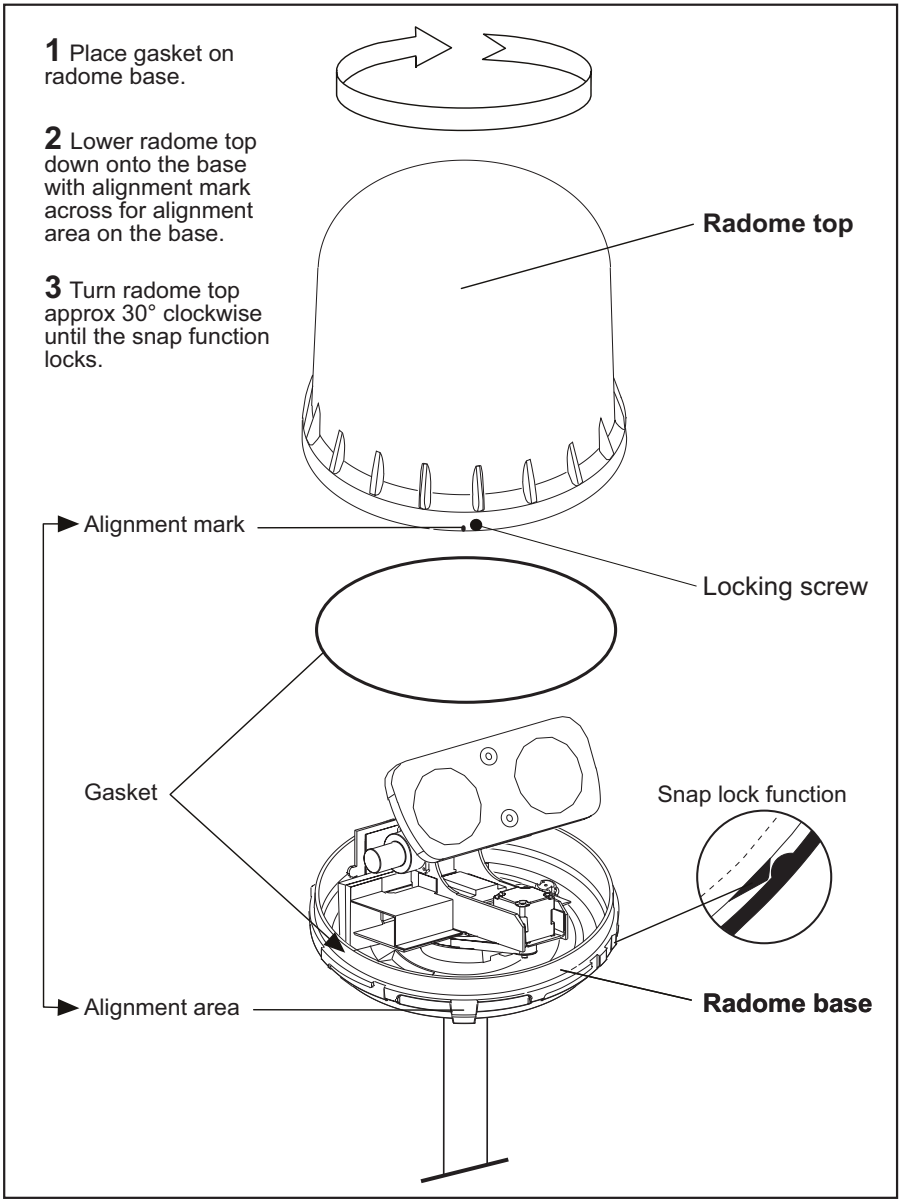


Mounting flange dimensions:



DIMENSIONS IN MILLIMETRES

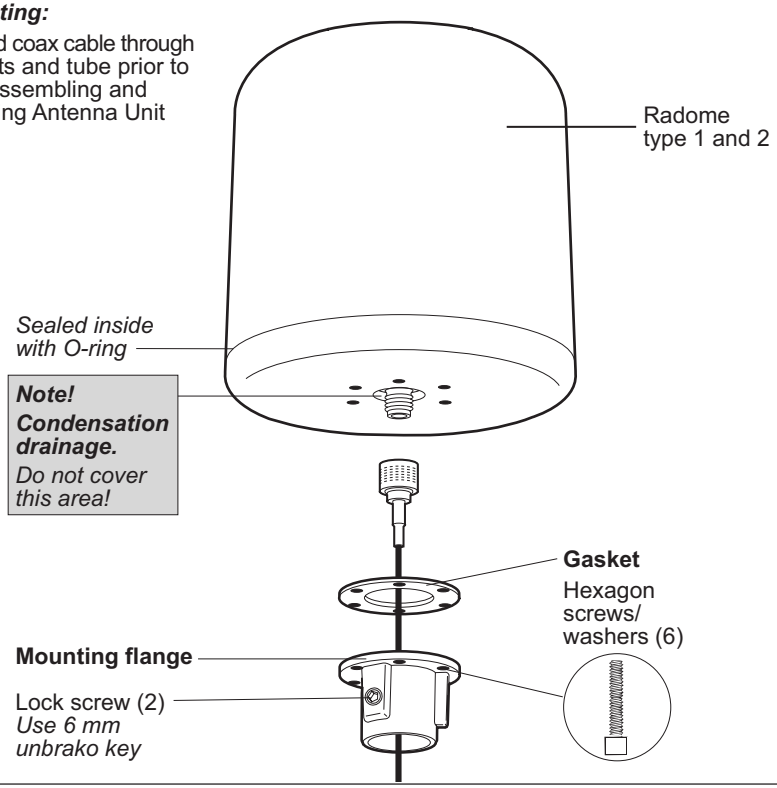
Mounting the radome top of radome type 3



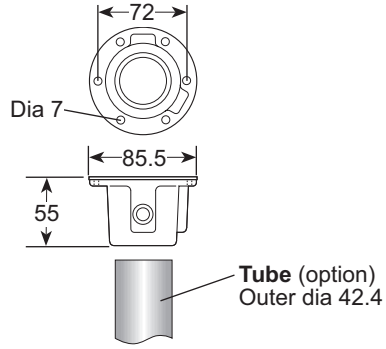
Mounting the Antenna Unit with radome type 1 and 2

Mounting:

Thread coax cable through sockets and tube prior to final assembling and installing Antenna Unit

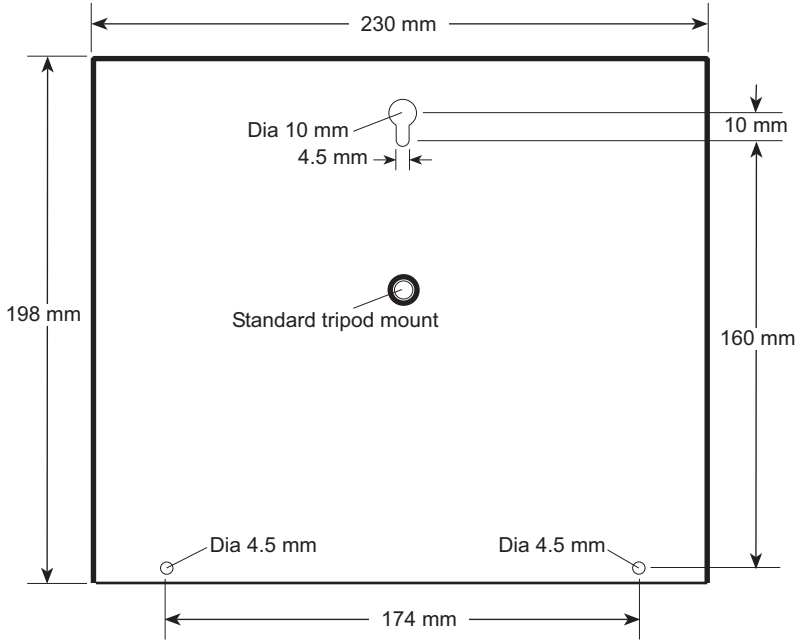


Mounting flange dimensions:



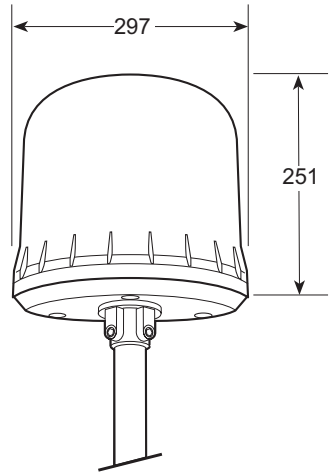
DIMENSIONS IN MILLIMETRES

Mounting the Power Supply



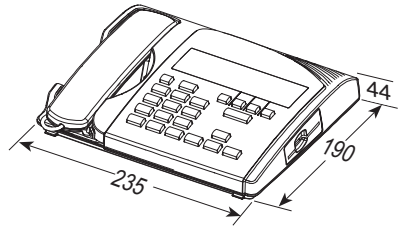
Underside view

Outline dimensions



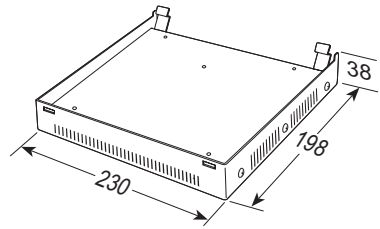
Antenna Unit
QUFF 911980
(antenna only)

Weight: 3.8 kg



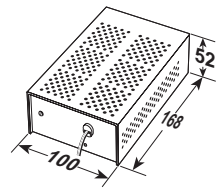
Telephone Unit (TPU)
QUFC 911936

Weight: 1.0 kg



Power Supply (PS)
QUFC 911932

Weight: 1.6 kg



Optional 230 VAC power supply w/AC and DC cables connected.
QBMJ 101004

Weight: 0.65 kg

Antenna Unit

The Antenna Unit should be installed so that severe vibration and shock are avoided.

The equipment is supplied with a magnetic mounting bracket for installation on cars with magnetic-holding roof top.

Mounting option:
Load Carrier Base Assembly for installation on cars with non-magnetic roof material, or for installation on trains.

See illustration on next page.

Coax cable

A 5 metre coaxial cable type GO2232D (QRPM 911086-5000) is supplied as standard.

*For greater lengths, see "**Optional antenna cable**".*

Telephone Unit (TPU) and Power Supply (PS)

The PS is provided with holes for mounting on wall or dash board with the TPU snapped on top of PS by fastening clips. A tripod mount allows the unit to be mounted on the optional suction adapter.

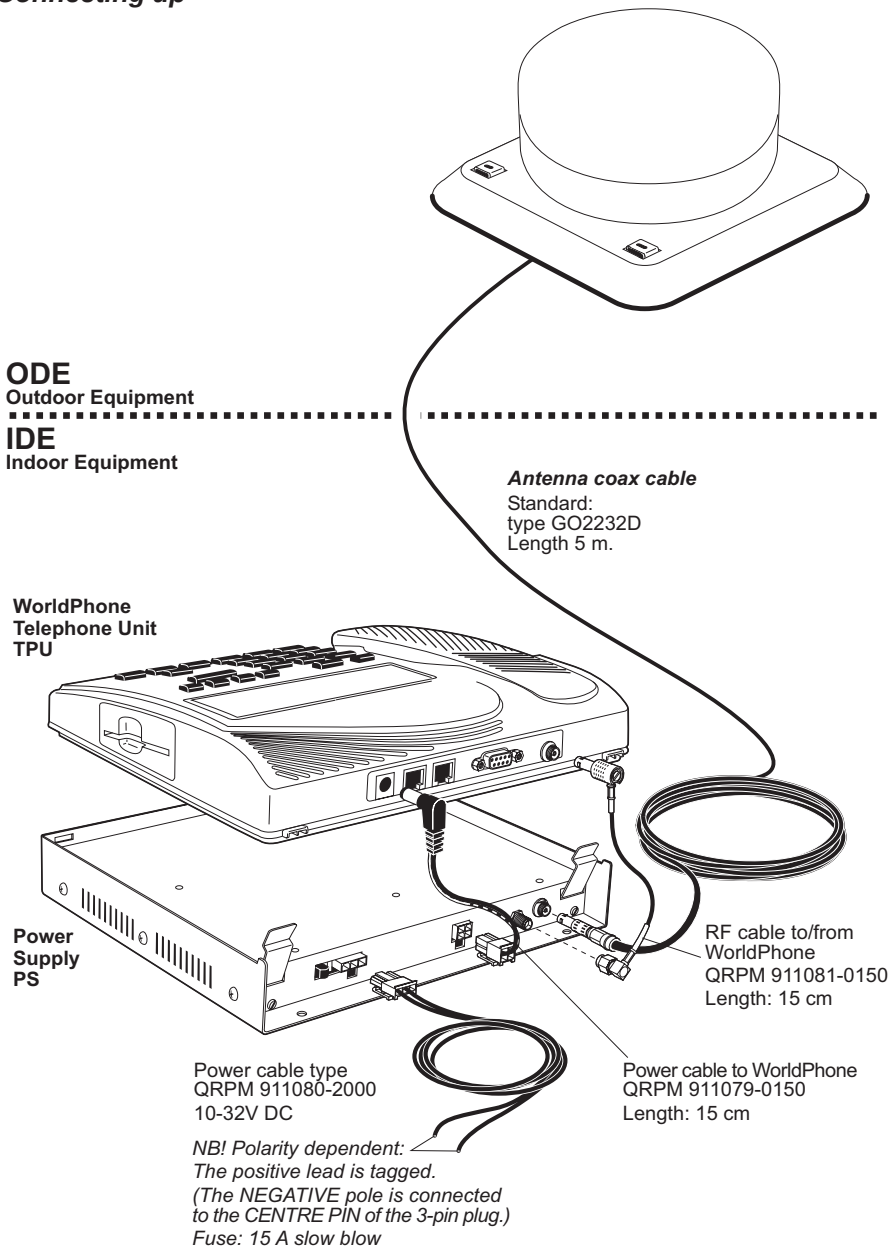
The TPU may be installed separately by using 3 metre extension cables between PS and TPU:

- coaxial cable, QRPM 911087-3000
- DC cable, QRPM 911079-3000

Source of energy

The equipment operates from 10 to 32 Volts DC from any 12V or 24V battery. Maximum average power consumption: 30 W.

Connecting up



Mounting on magnetic-holding surface

The Antenna Unit may be attached to the roof top with a magnetic plate inside the antenna mounting bracket. On a flat, clean metal surface the antenna will stay in place at highway speeds up to 150 km/hour.

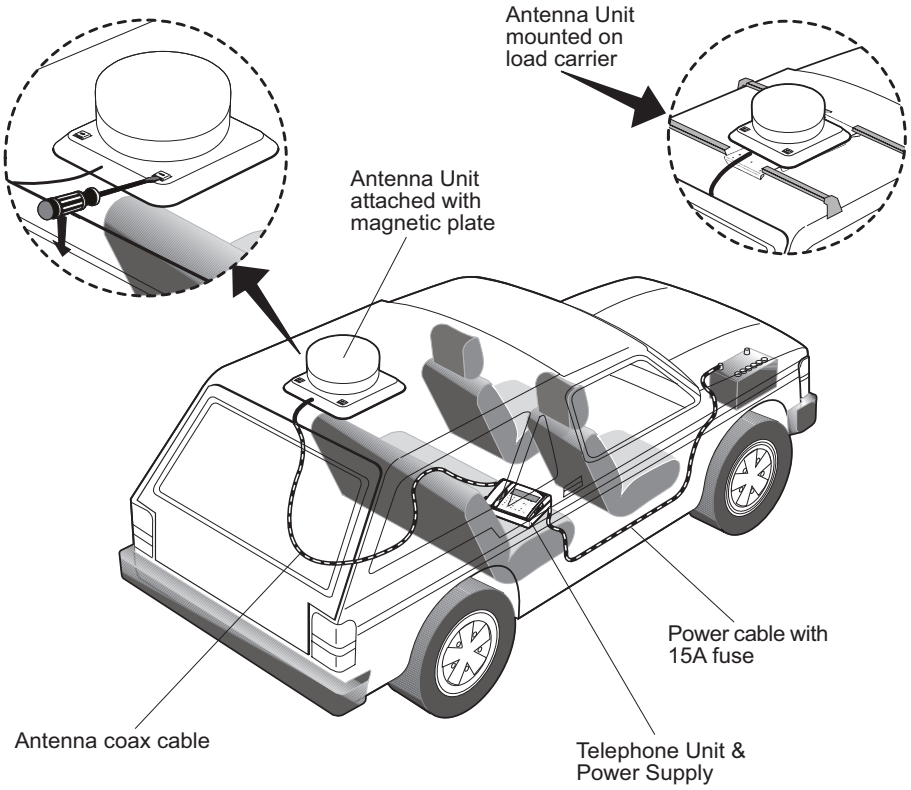
Note! A protection plate is supplied to keep the magnetic plate clean during shipment of the equipment. Remove the protection plate from the magnetic plate prior to attaching the Antenna Unit.

*See "**Assembling the Antenna Unit for magnetic mount**".*

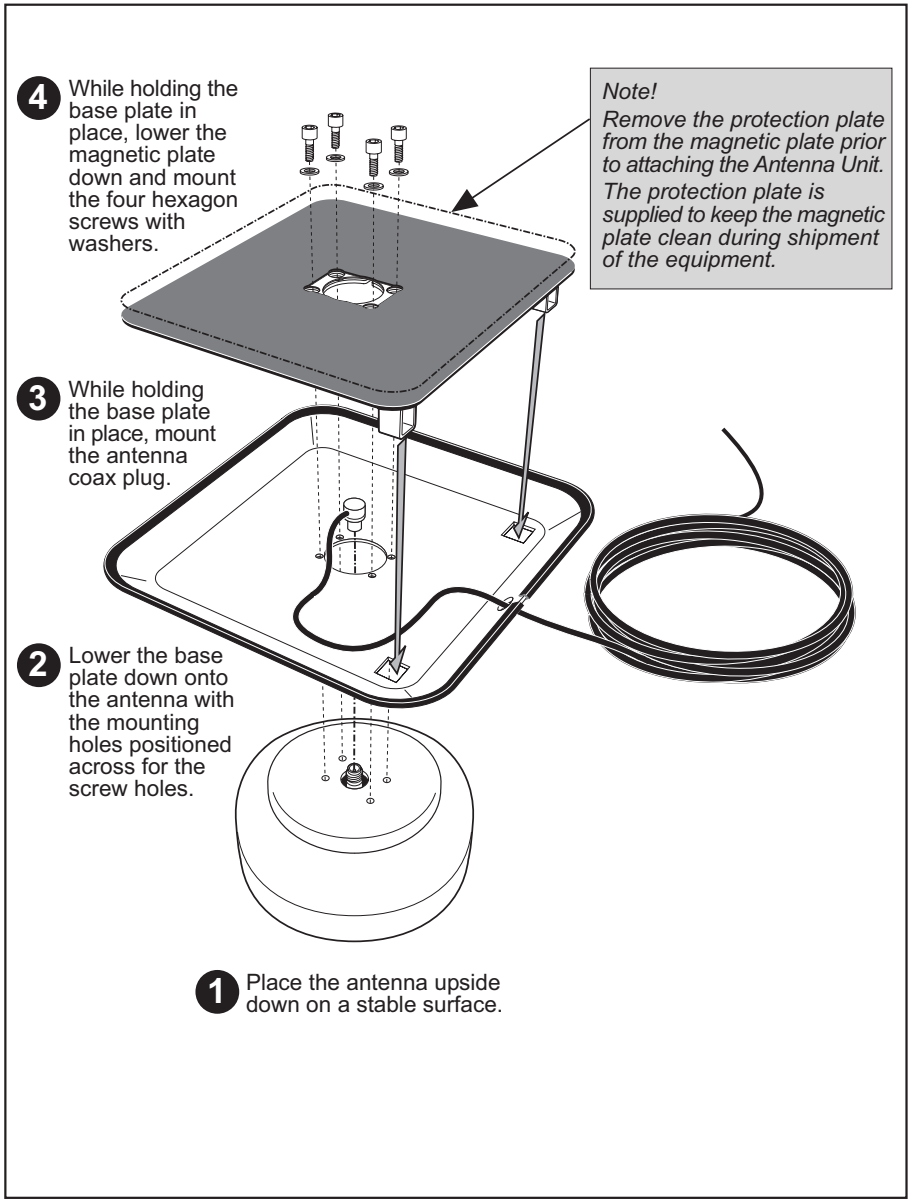
The antenna may be loosened by carefully bending a screwdriver as indicated.

Mounting on load carrier

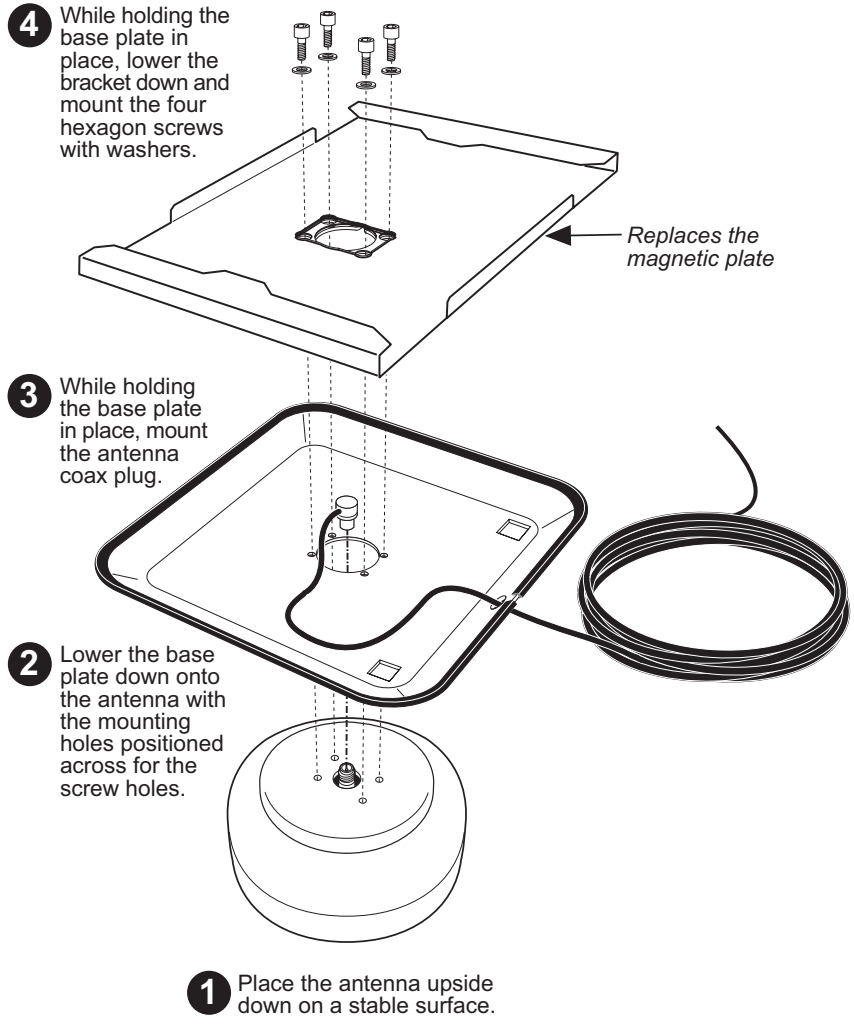
*The Antenna Unit may also be attached to the roof using load carrier as indicated. See "**Assembling the Antenna Unit for load carrier mount**".*



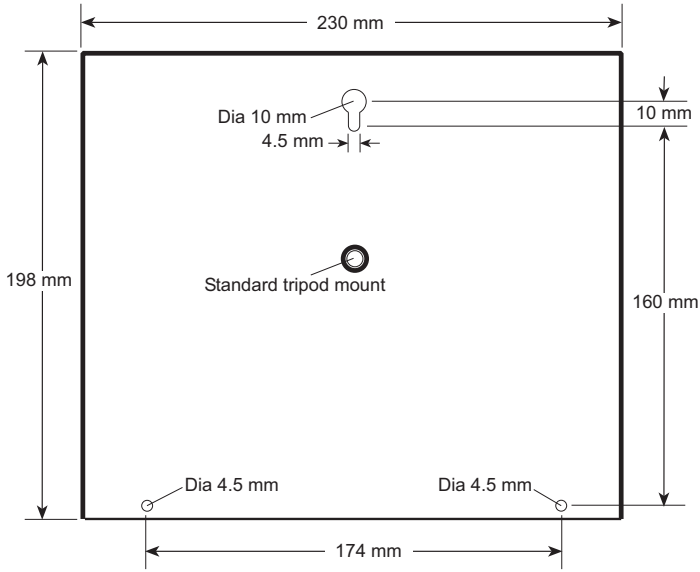
Assembling the Antenna Unit for magnetic mount



Assembling the Antenna Unit for load carrier mount



Mounting the Power Supply

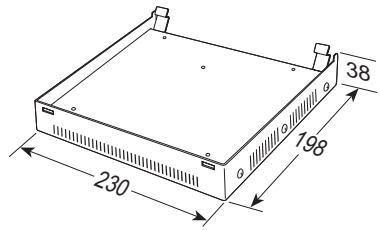


Underside view

Outline dimensions

Power Supply
QUFC 911932

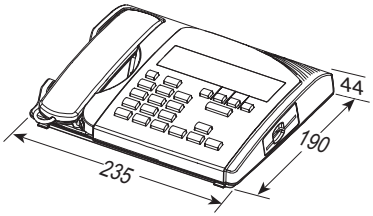
Weight: 1.6 kg



Outline dimensions

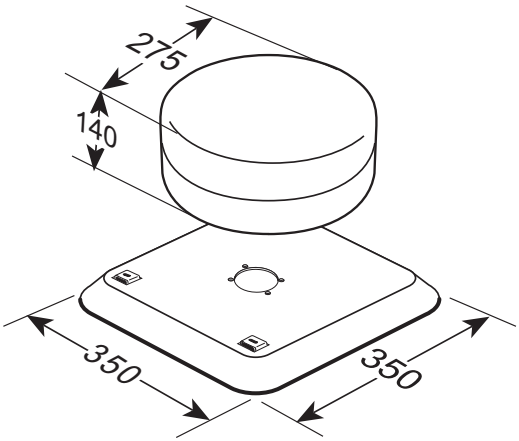
Telephone Unit
QUFC 911936

Weight: 1.0 kg

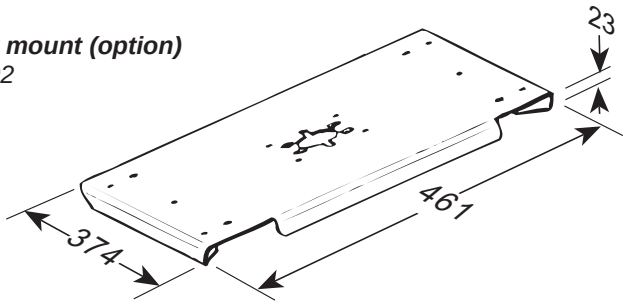


Antenna Unit
QUFF 911905

Weight: 3.0 kg



Load carrier mount (option)
QSXA 911402



Appendix B – Installation of *Provident Antenna*

Satellite search

Before mounting the WorldPhone Provident antenna, look up the relative position of the satellite, *see coverage map in appendix H – System description.*

The antenna must be pointed at the satellite with free line of sight for optimum receiving and transmitting conditions. The beam is perpendicular to the antenna.

When during adjustment of the antenna a satellite signal is received, a short tone will sound. If it is an Inmarsat satellite, a continuous tone will sound with varying frequency. When closing in on a satellite, turning the antenna horizontally and adjusting its vertical angle, the tone should increase in frequency.
See setup procedure for WorldPhone Portable in chapter 1. Getting Started.

Coax cable

A 10 metre coaxial cable type RG-223 (QRPM 911091-10000) is supplied as standard.

*For greater lengths, see "**Optional antenna cable**".*
A bracket is available with N-connector receptacle for connection of extended antenna cable*, see "**Optional bracket**".*

Source of energy

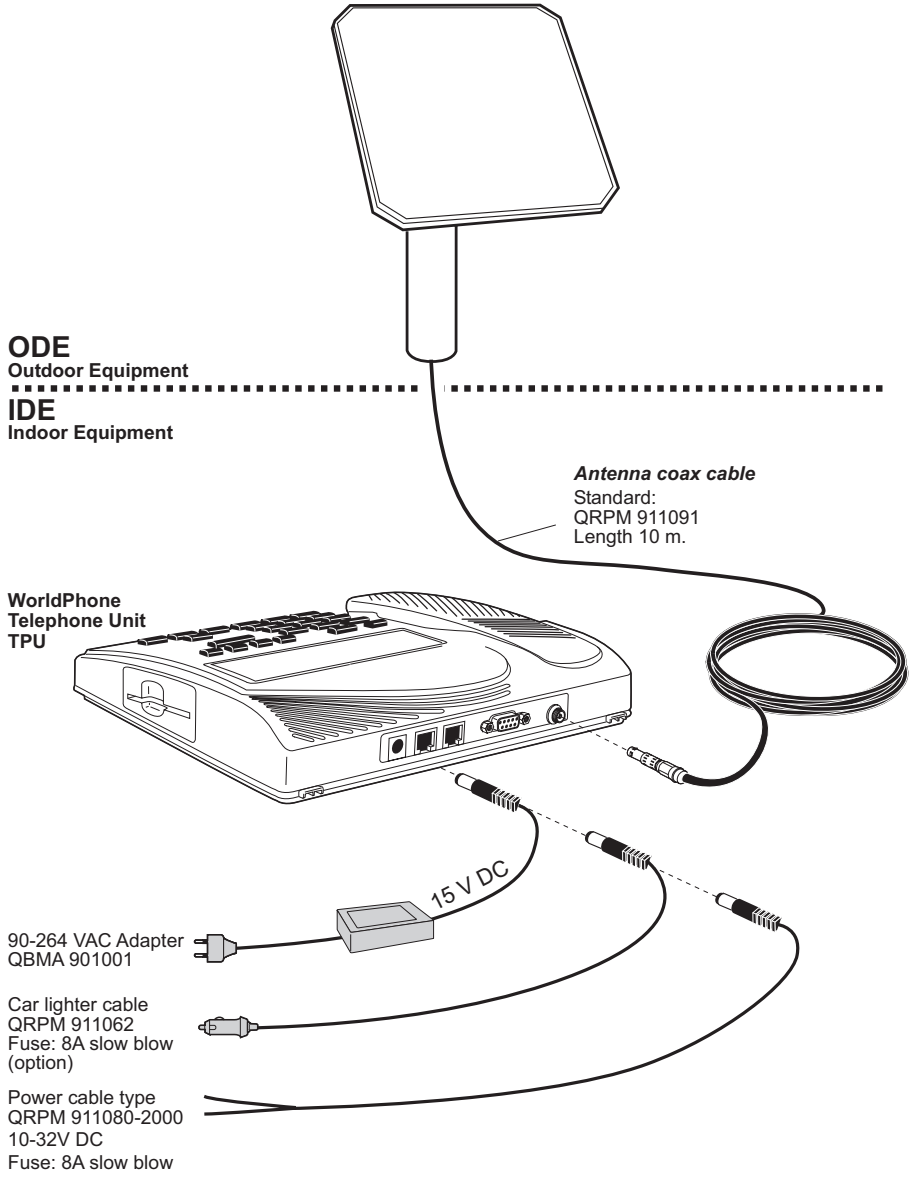
The equipment operates from 10 to 32 Volts DC from any 12V or 24V battery, using the 2 m DC power cable, QRPM 911080-2000. The positive lead of the power cable is tagged.

An adapter is included for operation from 90-264 VAC, QBMA 901001 (1.8 m mains cable).

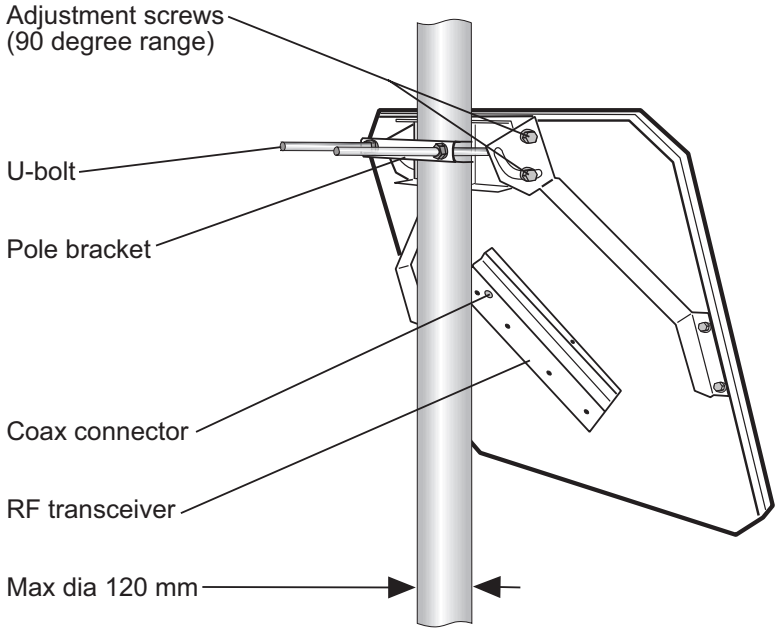
A 2 m car lighter cable can also be supplied, QRPM 911090.

The TPU is delivered with an internal rechargeable battery pack, *see "**Internal battery**" in chapter 1. Getting Started.*

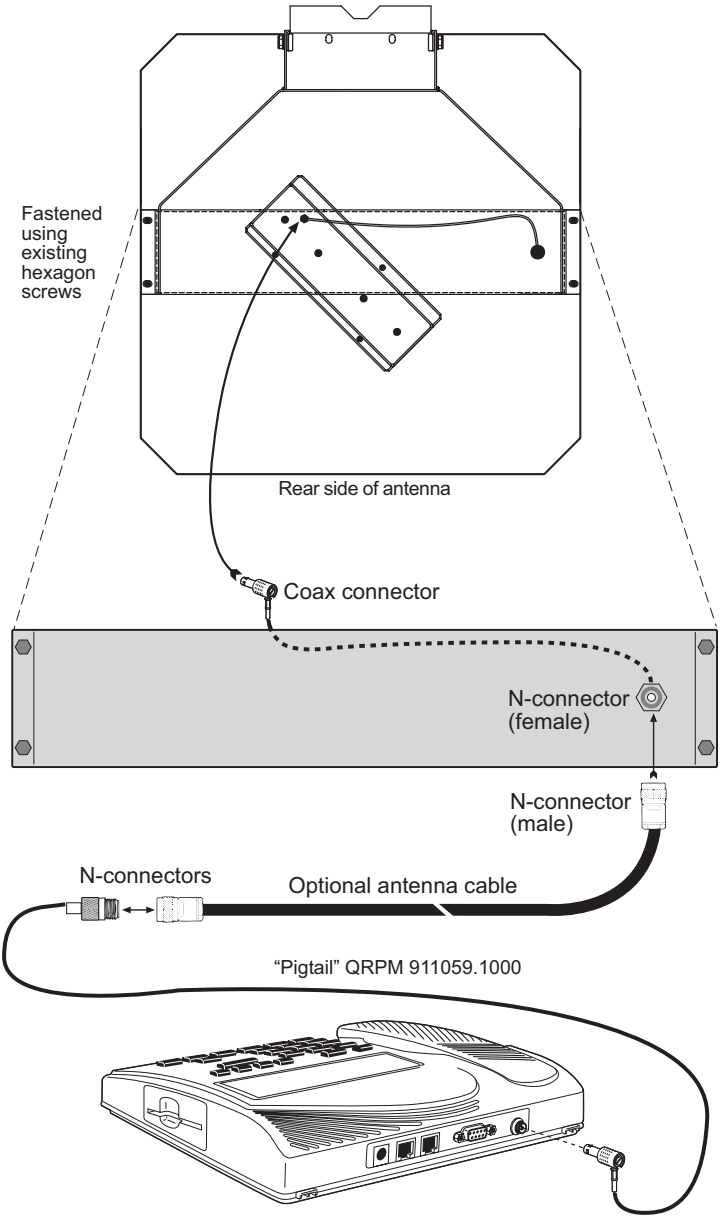
Connecting up



Mounting the Antenna Unit



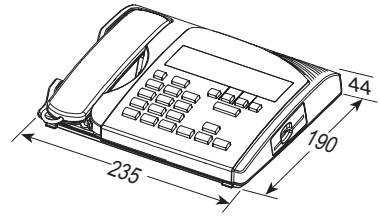
Optional bracket



Outline dimensions

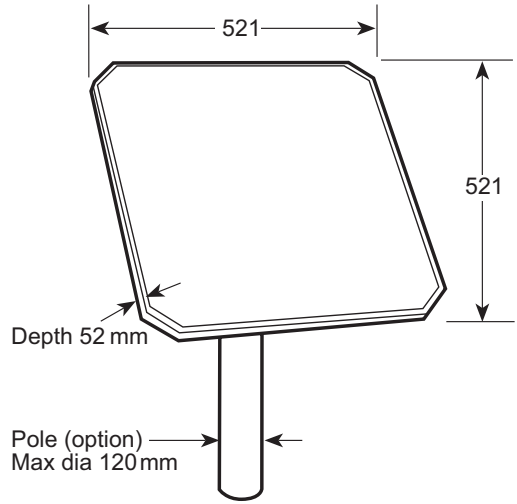
Telephone Unit
QUFC 911936

Weight: 1.0 kg



Antenna Unit
QUFC 911906

Weight: 3.0 kg
(antenna only)



General

Double screen 50 ohm coaxial cable must be used for connection between the TPU and the various Antenna Units.

The coax cable should be secured by laying the cable in a tube and/or by fastening the cable to avoid damage.

A "pigtail" is normally required for connection to the TPU.

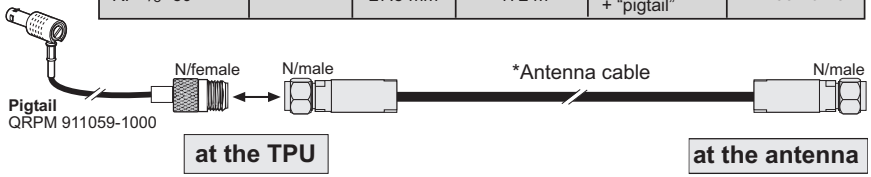
The maximum length of the coax cable is limited by the DC and RF loss through the cable:

Maximum DC loss: R loop 0.6 ohm

Maximum RF attenuation at 1525-1660 MHz: < 10 dB

The table below lists suitable double screened coax cables:

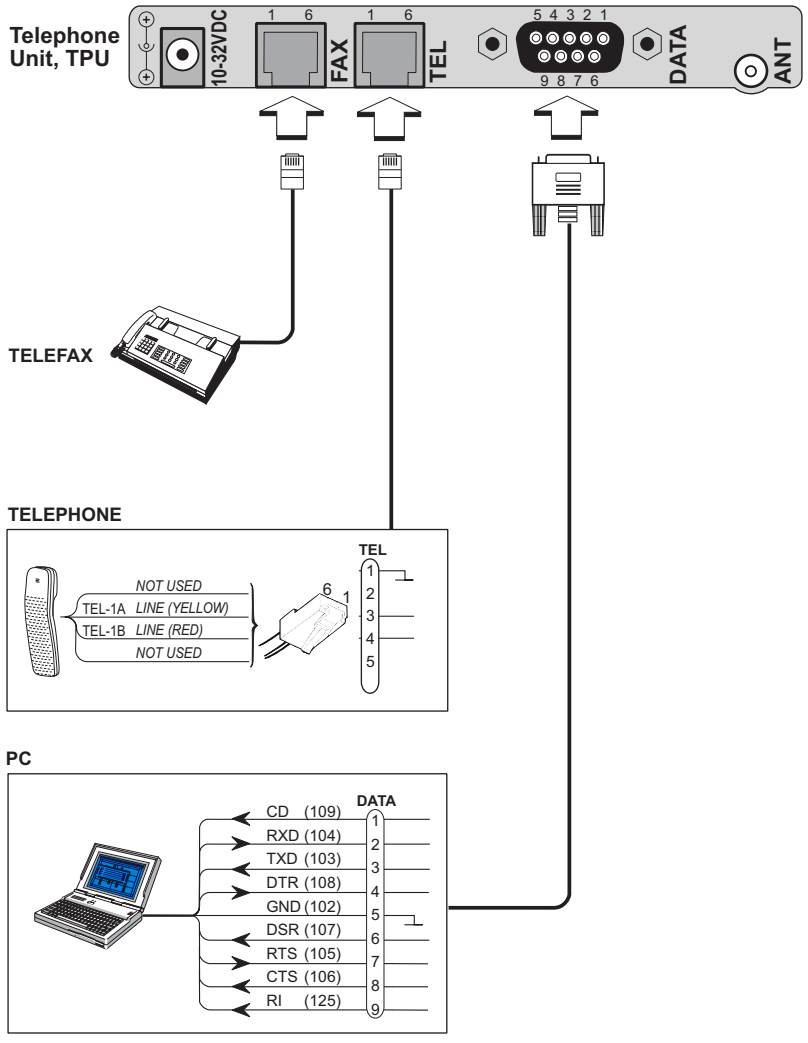
*Antenna cable	Reference	Diameter	max. length for 10 dB/0.6	Suitable coaxial connectors	
				at the TPU	at the antenna
RG214	MIL-C-17	10.8 mm	25 m	11N-50-7-5 + “pigtail”	11N-50-7-5
S 10172 B-10 (QTZC 502 012	—	12.9 mm	75 m	11N-50-10-4 + “pigtail”	11N-50-10-4
RF 1/2” 50	—	16.0 mm	95 m	11N-50-12-115 + “pigtail”	11N-50-12-115
RF 7/8” 50	—	27.5 mm	172 m	11N-50-23-101 + “pigtail”	11N-50-23-101



Ready-made cables

The following cable extensions are delivered with coax connectors mounted:

10 m cable	QRPM 911091-10000
28 m cable	QRPM 911057-28000
80 m cable	QRPM 911058-80000


Telephone Unit, TPU
10-32V/DC
1 6
FAX
1 6
TEL
5 4 3 2 1
9 8 7 6
DATA
ANT
TELEFAX
TELEPHONE
TEL
NOT USED
TEL-1A LINE (YELLOW)
TEL-1B LINE (RED)
NOT USED
6 1
1
2
3
4
5
PC
DATA
CD (109) 1
RXD (104) 2
TXD (103) 3
DTR (108) 4
GND (102) 5
DSR (107) 6
RTS (105) 7
CTS (106) 8
RI (125) 9

Appendix C – Battery charging

(WorldPhone Portable/Provident only)

Handling

A new battery, or a battery that has not been used for a long time, will require 2 - 3 charge/discharge cycles to achieve its maximum performance with normal use of the WorldPhone.

To discharge the battery use the phone until it shuts down.

Avoid charging a fully charged or nearly charged battery.

Never leave the battery in hot sunlight. Extreme temperatures may cause permanent reduction of the battery capacity.

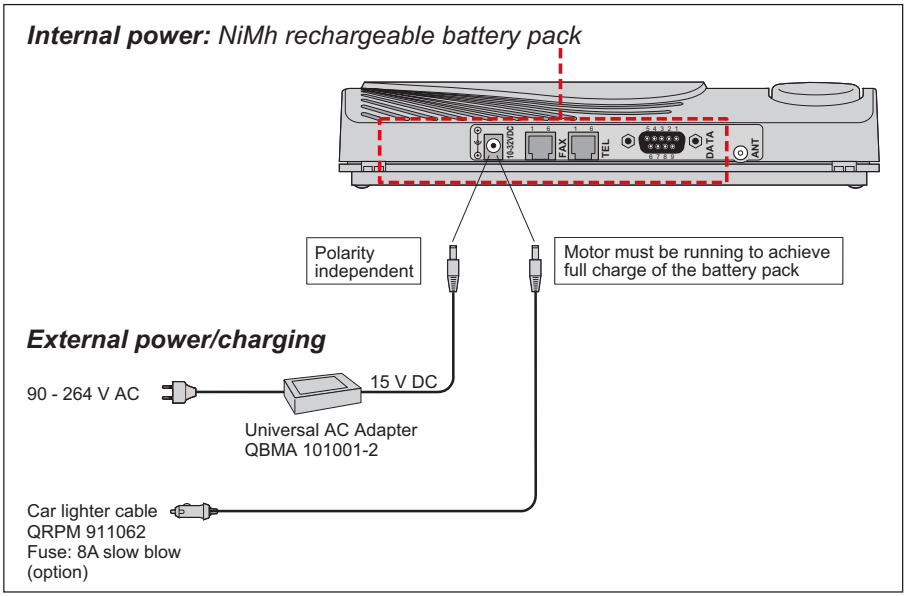
Charging

The charging starts automatically once the universal AC adapter or the car lighter cable is connected to the power source, and terminates automatically when the battery is fully charged.

*Note! When running the WorldPhone on the universal adapter alone (no battery installed), the battery symbol in the display is replaced by "**DC**".*

Calibration

To ensure correct monitoring of the battery state, it must be fully discharged before charging the battery pack for the first time.



Charger

The WorldPhone Charger allows separate charging of a single battery pack.

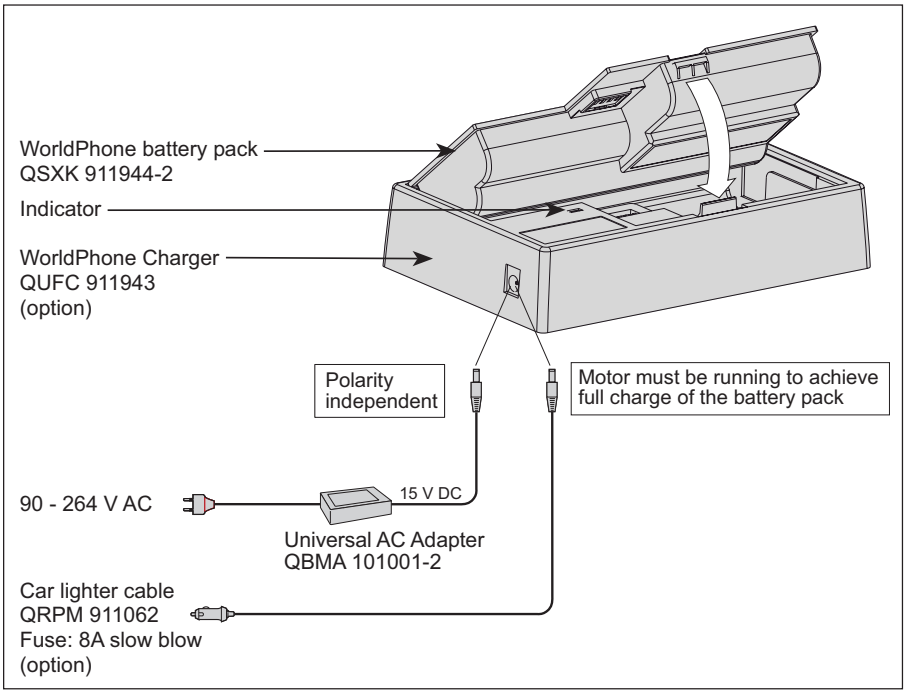
Operation:

1 The indicator lights green when connecting the charger to the power source without battery inserted.
No light indicates that power is not supplied to the charger: check cables.

2 When inserting a battery that is not fully charged, red light indicates that charging takes place.

3 Green light indicates that the battery is fully charged. A fully discharged battery is charged in approximately 3 hours.

Note!
The battery may be stored or transported in the charger without any risk of drainage apart from self-discharge.



Slide back lock to release battery pack

Battery pack
QSXK 911944-2

General

The **AT** command set allows you to configure the WorldPhone ASD function directly from your PC keyboard. The AT characters are a prefix to the commands you issue to the WorldPhone's ASD service. *Most communication applications do not require knowledge of AT commands.*

Every time you type AT, you are essentially asking for the WorldPhone ASD's **AT**tention. For instance, if you want to answer an incoming data call, you would type ATA to answer: A T A ↵ R

When a value associated with a command is not entered, it is assumed to be 0, f.ex.: A T & D equals A T & D 0.

Hanging up – escape sequence

Once the the WorldPhone ASD is online to another system, the only command it recognises is an **escape code** that contains three typed pluses, (+) which forces the WorldPhone ASD back to **command mode**.

The following should be done, when issuing the escape command:

- Wait one second after sending the last item of data.
- Type + + + with less than one second between the characters.
- Wait one second, an "OK" response should appear.

Do not type the AT prefix or Carriage Return. The guard time of one second before and after the code prevents the WorldPhone ASD from misinterpreting the occurrence of +++ in the transmitted data stream.

If necessary, the character used in the escape code or the duration of the guard time can be changed by altering Register S2 or S12, *see* ***S-register commands****.*

- In response to + + +, the WorldPhone ASD returns to command mode.
- To hang up, key A T H ↵ R
- To return to online mode, key A T O ↵ R

Operating modes

The WorldPhone ASD function may operate in three modes:

- ***Command mode***
  The WorldPhone ASD responds to AT commands. No remote communication occurs.
- ***Online command mode***
  A data call is taking place and an escape sequence has been initiated, after which the WorldPhone ASD will respond to **AT** commands during the call.
- ***Online data mode***
  Once the WorldPhone ASD is connected up, anything arriving from the PC is interpreted as data and sent to the remote end and vice versa.

Basic AT commands

*Note! AT commands may be entered in **either** upper or lower case (not mixed).*

A T A ↵ R

instructs the WorldPhone ASD to connect the line and start the answer sequence of the incoming call. Used when not configured for auto answer.

A T D 0 0 4 7 6 7 2 4 4 7 0 0 ↵ R

*instructs the WorldPhone ASD to dial the number **00 47 67 24 47 00** via the default Net service provider.*

A T D 4 * 0 0 4 7 6 7 2 4 4 7 0 0 ↵ R

*instructs the WorldPhone ASD to dial the number **00 47 67 24 47 00** via the selected Net service provider, e.g. Telenor (Norwegian Telecom, code no.4).*

A T D 2 3 1 1 ↵ R *dials the telephone number stored under short number 11.*

A T E **[n]** ↵ R

sets local echo of keyboard commands on/off:

A T E 0 ↵ R turns local echo **OFF**.

Default A T E 1 ↵ R turns local echo **ON**.

A T H ↵ R

hook control:

A T H ↵ R sets the WorldPhone ASD ON-hook when in Online Data Mode. Disconnects the line and terminates the call.

A T O ↵ R

returns to Online Data Mode when in Online Command Mode during a data call.

A T Q **[n]** ↵ R

sets responses sent by the WorldPhone ASD:

Default A T Q 0 ↵ R : the WorldPhone ASD **returns** responses like OK or ERROR.

A T Q 1 ↵ R : the WorldPhone ASD does not return responses.

A T S *sets and displays S register values. See "**S-Register Commands**".*

A T V **[n]** ↵ R

sets the WorldPhone ASD response format to words or numbers:

A T V 0 ↵ R selects **numeric** response.

Default A T V 1 ↵ R selects **verbal** response.

A T X **[n]** ↵ R

selects CONNECT result code format (dial tone detection – busy detection):

A T X 0 ↵ R

basic message set: OK, CONNECT, RING, NO CARRIER, ERROR.

A T X 1 ↵ R

basic message set extended with CONNECT xxxx-yyyy.

A T X 2 ↵ R

basic message set extended with NO DIALTONE.

A T X 3 ↵ R

basic message set extended with BUSY.

Default A T X 4 ↵ R

basic message set extended with all of the above.

resets the WorldPhone ASD configuration to last saved command. Also clears the call if used when in Online Command Mode.

repeats last command.
Re-executes the last AT command string issued to the WorldPhone ASD, including redialing a telephone number.

Extended AT commands

AT&C**[n]** ↵R

determines the Data Carrier Detect (DCD) behaviour:

AT&C0 ↵R sets DCD always ON.

Default AT&C1 ↵R sets DCD, only when connected.

AT&D**[n]** ↵R

selects the Data Terminal Ready (DTR) behaviour:

AT&D0 ↵R the WorldPhone ASD ignores DTR.

AT&D1 ↵R the WorldPhone ASD enters Online Command Mode when DTR goes inactive.

Default AT&D2 ↵R the WorldPhone ASD **clears call** when DTR goes inactive.

AT&F ↵R

*resets the WorldPhone ASD to factory **default**. The factory default is not saved as with the AT&W command, so ATZ revokes to last saved values.*

AT&S**[n]** ↵R

selects the Data Set Ready (DSR) behaviour:

Default AT&S0 ↵R sets DSR permanently ON.

AT&S1 ↵R sets DSR ON when satellite link is established.

AT&V ↵R

displays stored configuration profile.

AT&W ↵R

saves active configuration profile.
(May be recalled using ATZ ↵R*).*

Extended AT+I, +G and +W commands

The extended AT+I, AT+G and AT+W commands are non-standard features some of which are designed specially for the Inmarsat Mini-M system.

AT +GCAP ↵R

displays capabilities supported by WorldPhone terminals.

AT +GMI ↵R

displays manufacturer identification.

AT +GMM ↵R

displays equipment identification.

AT +GMR ↵R

displays software revision.

AT +ICF =[**n**<format>] [**,m**<parity>] ↵R

specifies the local serial port start-stop (asynchronous) character framing between the PC and the WorldPhone.

AT +ICF ? ↵R

displays current settings.

AT +ICF =? ↵R

displays available settings.

Format reference number **n** :

1 = 8 data bits, 2 stop bits

Default **3** = 8 data bits, 1 stop bit

4 = 7 data bits, 2 stop bits

5 = 7 data bits, 1 parity bit, 1 stop bit

Parity reference number **m** :

0 = odd

1 = even

2 = mark

Default **3** = space

Example:

specifies a data format of 8 data bits,1 stop bit and space parity.

specifies the local flow control between the PC and the WorldPhone.

displays current settings.

displays available settings.

WorldPhone - to - PC, reference number **n** :

0 = no flow control

1 = XON/XOFF (software flow control stripped of control characters.)

Default **2** = RTS (hardware flow control)

3 = XON/XOFF (software flow control with pass-through of control characters.)

PC - to - WorldPhone, reference number **m** :

0 = no flow control

1 = XON/XOFF (software flow control)

Default **2** = CTS (hardware flow control)

specifies the data rate at which PC - WorldPhone interface accepts commands.

AT+IPR ? ↵R

displays current settings.

AT+IPR =? ↵R

displays available settings.

Selectable data rates, **r** :

1200 bps
2400 bps
4800 bps
9600 bps
19200 bps
38400 bps

Example:

AT+IPR =9600 ↵R

specifies a data rate of 9600 bps between the PC and the WorldPhone telephone unit.

AT+W ↵R

indicates which PCCA standard the WorldPhone ASD complies with.

AT+WKSIZE =**[n]** ↵R

sets the maximum ARQ window size for subsequent data calls using ARQ mode. The ARQ window determines the size of the buffer that keeps in memory data not yet acknowledged by the other end.

AT+WKSIZE ? ↵R

displays current settings.

AT+WKSIZE =? ↵R

displays available settings.

Valid value of **n** = 1 - 63

Default **WorldPhone : n** = 15

AT +WINMARSAT ↵R

lists Inmarsat specific functions supported by the WorldPhone ASD.

AT +WLES =**[n]** ↵R

selects the Net service provider for the next outgoing call.

The parameter **nnn** specifies the Net service provider Access Code. Three digits must be keyed in. If omitted, the default Net service provider set from the WorldPhone is selected.

Range = 0 - 255

nnn = 000, default Net service provider.

AT +WNERAHSHAKE =**[n]** ↵R

selects handshake setup.

n = 1 fills the WorldPhone buffer before handshaking with the Net service provider.

Default **n** = 0 routes handshake transitions from the PC directly to the Net service provider. Minimizes transmission delays when handshake is used seldom.

AT +WRATE =**[<sat_rate>]** [,**<ter_rate>**] ↵R

sets the wanted satellite data rate, and the terrestrial data rate used for outgoing data calls.

AT +WRATE ? ↵R

displays selected rates.

AT +WRATE =? ↵R

displays available rates.

Sat_rate, i.e. requested data rate to use over satellite channel, for WorldPhone permanently set to:

2400 bps

Ter_rate, i.e. data rate to use on terrestrial modem:

1200 bps
2400 bps
4800 bps
Default 9600 bps
14400 bps

Example:

AT +WRATE =2400,2400 ↵R

sets both the satellite rate and the terrestrial modem rate to 2400 bps.

AT +WRTL =[**<low>**] [**,<high>**] ↵R *sets the lower and upper threshold level in bytes of the buffer used in the Net service provider-to-WorldPhone direction (**WorldPhone receive buffer**).*

AT +WRTL ? ↵R

displays selected threshold levels.

AT WRTL =? ↵R

displays available threshold levels.

The **low** parameter specifies the lower threshold at which point the WorldPhone ASD should issue an RR (Receiver Ready) packet signalling that it is ready to receive data from Net service provider:

Valid value: 0-511

Default value: 120

The **high** parameter specifies the upper threshold at which point the WorldPhone ASD should issue an RNR (Receiver Not Ready) packet signalling that it is not ready to receive any more data from Net service provider:

Valid value: 1-512

Default value: 240

Note! The high value must be larger than the low value. When the high value is omitted, it becomes low value + 120.

AT+WS45 =**[n]** ↵R

sets the requested satellite and terrestrial error correction scheme for data calls.

AT+WS45 ?↵R

displays current setting.

AT WS45 =?↵R

displays available setting.

Parameter reference number

n *:*	*Sat. err.corr.*	*Terr. err.corr.*	*End-to-end*
0	non-ARQ	non-V.42	NARQ
Default **1**	ARQ	V.42	ARQ
200	non-ARQ	V.42	NARQ
201	ARQ	non-V.42	NARQ

AT+WS46 ?↵R

shows that the Inmarsat Mini-M ASD standard is to be used for data communication. This is fixed and may not be changed.

AT+WTNID =**[<nnn>]** ↵R *sets the terrestrial network for the next outgoing data call.*

AT+WTNID ?↵R

displays selected TNID.

AT+WTNID =?↵R

displays available TNIDs.

The parameter **nnn** specifies the terrestrial network ID. If omitted, it is set to **000**.

Range = 0 - 255

nnn = 000, terrestrial network unspecified.

A T + W T T L = **[<low>] [,<high>]** ↵ R *sets the lower and upper threshold level in bytes of the buffer used in the WORLDPHONE-to-Net service provider direction (**WorldPhone transmit buffer**).*

A T + W T T L ? ↵ R
displays selected threshold levels.

A T W T T L = ? ↵ R
displays available threshold levels.

The **low** parameter specifies the lower threshold at which point the WorldPhone ASD should issue an XON, or raise the CTS line signalling that it is ready to receive data from the PC:

Valid value: 0-511

Default value: 120

The **high** parameter specifies the upper threshold at which point the WorldPhone ASD should issue an an XOFF, or lower the CTS line signalling that it is not ready to receive data from the PC:

Valid value: 1-512

Default value: 240

Note! The high value must be larger than the low value. When the high value is omitted, it becomes low value + 120.

A T + W X R = **[n]** ↵ R
determines the format of a CONNECT response from the WorldPhone ASD.

A T + W X R ? ↵ R
displays selected format.

A T + W X R = ? ↵ R
displays available formats.

Format reference number **n** :

0 = CONNECT <*see below** >

1 = +WXSR:<satellite rate>,<ARQ I NARQ>
+WXTR:<terrestrial rate>,<ARQ I NARQ>
+WXKR:<ARQ window size>
CONNECT <PC-WP rate>

Default **2** = CONNECT <*see below** >,<ARQ I NARQ>

3 = CONNECT <ARQ I NARQ>

* *The lowest value of PC-WP rate, satellite rate and terrestrial rate.*

S-Register commands

S-registers are special memory locations in the WorldPhone for storing specific configuration and operating parameters.

AT S0 = **[n]** ↵ R

specifies automatic answer at the nth ring.
***0*=OFF, *1-255*=ON.**

AT S0 = **<n>** ↵ R

sets value of register.

AT S0 ? ↵ R

displays current value of register.

Default AT S0 = 0 ↵ R turns automatic answer **OFF**.

AT S0 = 1 ↵ R answers after 1 ring.

*the WorldPhone ASD will terminate incoming calls after **95 secs**.*

AT S2 = **[n]** ↵ R

stores the ASCII decimal code for the escape character. Authorized codes within: 0 to 255.
***n >=128** disables the escape sequence.*

AT S2 = **<n>** ↵ R

sets value of register.

AT S2 ? ↵ R

displays current value of register.

Default AT S2 = 4 3 ↵ R sets the ESCAPE code to **43** (+-key).

AT S3 = **[n]** ↵ R

stores the ASCII decimal code for the carriage return character. Authorized codes within: 0 to 127.

AT S3 = **<n>** ↵ R

sets value of register.

AT S3 ? ↵ R

displays current value of register.

Default A T S 3 = 1 3 ↵ R sets the CARRIAGE RETURN code to **13** (↵ R -key).

A T S 4 = **[n]** ↵ R

stores the ASCII decimal code for the line feed character. Authorized codes: 0 to 127.

A T S 4 = **<n>** ↵ R

sets value of register.

A T S 4 ? ↵ R

displays current value of register.

Default A T S 4 = 1 0 ↵ R sets the LINE FEED code to **10**.

A T S 5 = **[n]** ↵ R

stores the ASCII decimal code for the editing character. Authorized codes: 0 to 127.

A T S 5 = **<n>** ↵ R

sets value of register.

A T S 5 ? ↵ R

displays current value of register.

Default A T S 5 = 8 ↵ R sets the BACK SPACE code to **8**.

A T S 2 5 = **[n]** ↵ R

sets delay before examining DTR (108/2) after dialing and when online with a WorldPhone-to-Net call.

Range: 0-255 hundredths of a second.

A T S 2 5 = **<n>** ↵ R

sets delay value.

A T S 2 5 ? ; ↵ R

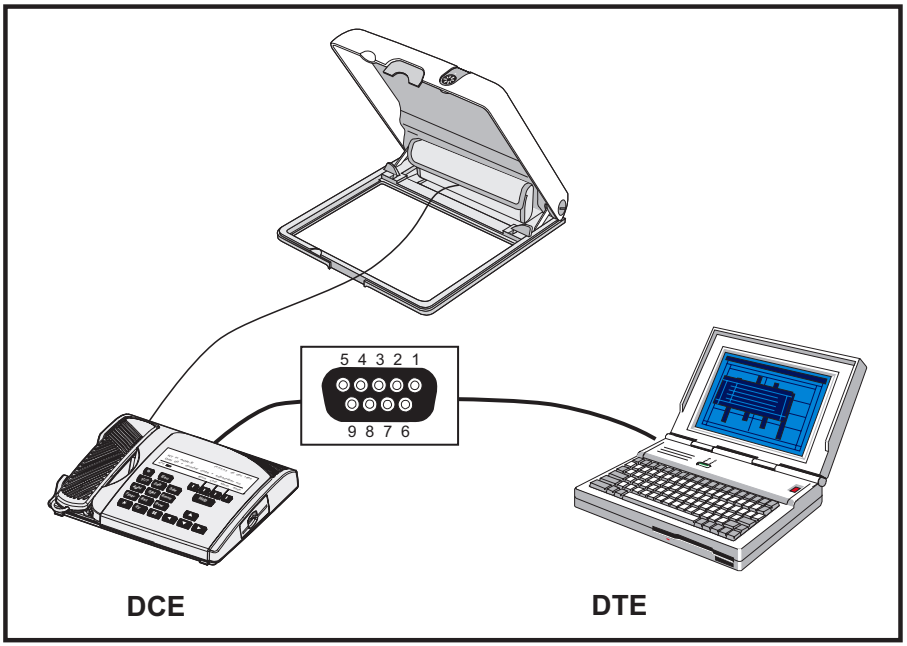
displays current delay value.

Default A T S 2 5 = 5 ↵ R sets delay to **5** (corresponding to 50 milliseconds).

Pin assignments

Pin number	*Mne-monic*	*Circuit*	*DIN*	*CCITT circuit*	*Signal source*	*Description*
1	CD			109	DCE	Carrier detect
2	RXD	BB	D1	104	DTE	Received Data
3	TXD	BA	D2	103	DCE	Transmitted Data
4	DTR			108	DTE	Data terminal ready
5	GND			102		Signal ground
6	DSR			107	DCE	Data set ready
7	RTS	CA	S2	105	DTE	Request To Send
8	CTS	CB	M2	106	DCE	Clear To Send
9	RI			125	DCE	Ring indicator

Signal source DTE means the signal goes from the PC to the WorldPhone.
Signal source DCE means the signal goes from the WorldPhone to the PC.



Signal descriptions

102 Signal Ground
Digital ground, return line.

103 Send Data
Data transmitted from DTE (PC) to DCE (WorldPhone).

104 Receive data
Data Received from DCE (WorldPhone) to DTE (PC).

105 Request To Send
OFF requests DCE (WorldPhone) to suspend transmission to DTE (PC).
ON requests DCE (WorldPhone) to resume transmission to DTE (PC).

106 Clear to send
OFF indicates that DCE (WorldPhone) cannot accept data from DTE (PC).
ON indicates that DCE (WorldPhone) is prepared to accept data from DTE (PC).

107 Data Set Ready
Signal from WorldPhone that when ON indicates that a data call setup is in progress.

108 Data Terminal Ready
Signal from PC. This signal is used in the Hotline mode and indicate when going from OFF to ON that the PC wants to make a data call. The PC clears the call by setting the signal from ON to OFF.

109 Receive Signal Indicator
Signal from WorldPhone that when ON indicates that connection is established and received data will be delivered on circuit 104, Received Data.

125 Ring Indicator
Signal from WorldPhone. This signal is used in the Auto answer OFF mode and when ON indicates that an incoming call is in progress. The signal will go OFF when the call is answered by the PC by turning circuit 108 Data Terminal Ready ON.

General

The WorldPhone can be programmed to allow operation of encrypted speech through the TEL port and the FAX port when this is configured for voice service. *Settings can only be made in Owner level.*

The STU IIB/III is *enabled as default* on ports configured for voice service.

STU enabling/disabling

1 Press the **Menu** function key and scroll down to **Advanced functions**:

2 Press **Selct** or **right arrow** and scroll down to **Configuration**:

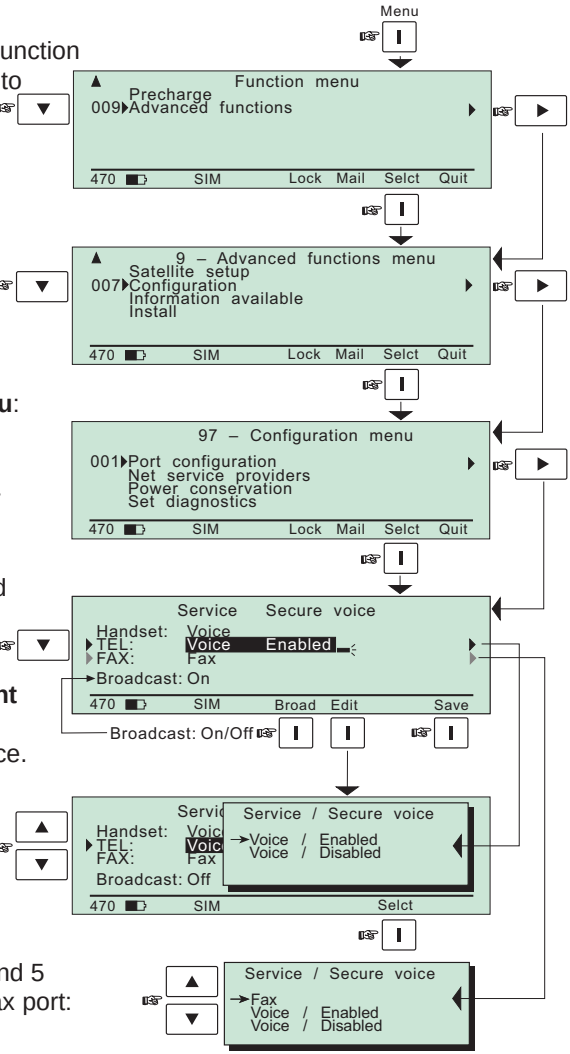
3 **Selct** or **right arrow** opens the **Configuration menu**:

4 Pressing **Selct** or **right arrow** again displays which ports are enabled/disabled for use with secure voice:

5 Press **Edit** or **right arrow** for enabling/ disabling secure voice.

Scroll up/down and press **Selct** at wanted mode:

6 Repeat steps 4 and 5 to select mode for fax port:



Appendix E – Aero functions (option)

Magnetometer calibration

1 Press the **Menu** function key and scroll down to **Advanced functions**:

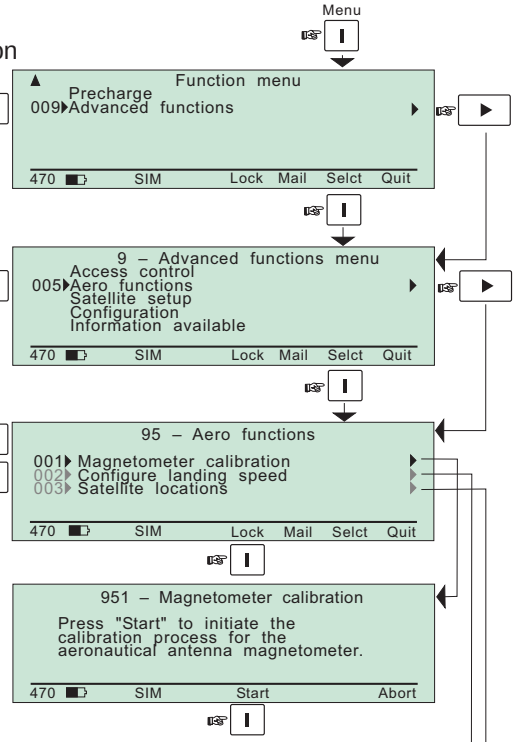
2 **Selct** or **right arrow** opens the **Advanced functions menu**:

3 Scroll down to **Aero functions** and press **Selct** or **right arrow** to open the **Aero functions** window:

4 **Selct** or **right arrow** opens the **Magnetometer calibration** window:

Start initiates calibration.

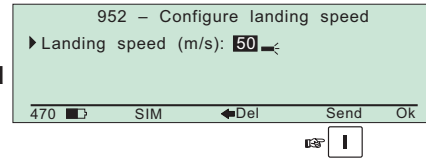
Abort stops the procedure.



Configure landing speed

5 Scroll down in the menu and press **Selct** or **right arrow** to open the **Configure landing speed** window:

Key in anticipated speed.

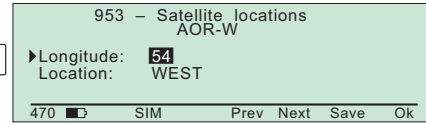


Satellite locations

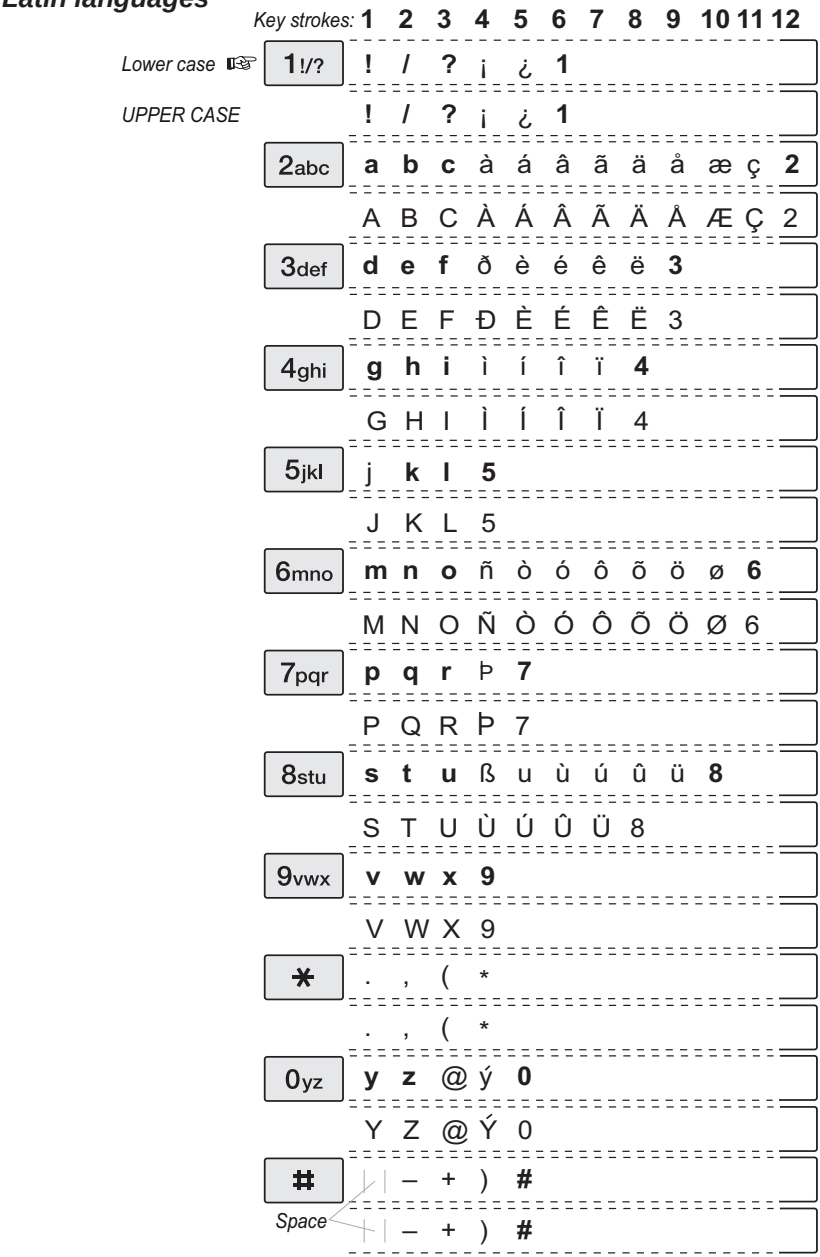
6 Scroll down in the menu and press **Selct** or **right arrow** to open the **Satellite locations** window:

Prev/Next lists the position of available satellite regions.

(For possible new satellites, key in position and scroll down to select location)

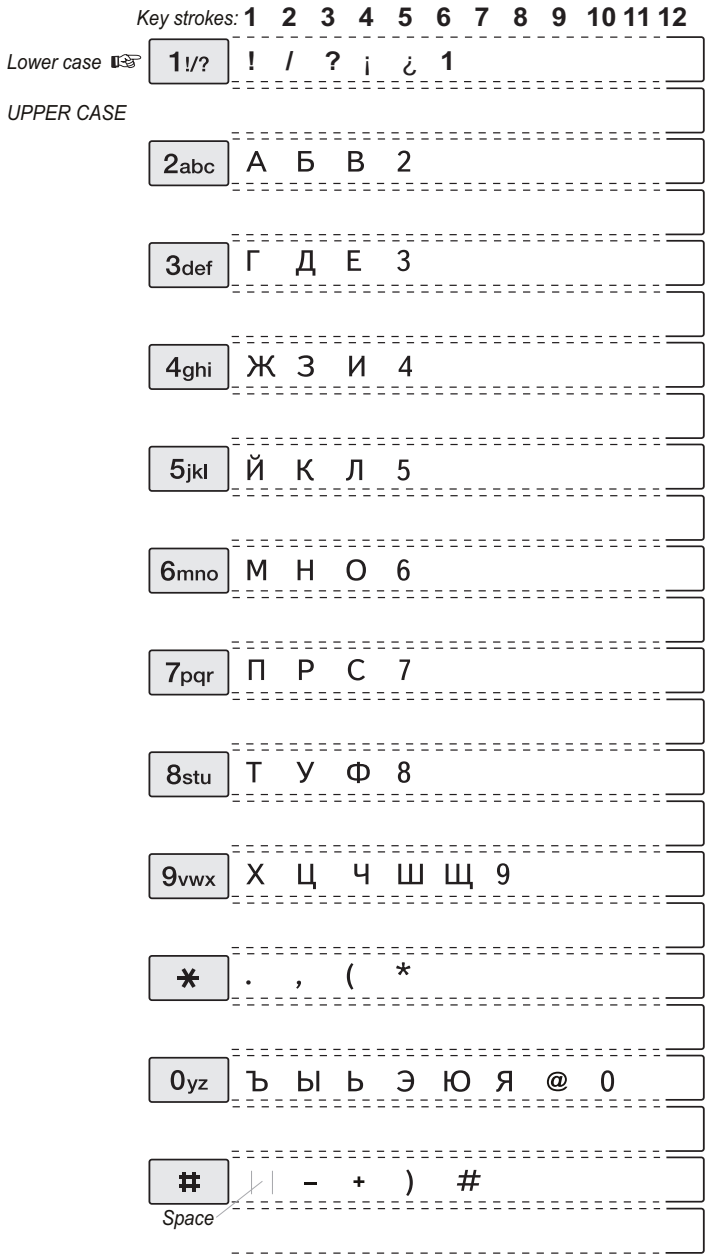


Latin languages



Appendix F – Character map cont'd

Cyrillic



AOR-E Atlantic Ocean Region East, *see map in* ***appendix H***.

AOR-W Atlantic Ocean Region West, *see map in* ***appendix H***.

ARQ automatic repeat request, protocol for error detection and automatic retransmission of defective blocks of data.

ASD asynchronous data transmission

ASD function/service the built-in capability of the WorldPhone for asynchronous data transmission.

AT command used to control modem functions from the PC keyboard (ATtention).

AT modem the built-in modem of the WorldPhone that performs the modulation and demodulation required for data communication.

Azimuth horizontal direction angle between north and, e.g. the direction to the satellite.

Bit rate the number of bits transmitted per second (bps).

Bps Bits per second

CHV2 higher access level on the SIM card, corresponding to WorldPhone "owner" level.

DC Direct Current

DCE data circuit terminal equipment

Deg degrees

DTE data terminal equipment

DTMF Dual-Tone Multifrequency Dialing, pulsing in which each digit is represented by a specific pair of audio frequencies (one tone below 1000 Hz and another above 1200 Hz).

Elevation vertical angle to the satellite, e.g. the height of the satellite above the horizon.

FWD ID forward Id, telephone network identity

IMN Inmarsat Mobile Number, a unique 9-digit number which identifies each port of the WorldPhone.

Inmarsat International Maritime Satellite Organisation.

IOR Indian Ocean Region, *see map in* ***appendix H***.

ISN Inmarsat Serial Number, individual number assigned to each WorldPhone terminal.

ISP Inmarsat Service Provider

Kbps Kilobits per second

LES Land Earth Station, a station that interconnects fixed telecommunications networks with the Inmarsat system; may also be called a CES (Coast Earth Station) or a GES (Ground Earth Station).

MES Mobile Earth Station, a user terminal for an Inmarsat system; the WorldPhone terminal is an MES for the Inmarsat Mini-M system; MES may also be called SES (Ship Earth Station) or, if on aircraft, AES (Aeronautical Earth Station).

NCS Network Coordination Station, station that supervises all messages and signals sent in the Inmarsat system; one in each Ocean Region.

NIMS Nera Internet Messages Service, allows a message of maximum 1024 characters to be sent to the WorldPhone from a website, or to an e-mail address from the WorldPhone.

Non-ARQ non-automatic repeat request, see ARQ

Ocean Region the coverage area of an Inmarsat satellite within which the WorldPhone may communicate, *see map in* ***appendix H***.

PABX private automatic branch exchange

PCCA Portable Computer & Communications Association Modem Standards Committee.

PIN Personal Identification Number

POR Pacific Ocean Region, *see map in* ***appendix H***.

PUK Personal Unblocking Key, code that allows unblocking a SIM card.

RF Radio Frequency

RNR Receiver Not Ready data signal

RR Receiver Ready data signal

S/A operator StandAlone operator who maintains connectivity in the event of Network Coordinating Station failure.

SIM Subscriber Identity Module

SMS Short Message System

Spot Beam an Ocean Region is divided into sub-regions, each "spotlighted" by a beam from the region satellite.

Terrestrial Network a fixed telecommunications network, such as a telephone network or a data network, which connects to the Inmarsat system at an LES/NCS.

TNID Terrestrial Network Identification Digits

UTC Coordinated Universal Time, referenced to Greenwich Mean Time (GMT)

Inmarsat Mini-M system

Inmarsat Mini-M is a satellite communications system that provides highly-reliable telephone, data and facsimile communication to and from mobile subscribers anywhere within the worldwide coverage area of the Inmarsat 3 Spot Beam system, *see map on next page*.

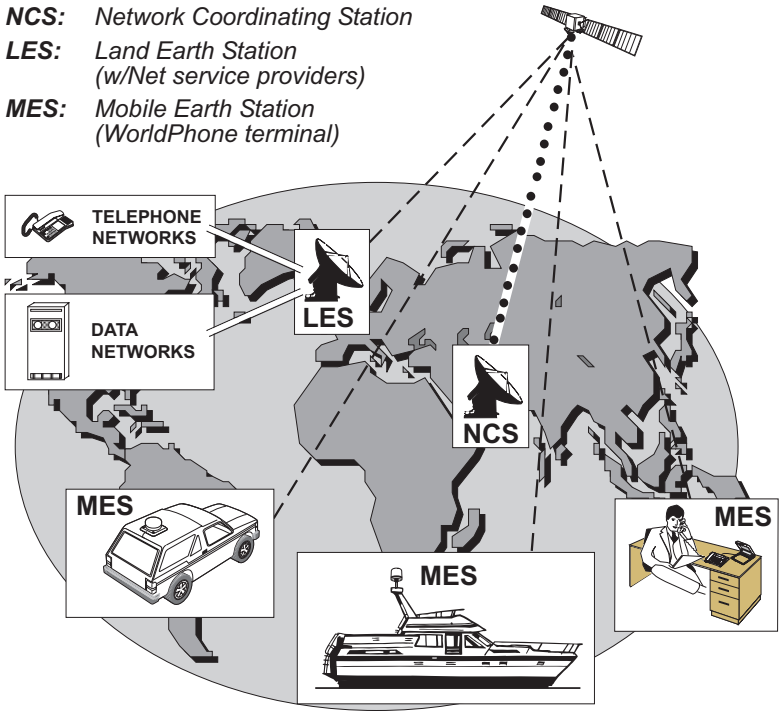


Figure 1 Overwiew of the Inmarsat Mini-M system.

System satellites

The satellites are positioned in a geostationary orbit above the equator at approximately 35700 km altitude.
See figure.

In geostationary orbit, each satellite moves at the same rate as the earth, and so remains in the same relative position to the earth.

The satellites cover approximately 1/4 of the earth each, called Ocean Regions:

AOR-W Atlantic Ocean West Region
AOR-E Atlantic Ocean East Region
IOR Indian Ocean Region
POR Pacific Ocean Region

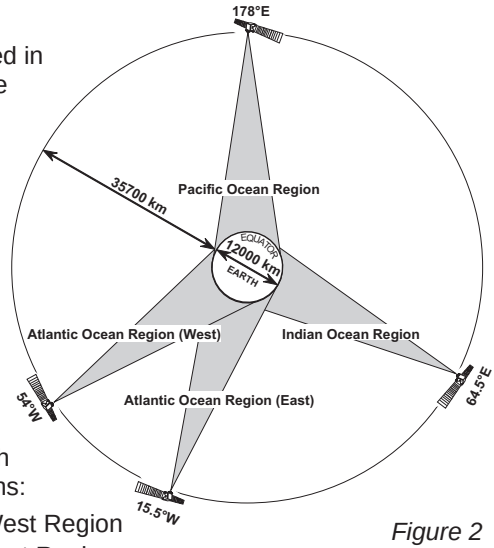
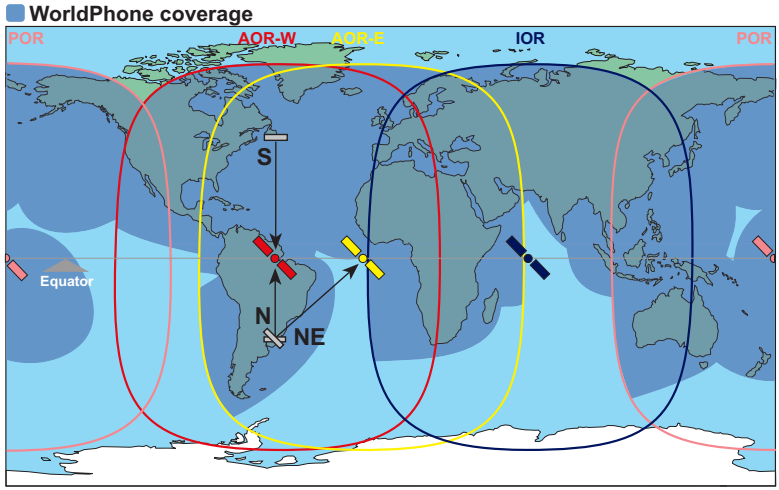


Figure 2
Satellite positions

The coverage area of the satellites for WorldPhone (Mini-M) is shown on the map below. Communication is possible in areas marked with dark blue.



General

The WorldPhone terminal provides direct telephony, telefax, NIMS and data connection to international public networks via the Inmarsat 3 Spot Beam satellite system.

The WorldPhone terminal consists of:

- Telephone Unit (TPU).
- Universal AC adapter (WorldPhone Portable only).
- Antenna Unit (AU) including RF transceiver.
- Power Supply (WorldPhone Marine and Voyager only).

The operating functions are conducted on the telephone panel. Only a single coax cable links the Telephone Unit and the Antenna.

Net service provider

The Net service provider issues your user licence and an IMN (Inmarsat Mobile Number) phone number. It is also responsible for the billing of calls (charges).

To make an outgoing call, you use a standard international telephone number with the 00 prefix. The WorldPhone terminal receives incoming calls via the IMN phone number.

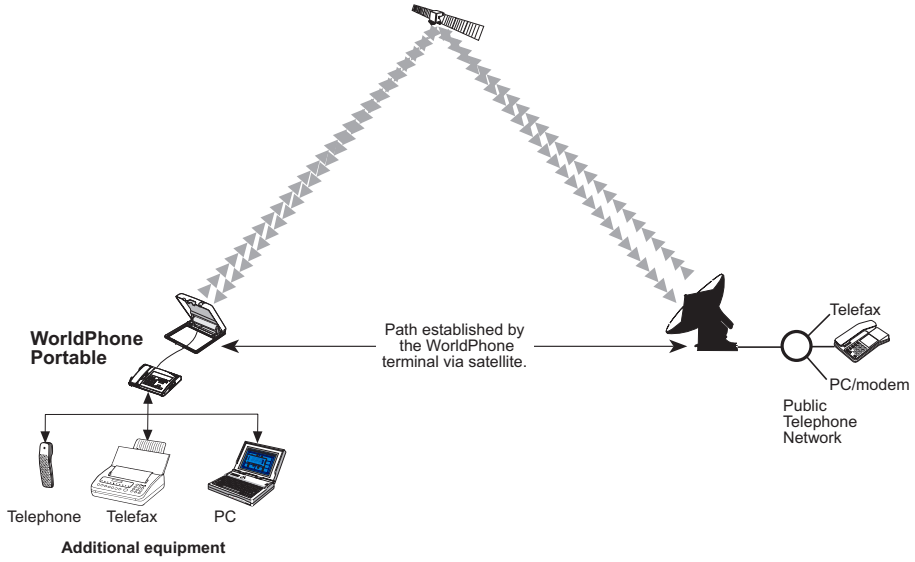


Figure 3 Communication path.

Calls from Mobiles

To make an outgoing call, you use a standard international telephone number with the 00 prefix. The mobile automatically includes information to identify the MES and the particular port that originates the call.

The WorldPhone has four ports: the basic Telephone Unit w/handset, and three connectors that are configured for telephone, data and telefax.
The LES uses the end terminal identifying information (OI) for billing purposes.
The mobile transmits the dialing information on a channel specially assigned by the NCS, to the LES, which also has been instructed to tune to the same channel. LES routes the call over the public telecommunications networks to the intended destination. When the called party responds, the call proceeds.

Calls to Mobiles

The WorldPhone terminal receives incoming calls via the IMN phone numbers. IMN numbers are assigned to the following ports:

- *Basic Telephone Unit (handset)*
- *Telephone (TEL port)*
- *Telefax service (FAX port)*
- *Data service (DATA port)*
- *NIMS service*

Calls are made as ordinary international (Satellite) calls by dialing the international prefix (normally 00) followed by **870** and the IMN number, f.ex. 00 **870** 762420510.

*The common Ocean Region access no. **870** connects the call to the dialed WorldPhone regardless of the Ocean Region the user currently communicates through.*

*If the Net service provider does not support access no. **870**, call the Ocean Region directly:*

871 – **AOR-E** (Atlantic Ocean Region East)
872 – **POR** (Pacific Ocean Region)
873 – **IOR** (Indian Ocean Region)
874 – **AOR-W** (Atlantic Ocean Region West)

Services

- Telephone calls – basic telephony services.
- Telefax – CCITT Group 3 facsimile services, 2.4 kbps.
- Data communication – Hayes compatible 2.4 kbps data service.
- Mail service – NIMS

1. The WorldPhone display does not light up:

Portable/Provident:

- Is the Telephone Unit turned on?
  Press the ON/OFF key for 2 seconds.
- Does the battery need recharging? If needed, connect the universal adapter for powering/charging.
- Is the battery inserted properly, or contacts dirty or damaged?
  Check the battery (accessible underneath the telephone unit).

Marine/Voyager:

- Is the Power Supply turned on?
- Is the Telephone Unit turned on?
  Press the ON/OFF key for 2 seconds.
- Is the Power Supply properly connected?

2. The access PIN code appears to be invalid:

- The code may have been changed. The access Phone PIN is reset to default by logging in as owner:

  ✱ + owner's password

  Note! The SIM card can only be unblocked using a PUK code (Pin Unblock Key). Contact the agent.

3. The WorldPhone cannot find the satellite:

- Check for correct position of the antenna. Check that no obstacles block the free sight to the satellite.
  Be aware that a window glass may reduce the signal level significantly. The signal strength indicator should preferably exceed 415.
- Check that the coax cable is connected properly.
- If accessible, try another antenna unit.
- The warning "Not available" appears in the display.
  To restore communication with the satellite,
  see chapter 2. Operation: ***Advanced functions: Information available: Oscillator compensation***.

4. The WorldPhone functions abnormally:

- Turn off power and disconnect power cable/battery.
- Connect power cable/battery, and switch on again.

5. *Unsuccessful call attempt:*

- The called party is busy ("Subscriber busy" appears on the display).
- Call the Net service provider. If unsuccessful, wait for some time and try again.
- The WorldPhone is not properly commissioned. Check with the Net service provider.

6. *Problems with telefax:*

- Remember to press "#" as last digit before starting transmission.
- Verify that the service is commissioned, *see step 5.*
- Connect an external standard telephone to the FAX port and verify that you have a dial tone.
- Be aware of system transmission delays. The OFF-HOOK time should therefore be as long as possible (e.g. 2 minutes).
  When the fax machine is called, ringing time should be set to minimum (e.g. immediate answer).
- Try a different fax machine.
- Check that the port is configured for telefax service (and not voice), *see chapter 2. Operation:* ***Advanced functions: Configuration***.

7. *Problems with data communication:*

- Verify correct bit rate on PC and telephone unit,
  see chapter 2. Operation: ***Data/printer port setup***.
- Try to connect to the server through a terminal emulator.
- Check the PC program settings, and if necessary extend the timeout intervals.
- Contact the PC applications vendor for help.

Appendix J – Technical data

General

The Nera WorldPhones are Inmarsat approved with the following certificates:

WorldPhone Portable	:	Certificate Number 76EB51.
WorldPhone Marine	:	Certificate Number 76EB52.
WorldPhone Voyager	:	Certificate Number 76EB54.
WorldPhone Provident	:	Certificate Number 76EB53.

Standard functions

- Voice
- Fax 2.4 kbps Group III
- Data 2.4 kbps
- SIM card handling
- Handsfree
- 10 different last number dialed
- Telephone book for 99 numbers (22 digits)
- Prepaid minutes
- Call logging
- Access code
- Restricted dialing
- Preferred Net Service Provider
- Multiple-language display

Optional function

Secure Interface Unit - STU-II B / STU III Interface

Display

Large graphical backlit LCD display (64x240 pixels).
8x40 characters in text mode.

Keyboard

- On/off
- Help
- Escape
- 12 alpha numerical keys
- 4 soft keys (function changes according to task)
- 4 arrow keys (function changes according to task)

Dimensions and weight

See appendix B

Power (WorldPhone Portable)

DC input	:	10 - 32 V polarity independent.
Input protection	:	If the TPU is powered directly from external battery source, a protection fuse < 8 A is required. ***See appendix B***
Typical power consumption	:	Transmit 12 W, standby: 0.5 W.
Max current	:	(during charging) 15 V, 2 A. Current limit 2.3 A
Max. rated power	:	30 W
AC/DC adapter		
AC input	:	100 - 240 V, 47 - 63 Hz, 30 VA.

Power (WorldPhone Marine)

DC input to PSU	:	10 - 32 V. Polarity dependent
Typical power consumption	:	During transmission = 40 W, During Standby = 15 W.
Max power rating	:	40 W
AC/DC converter (option)		
AC input	:	240 V, 47 - 63 Hz, 80 VA.

Power (WorldPhone Voyager)

DC input to PSU	:	10 - 32 V. Polarity dependent
Typical power consumption	:	During transmission = 30 W, During standby = 15 W.
Max rated power	:	40 W
AC/DC converter (option):		
AC input	:	240 V, 47-63 Hz, 80 VA.

Power (WorldPhone Provident)

DC input	:	10 - 32 V. Polarity independent
Input protection	:	If powered directly from an external battery source, a protecting fuse (8A) is required. ***See appendix B.***
Power consumption	:	Transmit max. 12W, standby 0.5 W
Max current	:	(during charging) 15 V, 2 A. Current limit 2.3 A
Max rated power	:	30 W
AC/DC adapter:		
AC input	:	100 - 240 V, 47 - 63 Hz, 30 VA.

Environmental conditions

Storage : -50°C - +80°C

Operational (WorldPhone Portable, Marine, Voyager and Provident)

Telephone Unit	: -25°C - +55°C, 40°C 95 % humidity (non-condensing)
Antenna Unit	: -35°C - +55°C, 40°C 95% humidity, (non-condensing)
Infrared	: 500 W/m^2,
Ultra violet	: 54 W/m^2,
Visible	: 1150 W/m^2
Telephone Unit	: IP53
Antenna Unit	: IP55 (WorldPhone Portable). IP66 (WorldPhone Marine, Voyager and Provident)

Operational (WorldPhone Marine)

Power supply	: IP43
Roll	: ± 25 degrees
Pitch	: ± 15 degrees
Yaw	: ± 8 degrees
Wind	: Relative average wind velocity up to maximum 200 km/h
Ice	: Outdoor equipment up to 25 mm
Turning rate	: 50 degrees per second

Operational (WorldPhone Voyager)

Power supply	: IP43
Velocity (vehicle)	: Up to 150 km/h providing not exceeding: - turning acceleration up to 20 deg/sec^2 - induced acceleration 0.5g - wind max 20 m/s
Wind	: Relative average wind velocity up to maximum 200 km/h
Ice	: Outdoor equipment up to 25 mm
Turning rate	: 60 degrees per second

Operational (WorldPhone Provident)

Power supply	: IP43
Wind	: Relative average wind velocity up to maximum 150 km/h
Rain	: 50 mm/h with wind of 55 km/h
Ice	: Outdoor equipment up to 25 mm

Vibration and shock

As specified by Inmarsat

External Interfaces

- Two-wire interface for standard DTMF phone, cordless base station or PABX (trunk lines)
- Two-wire interface programmable f.ex. for standard DTMF phone, cordless base station, PABX (trunk lines) or telefax (default).

  Specifications for two wire interface:

Connector	:	RJ11
Speech level	:	+2.5 dBm
Receive level	:	-9 dBm
Dial tone	:	425 Hz -19 dBm
DTMF minimum	:	Dialing: -20 dBm0
Line voltage	:	30V DC
Ringing signal	:	35V RMS 25 Hz (max two telephones/ faxes)
Signalling	:	Hook off: >20 mA/hook on: < 9 mA

- Data connector for data communication, printer or software download.

Connector	:	D-sub, 9 pins RS232
Data protocol	:	Hayes AT compatible
Bit rate	:	1.2 - 38.4 kbps
Parity	:	No parity (AT programmable: odd/even/mark/space)
Data Bits	:	8 bits (AT programmable: 7 or 8 bits)
Stop bit	:	1 bits (AT programmable: 1 or 2 stop bits)
Flow control	:	RTS/CTS (AT programmable NO, XON/XOFF or RTS/CTS)

- SIM card interface : According to Inmarsat SDM module B annex 7 (subset of ISO 7816)
- Antenna plug : 16 QLA 01-2-4c
- Power connector : Outer 5.5 mm, inner 2.1 mm length 10 mm

ARU separation from TPU

See table in appendix B

G/T, EIRP and Antenna gain

Antenna (4 patch) Gain	:	Tx 13.0 dB Rx 12.5 dB RHCP
Beamwidth at -3 dB points	:	25 degrees both in vertical and horizontal direction
Polarization	:	Right hand
G/T	:	- 17 dBK
EIRP (WorldPhone Portable)	:	+17 dBW (maximum), 4 power level steps
EIRP (WorldPhone Marine, Voyager and Provident)	:	+14 dBW (maximum)

Frequency

1626.5 to 1660.5 MHz (transmitting)
1525.0 to 1559.0 MHz (receiving)

Bit rates/modulation

Voice channel	:	5.6 kbps, O-QPSK, 60% roll-off
Speech codecs rate	:	4.8 kbps advanced multi-band excitation (AMBE) encoding

Main battery (WorldPhone Portable and Provident)

See appendix C

Microwave safe distance

Microwave radiation	:	Passengers should not be admitted in areas closer than 1 m (based on 8W m^2)

Compass distance (WorldPhone Marine)

Compass safe distance	:	1 m from the steering compass* * British or Norwegian vessels

F

G

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K

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M

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W

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