

# SAILOR 55 Fleet+ GETTING STARTED





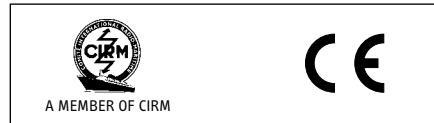
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All specifications are subject to change without notice.

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*The SAILOR 55 Fleet+ terminal fully complies with the R&TTE directive.*



## General

The SAILOR 55 Fleet+ satellite terminal provides 4.8 kbps global speech service via the Inmarsat satellite system. SAILOR 55 Fleet+ offers 64 kbps telefax, compressed data service and MPDS (Mobile Packet Data Service) within the Inmarsat spot beam coverage, see *Satellite Coverage Map*.

## Antenna Unit

The **SAILOR 55 Fleet+ Antenna Unit** consists of:

- Servo stabilized antenna dish with RF-Transceiver
- GPS receiver
- Radome
- Optional tower or mast mounting

## Below Deck Unit - BDU

The **SAILOR 55 Fleet+ Below Deck Unit (BDU)**

- which constitutes the major electronic part - is designed for wall or desktop installation.

The BDU power input is 11 - 32VDC.

The maximum power requirement is approx. 110 W (170 W for a short period at start-up).

The BDU supplies 48VDC power to the Antenna Unit through the coaxial cable.

## ISDN Handset

The handset keypad and built-in display allows dialing and control of the BDU and antenna.

Antenna Unit mounted on tower



BELOW DECK UNIT  
and ISDN Handset



SAILOR 55 Fleet+ Satellite Terminal.

# Communication services

## Global beam service

- **Speech:** 4.8 kbps

## Spot beam services

- **Voice:** 64 kbps
- **Data:** 56/64 kbps
- **MPDS** Mobile Packet Data Service  
FWD = 64 kbps, RTN = 64 kbps  
Shared channel
- **Telefax:** 64 kbps Group 4 .6 kbps Group 3 via  
Terminal Adapter (TA)
- **Audio:** 3,1 kHz (64kbps)

## Internal communication

Equipment connected to the various interfaces may communicate with each other via an internal MSN (Mobile Subscriber Number) assigned to each unit.

## Control interface

The **RS-232/RS-422** or **USB** port allows connection of a PC for configuration of the SAILOR 55 Fleet+ BDU.

A PC program (SAILOR VtLite) that provides the software to operate and configure the BDU is supplied on the enclosed CD (requires at least Windows 98).

## CD

*The CD ROM supplied with SAILOR 55 Fleet+ contains:*

- program for control from PC (SAILOR VtLite)
- manuals
- application notes
- modem drivers
- and other useful information

## Additional equipment

- Additional ISDN Handsets
- PC
- Terminal Adapter for connection of:
  - analogue DTMF telephone(s)
  - group 3 telefax



Additional ISDN Handsets



PC



Terminal Adapter



Analogue telephones (wall or desk)



Telefax (Group 4)

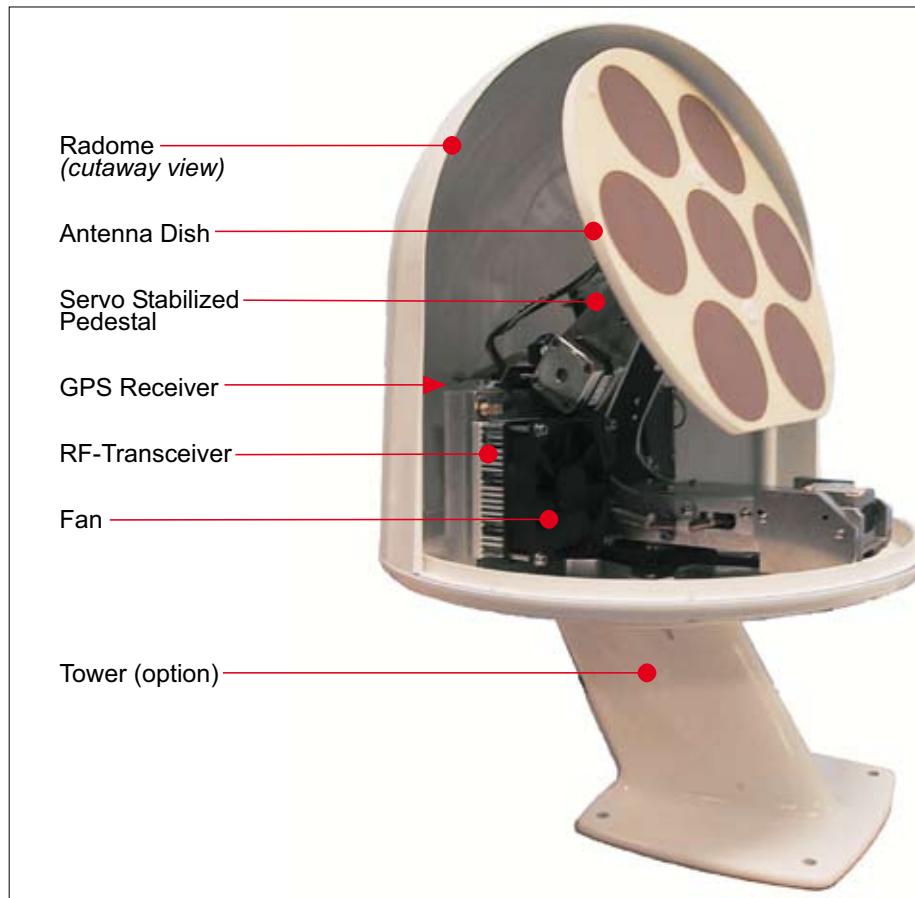


Telefax (Group 3)



Serial printer

*Additional Equipment.*



SAILOR 55 Fleet + - Antenna Unit Parts.

Examples of preprogrammed

Terminal Ids and MSN

numbers.

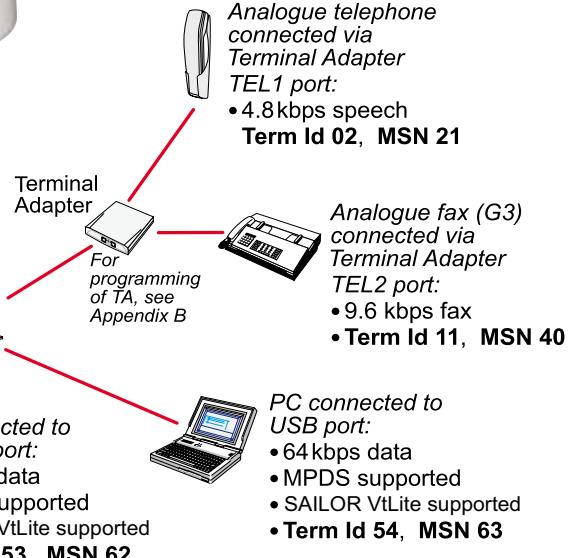
Allows direct connection without prior configuration.

See also *Routing of Incoming Calls* and *MSN Configuration* in the *User Guide*.

ISDN Handset  
Connected to  
ISDN port/bus:  
• 4.8 kbps speech  
• 64 kbps speech  
• **Term Id 01, MSN 20**  
• **Term Id 91, MSN 30**

Digital fax (G4) or ISDN  
router connected to  
ISDN port/bus:  
• 64 kbps data  
• **Term Id 51, MSN 60**

PC connected to  
RS232A port:  
• 64 kbps data  
• MPDS supported  
• SAILOR VtLite supported  
• **Term Id 52, MSN 61**



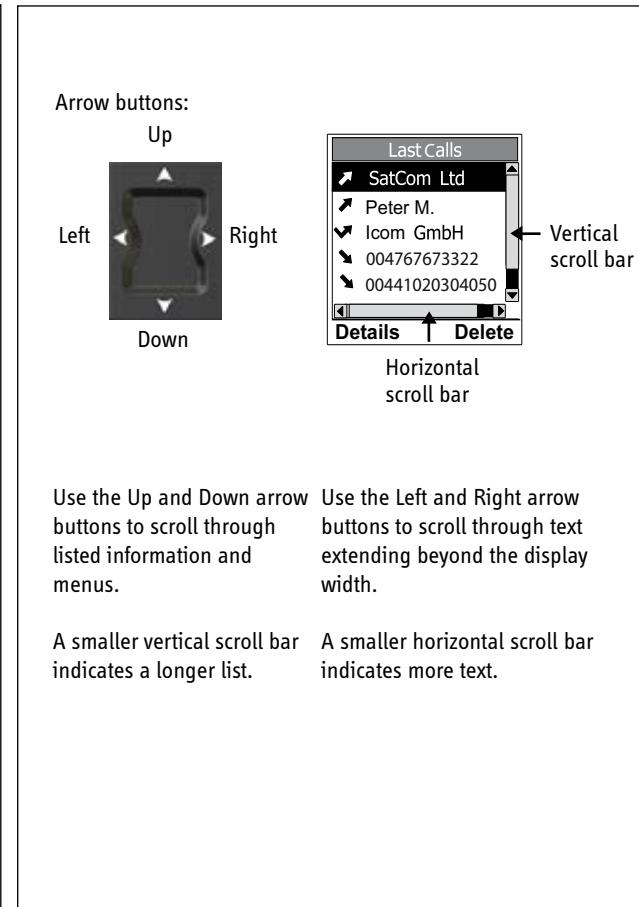
Analogue telephone  
connected via  
Terminal Adapter  
TEL1 port:  
• 4.8 kbps speech  
**Term Id 02, MSN 21**

Analogue fax (G3)  
connected via  
Terminal Adapter  
TEL2 port:  
• 9.6 kbps fax  
**Term Id 11, MSN 40**

PC connected to  
USB port:  
• 64 kbps data  
• MPDS supported  
• SAILOR VtLite supported  
**Term Id 54, MSN 63**



Display and Keys.



Use the Up and Down arrow buttons to scroll through listed information and menus.

A smaller vertical scroll bar indicates a longer list.

Use the Left and Right arrow buttons to scroll through text extending beyond the display width.

A smaller horizontal scroll bar indicates more text.

Display Navigation.

### Cradle

(Part no. 106430)

SAILOR 55 Fleet+ features a specially designed cradle.

A coiled cable (stretchable from 60 to 300 cm) is used to connect the ISDN Handset to the cradle. The cradle makes it possible to have a fixed handset installation.

In order to answer a call, press  or select **Speaker** or release the ISDN Handset from the cradle. When placed in the cradle the handset is in speakerphone mode during calls.

#### **Note!**

*The ISDN Handset is equipped with a magnetic switch carrying out an off-hook operation when the handset is released from the cradle, and an on-hook operation when it is replaced in the cradle. Thus, an on-going call will be disconnected if the handset is replaced in the cradle during the call.*

The cradle is provided with two different snap versions for securing the ISDN Handset:

- A **standard snap** (part no. 106433) performing a soft lock of the handset when placed in the cradle. Allows the handset to be inserted and released easily.
- A **strong snap** (part no. 106433, the longer one) locking the handset firmly when placed in the cradle. This snap version requires that the snap is pushed upwards, away from the handset, in order to release the handset.



1. Position the lower part of the handset in the cradle. Make sure it fits firmly.
2. Insert the upper part of the handset into the cradle. A click should be heard when the snap locks the handset in position.
3. When releasing the handset, start pulling out the upper part of the handset.

#### **Note!**

*When the strong snap is used, it is required to push the snap upwards when pulling out the handset.*

## Using a SIM Card

The SIM card carries subscription information from your Net service provider on an integrated circuit. The SAILOR 55 Fleet+ used with the SIM card assumes the identity of the SIM card.

The SIM card has its own set of Inmarsat Mobile Numbers (IMNs) on which the user can be contacted irrespective of the SAILOR 55 Fleet+ used.

All outgoing calls will be billed to the owner of the SIM card.

The SIM card is protected by a SIM PIN (Personal Identification Number). Contact your Net service provider if you do not have the PIN code.

To change or disable the PIN code, see *Access Level* in the *User Guide*.

### The SIM card can store various information, e.g.:

- PIN (Personal Identification Number) code
- Phone book
- Allowed and preferred Net service providers

#### **Note!**

*SAILOR 55 Fleet+ can be used with or without a SIM card. The Net service provider, however, sometimes requires the use of a SIM card.*

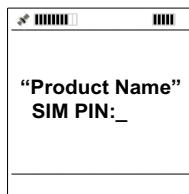
The SIM card is located at the short side of the Below Deck Unit, see figure *Location of SIM Card and ON/OFF Switch*.

The cover must be removed to access the card slot.

The cover is attached by two serrated screws.

No tools are required to loosen the screws.

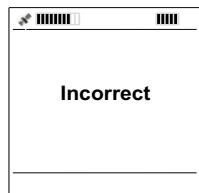
When inserting the SIM card, the terminal prompts for the SIM PIN:



If the correct SIM PIN is entered, the following is displayed:



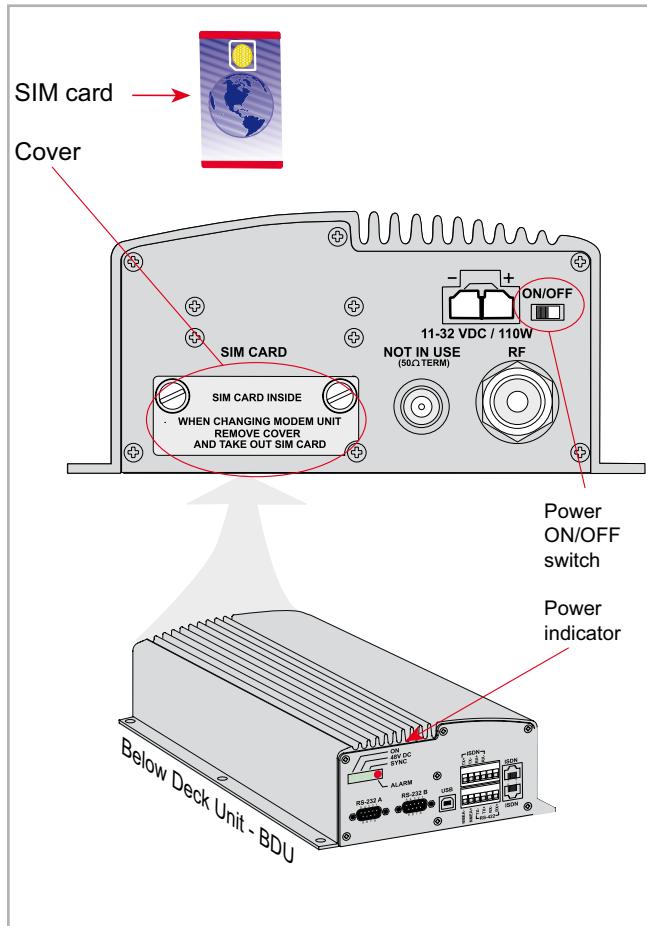
If an incorrect SIM PIN is entered, the following is displayed:



**CAUTION!**

*Operation with the particular SIM card will lock-up after three failed attempts. You must then use the SIM unlock code (PUK code) provided by your Net service provider to unlock the card. Contact your Net service provider if you do not have the PUK code.*

*When the PUK code is used, the SIM PIN is reset to the card's default PIN.*



## Switching On

The power ON/OFF switch and the power indicator are located on the short sides of the Below Deck Unit (see figure *Location of SIM Card and ON/OFF Switch*).

The switch turns all units of the SAILOR 55 Fleet+ on and off:

- The ISDN Handset
- The Below Deck Unit (BDU)
- The Antenna Unit

## SAILOR 55 Fleet+ Start-Up

At start-up SAILOR 55 Fleet+ performs system initialization and then search for a satellite (expect a wait of about 30 seconds after power on).

**Note!**

*The Ocean Region used the last time the system was in operation will be searched for.*

Available Ocean Regions:

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

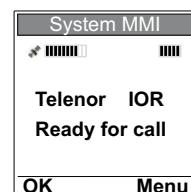
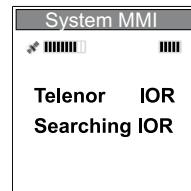
After completed the start-up sequence the SAILOR 55 Fleet+ enters idle mode.

See *Satellite Search* in the HANDSET FUNCTIONS section on how to initiate a manual search.

If required, see *Select Default Net Service Provider* in the HANDSET FUNCTIONS section.

**Note!**

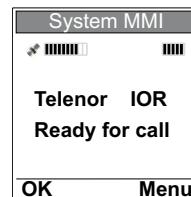
*If the Access Code feature has been enabled, an access code must be entered before calling (see Access Control > Access code in the User Guide).*



## Idle Mode

When in idle mode the ISDN Handset displays:

Alarm indicator  
(See *View Alarms*)  
Signal strength indicator  
Ocean Region  
Service provider  
Status Line  
Soft-key choices



The signal strength indicator indicates maximum signal strength by all segments shown dark.

When the terminal is busy, the status line indicates the type of service in use (indicated on all ISDN Handsets connected to the terminal):

4.8k speech	- ongoing low cost voice call
64k speech	- ongoing high quality voice call
MPDS call	- ongoing MPDS call
Fax call	- ongoing fax call
3.1kHz audio	- ongoing audio call
UDI call	- ongoing data call

## Make a Call

- Dial 00, country code and subscriber number, e.g.: 0047 67244700

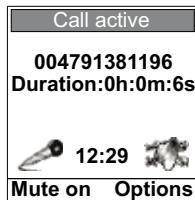


Use and to move cursor left and right. Select **<Del** to delete the digit to the left of the cursor.

- Press or select **Call** to send the digits.

The **Call active** display appears when connection is established, and indicates the duration of the call as it progresses.

- Complete the conversation.



### Symbol Description:

Symbol	Function	Soft-key
	Speakerphone mode on/off	Left
	Call options	Right
	Microphone mute on/off	Left

The handset may at any time during the conversation be released from the cradle. It then automatically turns to private mode (i.e. reduced loudspeaker volume).

### Note!

*Replacing the handset in the cradle during conversation will terminate the call.*

- Press or replace the handset in the cradle to end the call.

The duration of the call is indicated in the display for a few seconds before the idle screen appears.

For details on how to redial the last call or a listed call, see *Redial*.

For how to call a contact, see *Call From Phone Book*.

### Options During Calling

When selecting **Speaker on** SAILOR 55 Fleet+ turns to speakerphone mode (i.e. increased loudspeaker volume).

### Options During Conversation (Outgoing Call)

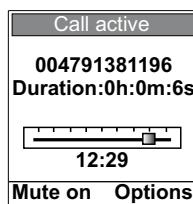
Select **Mute on / Mute off** to toggle the handset's microphone on and off. **Mute on** enables private talking without the called party being able to listen.

Selecting **Options** provides the following choices:

- Select **Turn Speaker on / Turn Speaker off** to activate/deactivate the speakerphone mode (see *Options During Calling*)
- The **Audio Control Display** option is not supported in the default handset mode (Automatic). It is, however, supported if the handset mode is set to *Normal*. See *Appendix Handset Ports*.

### Loudspeaker Level Adjustment

Press **◀** to decrease and **▶** to increase the loudspeaker volume while in conversation.

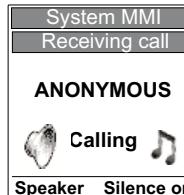


### Receive a Call

1. When the handset is ringing, press **◀** or select **Speaker** or release the handset from the cradle to answer the call.

Selecting **Speaker** or pressing **◀** while in cradle puts the handset in speakerphone mode.

If the call is not answered, it will eventually time out and either be transferred to an answering service if this option is enabled at your Net service provider or be rejected.



As the system does not support the service *Number forwarding*, the display indicates "Anonymous" and not the caller's number.

#### Symbol Description:

Symbol	Function	Soft-key
	Ringing on/off	Right

For description of other symbols, see *Make a Call*.

## 2. Complete the conversation.

The handset may at any time during the conversation be released from the cradle. It then automatically turns to private mode.

### **Note!**

*Replacing the handset in the cradle during conversation will terminate the call.*

The Call active display shows the duration of the call as it progresses.



## 3. Press or replace the handset in the cradle to end the call.

The display shows the duration of the call.

## Silent Ringing Option

### 1. Select **Silence on** or press to turn off the ringing without answering or terminating the call.

The call may still be answered when feasible until timed out.

## Options During Conversation (Incoming Call)

### 1. Press or select **Options** and then **Place call on hold** to put the incoming call on hold. See *Call Hold and Transfer*.

See *Options During Conversation (Outgoing Call)* and *Loudspeaker Level Adjustment* for other options.

## Call Hold and Transfer

When answered, an incoming call may be put on hold and, if applicable, be transferred to a new internal number (i.e. a two-digit Multiple Subscriber Number).

1. While in conversation, press  or select **Option** and then **Place call on hold** to put the incoming call on hold and get the ringing tone. The following display appears.



It is possible, if desired, to switch back to the incoming call by selecting **Retrieve call** (use arrow down key), and then **Select**.

2. Dial a two-digit internal phone number (MSN), and press  or choose **Select** to call the number.

For incorrect entries use  and  to move cursor left and right. Select **<Del** to delete the digit to the left of the cursor.

3. Wait for answer, and talk if necessary.

If no answer, press  to return to the incoming call.

4. Press  when the called party accepts the call. The incoming call is now transferred.

## Redial

The SAILOR 55 Fleet+ stores information about the last outgoing and incoming calls (30 altogether). The information is stored inside the handset, and is retained also when the handset is disconnected.

### Last Calls Redial

1. Press  once to enter the **Last Calls** list.



Symbol Description:

Symbol	Signification
	Indicates incoming call
	Indicates outgoing call
	Indicates rejected or missed call

2. Use  and  to scroll through the list and highlight the call to redial.

Use  and  to see all available information for a listed call.

3. Press  to redial the highlighted call.

Select **Details** to view more detailed information for the highlighted call.

Select **Delete** to delete the highlighted call.

## Call From Phone Book (Contacts list)

### Note!

*Phone Book contents are stored in the BDU and are available to all connected ISDN Handsets.*

1. Press  once to enter the Phone Book.

2. Press  or  to scroll through the list. Highlight the entry to call by leaving the sign ">" in front of the entry.

3. Press  to call the highlighted entry.

## Using Short Number from Phone Book (prefix 23)

1. Dial 23 followed by a short number.

Example: 2315 (short number = 15).

2. Press  or select **Call** to initiate the call.

## Internal Communication

SAILOR 55 Fleet+ allows internal calls to be made between ISDN Handsets, and between an ISDN Handset and an analogue telephone.

### Note!

*If any of the parties involved in an internal call receives a satellite link call, the satellite link caller receives the busy tone.*

### Note!

*Internal communication is not possible when the SAILOR 55 Fleet+ is busy handling a satellite link call.*

## Make a Call

1. Dial a two-digit Multiple Subscriber Number (MSN).

2. Press  or select **Call** to initiate the call.

## Receive a Call

1. Press  or select **Speaker** or release the handset from the cradle to answer the call.

The caller's MSN number is displayed.

## Phone Book (Contacts list)

The Phone Book entries are stored in the BDU and are available to all connected ISDN Handsets. About 100 entries may be stored, and they may as well be edited using the PC application SAILOR VtLite available on the CD (see CONFIGURATION FROM PC >Phone Book).

### Add a New Entry

1. Press  to access the Phone Book.
2. Select **Menu** to see the Phone Book menu options.
3. Select **OK** to add a new entry (Add entry is the first menu option listed).
4. Enter name (one field) and number for the entry. The content of each field has to be confirmed by selecting **OK**.

Press  to delete the last character or digit.

The table shows available characters and where to find them.

Key	Uppercase	Lowercase
 1	1	1
 2	ABC2	abc2
 3	DEF3	def3
 4	GHI4	ghi4
 5	JKL5	JKL5
 6	MNO6	mno6
 7	PQRS7	pqr7
 8	TUV8	tuv8
 9	WXYZ9	wxyz9
 0	0	0

#### **Note!**

*The # key toggles between upper- and lowercase characters.*

## Edit an Entry

1. Press  to access the Phone Book.
2. Use  and  to scroll through the Phone Book entries. Highlight the entry to edit by leaving the sign ">" in front of the entry. Select **OK**.
3. Select **Menu** to get the Phone Book menu options.
4. Use  and  to scroll through the menu options. Highlight the desired option and select **OK**.

The options are:

Add entry	- Enter new name and number
Edit number	- Edit number of preselected entry
Edit name	- Edit name of preselected entry
Delete	- Delete preselected entry
Search book	- Enter up to three successive start characters to search for
See number	- View number for preselected entry
Copy	- Create a copy of the preselected entry with a new short number
Sort by	
ShrtNo/Name	- Sort on short number or name (toggle function)

Press  to delete characters to be modified.

### Call from a Standard Analogue Telephone

This section provides procedures for calling from other devices connected to the BDU such as fax, videophone or analogue telephone. A procedure covering how to call a SAILOR Fleet+ is also included.

1. Dial 00, country code and subscriber no.
2. Press **#** to send the digits.

Example:

0 0 4 7 6 7 2 4 4 7 0 0 #

### Using Short Number from Phone Book (prefix 23)

1. Dial 23 followed by a short-number.  
Example: 2315 (shortnumber = 15).
2. Press **#** to send the digits.

### Calling through Selected Net Service Provider

1. Dial <Net Service Provider number>\*<telephone number> when dialing a complete subscriber number, or  
Dial <Net Service Provider number>\*23<short number> when using a short number from Phone Book.

Example:

4\*004767244700, or

4\*2315

(Telenor is Net Service Provider number 4).

2. Press **#** to initiate the call.

### Call from a Telefax Unit

1. Dial 00, country code and subscriber number.

Example:

004767244700 # before starting the transmission.

Example:

0 0 4 7 6 7 2 4 4 6 2 1 # START

#### **Note!**

*Some types of equipment do not have # implemented in software even if the #-key appears on the keypad. In this case, add before the number to call:*

*903 if the number is to be sent digit by digit, or  
902 if the number is to be sent as one block.*

Exa 9 0 2 0 0 4 7 6 7 2 4 4 7 0 0 #

## Call a SAILOR 55 Fleet+

Dial the prefix for international call (normally 00. USA, however, is using 001) followed by 870 and the Inmarsat Mobile Number (IMN).

Example: 00**870**762420510.

The common ocean region access number **870** establishes a connection to the called Sailor 77 Fleet+ regardless of which ocean region the called party currently communicates through.

If the network service provider does not support use of access number 870, select a possible ocean region directly:

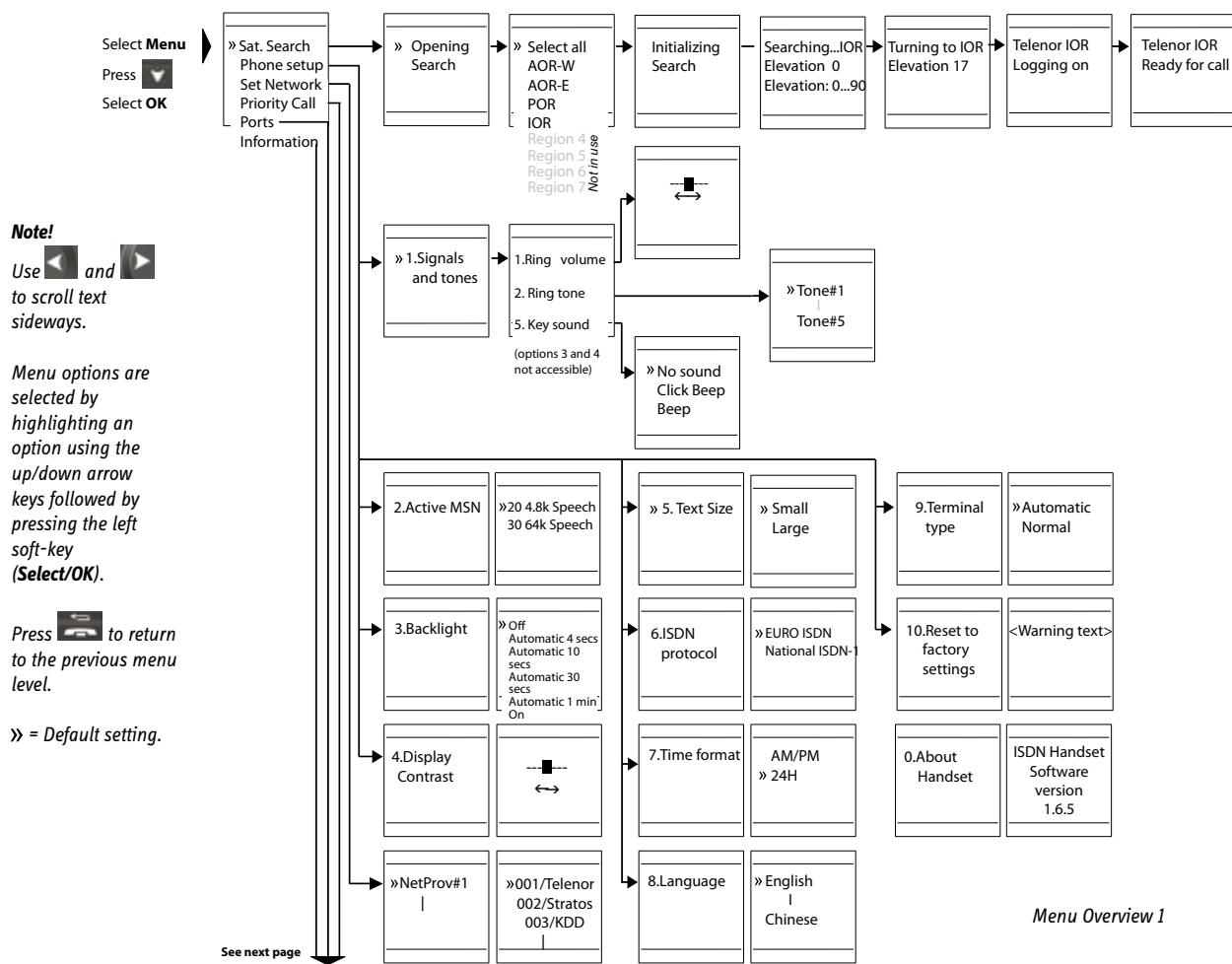
**871** - AOR-E (Atlantic Ocean Region East)

**872** - POR (Pacific Ocean Region)

**873** - IOR (Indian Ocean Region)

**874** - AOR-W (Atlantic Ocean Region West)

## HANDSET FUNCTIONS



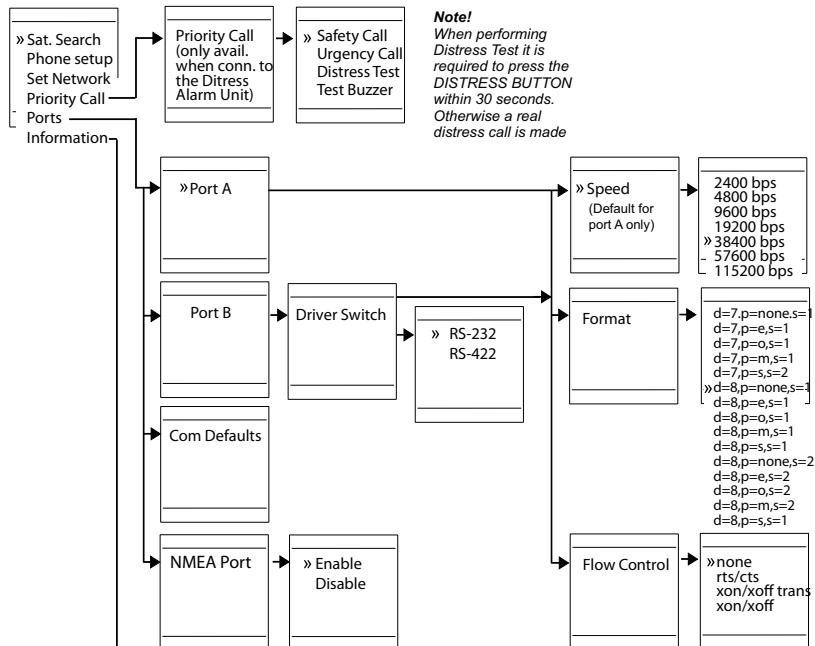
Select **Menu**   
Press   
Select **OK**

**Note!**  
Use  and  to scroll text sideways.

*Menu options are selected by highlighting an option using the up/down arrow keys followed by pressing the left soft-key (Select/OK).*

Press  to return to the previous menu level.

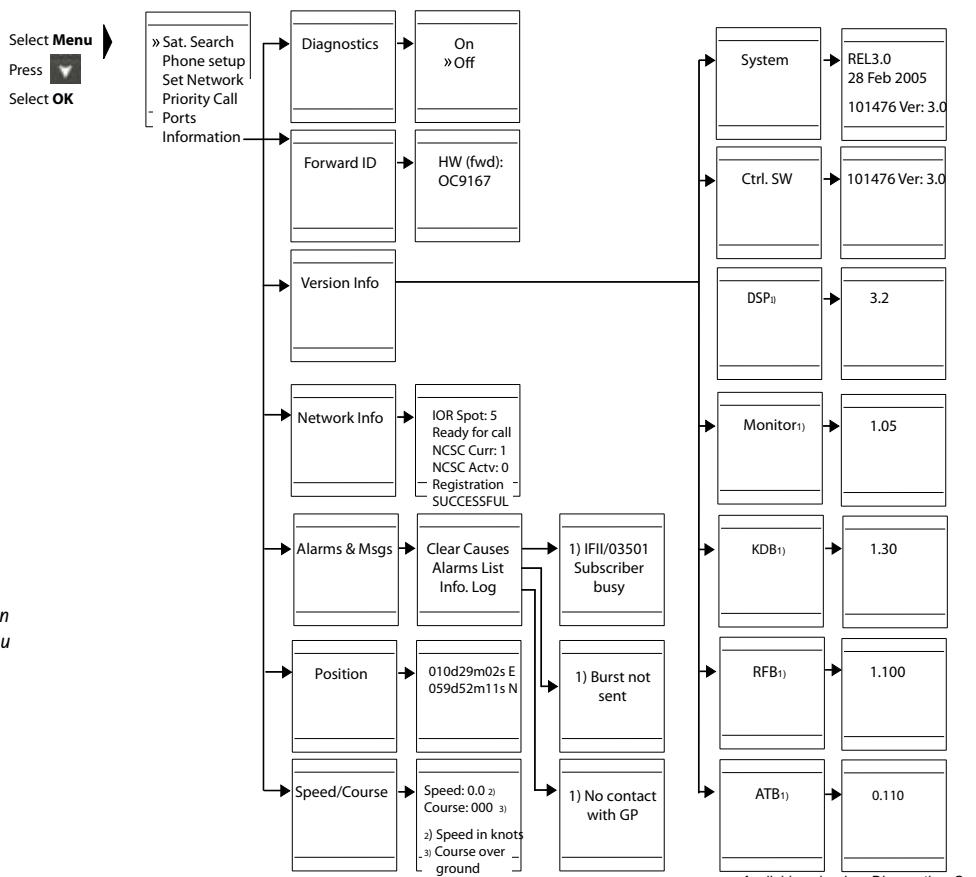
» = *Default setting.*



## Menu Overview 2

See next page

## HANDSET FUNCTIONS cont'd



1) Available only when Diagnostics=On

Menu Overview 3

## Satellite Search

Refer to *Menu Overview 1*.

Some geographic locations allow contact with more than one Ocean Region satellite. It is recommended to choose an Ocean Region satellite providing sufficient signal quality in order to have the selected services available. In general, this requires that not less than 5 segments (70%) of the signal strength bar are dark when in idle mode.

Both an automatic search for a satellite in any Ocean Region and a search for a satellite within a specific Ocean Region may be initiated. A search within a specific Ocean Region may be useful in order to find a satellite with better signal quality than the current satellite found by an automatic search.

The *Satellite Coverage Map* and the *Coverage Map for Each Region* found on the next two pages (and on the CD) may be used to select to select a specific Ocean Region to search for. For the latest edition of these maps, see <http://maritime.inmarsat.com>.

Possible Ocean Regions are:

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

The options Region 4 to Region 7 are not used.

## Select an Ocean Region Automatically

1. Select **Menu** from idle screen to open the main menu.
2. Select **OK** (Sat. Search is the first option of the main menu).
3. Select **OK** (Select all is the first option of the Sat. Search menu).

The elevation to use is calculated based on the received GPS information.

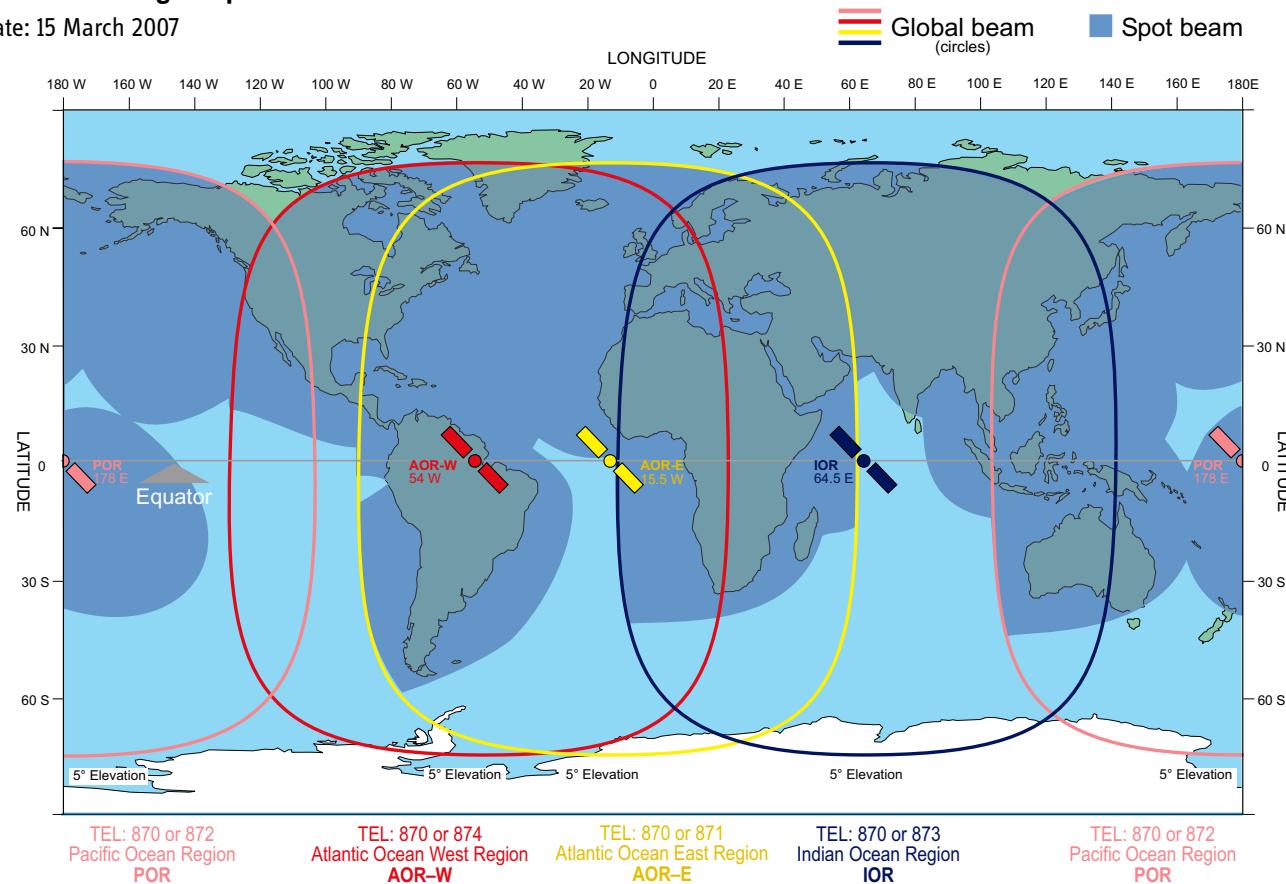
If no satellite signal is found in any Ocean Region, an hemispheric search is performed at an elevation varying from 0° to 90°.

## Select Specific Ocean Region

1. Select **Menu** from idle screen to open the main menu.
2. Select **OK** (Sat. Search is the first option of the main menu).
3. Use  and  to highlight (indicated by the sign ">") the desired Ocean Region, and select **OK**.

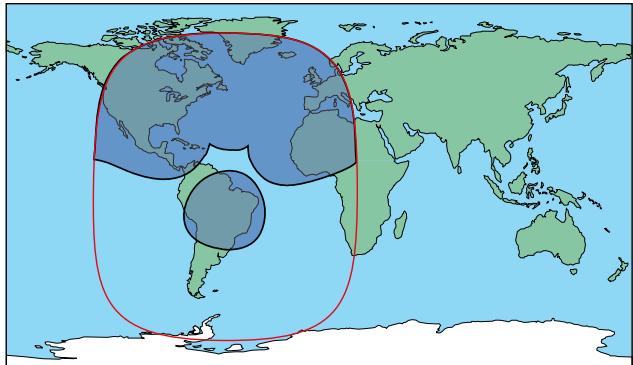
## Satellite Coverage Map

Date: 15 March 2007

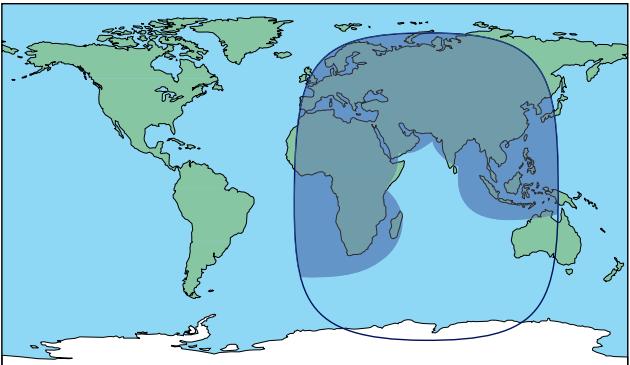


### Coverage Map for Each Ocean Region

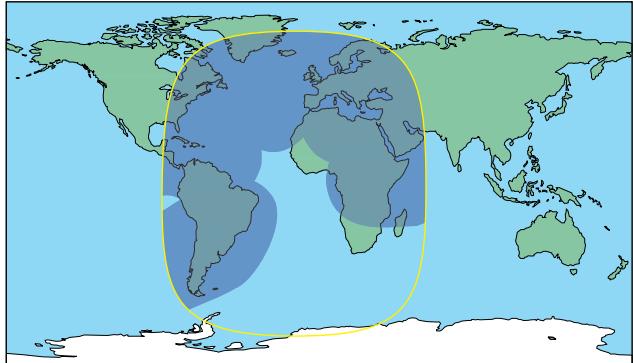
AOR-W



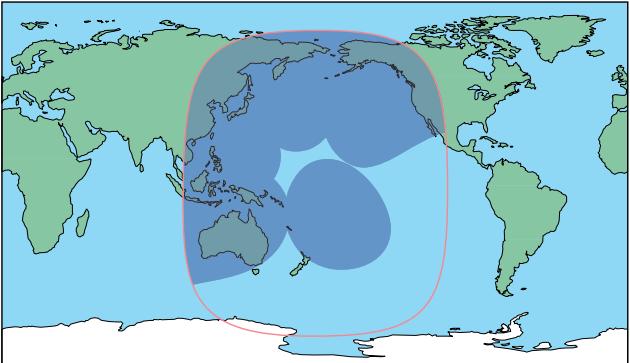
IOR



AOR-E



POR



### Phone Setup

Refer to *Menu Overview 1*.

The *Phone setup* option of the main menu consists of the following choices:

1. Signals and tones
2. Active MSN
3. Backlight
4. Display Contrast
5. Text Size
6. ISDN protocol
7. Time format
8. Language
9. Terminal type
10. Handset Reset
0. About Handset

1. Select **Menu** from idle screen to open the main menu.
2. Use and to highlight the *Phone setup* option and choose **OK**.
3. Use and to highlight the desired option and choose **Select**.

### Signals and tones

The *Signals and tones* option of the *Phone setup* menu consists of the following choices:

1. Ring volume
2. Ring tone
3. Message signal (Not used)
4. Alarm signal (Not used)

1. Use and to highlight the desired option and choose **Select**, or press the key corresponding to the option number (e.g. press **2** to select the *Ring tone* option).

#### *Ring volume*

1. Press to increase the volume (slider moves to the right), and to decrease the volume (slider moves to the left).
2. Select **Test** to check the new setting and **Save** to store it.

#### *Ring tone*

1. Use and to highlight the desired option and choose **Select**.
2. Select **Play** to listen to the highlighted option before selecting it. Press **Stop** to terminate the sound.

**Key sound**

1. Use and to highlight the desired option and choose **Select**.
2. Select **Play** to listen to the highlighted option before selecting it.

**Active MSN**

When making a call, the ISDN Handset identifies itself locally by its Multiple Subscriber Number (MSN).

Although specific MSN numbers may be programmed in the ISDN Handset for both the 4.8k Speech and 64K Speech services, only *one* of the services can be active at a time for outgoing calls.

The first ISDN Handset connected to a terminal gets the MSN numbers 20 and 30. Additional handsets will get increasing numbers.

The *Active MSN* option of the *Phone setup* menu consists of the following choices:

- 20 4.8 kbps Speech (standard quality speech)
- 30 64 kbps Speech (high quality speech)

**Note!**

*Selecting high quality speech also increases the call cost.*

1. Use and to highlight the desired option.

2. Choose **Options** and **Select** to save the selected option.

**Backlight**

The *Backlight* option of the *Phone setup* menu is used to select the display backlight setting, and consists of the following choices:

- Off
- Automatic 4 secs
- Automatic 10 secs
- Automatic 30 secs
- Automatic 1 min (default)
- On

The backlight is turned on for the selected amount of time when any key is pressed. Select **Off** or **On** to turn the backlight permanently off or on.

1. Use and to highlight the desired option and choose **Select**.

### Display Contrast

The *Display Contrast* option of the *Phone setup* menu is used to change the contrast setting of the display to optimize reading conditions.

1. Press  to increase the display contrast (slider moves to the right), and  to decrease the display contrast (slider moves to the left).
2. Select **Save** to store the new setting.

### Text Size

The display information may be presented in two different character sizes:

- Small (Default)
- Large

#### **Note!**

*Text size selection applies to the Phone setup menu, the Last Calls list and to the display text indicating the current function of the soft keys. Other text appears as small.*

### ISDN Protocol

The *ISDN Protocol* option of the *Phone setup* menu is used to select ISDN protocol for the handset, and consists of the following choices:

- Euro ISDN. For connection to equipment conforming to the

European ISDN standard

- National ISDN-1. For equipment conforming to the NI-1 (National ISDN-1) standard

#### **Note!**

*All ISDN devices and the BDU must use the same protocol. By default the terminal and handsets use the Euro ISDN protocol.*

1. Use  and  to highlight the desired option and choose **Select**.

### Time format

The *Time format* option of the *Phone setup* menu is used to set the format of the time presentation.

The time displayed is GMT time and is updated automatically via the GPS receiver.

The *Time format* option of the *Phone setup* menu consists of the following choices:

- AM / PM
- 24H

1. Use  and  to highlight the desired option and choose **Select**.

## Language

The display information may be presented in different languages.

### Note!

*Translation applies to the Phone setup menu, the Last Calls list and to the display text indicating the current function of the soft keys. Other text appears in English.*

The *Language* option of the *Phone setup* menu consists of the following choices:

- English
- Norwegian (Norsk)
- Spanish (Español)
- Russian
- Chinese

1. Use  and  to highlight the desired option and choose **Select**.

If the current language is not understood, the *Language* option can be accessed by selecting *Menu > Phone setup* followed by pressing **7**.

## Terminal type

The *Terminal type* option of the *Phone setup* menu is used to select the handset mode, and consists of the following choices:

- Automatic (SAILOR 77 Fleet+ handset)
- Normal Mode (regular ISDN handset)

Default mode is *Automatic*. In this mode the handset is automatically set up according to the connected terminal type (e.g. a Fleet terminal will automatically set up the handsets with MSN numbers).

In *Normal Mode* the handset acts as a regular ISDN handset and does not exchange information with the terminal. This means that the shared Phone Book will not be available and MSN numbers must be manually selected.

1. Use  and  to highlight the desired option and choose **Select**.

## Handset Reset

The *Handset Reset* option of the *Phone setup* menu is used to reset the handset settings.

### CAUTION!

*When selected, this option reverts all handset settings to their factory setting (including erasure of Last Calls list).*

1. Choose **Select** and **Yes** to revert to factory settings. The operation may be cancelled by choosing **No** instead of **Yes**.

## About Handset

The *About Handset* option of the *Phone setup* menu is used to view information about the ISDN Handset software version.

1. Choose **OK** to return to the *Phone setup* menu.

### Select Default Net Service Provider

Refer to *Menu Overview 1*.

The default Net service provider for an Ocean Region satellite service is automatically used if the user does not select another provider.

**Note!**

*When using a SIM card, selection of Net service provider is restricted to one of the allowed Net service providers. See *Using a SIM Card* in the INTRODUCTION section.*

When the Restricted Net function is enabled, and also when using certain SIM cards, the selection of default Net service provider is not possible.

1. Select **Menu** from idle screen to open the main menu.
2. Use and to highlight the *Set Network* option and select **OK**.
3. Use and to highlight the desired Net service provider and select **OK**.

### Priority Calls

Refer to *Menu Overview 2*.

This main menu option is only available when the ISDN

Handset is connected to the *Distress Alarm Unit*.

The following call priority levels are recognized by the Inmarsat system:

- Safety Call
- Urgency Call
- Distress Test (see *Distress Alarm Unit*)
- Test Buzzer (see *Distress Alarm Unit*)

For *Safety Call* and *Urgency Call*, specific telephone numbers are prompted for that must be provided by the Net service provider.

1. Select **Menu** from idle screen to open the main menu.
2. Use and to highlight the *Priority Call* option and select **OK**.
3. Use and to highlight the desired option (Safety Call or Urgency Call) and select **OK**.
4. Enter the number provided by the Net service provider.

## Serial Ports Settings

Refer to *Menu Overview 2*.

This main menu option is used to set parameters (e.g. data speed, format and flow control) for the RS-232 ports A and B. It is also used to enable/disable the NMEA port used for reading external GPS information when the internal GPS information is not usable.

1. Select **Menu** to open the main menu.
2. Use and to highlight the *Ports* option and select **OK**.
3. Use and to highlight the desired option and select **OK**.

### Port A / Port B

1. Select parameter (speed, format or flow control) and the desired parameter value. Confirm selection(s) by selecting **OK**.

### Change Port B driver type

Port B may have the driver type changed between RS-232 and RS-422.

1. Select the *Driver Switch* menu option for Port B, and use and to highlight the desired driver type. Confirm the selection by selecting **OK**.

2. Reboot the BDU for the new setting to take effect. The disabled port type will be disconnected.

## Available Information

Refer to *Menu Overview 3*.

The information available here are read-only information generated by the system.

The *Information* option of the main menu consists of the following choices:

- Diagnostics (turn diagnostics on and off, see *About Version Info*)
- Forward ID (view terminal ID)
- Version Info. (see *About Version Info*)
- Network Info (view ocean region and spot no.)
- Alarms & Msgs (see *About Alarms & Messages*)
- Position (view position values)
- Speed/Course (view speed and course values)

### *Note!*

*Course (over ground) not to be used for navigation.*

1. Select **Menu** from idle screen to open the main menu.
2. Use and to highlight the *Information* option and select **OK**.
3. Use and to highlight the desired item and select **OK**.

### About Version Info

The *Version Info* option of the *Information* menu consists of the following choices:

- System (view system version)
- Ctrl SW (view control software version)
- DSP\* (view DSP software version)
- Monitor\* (view boot software version)
- KDB\* (view KDB software version)
- RFB\* (view RFB software version)
- ATB\* (view ATB software version)

\* Available only when Diagnostics = On

### About Alarms & Messages

The *Alarms & Msgs* option of the *Information* menu consists of the following choices:

- Clear Causes (view network connection error info)
- Alarms List (see *View Alarms*)
- Info. Log (view alarm history)

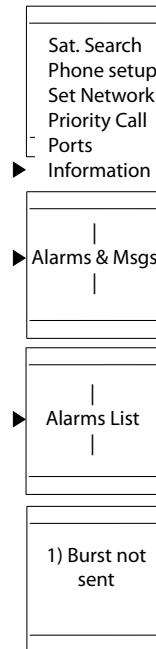
### View Alarms

Information about the alarm is found in the Alarms List. The alarm indicator flashes when an alarm condition occurs:



Alarm indicator

The alarm indicator stops flashing when accessing the Alarms List. If an alarm condition persists, the alarm indicator continues to be displayed.



1. Select **Menu** from idle screen to open the main menu.

2. Use **▲** and **▼** to highlight the *Information* option and select **OK**.

3. Use **▲** and **▼** to highlight the *Alarms & Msgs* option and select **OK**.

4. Use **▲** and **▼** to highlight the *Alarms List* option and select **OK**.

5. The alarms list is presented. Use **▲** and **▼** to scroll through the list, and select **OK** to view time and date information for the alarm displayed.

## General

SAILOR 55 Fleet+ provides access to telefax service:

- Group 4 fax at 64 kbps via the ISDN connector.
- Group 3 fax at 9.6 kbps via the Terminal Adapter.
- Group 3 fax using 3.1kHz Audio service.

## Limitations

SAILOR 55 Fleet+ 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/Thrane & Thrane Distributor before purchasing a telefax for use with SAILOR 55 Fleet+.

## Installation

For installation of Terminal Adapter, see *Appendix B*.

## Transmission

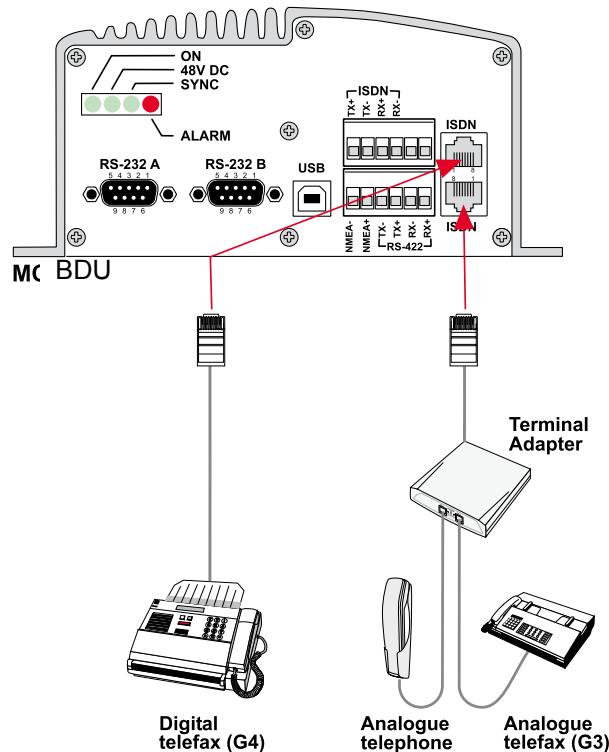
Telefax calls made by SAILOR 55 Fleet+ are telefax only. Any telephone handset connected to the telefax machine can not be used.

To send a fax, use the same dialing sequence as when making a call. See *OTHER CALL PROCEDURES* earlier in this manual.

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

Telefax transmissions normally take 1 minute 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, re-send only the failed pages.



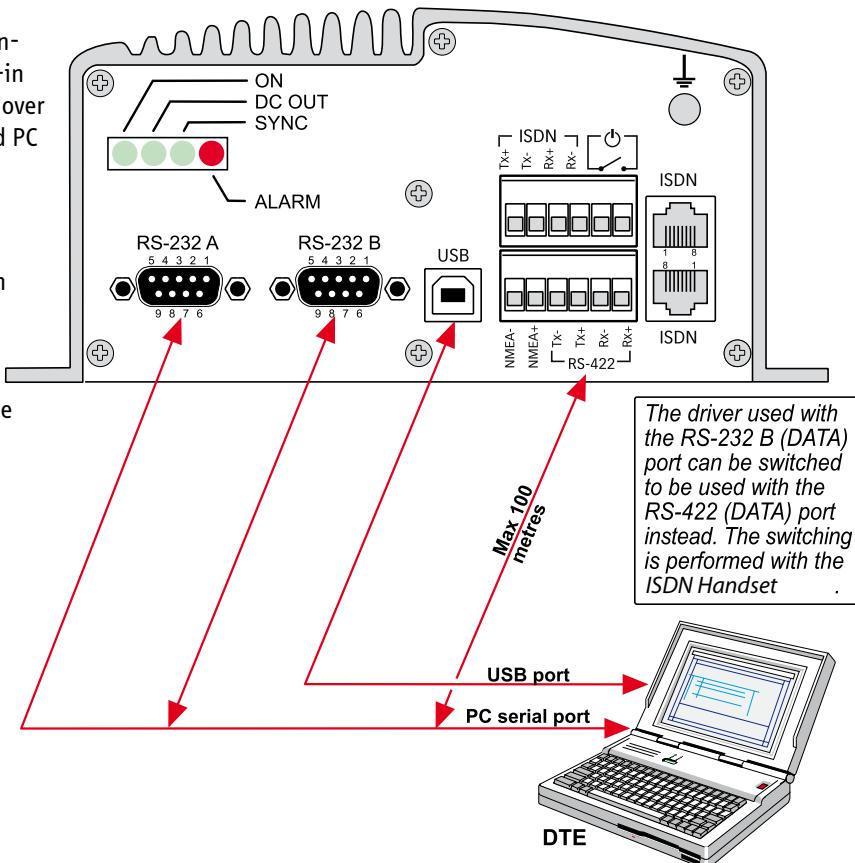
## Data transmission

SAILOR 55 Fleet+ provides access to asynchronous data services through its built-in modem capability. The transmission rate over the satellite is 64 kbps, and any standard PC with a serial port can be used.

## Installation

Connect the RS-232 serial cable between the serial port on the PC and one of the the 9-pin **RS-232** ports on the SAILOR 55 Fleet+ BDU.

For connecting up and configuration, see *Applications > Mobile Data Service via RS232 or via USB on the CD*.



## Mobile Packet Data Service

The MPDS service can be efficient for applications such as:

- E-mail
- Internet/intranet
- Navigational updates
- Vessel telemetry transmission
- Database queries
- E-commerce

The user only pays for the amount of data sent over the network, and not for the time connected.

*Ports supporting MPDS:*

- RS232A
- RS232B / RS422
- USB

*No configuration is needed!*

Reverting to Mobile ISDN service is done from the PC.

See the *MPDS application* on the SAILOR 55 Fleet+ CD.

### Installing the PC program

The **SAILOR VtLite** program allows SAILOR 55 Fleet+ to be operated or configured from a PC, including functions such as:

- Phone book
- Traffic log
- Configuration of ports (ISDN/USB/RS-232/RS422)
- Configuration of the BDU

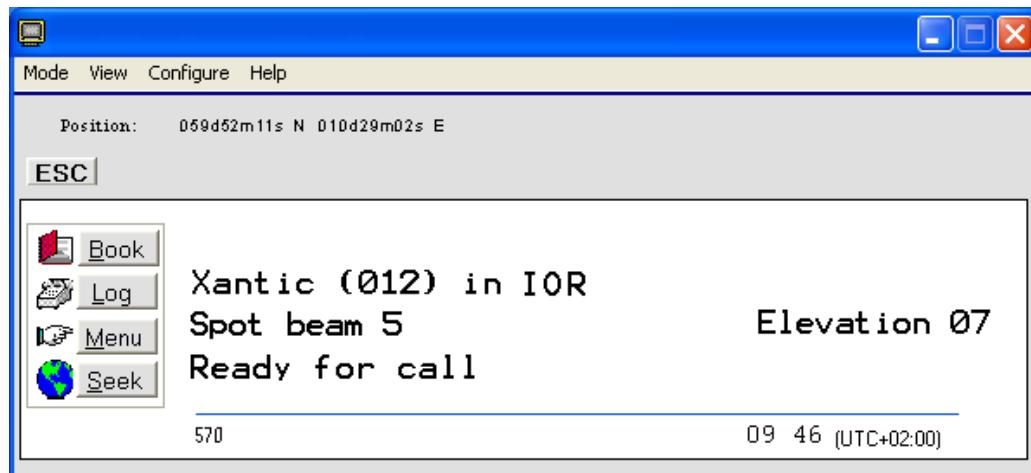
Connect the PC as indicated on the previous page.

The **SAILOR VtLite** program is available on the enclosed CD and must be installed on the PC hard disk.

For an explanation of the functions, *see the User Guide on the CD.*

*Close any Acrobat Reader program open on the PC before proceeding.*

*See next page.*

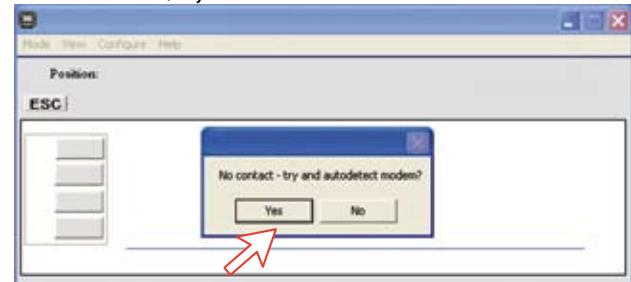


*SAILOR VtLite PC program*

**Procedure:**

1. Insert the CD: *The Start Page opens automatically in a few seconds. (Alternatively, open the Acrobat file "SAILOR 55 Fleet+\_StartPage" on the CD. If necessary, install Acrobat Reader by clicking "Ar505enu.exe" in the "SW Installation" folder.)*
2. Click **"Software Installation"** and then **"SAILOR VtLite"**. Allow files to load on to the PC hard disk. The installation of the program starts automatically when files have been loaded.
3. Connect the serial cable between the PC serial port and one of the RS-232 ports on the SAILOR 55 Fleet+ Below Deck Unit. See **DATA SERVICE**.
4. Switch ON the Below Deck Unit.
5. Start the SAILOR VtLite Marine program by clicking **Start>Programs>SAILOR VtLite**.  
If no contact, click **Mode>Terminal MMI**.

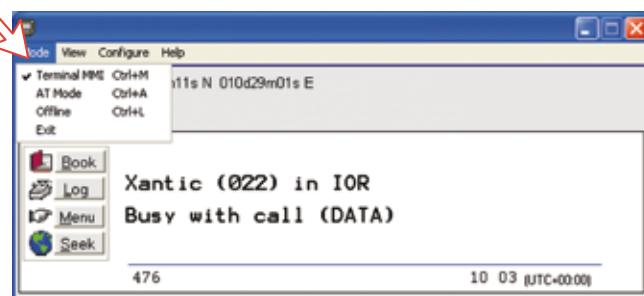
6. If no contact, try **Autodetect**.



7. Click **Configure > Port** to check the port settings.



8. The USB port can be used to run SAILOR VtLite. The USB modem driver required is available on the CD.



## **General**

No regular maintenance is required of the SAILOR 55 Fleet+ satellite terminal. It is recommended, however, to clean the antenna radome every once in a while. The realtime clock is automatically updated by the built-in GPS.

Problem	Probable cause	Action
<b>1. SAILOR 55 Fleet+ BDU power On indicator does not light up:</b>	<p>The Below Deck Unit is not switched ON</p> <p>Power is not connected</p>	<ul style="list-style-type: none"> <li>Set the ON/OFF switch to ON (rear panel).</li> <li>Switch OFF, wait 10 secs and switch back ON</li> </ul>
		<ul style="list-style-type: none"> <li>Check that the power cord is properly connected to 24VDC power source.</li> </ul> <p><i>Diode info: ON=DC-in OK (&gt;18VDC), 48VDC=Internal DC Power output 48V OK</i></p>
<b>2. The ISDN Handset display freezes or stays completely blank:</b>	The handset cord is not connected or damaged	<ul style="list-style-type: none"> <li>Check that the handset cord is properly connected and inspect the cord.</li> <li>Power BDU off/on.</li> <li>Disconnect cord from BDU and connect it again.</li> </ul>
<b>3. SAILOR 55 Fleet+ cannot find the satellite:</b>	No or weak signals. Sight to satellite obstructed	<ul style="list-style-type: none"> <li>Check that no obstacles block the free sight to the satellite.</li> </ul>
<b>4. Low signal reception:</b>	Obstructions	<ul style="list-style-type: none"> <li>The signal strength indicator should preferably exceed 570 in Sailor VtLite, or 5 bars in the Handset display.</li> <li>Check that no obstacles block the free sight to the satellite.</li> <li>Restart the search for any satellite, or try a satellite in a specific Ocean Region.</li> </ul>
<b>5. SAILOR 55 Fleet+ functions abnormally:</b>		<ul style="list-style-type: none"> <li>Turn off power and disconnect power, and switch on again.</li> <li>Verify correct voltages to the BDU: 24V DC -10% to +30%.</li> <li>Contact your distributor/retailer for new software.</li> </ul>

Problem	Probable cause	Action
<b>6. Unsuccessful call:</b>	<p>SAILOR 55 Fleet+ is not commissioned.</p> <p>The following messages appear in the VtLite display: "No response from net". (HS: Disconnected)</p>	<ul style="list-style-type: none"> <li>Check clear cause</li> <li>Call the Net Service Provider.</li> </ul> <ul style="list-style-type: none"> <li>Check that the correct Net service provider is shown in the display.</li> <li>SAILOR 55 Fleet+ is not commissioned.</li> <li>Verify in ISDN Handset menu &gt;Information&gt;Network info&gt;(scroll down) successful=commissioned, failed=not commissioned.</li> </ul>
	<p>The called party is busy.</p> <p>"Subscriber busy"</p> <p>appears in HS display</p>	<ul style="list-style-type: none"> <li>Wait for some time and try again.</li> <li>Call another subscriber.</li> </ul>
<b>7. Problems with telefax:</b>	Incomplete dialing	<ul style="list-style-type: none"> <li>Remember to press "#" as last digit before starting transmission.</li> <li>Instead of "#", try to enter: 902 + 00 + country code + subscriber number.</li> </ul>
	Fax fails to work in Global Beam (0)	<ul style="list-style-type: none"> <li>Works in spot beam only.</li> </ul>
	Service not commissioned	<ul style="list-style-type: none"> <li>See <i>problem 5</i>.</li> </ul>
	System transmission delays	<ul style="list-style-type: none"> <li>The OFF-HOOK time for handshake should 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).</li> <li>Set error correction to OFF</li> <li>Try a different fax machine. Check that the telefax (Group 3) is properly connected to the Terminal Adapter.</li> <li>Contact the Distributor</li> </ul>

Problem	Probable cause	Action
<b>8. No GPS:</b> <b>"Beam selection failed"</b> <b>"Not ready for call"</b>	GPS alarm, or GPS not received	<ul style="list-style-type: none"> <li>Wait up to 15 minutes. The GPS may use up to 15 minutes if SAILOR 55 Fleet+ has switched off for more than 6 hours. If not the case, GPS will report position to Sailor VtLite and handset display when GPS sync. Gps is needed to select satellite beam!</li> </ul>
<b>9. Problems with data communication:</b>	Wrong PC settings	<ul style="list-style-type: none"> <li>Check the PC program settings: speed 115200bps, 8 data bits, 1 stop bit, no parity if RS232 is used (default settings in BDU).</li> <li>Shore/land has not an analogue modem.</li> <li><i>Read SAILOR Application guide on the CD.</i></li> <li>Contact the PC applications vendor for help.</li> </ul>
	Data Service fails in Global Beam (0)	<ul style="list-style-type: none"> <li>Works in spot beam only.</li> </ul>
<b>10. Routing of calls:</b>	MSN number not entered properly	<ul style="list-style-type: none"> <li>Make sure that the MSN number entered into SAILOR 55 Fleet+ with the Device Manager, is also entered into connected equipment. Some devices, e.g. ISDN Handset, can be programmed with multiple MSNs.</li> <li>Call Handset to verify MSN of other phones.</li> <li>Read handset MSN by selecting <b>Menu &gt; Phone setup &gt; Active MSN.</b></li> </ul>
<b>11. Problem with local calls:</b>	Wrong dialing	<ul style="list-style-type: none"> <li>Check that you call the correct MSN number. If Access Code is used, you need to enter this code first.</li> <li><b>(*) (*) MSN (#)</b></li> </ul>
<b>12. Problem with call transfer</b>		<ul style="list-style-type: none"> <li>Not possible to transfer call from analogue to ISDN.</li> </ul>

## LIST OF TERMS

<b>AC</b> Alternating Current	SAILOR 55 terminal is an MES for the Inmarsat GAN system; MES may also be called SES (Ship Earth Station) or, if on aircraft, AES (Aeronautical Earth Station).
<b>AOR-E</b> Atlantic Ocean Region East.	
<b>AOR-W</b> Atlantic Ocean Region West.	
<b>Azimuth</b> horizontal direction angle between north and, e.g. the direction to the satellite.	
<b>Bit rate</b> the number of bits transmitted per second (bps).	
<b>Byte</b> = 8 bits	
<b>CHV2</b> higher access level on the SIM card, corresponding to SAILOR 55 Fleet+ "owner" level.	
<b>DC</b> Direct Current.	
<b>DID</b> Destination terminal IDentification.	
<b>DSP</b> Digital Signal Processor.	
<b>DTE</b> Data Terminal Equipment.	
<b>Elevation</b> vertical angle to the satellite, i.e. the height of the satellite above the horizon.	
<b>55 Fleet</b> Inmarsat's single integrated voice, fax, Mobile Data Service and Mobile Packet Data Service.	
<b>FWD ID</b> forward Id, telephone network identity.	
<b>GAN</b> Inmarsat Global Area Network.	
<b>Home LES</b> Home Land Earth Station gives access to MPDS service like Internet / e-mail and handles MPDS billing system.	
<b>IMN</b> Inmarsat Mobile Number, a unique 9-digit number which identifies each device connected to SAILOR 55 Fleet+.	
<b>Inmarsat</b> International Maritime Satellite Organisation.	
<b>IOR</b> Indian Ocean Region.	
<b>ISDN</b> Integrated Services Digital Network.	
<b>ISN</b> Inmarsat Serial Number, individual number assigned to each SAILOR 55 Fleet+ terminal.	
<b>ITU</b> International Telecommunications Union	
<b>Kbps</b> Kilobits per second.	
<b>LAN</b> Local Area Network.	
<b>LES</b> 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).	
<b>M4</b> Inmarsat Multi-Media Mini-M.	
<b>MES</b> Mobile Earth Station, a user terminal for an Inmarsat system; the	
<b>MPDS</b> Inmarsat Mobile Packet Data Service.	
<b>MSN</b> Multiple Subscriber Number, the extension number that connected equipment responds to. Also used for internal calls.	
<b>NCS</b> Network Coordination Station, station that supervises all messages and signals sent in the Inmarsat system; one in each Ocean Region.	
<b>OID</b> Originating terminal IDentification.	
<b>OCEAN REGION</b> the coverage area of an Inmarsat satellite within which SAILOR 55 Fleet+ may communicate.	
<b>PABX</b> Private Automatic Branch Exchange.	
<b>PIN</b> Personal Identification Number.	
<b>POR</b> Pacific Ocean Region.	
<b>PPP</b> Point-to-Point Protocol, protocol used for serial data communication via the SAILOR 55 RS-232 or USB port.	
<b>PUK</b> Personal Unblocking Key, code that allows unblocking a SIM card.	
<b>RF</b> Radio Frequency.	
<b>R LES</b> Regional Land Earth Station sets terminal in MPDS list.	
<b>S/A operator</b> StandAlone operator who maintains connectivity in the event of Network Coordinating Station failure.	
<b>SBS</b> Shared Base Station assigns channels to the MPDS user and handles the MPDS communication.	
<b>SIM</b> Subscriber Identity Module.	
<b>SMS</b> Short Message System.	
<b>Spot Beam</b> an Ocean Region is divided into sub-regions, each "spot-lighted" by a beam from the region satellite.	
<b>Terminal ID (OID/DID)</b> different IDs for different Inmarsat services (e.g. 01 = 4.8 speech)	
<b>Terrestrial Network</b> a fixed telecommunications network, such as a telephone network or a data network, which connects to the Inmarsat system at an LES/NCS.	
<b>UDI</b> Unrestricted Digital Information.	
<b>USB</b> Universal Serial Bus.	
<b>UTC</b> Coordinated Universal Time, referenced to Greenwich Mean Time (GMT).	

## Safety Warnings, Cautions and Warranty

### General

To avoid interference, do not run cables parallel to AC wiring, or near fluorescent lights or other high magnetic or electrical fields. Interference from this kind of sources causing equipment to be faulty or fail working properly will automatically void warranty conditions. Access to the interior of the equipment shall be made by a Thrane & Thrane AS qualified technician only.

*The equipment should preferably be installed by a Thrane & Thrane approved Installation & Service Agent.*

Warranty is not valid until the "Thrane & Thrane AS Warranty Certificate" (at the back of the Registration and Warranty Certificate booklet enclosed with the equipment) is signed by the approved Installation & Service Agent, and returned to Thrane & Thrane AS.

### Grounding

Connection to all type of equipment meant for operation together with SAILOR 55 Fleet+ should be done while the unit is powered off. Peripheral equipment using mains shall be connected to a grounded AC power socket.

### Cables and connections

Cables longer than 5 metres must be shielded. All peripheral equipment must be grounded.

ISDN telephone	100 m	0.22 mm <sup>2</sup> min
Analogue telephone	150 m	0.22 mm <sup>2</sup> min
USB	5 m	Standard cable
RS-232	3 m	Standard cable
RS-422	100 m	0.22 mm <sup>2</sup> min

*Always follow the installation guidelines described later in this manual for each type of interface.*

### Ventilation of the Below Deck Unit

*Ambient temperature range: 0 - 45°C.*

*To ensure adequate cooling of the BDU a 10 cm unobstructed space must be maintained above and below the unit.*

*See "Placing the Below Deck Unit (BDU)".*

***Failure to comply with the above rules for installation will automatically void the warranty.***

## Location of Antenna Unit

### Avoiding obstructions

The antenna has a beamwidth of  $\pm 50$  at 3 dB and ideally requires a free line of sight in all directions.

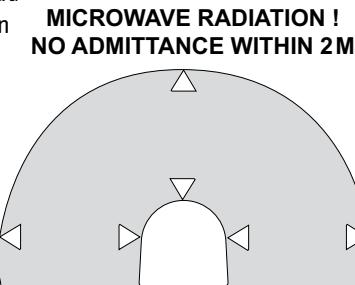
Any obstruction will cause blind sectors, resulting in signal degradation or even loss of communication with the satellite. Degradation of the satellite signal can only be completely avoided by placing the antenna higher than any obstructions. This is often not feasible and a compromise must be made to reduce the number of blind sectors and cost of installation. The degree of signal 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.

### Radiation precautions

Personnel should not be admitted in areas closer than 2 m from the antenna.

However, no restrictions are required when the antenna radome is installed at least 2 m above the highest point accessible to passengers.



### Avoiding interference

Do not locate the Antenna Unit close to interfering signal sources, or in such a position that the source (e.g. radar antenna) radiates directly into the SAILOR 55 Fleet+ antenna. The Antenna Unit should be separated as far as possible from other transmitter/receiver antennas, and preferably by at least 5 m from the antenna of other communication or navigation equipment, such as the antenna of the satellite navigator, the VHF antenna, radar equipment, or other Inmarsat equipment.

### Compass safe distance

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

### Other precautions

Do not place the antenna close to the funnel, as smoke deposits will then eventually degrade antenna performance.

*The antenna should be installed so that severe vibration and shock are avoided.*

## Coax cable

A 25 metre coaxial cable type RG-223 (103154) is supplied as standard.

For greater lengths, see the table below which lists suitable double screened coax cables.

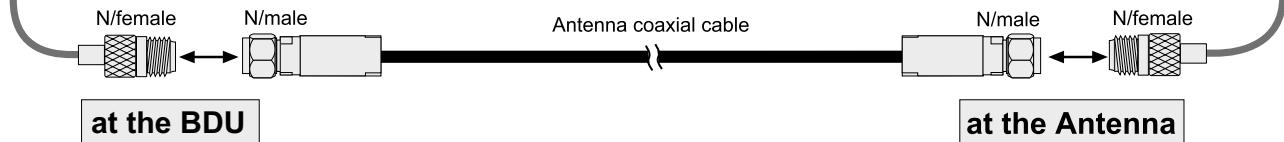
The coax cable should be secured by laying the cable in a tube and/or by fastening the cable to avoid damage.

## Optional antenna cable

\* Halogen-free/flame retardant/low smoke (FRNC: Flame Retardant Non-Corrosive)

Antenna cable	Thrane & Thrane part no.	Diameter	Bending radius	Min/max. length for 4/20dB	Suitable coaxial connectors
RG223	R906551/1	5.3 mm	53 mm	7/25 m	11N-50-3-54
RG214-FRNC*	102052	10.8 mm	108 mm	12/50 m	11N-50-7-5
S 10162 B-11*	QTZC502012	12.9 mm	129 mm	30/140 m	11N-50-10-4
RF 1/2" 50		16.0 mm	160 mm	45/170 m	11N-50-12-10 + "pigtail"

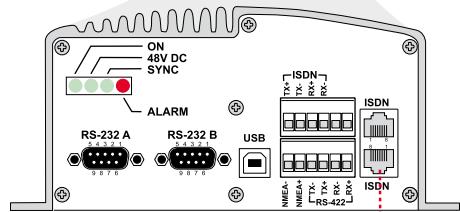
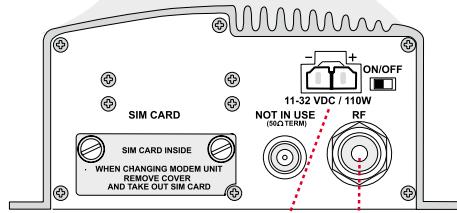
Mounting the coaxial connector, see later in this appendix.



## Connecting up



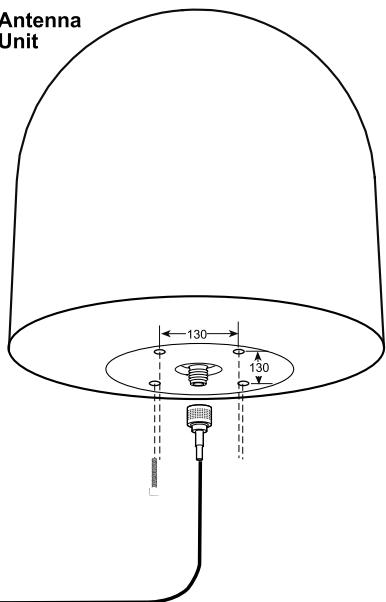
**BDU -**  
**Below Deck Unit**



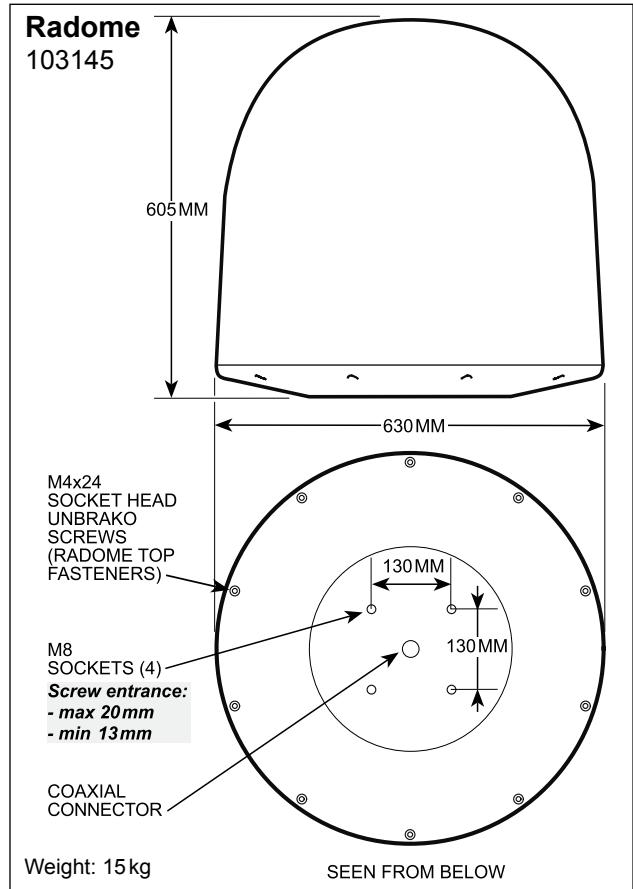
**Front connector panel**



**Antenna Unit**

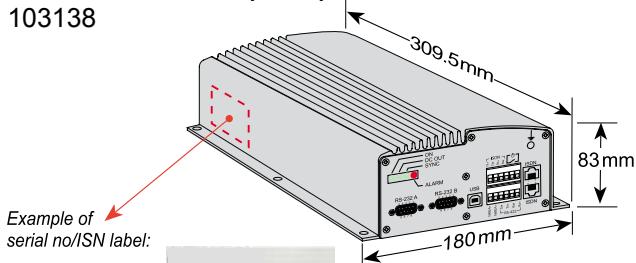


## Outline dimensions



### Below Deck Unit (BDU)

103138



Example of serial no/ISN label:

Unit designation → SAILOR 55 Fleet+  
Below Deck Unit

Thrane Part No. →

Revision no. →

ISN - Inmarsat → 01-03040011

Serial No.

Production Serial No, e.g.: 01 - 03040003

year month ser.no in month

**Important!**  
Ensure free space of at least 10cm around the BDU for adequate cooling, and to allow removal of the unit for service.

Weight: 3 kg



### ISDN Handset

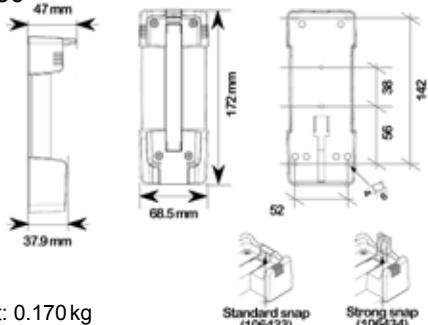
106167



Weight: 0.125 kg

### ISDN Handset holder/cradle

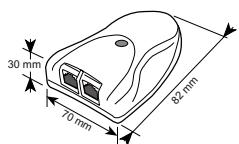
106430



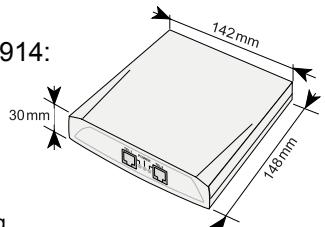
Weight: 0.170 kg

**Mounting handset holder/cradle****ISDN wall socket  
(option)**

102176

**Terminal Adapter****Analogue-to-ISDN TA with 2 analogue lines  
(option)**

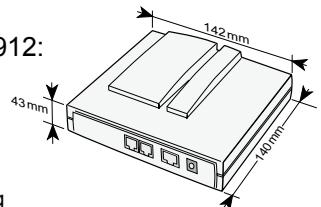
QDGY911914:



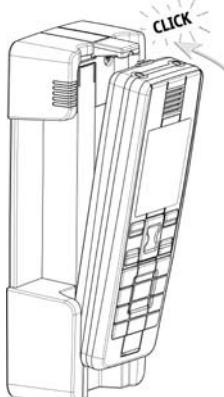
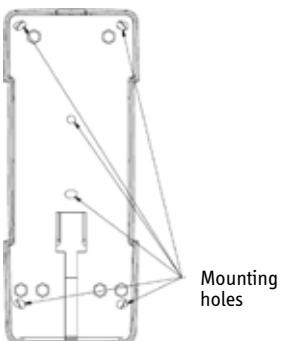
Weight: 0.1 kg

**BCS iTA Terminal Adapter****Analogue-to-ISDN TA with 2 analogue lines  
(option)**

QDGY911912:

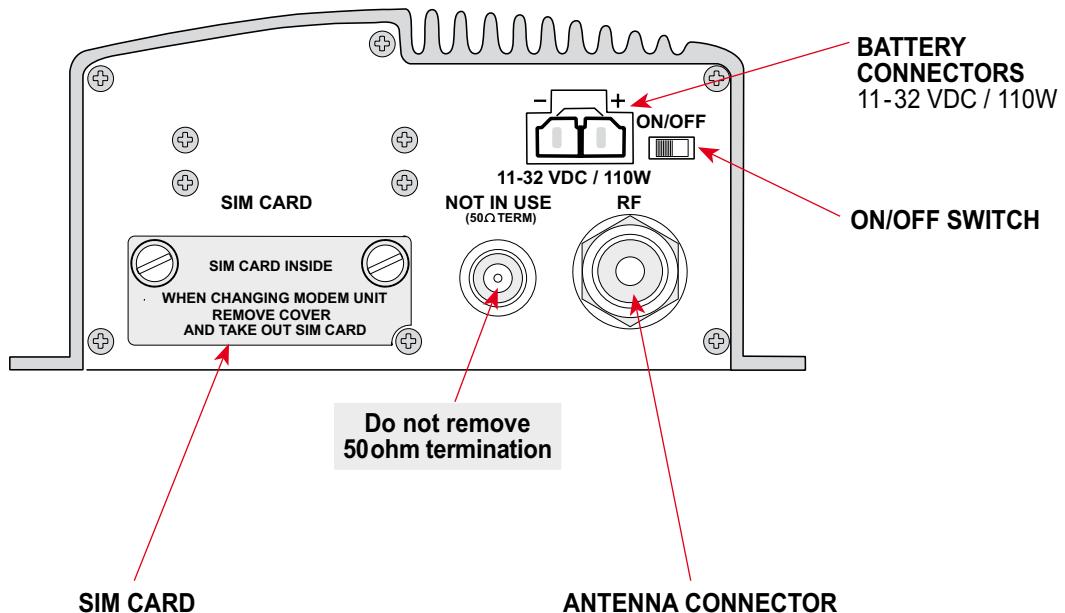


Weight: 0.2 kg

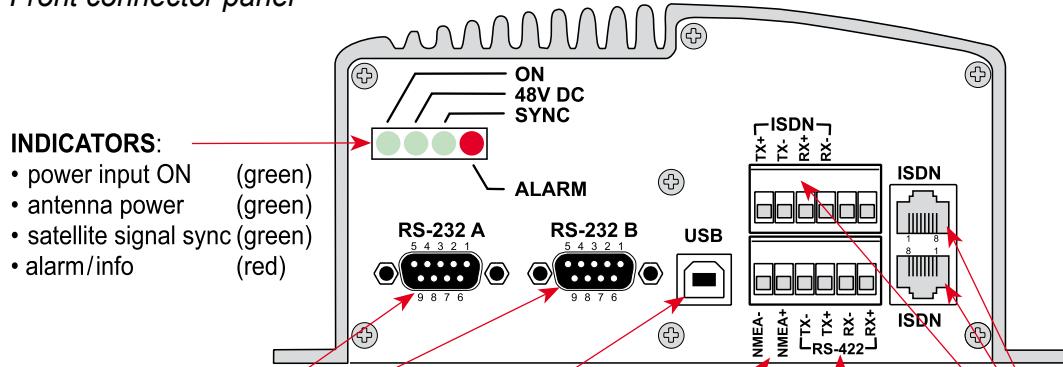


## BDU connectors

Rear connector panel



## Front connector panel

**INDICATORS:**

- power input ON (green)
- antenna power (green)
- satellite signal sync (green)
- alarm/info (red)

**RS-232:**

9-pin serial data ports for:

- operation and configuration from PC.
- software download (RS-232A)
- 64 kbps data service
- MPDS
- Serial printer (traffic logging)

**USB:**

serial data port for:

- operation and configuration from PC.
- 64 kbps data service
- MPDS

**NMEA:**

Connection of NMEA-0183 for external GPS input (*not required*)

**RS-422:**

serial port for connection of data equipment with up to 100 metres cables.

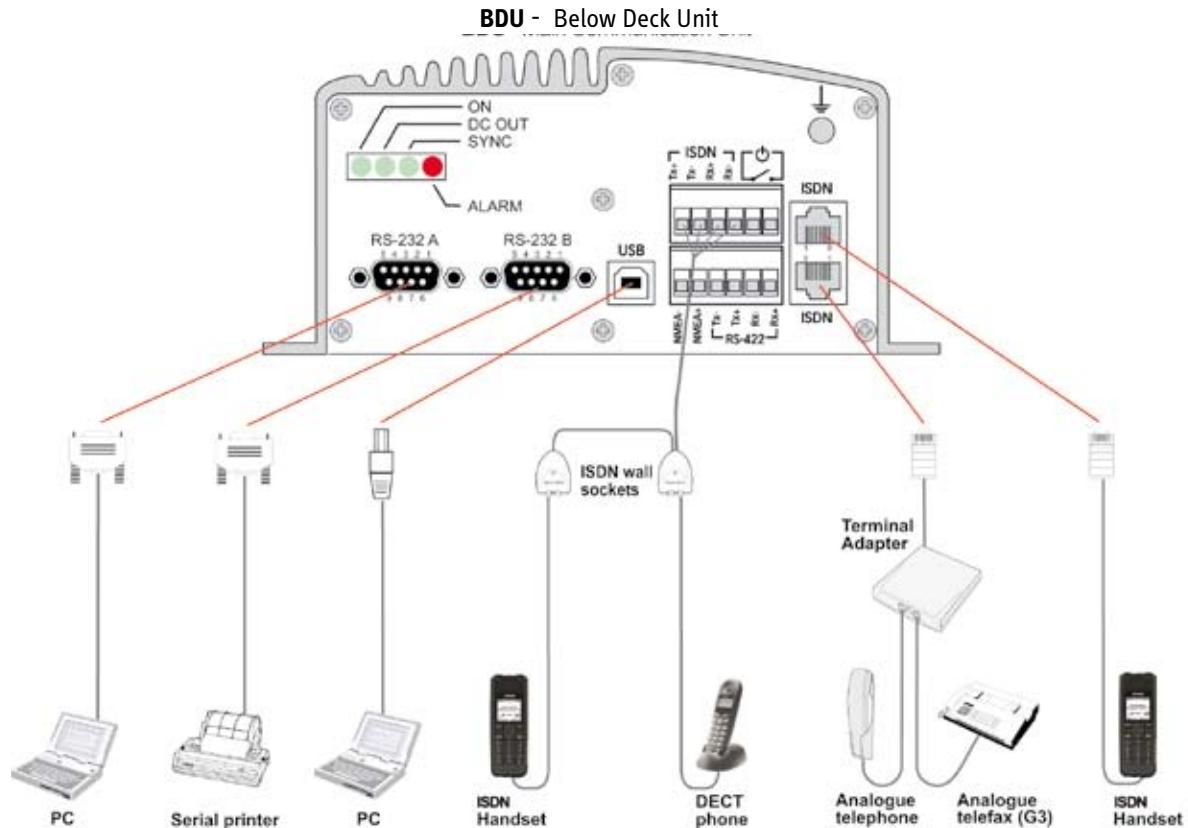
- operation and configuration from PC.
- 64 kbps data service
- MPDS

**ISDN:**

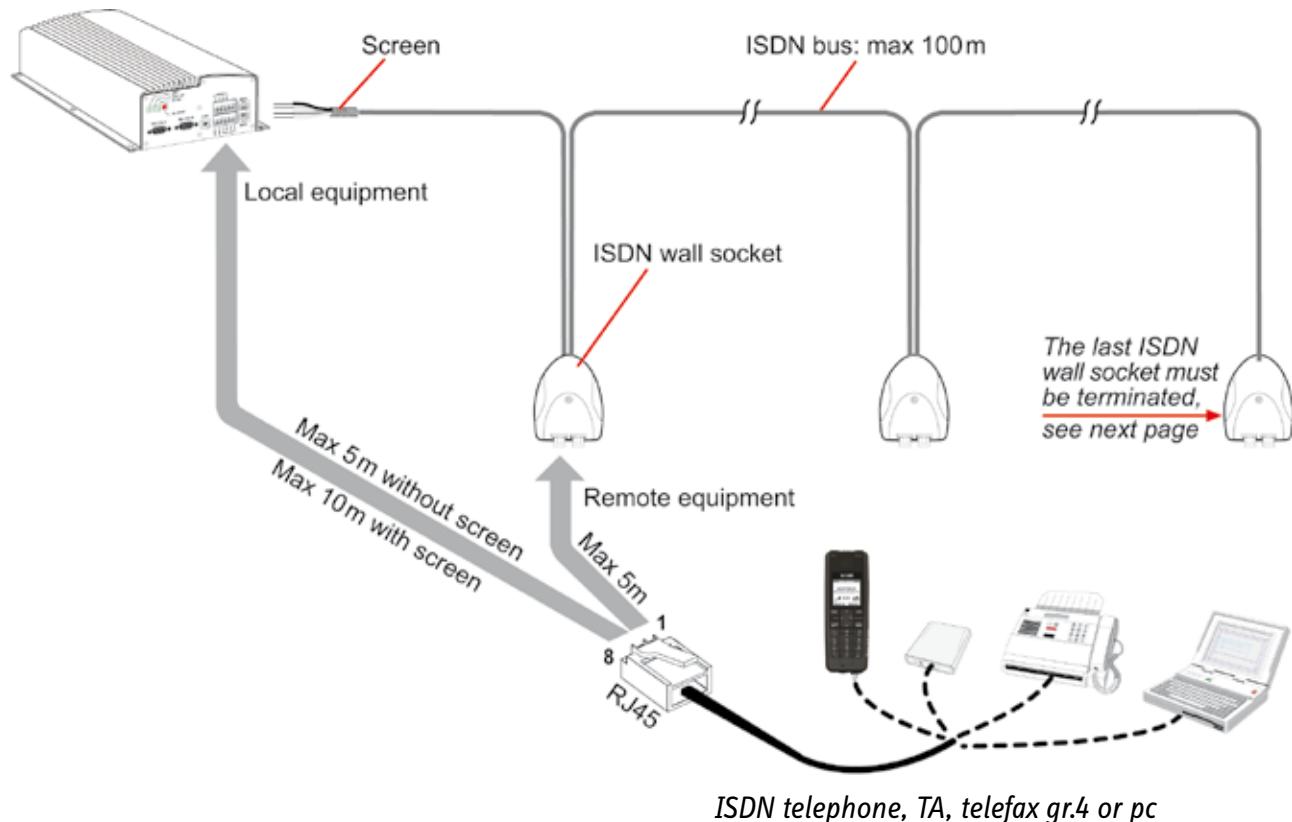
Connectors/RJ45 Services:

- 4.8 kbps speech
- 64 kbps speech
- 64 kbps data service
- 56 kbps data service
- audio service (3.1 kHz)
- 9.6 kbps fax service via Terminal Adapter

## Connecting up - examples



## ISDN telephones/equipment



## ISDN cable lengths

**Total length of ISDN bus:**

**100m**

Only one bus from the BDU

**Single cables: max 5m**

The last ISDN wall socket must be terminated, see next page

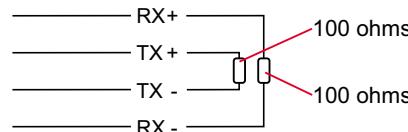
**Up to 8 ISDN devices can be operated with SAILOR 55 Fleet+**

## ISDN bus termination

When longer than 10 metres, the end of the ISDN bus must be terminated by two resistors as shown below.

Only one bus/termination per BDU.

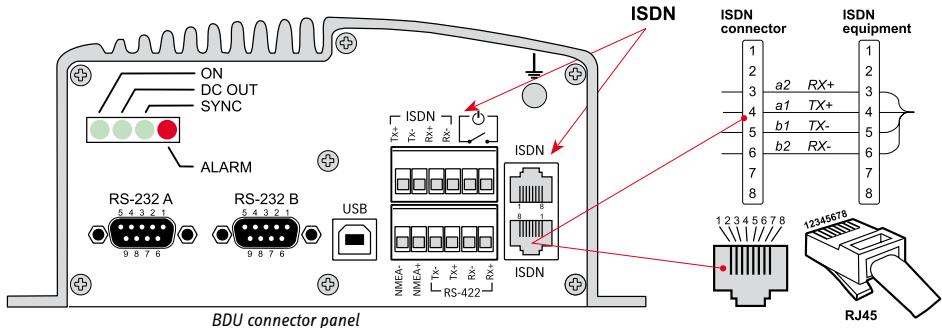
Be aware that only one ISDN cable is permitted to be longer than 10 metres.



Alternative termination:  
ISDN bus end plug



## ISDN connectors



## ISDN wall socket

ISDN bus  
from the BDU

To next ISDN wall socket via junction box, if required.

Ground to be continued  
or interconnected

ISDN wall socket

Terminal	Name	38VDC	Signal	ISDN port
4	a1	-	TX+	TX+
5	b1	-	TX-	TX-
3	a2	+	RX+	RX+
6	b2	+	RX-	RX-

When the distance between the BDU and the last connection box on an ISDN bus exceeds 10m, the termination resistors in the last box must be incorporated by setting both slide switches to position ON:

The switches in all other boxes should be OFF (default setting).

The two RJ45 jacks are connected in parallel.

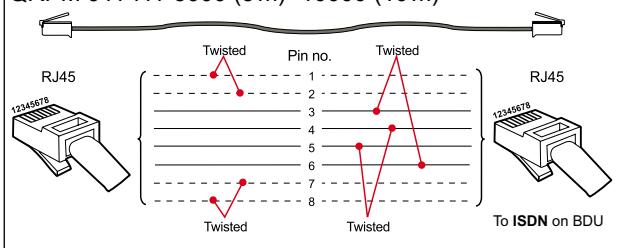


RJ45  
8 1 8 1

## Cable pinouts

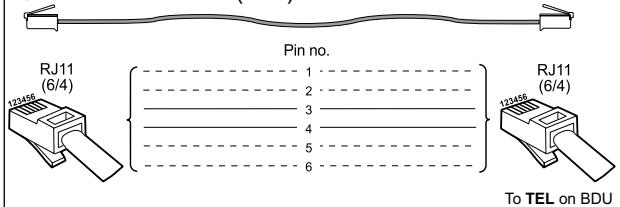
### ISDN cable

QRPM 911 111-3000 (3 m) -10000 (10 m)



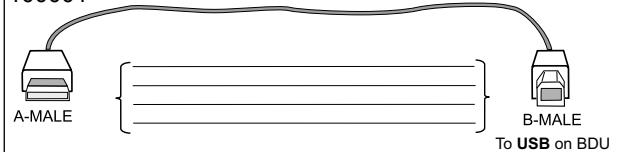
### Analogue telephone cable

QRPM 911033-2000 ( 2 m)



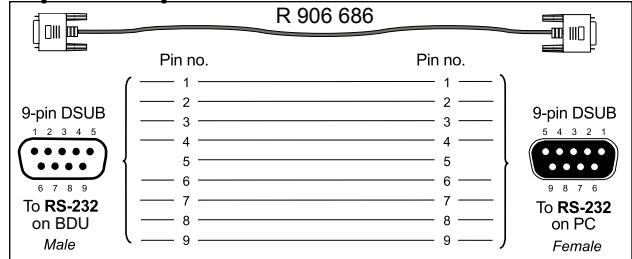
### USB cable

100001

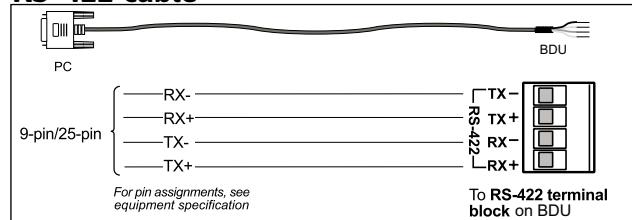


### 9-pin to 9-pin RS-232 cable (3 m)

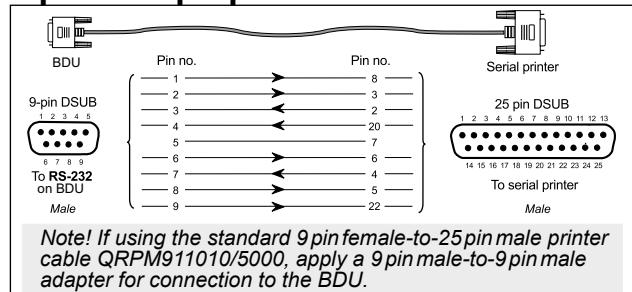
R 906 686



### RS-422 cable



### 9-pin to 25-pin printer cable

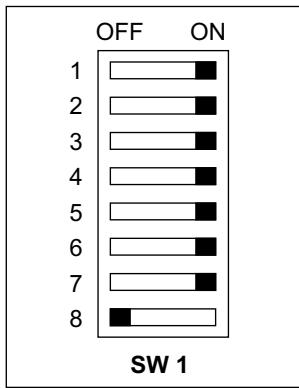


*Note! If using the standard 9 pin female-to-25 pin male printer cable QRPM911010/5000, apply a 9 pin male-to-9 pin male adapter for connection to the BDU.*

## Serial printer settings

### Switch bank 1

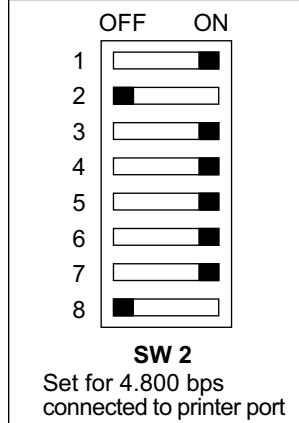
Switch no.	OFF	ON	FUNCTION
1	Even	Odd *	Parity
2	With	No *	Parity
3	7	8 *	Databits
4	X-on/X-off	Ready/Busy *	Protocol
5	Monitor	Circuit *	Test Select
6	Test	Print *	Mode Select
7		ON *	Busy line RTS (-9V)pin4
8	Off *		



\* Correct setting

### Switch bank 2

Switch no.	OFF	ON	FUNCTION
1		ON *	Baud rate 4.800
2	Off *		
3		ON *	
4	Invalid	Valid *	DSR I/P signal
5	512 Bytes	32 Bytes *	Buffer Threshold
6	1 sec.	200 ms *	Min. Busy Time
7	High when selected	High at Power on *	DTR Signal
8	*		Not Used



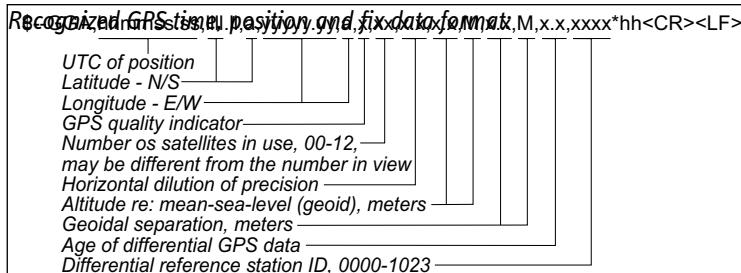
## NMEA-0183 input sources (complies with IEC 61162-1)

Intended for backup GPS. The internal GPS located in the antenna will always be used as the primary source. If the primary source is not receiving GPS signals, the external GPS input will be used (if enabled). NMEA-0183 input is not required for operation of SAILOR 55 Fleet+ Fleet+.

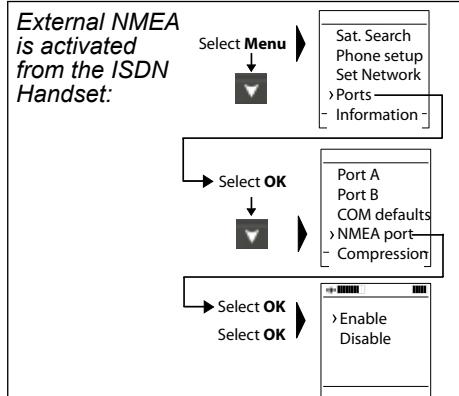
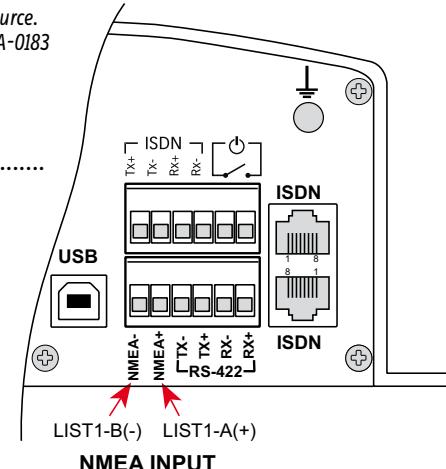
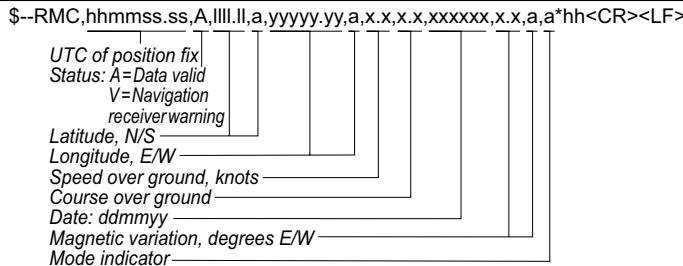
The NMEA-0183 (ver. 3.00) input is a 4 - 15 V current loop interface located on the connector panel of the BDU.

Data input format:.....

- Baud rate 4800
- Data bits 8, parity none, stop bit 1
- Heading input is not required



Recognized NMEA-0183 data format:

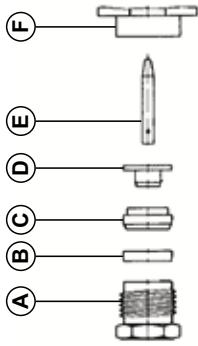


## Mounting connector type 11N-50-3-54 (for cable RG223)

### Tools and materials required:

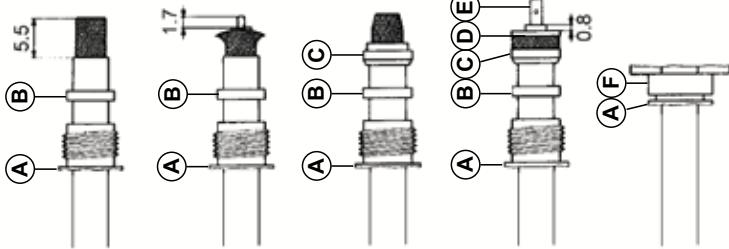
- Stanley blade
- Scissors
- Solder Sn/Pb 60/40 activated rosin flux
- Spanner

7 mm (74Z-0-0-38)  
8 mm (74Z-0-0-16)  
13 mm (74Z-0-0-37)



Slide nut **A** and gasket **B** onto cable.

Prepare cable according to diagram.  
**Caution:** Do not damage braid.



Push braid back and widen it slightly, but do not comb it out. Cut off dielectric 1.7 mm perpendicular to cable axis.

Taper braid towards center conductor.  
Position braid **clamp C** so that its shoulder fits against cable sheath.

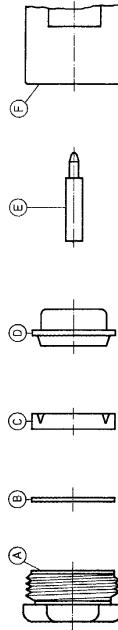
Fold back braid over **clamp C** and trim overlapping braid.  
Slide **clamp D** underneath the braid.  
Check dimension of 0.8 mm.  
Heat inner **contact E** using a soldering iron (approx 40 W) and flow small amount of tin into bore. Push cable inner conductor into bore, immediately remove soldering iron to prevent melting of the dielectric.

Push prepared cable into **connector body F** and tighten **nut A**.  
Do not rotate cable in connector body.

## Mounting connector type 11N-50-7-5 (for cables RG214 FRNC)

## Tools and materials required:

- Stanley blade
- Scissors



Slide nut **A**, washer **B** and gasket **C** onto cable. Remove 8.5 mm (6.5 mm for angle plugs) of jacket without damaging the braid.

**Cables with double braid:** Remove 9 mm (7 mm for angle plugs) of jacket.

**Armoured cables:** Slide two-piece armour clamp onto cable, instead of nut A. Remove 29 mm (27 mm for angle plugs) of armour.

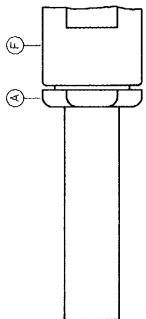
Push braid back and widen it slightly, but do not comb it out. Cut off dielectric 5 mm (3 mm for angle plugs) from end, even and perpendicular to cable axis.  
**Caution:** Do not damage centre conductor.

Taper braid towards centre conductor. Position clamp **D** so that its shoulder fits against cable jacket.

Fold back braid over clamp **D** and cut it off in front of the clamp rim. Check dimension of 1.5 mm. Tin centre conductor of cable.

**Heat contact pin or brush E** with a soldering iron of approx. 250 W. Tin bore hole sufficiently. Insert centre conductor into hole and remove soldering iron quickly in order to prevent dielectric from deformation.

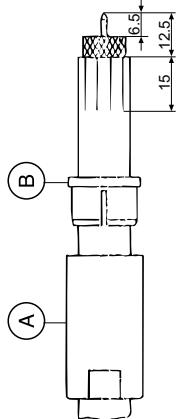
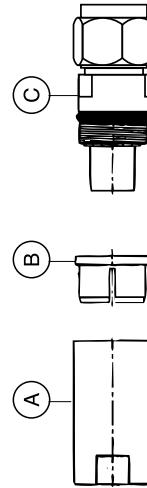
Insert connector body. Screw in and tighten nut **A** with wrenches of 16 mm, type 74Z 0-3, until rubber gasket **C** is split. Do not distort cable and connector body.  
**Armoured cable:** Finally, screw on and tighten armour clamp.



## Mounting connector type 11N-50-10-4 (for cable S10172 B-11)

### Tools and materials required:

- Stanley blade
- File
- Spanners (18, 20, 22 mm)
- Sand paper (300 or 400)
- Scissors



Slide **body A** and **ring B** over cable.

Prepare **cable** according to figure.

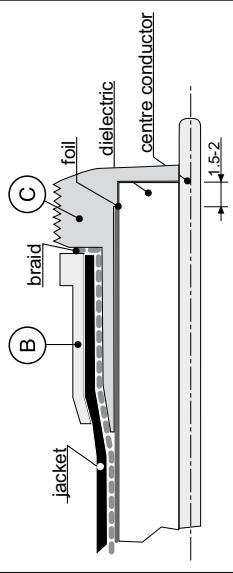
**CAUTION:** Do not damage **braid**.

Trim edge of **centre conductor** with file.

Cut **jacket** 6-8 times lengthwise 15 mm.

**CAREFUL:** Do not damage **braid**.

**IMPORTANT:** Clean **centre conductor** with sand paper. All dielectric remainders must be removed.



Open **jacket A** and **push sleeve C** between foil and braid.

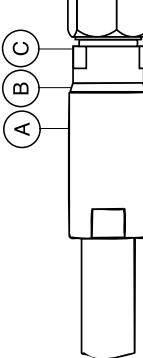
Slide **clamp ring B** to **sleeve C**.

Observe the distance 1.5-2 mm.

Cut **braid** along **sleeve C**.

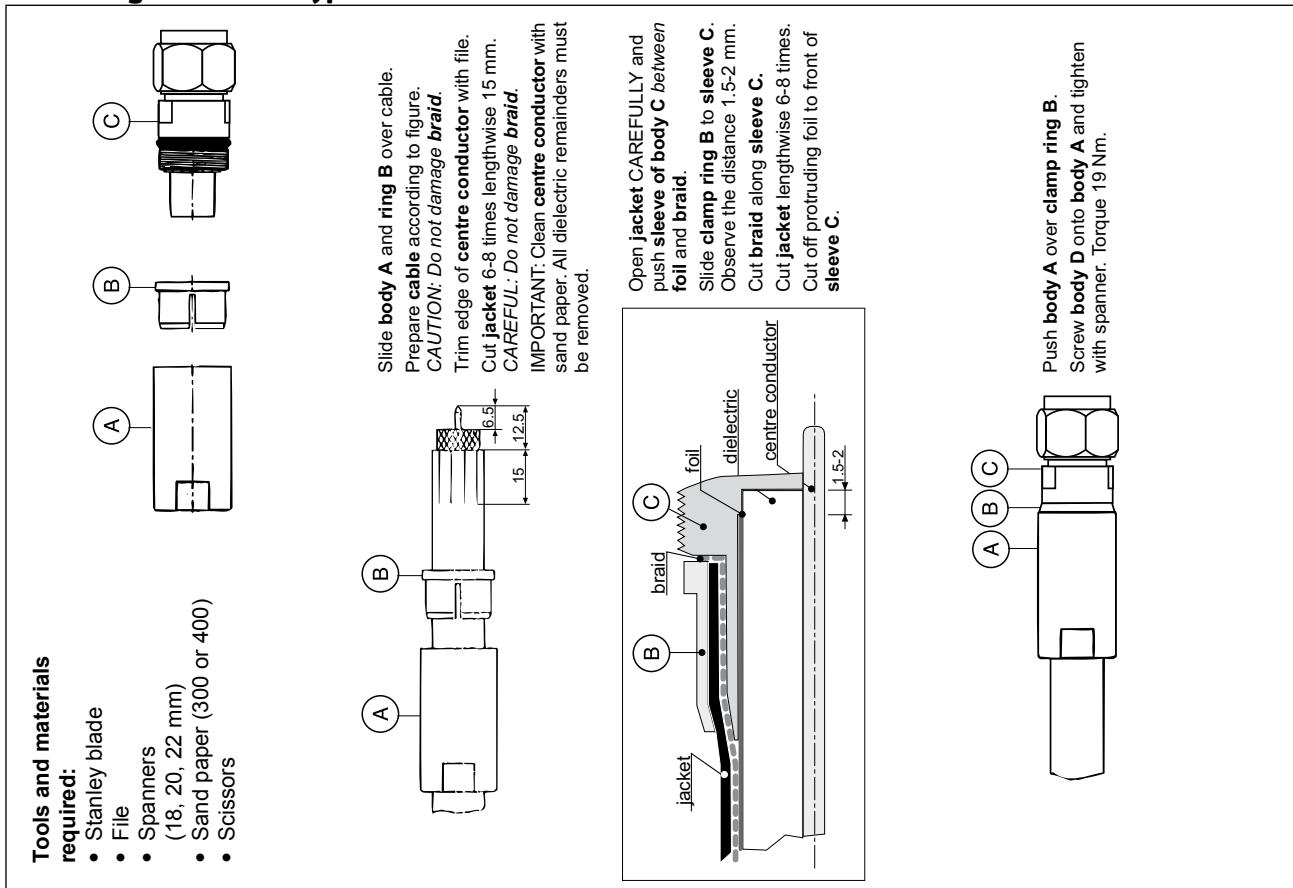
Cut **jacket** lengthwise 6-8 times.

Cut off protruding foil to front of **sleeve C**.

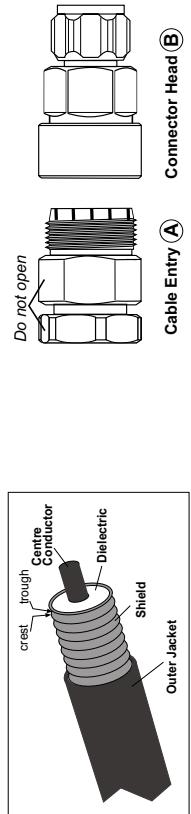


Push **body A** over **clamp ring B**.

Screw **body D** onto **body A** and tighten with spanner. Torque 19 Nm.

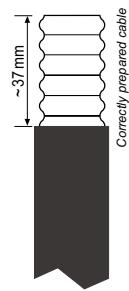


## Mounting connector type 11N-50-12-10 (for cable RF 1/2" 50)



## Tools and materials required:

- Spanners, 22 mm and 24 mm
- Metal saw
- Screwdriver
- Measure
- Abrasive paper
- File
- Knife



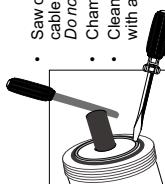
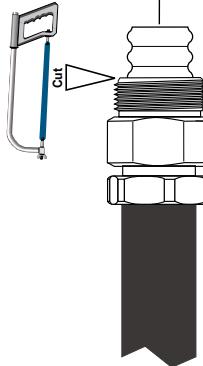
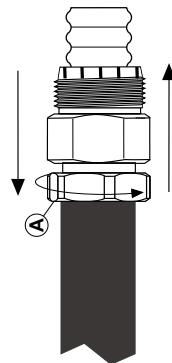
## Preparing the cable

- Cut the Cable in a trough perpendicularly to the cable axis.
- Remove approx. 37 mm of Outer jacket.

*IMPORTANT: Do not damage shield.*

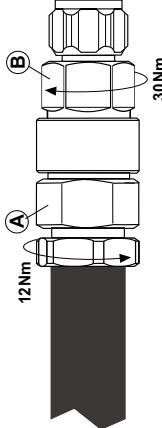
## Mounting the connector

- Slide the Cable Entry (A) over the cable into the **third** trough in the corrugation. (See figure.)
- Pull the Cable Entry as far as the stop.
- Tighten the back ring of the cable entry manually.
- Verify the correct position of the Cable Entry; if necessary pull forward as far as the stop.

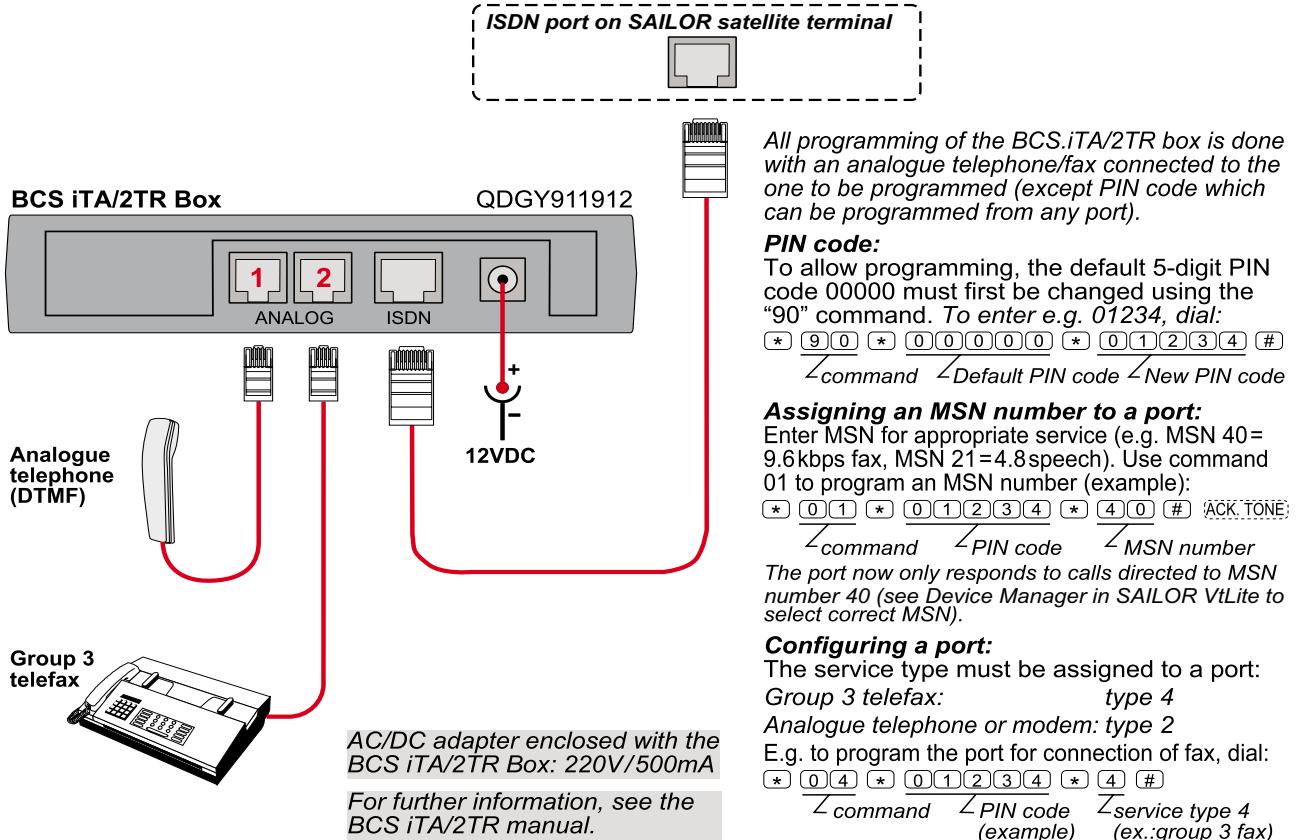


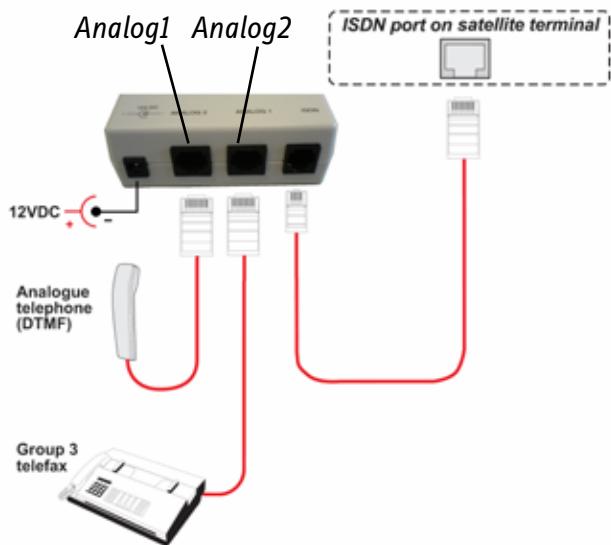
- Saw off the Cable Entry (A) over the cable entry as indicated.
- *Do not damage the centre conductor.*
- Chamfer the centre conductor.
- Clean the centre conductor carefully with abrasive paper

- Using the screwdriver, press the dielectric away from the outer conductor tube to ensure good contact when entering the connector head.
- Screw the **Cable Entry (A)** and **Connector Head (B)** lightly together with a torque of approx. 30 Nm.
- Tighten the back nut of the **Cable Entry (A)** with a torque of approx. 12 Nm.



*Note! If exposed to extreme environmental conditions, especially icy conditions, the connector pair should be completely covered with a cold shrink tube (e.g. SUHNER 74 Z-0-0337 or selfvulcanizing tape) for added protection.*



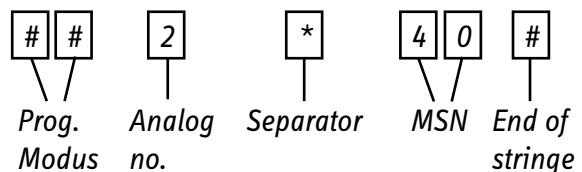


All programming of the TA box is done with an analogue telephone or fax connected to any port.

### Assigning an MSN number to a telport:

From the telephone equipment make a hook off and dial##, and a new dial tone is heard.

To assign MSN 21, enter **1\*21#** for Analog1 (4.8 kbps speech), or enter **2\*40#** for MSN**40** to Analog2 (9.6 kbps fax).



*AC / DC adapter enclosed with the TA:*

*Input 220V, Output 12VDC / 300mA.*

Term. Id	Service	Inmarsat services
01-0F	Voice	B: 16.8, M:4.8, Mini-M 4.8, SAILOR 77/33/55 Fleet+: 4.8
11-1F	Fax	B: 9.6, M:2.4, Mini-M 2.4, SAILOR 77/33/55 Fleet+: 9.6
21-2F	ASD	B: 9.6, M:2.4, Mini-M 2.4, SAILOR 77/33/55 Fleet+: 9.6
31-3F	Telex	B
41-4F	HSD	B
51-5F	64k Data	GAN/SAILOR 77 Fleet+/SAILOR 55 Fleet+
61-6F	3.1kHz Data	GAN/SAILOR 77 Fleet+/SAILOR 55 Fleet+
71-7F	56K Data	GAN/SAILOR 77 Fleet+/SAILOR 55 Fleet+
	N.C.	
91-9F	64k Speech	GAN/SAILOR 77 Fleet+/SAILOR 55 Fleet+

*Terminal Identities and the corresponding Inmarsat Services.  
Note! MPDS is given the Terminal Id A1 (not programmable)*

### Introduction

The ISDN Handset has been designed with the professional user in mind, and has been enhanced with external interfaces for special applications.

### ISDN Handset Ports

The ISDN Handset has the following user ports:

- 2.5 mm Handsfree port
- 3.5 mm Microphone port
- 3.5 mm Line Out port



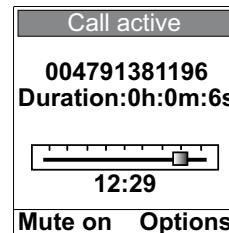
### Handsfree port

The Handsfree port is a standard three-terminal 2.5 mm mini jack socket supported by mating detection logic. The microphone signal is on the tip, and the speaker signal is on the ring.



Volume is adjusted in the same way as for the handset integrated speaker using the left/right arrow keys:

Press **◀** to decrease and **▶** to increase the speaker volume while in conversation. A level indicator is shown in the handset display during volume change.



### **Microphone and Line Out ports**

The Microphone and Line Out ports are not in use when the handset is set to Automatic which is the default setting of an ISDN Handset.

The ports are available if the handset is switched to Normal Mode. In this mode the handset acts as a standard ISDN telephone, and terminal configuration and supervision are not possible.

The handset is switched to Normal Mode by selecting **Menu > Phone Setup > Terminal Type > Normal Mode**. For more information, refer to the *Normal Mode User Manual* for the EXPLORER and ISDN handsets.





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