SAILOR SP4400
Operating Instructions

Distress Call, see page ii. List of contents, see page 1.

DISTRESS Call From Handset

1. **Hook off the handset.**
2. **Open DISTRESS lid on hook.**

3. **Press DISTRESS button for 5 seconds.**

DISTRESS 5 seconds to Distress Alert

4. **Release the button when the display shows:**

ENTER TEL.NO OR PRESS # _

5. **Hook off handset if on hook.**
6.
   - **Enter number for DISTRESS call, followed by # key, or**
   - **Enter # key to start a DISTRESS call to default Coast Earth Station (CES), or**
   - **Wait about 15 seconds, then handset automatically starts a DISTRESS call to default CES.**
7. **Wait for connection to Rescue Coordination Centre (RCC).**

8. **Provide the RCC with the necessary information about the ship name, call sign, MMSI, position (unless using a GPS), what is wrong, number of crew, and anything else of importance.**

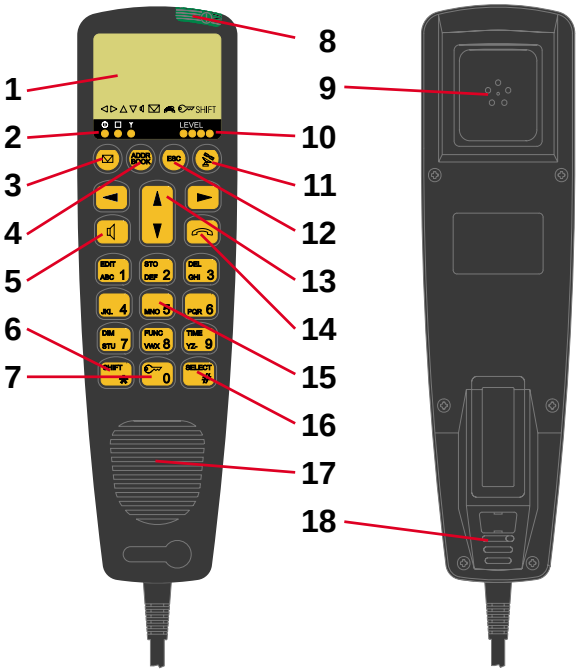
DISTRESS Call From Button

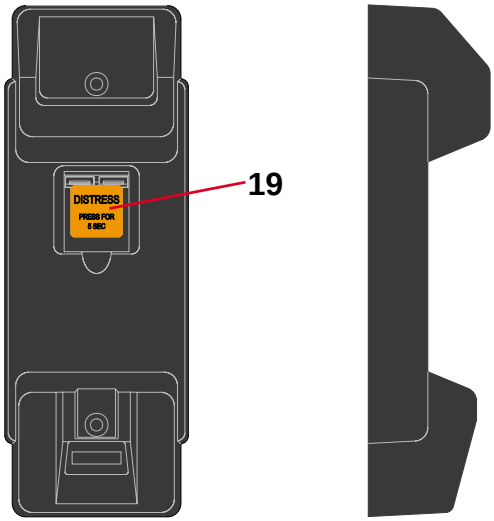
1. **Open DISTRESS lid.**

2. **Press button for 5 seconds.**
3. **Release button when tone signal stops.**
4. **If the telephone connected to the button is on hook, it starts ringing. Then hook off the telephone.**
5.
   - **Enter number for DISTRESS call, followed by # key, or**
   - **Enter # key to start a DISTRESS call to default Coast Earth Station (CES), or**
   - **Wait about 15 seconds, then handset automatically starts a DISTRESS call to the default CES.**
6. **Wait for connection to Rescue Coordination Centre (RCC).**
7. **Provide the RCC with the necessary information about the ship name, call sign, MMSI, position (unless using a GPS), what is wrong, number of crew, and anything else of importance.**

Handset

What Is What?



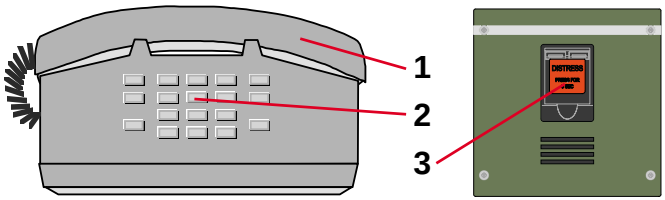


1. Display
2. Indicator lamps
   - ⏻ Power
   - ☐ Call
   - ᛉ In use
3. Call transfer/ switching key
4. Address Book key
5. Loudspeaker on/off key
6. Shift key
7. Lock on/off key
8. On/off button
9. Earpiece
10. Signal level
11. Opens Ocean Region menu
12. Escape / idle state key
13. Volume control
14. Hook on/off key
15. Keypad
16. Select key
17. Loudspeaker
18. Microphone
19. DISTRESS button

Telephone

What Is What?

1. Handset
2. Keypad
3. DISTRESS button



Introduction

Congratulations on your new SAILOR SP4400 accessories.

Your SAILOR SP4400 system is a modular system containing aerial, transmitter/receiver, handset, printer, standard telephone/switch board, fax, telex terminal, alarm unit, alarm button and/or personal computer.

The SAILOR SP4400 system can be operated from the handset and/or a telephone in voice mode. You can connect up to five handsets and two telephones to your SAILOR SP4400 system. The stand-alone alarm button (for distress purpose) is used in connection with the telephones. In connection with the handset, the DISTRESS key is placed on the hook.

Sailor marine equipment is specially designed for the extremely rugged conditions on bord a ship, based on more than 50 year's experience with all kinds of boats, from small pleasure crafts, over fishing boats working under all climatic conditions, to the biggest ships.

S.P. Radio A/S is one of Europe's leading manufacturers of maritime radio communication equipment, a position which has been maintained by means of constant and extensive product development. We have a worldwide network of dealers with general agencies in more than fifty countries. All our dealers are specially trained to service all your Sailor products.

About this Manual

This manual is for the daily user of the system in voice mode. The manual includes instructions for both use of telephones and handsets in the Inmarsat B 4400 system. The manual is divided into 3 sections.

- Section # 1 describing DISTRESS calls.
- Section # 2 describing simple use, incl. how to make and answer a call.
- Section # 3 describing advanced operation/functions of the handset.

Please note

Any responsibility or liability for loss or damage in connection with the use of this product and the accompanying documentation is disclaimed. The information in this manual is furnished for informational use only, is subject to change without notice, may contain errors or inaccuracies, and represents no commitment whatsoever. This agreement is governed by the laws of Denmark.

Doc. no.: B4345GB0 Issue: D/0013

SAILOR

S.P. RADIO A/S · Porsvej 2 · PO Box 7071 · DK-9200 Aalborg SV · Denmark
Phone: +45 9634 6100 · Fax: +45 9634 6101 · Telex: 69789 SPRAD DK
E-mail: sailor@sailor.dk · Web: www.sailor.dk

Contents

Basic Information

Inmarsat Satellite System

The Inmarsat satellite system consists of four satellites.

The Inmarsat satellite system is a worldwide communications system covering the area from 70°S to 70°N or more. The system contains four geostationary satellites placed above the equator, each satellite remaining in the same relative position to the earth. Each satellite covers a part of the earth, called an Ocean Region:

- Atlantic Ocean Region East (AOR-E), 15.5°W
- Atlantic Ocean Region West (AOR-W), 54°W
- Pacific Ocean Region (POR), 178°E
- Indian Ocean Region (IOR), 64.5°E

Coast Earth Stations

Your Inmarsat B terminal is referred to as a Ship Earth Station (SES) in the Inmarsat system. Linking and routing connections through the public telecommunications network is done by a Coast Earth Station (CES). All coordination of the satellite traffic is done by a Network Coordination Station (NCS).

The Inmarsat B system includes telephone, facsimile, telex and data communication. At each Coast Earth Station one or more Network Operators provide some or all of the Inmarsat B facilities. The user can select which Network Operator he wants to use by specifying a CES access code in the call.

Abbreviations

CES	Coast Earth Station
CU	Control Unit
GPS	Global Positioning System
NCS	Network Coordination Station
RCC	Rescue Coordination Centre
SES	Ship Earth Station
TN Id	Terrestrial Network Identification

Telephone

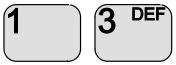
It is possible to connect a telephone or a switchboard to the Inmarsat B terminal. If using a telephone, it is only possible to make simple calls. A lot of the advanced features in the system are not accessible from the telephone, e.g. the security lock.

Dialling

To enter a telephone number on a telephone:

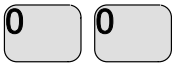
1. Optional
   Switch to access code mode *

2. Optional
   Enter CES access code **1 3**



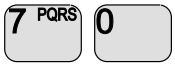
3. Optional
   Switch to number mode * *

4. Prefix for automatic calls **0 0**

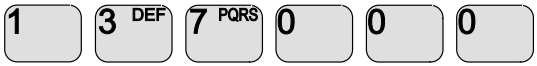


5. Country code **4 5**

6. Area code **7 0**



7. Subscriber's number **1 3 7 0 0 0**



8. Accept the call #

If steps 1-3 are omitted, the default CES is selected.

Making a Call

1. Hook off the receiver and listen for the tone signal.

2. Busy tone: Hook on and try again later.
   Ready tone: The phone is ready for calling.

3. Optional; enter CES access code, for example Laurentides:

   *** 1 3 * ***

4. Enter the wanted number including prefix for automatic calls, country code and area code, for example who has telephone no. 7013 7000 in Denmark:

   0 0 4 5 7 0 1 3 7 0 0 0

5. Accept the call by entering: #

6. Wait for connection.

Answering a Call

When the phone rings, hook off and answer the call.

Handset, Simple Operation

Up to five handsets can be connected to the Inmarsat B terminal. Each handset can be in one of 3 states, active, passive and disabled. Only one handset can be in the active state, the handset currently in use.

Handset States

The normal display and signalling of the handset are:

In Disabled State:

a) Display is cleared and the light is turned off.

b) The “Power” indicator lamp gives a short flash every 5 seconds.

In Passive State:

a1) If the handset is ready for operation, the display shows one of the following read-outs, depending on the security lock state:

Lock = Enabled

Ready Press a Key To Activate

Lock = Disabled

Ready Hook Off And Enter Number

a2) If the system is occupied by another handset, this is displayed; for example a connection established from handset 2 will show the following display in the passive handsets.

OCCUPIED CONNECTED By CU 2

If the line is being used by another service on the Inmarsat B terminal - e.g. telex - this appears from the passive handset display.

Not Ready Line Busy By Telex

b) The “Power” indicator lamp is turned off shortly every 5 seconds.

In Active State:

a) The display shows the following:

Ready Hook Off And Enter Number

b) The “Power” indicator lamp flashes twice every second.

Handset Power On/Off

If you want to toggle the handset’s power on/off condition, simply:

1. Press and hold the on/off button.

2. Wait 3 to 5 secounds for either a continuous tone signal or the “Power”, “Call” and “In use” indicator lamps to be turned on simultaneously.

3. Release the button.

Unlocking Handset

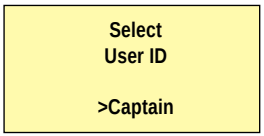
If security lock is turned on, the user has to key in a pin code before the handset can be forced into the active state. The security lock state is indicated by the key icon and the displayed text in passive state. With security lock on, the display shows:

Ready Press a Key To Activate

Having pressed any key, the user is asked to pick a user name from a list. The user name determines which facilities the user has access to. Furthermore the user name is stored in the call log for later use.

To disable the lock:

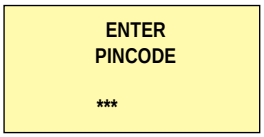
1) Press any key to see the user list:



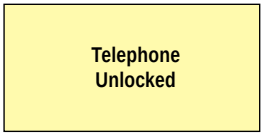
2) Use arrow up and down to pick the right user name.

3) Press SELECT key to select the user name.

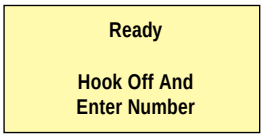
4) Key in the pin code corresponding to the user name.



5) Press SELECT key to finish pin code entry.



Then the display shows:



If the handset has not been used for some time, the state is forced from active to passive, enabling the security lock if used. The amount of time it takes before the handset is forced into passive state, can be set up from within the function menu.

Call Functions

Speaker, earpiece and microphone

The earpiece is always turned on. The microphone is always in the opposite state of the speaker (ON if speaker OFF). The speaker icon on the display shows the state of the speaker.

Use the speaker key to toggle the state of the speaker and the microphone.

Hook and hook key

Before initiating a call, you have to hook off. This can be done by lifting the handset out of the hook or by activating the hook key. The hook icon on the display shows the state of the hook.

Hook on 

Hook off 

If no hook icon is shown, the hook is on.

Volume regulations

The volume in the speaker and earpiece can be adjusted during conversation by arrow up/down.

Manual telephone call dialling

To enter a telephone number on the handset:

1. Optional Terrestrial network ID followed by dial string separator **1 ***

2. Optional CES access code followed by dial string separator **1 3 ***

3. Prefix for automatic calls **0 0**

4. Country code **4 5**

5. Area code **7 0**

6. Subscriber's number **1 3 7 0 0 0**

7. Accept the number and start calling

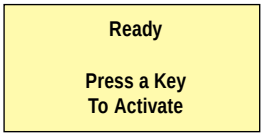
#

If 1 and/or 2 are omitted, the default network and CES respectively are selected. (See *Setting Default CES*, page 17)

Making a Manual Call, Example

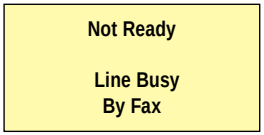
1. If the display shows:

a)



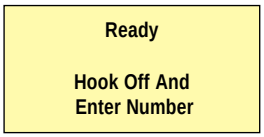
- the handset is locked. Follow the instructions on how to unlock it.

b)



- the line is occupied (in this example by a fax). Wait until the line is free again.

c)



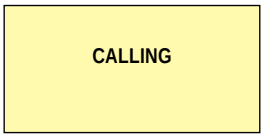
- hook off the handset. The display will show:

- and you will hear a dialling tone.

2. Enter the total number you want to dial, including Network ID, CES code and separators if necessary, using the numeric keys. Left arrow deletes last entered digit. For example, to call the subscriber who has telephone no. 7013 7000 in Denmark:

3. Accept the number and start calling by the # key.

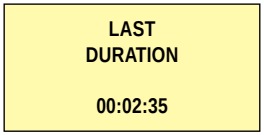
4. The earpiece/speaker will make a dialling tone and the display will show:



5. When connection is established, the audio is routed through and the display shows:

6. When either party taking part in the conversation hangs up, the other user will hear a busy tone. Also, the display will indicate that the call has been ended and that the handset should be hooked on.

7. After every call, its duration is shown on the display:



The call duration is also stored in the call log, together with user name and called telephone number.

Answering a Call

1. When the handset rings, hook off to answer the call.
2. Use arrow up/down to adjust the volume in earpiece or loudspeaker.

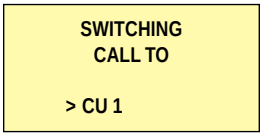
3. Communicate as on an ordinary phone.
4. Hook on to end communication, or when you hear a busy tone.

Call Switching

When the handset is in conversation mode, the call can be switched to another handset.
In conversation mode the display shows:

1. To enter the menu for call switching, press:

The display now shows:



2. Use arrow up/down to find the handset (= CU number) to which the call should be switched.

3.a) To switch the call to the selected handset, hook on - i.e. place the handset on the hook, or push:

OR

3.b) To cancel switching the call, push:

Handset, Advanced Operation

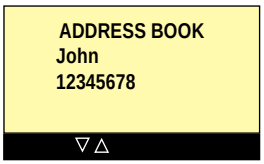
There are numerous possibilities of more advanced operation of the system. The most frequently used functions are carried out by means of special buttons or shifted numeric keys. The less frequently used functions are shown in the function menu tree on page 15.

Address Book

In the Address Book the following facilities are implemented:

- The Address Book can hold up to 99 entries with numbers and names. A telephone number can consist of maximum 22 digits, and a name may be up to 12 characters.
- Any of the 99 stored telephone numbers can be used to initiate a call.
- Each entry in the Address Book can be deleted.
- New entries can be added to the Address Book as long as some of the 99 entries are free.
- The number stored in every entry can be changed.
- It is possible to carry out alphanumeric search through the stored entries.

To enter, push the Address Book key. Then the following menu appears:



Searching the Address Book
To find a stored entry in the Address Book, simply:

1. Push Address Book key. The Address Book will show the last used entry.

2.a) Use the arrow up/down key to search alphabetically through all the entries in the Address Book. When the last entry has been reached, the first entry is shown again

OR

2.b)Use one of the numeric keys to search alphabetically through a specific range of the Address Book.

Example:

Key 

to search through alphabetical range “A”-”C”.

Key 

to search through alphabetical range “D”-”F”, and so on. When the last entry in the range has been reached, the first entry in the range will be shown again.

Changing a stored number in the Address Book

1. Push Address Book key.

2. Use arrow up/down to select the wanted entry in the Address Book (see above).

3. Push the SHIFT key to enter the shifted functions.

4. Push 1 key to select EDIT mode.

5. Use the numeric keys to enter a new number.

6. Push # key to store the new number.

Entering new number and name in Address Book

1. Push Address Book key.

2. Push the SHIFT key to enter the shifted functions.

3. Push 2 key to select STORE mode.

4. Use the numeric keys to enter the number.

5. Push # key to store number.

6. Use the alphanumeric keys to enter the name corresponding to the number.

7. Push # key to store the name.

Deleting a stored entry in the Address Book

1. Push Address Book key.

2. Use arrow up/down to select the wanted entry in the Address Book (see above).

3. Push the SHIFT key to enter the shifted functions.

4. Push 3 key to select the DELETE mode.

5. Push # key to delete the selected entry.

Calling a Number From Address Book

To call a number stored in the Address Book:

1. Push Address Book key.

2. Use arrow up/down to select the wanted entry in the Address Book.

3. To start initialling the call:

   - Hook off the handset to start initialling the call, or
   - Push the hook key.

The handset will generate a ringing tone; follow the description in *Making a Manual Call, Example,* 3-6 (page 5).

Last Number Redial

When ready to enter a telephone number:

1. Hook off the handset to enter telephone number entry mode.

2. Push 0 key to give code for last number.

3. Push # key to show the last called number.

4. Push # key again to start initiating the call.

The handset will generate a ringing tone; follow the description in *Making a Manual Call, Example* 4-6 (page 5).

Auto Call Transferring

When a handset receives a selective ship originated call, and the call is not answered, the call can automatically be transferred to another handset. The auto transferring parameters can be set up individually for each handset.

The handset has to be in ready mode, where the display will typically show:

```
Ready

Hook Off And
Enter Number
```

1. To enter the menu for auto transferring, push:

   The display now shows:

```
TRANSFER
> Mode :   Off
  To CU :    1
  Delay :  30 s
```

As appears from the above read-out, you can now choose among “Mode”, “To CU”, and “Delay”.

2. To enable/disable auto transferring mode, select “Mode”.

3. To specify which handset (= CU number) the call should be transferred to, select “To CU”.

4. To specify the time in seconds (0-60) that the call should ring before it is transferred to the specified handset, select “Delay”. If the delay is set to 0 seconds, the call is transferred immediately; there will not even be a ringing tone in the first handset before the call is transferred to the next.

Security Lock Function

The handset can be protected against unauthorized use by security lock. Security lock works together with a list of user ID’s and corresponding pin codes. Security lock requires that the user selects his user ID from a list, and then keys in his personal pin code, before the handset can be used to generate a call.

The security lock function ensures that only users recognized by the system can unlock the handset and make calls through the Inmarsat system.

Answering incoming calls is not protected by security lock. Furthermore sending a distress priority call can also be done regardless of the security lock.

It is possible to disable the security function in the setup menu.

User ID List

Every user specified in the system is given a priority value. The priority value determines what the user is allowed to do in the system. By default, the user list contains 6 entries with different priority values. The 6 default users are shown below.

User ID	Priority value
SUPER USER	0
Captain	1
Commander	4
Officer	10
Crew	100
Passenger	200

The super user has the highest priority in the system and is therefore not restricted in any action. The super user can edit all other users. Each facility/function in the handset has a priority value. The priority value of the facility item and the user’s priority value determine whether the user has access to the item or not. (See Appendix A)

The user ID is written in the call log so it is possible to identify who has made which calls.

Disabling Security Lock

By default, the transceiver is set up with security lock enabled, and with the user entries listed above. The pin codes of the default user ID’s are included in the documentation. To disable security lock, the user has to be identified with a priority value of 4 or less (Commander, Captain or super user). To select the item for disabling security lock from the function menu:

1. Push SHIFT key to enter the shifted functions.

2. Push 8 key to enter the function menu.

3. Push # key to enter the “Setup” menu.

4. Use arrow up/down to select the “Security” item.

5. Push # key to enter the “Security” menu.

6. Push # key again to select “On/Off” item.

7. Push arrow down to select “Disable Lock” item.

8. Push # key to enter “Disable Lock” menu.

9. Use arrow up/down to select the default user of the system.

10. Push # key to accept security lock disabling.

With security lock disabled, the handset is ready for use for everyone without any identification of the user. To avoid misuse of the handset's facility, the user who disables the security lock is asked to set the priority value. This is done by selecting a user ID from the user list. This user ID is then used as the default user of the unlocked system.

Enabling Security Lock

If security lock has been disabled as described above, it can be enabled again in the following way:

1. Push SHIFT key to enter the shifted functions.

2. Push 8 key to enter the function menu.

3. Push # key to enter the "Setup" menu.

4. Use arrow up/down to select the "Security" item.

5. Push # key to enter the "Security" menu.

6. Push # key again to select "On/Off" item.

7. Push # key again to select "Enable Lock" item.

8. Use arrow up/down to select your user ID.

9. Push # key to accept your choice.

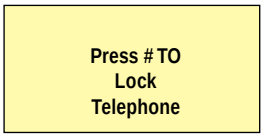
10. Use numeric keys 0-9 to enter the pin code, and finish entering with the # key.

The user has to pick a user ID with a priority value of 4 or less to enable security lock.

If the handset is left unused for some time, it automatically turns into locked state. The user then has to log on again to use the handset.

The user can also force the handset into locked state by pushing the following two keys:

The user has to accept entering the security lock state, and the following is displayed:



The user can regret entering the security lock state by pushing the ESCAPE key 

, after which the handset will return to the active state. If the user presses the SELECT key 

, the handset is forced into the passive state. The display shows the following and the "Lock" icon is turned on:

To use the handset again, the user has to go through user identification again.

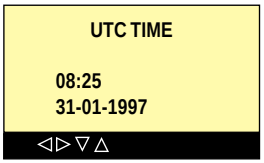
Deciding which users are allowed to use the system is done from the "Setup" menu by selecting the "Security" item.

Setting UTC Time

UTC time can be displayed/adjusted manually. The time is used in the call log. Adjusting the time requires that the user is identified with a priority value of 4 or less (Commander, Captain or super user).
To adjust the time:

1. Push the following two keys:

to enter the time menu



2. The time menu contains: hour, minute, day, month and year, each of which can be adjusted. The display will flash to show where changes are being made. Using the arrow right  and left  keys will change to the next or previous item.

Using the arrow up and down key  will change the value of an item.

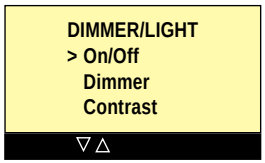
3. When editing is finished, enter the SELECT key  and the changes will take effect. Entering the ESCAPE key  will cancel the changes.

Setting Dimmer & Contrast

The background light and the contrast level can be adjusted from the “Dimmer/Light” menu.

1. Push the two keys:

and the “Dimmer/Light” menu appears:



2. Use the arrow up/down key  to move to the desired item and use # key  to select the item.

Selecting the “On/Off” item enables or disables the light. Selecting the “Dimmer” or “Contrast” item, a menu makes it possible to adjust the level of each of these.

3. Example: Select the “Dimmer” item for the “Dimmer” menu:

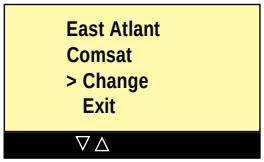
Use the arrow up/down key  to increase or decrease the “Dimmer” level.

4. Push the # key  for the changes to take effect.

CES, TN Id, Ocean Region and Position

To view the current Ocean Region and CES, push the CES key

and the following display appears:



The first line shows Ocean Region. The second line shows CES (for normal calls).
User identified by a priority value of 4 or less (Commander, Captain, or super user) may change the Ocean Region, CES, and TN Id as well as key in the position by selecting the “Change” item.

Changing CES
To change CES for normal calls:

1. Push the CES key to view settings.

2 Use arrow up/down to indicate “Change” item.

3. Push # key to select “Change” menu.

4. Use arrow up/down to find “Earth Station” item.

5. Push # key to select “Earth Station” menu.

6. Use arrow up/down to find the new CES.

7. Push # key for new CES to take effect.

If the default CES for distress calls and stand alone calls have to be changed, this must be done from the “Setup” menu.

Changing TN Id
To change the TN Id of the default CES:

1. Push the CES key to view settings.

2 Use arrow up/down to indicate “Change” item.

3. Push # key to select the “Change” menu.

4. Use arrow up/down to find “TN Id” item.

5. Push # key to select “TN Id” menu.

6. Use arrow up/down to change TN Id.

7. Push # key to let the new TN Id take effect.

If the TN Id of the CES for distress calls and stand alone calls has to be changed, this must be done from within the “Setup” menu.

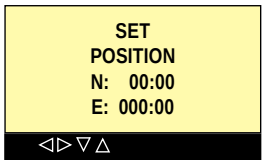
Changing Ocean Region (satellite)
To change Ocean Region:

1. Push the CES key to view settings. 
2. Use arrow up/down to find “Change” item. 
3. Push # key to select “Change” menu. 
4. Use arrow up/down to find “Ocean Region” item. 
5. Push # key to select “Ocean Region” item. 
6. Use arrow up/down to find new Ocean Region. 
7. Push # key for new Ocean Region to take effect. 
8. Use arrow up/down to find the CES in the new Ocean Region.
9. Push # key to let new CES take effect. 

Changing Ocean Region forces the system to carry out a new search for the satellite in the region. This may take a while.

Manual Position Setting
When the system searches for a satellite, the position has to be known. Normally the position is given from a GPS, but it is also possible to key in the position manually. This is done by the following:

1. Push the CES key to view settings. 
2. Use arrow up/down to find “Change” item. 
3. Push # key to select “Change” menu. 
4. Use arrow up/down to find “Position” item. 
5. Push # key to select “Position” menu and the following menu appears:



The “Position” menu contains 6 pieces of information, each of which can be adjusted. The display will flash to show where such changes are being made. Use the arrow right  and left  keys to move back- and forwards. To change the value of an item, use the arrow up/down keys  or the numeric keys to change numeric values.

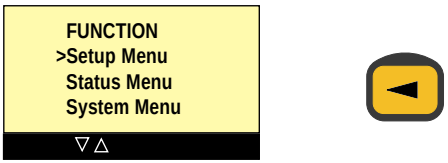
When editing the position has been finished, push the # key and the new position will take effect.

The Function Menus

The handset contains several functions for changing the system settings, showing the status of some system parameters, configurations, and testing the system.

To enter the function menu system push the following two keys:

Then the main menu of the functions appears:



The functions in the system are divided into three categories:

SETUP MENU: Containing all functions for changing system parameters, such as volume, ringing tone, language, user names and pin codes.

STATUS MENU: Containing all functions for viewing system parameters, such as versions, use of the system and system parameters.

SYSTEM MENU: Containing all functions needed for the system administrator/super user to test and configure the system.

In each menu, you can

- Step up/down by 
- Select items by 

- Go up one level without selecting by 

  or simply wait 7-8 seconds for the menu to step up one level automatically.

In the table on page 15 is given a total list of entries available in the function menu system.
If an entry in the function menu system is marked by an asterisk (*), the user is identified by a priority value that does not give him access to the item.

Function Overview

Function Menu	1st submenu	2nd submenu	3rd submenu	4th submenu	5th submenu	Action
Setup Menu	Ringing Tone	Volume				Increases or decreases ringing volume
		Ringing Tone	Deep			Selects one deep ringing tone every 5 seconds
			High			Selects one high ringing tone every 5 seconds
			Toggle Slow			Selects 5 deep/high toggled ringing tones every 5 seconds
			Toggle Fast			Selects 20 deep/high toggled ringing tones every 5 seconds
			Deep Dual			Selects 2 deep ringing tones every 5 seconds
			High Dual			Selects 2 high ringing tones every 5 seconds
		Test				Continues testing of selected ringing tone
	Key Beep	Volume				Increases or decreases volume of key beep
		Enable				Enables key beep
		Disable				Disables key beep
	Language	English				Switches all text to English
		Danish				Switches all text to Danish
	CES	Default	For Voice			Sets default CES used for normal calls
			Distress			Sets default CES used for DISTRESS calls
			Stand Alone			Sets default CES used for stand-alone calls
		Rename				Edits CES names
		TN Id				Changes TN Id for CES
	Security	On/Off	Enable Lock			Enables security lock, giving user ID and pin code
			Disable Lock			Disables security lock, specifying default user ID
			Prev			Steps backwards in the menu. No changes
		Set Pincode				Changes pin code of current user
		Setup Users	Edit	Set Pincode		Changes pin code of another user
				Set Status	Enabled	Enables user ID to be used with login
					Disabled	Disables user ID; to log in, use standard ID
			Add			Specifies name, priority and pin code of new user
			Delete			Deletes user ID from list
	Areas	Show Areas				Shows the current area
		Auto Areas	Enable			Enables automatic area changes
			Disable			Disables automatic area changes
		User Areas	User Area 1			Sets user defined area no. 1
			User Area 2			Sets user defined area no. 2
			User Area 3			Sets user defined area no. 3
			User Area 4			Sets user defined area no. 4
	Groups	Show				Shows the current group ID
Status Menu	SW Versions	Control Unit				Displays the version no. of the handset unit
		Transceiver				Displays the version no. of the transceiver unit
		Aerial				Displays the version no. of the aerial unit
	Call Log	Global	View			Displays the entries in the global call log
			Delete			Deletes all entries in the call log
		Private	View			Displays the entries in the call log of current user
			Total			Displays total number of calls and duration of current user
			Clear			Clears totals above of current user
	Eb/N0					Shows continuously the value of Eb/N0
	Eleva/Azim.					Shows continuously the value of elevation and azimuth angle
System Menu	Distre Test	Start				Initiates a DISTRESS test call
		Cancel				Steps backwards in the menu. No changes
	System Test	Overview				Generates an overview of the system warnings and errors
		List				Steps through all system tests, pausing for every warning and error
	Configure	Call Groups				Sets status, number and mode for call groups
		Extension	CU			Specifies extension no. of handset
			Phone 1			Specifies extension no. of phone 1
			Phone 2			Specifies extension no. of phone 2
			Button 1			Specifies extension no. of DISTRESS button 1
			Button 2			Specifies extension no. of DISTRESS button 2
		Local nr.				Sets local number for current handset
		Select Code	Automatic			Selects default CES automatically
			Manual			Default CES has to be selected manually
		InAct Timer				Sets time before unused handset is forced inactive
	Handset Tst	Keys				Manual test of all keys
		Indicators				Visual test of all indicators and icons
		Sounds				Test of each of the four frequencies

Extension Number

Your Inmarsat B terminal's handsets, phones, and DISTRESS buttons have extension numbers. When initiating the system, the extension number of each handset/phone has to be set.

The extension number of each handset/phone has to be unique because it represents an address in the system.

The extension number of the DISTRESS button, on the other hand, indicates a connection to a phone or the telex terminal.

When a DISTRESS call is initiated from a DISTRESS button connected to a phone, a DISTRESS priority call is (automatically) sent, and an audio signal is generated on the connected phone, indicating that the user hooks off and answers the RCC. If, for some reason, the system cannot find the connected phone, the audio signal is generated in all handsets/phones, and the first to hook off gets the line.

When a DISTRESS call is initiated from a DISTRESS button connected to the telex terminal, a DISTRESS priority call with pre-entered parameters is sent automatically.

Setting up extension numbers of the current handsets, phones and DISTRESS buttons is done from within the system menu by following these instructions:

1. Push SHIFT key to enter the shifted functions.

2. Push 8 key to enter function menu.

3. Use arrow up/down to select "System" menu.

4. Push # key to enter "System" menu.

5. Use arrow up/down to select "Configure" item.

6. Push # key to enter "Configure" item.

7. Push # key to enter "Extension" item.

8. Use arrow up/down key to select the item whose extension is to be changed.

9. Push # key to enter selected item.

10. Use arrow up/down key to change the value of the extension number.

11. Push # key for the change to take effect.

Local Number

For each handset it is possible to specified a local number. The local number is only used in connection with call groups.

The local number of each handset/phone has not to be unique as in case of the extension number. The local number indicate what ID the handset/phone is using as identification to the Inmarsat system when making a call or responding to a incoming call, provided that the current local number is member of a enabled call group. If the local number for a handset/phone is not member of a enabled call group or the call group is disabled, the extension is used as identification to the Inmarsat system.

The local number for a PSTN phone (connected to X41 or X42) is always the same as the extension number and can not be changed.

The local number for a handset can be changed from within the system menu by following these instructions:

1. Push SHIFT key to enter shifted functions.

2. Push 8 key to enter function menu.

3. Use arrow up/down to enter “System” menu.

4. Push # key to enter “System” menu.

5. Use arrow up/down to select “Configure” item.

6. Push # key to enter “Configure” item.

7. Use arrow up/down to select “Local Nr” item.

8. Push # key to enter “Local Nr” item.

9. Use arrow up/down to change the value of the local number.

10. Push # key for the change to take effect.

Call Groups

When configuring the system, Inmarsat will assign one or more telephone numbers to the system, where some or all can be dedicated for voice purpose. Every number assigned to the system is identified by a ID (normaly the ID is equal to the extension of the equipment).

It is possible to let several handsets/phone refer to the same Inmarsat ID. This is done by setting up call groups. It is possible to set up 8 call groups. Each call group can include one phone and several handsets.

A call group consist of 3 parameters:

- Status
- Number
- Mode

Status can be set as On or Off (enabled/disabled) and indicates whether or not the group is used.

Number shall be set equal to the Inmarsat ID assigned to the system as a voice number.

Mode can be set as Dedicated or Common. When dedicated only the first phone or handset found in the call group, will receive incoming calls for the specified number. When mode is set to common, all phone and handset in the call group will receive incoming calls for the specified number.

Setting up call groups is done from within the system menu by following these instructions:

1. Push SHIFT key to enter shifted functions.

2. Push 8 key to enter function menu.

3. Use arrow up/down to enter “System” menu.

4. Push # key to enter “System” menu.

5. Use arrow up/down to select “Configure” item.

6. Push # key to enter “Configure” item.

7. Push # key to enter “Call Groups” item.

The display will show:

```
   CALL GROUP 1
> Status:    Off
  Number :    1
  Mode :    Com
```

8. Use arrow up/down to scroll true the parameters for all 8 call groups.

9. Push # key to enter selected parameter.

10. Use arrow up/down to change the value for the selected parameter.

11. Push # key for the change to take effect.

The following rules have effect, using call groups:

- When all call groups is disabled (factory default), the extension is used as inmarsat ID.
- The local number for phones (connected to X41 or X42) is the same as the extension and therefor two phones can’t be member in the same call group.
- If the local number for a handset can’t be found in any enabled call group, the extension for the handset is used as Inmarsat ID for outgoing calls.
- When the Inmarsat ID for a incoming call is specified as a dedicated call group, the phones is always evaluated first for a member of the call group. If no phones are member of the call group the handsets are evaluated. If no handsets are found as member of the call group, the call will be send to all handsets.

Setting Default CES

When the user is initiating a call, it is optional to enter a specific CES ID. If CES ID is omitted when initiating the call, the system automatically inserts the ID of the default CES. The user has the possibility of changing the default CES. The default CES is specified for each of the 4 Ocean Regions and for normal calls, DISTRESS calls and stand alone calls.

When specifying default CES:

1. Push SHIFT key to enter shifted functions.

2. Push 8 key to enter function menu.

3. Push # key to enter “Setup” menu.

4. Use arrow up/down to select “CES” item.

5. Push # key to enter “CES” item.

6. Push # key to enter default item.

7. Use arrow up/down key to select Ocean Region.

8. Push # key to enter selected Ocean Region.

9. Push arrow up/down key to select service type (voice, DISTRESS, stand alone).

10. Push # key to enter selected service type.

11. Push arrow up/down key to select default CES.

12. Push # key to accept selected default CES.

DISTRESS Test Procedure

Your Inmarsat B terminal can test the DISTRESS call by changing the DISTRESS flag from DISTRESS real mode to DISTRESS test mode. This is done in the “System” menu.

A DISTRESS test call has to be initiated within **30 seconds**, otherwise the DISTRESS flag is changed back to **real DISTRESS mode**. Furthermore the DISTRESS test call has to be cleared within 120 seconds from the selection of the test mode. After 120 seconds, the system automatically changes the DISTRESS flag back to real DISTRESS mode.

To start the DISTRESS test mode:

1. Push SHIFT key to enter shifted functions.

2. Push 8 key to enter function menu.

3. Use arrow up/down to select “System” menu.

4. Push # key to enter “System” menu.

5. Push # key to enter DISTRESS TST item.

6. Push # key to enter start item.

7. Push # key to accept starting DISTRESS test timer.

   The system returns to idle state and the display shows:

Ready for DISTRESS TST Activate Distress Key

   Then follow the procedure for sending a DISTRESS call.

8. Hook off the handset.

9. Open DISTRESS lid on hook.

10. Press DISTRESS button for 5 seconds.

DISTRESS 5 seconds to Distress TEST

11. Release the button when the display shows:

ENTER TEL.NO OR PRESS # _

12. If the handset is on hook then hook off.

13.
    - Enter number for DISTRESS call, followed by # key, or
    - Enter # key to start a DISTRESS call to default CES, or
    - Wait about 15 seconds, then the handset automatically starts a DISTRESS call to the default CES.

14. Wait for connection to CES.

15. In most cases you will hear an answering machine informing you that the test went through. If the call is answered manually, switch the loudspeaker off:

    Push the loudspeaker key  and inform the operator that this is a test call.

16. Stop the distress mode with a short push on the distress key, and hang up.

Testing Handset Functionality

You can test your inmarsat B handset's functionalities - activating keys, displaying indicator lamps and icons, and generating sounds. This is done from within the "System" menu:

1. Push SHIFT to enter the shifted functions.

2. Push 8 to enter the function menu.

3. Push arrow up/down to find the "System Menu" item.

4. Push # to enter the "System" menu.

5. Push arrow up/down to find the "Handset Test" item.

6. Push # to enter the "Handset Test" menu.

The display now shows:

```
HANDSET TEST
>Keys
 Indicators
 Sounds
```

a) To test the keys, select "Keys".

The display shows:

```
HANDSET TEST
     Keys
.TAECLURSDH.
123456789*0#
```

When you now push a key on the keyboard, the corresponding character on the display will change into a dot ".". When you have pushed all the keys, the last two lines on the display will only show dots. The test will then have been completed successfully.

If a key cannot be recognized, and the corresponding character on the display therefore does not change into a dot, the test cannot be finished. To cancel the test, push the key in question more than five times.

b) To test the icons on the display and the indicator lamps, first select "Indicators". Then, to start the test, push:

The display shows:

```
Press # to
Stop
Indicator
TEST
```

Now all icons and indicator lamps will first be turned off. Then they will be turned on again one by one. When all icons and indicator lamps have been turned on again, they will all be turned off, and the test will start from the beginning again.

To stop the test and return to the "Handset Test" menu, push:

c) To test the sound generator in the handset, first select "Sounds". Then, to start the test, push:

The display shows:

```
450 Hz

Press # for
next test
```

Four frequencies are available: 450Hz, 900Hz, 1440Hz, and 1800Hz. The handset will generate the sound which is displayed. For the next frequency to be generated, push either:

For the previous frequency to be generated, push:

While testing the last frequency, to end the test and return to the "Handset Test" menu, push:

System Test

Your Inmarsat B terminal can carry out system tests. Appendix C contains lists of all available tests and test result codes. Testing the system is done from within the "System" menu:

1. Push SHIFT to enter the shifted functions.

2. Push 8 to enter the function menu.

3. Push arrow up/down to find the "System Menu" item.

4. Push # to enter the "System" menu.

5. Push arrow up/down to find the "System Test" item.

6. Push # to enter the "System Test" menu.

The display now shows:

```
SYSTEM TEST
>Overview
 List
```

a) To go through all the tests and see the number of tests returning error and warning codes, select the "Overview" item. As more than 60 tests are run, the overview test takes some time. The following is a read-out showing the possible result of such a test:

```
SYSTEM TEST
  OVERVIEW
Errors   :  1
Warnings :  2
```

b) To go through all the tests and see those not returning a "passed" result (see appendix C for test result titles), select the "List" item. While going through the list, the display shows e.g.

```
SYSTEM TEST

Test no. :  7
Result   :  5
```

Each read-out will stay on the display for about seven seconds. Then the next test not having passed will appear. While watching the tests on the list, you can change the test sequence:

To cancel the system test list, push:

To see more of the list without waiting the seven seconds a read-out stays on the display, push:

To continue a test after the seven seconds have expired, push:

The test will now stay on the screen until it has passed, or arrow right is pushed.

Appendix A

User Access Levels

The Inmarsat B terminal contains a security lock based on user identification. Every user has a priority value of 0 - 255, 0 being the super user who can access every function.

Every function in the system has a priority value used to determine if the user can access the function. Below is listed the priority of each function in the system with a priority value lower than 255.

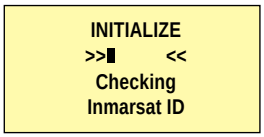
PRIORITY VALUE	FUNCTION/FACILITY
4	Changing Ocean Region, CES, TN Id and Position
4	Setting time
1	Setting default CES
1	Renaming CES
1	Setting TN Id for CES
4	Disabling security lock, specifying default user ID
4	Editing, adding and deleting user information
4	Enabling/disabling automatic area changes
4	Setting user defined area
4	Displaying and deleting entries in global call log
4	Initiating DISTRESS test calls
4	Displaying and printing system test
0	Specifying extension numbers
4	Specifying manual or automatic default CES selection
0	Setting up time for inactive handset to be forced passive

Appendix B

Initialisation Sequence

When turning on the Inmarsat B system, an initialisation sequence is carried out. This sequence contains 8 steps displayed in the passive handset as shown below.

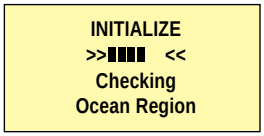
Step 1:



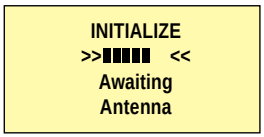
Step 2:

Step 3:

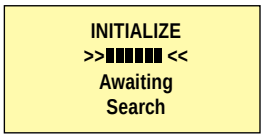
Step 4:



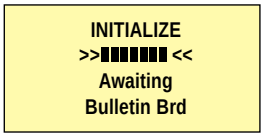
Step 5:



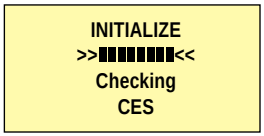
Step 6:



Step 7:

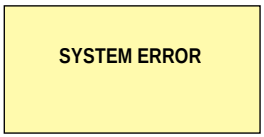


Step 8:

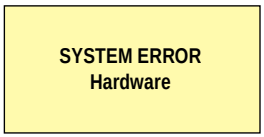


During the initialization sequence, the system check can result in errors. This is shown on the display, the read-out depending on which step in the sequence has been reached.

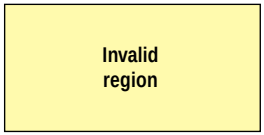
Step1:



Step 2:

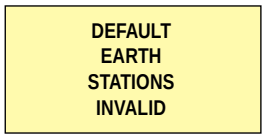


Step 4:

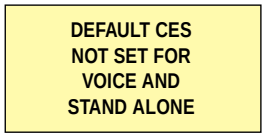


When checking the CES (step 8), display read-out depends on the status of the 3 types of default CES.

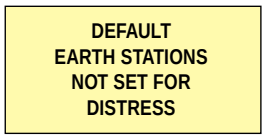
If all 3 types of default CES are invalid, the following is displayed:



If for example the default CES for normal and stand alone calls is invalid, the display shows:



If the default CES for DISTRESS calls is invalid, the display shows:



Appendix C

System Test

Test no.	Test title
1	Battery backup
2	Real-time clock
3	EEPROM
4	Inmarsat IDs
5	+15V DC
6	Factory reset
7	TX inhibited
8	Distress button 1
9	Distress button 2
10	TELEX input
11	Printer input
12	ADE input
13	NMEA position input
14	Service input
15	NMEA gyro input
16	Printer on-line
17	Heading known
18	Position known
19	Ocean region valid
20	Control unit found
21	SCANBUS data transmission
22	SCANBUS data reception
23	TUBUS
24	MODEM found
25	MODEM active
26	MODEM RX SU ratio
27	SPS found
28	SPS RX IF
29	SPS RX filter
30	SPS TX IF
31	SPS TX filter
32	SPS DSP
33	SPS OCXO
34	SPS RX S/N ratio
35	ADE found
36	Down converter locked
37	Tracking receiver locked
38	Up converter locked
39	HPA failed
40	HPA timed-out
41	HPA stopped
42	ADE ready
43	ADE idle
44	Aerial direction
45	ADE azimuth rate-sensor
46	ADE elevation rate-sensor
47	ADE cross-elevation rate-sensor
48	ADE inclinometer
49	ADE fluxgate
50	ADE connection stability
51	VDP running
52	VDP MODEM detected
53	VDP clock detected
54	PAX found
55	PAX running
56	PAX phone 1 activity
57	PAX phone 2 activity
58	PAX phone 1 PABX setting
59	PAX phone 2 PABX setting
60	PAX phone 1 line noise
61	PAX phone 2 line noise
62	SPS OCXO warm
63	ADE failed
64	ADE control input
65	ADE control output
66	PAX interface

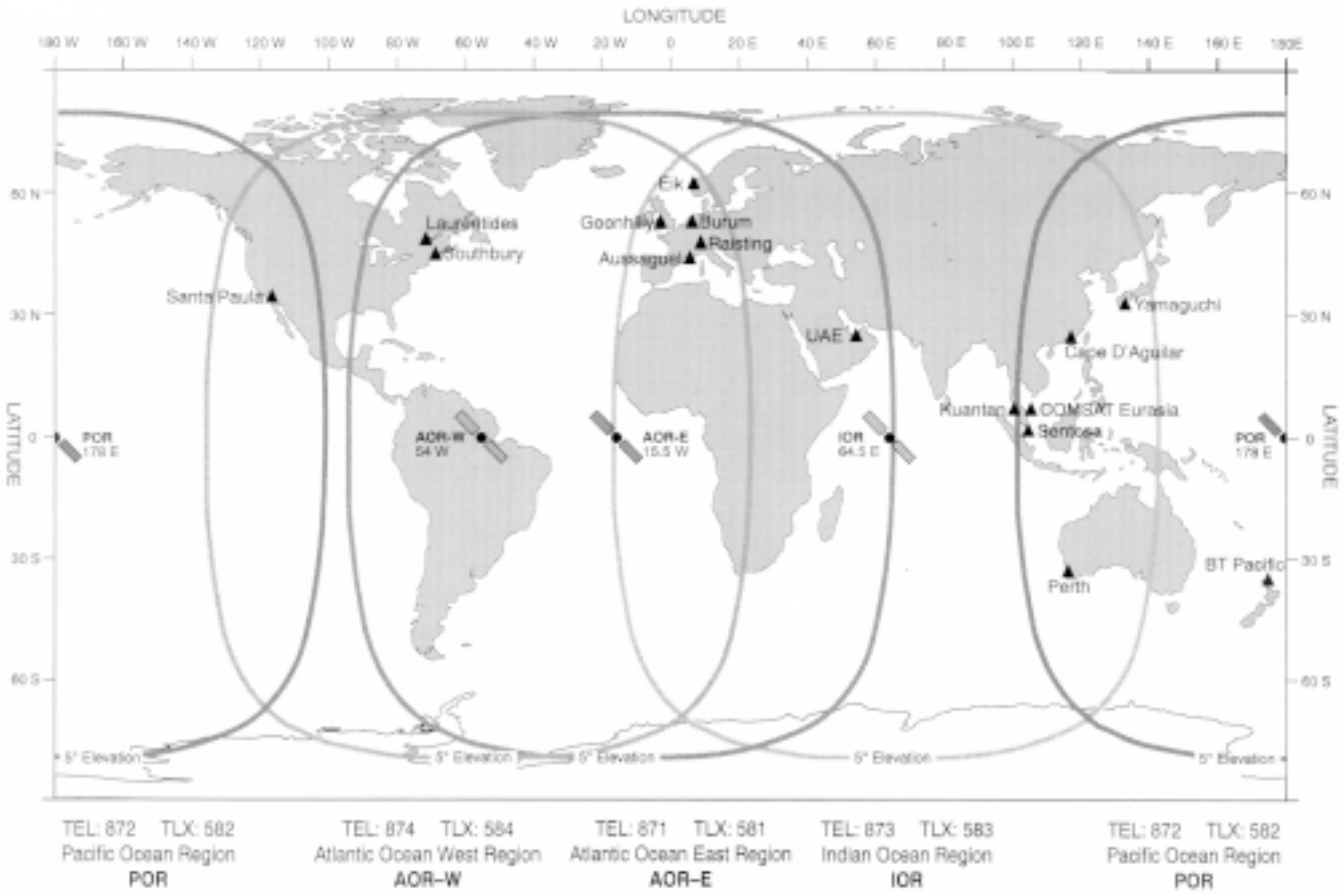
Result no.	Result Title
0	Invalid
1	Passed
2	Failed
3	Not present
4	Not used
5	Input static
6	Wrong state

Appendix D
CES Codes, Names and Operators

Ocean Region	CES Code	CES Name	Operator
Atlantic Ocean Region - East (AOR-E)	011	Aussaguel	France Telecom
	003	Burum	KDD
	012	==	PTT Telecom
	004	Eik	Telenor
	002	Goonhilly	BT
	118	Laurentides	HKT
	015	==	Morsviazsputnik
	222	==	Telstra
	013	Laurentides/Tel.	Teleglobe/IDB
	111	Raisting	DBP Telecom
	001	Southbury	CMC
Atlantic Ocean Region - West (AOR-W)	012	Burum	PTT Telecom
	003	==	KDD
	004	Eik	Telenor
	002	Goonhilly	BT
	011	Laurentides	France Telecom
	118	==	HKT
	015	==	Morsviazsputnik
	222	==	Telstra
	013	==	Teleglobe/IDB
	001	Southbury	CMC
Indian Ocean Region (IOR)	306	Arvi	India
	011	Aussaguel	France Telecom
	888	Brunei	
	012	Burum	PTT Telecom
	118	Cape d'Aguilar	HKT
	013	Cape d'Aguilar	Teleglobe/IDB
	001	Comsat Eurasia	CMC
	004	Eik	Telenor
	060	Kuantan	Malaysia Telecom
	015	Perth	Morsviazsputnik
	222	Perth	Telstra
	111	Raisting	DBP Telecom
	210	Sentosa	Singapore Telecom
	123	Towi Al Saman	ETISALAT
	003	Yamaguchi	KDD
Pacific Ocean Region (POR)	202	BT Pacifici	British Telecom
	118	Cape d'Aguilar	HKT
	013	Cape d'Aguilar	Teleglobe/IDB
	015	Perth	Morsviazsputnik
	011	==	France Telecom
	013	==	Teleglobe
	222	==	Telstra
	001	==	CMC
	210	Sentosa	Singapore Telecom
	003	Yamaguchi	KDD
	012	==	PTT Telecom

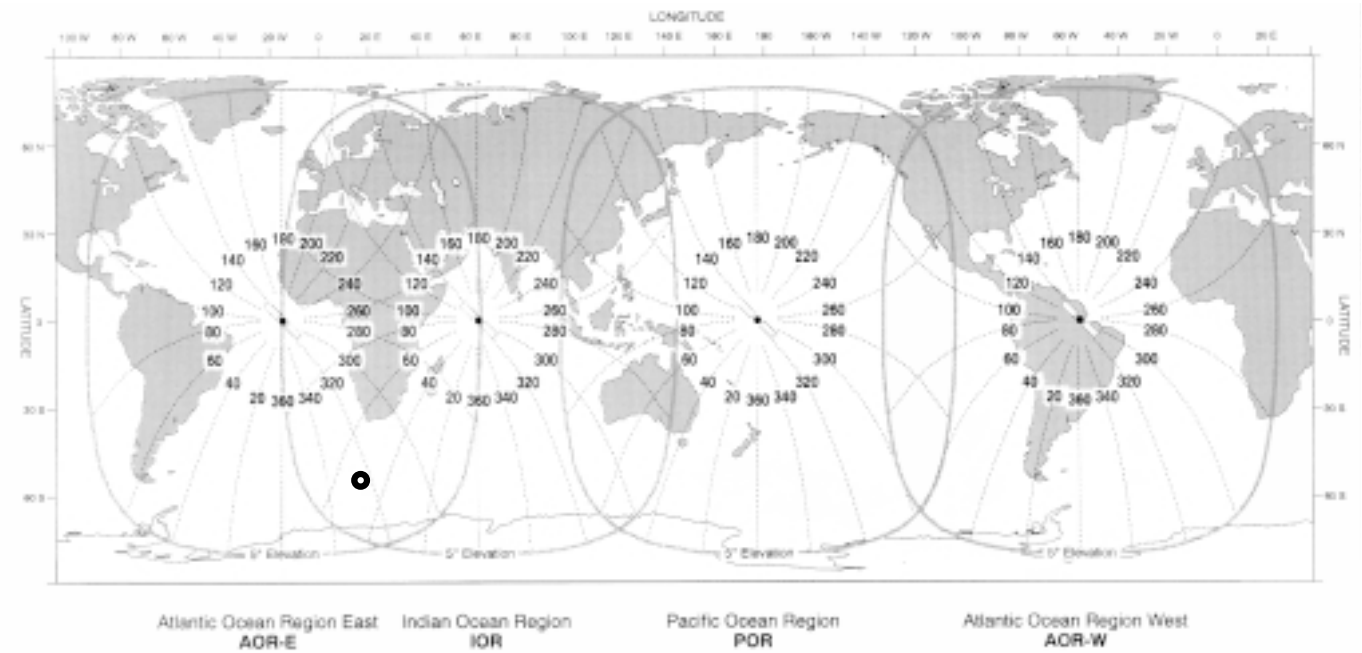
Appendix E
Satellite Maps

Satellite Coverage Map



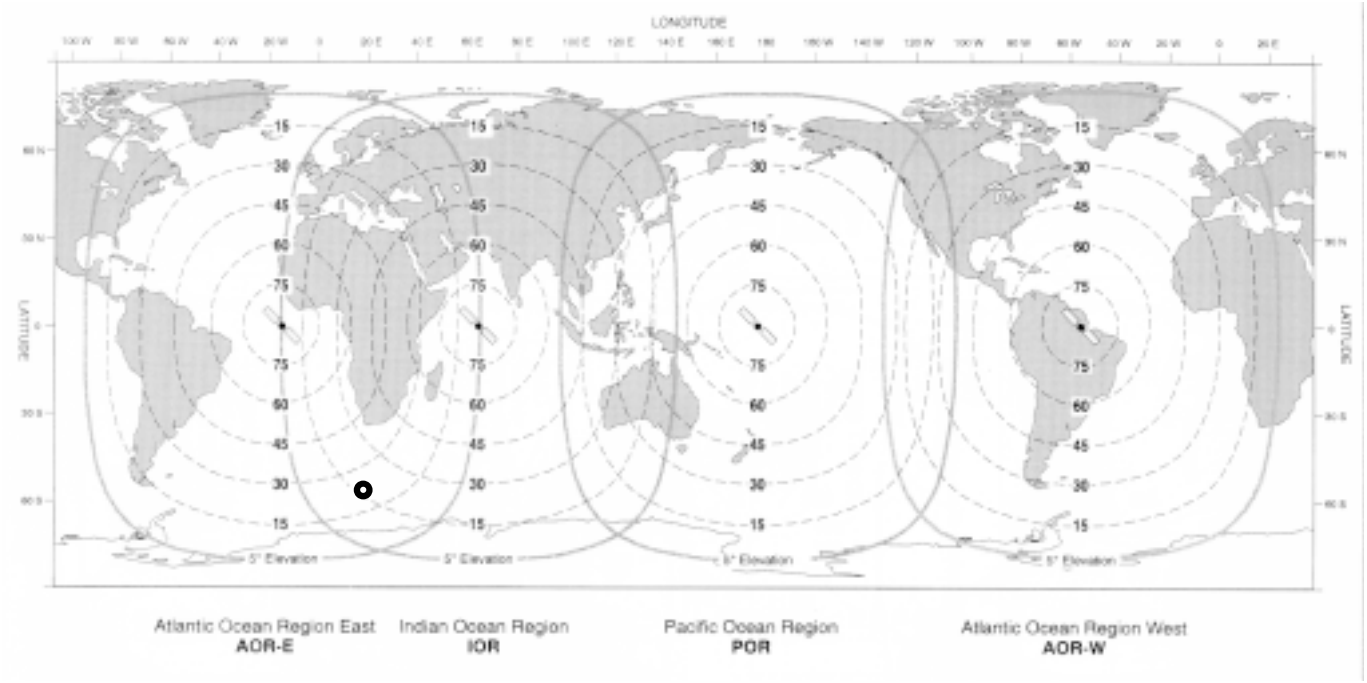
00 870 scans all regions and is a number common to all regions.

Azimuth Map



Example:
Aximuth angle for the plotted position ⊙
324° for the AOR-E satellite
50° for IOR satellite
Be careful not to read the wrong angle in areas where two satellites overlap.

Elevation Map

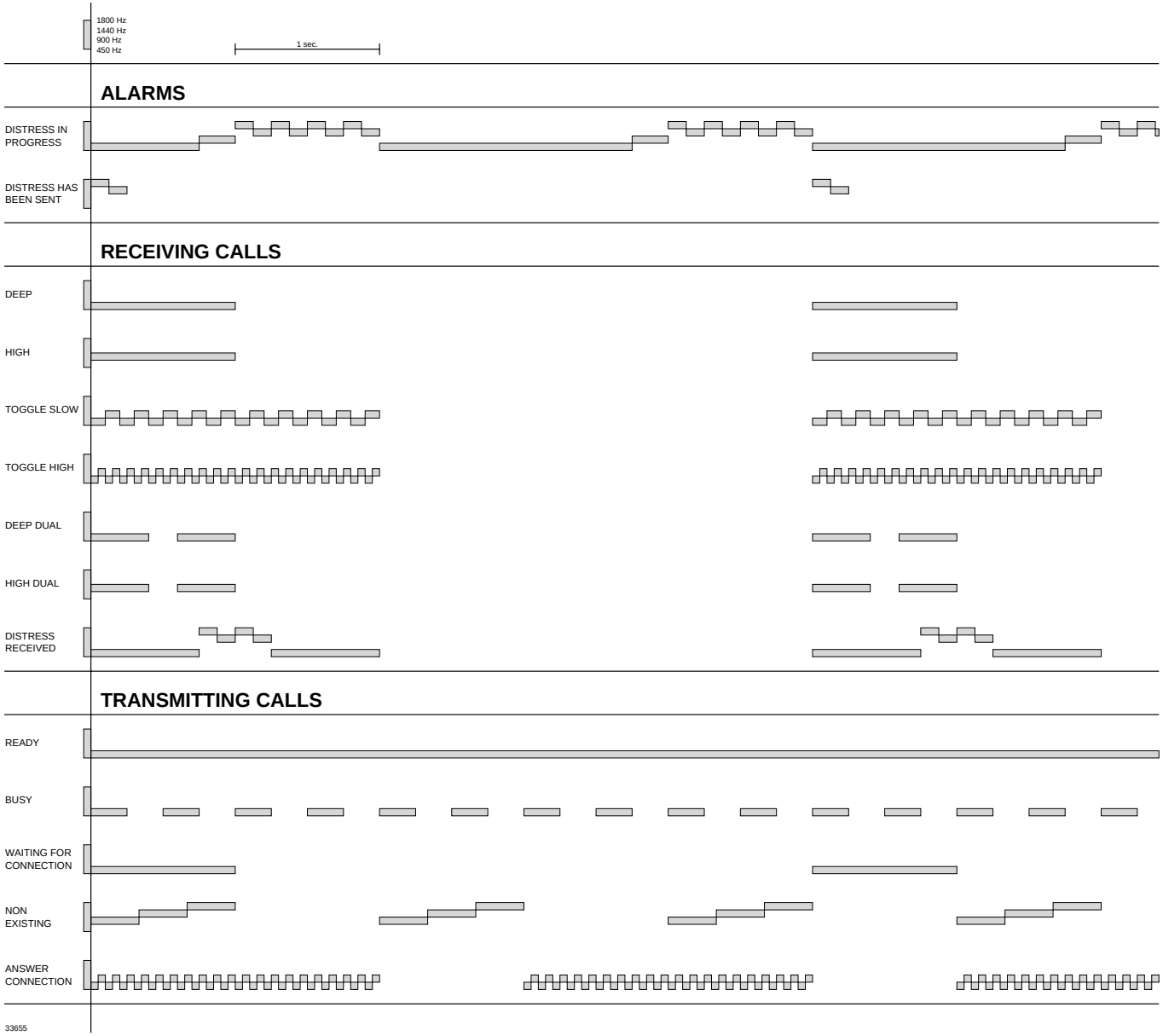


Example:
Elevation angle for the plotted position ⊙
24° for the AOR-E satellite
17° for IOR satellite
Be careful not to read the wrong angle in areas where two satellites overlap.

Appendix F

Tone Signalling

The system contains different tone signals, used to indicate status or action of the user, on 4 different frequencies: 450, 900, 1440 and 1800 Hz. The figure below illustrates the tone signals of different purposes:



S.P. RADIO A/S · Porsvej 2 · PO Box 7071 · DK-9200 Aalborg SV · Denmark
Phone: +45 9634 6100 · Fax: +45 9634 6101 · Telex: 69789 SPRAD DK
E-mail: sailor@sailor.dk · Web: www.sailor.dk