

## **OPERATOR'S MANUAL**

## *INMARSAT FLEET F77 SHIP EARTH STATION*

MODEL FELCOM 70



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• FURUNO Authorized Distributor/Dealer

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## **IMPORTANT NOTICES**

#### General

- The operator of this equipment must read and follow the descriptions in this manual. Wrong operation or maintenance can cancel the warranty or cause injury.
- Do not copy any part of this manual without written permission from FURUNO.
- If this manual is lost or worn, contact your dealer about replacement.
- The contents of this manual and equipment specifications can change without notice.
- The example screens (or illustrations) shown in this manual can be different from the screens you see on your display. The screens you see depend on your system configuration and equipment settings.
- Save this manual for future reference.
- Any modification of the equipment (including software) by persons not authorized by FURUNO will cancel the warranty.
- All brand and product names are trademarks, registered trademarks or service marks of their respective holders.

#### How to discard this product

Discard this product according to local regulations for the disposal of industrial waste. For disposal in the USA, see the homepage of the Electronics Industries Alliance (http://www.eiae.org/) for the correct method of disposal.

#### How to discard a used battery

Some FURUNO products have a battery(ies). To see if your product has a battery(ies), see the chapter on Maintenance. Follow the instructions below if a battery(ies) is used.

#### In the European Union

The crossed-out trash can symbol indicates that all types of batteries must not be discarded in standard trash, or at a trash site. Take the used batteries to a battery collection site according to your national legislation and the Batteries Directive 2006/66/EU.



#### In the USA

The Mobius loop symbol (three chasing arrows) indicates that Ni-Cd and lead-acid rechargeable batteries must be recycled. Take the used batteries to a battery collection site according to local laws.

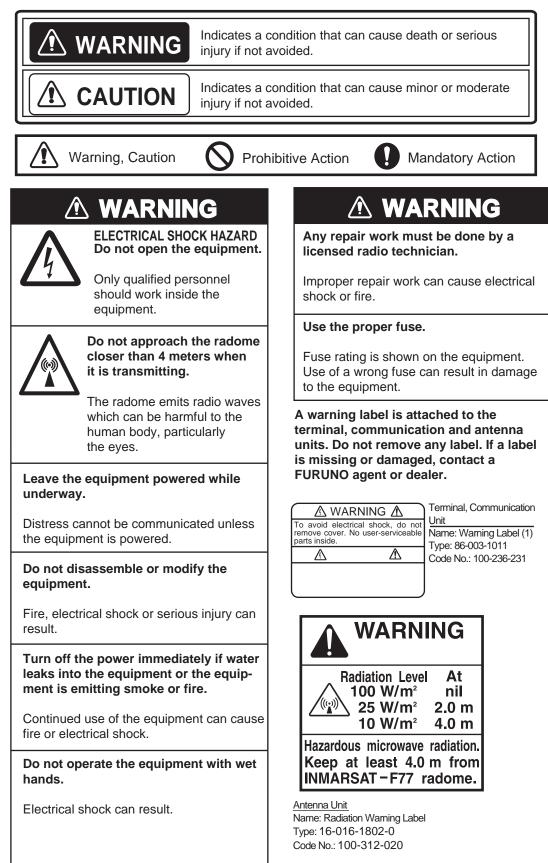
# Ni-Cd Pb

#### In the other countries

There are no international standards for the battery recycle symbol. The number of symbols can increase when the other countries make their own recycle symbols in the future.

## **▲** SAFETY INSTRUCTIONS

Read these safety instructions before you operate the equipment.



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## FOREWORD

#### A Word to the Owner of the FURUNO FELCOM 70

Congratulations on your choice of the FURUNO FELCOM 70 Inmarsat Fleet F77 Mobile Earth Station. We are confident you will see why the FURUNO name has become synonymous with quality and reliability.

For over 60 years FURUNO Electric Company has enjoyed an enviable reputation for quality marine electronics equipment. This dedication to excellence is furthered by our extensive global network of agents and dealers.

This equipment is designed and constructed to meet the rigorous demands of the marine environment. However, no machine can perform its intended function unless operated and maintained properly. Please carefully read and follow the recommended procedures for operation and maintenance.

We would appreciate hearing from you, the end-user, about whether we are achieving our purposes. Thank you for considering and purchasing FURUNO equipment.

#### **Features**

The FELCOM 70 mainly consists of an antenna unit, communication unit, distress alert unit, and a handset. The FELCOM 70 provides telephone, facsimile, and data services.

The main features of the FELCOM 70 are

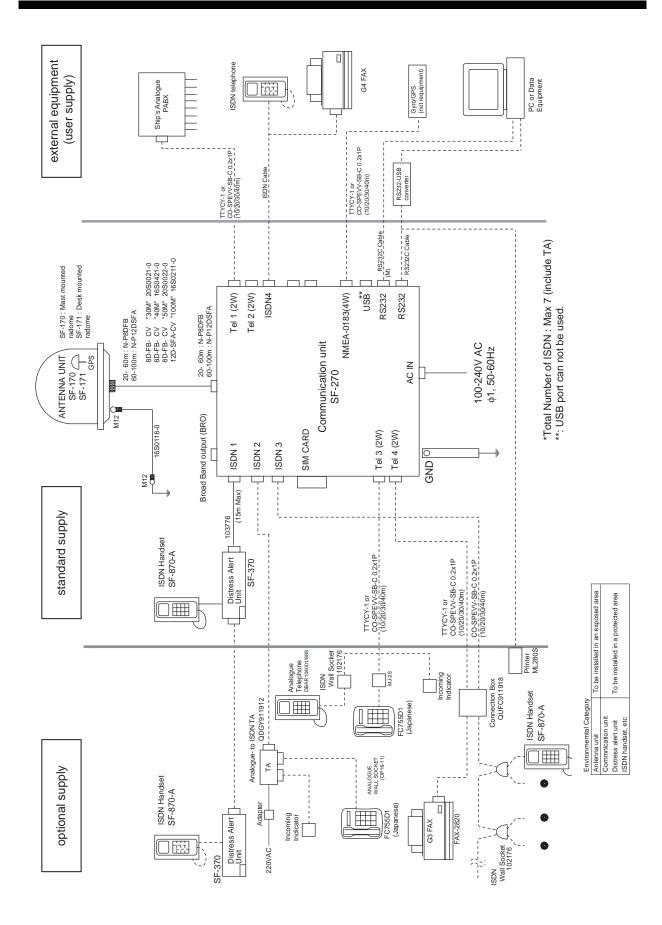
- Conforms to the following standards: INMARSAT MINI-M SDM, CN-MM056, 059, IEC 60945 (Ed. 4), IEC 60529 (Ed. 2), IEC 61162-1 (Ed. 2)
- Voice communication: 4.8 kbps
- Facsimile: G4-64 kbps, G3-Max. 33.6 kbps, G3-9.6 kbps (low cost)
- Connection to ISDN (Up to 8 sets of analog telephone or G3 FAX via Terminal Adapter or Video Phone, etc.)
- Always-on Internet connections via MPDS
- Compact antenna unit (comparing Inmarsat B antenna unit): φ970 x 1130 mm, 50 kg; Dome with hatch is also available (φ1260 x 1153 mm, 65 kg)

#### Program number

System version of the communication unit: REL 3.5 Software for PC, SAILOR vtLite:

For Windows XP SP2 and Windows Vista: 7.2

## SYSTEM CONFIGURATION



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## 1. INTRODUCTION

## 1.1 General

The FELCOM 70 consists of the Above Deck Equipment (ADE) and Below Deck Equipment (BDE).

#### **Above Deck Equipment - ADE**

The FELCOM 70 Above Deck Equipment consists of:

- Servo stabilized antenna dish with RF-Transceiver
- Mast mounted radome, or
- Deck mounted radome

#### **Below Deck Equipment - BDE**

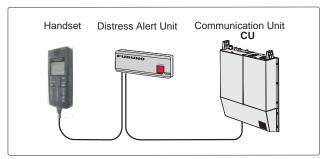
The **FELCOM 70 Communication Unit (CU)** - which constitutes the major electronic part - is designed for wall or desktop installation. The CU mains input is 100 - 240 VAC. The power requirement is approx. 40 W in receive/idle mode, and approx. 150 W in transmit mode. The CU supplies 48 VDC power to the ADE through the coaxial cable.

#### ISDN Handset

The **ISDN Handset** keypad and built-in display allow dialing and control of the CU and antenna.

#### **Distress Alert Unit**

The Distress Alert Unit provides remote activation of an alert transmission and indication of incoming distress calls.



FELCOM 70 satellite terminal

<u>CD</u>

The CD ROM supplied with FELCOM 70 contains program for PC (SAILOR vtLite and driver software.

## 1.2 Communication services

FELCOM 70 provides the following services:

• ISDN:	<ul> <li>- 64 kbps Mobile Data Service (UDI)</li> <li>- 128 kbps Mobile Data Service (UDI)</li> <li>- 56 kbps Mobile Data Service</li> <li>- 110 kbps Mobile Data Service (UDI)</li> <li>- 4.8 kbps speech</li> <li>- 9.6 kbps fax</li> <li>- 64 kbps speech</li> <li>- 3.1 kHz audio (64 kbps) (e.g. G4 FAX)</li> </ul>		
• RS-232:	<ul> <li>- 64 kbps Mobile Data Service (UDI)</li> <li>- Mobile Packet Data Service (MPDS)</li> </ul>		
• RS-422:	<ul> <li>- 64 kbps Mobile Data Service (UDI)</li> <li>- Mobile Packet Data Service (MPDS)</li> </ul>		
• USB:	<ul> <li>- 64 kbps Mobile Data Service (UDI)</li> <li>- Mobile Packet Data Service (MPDS)</li> </ul>		
	Note: Currently the USB port is not supported.		
• ANALOGUE:	- 4.8 kbps speech/64 kbps speech - 9.6 kbps fax/3.1kHz(e.g. telefax Gr.3)		

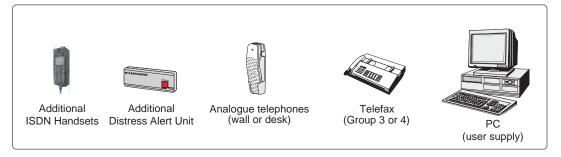
#### Internal communication

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

#### **Control interface**

The **RS-232/RS-422** port allows connection of a PC for configuration of the FELCOM 70 Communication Unit (CU).

A PC program (SAILOR vtLite) that provides the software to operate and configure the CU is supplied on the enclosed CD (requires Windows XP SP2 or Vista).



Additional equipment

## 2. OPERATION FROM HANDSET

## 2.1 Display Panel and Key Panel of ISDN Handset



#### Note:

The left and right soft keys will change function according to the actual situation. The function associated with each soft key is at any time indicated in the display, right above each key.

Display and Keys

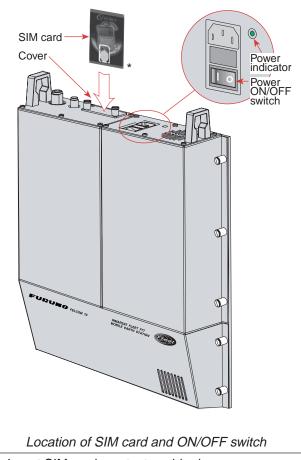


## 2.2 Switching ON

The **ON/OFF** switch located on the upper end of the Communication Unit switches all basic units of the FELCOM 70 terminal on/off:

- the ISDN Handset
- the Communication Unit (CU), and
- the Antenna Unit.

See figure below for location of the power ON/OFF switch and indicator.



\*: Insert SIM card, contact upside down.

Note: Wait about 30 seconds to turn on the power after turning it off.

### 2.3 SIM card

The SIM card carries subscription information from your Net service provider on an integrated circuit. The FELCOM 70 used with the SIM card assumes the identity of the SIM card.

The SIM card has its own set of Inmarsat Mobile Numbers (IMN) on which the user can be contacted irrespective of the FELCOM 70 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.

If the PIN code entered does not match the PIN code on the SIM card, operation with that particular SIM card will lock-up after three failed attempts. You must

then use the SIM un-block code (PUK code) provided by your Net service provider to un-lock the card. Contact your Net service provider if you do not have the PUK code.

Note: When the PUK is used, the SIM PIN is set to 1 2 3 4.

To change or disable the PIN code, see "5.3 Access level" later in this manual.

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

- PIN code (Personal Identification Number)
- Phone book
- · Allowed and preferred Net service providers
- **Note:** FELCOM 70 can be used with or without SIM card. The Net service provider, however, sometimes requires the use of SIM card.

The SIM card driver is located on the upper end of the Communication Unit, see page 2-2. 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.

**Note:** Turn on the power, wait for the indication "Ready for call", and then insert the SIM card. If the ship's mains are turned off instantaneously, eject the SIM card and turn the power off and on again.

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:
× 10000	<b>* 1111111 11111</b>	<u>* 10000 800</u>
"Product Name" SIM PIN:_	Access granted	Incorrect

### 2.4 FELCOM 70 starts up

At start-up FELCOM 70 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:

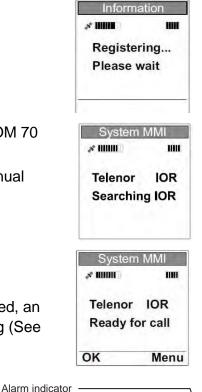
- Atlantic Ocean Region East (AOR-E)
- Atlantic Ocean Region West (AOR-W)
- Indian Ocean Region (IOR)
- Pacific Ocean Region (POR)

After completed the start-up sequence the FELCOM 70 enters idle mode.

See "3.2 Satellite Search" on how to initiate a manual search.

If required, see "3.4 Selecting 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 5.7.3 Access code).



#### Idle Mode

When in idle mode the ISDN Handset displays as shown right:

Signal strength indicator Ocean Region Service provider Status Line Soft-key choices Ocean Region Telenor Ready for call OK Menu

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 s	speech	- ongoing	low cost voice call
64k s	peech	- ongoing	high quality voice call
MPD:	S call	- ongoing	MPDS call
Fax c	all	- ongoing	fax call
3.1k⊦	Iz audio	- ongoing	audio call
UDI o	call	- ongoing	data call
128k	UDI	- ongoing	128k data call

## 2.5 Making a call

**Note:** After a call is completed, wait 15 to 30 seconds before initiating a next call. If a next call is initiated within 15 seconds, the call will be rejected by an LES. In this case, try to make a call again, approx. 15 to 30 seconds later. If it is still impossible to set up a call after several attempts, restart the system.

1 Dial 00, country code and subscriber number, e.g.: 004767244700



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

- 2 Press **Call** 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.
- 3 Complete the conversation.



#### **SymbolDescription**

Symbol	Function	Soft-key
Ô	Speakerphone mode on/off	Left
10	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.

4 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.

#### **Options During Calling**

When selecting **Speaker on** FELCOM 70 turns to speakerphone mode (i.e. increased loudspeaker volume).

#### **Options During Conversation**

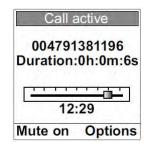
Select **Mute on / Mute off** to toggle the handset's microphone on and off. **Mute on** enables private talking without the called party being able to listen. Selecting **Options** provides the following choices:

- Select **Turn Speaker on / Turn Speaker off** to activate/deactivate the speakerphone mode.
- The **Audio Control Display** option is not supported in the default handset mode (Automatic).

Note: When using DTMF, set the handset to speaker-off and dial slowly.

#### Loudspeaker Level Adjustment

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



## 2.6 Redialing

The FELCOM70 stores information about the last outgoing and incoming calls (25 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	
S	Indicates incoming call
Z	Indicates outgoing call
~	Indicates rejected or missed call

- Use and red to scroll through the list and highlight the call to redial.
   Use and red and red scroll available information for a listed call.
- Press redial the highlighted call.
   Select details to view more detailed information for the highlighted call.

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

## 2.7 Dialing from phone book

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

- 1. Press 📡 once to enter the Phone Book.
- 2. Press a or to scroll through the list. Highlight the entry to call by leaving the sign ">" in front of the entry.
- 3. Press **2** to call the highlighted entry.

#### Using short number from phone book (prefix. 23)

- Dial 23 followed by a short number. Example: 2315 (short number = 15)
- 2. Press **Call** to initiate the call.

### 2.8 Receiving a call

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

Selecting **Speaker** or pressing **Selecting** 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
7	Ringing on/off	Right

For description of other symbols, see "2.5 Making 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 er replace the handset in the cradle to end the call.

The display shows the duration of the call.

### **Silent Ringing Option**

Select **Silence on** 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)**

Press **and then Place call on hold** to put the incoming call on hold. See "2.9 Call Hold and Transfer".

See "Options During Conversation" (Outgoing Call) and "Loudspeaker Level Adjustment" in "2.5 Making a call" for other options.

## 2.9 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.

Call on	hold
Make new	call
<b>Retrieve</b> of	all
Select	<del< td=""></del<>

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 1, 0, 3, MSN, # or \*, \*, MSN, #, and press or choose **Select** to call the number.

MSN: Two-digit internal phone 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 **E** to return to the incoming call.

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

### 2.10 Internal communication

FELCOM 70 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 FELCOM 70 is busy handling a satellite link call.

#### Make a Call

- 1. Dial 1, 0, 3, MSN, # or \*, \*, MSN, #.
- 2. Press are select **Call** to initiate the call.

#### **Receive a Call**

1. Press **See and Sec Speaker** or release the handset from the cradle to answer the call.

The caller's MSN number is displayed.

### 2.11 To call FELCOM 70

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

Example: 00870762420510.

The common ocean region access number 870 establishes a connection to the called FELCOM 70 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)
- Note: 871, 872, 873 and 874 are available until Dec. 31, 2008. Only 870 is available from Jan. 1, 2009.

### 2.12 Phone book entry

The Phone Book entries are stored in the CU 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 VtLite available on the CD.

#### 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). The word "ALPHA" is displayed to indicate that letters are expected as input.
- 4. Enter name (one field) and number for the entry. The content of each field has to be confirmed by selecting OK.
- Press **I** to delete the last character or digit.

The table shows available characters and where to find them.

Кеу	Uppercase	Lowercase
1	1	1
2 abc	ABC2	abc2
3 det	DEF3	def3
4 8 <sup>90</sup>	GHI4	ghi4
5 jki	JKL5	jkl5
6	MNO6	mno6
7 9479	PQRS7	pqrs7
8 tuv	TUV8	tuv8
9 wxyz	WXYZ9	wxyz9
0]	u 0 ل	⊔ 0

Note: The # key toggles between upper- and lowercase characters.

#### **Edit an Entry**

- 1. Press **T** to access the Phone Book.
- 2. Use a or 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 a or to scroll through the menu options. Highlight the desired option and select **OK**.

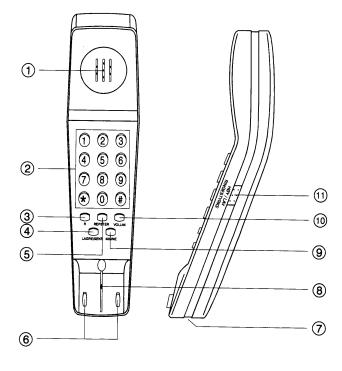
The options are,

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 See number	: Enter up to three successive start characters to search for : View number for preselected entry.
Сору	: 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 **I** to delete characters to be modified.

### 2.13 Analogue telephone

#### In case of optional telephone DBAR 104001/888



- 1 Speaker
- 2 Keypads
- 3 R-button (not used)
- 4 Storing / Microphone muting
- 5 Last number redial
- 6 Hook on / off
- 7 Line cable outlet
- 8 Microphone
- 9 Memory (stored numbers)
- 10 Volume control
- 11 Ringing signal High / Low

#### Outgoing call

- 1 Lift handset and receive dial tone
- 2 Dial the subscriber number (and #)
- 3 When finished, replace the handset

#### Redialing

If the subscriber is busy, or you want to make a new call to the last dialed subscriber, you can lift the handset, receive new dial tone and then press the [REPETER] button.

Note that this button is for manually dialed numbers only. Stored numbers will not be repeated using this method.

#### Storing abbreviated numbers

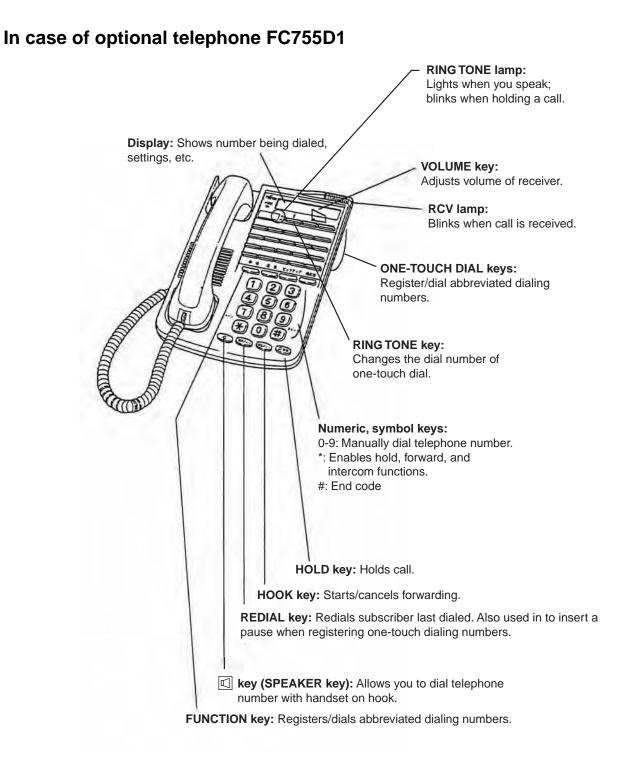
Ten subscriber numbers can be stored in the telephone's memory in short from. The numbers can be used for outgoing call, by pushing 2 buttons only.

- 1 Lift handset and press [LAGRE/SEKR] button (Don't worry the dial tone).
- 2 Press [MINNE] button.
- **3** Select relevant storing address by pushing one button (0 9).
- 4 Dial the subscriber no. and # (max. 21 digits).
- 5 Press [LAGRE/SEKR] button.
- 6 Replace handset. The number is stored.
- 7 Repeat the step 1 6 to store additional numbers.

If required to change a number, just overwrite existing number.

#### Abbreviated call

- 1 Lift handset and receive dial tone
- 2 Press [MINNE] button.
- **3** Press relevant storing address (0 9). The subscriber number is automatically dialed.
- **Note:** If you put the analogue phone, facing the key pad down for holding on call, the line will cut.



## 2.14 Call from a telefax unit

Dial 00, country code and subscriber number.

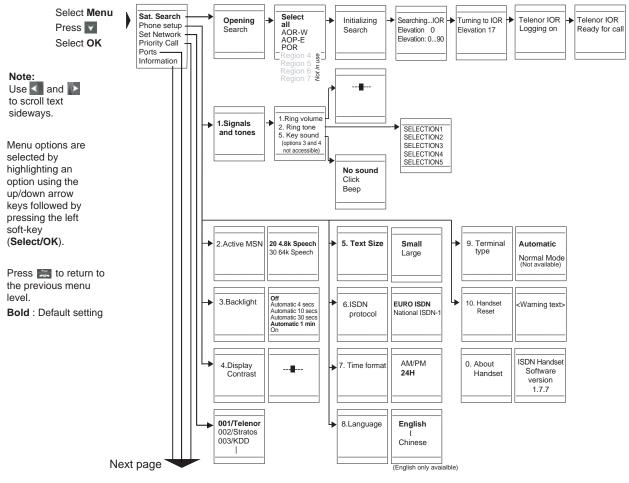


#### 2. OPERATION FROM HANDSET

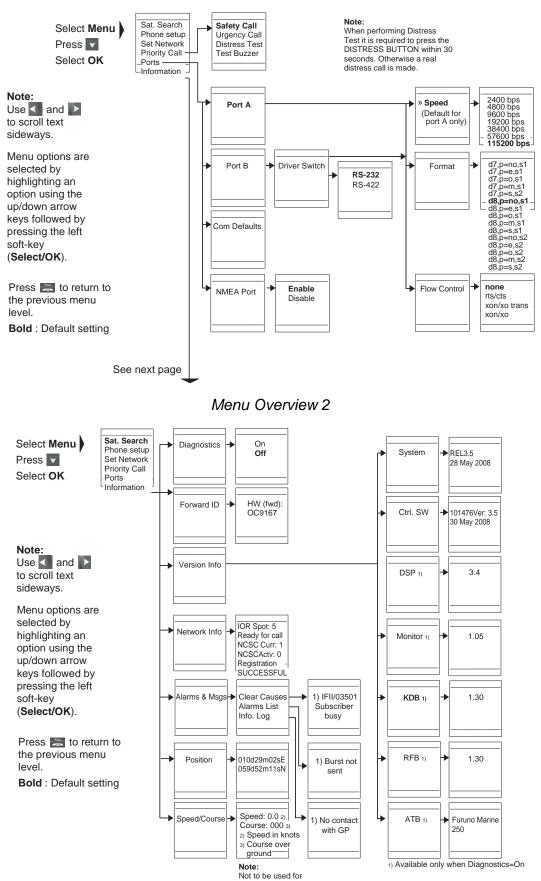
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## 3. HANDSET FUNCTIONS

## 3.1 Overview



Menu Overview 1



navigation

## 3.2 Satellite search

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 page may be used 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.

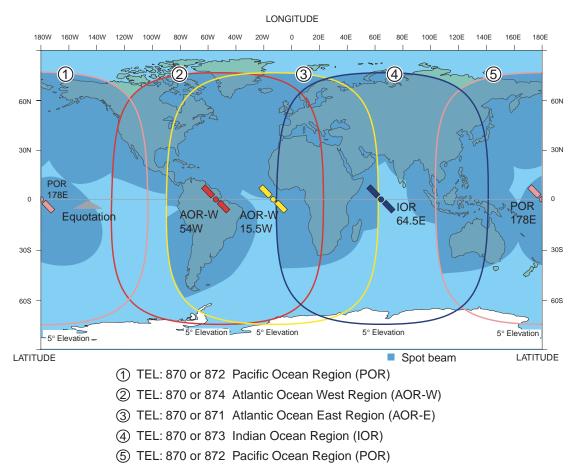
If no satellite signal is found in any Ocean Region, a hemispheric search is performed at an elevation varying from 0° to 90°.

#### 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**.

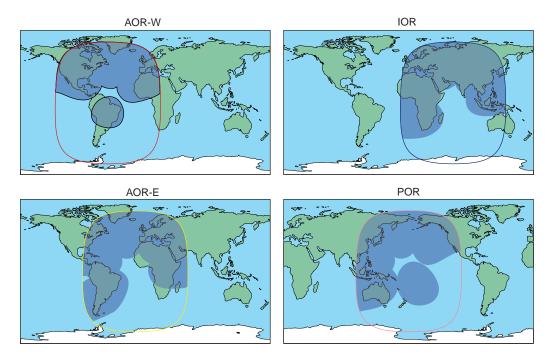
#### Satellite Coverage Map Date:

15 March 2007



Note: 871, 872, 873 and 874 are available until Dec. 31, 2008. Only 870 is available from Jan. 1, 2009.

#### Coverage Map for Each Ocean Region



## 3.3 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)
- 5. Key sound

Use **I** and **I** 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).

#### 1. 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.

#### 2. 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.
- 3. Press **Stop** to terminate the sound.

#### 5. Key sound

- 1. Use and it to highlight the desired option and choose **Select**. You can select "Beep" or "No sound". "Click" can not be used.
- 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.

Use **I** and **i** 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 CU must use the same protocol. By default the terminal and handsets use the Euro ISDN protocol.

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

Use 🚺 and 🛐 to highlight the desired option and choose Select.

#### Language

Only English is available.

#### **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 (For INMARSAT FLEET F77)
- Normal Mode (Not available)

#### **Handset Reset**

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

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

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.

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

## 3.4 Selecting 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**.

## 3.5 **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 and to highlight the desired option (Safety Call or Urgency Call) and select **OK**.
- 4. Enter the number provided by the Net service provider.

## 3.6 Distress Alarm

The Distress Alarm Unit allows activation of an alert transmission. Messages concerning alarm transmission and reception are displayed on the connected ISDN Handset. The operability of the Distress Alarm Unit may be tested.



#### Activate Distress Alarm

- **Note:** This procedure will transmit a distress alarm. Only to be performed when utterly required.
- 1. Lift the flap located on the Distress Alarm Unit.
- 2. Press the DISTRESS BUTTON for at least 6 seconds to activate the alarm.
- 3. Wait for your Distress call to be answered by a RCC (Rescue Coordination Centre).



#### Activate Distress Alarm Test

- **Note:** A real distress alarm may be transmitted if this procedure is not performed as described.
- 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 A and to highlight the Distress Test option and select **OK**. The operation may be canceled by pressing
- Lift the flap located on the Distress Alarm Unit and press the DISTRESS BUTTON WITHIN 30 seconds, otherwise a real distress alarm is transmitted.
- 5. Press **#** and then select **Call** to initiate the Distress Alarm test call.
- 6. Wait for the test call to be answered by a RCC (Rescue Coordination Centre).

#### Activate Distress Alarm Unit Buzzer Test

- 1. Select Menu to open the main menu.
- 2. Use 🔼 and 💟 to highlight the Priority Call option and select **OK**.
- 3. Use 🔼 and 💟 to highlight the Test Buzzer option and select **OK**.

The Distress alarm buzzer sounds for a short period.

## 3.7 Setting serial ports

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

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 **M** and **W** to highlight the desired driver type. Confirm the selection by selecting **OK**.
- 2. Reboot the CU for the new setting to take effect. The disabled port type will be disconnected.

### 3.8 Information available

Refer to Menu Overview 3.

The information available here is 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 **M** and **W** 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

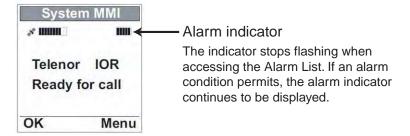
#### About Alarms & Messages

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

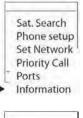
Information about the alarm is found in the Alarms List. The alarm indicator flashes when an alarm condition occurs:



- 1. Select **Menu** from idle screen to open the main menu.
- 2. Use and it 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**.

The alarms list is presented.

5. Use and it to scroll through the list, and select **OK** to view time and date information for the alarm displayed.







1) Burst no	JI.
sent	

# 4. OPERATION FROM PC

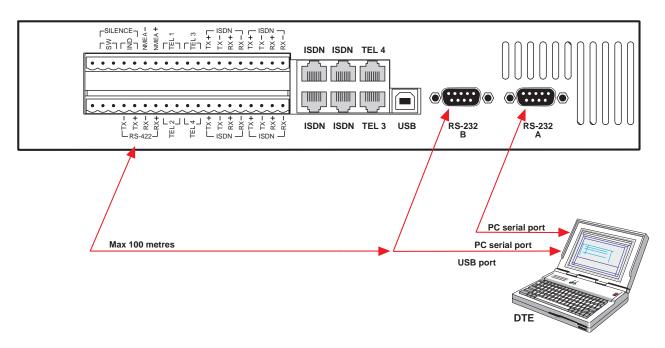
### 4.1 Installing the PC program

The **SAILOR vtLite** program allows FELCOM 70 to be operated or configured from a PC, including functions such as:

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

For an explanation of the functions, see later in this manual. The **SAILOR vtLite** program is available on the enclosed CD and must be installed on the PC hard disk.

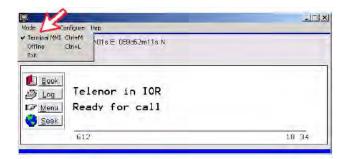
**Note:** To install the **SAILOR vtLite**, the user name of the PC should be one-byte characters.



- **Note:** Use **SAILOR vtLite** program 7.2 with the system program version REL3.5 of the communication unit.
- **Note:** The SAILOR vtLite software works in Windows XP SP2 and Windows Vista.

Procedure:

- 1 Insert the CD and open it from the "My Computer" icon.
- 2 Install the "SAILOR vtLite" to the PC hard drive.
  - a. Open the "SAILOR vtLite" folder.
  - b. Double-click the "setup.exe" ic
  - on and follow the instruction displayed.
  - c. Double-click the "furuno.bat" icon.
- **3** Connect the serial cable between the PC serial port and the RS-232 port on the FELCOM 70 Communication Unit. *See previous page*.
- 4 Start the SAILOR vtLite program by clicking **Start>Programs>SAILOR** vtLite.
- 5 Switch ON the Communication Unit. If no contact, click **Mode>Terminal MMI**.



6 If no contact, press **YES** button to try auto detect.

9		
Mode View Configure Hele		
Position		
ESC		
	No contact - try and autodetect modem?	_

7 Click Configure>Port to check the port settings.

SPT	COM1	06:16 (UTC+00:00)
m settings   1	Felnet settings	
Port		ed bps 5200 • Save Settings

### 4.2 Starting up

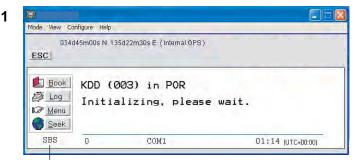
 Switch ON FELCOM 70. See figure on page 2-2 for location of the ON/OFF switch.

The initialization starts and its progress is displayed on the ISDN handset screen as follows:

Fleet Euro – ISDN ⇒ Enumerating ⇒ Initializing ⇒ Searching

- 2 Turn ON the PC. After the indication "Initializing" appears on the ISDN handset screen (30 seconds after turning on power), click Start>Programs> SAILOR vtLite.
- **Note:** To prevent system hang-up or abnormality such as changed ISDN handset ID, start up the system by following the above procedures.
  - 1) The satellite search program is initialized.

#### See also "3.2 Satellite search".



Beam was selected. In global beam, "GLB" is shown. If spot selection is not complete, SBS is shown as above.

- FELCOM 70 starts searching for last known satellite (Ocean Region) as default.
- **3)** When receiving a satellite signal, a signal strength bar will appear in the search window. The longer the signal bar or higher the signal strength indicator value, the better the signal quality. The maximum marker indicates the highest signal strength achieved during the current search.

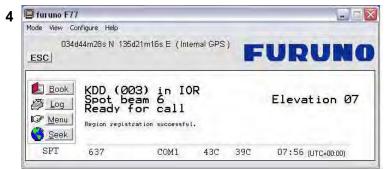
					L	
Mode View C	Configure Help					
034d44m28s N 135d21m16s E (Internal GPS)						
→ <u>N</u> ew → <u>O</u> k						
SBS	553	COM1	41C	32C	06:23 (UTC+00:00	)



**Note:** It is recommended that the signal strength reading (**S/N=S**ignal/**N**oise ratio) should be at least 550, typically 660. The antenna will automatically fine-tune to the best signal and accept it.

Clicking **Seek** starts the search again. If required, select a specific satellite by clicking **New**.

4) The equipment is ready for use when the following **Main window** appears.



To make a connection, see "2.6 Making a call"

### 4.3 Phone book

Adding and editing entries can also be done from the handset, *see "Chapter 2 OPERATION FROM HANDSET".* 

#### Phone book capacity

	CU	SIM card
		(Data vary with card type)
Phone numbers:	100 entries	100 entries
Number length:	19 digits	19 digits
Name length:	29 characters	12 characters
Entry numbers:	0 - 99	100 and up

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

### Abbreviated dialing (prefix 23)

1 Clicking **Book** opens the **Phone book**.

Fosition	010.029m01s E 059d52m11s N	
ESCI A	1	
BOOK	S Telenor in IOR	
ظه Log		
Menu Menu	Ready for call	

**2** Scroll through list 1/1 to wanted entry.

*Example:* dialing 2310 # on the analogue telephone or ISDN keypad fetches and sends the telephone number stored under short number entry 15.

N.	010x29m01s E 059d52m11s N	Fosition
Phone book	P	ESC
	001> ome Office M/v Berge Stah M/v Lysfoss	New
		New Edit

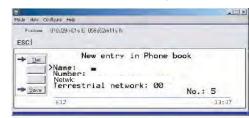
### Adding or editing entries

3

4

3 Clicking **New** (window 2 on previous page) opens the window used to add an entry to the book. To select a network provider, choose the NETWORK and then a provider you want.

Use Del to modify. Save stores the new entry.



4 Clicking **Edit** (window **2** on previous page) opens the window allowing changes to be made in the Phone book.

Use **Del** to modify. **Remov** erases the entry.

**Note:** The book is also used with the restriction "Dial from book only", see "**Restricted dialing setup**" on page 5-11.

Terrestrial network is normally "not in use" in the Inmarsat system.

Loupon	010d29m01s E_059d52m11s N
ESC	
- Del	Edit mode in Phone book
- Del	>Name: FURUNO Number: 004767244627
> New	
A Contraction of the local division of the l	Netwk: Default Net Terrestrial network: Default No.: 2
- Save	

#### Netwk = Net provider

Another Net provider may be selected when dialing this number from the phone book. If no selection, the system uses the default one.

#### **Terrestrial network**

It is possible to change Terrestrial network for the selected Net provider (00 is most common). Call your Net provider for more information.

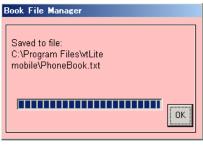
#### Saving entries to PC (Owner level only)

5

5 Click **File** to save, load or replace the phone book.

Bo	ook File Manager
	Save phone book to a file
	C Replace phonebook from a file to the terminal
	Cancel 0K

6 Choose either one and press OK button.



### 4.4 Traffic Log

This function logs all outgoing and incoming calls both with and without SIM card inserted. Incoming calls may be logged as well.

*Up to 100 calls can be logged. Circuit switched calls (Cct) including:* 

- Voice calls
- Mobile Data Service calls

Packet switched data calls (Mpds) including:

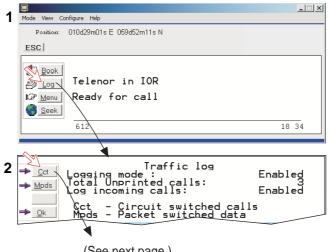
• Mobile Packet Data Service calls

The FELCOM 70 owner may set the log output mode as follows, (see "4.5 *Traffic log settings*"):

- Paused
- Cleared (stops logging and clears the log)
- Enabled
- Enabled & automatic printout to RS-232A
- Enabled & automatic printout to RS-232B

### Traffic log readout

- 1 Clicking Log opens the Traffic log window.
- 2 The Traffic log window shows whether the logging is enabled, whether incoming calls are logged, and the total number of unprinted calls (MPDS and Cct calls).



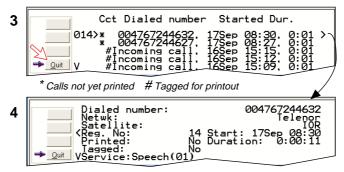
(See next page.)

### Circuit switched calls:

Clicking Cct displays the list of calls.

- 3 Scroll □/□ to wanted call record and press ⊡ to display details of the selected call.
- 4 The call details include data such as dialed number, start of the call, duration, service and terminal Id.

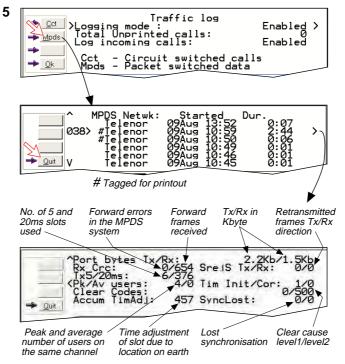
Quit reverts to main window.



#### Mobile Packet Data Service calls:

- 5 Clicking Mpds displays the list of Mobile Packet Data Service calls.
- 6 The call list include data such as Net provider, start of the call and duration. Scroll □/□ to wanted call record and press □ to display details of the selected call.
- 7 The call details include data such as forward errors in the MPDS system, forward frames received, etc.

Quit reverts to main window.



### 4.5 Traffic log settings

(owner level only, see "Shifting to owner level" on page 5-4.)

1 In the Main window, clicking Log opens the Traffic log window, which displays the current log mode, number of unprinted calls, and whether logging of incoming calls is enabled/disabled. Point to Logging mode. The following "Select Traffic Logging mode" window appears.

furuno F7	7					
lode View C	ionfigure Help					
034 ESC	d44m28s N 135	d21m16s E (Inti	emal GPS		UR	UNC
	>Los Paused Tot Cleared Los Enabled Enabled Cr Enabled		nting to R nting to R	S-232 A S-232 B	Select Cancel	oled > 29 oled
SPT	626	COM1	43C	39C	- 07 51 π	ITC+00:001

Click **Edit** or 🖃 to choose mode of operation:

- Paused: any logging is off.
- Cleared: all log entries are deleted (incoming and outgoing).
- Enabled: outgoing logging is on.
- Enabled & Automatic printing to RS-232A\*: output to local printer
- Enabled & Automatic printing to RS-232B\*: output to local printer Note: Before selecting "Automatic printing", confirm that a serial printer is connected to the RS-232A or RS-232B port, indicated in the alarm message. If a serial printer is not connected to RS-232A or RS-232B port, never select an item marked with asterisk (\*).

<b>furuno F77</b> Mode View Co					
034d ESC	44m28s N 135	5d21m16s E (Internal GPS)	F	UR	UNC
	Los Enable Tot Enable Los Inable	ct Traffic Logging mode: d d & Automatic printing to RS ecting automatic printing to RS ecting automatic printing, that a printer is attached specified serial port.	G-232 A G-232 B	Select Cancel	oled > 29 oled

Scroll . to wanted mode, and click to select.

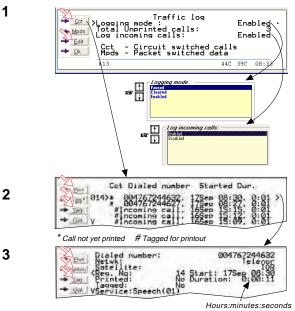
• Scroll down ☐ to **Log incoming calls** and click **Edit** or ☐ to enable or disable logging of incoming calls.

### Circuit switched calls:

2 Clicking **Cct** in the Traffic log (window 1 shown in the figure below) opens the list of all call records except MPDS calls.

Print outputs all unprinted calls (marked with a star):

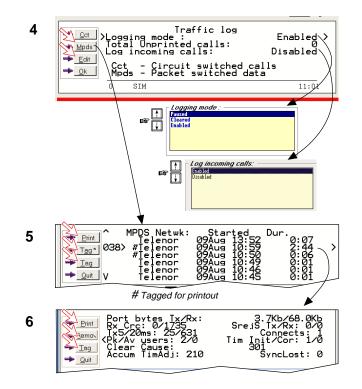
- Clicking **Tag**\* marks *all* calls with a hash, which adds the records to the printout file.
- Clicking **Tag** marks the *selected* call with a hash, which adds the record to the printout file.
- Clicking Tag again untags a selected record.
- **3** Pressing  $\square$  at a record when in window (**2**) displays detailed call data.



4-10

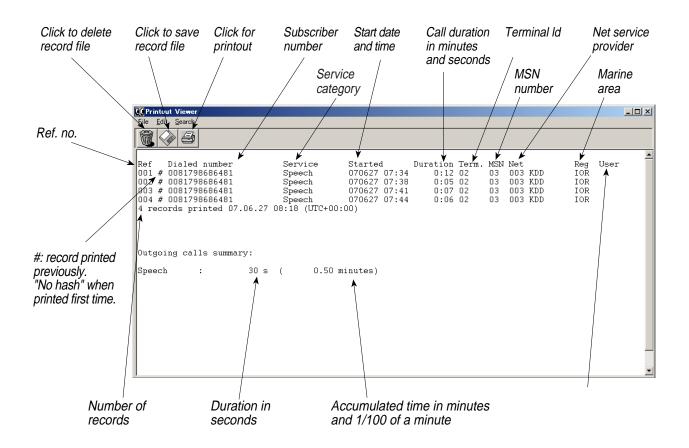
### Mobile Packet Data Service calls:

- 4 Clicking Mpds in the Traffic log (window 1 on previous page) opens the list of *Mobile Packet Data Service* call records.
- 5 Print outputs all unprinted calls (tagged with a hash):
  - Clicking Tag\* marks all calls with a hash, which adds the records to the printout file.
  - Clicking **Tag** marks the selected call with a hash, which adds the record to the printout file.
  - Clicking Tag again untags a selected record.
- 6 Pressing 🗔 at a record when in window (5) displays detailed call data.



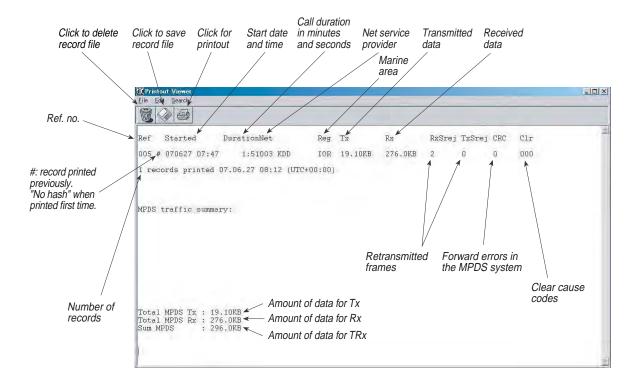
### 4.6 Traffic log printout viewer - normal calls (Cct)

The viewer lists tagged call records. Records that have been printed out previously are marked with a hash. The record file can be printed out or saved to disk. For default setup, see "5.15 Print handling setup".



# 4.7 Traffic log printout viewer - Mobile Packet Data Service calls (MPDS)

The viewer lists tagged call records. Records that have been printed out previously are marked with a hash. The record file can be printed out or saved to disk. For default setup, see "5.15 Print handling setup".



### 4.8 Traffic log output to serial printer

When connected, traffic log details are automatically output as indicated below. One line is printed out after each call. To dump the traffic log, select menu > information > Traffic log in the ISDN handset.

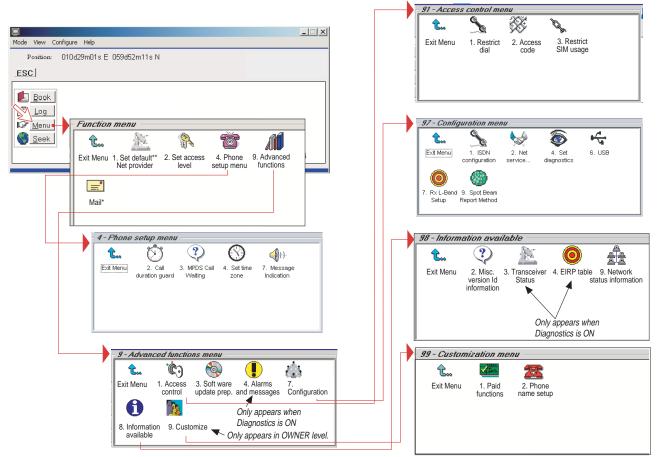
Select logging mode in vtLite Mobile Traffic log to: Automatic printing to RS232A or RS232B, see **Traffic log settings** earlier in this manual.

This page is intentionally left blank.

# 5. CONFIGURATION FROM PC

### 5.1 Menu functions

Point at icons and double-click the mouse to open menus and functions.



\*: "Mail" is not in use.

\*\*: This icon is not displayed when using SIM card.

### 5.2 Function reference list

• Reference number for direct selection. Click menu in main window and then key in the number.

₹ Ref.	Function	Features
1	Set default Net provider	Allows changing Net service provider (and terrestrial network). See " <b>3.4 Selecting default Net service provider</b> ".
2	Set access level	Allows shifting between user level and owner level, changing PIN code and owner password. See " <b>5.3 Access level</b> ".
4	Phone setup menu	
42	Call duration guard	Sets maximum call duration for 64 kbps calls.
43	MPDS Call waiting	Calls may be received during an MPDS session.
44	Set time zone	Sets time zone.
47	Message indication	Switches indication of received call on/off.
9	Advanced functions menu	
91	Access control menu	See "5.6 Advanced functions".
911	Restrict dial	Only allows calls from Phone Book. List of barred numbers may be established.
912	Access code	Set personal codes for using FELCOM 70.
913	Restrict SIM usage	Only allows calls with specific card, no card or any card.
93	Software update prep.	Prepare software update.
94	Alarms and messages	See information on page 7-4.
97	Configuration menu	
971	ISDN configuration	Chooses between ISDN protocols.
972	Net service providers	Changing Net service provider data.
974	Set diagnostics	Allows additional system information to be displayed
976	USB	Choose single port or dual port for USB operation.
977	Rx L-Band Setup	Choose ON or Off as appropriate for DGPS port on the CE.
979	Spot beam report method	Sending spot ID or position
98	Information available	See "5.6 Advanced functions".
982	Misc. version Id information	Displays a series of version information windows.
983	Transceiver status	Displays max/min voltages and temperatures in RF unit
984	EIRP table	Carrier status (not in use)
989	Network status information	Displays various network status information.
99	Customization menu	See "5.6 Advanced functions".
991	Paid functions	Not in use
992	Phone name setup	Allows altering the phone name.

### 5.3 Access level

The FELCOM 70 user program (SAILOR vtLite) is accessible from two levels:

- USER LEVEL
- **OWNER LEVEL** accessed by owner level password.

**Warning:** To prevent misuse, passwords other than default must be entered before putting the FELCOM 70 in operation.

### 5.3.1 Activating/Changing user PIN code

1 Double-click the **Set access level** icon on the **Function menu**.



2 Click Edit to enter/modify the PIN code.

Position 010d29m01 ESC	a E-059d52m11a N				
Acces	2 - Set acces s level: User In				
2k 500	_	38/7	34C	09	2

- 3 Key in:
  - Old PIN code (default: 1234)
  - New PIN code (4-8 digits possible)
  - Retype to confirm

3

Click **Ok** for each entry and to store new code.

Postion 010d29m01s E 059c	52m11s N				
Del	Edit	phone PIN			
Old PIN: New PIN: >Retype new	PIN:	**** ******** *******			
► <u></u> 614			000	34C	09:41

- Note1: If you want to omit entering the PIN code at power up, click Ok without entering neither "New PIN" nor "Retype new PIN". If you want to recover the PIN code previously used, enter the old PIN code. If you have forgotten the PIN code, login with [\*] + owner password at power up. The user password is reset to default (1234) at this time. However, the reset can not be done if you are using a SIM card.
- Note2: If a wrong PIN is entered consecutively, key entry is disabled for 1 minute. If the system is left under this condition for 1 minute, the PIN prompt screen appears again. (Consecutive entries of wrong PIN codes are barred to prevent a registered PIN from being hacked.)

### 5.3.2 Functions requiring owner level

Programming of the functions below requires that the user access is set to **OWNER LEVEL:** 

- Traffic log settings/printouts
- Modifying password
- Net Service provider names
- Restricted dial
- Restricted SIM usage
- ISDN configuration (except data/time element)
- Access code
- Paid functions
- Phone name setup
- Spot beam report method

### Shifting to owner level

1 Click Owner in Set access level window.

1



2 Key in the password.

Note: The default password is "1 2 3 4 5 6 7 8 9 0." Clicking Ok activates the Owner level.



#### Changing owner level password

- **3** Open the **Set access level** window again, and click **Edit** to modify the owner password. Key in:
  - Current password
  - New password (10 12 digits)

3

Retype to confirm



4 Click Ok following each entry and store new password. To revert to User level, open the "Set access level" window and click User.

### 5.4 Selecting default Net service provider

The default Inmarsat Net service provider for a satellite (Ocean Region) is automatically used if the user does not select another one when making a call. Make sure that you choose the Net service provider who commissioned the equipment. You will otherwise be barred or charged additional rate. In this menu default Net service provider can be preprogrammed for the *current* Ocean Region.

When using SIM card, selection is automatically restricted to one of the allowed Net service providers and does not need to be programmed!

Procedure:

1 On the **Function menu**, double-click the **Set default Net provider** icon to display the current selections.

Position	Function m	enu				-
ESC	<b>C</b>	12		1	A	
	Exit Menu	1. Set default Net provider	2. Set access level	4. Phone setup menu	9. Advanced functions	-
_		nor promace		coup mona	Tanonono	
_						
-	Mail					

2 Scroll up/down to change satellite: 1/1.

2

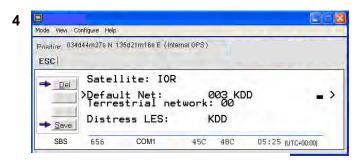
1ode View Co	onfigure Help		( <u></u> )12	
Position:	059d52m12s	N 010d29m01s E		
Edit	003 > 10 Re		Default Net provider 012 Xantic 022 Xantic MES category blocked.	>
→ <u>S</u> elct → <u>O</u> k	Re	gion 6 gion 7	MES category blocked. MES category blocked. MES category blocked.	

3 Clicking **Select** opens the window prompting you to confirm the choice of satellite with the current default Net service provider.

To change default Net service provider for a satellite region, see next page.

Mode View Col	-Figure He	le.				
		2s N 010d29m01s E		R.		
→ <u>Y</u> es	Use	IOR as nev	w sate	llite?		
SBS	502	COM1	43C	37C	10 : 22	[UTC+02:00]

4 Clicking **Edit** and pressing ightarrow at the satellite region selected in step **2**, displays the list of available Net service providers.



### **Terrestrial network**

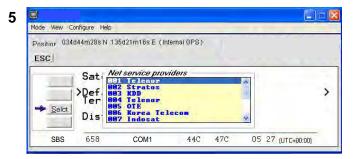
It is possible to select different terrestrial network. If no selection, the system uses the default net: 00.

### **Distress LES**

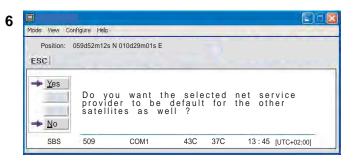
Automatically selected by the system. Can only be changed by selecting another Net service provider.

5 Scroll to required Net provider: 1/1, and press regime to enter chosen Net as default.

Save stores the selected Net provider for this satellite (Ocean Region).



6 Click Yes sets Net service provider for all satellites (Ocean Regions).



### 5.5 Phone setup

This phone setup menu includes the functions:

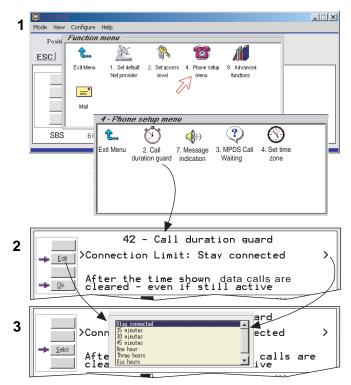
- Limitation of call duration
- Setting time zone
- Indication of received calls(See next page.)

Double-click the **Phone setup menu** icon in the **Function menu** to access the functions.

### Call duration limit

The call duration guard prevents accidental transmission of prolonged 64 kbps calls. The timer sets the point at which the call is automatically cleared.

- 1 Double-click the Call duration guard icon.
- 2 Click Edit to set the timer.
- **3** Scroll **1**/**1** to select the required limit (either "Stay connected" or in steps between 15 minutes and 12 hours), and click **Select** to store the setting.

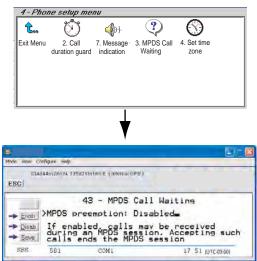


### MPDS call waiting

The MPDS call waiting is to notify the presence of a fixed-originated routine priority voice or SCPC data call to a dialed-MES that is engaged in an on going MPDS call. Support for call waiting allows a user to remain connected to the MPDS network without worrying about missing a call.

The default is "disabled". If enabled, calls may be received during an MPDS session. Accepting such calls ends the MPDS session. Note that the call waiting functionality must be implemented on the LES.

1 Double-click the MPDS Call Waiting icon.



- 2 Click the Enab or Disab button.
- 3 Click the **Save** button to store the setting.

### Set time zone

The UTC time is displayed, getting from the GPS. To display local time, set time zone as follows.

- 1 Double-click the **Set time zone** icon.
- 2 Press the Edit button.

Mode View C							
	arching GPS satellite	s		U.			
	>Current		- Set ti zone: U				>
<u>→ 0</u> k	0		31C	32C	13	05 (UTC+I	09:00)

3 Choose the time difference and press the **selct** button.

### Message indication

When the Massage Indication function is set On, a received data and/or fax call is signaled in all FELCOM 70 Display Handsets:

The ringing stops when pressing **E**, or when the Call is finished.

Data call:

F2M = Fixed-to-Mobile

Fax call:

When the call is finished, the display reverts to idle.



#### Setup:

1 Double-click the **Message Indication** icon in the **Phone setup menu**.

Position ESC	<b>î</b>	۲Ĵ	<b>()</b> ))	?	()	
	Exit Menu	2. Call duration guard	7. Message indication	3. MPDS Call Waiting	4. Set time zone	_

2 Select Fax or Data and Enable or Disable indication of received messages, as required.

Press Save to store the settings.

Furuno F77		
Mode View Configure Help		
P <sub>osition</sub> 034d44m27s N 135 ESC	d21m16s E (Internal GPS)	
→ Enab → Disab → Save	47 - Message Indication On <u>a</u> On	1
600	14	55 (UTC+09:00)

### 5.6 Advanced functions

"9 Customize" is accessible from **OWNER LEVEL** only. The OWNER LEVEL is protected by password. For shifting to owner level and assignment of password, see "**5.3 Access level**".

" 4 Alarms and messages" is accessible when **Diagnostics** is turned ON.



The Advanced functions include the following menus.

•	Access control:	Restrict dial Access code Restrict SIM usage
•	Software update prep:	Prepares software update
•	Alarms and messages:	Indicates alarms and messages. See page 7-4 for details.
•	Configuration:	Net service provider names Set diagnostics ISDN configuration USB port setup Rx L-Band Setup Spot Beam Report Method
•	Information available:	Misc. version Id information Network status information (when diagnostics is ON, see " <b>5.9.3 Set</b> diagnostics")
•	Customize:	Phone name setup (owner level) Paid functions

### 5.7 Access control

### 5.7.1 Restricted dialing

The restricted dialing function allows the owner to establish a Barred list of subscriber numbers that cannot be called; or set FELCOM 70 for dialing from Phone Book only. The restricted dialing modes prevent misuse of FELCOM 70.

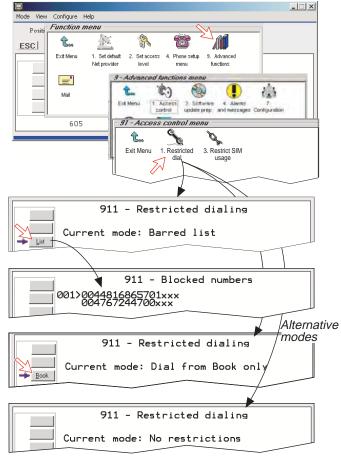
- **Barred list**, which may contain up to 10 phone numbers or part of numbers that **can not** be called. E.g. the entry "0087" in the barred list prevents all mobile-to-mobile calls.
- Dial from Book only, which restricts calls to the numbers in FELCOM 70
  Phone Book. It is still possible to append: an entry with number field "0047"
  means that it is possible to dial all Norwegian numbers.
  When a SIM card is inserted, the SIM entries will not be merged with the
  "phone" entries. The function is active for non-SIM operation and for one
  specific SIM card. See "5.7.4 Restricted SIM usage".
- No restrictions.

Only one mode can be active at one time, as selected by the owner, see next page.

### Checking the dialing setup

Via the Function menu > Advanced functions menu, double-clicking the Restrict dial icon on the Access control menu shows the active mode.

- Barred list
- Dial from Book only
- No restrictions

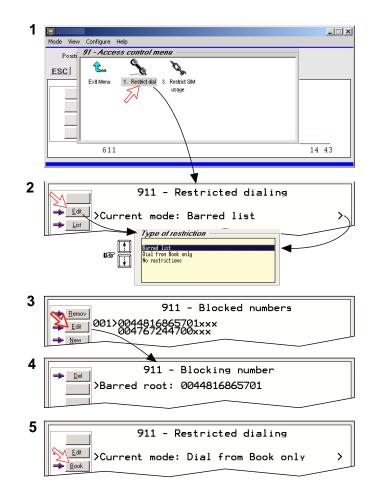


### 5.7.2 Restricted dialing setup (owner level only)

"Barred list" and phone book are established as follows:

- 1 Open the **Restricted dialing** window as shown on the previous page.
- 2 The Restricted dialing window shows which list is currently active. Edit allows selection of restriction mode. Scroll up/down to select. (Selct enters the chosen mode)
- Clicking List displays the blocked phone numbers.
   The List key only appears when Current mode is Barred list.
- Clicking Edit allows the barred number to be modified.
   The field is empty when clicking New to add a phone number to the list.
   Remove deletes number. Save stores the changes.
- **5** When the restriction mode "Dial from Book only" is active, clicking **Book** allows data to be entered.

### Note: Remember to revert to user level



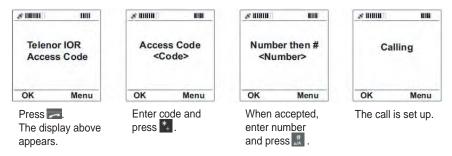
### 5.7.3 Access code (owner level only)

Access code can be activated for up to 25 users (for 4.8 kbps speech and 64 kbps speech only.)

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

All telephones are activated. To release a telephone for use without access code, see **"5.13 MSN configuration"**. Entering the personal code allows the subscriber number to be dialed, e.g.:

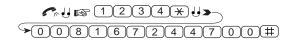
### **ISDN Handset (External communication)**



### ISDN handset (Internal communication)

- Press key and dial \*, \*, MSN, #.
- Press key and enter access code (1 to 8 digits). After the message "Number then#" appears, dial 1, 0, 3, MSN, # or \*, \*, MSN, #.
   MSN is two-digit internal phone number.

#### Analogue telephone (External communication)



- Note 1: Dial input cannot be corrected by **DEL** key when an access code has been set. When you misdialed on an ISDN Handset, hook it on once and then repeat the call initiation procedures from inputting an access code. Once an access code has been set, the dialing signal from the Handset is sent to the mobile terminal with each key input (the same as when dialing from an analog telephone). Therefore, correction by **DEL** key is not possible.
- Note 2: For old type handset, Phone Book key is unavailable when access code has been set. When an access code has been set, utilize a prefixed call "23XX#" (XX: registered number on Phone Book). Phone Book key does not work by the same reason as above.

Setup:

- 1 Double-click the Access code icon in the Access control menu and press the <sup>(Setup)</sup> button.
- 2 Pressing **New** opens the **Access code add entry** window, allowing a name associated with the particular code to be entered.
- **3** Pressing **Ok** allows entering the personal code. Pressing **Ok** again prompts you to confirm the entry.
- 4 When pressing the **Access code** icon the next time (1), the window displays a list of the names associated with the programmed access codes.

Eruno F77	🔲 🗖 🔀 📮 Furuno F77	
Mode View Configure Help	Mode View Configure Help	
Prisition ESCI Exit Menu Finite Secience Seci	Position: 034044m27s N 135021m1Bs E (Inter ESC	mal GPS) code add entry
	>Name: captain	
604 14.57	(UTC+09:00) 597	15:02 (UTC+09:00)
Furuno F77 Mode View Configure Help	Furuno F77 Mode View Configure Help	
Pnsitiner 034644m28s N 135621m16s E (Internal GPS )	Position: 034044m27s N 135021m16s E (Inter ESC	nal GPS )
912 - Access code <u>Enab</u> Access code: Disabled <u>Qk</u>	Access c Name: captain >Code: ****	code add entry
597 14:59 (	(UTC+09:00) 613	15:04 (UTC+09:00)
Eurumo F77	E Furuno F77 Mode View Configure Help	
Mode View Configure Help	Positian 034d44m27s N 135d21m16s E (Inter	mal (880)
Prisitinn 034d44m27s N 135d21m16s E (Internal GPS) ESC	ESC	
Access codes 000>No codes set.	Access of Name: captain >Confirm code: *	code add entry
594 15:01	(UTC+03:00) 595	15 D5 (UTC+09:00)

### 5.7.4 Restricted SIM usage

### Allowed SIM

FELCOM 70 can be set to operate from:

- Lock SIM, locked to one specific SIM card. Any other SIM user will be rejected.
- No SIM card. All SIM users will be rejected.
- Any SIM card.

### **Setting SIM restrictions**

#### (owner level only)

- 1 Double-click the **Restrict SIM usage** icon.
- 2 The SIM restrictions window shows an example with the setting Allowed SIM: No SIM.

Click Any (default) to set FELCOM 70 for operation from a specific card only.

### Lock SIM:

3 Click **Lock** and insert the actual SIM card.

FELCOM 70 can now be operated with that specific card only.

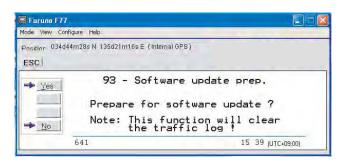
4 When retracting the card, the Id of the SIM provider is displayed.

Ok stores the settings.

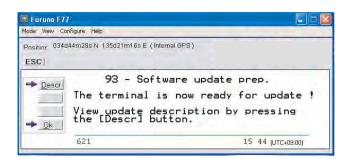
1	Furune F77		
	Mode View Configure Help		
	Position ESC Edt Menu 1. Restrict dial	2. Access 3. Restrict code SIM usage	
	609	42C	14:36 (UTC+09:00)
2	Seck Lock	3 - SIM restrict M: No SIM	ions
 • •			
3	913	3 - SIM restrict	ions
	>Allowed SI	M: Any	
	Please ins	ert the actual	SIM card.
4	913	3 - SIM restrict	ions
	Allowed SI	M: Any	
	Any Please ret	ract the SIM ca	ard.

### 5.8 Software update preparation

- 1 Open the Function menu and then Advanced function menu.
- 2 Double-click the Software update prep icon.



3 Press the **YES** button.



- 4 To view update description press the **Descr** button.
- 5 Press the **OK** button.

The update information is printout.

### 5.9 Configuration menu

### 5.9.1 ISDN protocol configuration

- 1 Open the **Configuration menu** via the **Function menu > Advanced function menu>Configuration**.
- **2** Double-clicking the **ISDN configuration** displays the ISDN configurations implemented in FELCOM 70.
- **3** Press the up or down arrow key to select an item and the right arrow key to show the selection dialog box.

### Switch to owner level to choose protocol.

### Protocol

Select Euro ISDN for connection of equipment conforming to the European ISDN standard. (NI-1 can not be used.) Select same protocol for all ISDN handsets and PC.

### • Date/time element

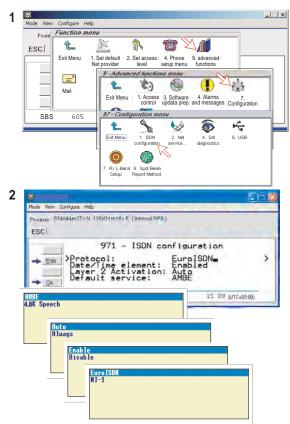
When enabled, date and time is sent to the connected Terminal Equipment during call establishment some ISDN devices do not survive this message. The date and time transmission may then be disabled.

### Layer 2 Activation

The layer 2 connection is deactivated after some idle time as default. Some ISDN devices interpret this as an alarm situation. Layer 2 deactivation can then be disabled.

### • Default service

Some ISDN devices can not signal their own MSN number. Such a phone will be able to use the 64 kbps service since all "unknown" speech devices are required to use the 4.8 kbps speech service. The user can set FELCOM 70 to map all "unknown" devices to 64 kbps speech service. **Note:** Remember to revert to user level.



### 5.9.2 Net service providers (owner level only)

Adding, editing, or removing entries in the list of Net service providers.

- 1 Via the Function menu > Advanced functions menu, double-clicking the Net service providers icon in the Configuration menu displays the list of Net service providers including their station codes.
- 2 Scroll to required Net service provider with key. Clicking **Ok** returns you to the Configuration window.

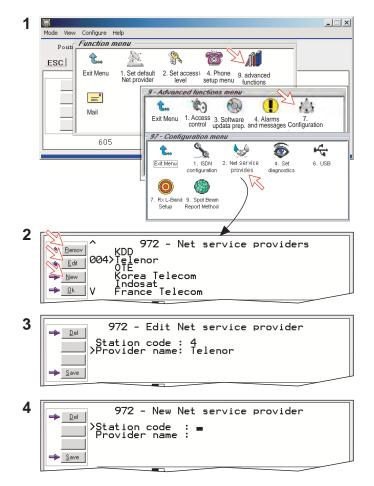
Remov deletes entry.

**3.** Clicking **Edit** opens the window allowing the station code and provider name to be modified.

Use **Del** to modify. **Save** stores the changes.

4 Clicking **New** (window **2**) opens the window allowing station code and provider name to be added.

Note: Remember to revert to user level.



### 5.9.3 Set diagnostics

Additional system information is displayed when diagnostics is turned **On**.

See also "5.1 Menu functions".

- 1 Double-click the **Set diagnostics** icon via the **Function menu > Advanced functions menu > Configuration menu**.
- 2 Click On button.

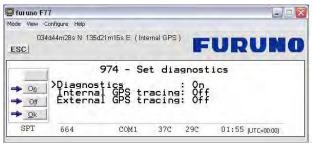


3 Click Ok button.

"Diagnostics" becomes On and control is returned to the Configuration Menu.



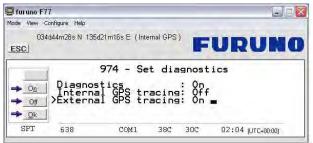
4 Double-click Set diagnostics to confirm setting on diagnostic menu.



5 To monitor internal GPS data, press down-arrow key to move the cursor(>) to "Internal GPS tracing". Then click **On** button and then **Ok** button.

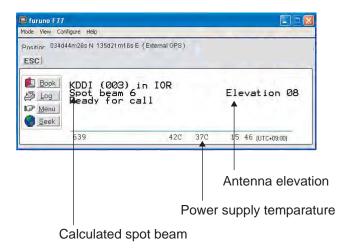
📕 furuno F77										
Mode View	Configure Help									
CI34d44m27s N 135d21m16s E (Internal GPS)										
974 - Set diagnostics → On → Off → Off → Off										
SPT	592	COM1	44C	41C	09	49	(UTC+00:00)			

6 To monitor external GPS data, press down-arrow key to move the cursor(>) to "External GPS tracing". Then click **On** button and then **Ok** button.



When choosing diagnostic **On**, the following terms appear.

- Alarm and message icon (menu 9).
- Power supply unit temperature
- Calculated spot beam
- Antenna elevation



#### 5.9.4 Dual-port USB

The Dual-port USB allows several programs to operate at the same time via a single USB port. Connect a USB cable between the USB port of the communication unit and the USB port of PC.

- One channel for data communication
- One channel for control (vtLite)

The default setting is "Single port".

To set the dual port, do as follows.

1 Double-click the USB icon via the Function menu > Advanced functions menu > Configuration menu.

03	4d44m28s N 138	id21m16s E (Internal GPS	)	
ESC				
1.000	1	976 - L	JSB	
Edit	>Profile	e: Single Port	-	>
→ <u>O</u> k	This u as a s standa	nit will appea ingle port CDC rd USB modem	ar to the host compliant	
SBS	590	COM1	20:54 JUTC-09:00)	-

2 Click the Edit button. Three selections are provided.

ode View C	ionfigure H	elp	
034 ESC	ld44m28s I	N 135d21m16s E (Internal GPS)	
▶ <u>S</u> elct	≻Pro Thi: as sta	Single-Fort Dual Port (1007) Dual Port (Composite)	= host
SBS	574	COM1	20 56 (UTC-09:00)

- Single port: This unit will appear to the host PC as a single port CDC compliant standard USB Modem.
- Dual port WDM: This unit will appear to the host computer with a profile matching the Windows dual port device driver.
- Dual port (composite): Not in use.
- 3 Choose **Dual port WDM** and click the **Select** button.

4 Clicking **Save** opens **Welcome to the Found New Hardware Wizard** which allows the selection of new USB drivers required to achieve parallel operation via the USB port.



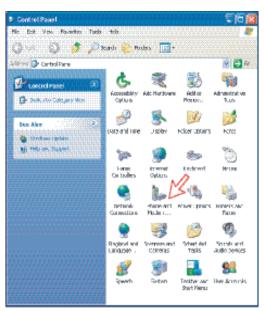
For Windows XP, follow next step 5 to 10. For Windows Vista, follow step 5a to 13a.

#### For Windows XP

- **5** Insert CD-ROM provided. Install "SAILOR Dual port USB modem" driver for dual port operation as follows;
  - 1 ) Check "Install from a list or specific location (Advanced)" and click **Next** button.
  - 2) Check "Search for the best driver in these location" and click **Browse** button.
  - 3 ) In CD-ROM, choose "USB Driver" and click Next button.
  - 4) The window, which says this driver does not pass Windows Logo test, appears, but click **Continue Anyway** button to continue.
  - 5) After the installation is completed, click **Finish** button.
- 6 The SAILOR USB DUAL PORT MODEM Wizard opens automatically. Follow the instructions as above .

Subsequently, the SAILOR USB CONTROL PORT Wizard opens automatically. Follow the instructions as above.

7 Open the **Control Panel** and double-click the **Phone and Modem Options** icon verify com ports used on the PC.



8 Clicking the **Modem** tab shows the new driver installations (examples): COM9 to be used for SAILOR vtLite COM8 to be used for dial-ups

hone and Modem Options	?
Dialing Rules Modems Advanced	-
The following moderns are installed.	
Modem	Attached To
Standard 33600 bps Modem	COM1
SAILOR USB CONTROL PORT	COM9 COM8
Add.	Remove Propertes
ОК	Cancel Apply

**9** Open **SAILOR vtLite** and click **Port**. Select the **Port** COM setting for the new driver, i.e. 6.

Click Save Settings.

3	
tode View Configure	Help
ESC 0 Port Device Print by Sound	manager CUHP anding CUHP ,
SPT Com settings T	COM1         34C         28C         00         57 (µтс+00:00)           elnet settings

10 Click Mode > Terminal MMI to reestablish SAILOR vtLite. You can now perform data communication at the same time, see the application:
 Mobile Packet Data Service via USB, or Mobile Data Service via USB

#### For Windows Vista

**5a.** When connecting USB cable, the **Found New Hardware** screen appears. Click the **Locate and install driver software**.



If the User Account Control screen appears, click the Continue button.

User Account	Control
💎 Wind	dows needs your permission to continue
If you starte	d this action, continue.
1	Device driver software installation Microsoft Windows
Details	<u>Continue</u> Cancel
User Accoun	t Control helps stop unauthorized changes to your computer.

**6a.** The **Found New Hardware – SAILOR 77 Fleet** screen appears. Click the **Don't search online**.

Allo	w Windows to search online for driver software for your SAILOR 77 Fleet
+	Ves, glways search online (recommended) Windows will automatically search for the latest drivers and applications for your hardware and download them to your computer.
+	Yes, search online this time only Windows will search for the latest drivers and applications for this device and download them t your computer.
+	Don't search online Your device may not function properly until you get the latest software.
Please	e read Microsoft's privacy statement

7a. Insert the CD.



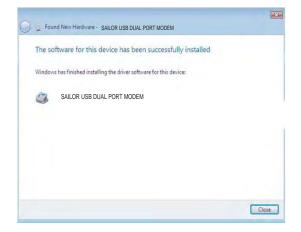
The driver software is installed.



**8a.** The **Windows Security** wizard appears. Click the **Install this driver software anyway**.

Wi	ndows can't verify the publisher of this driver software
	Don't install this driver software You should check your manufacturer's website for updated driver software for your device.
•	Install this driver software anyway Only install driver software obtained from your manufacturer's website or disc. Unsigned software from other sources may harm your computer or ste information.

**9a.** After completing installation, the **The software for this device has been successfully installed** appears. Click the **Close** button.



**10a.** Open the **Control Panel** on the PC and click the **Hardware and Sound** and the **Phone and Modem Options** in that order.





- **11a.** Click the **Modem** tab to show new driver installed.
  - COM7: For SAILOR vtLite
  - COM5: For dialup

aling Rules Modems Advanced	
The following modems are insta	alled:
Modem	Attached To
SAILOR USB MODEM	Not present
	l≩
	Remove Propertie

- 12a. Open SAILOR vtLite and click Port. Select the Port COM setting for the new driver, i.e. 6.
  - Click Save Settings.

ESC Pri	chip I	E (Internal GP	5)	
SPT		DM1 34C	28C 00 9	57 (UTC+00:00)
Port	Telnet settings  ☐ ☐ Data 8 ᠿ		Speed bps	Save Settings

13a. Click Mode > Terminal MMI to reestablish SAILOR vtLite. You can now perform data communication at the same time, see the application:
 Mobile Packet Data Service via USB, or Mobile Data Service via USB

### 5.9.5 Spot beam report method

- 1 Double-click the Spot beam report method icon via the Function menu > Advanced functions menu > Configuration menu.
- **2** Two selections are provided:
- Do not transmit my position
- May send position (default)

May be changed in owner level only

#### 97 - Co. Posit ۲ A A 4 **î**... ESC 6 2. Net service 4. Set providers diagnostics Exit Menu 1. ISDN 6. USB configuration ۲ 9. Spot Beam Report Method 979 Spot Beam Report Method -Edit Network Capability: Only Spot ID >Block Position reports: No Where available position reporting allous for optinized network usage Reducing congestion for all users. Ok Do not transmit my position Hay send position (recommended)

## 5.10 Information available

#### **Miscellaneous version Id information**

The **Information available** function displays the terminal forward Id and system versions.

1 Open the Function menu > Advanced functions menu > Information available menu.

1

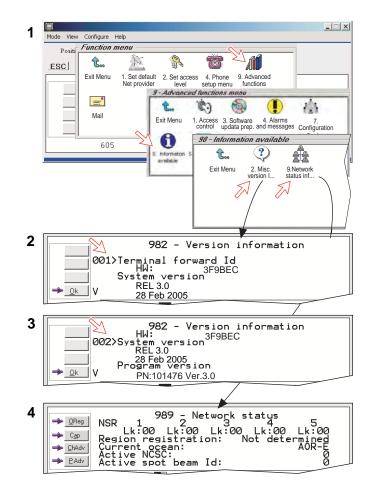
2

- 2 Double-clicking the **miscellaneous version Id information** icon displays the available data.
- **3** With **Diagnostics On**, pressing **D** opens a series of version information windows.

#### <u>Network status information</u> (owner level only)

This function displays various network status information.

- 4 Double-click the **Network status information** icon in the **Information available** menu for readout.
- **NOTE:** Remember to revert to **user** level.



## 5.11 Customization menu (owner level only)

1 Open the **Customization menu** via the **Function menu > Advanced functions menu**.

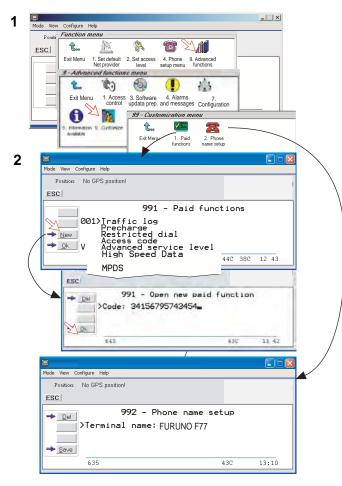
#### Paid functions

This function is not supported by the FELCOM 70.

#### Phone name setup

2 Double-clicking the **Phone name setup** icon in the **Customization menu** displays the Phone name, i.e. FURUNO F77. To change, key in uppercase/lowercase letters as required. Use **Del** to modify. **Save** stores the changes. This name appears at some screen.

**NOTE:** Remember to revert to **user** level.



## 5.12 Routing of incoming calls

When applying for IMN numbers, a **Terminal Id** (OID/DID) is received from the Net service provider. All devices connected to FELCOM 70 can make outgoing calls. For incoming calls it must be assured that the Terminal Ids and MSN numbers configured are as commissioned.

To make an incoming call reach a particular device, an MSN number and the Terminal Id "connected" to the IMN number must be programmed into the Communication Unit (CU). See later in this manual.

The table below lists valid MSN numbers for the available ISDN services.

#### Numbers to be programmed:

In <b>ISDN</b> device:	In Communication Unit:
MSN number	<b>MSN</b> number and <b>Terminal Id</b> (the Terminal Id is paired with a specific <b>IMN</b> number)

For an easy start, the some Terminal Ids and MSN numbers have been preprogrammed into the CU (marked with a star in the table).

In the *4.8 kbps speech and 3.1 kHz audio* columns of the ISDN PORTS table the Term.Id is represented by an X, allowing an ISDN Term.Id to be used for analogue ports.

	LIST OF VALID TERMINAL IDs AND MSN NUMBERS															
ANALO	OGUE P	ORTS					15	SDN F	PORT	S					ISDN/RS-	232/USB
TE	TEL1 - TEL4		4.8kbps speech 64kbps speech 3.1kHz audio 9.6kbps fax 56kbps data					128kbps	s data	64 kbps	s data					
4	.8 spee	ech	Term.ld	MSN	Term.Id	MSN	Term.ld	MSN	Term.lo	MSN	Term.ld	MSN	Term.ld	MSN	Term.ld	MSN
Port TEL 1 TEL 2 TEL 3		01* 02* 03*	01* 0X 0X 0X 0X	<b>20</b> * 21 22 23 24	<b>91</b> * 92 93 94 95	<b>30</b> * 31 32 33 34	6X 62* 6X 6X 6X	4X 42* 4X 4X 4X	1X <b>17*</b> 18 19 20	4X <b>41</b> * 4X 4X 4X 4X	<b>71</b> * 72 73 74 75	<b>50</b> * 51 52 53 54	86*	65*	51* 52* 53* 54* 55	60* 61* 62* 63* 64
9.0 Port TEL 4	6 kbps Term.ld 16*		OX OX OX OX	25 26 27 28	96 97 98 99	35 36 37 38			21 20	4X 4X	76 77 78 79	55 56 57 58	110kbps Term.ld 88*			
Fax via Port TEL 4	a 3.1 kHz Term.ld 61		01/20 Distr Handset. F connected Distress Al	irst HS via	91/30 Dist Handset. I connecteo Distress A	First HS I via	3.1 kHz 64 kbps audio s	5							51/60: ISD 52/61: RS- 53/62: RS- 54/63: USE	232A port 232B port

Note: A Term.Id already entered is not accepted.

\* Preprogrammed

#### Routing of incoming calls (examples)

The table below illustrates the use of appropriate Terminal Ids for the various services combined with examples incoming IMN numbers. \* Preprogrammed, see table on previous page.

**Note:** If the Net service provider does not specify which Terminal Id should be used with the various IMN numbers, select Term. Id no.1 for the first 4.8 kbps telephone, then no. 2 for the second phone. Use the same principle for the other type services. It is advisable to note down the selections.

Name			Service CU ports		Provided by ISP:			
			Service	co pons	Term.ld	IMN		
Bridge	MSN <b>20</b> *		4.8 kbps speech	ISDN	0 <b>1</b> *	762420510 🗰		
Radio room	MSN21		4.8 kbps speech		05	762420512		
Bridge	MSN <b>30</b> *	Į	64 kbps speech	ISDN	91*	600020520		
Captain	MSN <b>65</b> *		128 kbps data		86*	600020525 🖛		
Fax Gr.4	MSN <b>60</b> *		64 kbps data	ISDN	51*	600020522 🖛		
Data	MSN <b>63</b> *	Į	64 kbps data	() () () () () () () () () () () () () (	54*	600020525 🖛		
Fax Gr.3	MSN <b>04</b> *		9.6 kbps fax	TEL 4	62*	600020527		
Saloon	MSN <b>03</b> *		4.8 kbps speech	TEL 3	02*	762420511 🖛		
Data	MSN <b>61</b> *	<b>S</b>	64 kbps data	0 (*****) () RS-232A	52*	600020523 🖛		
Router	MSN <b>62</b> *	the the	64 kbps data	USB	53*	600020524		

## 5.13 MSN configuration

You are prompted to enter the owner level password (default: 1234567890). For security, the password should be changed before or after configuration of a device. See "**Changing owner level password**" on page 5-5.

Positice Part S CitHP m11s N Device manager C0HP SC1 Prick handling CoHPH	
Book Jog Telenor in IOR Manu Ready for call	

Click to open Device Manager for configuration of ISDN/analogue/RS-232/ RS-422/USB.

#### 5.13.1 ISDN Handset w/Distress Alarm

- ISDN Handsets will automatically be configured with Handset MSNs in the Device Manager.
- The first ISDN Handset connected to the Distress Alert Unit will be given MSN20 and MSN30.
   This handset will thus respond to both these MSNs.
- If the second handset has the distress alarm function, MSN number is 20. If not, it is 21. Those are the default number; MSN number can be changed at the menu of Device Manager.
- All ISDN Handset are given two MSN numbers, one for 4.8K speech and one for 64K speech.
- A ISDN Handset connected to Distress Alert Unit will automatically constitute a distress handset.
- The MSN numbers will follow the handset.
- The MSNs can be controlled independently, e.g. if two handsets are given the same MSN, they will both respond to an incoming call to that MSN.
- To verify selected MSNs of a handset, check in the Device Manager or press the "R"-button on the Handset.

#### To open device manager, see previous page.

Right- clicking a Dedicated Handset and then clicking **Handset Configuration** starts the Handset Setup Wizard. Enter **Name/Location** of the installed Handset, as requipment

🕫 Device Manager (Owner level access)	
Devices	
New ISDN Refresh Exit	
Analog Telephony Ports	-Dedicated Handsets
🖀 Tel 1 ld: 03. MSN: 01	🗄 🛕 Missing HSAD25
🚝 Tel 2 ld: 02. MSN: 03	🖻 🚝 HANDSET HSE385 DISTRESS
🚝 Tel 3 Id: 01. MSN: 03	4.8K Speech ID:08 MSN:20
Tel 4 Id: 05. MSN: 03	64K Speech ID:93 MSh(-2) Handset Configuration
	Test Handset
-ISDN Devices	Serial Ports - 64K UDI
Fax	Senar Ports - 04R OD
Terminal Id: 12. MSN: 41	Rs232 (A) Id= 52h //ISN= 61
64K Speech	
3.1KHz Audio	Rs232 (B) Id=53h MSN= 62
D Terminal Id: 62, MSN: 42	USB Id= A1h MSN= 63
⊟- 64K data (UDI)	
Tarminal Ide 54 MCN. En	
101	Require Access Code per call must be
Handset Setup Wizard	
The Handset can be set with two MSNs whose value	unchecked to allow this Handset to be used without
and associated service can be independently controlled.	entering a code.
Name/Location HS414A	
Service MSN Id (hex)	
4.8K Speech 🔻 20 03	Professional Priority Service is checked on
64K Speech V 30 91	special agreement with the Net Provider, e.g. for
	higher priority in the Inmarsat system.
Professional Priority     Service	
Code per call*	
Can Clear All Calls	Can Clear All Calls is checked to clear all calls.

#### 5.13.2 Testing the Distress Alarm

You can not execute the distress alarm test from the device manager. See also **"3.6 Distress Alarm"** in this manual.

#### **Deleting an ISDN Handset**

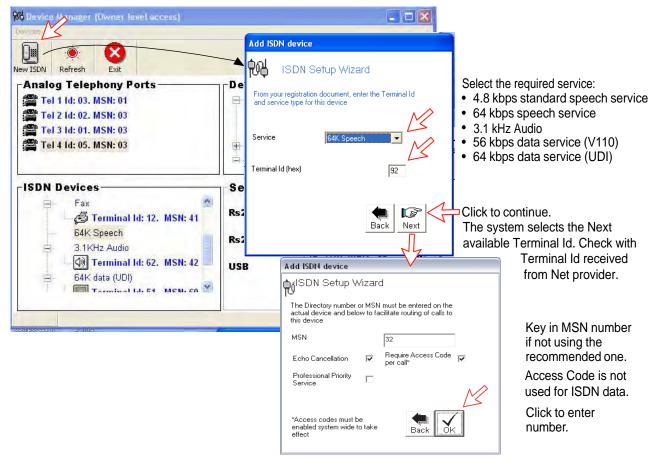
Unplug the ISDN Handset to be deleted and rightclick the same in the **Dedicated Handset** list. Clicking **Test Handset** removes its data, leaving the Terminal Id and MSN number vacant for another Display Handset. If necessary, click refresh: 
and repeat clicking **Test Handset**. The Communication Unit will remember the handset connection data. All handsets are given a unique name.

**Note:** A triangle symbol **A** in the Device Manager appears when a Display Handset is missing.

🕅 Device Manager (Owner level access)	
Devices	
New ISDN Refresh Exit	
Analog Telephony Ports	Dedicated Handsets
🚝 Tel 1 Id: 03. MSN: 01	🕀 🛕 Missing HS6E5E DISTRESS 🛛 🔤
🚝 Tel 2 Id: 02. MSN: 03	4.8K Speech ID:04 MSN:03 🔤
🖀 Tel 3 Id: 01. MSN: 03	64K Speech ID:91 MSN/30
🚝 Tel 4 Id: 05. MSN: 03	Handset Configuration
	HANDSET HSE385 Test buzzer
ISDN Devices Fax Fax Gamma Id: 12. MSN: 41 64K Speech 3.1KHz Audio Ferminal Id: 62. MSN: 42 64K data (UDI) Farminal Id: 51. MSN: 60	Serial Ports - 64K UDI           Rs232 (A)         Id= 52h MSN= 61           Rs232 (B)         Id= 53h MSN= 62           USB         Id= A1h MSN= 63

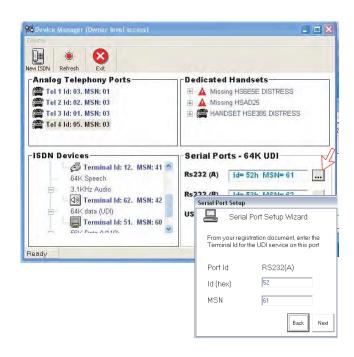
#### 5.13.3 ISDN port

Open device manager and click the **New ISDN** button to open ISDN Setup Wizard.



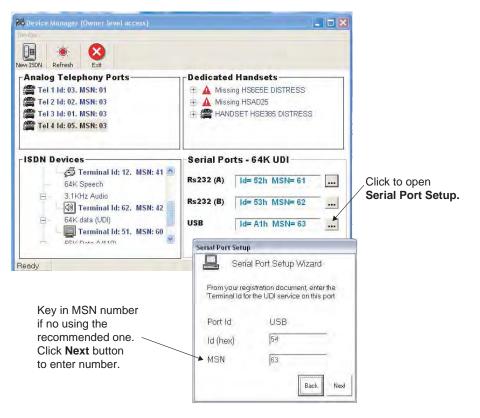
#### 5.13.4 RS-232 port

Open device manager and click [---] button of the RS232 on the **Serial Ports-64K UDI** to open Serial Port Setup window. Key in MSN number if not using the recommended one. Click **Proceed** button to enter number.



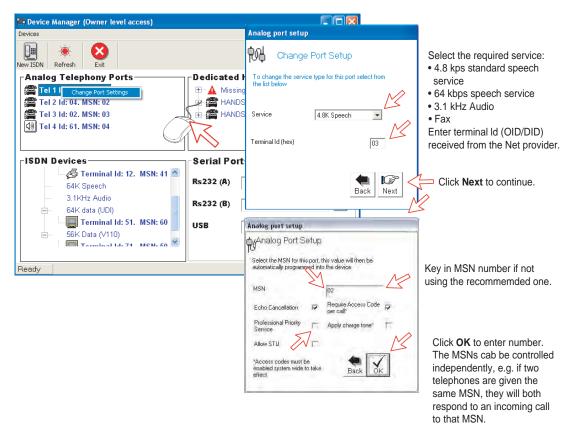
#### 5.13.5 USB port

Open device manager and click [---] button of the USB on the **Serial Ports-64 K UDI**.



#### 5.13.6 Analogue port

Open device manager, right-click the device in the Analog Telephony Ports box and left-click the **Change Port Settings** to open analogue port setup window.



**Echo Cancellation** is performed automatically for all voice calls. Uncheck if problems with echo cancellation.

**Require Access Code** is checked when used for 4.8 kbps speech and 64 kbps speech.

**Professional Priority Service** is checked on special agreement with the Net Provider, e.g. for higher priority in the Inmarsat system.

## 5.14 Saving and reloading configurations

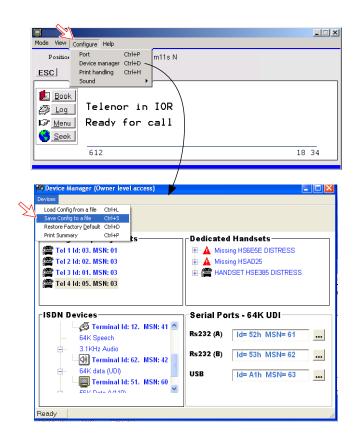
The FELCOM 70 configuration settings may be stored on the PC hard disk, e.g. prior to replacing software.

#### Procedure

- 1 Open the Device Manager window as indicated.
- 2 Clicking Devices > Save config to a file, naming and clicking Save button automatically stores the data in a "Config. cgf" file in the vtLite directory c:/program files/SAILOR vtLite.
- **3** After installing the software, the settings may be transferred back to FELCOM 70 by pressing **Load**.
- 4 Clicking Restore Factory Defaults loads default FELCOM 70 configurations.

Printout/storing a configuration summary:

- 5 Clicking **Print Summary** opens the **Printout Viewer** (see next page) which lists the settings of the end user equipment, and allows filing and/or printout.
- Note: Save config to a file only saves the Device Manager settings. Setting such as Net provider / Access codes / ISDN protocol / Rx-L band output are not saved. Phone book data and traffic log must be saved in the **Book** and Log menus.



## Configuration printout viewer

The list is sorted by Terminal Id.

Print to local printer	
Save to disk	Corrintout Viewer
Terminal Id and	Ele Edit Search
MSN number Tyep of service	Modem configuration ID = 01 MSN 20 Service 4.8K Speech on the ISDN interface Attributes: Stu incapable EchoCancel ON Access codes apply No Charge Tone Distress Box attached
Individual device settings	Jo = 02 MSN 03 Service 4.8K Speech on Tel 3 Attributes: Stu incapable EchoCancel ON Access codes apply No Charge Tone
Distress Alarm,	ID = 03 MSN 01 Service 4.8K Speech on Tel 1 Attributes: Stu incapable EchoCancel ON Access codes apply Charge Tone applies
	ID = 04 MSN 02 Service 4.8K Speech on Tel 2 Attributes: Stu incapable EchoCancel ON Access codes apply No Charge Tone
Name/location,	ID = 05 MSN 21 Service 4.8K Speech on the ISDN interface Attributes: Stu incapable EchoCancel ON Access codes apply No Charge Tone Handset Name = HSE385
if entered	ID = 06 MSN 22 Service 4.8K Speech on the ISDN interface Attributes: Stu incapable EchoCancel ON Access codes apply No Charge Tone Handset Name = HSF8A2
	ID = 12 MSN 41 Service Fax on the ISDN interface Attributes:
	ID = 51 MSN 60 Service 64K data (UDI) on the ISDN interface Attributes:
	ID = 52 MSN 61 Service 64K data (UDI) on the RS232(A) interface Attributes:
	ID = 53 MSN 62 Service 64K data (UDI) on the RS232(B) interface Attributes:

## 5.15 Print handling setup

Clicking **Configure>Print handling** opens the **Printout from modem** window. The **Printout from modem** window is used for setting of default output of Traffic log, Modem configuration, etc. The following settings are selectable.

#### Default print action:

Normally, choose **Print to screen** which causes the file to be output via the Printout viewer. For an example, see "**4.6 Traffic Log Printout viewer**". For direct printout, choose **Print to default windows printer**.

#### Print to screen settings:

Determines the output of records via the Printout viewer. Normally, use **Concatenate print jobs** which "chains" the jobs to be printed or saved to file. The alternative choice clears the screen after each printout.

#### **Printer settings:**

For hardcopy printout, make sure that the appropriate printer and font are selected.

😼 Printout from modem	X
General	
Default print action         Print to screen         Print to default windows printer	
Printer settings       \\HDEVDE01\EPSON(PARA)       Arial (12)   Font	
Print to screen settings Printout is sent to a desktop window with options to save and print. Courier (12) Font	
Clear this screen area automatically each time a new print job is performed	
Concatenate print jobs	
Quit	

## 5.16 Ethernet interface

Port configuration gets an additional tag for Telnet settings. Click **Configure > Port** and **Telnet settings** tag.

SPT COM1 39C 33C 08 47 (UTC	+00:00)

If **Enable access via LAN** is ticked then vtLite will attempt to communicate using a raw telnet connection to the server address given in the server box. It will use the default telnet port 23.

If **Empty ERB access mode** is also ticked then over the telnet session the vtLite will attempt to login to an Ethernet Router Board (currently no in use).

If the Ethernet connection is used then the vtLite port indicator will show "LAN" rather than the port number.

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# 6. DATA COMMUNICATION

## 6.1 Mobile Packet Data Service (RS-232)

#### 6.1.1 Introduction

The **Mobile Packet Data Service** complies with the communication protocol defined by the Inmarsat F77 system.

The transmission data rate over the satellite link is typically 20 kbps (a 64 kbps channel is shared with other users).

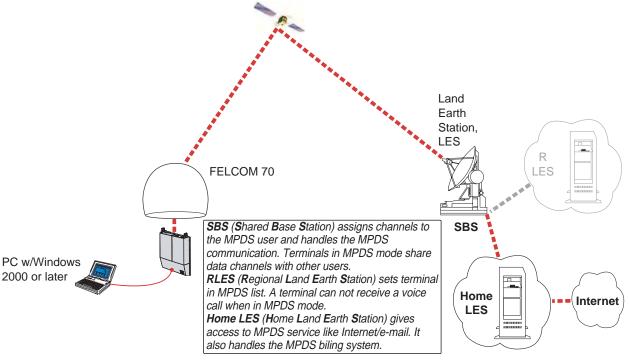
Switching between MPDS and Mobile ISDN service is done from the PC.

The PC must have Windows XP or Windows Vista installed.

With MPDS you only pay for the amount of data received or transmitted, rather than for the time you are connected.

MPDS can be efficient for applications that involves brief bursts of communication followed by periods of inactivity, such as:

- E-mail
- Internet/intranet
- Navigational updates
- Scada
- Database queries
- E-commerce
- VPN Virtual Private Network



System Overview

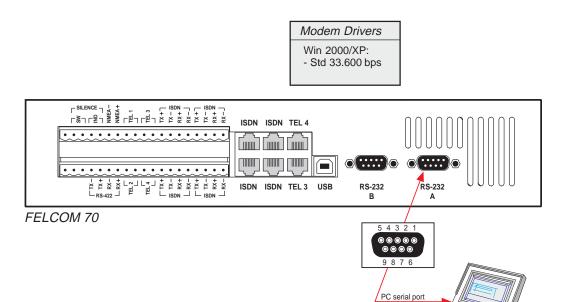
## 6.1.2 Connecting up

#### **Installation**

Connect the RS-232 serial cable between the serial port on the PC and the **RS-232** port on the CU.

The default settings are:

Data speed:	115200 bps
Format:	8 data bits, no parity, 1 stop bit
Flow control:	Hardware (RTS/CTS)



DTE

#### 6.1.3 MPDS - setup

#### For Windows XP

Ensure that SAILOR vtLite is closed.

1 Open the **Control Panel** on the PC and double-click the **Phone and Modem Options** icon.



2 Click the **Modems** tab. Click **Add**, see next page.

Phone and Modem Options	? 🛛
Dialing Rules Modems Advanced The following modems are installed:	1
Modem	Attached To
Add Pi	emave Propettes

3 In the Add Hardware Wizard window check "Don't detect my modem", and click Next.

Select Standard 33600 bps Modem in the Models field, and click Next.



4 Select the port to which the Modem driver should be installed. *Click Next and then Finish to complete the installation.* 

<b>Id Hardware Wizard</b> Install New Modem Select the port(s) you	want to install the modem on:
	You have selected the following modem: Standard 33600 bps Modem On which ports do you want to install it? All ports © Selected ports COM1 CDM2
	< Back Next> Cancel
200	

**5** Opening the **Phone and Modem Options** window confirms the established modem connection.

Select "Standard 33600 bps Modem".

Phone and Modem Options	?	
Dialing Rules Modems Advanced		_
The following modems are installed;		
Modem	Attached To	
Standard 33600 bps Modem	COM1	
Add,	mave Properties	
OK.	Cancel Apply	

**Note:** The setup for data transfer to the CU is based on the Windows XP default parameters:

8 data bits - no parity - 1 stop bit - flow ctrl: Hardware Clicking **Properties** allows checking the parameters.

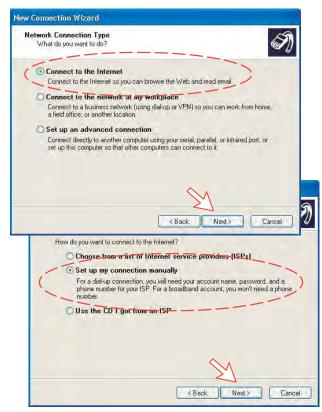
6 Open the **Control Panel** on the PC and double-click the **Network Connections** icon.

🖻 Control Panel				
File Edit View Favorites Tools	Help			1
🕃 Back : 🐑 🍺 🔎 Se	arch 🜔 Fol	ders 🛄 🛪		
Address 🔂 Control Panel				💌 🔁 Go
Control Panel	Ġ.	Ń	5	-
🕞 Switch to Category View	Accessibility Options	Add Hardware	Add or Remov	Administrative Tools
See Also 🎓	- P	8		1
<ul> <li>Windows Update</li> <li>Help and Support</li> </ul>	Date and Time	Display	Folder Options	Ponts
	Game Controllers	Internet Options	Keyboard	Mouse
		2		
	Control Panel       Accessibility       Add Iardware       Add or Add or Police       Add or Add or Add or Constraints       Add or Add or Constraints       Add or Add or Constraints       Add or Add or Constraints       Add or Constraints       Constraints       Add or Constraints			
	9	3	3	0
				Sounds and Audio Devices
	2	3		92
	Iddess       Control Panel       Image: Control Panel	User Accounts		

7 Click Create a new connection to open the New Connection Wizard. *Click Next.* 



8 Check Connect to the Internet. *Click Next.* Check Set up my connection manually. *Click Next.* 



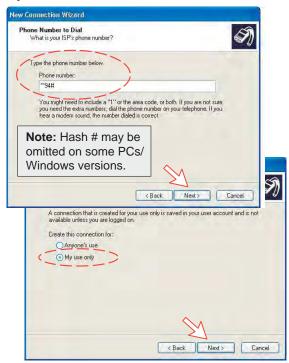
9 Check "Connect using a dial-up modem". Click Next.



**10** Check "Modem Standard 33600 bps Modem." Click **Next**. Enter the name for the connection e.g. **MPDS**. *Click Next*.

This is the d	ce levice that will be used to make the connection.	Ð
You have m	ore than one dial-up device on your computer.	
Select the d	evices to use in this connection:	
	lem - PCTEL 2304WT V.9x MDC Modem (CDM4)	
Moc 🧶	Jem - Standard 33600 bps Modem (COM1)	
New Conne	ction Wizard	
Connecti What	ion Name is the name of the service that provides your Internet connection?	14
Type th	e name of your ISP in the following box.	
ISP Na	me	
MPDS		
The na	me you type here will be the name of the connection you are creating.	
	no you yee nac nin oo no nano a no connocian you ao coomig.	

11 Entering phone number \*\*94# automatically connects you to the Internet Service Provider through your default Net Provider. *Click Next.* Check My use only, and click Next.



**12** Enter name and password for the connection.

Uncheck Turn on Internet Connection Firewall for this connection. Click Next.

Complete the New Connection, click Finish.

	rmation ount name and password to sign in to your Internet account.	
	t name and password, then write down this information and store it in a ve forgotten an existing account name or password, contact your ISP.)	
User name:	FURUNO	
Password:	•••••	
Confirm password:	•••••	
this computer Make this the de	name and password when anyone connects to the Internet from fault Internet connection	
R	< Back Next> Cancel Create the tolowing connection: MPDS • Make this the default connection • This connection is firewalled • Share with all users of this computer • Use the same user name & password for everyone The connection will be saved in the Network Connections folder. • Add a shortcut to this connection to my desktop	

#### For Windows Vista

1. Open the **Control Panel** on the PC and double-click the **Hardware and Sound** and the **Phone and Modem Options** in that order.



2. Click the **Modems** tab and the **Add** button to show the **Add Hardware Wizard**.

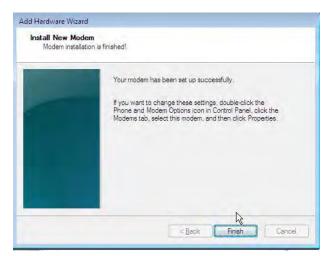
ling Rules Modems	Advanced		
The following	<u>m</u> odems are installe	d:	
Modem		Attached To	
SAILOR USB MODEM		Not present	
		Ş	

3. Check the "Don't detect my modem; I will select it from a list." and click the Next button. Then, select the Standard 336900 bps modem in the Modem field and click the Next button.

Do you want Window:	s to detect your modem?
	Windows will now try to detect your modern. Before continuing, you should:
	<ol> <li>If the modem is attached to your computer, make sure it is turned on.</li> </ol>
	<ol><li>Quit any programs that may be using the modem.</li></ol>
	Click Next when you are ready to continue.
	☑ Don't detect my modem: I will select it from a list
dd Hardware Wizard	
Install New Modem	
	sturer and model of your modem. If your modem is not listed, or if you disk, click Have Disk.
Manufacturer	Models
Manufacturer (Standard Modem Types)	Models Standard 19200 bps Modem Standard 28800 bps Modem Standard 33600 bps Modem

4. Select a port that you installed the modem driver and click the **Next** and the **Finish** button.

You have selected the following modem: Standard 33600 bps Modem
On which ports do you want to install it?
COM1 COM2 COM4

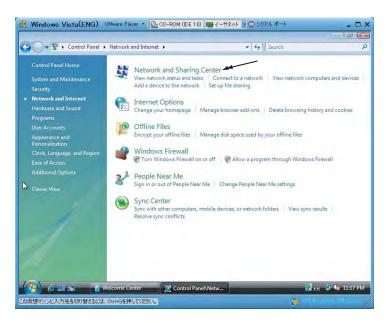


5. Open the **Phone and Modem Options** window and confirm the modem connection.

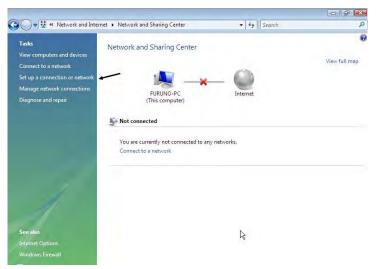
aling Rules Modems Advanced		
The following <u>m</u> odems are instal	led:	
Modem	Attached To	
SAILOR USB MODEM	Not present COM4	
( @ A <u>d</u> d	Remove Properties	

6. Open the Control Panel and click the Network and Internet and the Network and Sharing Center in that order.

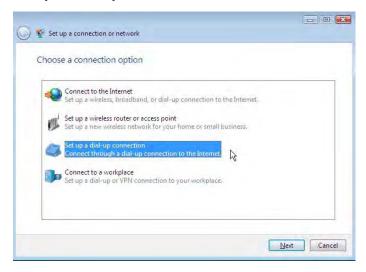




Click the Set up a connection or network to open the Set up a connection or network window.



8. Select the Set up a dial-up connection and click the Next button.



9. Select the Standard 33600 bps Modem and click the Next button.

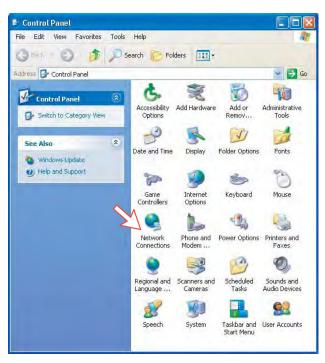


**10.** Enter telephone number (access code) "\*\*94#", user name, password and connection name. Clear the check box **Allow other people to use this connection** and click the **Connect** button.

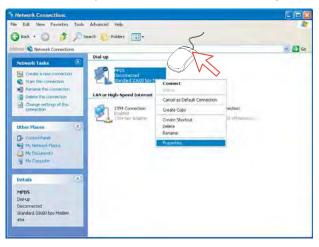
Type the information f	rom your Internet service provider	(ISP)
<u>D</u> ial-up phone number:	**94#	Dialing Rules
<u>U</u> ser name:	yam003	
Password:		
	Show characters	
	Remember this password	
Connection <u>n</u> ame:	Dial-up Connection	
🗑 📃 Allow other people to	use this connection	
This option allows an	yone with access to this computer to use this	connection.
I don't have an ISP	١	2

## 6.1.4 Checking default settings

1 Double-click **Network Connections** in the **Control Panel**.



2 Right-click the MPDS dial-up connection and click Properties.



- 3 Check settings in the **MPDS Properties** window:
  - Modem Standard 33600 bps Modem (COM1)
  - Phone number: \*\*94#.

Click Configure.

MPDS Properties	2 🔀
General Options Security Network	king Advanced
Connect using:	
🛛 🖉 🎒 Modem - Standard 33600 bps	s Modem (COM1)
	5J
	V 📎
Phone number	
Area code Phone number:	
**94#	Alternates
Country/region code	
Use dialing rules	Dialing Bules
Show icon in notification area whe	en connected
	OK Cancel

4 In the Modem Configuration window, check that the Maximum speed (bps) is set to 115200.

Modem Configuration		? 🔀
Standard 33600 bp	os Modem (COM1)	
Maximum speed (bps).	115200	-
Modem protocol		
Hardware features		_
Enable hardware flow	control	
🛃 Enable modem error co	ontrol	
Enable modern compre	ession	
Show terminal window		
Enable modem speaker		
	OK (	Cancel

5 In the MPDS Properties window, click Networking and check that Internet Protocol (TCP/IP) is selected. *Click Settings.* 

			L		-
General	Options	Security	Networking	Advanced	
Type of a	lial-up se	rver 1 am	calling:		
PPP: W	indows 9	5/98/NT	4/2000, Intern	et	Ŷ
Th <u>is con</u>	pection u	is <del>os t</del> he f	ollowing items:	- A	ettings
VTI	nternet P	rotocol (T	CP/IP)		
that we have					
	tos Pack	tet Schet	Juler		
Ball?			duter aring for Micros	oft Networks	
	ile and P	rinter Sha		oft Networks	
	ile and P	rinter Sha	aring for Micros	oft Networks	
	ile and P	rinter Sha	aring for Micros		erties
	ile and P Client for I	rinter Sha	ating for Micros Networks		erties
	ile and P Client for (	rinter Sha	ating for Micros Networks		erties
In Descrip Transi wide a	ile and P Ilient for I stall otion mission C irea netw	rinter Sha Microsoft	aring for Micros Networks Uninstall	Prop Protocol. The d	efault
In Descrip Transi wide a	ile and P Ilient for I stall otion mission C irea netw	rinter Sha Microsoft	aring for Micros Networks Unimetall biocol/Internet icol that provide	Prop Protocol. The d	efault

6 In the PPP Settings window, Negotiate multi-link for single link connections should be unchecked.

PPP Settings	? 🔀
Enable LCP extensions     Enable software compression     Negotiate multi-link for single link connections	Cancel

#### For Windows Vista

1. Open the Control Panel and click the Network and Internet, the Network and Sharing Center and Manage network connection in that order.



- 2. Right-click the MPDS icon that you created in the Dialup and click the **Properties**.
- 3. Confirm the setting contents in the MPDS Properties window.
  - Modem: Modem Standard 33600 bps Modem (COM4)
  - Phone number: \* \* 9 4 #

Click the **Configure** button.

Dial-u	p Connec	tion Prop	erties		×
General	Options	Security	Networking	Sharing	
Connec	t using:				
	Modem -	AILOR U	SB MODEM (	COM3)	1
2	Modem -	Standard 3	3600 bps Moo	dem (COM4)	
					75
				E.	
1111	levices cal			Configu	re
V Dia	only first a	vailable de	vice		
Phon	e number				
Area	a code.	Phone n	umber:-		
	Ŧ	**94#		Alte	emates
Eou	ntrv/region	node			
Cou	(in Wiedlich	0000			*
		× 77		ht	
	J <u>s</u> e dialing	rules		Diali	ng <u>R</u> ulies
			-	OK	Cancel
			_		

4. In the Modem Configuration window, confirm that the Maximum speed (bps) is set to 115200 and click the OK button.

Maximum speed (bps):	115200	•
Modem protocol		-
Hardware features		
Enable hardware flow	v control	
Enable modem error o	control	
Enable modem comp	ression	
Enable modem speaker	OK Cancel	-

5. Select the **Options** in the MPDS properties window and click the **PPP Settings**.

ieneral	Options	Security	Networking	Sharing	
	g options				
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		connecting		
	the second of the	in a come	password, cer	tificate, etc.	
	nclude <u>W</u> ir Prompt for p				
-	and the second	a month			
Redia	aling option	S			
				100	[ married
Red	ial attempts	3:		3	1
-	ial attempts e between		npts:	3 1 minute	*
Time		redial atter		18	*
Time Idle	e between	redial atter		1 minute	*
<u>T</u> ime Idle	e between ti <u>m</u> e before threshold:	redial atter hanging u	an:	1 minute	*
<u>T</u> ime Idle	e between ti <u>m</u> e before	redial atter hanging u	an:	1 minute	**************************************
Ţima Idie Idi <u>e</u> F	e between ti <u>m</u> e before threshold: Redial if line	redial atter hanging u	an:	1 minute	The second secon
Time Idle Idl <u>e</u> F	e between ti <u>m</u> e before threshold:	redial atter hanging u	an:	1 minute	
Time Idle Idl <u>e</u> F	e between ti <u>m</u> e before threshold: Redial if line	redial atter hanging u	an:	1 minute	
Time Idle Idl <u>e</u> F	e between ti <u>m</u> e before threshold: Redial if line	redial atter hanging u	an:	1 minute	**
Time Idle Idl <u>e</u> F	e between ti <u>m</u> e before threshold: Redial if line	redial atter hanging u	an:	1 minute	× ×

6. Confirm that the check box for **Negotiate multi-link for single-link** connections is clear in the **PPP Setting** window and click the **OK** button.



## 6.1.5 Connecting to server

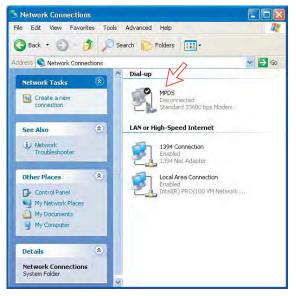
#### For Window XP

#### Initiating an MPDS call

Open the **Control Panel** on the PC and double-click the **MPDS** icon in the **Network Connections** window *(i.e. the preset dial-up connection).* 

If provided for the specific server connection, enter the **User name** and **Password**.

Dialing \*\*94# establishes the MPDS connection via the default Net provider (to Home LES, see system overview).





Click **Dial** to establish the connection to the server. See **Connection in progress** on next page.

#### **Connection in progress**

Displayed on the PC screen:



#### When connected:



#### **Connection status**

Appears when right-clicking the **MPDS** dial-up icon and **Status**, or clicking the PC icons in the lower right corner of the screen.

eneral Details		
Connection		
Status:		Connected
Duration:		00:00:23
Speed:		115.2 Kbps
Activity	Sent —	Received
Bytes:	1 544	868
	0%	000 0%
Compression: Errors:	0 /	0%
Properties Dis	sconnect	

**Note:** Click **Disconnect** when shutting down the call. It is not enough to close the browser alone.

#### Switching between MPDS and ISDN mode

The connection window provides sensing on the telephone number. If dialing an international number instead of \*\*94#, the terminal switches back to ISDN mode of operation.

Examples: Dialing **\*\*94#** (no subscriber number is sent to the Net provider). **Note:** Hash # may be omitted on some PCs/Windows versions.

Dialing 008166850170 : ISDN mode.

#### For Windows Vista

Initiating an MPDS call

Open the **Control Panel** and double-click the **Network and Internet**, the **Network and Sharing Center, Manage network connection** and **MPDS** in that order.



#### **Connection in progress**

Displayed on the PC screen:

Connecting to Dial-up Con	nection1
Dialing **94#	
Connecting to Dial-up	o Connection1
70	r name and password
Cor	nnecting to Dial-up Connection1
	Registering your computer on the network
	Cancel

10.000

#### When connected

Click the View status to show the connection status.



#### **Connection status**

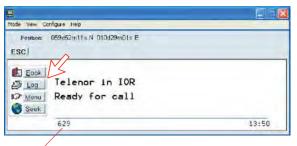
	vork and Sharing Center	← 😽 Search	0-
ew computers and devices onnect to a network et up a connection or network lanage network connections agnose and repair	FURUNO-PC (This computer)	Diel-up Connection	View full map
9	Dial-up Connection (Public ne	twork)	Customize
Acce	ss L	ocal and Internet	
Com	nection D	ial-up Connection	View status
Con	nection D	ial-up Connection	View status Disconnect
	nection D	ial-up Connection	
<u>a</u> :	Sharing and Discovery	ial-up Connection	
izi : Netv	Sharing and Discovery		Disconnect
23. Netv Files	Sharing and Discovery rork discovery d haring d	• Off 1	Disconnect
23. s Netv File Publ	Sharing and Discovery rork discovery 4 haring 4 ic folder sharing 4	a Ott	Disconnect © © ©
23 Netv Files Publ Print	Sharing and Discovery ork discovery 4 haring 4 ic folder sharing 4 er sharing 4	o 04 > 04 > 04 13	Disconnect () () ()

ieneral Details		
Connection		
IPv4 Connectivit	Y:	Internet
IPv6 Connectivit	y:	Limited
Media State:		Connected
Duration:		00:00:53
Speed:		115.2 Kbps
Details		
Activity —		
	Sent — 颠	Received
Bytes:	5,847	5,237
Compression:	0 %	A 0 %
Errors:	Q	D
Properties	Disconnect Dia	gnose
Tobernes		

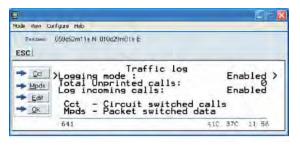
## 6.1.6 Traffic log

In the vtLite idle window, clicking Log lets you select between traffic logs for packet switched data (MPDS) and all other circuit switched call types. Clicking the right arrow key expands the level of detail on entries listed.

In the Traffic Log window: **MPDS**: note that this information is included for information only and should not be used e.g. for billing purposes. It contains some of the information also indicated in the "Real Time" status indications, and can be usefull to pinpoint any potential problem during a call. A low C/No < 535, will most likely give many retransmissions on the sattelite link. You should see this in the number of Srej TX and RX being higher than normal.







Position: 059d52m11e N 010d29m01s E					_	-
SC						
<pre>MPDS Netwk: Telenor Tag: 024&gt; #Telenor Telenor Telenor Telenor Telenor Telenor Y Telenor</pre>	Star 15Aug 15Aug 15Aug 15Aug 15Aug 15Aug	ted 100:07 100:538 099:38 099:05 099:05	Dur	000000000000000000000000000000000000000		>
648			410	0.0	40	

Press  $[\rightarrow]$  key.

Pesition 059d52m11 v N 010d29m01s E	
ESC	
Emi Bort bytes IX/Rx: Rx Crc: 0/135 Isonov (Pk/Av Users: 2/0 Clear Cause: Accum TimAdj: 210	3.7Kb/68.0Kb SrejŠ Tx/Rx: 0/0 Connects: 1 Tim Init/Cor: 1/0 301 SyncLost: 0
645	13:47

## 6.1.7 AT-commands

The commands listed below are performed automatically with the dial string \*\*94#, but can be useful for advanced debugging of the MPDS system (e.g. SBS and HLES):

AT +WLES=XXX =R selects Net Provider (XXX = LES access code) for the serial port used.

#### Example:

AT +WLES=004 HR selects Telenor: 004

AT + WNERAMPDSMSN= 1234567890 $\ldots$ 

Up to 22 digits are supported and the value is immediately saved to flash. The value is not used and is only provided for information.

#### AT+WREG=1

registers the user with the default Net Service Provider.

This command will make the terminal register at the R-LES only, i.e. the terminal will not be connected to the Internet. In many cases when the MPDS system does not work it is important to verify whether the fault is in the SBS, RLES or HLES.

If this command is performed via e.g. Hyperterminal and you get the prompt Registered, then the fault is probably located in the H-LES.

If you do not get registered, your mobile is either rejected because of limited SBS resources or your mobile is not registered (commissioned) in the RLES.

#### AT+WREG=0

deregisters the user.

#### AT+WS45=4

sets the FELCOM 70 terminal in MPDS mode.

This is implicitly done when using the \*\*94# dial string. This command will make the FELCOM 70 terminal Register at the RLES when the Windows dial Up adapter sets up a PPP connection to the H-LES (Internet).

#### $AT + WS45 = 1 \blacksquare R$

sets the FELCOM 70 terminal back to Normal mode (UDI) mode.

Note: Local echo of keyboard entries is set to ON with the commands: ATE1 = R

Note that all the above commands are not required if you use the Dial String \*\*94# to select MPDS; all other Dial Strings will use SCPC.

It is included for information only. However when you are not able to establish the Dial Up Adapter, the "FURUNO" procedure has been to try the At+Wreg=1, in order to verify whether or not this has been a SBS or RLES problem.

#### Verifying MPDS with AT-commands

#### Access to AT-commands

Instead of using the PC hyperterminal facility, access can easily be accomplished using SAILOR vtLite, or using Hyperterminal.

Web View Configure Help	
<ul> <li>Terminal MMI Oct++M josition!</li> </ul>	
AT Node CE/14/8	
Trace Criffin Offline Criffin Ext	(0
Manu Busy with call	(Beam 6) Elevation 16
630	10 16

Start vtLite again: You can now key in **at+wreg=1** from vtLite:

Made View Configure Help	
Position No GPS position	n <sup>r</sup>
OK atwes? +WLES:004 OK atweg+1 REGISTERED	¢.
Tx at greg = 1 Send at regreg = 1 Base Hex Dec	Rev Ascii Quit Cir Send F subo send
	MPDS is not operational. Verify that MPDS is available for your terminal. See function 99, <b>Customization &gt; Paid functions.</b> If necessary, check that MPDS has been commissioned at your Net Service provider.

Problem	Probable cause	Action	
1. No contact with modem or busy	Wrong setup of Communication Unit.	<ul> <li>Make sure the vtLite settings are correct, see <i>RS-232 configuration.</i></li> </ul>	
	SAILOR vtLite uses the same port.		
		<ul> <li>Try autodect if problems with the connection.</li> </ul>	
		<ul> <li>Try different speed and COM port settings.</li> </ul>	
		Close SAILOR vtLite.	
2. Cannot find Dial Up Networking:	Dial up connection not installed.	Contact your PC vendor to get the software.	
3. Connection unsuccessful:	Wrong connection details.	<ul> <li>Check the phone number, user name and password with your service provider.</li> </ul>	
		<ul> <li>Using SAILOR vtLite, check configuration in Device Manager.</li> </ul>	
4. Cable length	Guaranteed length: 1.5 m	Recommended maximum length: 3 m	
5. All dialups dial in MPDS		<ul> <li>Use AT+WS45=1 to set por back to normal mode.</li> </ul>	
6. User name and password illegal	Some PCs always require username/password.	<ul> <li>Enter any name/password to ensure a successful call.</li> </ul>	

## 6.1.8 Troubleshooting

#### **Checking your configuration**

# Connection attempt fails quickly and reports a hardware error with the modem

Check that no other application for example hyperterminal or vtLite is using the serial port and check that the serial cable is properly connected between the PC and the terminal.

# The MPDS real time status display starts but the connection fails to establish before timing out.

Start hyperterminal or another terminal emulator so AT commands can be entered to the terminal.

First check the LES being used AT+WLES? The terminal will reply with the LES access code being used. If this is not what you expect change the value with AT+WLES=xxx and save the new value with AT&W now check that it is possible to access the MPDS service by entering AT+WREG=1.

The real time status display should show "Allocating" "Tuning" and finally "Registered"

If instead you see "Failed" "Inactive" then the terminal has not been able to connect to the MPDS service with the given access code.

The result of the registration attempt is also shown to the AT interface. If registration worked then deregister with AT+WREG=0.

#### The registration attempt succeeds but connection attempts fail

Check that the max speed of the modem that was setup is 115200bps.

#### Fault finding

After starting the connection as described above one should see:

- a) The dial up networking connection dialogue shows the normal progression of "dialing" "verifying user name and password" and "registering your computer on the network"
- b) The real time status indication on the terminal should show "Registering" then "Registered"
- c) Once a "Connect" has been received from the host the Modem display/ISDN Handset will show "Connected".
- d) The connection should be established and usable after the completion of PPP negotiation.

#### Error and clear cause logging on the vtLite application window

The terminal includes call logging and a record of any errors that occur. To assist with improving the system please note the contents of these if a problem is encountered.

#### C/No display Signal Strength Indication

For data communication it is of major importance that the mobile has a high enough Carrier-to-Noise Ratio (C/No) before the call is established. (a voice call is not as sensitive to this as a data call).

Before establishing any sort of data call (HSD or MPDS) verify that the display in vtLite indicates minimum 535.

#### Diagnostics

To enable diagnostics open menu "Advanced Functions" -> "Configuration" -> "Enable diagnostics" "9-7-4"

And select "On". Press ESC key 4 times to return to the idle screen.

#### Version information

The versions of the software components used in your system are shown in menu "Advanced functions" -> "Information available" -> "Misc version Id". Use the up/down arrow keys to navigate the list.

Minimum Modem software requirements:

• FELCOM 70: system version REL 3.5 and higher

# 6.2 Mobile Packet Data Service (USB)

## 6.2.1 Introduction

The **Mobile Packet Data Service** complies with the communication protocol defined by the Inmarsat Fleet F77 system.

The transmission data rate over the satellite link is typically 20 kbps (a 64 kbps channel is shared with other users).

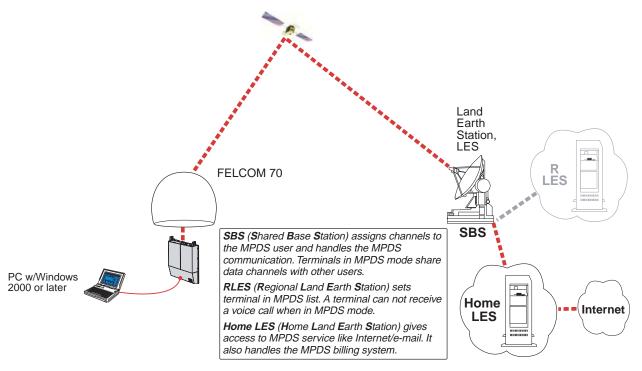
Switching between MPDS and Mobile ISDN service is done from the PC.

The PC must have Win 2000 or Win XP installed.

With MPDS you only pay for the amount of data received or transmitted, rather than for the time you are connected.

MPDS can be efficient for applications that involves brief bursts of communication followed by periods of inactivity, such as:

- E-mail
- Internet/intranet
- Navigational updates
- Scada
- Database queries
- E-commerce
- VPN Virtual Private Network



System Overview

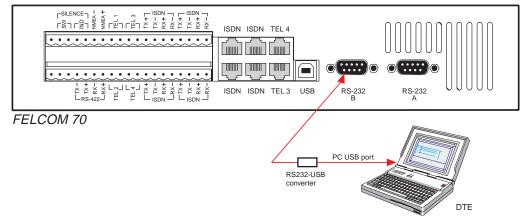
## 6.2.2 Connecting up

#### **RS-232 Connection via USB port**

- 1 Insert the driver that is attached to a commercial RS232-USB converter, to the PC.
- **2** Connect the USB port of the PC and the serial port of the FELCOM 70 with a commercial RS232-USB converter.

Windows opens the Found New Hardware Wizard.

3 Install the driver, referring to the instruction attached to the driver.



**Note:** The USB port can not be used. If you want to use an USB port on your PC, use a commercially available RS232-USB converter and install its driver.

## 6.2.3 PC setup

#### For Windows XP

Ensure that SAILOR vtLite is closed. If connecting USB cable, restart the PC and the FELCOM 70.

1 The **Found New Hardware Wizard** opens when the USB cable has been connected.

Check "Install from a list or specific location (Advanced)" and click Next.

Found New Hardware Wiz	ard
	Welcome to the Found New Hardware Wizard
	This wizard helps you install software for:
	Nera Saturn F1 USB Modem
	If your hardware came with an installation CD or floppy disk, insert it now.
	What do you want the wizard to do?
	<ul> <li>Install the software automatically (Recommended)</li> </ul>
	<ul> <li>Install from a list or specific location (Advanced)</li> </ul>
	Click Next to continue.
	< Back Next > Cancel

- 2 Check "Don't search. I will choose the driver to install". *Click Next.*
- **Note:** Setting up is only necessary to do once. For future connections, go directly to **Initiating an MPDS call**.

eas	e choose your search and installation options.
0	Search for the best driver in these locations.
	Use the check boxes below to limit or expand the default search, which includes loo paths and removable media. The best driver found will be installed.
	<ul> <li>Search recovable media (hopp, CD/FOM, 1)</li> </ul>
	in Findude An Igennary (n.e. reach)
	E-USE_UPINESS AUX_DOIIP Blowse
0	Don't search. I will choose the driver to install.
	Choose this option to select the device driver from a list. Windows does not guaran the driver you choose will be the best match for your hardware.
	une unver you choose will be the best match for your hardware.
	<back next=""> Car</back>
	CBack Next> Car

3 In the Found New Hardware Wizard window *click Have disk*. Click Browse and specify a USB driver folder in the CD. Open USB4SAILOR.INF and click OK.

Install New Modem Please select the modem you want to install.	<b>A</b>
Select the manufacturer and model of your modern have an installation disk, click Have Disk.	: If your modern is not listed, or if you
Show compatible hardware	
Models	
a and a second second second	
This driver is not digitally signed! <u>Tell me why driver signing is important</u>	Have Disk
Tell me why driver signing is important	
Tell me why driver signing is important	ack Next Cancel
Tell me why diver signing is important	ack Next Cancel

4 Select the **SAILOR USB MODEM**. Click **Next**. Some message appears, but ignore it and click **Continue**. Click **Finish** to complete the installation.



#### For Windows Vista

Ensure that the SAILOR vtLite is closed.

1. When connecting USB cable, the **Found New Hardware** screen appears. Click the **Locate and install driver software**.



If the User Account Control screen appears, click the Continue button.

User Account	Control
💎 Wind	lows needs your permission to continue
If you starte	d this action, continue.
1	Device driver software installation Microsoft Windows
Details	<u>Continue</u> Cancel
User Account	t Control helps stop unauthorized changes to your computer.

2. The Found New Hardware – SAILOR 77 Fleet screen appears. Click the Don't search online.

**Note:** Setting up is only necessary to do once. For future connections, go directly to **Initiating an MPDS** call. When installing the single USB driver, the dual USB driver is installed.

Allo	w Windows to search online for driver software for your SAILOR 77 Flee
+	Yes, <u>a</u> lways search online (recommended) Windows will automatically search for the latest drivers and applications for your hardware an download them to your computer.
+	Yes, search online this time only Windows will search for the latest drivers and applications for this device and download them your computer.
+	Don't search online
	Your device may not function properly until you get the latest software.
leas	e read Microsoft's privacy statement

3. Insert the CD.

Insert	the disc that came with your SAILOR 77 Fleet+
If you has search to	ve the disc that came with your device, insert it now. Windows will automatically se disc for driver software.
41	don't have the disc. Show me other optices.

The driver software is installed.

Ge Found New Hard	Iware - SAILOR 77 Flee	t+		
Installing driver	software			
į.			-	2
		X		

4. The Windows Security wizard appears. Click the Install this driver software anyway.

Allo	w Windows to search online for driver software for your SAILOR 77 Flee
+	Yes, always search online (recommended) Windows will automatically search for the latest drivers and applications for your hardware an download them to your computer.
+	Yes, search online this time only Windows will search for the latest drivers and applications for this device and download them your computer.
+	Don't search online Your device may not function properly until you get the latest software.
Pleas	e read Microsoft's privacy statement

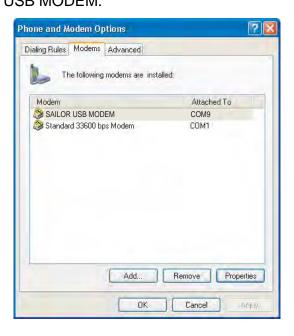
5. After completing installation, the **The software for this device has been** successfully installed appears. Click the **Close** button.

The so	ftware for this device has been successfully ins	stalled
Window	s has finished installing the driver software for this device:	
3	SAILOR USB DUAL PORT MODEM	

## 6.2.4 MPDS – setup

#### For Windows XP

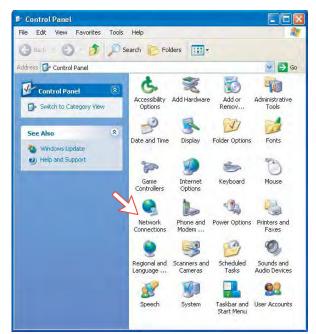
 Opening the SAILOR USB MODEM window confirms the established modem connection.
 Select SAILOR USB MODEM.



**Note:** The setup for data transfer to the FURUNO terminal is based on the Windows XP default parameters:

8 data bits - no parity - 1 stop bit - flow ctrl: Hardware Clicking **Properties** allows checking the parameters.

2 Open the **Control Panel** on the PC and double-click the **Network Connections** icon.

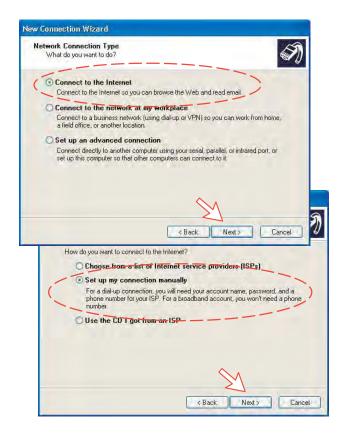


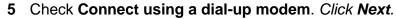
3 Click Create a new connection to open the New Connection Wizard. *Click Next.* 



4 Check Connect to the Internet. *Click Next.* Check Set up my connection manually.

Click Next.



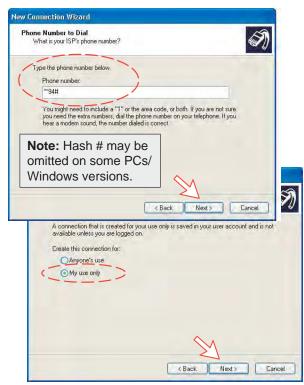




6 Check "Modem-NERA Generic USB Modem." Click *Nex*t. Enter the name for the connection e.g. **MPDS**. *Click Next*.

ew Co	nnection Wizard
	ct a Device his is the device that will be used to make the connection.
	'ou have more than one dial-up device on your computer. elect the devices to use in this connection:
	Modem - PCTEL 2304WT V.9x MDC Modem (CDM4)      Modem - NERA Generic USB Modem [COM3]
Ne	w Connection Wizard
	Connection Name What is the name of the service that provides your Internet connection?
	Type the name of your ISP in the following box. ISP Name
	MPDS
	The name you type here will be the name of the connection you are creating.
	<u> </u>

 7 Entering phone number \*\*94# automatically connects you to the Internet Service Provider through your default Net Provider. *Click Next*. Check Anyone's use, and click Next.



8 Enter name and password for the connection.

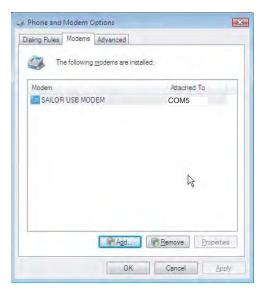
Uncheck Turn on Internet Connection Firewall for this connection. *Click Next*.

Complete the New Connection, click Finish.

	rmation ount name and password to sign in to your Internet account.
	t name and password, then write down this information and store it in a ve forgotten an existing account name or password, contact your ISP.)
User name:	FURUNO
Password:	******
Confirm password:	******
Use this account this computer	name and password when anyone connects to the Internet from
	Connection Firewall for this connection
	<back next=""> Cancel Create the tollowing connection:</back>
R	<back next=""> Cancel</back>
K	

#### For Windows Vista

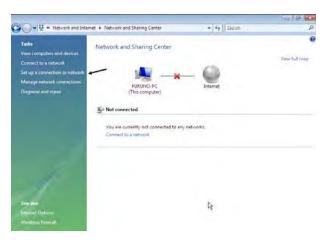
1. Open the **Phone and Modem Options** window and confirm the established modem connection. Select **SAILOR USB MODEM**.



2. Open the Control Panel and click the Network and Internet and the Network and Sharing Center in that order.

				1 million 1 million 1
Control Panel			+ 69	
Control Panel Home Classic View	9	System and Maintenance Birt stated with Windowy Back up your computer	5	User Accounts #Add or remove user accounts
	۲	Security Check for opdates Direct this computer's recently itemat Allow a program through Windows Final	-	Appearance and Personalization Change testop background Change the color scheme adjuit screen resolution
	٠	Network and Internet	9	Clock, Language, and Region Onings leptoants or other input, methods
	-	Hardware and Sound Play CDs or other media automatically Frinter	G	Ease of Access Let Windows suggest settings Optimize visual display
	Q	Mouse Programs Uninstal a program Change statue program	*=	Additional Options
2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Control Panel	1020		Li D'Gasse Gi VMware Playe
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原題マシンに入力先を切り替えるこは	I. CHHGERUT	* 🔁 CE-ROM IDE 100 🐻 ( -930	• • <b>©</b> */	ی VMware Playe کی ج-۱ د ا
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Window: Visita(ENG) Window: Visita(ENG) V Y Central Panel Central Panel Home System and Mantesance Systems Markowski and Islement Herkowski and Islement Herkowski and Islement Herkowski and Islement Herkowski and Pagesemi User Accounts Agenerandmate Elsek Lempang, mil Region Elsek Lempang, mil Region	Carrologieus Weiners Payer • Network and Carrologieus Network and Carrologieus Network and Carrologieus Network Networ	CD-ROM COE 100 C (-929)  Rennet  etwork and Sharing Center  to refrace Administration  for up fare  termet Options  may southenesses  Manage Biscon  Hilme Files	• • •	Control of the second sec
Hindows: Visita(ENG)     Windows: Visita(ENG)     Visita(	K. Carl A & Prove Videous Prove • Nicetoch and M. M. M	Concernence of the second sec	• 49 • set retealsh hering traditions we could by How a progr	Control Contro
All CONCASSES CONTACTOR Window: Visita(ENG) Visita (Engl) Visita (Engl) Control Planel Home Societa and Materiance Socially Advance and Invested Hardware and Social Appendixida Perpendixida Black, Lampang, and Repon Elars of Actors Addisonal Optime	Contrologity UC	CD-ROM COE 100 C-1929 Retent  Comparison Co	For the set of th	Converse Prayer      Autor Prayer      Autor Prayer      Seech      Seech      Delete transing hitley and cocket      your affine Nex      in through Windows Prevail      Mis settings:

3. Click the Set up a connection or network to open the Set up a connection or network window.



4. Select the Set up a dial-up connection and click the Next button.

-	Connect to the Internet Set up a wireless, broadband, or dial-up connection to the Internet.
1	Set up a wireless router or access point Set up a new wireless network for your home or small business.
0	Set up a dial-up connection Connect through a dial-up connection to the Internet.
	Connect to a workplace
	Set up a dial-up or VPN connection to your workplace.

5. Select the SAILOR USB Modem and click the Next button.

Which modem do you want to use?	
Standard 33600 bps Modem Modem	
SAILOR USB MODEM Modem	
Help me decide	l.≽

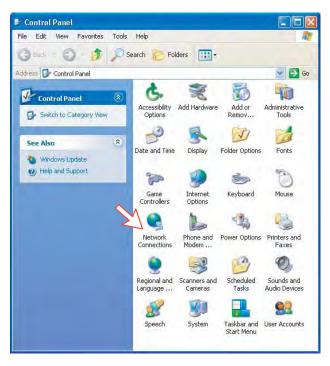
6. Enter telephone number (access code) " \* \* 9 4 # ", user name, password and connection name. Clear the check box Allow other people to use this connection and click the Connect button.

Type the information	from your Internet service provid	der (ISP)
Dial-up phone number:	**94#	Dialing Rules
<u>U</u> ser name:	FURUNO	
Password:	••••	
	Show characters           Remember this password	
Connection name:	Dial-up Connection	
	to use this connection nyone with access to this computer to use t	this connection.
		this connection.

## 6.2.5 Checking default settings

#### For Windows XP

1 Double-click Network Connections in the Control Panel.



2 Right-click the MPDS dial-up connection and click Properties.

Network Connections				
File Edit View Favorites Tools		,		4
G Rock + C / / / 54	Dial-up	A		- E @
Activative Tarker      Control & Factor      Monometric      Monometr	And an analysis of the second	Connect Table Concel as Default Connection Deate Copy Cineda Tolertat Deates Annane Procedures	nection 33-344 Anninos	
Details (A) MIDS Del-up Deconnected standard 38600 hos Moders 454				

- 3 Confirm settings in the MPDS Properties window:
  - "Modem SAILOR USB MODEM [COM9]".
  - Phone number: \*\*94#

Click Configure.

🖕 MPDS Proper	ties		? 🛛
General Options	Security Ne	tworking Ad	vanced
Connect using:			
( SAILOR ☐ SAILOR Modem ·			
4	100		5
All devices ca	II the same num	ibers	Configure
Phone number		- /	$\overline{\lambda}$
Area code	Phone numb	ber:	Alternates
Country/regio	n code		
Use dialing	) rules		Dialing Rules
Show icon in	notification area	when connec	sted
			Cancel

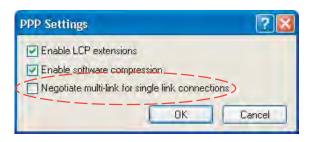
4 In the Modem Configuration window, check that the Maximum speed (bps) is set to 115200.



5 In the MPDS Properties window, click Networking and check that Internet Protocol (TCP/IP) is selected. *Click Settings*.

-			1		
eneral	Options	Security	Networking	Advanced	
Type of	dial-up se	rver I am	calling:		
PPP: V	Vindows 9	5/98/NT	4/2000, Interne	et	1
[his co	nne <del>ction u</del>	is <del>es the f</del> o	ollowing items:	- Se	ttings
VT	Internet P	rotocal (T	CP/IP)		
	A DESCRIPTION OF A DESC	and the second			
	QoS Pack	ket Sched	uler		
			luter iring for Microso	oft Networks	
		rinter Sha	ring for Microso	oft Networks	
	File and P	rinter Sha	ring for Microso	oft Networks	
	File and P	rinter Sha	ring for Microso	oft Networks	ities
	File and P Client for I	rinter Sha	ring for Microso Networks	-	ities
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Desci Tran	File and P Client for I Install Iption smission C area netw	rinter Sha Microsoft I ontrol Pro	ring for Microso Networks Uninstall tocol/Internet I col that provide	Proper Protocol. The de	fault

6 In the **PPP Settings** window, **Negotiate multi-link for single link connections** should be unchecked.



#### For Windows Vista

1. Open the Control Panel and click the Network and Internet, the Network and Sharing Center and Manage network connection in that order.

			010 2
🖉 🗣 😨 🦇 Network and Inte	rnet  Network and Sharing Center	+ ++ Search	م
Tasks View computers and devices	Network and Sharing Center		6
Connect to a network			View Full map
Set up a connection or network Manage network connections	- 🍓 -*	- 0	
Diagnose and repair	FURUNO-PC (This computer)	Internet	
	F Not connected		
	You are currently not connected to an	y networks.	
	Connect to a network		
1			
1			
Sei alto		N	
Internet Options		96	
Windows Ermeell			

- 2. Right-click the MPDS icon that you created in the Dialup and click the **Properties**.
- Confirm the setting contents in the MPDS Properties window.
  - Modem: Modem standard 33600 bps Modem (COM5)
  - Phone number: \* \* 9 4 #

Click the **Configure** button.

	AILOR USB MODEN			t
Modem - S	tandard 33600 bps N	Nodem (CC	)M4)	[F]
Al devices call	the same numbers	G	onfigure	
🔽 Dial only first av	ailable device			
Phone number				
Area code	Phone number: **94#	_	Alterington	
Country/region	1 1 1 1		Altemates	
		1		Ψ.
U <u>s</u> e dialing r	ules	l	Blaling <u>B</u> ule	ŝ

4. In the **Modem Configuration** window, confirm that the **Maximum speed** (bps) is set to 115200 and click the **OK** button.

Modem Configuration Standard 33600	bps Modem (COM5)
Maximum speed (bps):	115200 🔹
Modem protocol	-
Hardware features	
Enable hardware flow	v control
Enable modem error	control
Thable modem comp	ression
Enable modem speaker	OK Cancel

5. Select the **Options** tab in the MPDS properties window and click the **PPP Settings**.

Dialing options         Image: Second State S	General	Options	Security	Networking	Sharing	
Prompt for name and password, certificate, etc.         Include Windows logon domain         Prompt for phone number         Redialing options         Redial attempts:       3         Ime between redial attempts:       1 minute         Idle time before hanging up:       20 minutes         Idle threshold:       Image: Complete threshold:	Dialin	g options				
<ul> <li>Include Windows logon domain</li> <li>         Prompt for phone number     </li> <li>         Redialing options         Redial attempts: 3 *         Ime between redial attempts: 1 minute ▼         Idle time before hanging up: 20 minutes ▼         Idle threshold: ▼     </li> </ul>	VD	isplay prog	gress while	connecting		
Prompt for phone number         Redialing options         Redial attempts:       3         Time between redial attempts:       1 minute         Idle time before hanging up:       20 minutes         Idle threshold:       Image: Compared in the second in					tificate, etc.	
Redialing options <u>R</u> edial attempts: 3 <u>Time between redial attempts: 1 minute Idle time before hanging up: 20 minutes Idle threshold:</u>		_				
Redial attempts:     3       Ime between redial attempts:     1 minute       Idle time before hanging up:     20 minutes       Idle threshold:     ✓	VF	rompt for p	none <u>n</u> um	Der		
Redial attempts:     3       Time between redial attempts:     1 minute       Idle time before hanging up:     20 minutes       Idle threshold:     ✓						
Redial attempts:     3       Time between redial attempts:     1 minute       Idle time before hanging up:     20 minutes       Idle threshold:     ✓						
Ime between redial attempts:     1 minute       Idle time before hanging up:     20 minutes       Idle threshold:	Redia	aling option	IS			
Idle time before hanging up: 20 minutes  Idle threshold:	Redi	al attempts	s:		3	*
Idl <u>e</u> threshold:			N	note:	1 minute	*
	1	between	redial atten	inpro.	1	
Redial if line is dmoned	Time				20 minutes	-
	<u>T</u> ime Idle t	ti <u>m</u> e before			20 minutes	*
	Ţime Idle t Idl <u>e</u> t	i <u>m</u> e before hreshold: Redial if line	hanging u	.qı	20 minutes	• K
PPP Settings	Ţime Idle t Idl <u>e</u> t	i <u>m</u> e before hreshold: Redial if line	hanging u	.qı	20 minutes	• · · ·
PPP Settings,	Ţime Idle t Idl <u>e</u> t	i <u>m</u> e before hreshold: Redial if line	hanging u	.qı	20 minutes	× 1

6. Confirm that the check box for **Negotiate multi-link for single-link connections** is clear in the **PPP Setting** window and click the **OK** button.

PPP Settings	X
Enable LCP extensions     Enable software compression	
Negotiate multi-link for single-link connections	
OK.	Cancel

## 6.2.6 Connecting to server

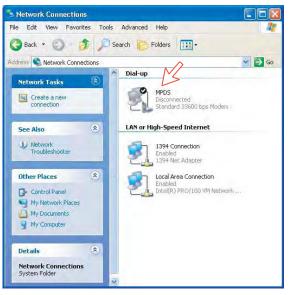
#### For Windows XP

#### **Initiating an MPDS call**

Open the **Control Panel** on the PC and double-click the **MPDS** icon in the **Network Connections** window *(i.e. the preset dial-up connection).* 

If provided for the specific server connection, enter the **User name** and **Password**.

Dialing \*\*94# establishes the MPDS connection via the default Net provider (to Home LES, see system overview).



Click **Dial** to establish the connection to the server. See **Connection in progress** on next page.

Connect MPD	is 💽 🔀
0	
User name:	FURUNO
Password:	[To change the saved password, click here]
<ul> <li>Me only</li> </ul>	user name and password for the following users: } who uses this computer
Dial:	**94#
Dial	Cancel Properties Help

#### **Connection in progress**

Displayed on the PC screen:



#### When connected:

	TD - Microsoft Internet E ② お気に入びる シール		
R6 · → · @ 2 @		36度 鸟-马圈-马	
ν μ λ (D) 🔊 http://www.furune	1.00.jp/		
and a second second			
10000	FUE	ZUNO	
Constant of	FURUNO E	LECTRIC CO.LTD.	
-	The set of the	and the second second	
	a state of the state		
		o FURUNO Website.	
	Please	select language.	
	Foreitsh	apanes	
	English	apones	

#### **Connection status**

Appears when right-clicking the **MPDS** dial-up icon and **Status**, or clicking the PC icons in the lower right corner of the screen.

neral Details		
Connection		
Status:		Connected
Duration:		00:00:23
Speed:		115.2 Kbps
Activity	m	David
	Sent —	- Received
Bytes:	1 544	868
Compression:	0%	0%
Errors:	0	0

**Note:** Click **Disconnect** when shutting down the call. It is not enough to close the browser alone.

#### Switching between MPDS and ISDN mode

The connection window provides sensing on the telephone number. If dialing an international number instead of \*\*94#, the terminal switches back to ISDN mode of operation. Examples:

Dialing **\*\*94# MPDS** via default Net service provider (no subscriber number is sent to the Net provider).

**Note:** Hash # may be omitted on some PCs/Windows versions.

Dialing 004766850170 -> ISDN mode.

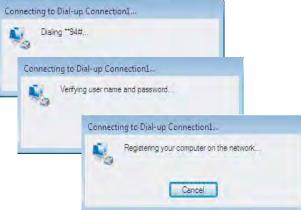
#### For Windows Vista

Open the **Control Panel** and double-click the **Network and Internet**, the **Network and Sharing Center, Manage network connection** and **MPDS** in that order.



## Connection in progress

Displayed on the PC screen:



#### When connected



#### **Connection status**

Click the View status to show the connection status.

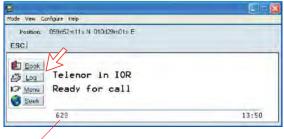


ieneral Details		
Connection -		
IPv4 Connec	tivity:	Internet
IPv6 Connec	tivity:	Limited
Media State:		Connected
Duration:		00:00:53
Speed:		115.2 Kbps
Details		
Activity —	15	4
		P)
	Sent — 🜉	Received
Bytes:	Sent —	— Received 5,237
Bytes: Compression	5,847	3
C. Burrow Sec.	5,847	5,237
Compression	5,847 : 0% 0	5,237 k 0%

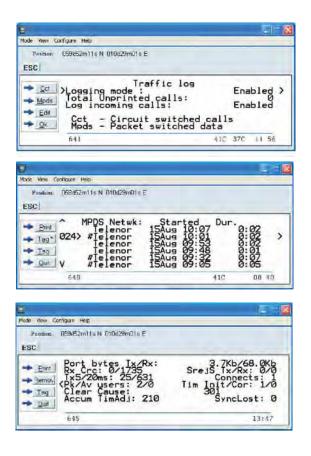
# 6.2.7 Traffic log

In the vtLite idle window, clicking Log lets you select between traffic logs for packet switched data (MPDS) and all other circuit switched call types. Clicking the right arrow key expands the level of detail on entries listed.

In the Traffic Log window: **MPDS**: note that this information is included for information only and should not be used e.g. for billing purposes. It contains some of the information also indicated in the "Real Time" status indications, and can be usefull to pinpoint any potential problem during a call. A low C/No, < 535, will most likely give many retransmissions on the sattelite link. You should see this in the number of Srej TX and RX being higher than normal.







# 6.2.8 AT-commands

The commands listed below are performed automatically with the dial string \*\*94#, but can be useful for advanced debugging of the MPDS system (e.g. SBS and HLES):

AT +WLES=XXX = R selects Net Provider (XXX = LES access code) for the serial port used.

Example: AT +WLES = 004 PR selects Telenor: 004

AT + WNERAMPDSMSN= 1234567890....

Up to 22 digits are supported and the value is immediately saved to flash. The value is not used and is only provided for information.

#### AT+WREG=1

registers the user with the default Net Service Provider.

This command will make the terminal register at the R-LES only, i.e. the terminal will not be connected to the Internet. In many cases when the MPDS system does not work it is important to verify whether the fault is in the SBS, RLES or HLES.

If this command is performed via e.g. Hyperterminal and you get the prompt Registered, then the fault is probably located in the H-LES.

If you do not get registered, your mobile is either rejected because of limited SBS resources or your mobile is not registered (commissioned) in the RLES.

#### $AT + WREG = 0 \blacksquare R$

deregisters the user.

#### AT+WS45=4

sets the FELCOM 70 terminal in MPDS mode.

This is implicitly done when using the \*\*94# dial string. This command will make the FELCOM 70 terminal Register at the RLES when the Windows dial Up adapter sets up a PPP connection to the H-LES (Internet).

#### AT+WS45=1

sets the FELCOM 70 terminal back to Normal mode (SCPC HSD) mode.

Note: Local echo of keyboard entries is set to ON with the commands: ATE1 = R

Note that all the above commands are not required if you use the Dial String \*\*94# to select MPDS; all other Dial Strings will use SCPC.

It is included for information only. However when you are not able to establish the Dial Up Adapter, the "FURUNO" procedure has been to try the At+Wreg=1, in order to verify whether or not this has been a SBS or RLES problem.

#### Verifying MPDS with AT-commands

#### Access to AT-commands

Instead of using the PC hyperterminal facility, access can easily be accomplished using SAILOR vtLite, or using Hyperterminal.

17:1- View Configure Help	
Terminal MML Ctrl+M     osition!	
AT Node CERTAIN	
Trace Cirl+R Offline Cirl+L Exit	
20 Log Terehor in AOR-E IS Menu Busy with call Seek	(Beam 6) Elevation 16
630	10 16

#### Start vtLite again: You can now key in **at+wreg=1** from vtLite:

0	
Mode View Configure Help	
Position: No GPS positi	mi
OK at+wies? +WLES: 004	•
OK at+wreg=1 REGISTERED	2
Tx at+wreg=1	1 Rau
Send at + WID BIG = 1	
Base Hex Dec	Ascii Quit Cir Send F auto send
г — — — —́—	
REGISTERED	: MPDS is operational
FAILED	: MPDS is not operational.
	Verify that MPDS is available for
	your terminal. See function 99,
	Customization > Paid functions.
	If necessary, check that MPDS
	has been commissioned at your Net Service provider.
L	

Problem	Probable cause	Action
1. No contact with	Wrong setup of	Check cable connection.
modem:	Communication Unit.	<ul> <li>Disconnect USB cable, and reconnect.</li> </ul>
		<ul> <li>On PC, open Phone and Modem options and check whether USB Modem driver is connected to COM port. <i>If not:</i></li> </ul>
		1. Remove Modem in Phone and Modem options.
		<ol> <li>Remove previous USB installation via Control Panel&gt; System &gt; Hardware &gt; Device Manager. Double-click universal serial Bus Controller and uninstall the USB universal Host Controller. Warning! Remove all USB drivers.</li> </ol>
		3. Start again from page 6-23.
2. Cannot find Network Connection:	Network connection not installed.	<ul> <li>Contact your PC vendor to get the software.</li> </ul>
3. Connection unsuccessful:	Wrong connection details.	<ul> <li>Check the phone number, user name and password with your service provider.</li> </ul>
4. Cable length:	Guaranteed length: 1.5 m	• Recommended maximum length: 3 r
5. Using SAILOR vtLite via USB		Remove SAILOR vtLite and USB drivers, see problem 1.
fails:		<ul> <li>Reinstall SAILOR vtLite.</li> </ul>
6. Disconnects after some time:	Wrong setting in dialup.	<ul> <li>Check properties&gt;options&gt;idle time before hang up.</li> </ul>
7. All dialups dial in MPDS mode:		<ul> <li>Use AT+WS45=1 to set port back to normal mode.</li> </ul>
8. Username and password illegal:	Some PCs always require username/password	<ul> <li>Enter any name/password to ensure a successful call.</li> </ul>

# 6.2.9 Troubleshooting

#### Checking your configuration

# Connection attempt fails quickly and reports a hardware error with the modem

Check that no other application for example hyperterminal or vtLite is using the serial port and check that the serial cable is properly connected between the PC and the terminal.

# The MPDS real time status display starts but the connection fails to establish before timing out.

Start hyperterminal or another terminal emulator so AT commands can be entered to the terminal.

First check the LES being used AT+WLES? The terminal will reply with the LES access code being used. If this is not what you expect change the value with AT+WLES=xxx and save the new value with AT&W now check that it is possible to access the MPDS service by entering AT+WREG=1.

The real time status display should show "Allocating" "Tuning" and finally "Registered"

If instead you see "Failed" "Inactive" then the terminal has not been able to connect to the MPDS service with the given access code.

The result of the registration attempt is also shown to the AT interface. If registration worked then deregister with AT+WREG=0.

#### The registration attempt succeeds but connection attempts fail

Check that the max speed of the modem that was setup is 115200bps.

#### **Faultfinding**

After starting the connection as described above one should see:

- a) The dial up networking connection dialogue shows the normal progression of "dialing" "verifying user name and password" and "registering your computer on the network"
- b) The real time status indication on the terminal should show "Registering" then "Registered"
- c) Once a "Connect" has been received from the host the Modem display/ISDN Handset will show "Connected".
- d) The connection should be established and usable after the completion of PPP negotiation.

#### Error and clear cause logging on the vtLite application window

The terminal includes call logging and a record of any errors that occur. To assist with improving the system please note the contents of these if a problem is encountered.

#### C/No display Signal Strength Indication

For data communication it is of major importance that the mobile has a high enough Carrier-to-Noise Ratio (C/No) before the call is established. (a voice call is not as sensitive to this as a data call).

Before establishing any sort of data call (HSD or MPDS) verify that the display in vtLite indicates minimum 535.

#### Diagnostics

To enable diagnostics open menu "Advanced Functions" -> "Configuration" -> "Enable diagnostics" "9-7-4" And select "On". Press ESC key 4 times to return to the idle screen.

#### Version information

The versions of the software components used in your system are shown in menu "Advanced functions" -> "Information available" -> "Misc version Id". Use the up/down arrow keys to navigate the list.

Minimum Modem software requirements:

• FELCOM 70: system version REL 3.5 and higher (*vtLite function no.982*).

# 6.3 Mobile Data Service (RS-232)

## 6.3.1 PPP modem via RS-232

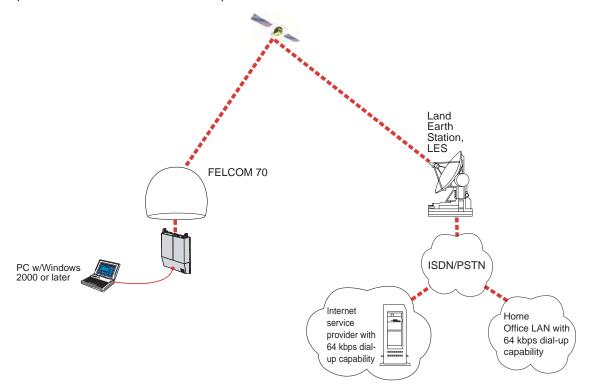
#### **Introduction**

The **Mobile Data Service** complies with the communication protocol defined by the Inmarsat Fleet77 system.

The transmission data rate over the satellite link is 64 kbps.

The **Mobile Data Service** offers 64 kbps connection to the international ISDN/PSTN network.

The service is suitable for applications such as high-speed file transfer, store-and-forward video, e-mail and internet. (*PPP = Point-to-Point Protocol*).



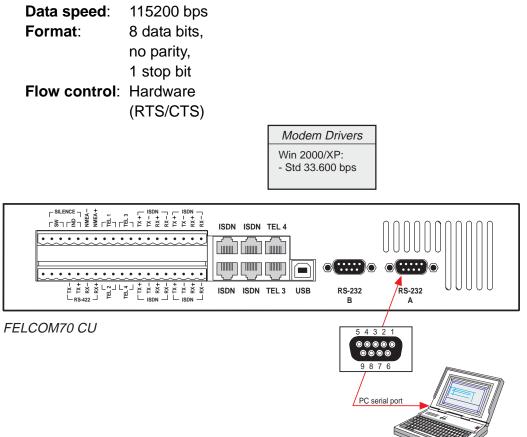
DTE

# 6.3.2 Connecting up

#### **Installation**

Connect the RS-232 serial cable between the serial port on the PC and the **RS-232** port on the CU.

The default settings are:



### 6.3.3 PC setup

#### For Windows XP

#### Ensure that SAILOR vtLite is closed.

1 Open the **Control Panel** on the PC and double-click the **Phone and Modem Options** icon.



- 2 Click the **Modems** tab. *Click* **Add**, see next page.
- **Note:** Setting up is only necessary to do once.
  - For future connections, go directly to Initiate a call.

Phone and Modem Options	? 🛛
Dialing Rules Modems Advanced	
The following modems are installed:	
Modem	Attached To
<b>.</b>	
M	
Add Re	move Properties
OK	Cancel Apply

3 In the Add Hardware Wizard window check "Don't detect my modem", and click Next.

Select Standard 33600 bps Modem in the Models field, and click Next.

d Hardware Wizard		
Install New Modem Do you want Window	ws to detect your modem?	
	Windows will now try to detect your modern. Before continuing, you should: 1. If the modern is attached to your computer, make sure it is turned on. 2. Quit any programs that may be using the modern. Dick Next when you are ready to continue. If Don't detect my modern: I will select it from a list. About the modern of the select it from a list. About the select it from a list. About the select it from a list.	
	$\sim$	
Manufacturer (Standard Moden	m Types) Models Standard 14400 bps Modem Standard 19200 bps Modem Standard 28800 bps Modem Standard 38800 bps Modem	No and No.
This driver is a	digitally signed. Have Disk	)
Tell me why d		

4 Select the port to which the Modem driver should be installed. *Click Next and then Finish to complete the installation.* 

d Hardware Wizaro	
Install New Modem Select the port(s) ye	ou want to install the modern on.
	2
	You have selected the following modern:
	Standard 33600 bps Modem
	On which ports do you want to install it?
	All ports     Selected ports
	COM1
	COM2
	<back next=""> Cancel</back>
	< Back Next> Cancel
	< Back Finish Cancel
	<

5 Opening the Phone and Modem Options window confirms the established modem connection. Select "Standard 33600 bps Modem". Click the Advanced tag and enter command "AT+WS45=1."

		Standard 33600 bps Modem Properties	?
The following modems are installed:	1	General Modem Diagnostics Advanced Driver	
Modem	Attached To	Extra Settings	
🍣 Nera Generic USB Modem	Not present	Extra initialization commands:	
≫ Nera Generic USB Modem #2 → PCTEL 2304WT V.9x MDC Modem	Not present COM4	AT+WS45=1	
Standard 33600 bps Modem	COM4 COM1		
Agd	<u>B</u> emove	artie	
Add		ertie Change <u>D</u> efault Preferences	

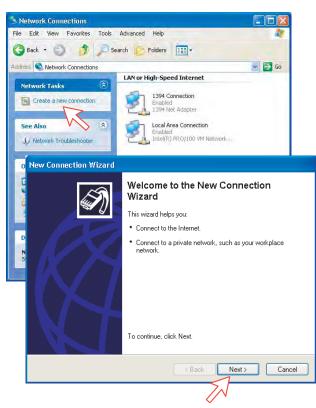
**Note:** The setup for data transfer to the Furuno terminal is based on the Windows XP default parameters:

8 data bits - no parity - 1 stop bit - flow ctrl: Hardware Clicking **Properties** allows checking the parameters.

6 Open the **Control Panel** on the PC and doubleclick the **Network Connections** icon.

🛃 Control Panel				
File Edit View Favorites Tools	Help			1
🕃 Back : 🕥 🦸 🔎 Se	arch 🌔 Fol	ders 🔝 -		
Address 🥵 Control Panel				💌
Control Panel 🛞	د Accessibility	Reference Add Hardware	Add or	Administrative
Switch to Category View	Options		Remov	Tools
See Also	B	1	<b>D</b>	1
🍇 Windows Update	Date and Time	Display	Folder Options	Fonts
Help and Support	P	9	-	C
<b>~</b>	Game Controllers	Internet Options	Keyboard	Mouse
2				-
	Network Connections	Phone and Modem	Power Options	Printers and Faxes
	9	3	3	0
	Regional and Language	Scanners and Cameras	Scheduled Tasks	Sounds and Audio Devices
	3	30		93
	Speech	System	Taskbar and Start Menu	User Accounts

7 Click Create a new connection to open the New Connection Wizard. *Click Next.* 



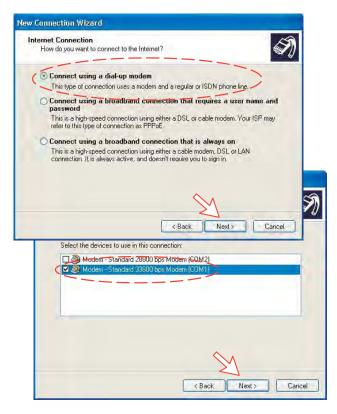
8 Check Connect to the Internet. *Click Next.* Check Set up my connection manually.

Click Next.

	do you want to do?
00	nnect to the Internet
~ ~ ~ ~	nnect to the Internet so you can browse the Web and read email
00	nnect to the network at my workplace
Co	nneet to the network at my workpace nneet to a business network (using dial-up or VPN) so you can work from home, eld office, or another location.
OSe	up an advanced connection
	nnect directly to another computer using your serial, parallel, or infrared port, or up this computer so that other computers can connect to it.
	M
	< Back Next> Cancel
	Kext Next Cancel
	How do you want to connect to the Internet?
<	How do you want to connect to the Internet?  Choose_team of list of Internet service providers-(LSPs)
	How do you want to connect to the Internet? Choose Isom a first of Internet service providers (ISPs) Set up my connection manually For a dial-up connection, you will need your account name, password, and a phone number for your ISP. For a breadband account, you won't need a phone
(	How do you want to connect to the Internet? Choose Isom a first of Internet service providers-(ISPs) Set up my connection manually For a dial-up connection, you will need your account name, password, and a phone number for your ISP. For a broadband account, you won't need a phone number.
	How do you want to connect to the Internet? Choose Isom a first of Internet service providers-(ISPs) Set up my connection manually For a dial-up connection, you will need your account name, password, and a phone number for your ISP. For a broadband account, you won't need a phone number.
(	How do you want to connect to the Internet? Choose Isom a first of Internet service providers-(ISPs) Set up my connection manually For a dial-up connection, you will need your account name, password, and a phone number for your ISP. For a broadband account, you won't need a phone number.

9 Check Connect using a dial-up modem.

Click Next. Check "Modem - Standard 33600 bps Modem". Click Next.



10 Enter the name for the connection e.g. Mobile Data Service via RS-232. *Click Next.* 

Enter phone number. (Through some Net Providers, dialing **28** automatically connects you to the ISP - Internet Service Provider). *Click Next*.

what is t	Name he name of the service that provides your Internet connection?
upe the r	name of your ISP in the following box.
SP Name	
Mobile Da	ita Service via RS-232
he name	you type here will be the name of the connection you are creating.
-	
	<u>~</u> .
	<u> </u>
	<
	<back next=""> Cancel</back>
1	Type the phone number below.
(	
(	Type the phone number below. Phone number: 28
(	Type the phone number below. Phone number: 28 You might need to include a "1" or the area code, or both. If you are not sur you need the extra numbers, dial the phone number on your telephone. If you
(	Type the phone number below. Phone number: 28 You might need-to-include a "1" or the area code, or both. If you are not sur
	Type the phone number below. Phone number: 28 You might need to include a "1" or the area code, or both. If you are not sur you need the extra numbers, dial the phone number on your telephone. If you
	Type the phone number below. Phone number: 28 You might need to include a "1" or the area code, or both. If you are not sur you need the extra numbers, dial the phone number on your telephone. If you
	Type the phone number below. Phone number: 28 You might need to include a "1" or the area code, or both. If you are not sur you need the extra numbers, dial the phone number on your telephone. If you
	Type the phone number below. Phone number: 28 You might need to include a "1" or the area code, or both. If you are not sur you need the extra numbers, dial the phone number on your telephone. If you
	Type the phone number below. Phone number: 28 You might need to include a "1" or the area code, or both. If you are not sur you need the extra numbers, dial the phone number on your telephone. If you

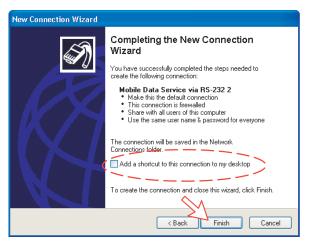
11 Check My use only, and click Next.

Some Internet Service Providers require user name and password (also on number 28).

Uncheck Turn on Internet Connection Firewall for this connection. *Click Next.* 

onnection Availability You can make the new conr	nection available to any user or only to yourself.
A connection that is created available unless you are logg	for your use only is saved in your user account and is not
Create this connection for:	
Anyone's use	
My use only	
	M
sare place; (il you ha	K Back Next> Cancel     Verougorierr an existing account manie or password, contact your is
sare place: (ir you na User name:	
	ve rorgonen an existing account name or password, contact your is
User name:	ve rorgonen an existing account name or password, contact your is
User name: Password: Confirm password:	ve rorgonen an existing account name or password, contact your is
User name: Password: Confirm password: Use this account this computer	FURUNO
User name: Password: Confirm password: Use this account this computer Make this the def	FURUNO         •••••••

12 Complete the New Connection, click Finish.



#### For Windows Vista

1. Open the **Control Panel** on the PC and double-click the **Hardware and Sound** and the **Phone and Modem Options** in that order.



Click the Modems tab and Add button.
 Note: Setting up is only necessary to do once. For future connections, go directly to Initiate a call.

aling Rules Modems Advanced	alled:
Modem	Attached To
SAILOR USB MODEM	Not present
	L <sub>8</sub>
Add	Remove Propertie

3. In the Add Hardware Wizard window, check the Don't detect my modem, and click the Next. Select Standard 33600 bps Modem in the Models field, and click the Next button.

_	
	Windows will now try to detect your modem. Before continuing, you should:
	<ol> <li>If the modem is attached to your computer, make sure it is turned on.</li> </ol>
	<ol> <li>Quit any programs that may be using the modem.</li> </ol>
	Click Next when you are ready to continue.
	Don't detect my modem; I will select it from a list

have an installation disk	and model of your modem. If your modem is not , click Have Disk.	listed, or if you
Manufacturer	Models	-14
(Standard Modem Types)	Standard 19200 bps Modem	
	Standard 33600 bps Modern Standard 56000 bps Modern	
	Standard 33600 bps Modern	

4. Select the port to which the Modem driver should be installed. Click the **Next** and then **Finish** to complete the installation.

	You have selected the following modem: Standard 33600 bps Modem
	On which ports do you want to install it?
	C All ports
	• Selected ports
	COM1 COM2
	COM4
	1
	N
	< Back Cancel
	< <u>Back</u> Cancel
ld Hardware Wi	
	ard
Install New M	ard
Install New M	ard sodem
Install New M	ard sodem
Install New M	ard odem Ilation is finished! Your modem has been set up successfully.
Install New M	ard pdem alation is finished! Your modem has been set up successfully. If you want to change these settings, double-click the Phone and Modem Options icon in Control Panel, click the
Install New M	ard bdem allation is finished! Your modem has been set up successfully. If you want to change these settings, double-click the
Install New M	ard pdem alation is finished! Your modem has been set up successfully. If you want to change these settings, double-click the Phone and Modem Options icon in Control Panel, click the
	ard pdem alation is finished! Your modem has been set up successfully. If you want to change these settings, double-click the Phone and Modem Options icon in Control Panel, click the
Install New M	ard pdem alation is finished! Your modem has been set up successfully. If you want to change these settings, double-click the Phone and Modem Options icon in Control Panel, click the

5. Open the **Phone and Modem Options** window and confirm the modem connection.

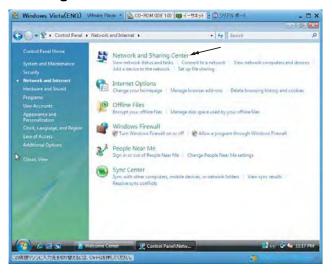
Select the Normal 33600 bps Modem and click the Properties button. Click the General tab in the Normal 33600 bps Modem Properties window and click the Change settings. Click the Advanced tab and type "AT+WS45=1" in the Extra initialization command box. Click the OK button.

The following <u>m</u> odems are installe		Standard 33600 bps Modern
Modem SAILOR USB MODEM Standard 3600 bps Modem	Attached To COM5 COM4	Device type: Modems Manufacturer: (Standard Modem Types) Location: Unknown
Add	Remove Properties	This device is working properly.
OK	Cancel Apply Standard 33600 bps Modern Propert General Modern Disposition Adh Edra Settings Edra Intelization commands: [AT-WS45=1] Intelization commands may lead t sensitive information methemodern modernis instruction manual form	vancad Driver Detais

6. Open the Control Panel and click the Network and Internet and the Network and Sharing Center in that order.

Change Default Preferences....

OK Cancel



7. Click the Set up a connection or network to open the Set up a connection or network window.



8. Select the Set up a dial-up connection and click the Next button.

-	
4	Connect to the Internet Set up a wireless, broadband, or dial-up connection to the Internet.
	Set up a wireless router or access point
Ø	Set up a wireless router or access point Set up a new wireless network for your home or small business.
m	Set up a dial-up connection
-	Connect through a dial-up connection to the Internet.
	Connect to a workplace Set up a dial-up or VPN connection to your workplace.
	set up a diar-up of very connection to your workplace.

9. Select the Standard 33600 bps Modem and click the Next button.

😴 Set up a dial-up connection		
Which modem do you want to use?		
Standard 33600 bps Modem Modem		
SAILOR USB MODEM Modem		
Help me decide	R	
		Cance

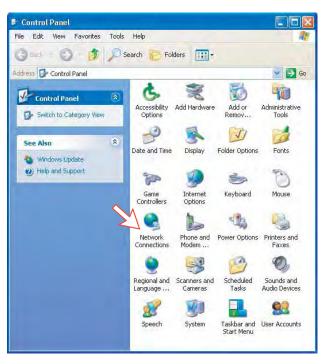
**10.** Enter telephone number (access code) " 2 8 # ", user name, password and connection name. Clear the check box **Allow other people to use this connection** and click the **Connect** button.

Type the information fi	rom your Internet service provi	ider (ISP)
Dial-up phone number:	28#	Dialing Rules
<u>U</u> ser name:	FURUNO	
Password:	••••	
	Show characters	
Connection name:	Dial-up Connection	
🛞 🗐 Allow other people to		
This option allows any	one with access to this computer to use	this connection.

# 6.3.4 Checking default settings

#### For Windows XP

1 Double-click Network Connections in the Control Panel.



2 Right-click the **Mobile Data Service via RS-232** dial-up connection and click **Properties**.

e Edit View Favorites Ioo			
) Back + 🔘 🧊 🎾	Search 🕞 Folders 🛄 -	,	
fress 🔇 Network Connections			× 🖻
Network Tasks	Dial-up		
Create a new connection	Mobile Data Service via Connected, Firewalled Standard 33600 bos Mo	R5-232	
See Also 🎗		Connect	
jy Network Troubleshooter		Cancel as Default Connection	
Other Places *		Create Copy	
Control Panel	LAN or High-Speed Internet	Create Shortcut Delete Rename	
My Documents My Computer		Properties	
Details *		$\sim$	
Network Connections System Folder			

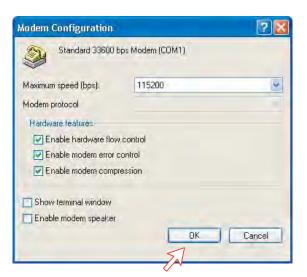
- 3 Check settings in the Mobile Data Service via RS-232 Properties window:
  - Modem Standard 33600 bps Modem (COM1)
  - Phone number: 28

Click Configure.

	king Advanced
Connect using:	-1 (COM1)
Modem - Standard 33600 bps M	
	Configure.
Phone number	
Area code Phone number:	N. V
28	Alternates
Country/region code	
Community ( Office) ( reside	
	Test on the second
Use dialing rules	Dialing Plotes
	and the second sec
Show icon in notification area who	en connected

4 In the Modem Configuration window, check that the Maximum speed (bps) is set to 115200.

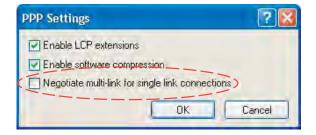
Click **OK** 



5 In the **Mobile Data Service via RS-232 Properties** window, click **Networking** and check that **Internet Protocol (TCP/IP)** is selected. *Click Settings.* 

	s Security Networking	Advanced
Type of dial-up	server I am calling:	
PPP: Windows	: 95/98/NT4/2000, Interr	net 🛛 🗸
This connectio	<del>h uses the followi</del> ng items:	Settings
Internel	Protocol (TCP/IP)	
🗆 🖳 Client fo	I Printer Sharing for Micro or Microsoft Networks	soft Networks
Install		
Install		
Install Description		

6 In the PPP Settings window, Negotiate multilink for single link connections should be unchecked.



#### For Windows Vista

1. Open the Control Panel and click the Network and Internet, the Network and Sharing Center and Manage network connection in that order.

Task       Network and Sharing Center         View computes and devices       View full map         See also       Internet         See also       Internet         Internet Options       Internet	🕖 🗣 📽 帐 Network and Inte	rnet > Network and Sharing Center	✓ 4 Search	۶
Connect to a network Set up a connection or network Manage network connections Diagnose and repair Not connected You are currently not connected to any networks. Connect to a network See also	and the	Network and Sharing Center		
Manage network connections Disgnose and repair Not connected You are currently not connected to any networks. Connect to a network See also				View full map
Diagnose and repair (This computer) Internet  Wou are currently not connected to any networks.  Connect to a network  See also		A -*	_ 🥥	
You are currently not connected to any networks. Connect to a network	and a second sec		Internet	
See also		Not connected		
see also			iy networks.	
		Connect to a network		
	ee also		5	
	nternet Options		v	

- 2. Right-click the **Dial-up Connection** icon that you created in the Dialup and click the **Properties**.
- 3. Confirm the setting contents in the Dial-up Connection Properties window.
  - Modem: Modem Standard 33600 bps Modem (COM4)
  - Phone number: 28#

Click the **Configure** button.

		ILOR USB MO andard 33600 b		
Phone n	ly first ava umber	ne same number ilable device <u>Phone number</u> 28#	 Configure	5
	dialing ru		Dialing <u>B</u> u	et:

4. In the Modem Configuration window, confirm that the Maximum speed (bps) is set to 115200 and click the OK button.

Maximum speed (bps):	115200 🔻
Modem protocol	-
Hardware features	
Enable hardware flow	v control
Enable modem error o	control
Enable modem comp	ression
Enable modem speaker	

5. Select the **Options** tab in the MPDS properties window and click the **PPP Settings**.

ieneral	Options	Security	Networking	Sharing	
Dialin	g options				
VD	lisplay prog	gress while	connecting		
P	rompt for r	name and p	assword, cer	tificate, etc.	
E h	nclude <u>W</u> ir	ndows logo	n domain		
VP	rompt for p	phone <u>n</u> um	ber		
Dedie	ta's estimation				
neula	ling option	IS			
				1.47	(Terri)
Redi	al attempts	8:		3	*
-		s: redial atten	npts:	3 1 minute	*
Time	between				* r *
<u>T</u> ime Idle t	between	redial atten		1 minute	5 V
<u>T</u> ime Idle t Idl <u>e</u> t	between i <u>m</u> e before hreshold:	redial atten hanging u	p:	1 minute	* v * \$
<u>T</u> ime Idle t Idl <u>e</u> t	between i <u>m</u> e before hreshold:	redial atten	p:	1 minute	* * * \$
Time Idle t Idl <u>e</u> t	between i <u>m</u> e before hreshold:	redial atten hanging u	p:	1 minute	\$ *
Time Idle t Idl <u>e</u> t	between i <u>m</u> e before hreshold: ledial if line	redial atten hanging u	p:	1 minute	5 5
Time Idle t Idl <u>e</u> t	between i <u>m</u> e before hreshold: ledial if line	redial atten hanging u	p:	1 minute	5 V

6. Confirm that the check box for **Negotiate multi-link for single-link** connections is clear in the **PPP Setting** window and click the **OK** button.

PPP Settings	×
Enable LCP extensions     Enable software compression	
Negotiate multi-link for single-link connections	
OK.	Cancel

## 6.3.5 Connecting to server

#### For Windows XP

#### Initiate a call

Open the **Control Panel** on the PC and double-click the **Mobile Data Service via RS-232** icon in the **Network Connections** window *(i.e. the preset dialup connection).* 

Network Connections			
ile Edit yew Favorites	ools Advagced Help		
3 Back + 10 - 5	Sourch 📄 Folders 🔟+		
(In this Connection			w 🔂 😡
Network Tasks	2 Dial-up		
Create a new connection	Mobile Data Service W Conventied, Firenaled Randard TRAID has the	AR5-232 Disconvented Intern	
See Also	0	13	
U Network Troubleshooter		$\sim$	
Other Places			
Control Panel	LAN or High-Speed Internet		
My Documents	1394 Connection	Local Area Connection	
Ho Contactor	Enibled 1394 Net Adapter	Nétokové cable unplugiped zeklálili PROLIGE VALAstvosti	
Details			
Network Connections System Folder			
	1		

**Note:** The SAILOR vtLite program must be closed down prior to dialing up the server.

If provided for the specific server connection, enter the **User name** and **Password**.

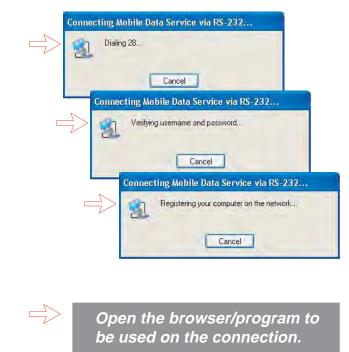
Click **Dial** to establish the connection to the server.

See Connection in progress on next page.

Connect MPD	s 💽 🔀
User name:	FURUNO
Password:	[To change the saved password, click here]
Me only	iser name and password for the following users: who uses this computer
Dial:	**94#
Dial	Cancel Properties Help

#### **Connection in progress**

Displayed on the PC screen:



#### **Connection status**

Appears when right-clicking the **Mobile Data Service via RS-232** dial-up icon and **Status**, or clicking the PC icons in the lower right corner of the screen.

eneral Details		
Connection		
Status:		Connected
Duration:		00:10:53
Speed:		115.2 Kbps
Activity	~	
	Sent -	- Received
Bytes:	3 824	2 155
Compression:	0%	0%
Errors:	0	0

**Note:** Click **Disconnect** when shutting down the call. It is not enough to close the browser alone.

#### For Windows Vista

#### Initiating an MPDS call

Open the **Control Panel** and double-click the **Network and Internet**, the **Network and Sharing Center, Manage network connection** and **Dial-up Connection** in that order.

**Note:** The SAILOR vtLite program must be closed down prior to dialing up the server.

If provided for the specific server connection, enter the **User name** and **Password**. Click **Dial** to establish the connection to the server. See **Connection in progress**.

onnect Dial-u	up Connection1	
User name: Password:	FURUNO	
Me o <u>n</u> l	user name and password for the fo y a who uses this computer	illowing users:
Dial:	28#	•
Dial	Cancel Properties	<u>H</u> elp

#### **Connection in progress**

Display on the PC screen



#### **Connection status**

The screen appears when clicking the **View Status** in the **Network and Sharing Center**.

Dial-up Connect	IOUT STRUE	
General Details		
Connection		
IPv4 Connectivi	ty:	Internet
IPv6 Connectivi	ty:	Limited
Media State:		Connected
Duration:		00:00:53
Speed:		115.2 Kbps
D <u>e</u> tails		
Activity —		4
	Sent — 颠	Received
Bytes:	5,847	5,237
	0 %	0 %
Compression:		

**Note:** Click **Disconnect** when shutting down the call. It is not enough to close the browser alone.

	-	
Problem	Probable cause	Action
1. No contact with modem or busy	Wrong setup of Communication Unit.	<ul> <li>Make sure the vtLite settings are correct, see RS-232 configuration.</li> </ul>
	SAILOR vtLite uses the same port.	<ul> <li>Try autodect if problems with the connection.</li> </ul>
		<ul> <li>Try different speed and COM port settings.</li> </ul>
		Close SAILOR vtLite
2. Cannot find Dial Up Networking:	Dial up connection not installed.	<ul> <li>Contact your PC vendor to get the software.</li> </ul>
3. Connection unsuccessful:	Other end is not an ISDN connection.	<ul> <li>It is not possible to use the RS-232 port if the modem on the receiver side is not an ISDN modem.</li> </ul>
	Wrong connection details	<ul> <li>Check the phone number, user name and password with your service provider.</li> </ul>
		<ul> <li>Check whether 64kbps data UDI is commissioned.</li> </ul>
		<ul> <li>Using SAILOR vtLite, check configuration in Device Manager.</li> </ul>
4. Cable length	Guaranteed length: 1.5 m	Recommended maximum length: 3 m
5. All dialups dial in MPDS		<ul> <li>Use AT+WS45=1 to set port back to normal mode</li> </ul>
6. User name and password illegal	Some PCs always require username/password.	<ul> <li>Enter any name/password to ensure a successful call.</li> </ul>

# 6.3.6 Troubleshooting

# 6.3.7 AT commands

#### <u>General</u>

The **AT** command set allows you to configure the Mobile Data Service function directly from your PC keyboard.

The AT characters are a prefix to the commands you issue to the Mobile Data Service.

Most communication applications do not require knowledge of AT commands.

Every time you type AT, you are essentially asking for the Mobile Data Service's **AT**tention. For instance, if you want to answer an incoming data call, you would type ATA to answer: ATA **I**R

When a value associated with a command is not entered, it is assumed to be 0, f.ex.: AT&Dequals AT&DO.

#### Hanging up – escape sequence

Once the Mobile Data Service is online to another system, the only command it recognizes is an escape code that contains three typed pluses, (+) which forces the Mobile Data Service back to command mode.

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

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

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

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

- In response to 🗐 🗐 🔄, the Mobile Data Service returns to command mode.
- To hang up, key ATH PR
- To return to online mode, key ATOLR

#### **Operating modes**

The Mobile Data Service function may operate in three modes:

• Command mode

The Mobile Data Service responds to AT commands. No remote communication occurs.

• Online command mode

A data call is taking place and an escape sequence has been initiated, after which the Mobile Data Service will respond to **AT** commands during the call.

• Online data mode

Once the Mobile Data Service is connected up, anything arriving from the PC is interpreted as data and sent to the remote end and vice versa.

#### **Basic AT commands**

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

#### 

instructs the Mobile Data Service to connect the line and start the answer sequence of the incoming call. Used when not configured for auto answer.

#### AT D 00 47 67 24 47 00 - R

instructs the Mobile Data Service to dial the number **00 47 67 24 47 00** via the default Net service provider.

#### AT D 4\* 00 47 67 24 47 00 -R

instructs the Mobile Data Service to dial the number **00 47 67 24 47 00** via the selected Net service provider, e.g. Telenor (4 = LES access code = Telenor).

AT D 23 11 PR dials the telephone number stored under short number 11.

#### 

sets local echo of keyboard commands on/off:

A T E O = R turns local echo OFF.

ATE1 FITUR turns local echo **ON**. Default ATH **P** hook control:

#### 

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

#### ATQ[n] JR

sets responses sent by the Mobile Data Service:

AT QO LR: the Mobile Data Service **returns** responses like OK or ERROR. *Default.* 

AT Q1 IR: the Mobile Data Service does not return responses.

[I] [S] sets and displays S register values. See "S-Register Commands".

#### 

sets the Mobile Data Service response format to words or numbers:

ATVO PR selects **numeric** response.

A □ V □ ■ R selects verbal response.
Default

#### ATX[n] -R

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

#### ATX0 PR

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

#### 

basic message set extended with CONNECT xxxx-yyyy.

#### ATX2 HR

basic message set extended with NO DIALTONE.

#### ATX3 PR

basic message set extended with BUSY.

AT  $\times$  4  $\blacksquare$ basic message set extended with all of the above. Default

#### ATZ R

resets the Mobile Data Service configuration to last saved command. Also clears the call if used when in Online Command Mode.

A C repeats last command.

Re-executes the last AT command string issued to the Mobile Data Service, including redialing a telephone number.

#### **Extended AT commands**

 A T & C [n] - R

 determines the Data Carrier Detect (DCD) behaviour:

AT&COJR sets DCD always ON.

AT & C1 FR sets DCD, only when connected. Default.

#### 

selects the Data Terminal Ready (DTR) behaviour:

AT & DO **F** the Mobile Data Service ignores DTR.

AT & D1 FR the Mobile Data Service enters Online Command Mode when DTR goes inactive.

AT & D2 HR the Mobile Data Service **clears call** when DTR goes inactive. *Default.* 

#### AT&F**J**R

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

#### AT&S[n] -R

selects the Data Set Ready (DSR) behavior:

AT & SO **F** sets DSR permanently ON.

AT & S1 - R sets DSR ON when satellite link is established. *Default*.

AT & V PR displays stored configuration profile.

AT & W = R saves active configuration profile.

(May be recalled using  $A \square \square \square$ ).

#### Extended AT+G, +I and +W commands

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

AT + GCAP = R displays capabilities supported by FELCOM 70

AT+GMI **P** displays manufacturer identification.

AT + GMM = R displays equipment identification.

AT (	+ G M	R HR
------	-------	------

displays software revision.

AT + ICF = [n<format>] [,m<parity>] = R specifies the local serial port start-stop (asynchronous) character framing between the PC and the FELCOM 70.

AT + I C F ? HR

displays current settings.

#### $AT + ICF = ? \blacksquare R$

displays available settings.

Format reference number n: 1 = 8 data bits, 2 stop bits Default 3 = 8 data bits, 1 stop bit 4 = 7 data bits, 2 stop bits 5 = 7 data bits, 1 parity bit, 1 stop bit Parity reference number m: 0 = odd1 = even

**2** = mark

Default 3 = space

Example:

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

#### AT + I C F =

[**n**<WP-to-PC>] [,**m**<PC-to-WP>] : **P** specifies the local flow control between the PC and FELCOM 70.

#### AT + I C F ? FR

displays current settings.

#### AT + ICF = ?

displays available settings.

FELCOM 70 - to - PC, reference number n :

- **0** = no flow control
- **1** = XON/XOFF (software flow control stripped of control characters.)
- *Default* **2** = RTS (hardware flow control)
  - 3 = XON/XOFF (software flow control with pass-through of control characters.)
- PC to FELCOM 70, reference number m :
  - **0** = no flow control
  - **1** = XON/XOFF (software flow control)
- *Default* **2** = CTS (hardware flow control)

AT HIPR = [r+(PC-to-WP rate)] - R

specifies the data rate at which PC – FELCOM 70 interface accepts commands.

#### AT + I P R ? HR

displays current settings.

#### $AT + IPR = ? \blacksquare R$

displays available settings. Selectable data rates, r : 1200 bps 2400 bps 4800 bps 9600 bps 19200 bps 38400 bps

Example:

AT + I P R = 9600 **-** R

specifies a data rate of 9600 bps between the PC and the FELCOM 70 CU.

indicates which PCCA standard the Mobile Data Service complies with.

AT + WLESEXX PR selects Net Provider (XXX = LES access code)

Example: AT +WLES=004 HR selects Telenor.

AT + WNERADTE R allows configuration and monitoring of the FELCOM 70.

Ctrl F switches font.

Ctrl X reverts to AT-command mode.

AT + WNERAMPDSMSN= 1234567890....

Up to 22 digits are supported and the value is immediately saved to flash. The value is not used and is only provided for information.

AT + W N E R A R E S E T 🖵 R

gives the response: OK or ERROR.

Takes 3-5 secs to complete burn; further 15 secs until the terminal is up again. The command causes the terminal to burn all its semipermanent data to flash, e.g. the Bulletin board, and then restart.

AT +WNERAPOWRTERM=0

causes the terminal to enter standby state as if the power key has been pressed and held.

AT +WNERAPOWERTERM=1

causes wake up from standby state as if the power key has been pressed and held.

#### S-Register commands

S-registers are special memory locations in FELCOM 70 for storing specific configuration and operating parameters.

AT SO =  $[n] \downarrow R$ specifies automatic answer at the  $n^{th}$  ring. 0=OFF, 1-255=ON.

ATSO = <n> IR sets value of register.

ATSO? R displays current value of register.

ATSO = 0 PR turns automatic answer **OFF**. *Default*.

ATS0 = 1 PR answers after 1 ring. the Mobile Data Service will terminate incoming calls after **95 secs**.

#### ATS2 = [n] - R

stores the ASCII decimal code for the escape character. Authorized codes within: 0 to 255.

 $n \ge 128$  disables the escape sequence.

ATS2 = <n> IR sets value of register.

AT S2 ? **P** displays current value of register.

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

AT S3 [[n] [R] stores the ASCII decimal code for the carriage return character. Authorized codes within: 0 to 127.

AT S3 = <n> = R sets value of register.

#### AT S 3 ? **J** R

displays current value of register.

AT S3 = 13 **P** sets the CARRIAGE RETURN code to **13** (**P** -key). *Default.* 

#### ATS4 = [n] - R

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

# ATS4 = [n] - R

sets value of register.

#### ATS4?

displays current value of register.

AT S4 = 10 PR sets the LINE FEED code to 10. Default.

#### $ATS5 = [n] \rightarrow R$

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

## ATS5 = <n> JRS

sets value of register.

#### AT S 5 ? 🚽 R

displays current value of register.

AT S5 = 8 - R sets the BACK SPACE code to 8. Default.

#### 

sets delay before examining DTR (108/2) after dialing and when online with a mobile-to-net call. Range: 0-255 hundredths of a second.

#### AT S25 = <n> JR

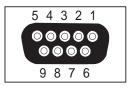
sets delay value.

AT S 2 5 ? : **P** displays current delay value.

ATS25 = 5  $\blacksquare$  R sets delay to 5 (corresponding to 50 milliseconds). *Default.* 

# 6.3.8 DTE interface

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



Signal source DTE means the signal goes from the PC to FELCOM 70.

Signal source DCE means the signal goes from FELCOM 70 to the PC.

#### Signal descriptions

#### **102 Signal Ground**

Digital ground, return line.

#### 103 Send Data

Data transmitted from DTE (PC) to DCE (FELCOM 70).

#### 104 Receive data

Data Received from DCE (FELCOM 70) to DTE (PC).

#### 105 Request To Send

OFF requests DCE (FELCOM 70) to suspend transmission to DTE (PC).

ON requests DCE (FELCOM 70) to resume transmission to DTE (PC).

#### 106 Clear to send

OFF indicates that DCE (FELCOM 70) cannot accept data from DTE (PC).

ON indicates that DCE (FELCOM 70) is prepared to accept data from DTE (PC).

#### 107 Data Set Ready

Signal from FELCOM 70 that when ON indicates that a data call setup is in progress.

#### **108 Data Terminal Ready**

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

#### **109 Receive Signal Indicator**

Signal from FELCOM 70 that when ON indicates that connection is established and received data will be delivered on circuit 104, Received Data.

#### **125 Ring Indicator**

Signal from FELCOM 70. This signal is used in the Auto answer OFF mode and when ON indicates that an incoming call is in progress. The signal will go OFF when the call is answered by the PC by turning circuit 108 Data Terminal Ready ON.

# 6.4 Mobile Data Service (USB)

# 6.4.1 PPP modem via USB

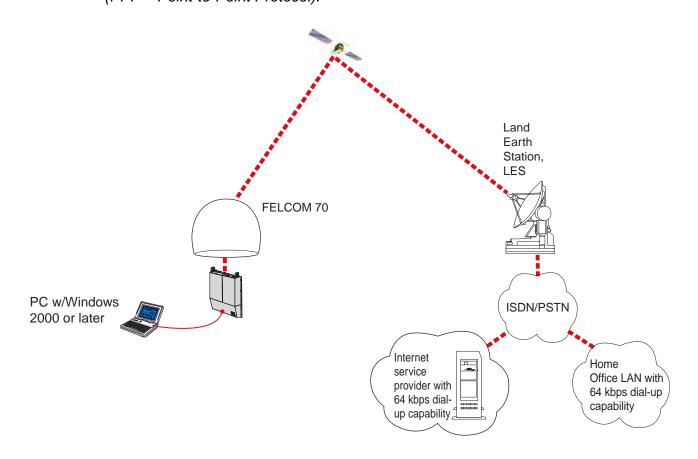
# **Introduction**

The **Mobile Data Service** complies with the communication protocol defined by the Inmarsat Fleet77 system.

The transmission data rate over the satellite link is 64 kbps.

The **Mobile Data Service** offers 64 kbps connection to the international ISDN/PSTN network.

The service is suitable for applications such as high-speed file transfer, store-and-forward video, e-mail and internet. (*PPP = Point-to-Point Protocol*).



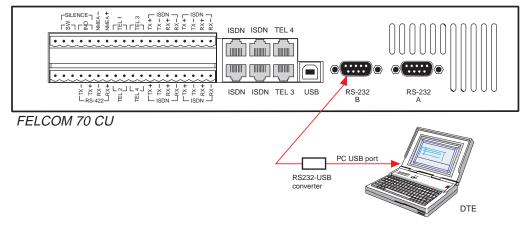
## RS232 Connection via USB port

Procedure:

- 1 Insert the driver that is attached to a commercial RS232-USB converter, to the PC.
- **2** Connect the USB port of the PC and the serial port of the FELCOM 70 with a commercial RS232-USB converter.

Windows opens the Found New Hardware Wizard.

3 Install the driver, referring to the instruction attached to the driver.



Note that the explanation of AT commands are exactly same as RS-232 Mobile Data Service. If necessary, refer to paragraph 6.3.7 AT commands.

## 6.4.2 PC setup

## For Windows XP

Ensure that SAILOR vtLite is closed. If connecting USB cable, restart the PC and the FELCOM 70.

1 The **Found New Hardware Wizard** opens when the USB cable has been connected.

Check "Install from a list or specific location (Advanced)" and click Next.

Found New Hardware Wiz	ard
	Welcome to the Found New Hardware Wizard
S.	This wizard helps you install software for:
	FELCOM 70 F1 USB Modem
	If your hardware came with an installation CD or floppy disk, insert it now.
	What do you want the wizard to do?
	<ul> <li>Install the software automatically (Recommended)</li> <li>Install from a list or specific location (Advanced)</li> </ul>
	Click Next to continue.
	< Back Next > Cancel

- 2 Check "Don't search. I will choose the driver to install". *Click Next*.
- **Note:** Setting up is only necessary to do once. For future connections, go directly to **Initiate a call**.

eas	e choose your search and installation options.
0	Search for the best driver in these locations.
	Use the check boxes below to limit or expand the default search, which includes loc paths and removable media. The best driver found will be installed.
	E. Seen Interneyable media (Bropg, CD/1004, 1)
	riel Indude Am locanorminie reguli
	E-USE_UPINESS WHILE P Elayse
0	Don't search. I will choose the driver to install.
	Choose this option to select the device driver from a list. Windows does not guaran the driver you choose will be the best match for your hardware.
	are arrei yeu eriesse will be the best mater her yeur hardware.
	< Back Next > Car
	< Back Next> Car

3 In the **Install new modem** window *click* **Have** *disk*. Click **Browse** and specify a USB driver folder in the CD. Open **USB4SAILOR,INF** and click **OK**.

Install New Please s	Modem elect the modem you want to in	nstall.	
	t the manufacturer and model of an installation disk, click Have		dem is not listed, or if you
Show comp	atible hardware		
Models			
		_	
			$\mathbb{M}$
	er is not digitally signed!		Have Disk
<u>Teil me wr</u>	iy griver signing is important		
		< Back	Next > Cancel
Install	From Disk	< Back	Next> Cancel
Install	From Disk Insert the manufactur make sure that the co	er's installation disk, a	nd then
Install	Insert the manufactur	er's installation disk, a	nd then DK
Install	Insert the manufactur	er's installation disk, a	nd then DK
Install	Insert the manufactur	er's installation disk, a prrect drive is selected	nd then DK

4 Select the **SAILOR USB MODEM**. Click **Next**. Some message appears, but ignore it and click **Continue**. Then **Finish** to complete the installation.

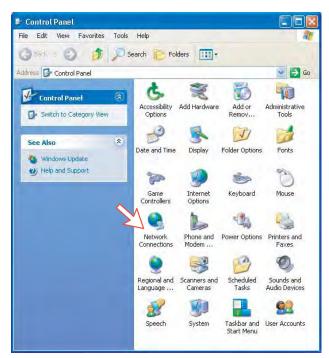


5 Opening the **Phone and Modem Options** window confirms the established modem connection. Select SAILOR USB MODEM. Click the **Advanced** tag and enter command "AT+WS45=1."

The following modems are in:	stalled
	Nera Generic USB Modem Properties
Modem	General Modem Diagnostics Advanced Driver
SAILOR USB MODEM	Extra Settings Extra initialization commands: AT+W/S45=1
	37

**Note:** The setup for data transfer to the FURUNO terminal is based on the Windows XP default parameters:

8 data bits - no parity - 1 stop bit - flow ctrl: Hardware Clicking **Properties** allows checking the parameters. 6 Open the **Control Panel** on the PC and double-click the **Network Connections** icon.

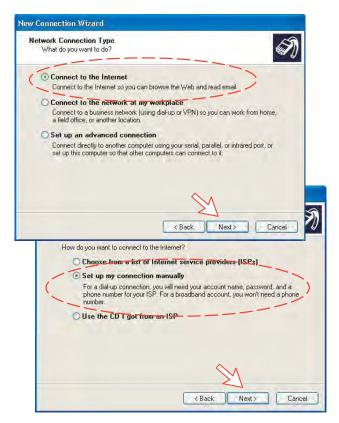


7 Click Create a new connection to open the New Connection Wizard. *Click Next.* 



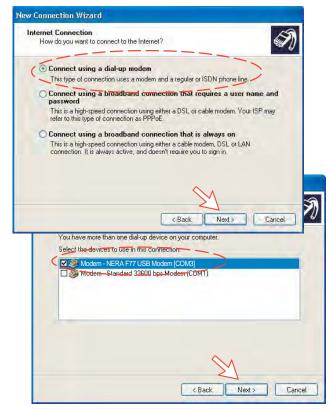
8 Check Connect to the Internet. *Click Next*. Check Set up my connection manually.

Click Next.



9 Check Connect using a dial-up modem.

Click Next. Check "Modem - NERA F77 USB Modem". Click Next.



10 Enter the name for the connection e.g. Mobile Data Service via USB. *Click Next*.

Enter phone number (through some Net Providers, dialing **28** automatically connects you to the ISP – Internet Service Provider). *Click Next*.

	on Wizard
Connection What is I	Name he name of the service that provides your Internet connection?
Type then	ame of your ISP in the following box.
	Na Service via USB
The name	you type here will be the name of the connection you are creating
The hand	you upper note will be the manne of the commedition you are creating
	$\sim$
	2
	< Back Next> Cancel
/	Type the phone number below.
(	Phone number:
	28
	You might need to include a "1" or the area code, or both. If you are not sure you need the extra numbers, dial the phone number on your telephone. If you
	hear a modern sound, the number dialed is correct.
	hear a modern sound, the number dialed is correct.
	hear a modern sound, the number dialed is correct.
	hear a modern sound, the number dialed is correct.
	hear a modern sound, the number dialed is correct.
	hear a modern sound, the number dialed is correct

11 Check Anyone's use, and click Next.



**12** Enter name and password for the connection.

Uncheck Turn on Internet Connection Firewall for this connection. Click Next.

Complete the New Connection, click Finish.

	rmation ount name and password to sign in to your Internet account:	
	name and password, then write down this information and store it in a ve forgotten an existing account name or password, contact your ISP.)	
User name:	FURUNO	
Password:		
Confirm password:	******	
Use this account this computer	name and password when anyone connects to the Internet from	
	Cannection Firewall for this connection           < Back         Next >         Cancel           create the tollowing connection.	
	MPDS	
K	Marke this the default connection     Share with all users of this computer     Use the same user name & password for everyone     The connection will be saved in the Network     Connections faultier     Add a shortcut to this connection to my desktop     To create the connection and close this wizard, click Finish	

#### For Windows Vista

Ensure that the SAILOR vtLite is closed.

1. When connecting USB cable, the **Found New Hardware** window appears. Click the **Locate and install driver software**.



If the User Account Control screen appears, click the Continue button.



2. The Found New Hardware – SAILOR 77 Fleet screen appears. Click the Don't search online.

**Note:** Setting up is only necessary to do once. For future connections, go directly to **Initiating an MPDS** call. When installing the single USB driver, the dual USB driver is installed.

AIIC	w Windows to search online for driver software for your SAILOR 77 Flee
+	Yes, always search online (recommended)
	Windows will automatically search for the latest drivers and applications for your hardware an download them to your computer.
+	Yes, search online this time only
	Windows will search for the latest drivers and applications for this device and download them your computer.
	L.
•	Don't search online
	Your device may not function properly until you get the latest software.

3. Insert the CD.



The driver software is installed.

G g Found New Hardware - SAILOR 77 Fleet+	
Installing driver software	
	X

4. The Windows Security wizard appears. Click the Install this driver software anyway.

)	Windows can't verify the publisher of this driver software
	Don't install this driver software
	You should check your manufacturer's website for updated driver software for your device.
	Install this driver software anyway
	Only install driver software obtained from your manufacturer's website or disc. Unsigned software from other sources may harm your computer or ste

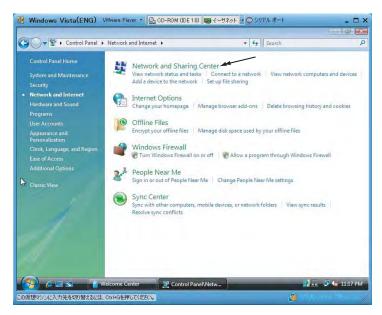
5. Open the Phone and Modem Options and confirm the modem connection. Select the SAILOR USB MODEM and click the Properties.

Click the **General** tab in the **SAILOR USB MODEM Properties** window and click the **Change settings**. Click the **Advanced** tab and type "**AT+WS45=1**" in the **Extra initialization command** box. Click the **OK** button.

Dialing Rules Modems Advanced	
The following modems are inst	talled:
Modem	Attached To
SAILOR USB MODEM	COM5
	ß
Add	Remove Propertie

SAILOR USB MODEM Properties	SAILOR USB MODEM Properties	? X
General Modem Diagnostics Advanced Driver Details	General Modem Diagnostics Advanced Driver Details	
Standard 33600 bps Modem	Extra Settings Extra initialization commands:	
Device type: Modems	AT+WS45=1	
Manufacturer: (Standard Modem Types) Location: Unknown	Initialization commands may lead to the exposure of sensitive information in the modem log. Consult your modem's instruction manual for more details.	
Device status This device is working property.		
		6
	Advanced Port Settings	
Change settings	Change Default Preferences	
OK Cancel	ОК	Cancel

6. Open the Control Panel and click the Network and Internet and the Network and Sharing Center in that order.



7. Click the Set up a connection or network to open the Set up a connection or network window.

			0 9 20
C . Vetwork and Internet	Network and Sharing Center	+ fg Search	P
Taska View computers and devices	Network and Sharing Center		0
Connect to a network			View-full might
Set up a connection or network	- 🙇 -*	- 0	
Manage network connections Diagnese and reput	FURUNIO-PC (This computer)	Internet	
	Not connected		
	You are currently not connected to an Connect to a network	y networks	
-			
1			
Sevalu		12	
Interinet Options			
Windows Frenkall			

8. Select the Set up a dial-up connection and click the Next button.

-	
1	Connect to the Internet Set up a wireless, broadband, or dial-up connection to the Internet.
m	Set up a wireless router or access point Set up a new wireless network for your home or small business.
	Set up a dial-up connection
Q	Connect through a dial-up connection to the Internet.
1	Connect to a workplace Set up a dial-up or VPN connection to your workplace.
	act up a dan up of yr yr connection to your workplaces

9. Select the SAILOR USB Modem and click the Next button.

Which modem do you want to use?	
Standard 33600 bps Modem	
SAILOR USB MODEM Modem	
	N

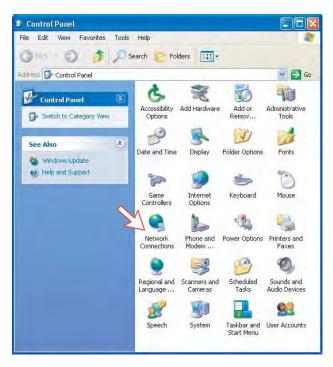
**10. Enter telephone** number (access code) "\*\* 2 8 # ", user name, password and connection name. Clear the check box **Allow other people to use this connection** and click the **Connect** button.

Type the information f	rom your Internet service provide	er (ISP)
Dial-up phone number:	28#	Dialing Rules
<u>U</u> ser name:	FURUNO	
Password:	••••	
	Show characters           Remember this password	
Connection <u>n</u> ame:	Dial-up Connection	
👘 🕅 Allow other people to This option allows an	use this connection yone with access to this computer to use th	is connection.
I don't have an ISP		₽.

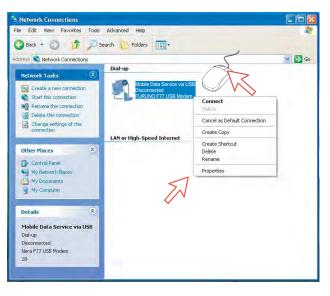
# 6.4.3 Checking default settings

## For Windows XP

1 Double-click Network Connections in the Control Panel.



2 Right-click the **Mobile Data Service via USB** dial-up connection and click **Properties**.



- 3 Confirm settings in the Mobile Data Service via USB Properties window:
  - "Modem SAILOR USB MODEM [COM9]".
  - Phone number: 28

## Click Configure.

	g: em - SAILOR USB MODE em - Standard 33600 bp		8
<		5	+
Phone num		s Configure	]
🗌 Use di	aling rules	Dialing Rules	
Show ico	n in notification area wh	nen connected	

4 In the **Modem Configuration** window, check that the **Maximum speed (bps)** is set to **115200**.

Click **OK** 

Modem Configuration	4		2 🔀
SAILOR USB MO	DEM [COM9]		
Maximum speed (bps):	115200		
Modern protocol			
Hardware features			
Enable hardware flow	control		
🛃 Enable modem error d	control		
Enable modem comp	ression		
Show terminal window			
Enable modem speaker			
	1	ОК	Cancel
		51	

5 In the Mobile Data Service via RS-232 Properties window, click Networking and check that Internet Protocol (TCP/IP) is selected. *Click Settings.* 

	Networking	Advan	iced
Type of dial-up server I am ca	alling:		
PPP: Windows 95/98/NT4/	2000, Interne	F .	
This cannection uses the foll	owing items:		Settings
Tr Internet Protocal (TC			
GoS Packet Schedu     GoS Packet Schedu     Generation of the schedu     Generation of the schedu of the sche	ng for Microsc etworks	ft Netw	
Install	Urinnitall		Properties
Description			

6 In the **PPP Settings** window, **Negotiate multi-link for single link connections** should be un-checked.

PPP Settings	?
Enable LCP extensions     Enable software compression     Negotiate multi-link for single link connections )     OK	Cancel

#### For Windows Vista

1. Open the Control Panel and click the Network and Internet, the Network and Sharing Center and Manage network connection in that order.



- 2. Right-click the **Dial-up Connection** icon that you created in the Dialup and click the **Properties**.
- 3. Confirm the setting contents in the **Dial-up Connection Properties** window.
  - Modem: SAILOR USB Modem (COM5)
  - Phone number: 2 8 #

Click the **Configure** button.

ieneral Optio	ns Security Networkin	g Sharing
Connect using	:	
	n - SAILOR USB MODEM	
Moder 🖉	n - Standard 33600 bps N	lodem (COM4)
Tel Mil des rees	Test and the first	
	call the same numbers	Configure
Dial only fir	st available device	
Phone numb	er	
Area code:	Phone number:	
	- 28#	Alternates
Country/re		
Country To	ioncode: M	4
U <u>s</u> e dia	ing rules	Dialing <u>R</u> ules

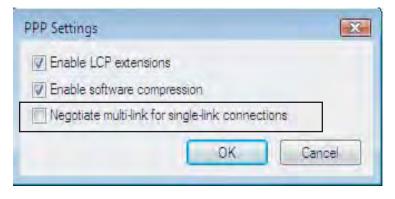
4. In the Modem Configuration window, confirm that the Maximum speed (bps) is set to 115200 and click the OK button.

Modem Configuration	X
SAILOR USB MOD	DEM (COM3)
Maximum speed (bps):	115200 🔹
Modem protocol	
Hardware features	ontrol
IV Enable mo <u>d</u> em speaker	OK Cancel

5. Select the **Options** tab in the **Dial-up Connection Properties** window and click the **PPP Settings**.

General Options Security Network	sing Sharing
Dialing options Display progress while connecti	ng
Prompt for name and password.	
Include Windows logon domain	
Prompt for phone number	
Redialing options	
<u>R</u> edial attempts:	3
Time between redial attempts:	1 minute 💌
Idle time before hanging up:	20 minutes 🔹 👻
Idl <u>e</u> threshold:	*
Redial if line is dropped	
DDD California	
PPP Settings	
FFF Settings	

6. Confirm that the check box for **Negotiate multi-link for single-link** connections is clear in the **PPP Setting** window and click the **OK** button.



## 6.4.4 Connecting to server

## For Windows XP

#### Initiate a call

Double-click the RS-232 port icon in the Dial-Up Networking folder.

S Network Connections		
File Edit View Favorites Tool	s Advanced Help	21
🌀 Back + 🕥 🎁 🔎	Search 🌔 Folders 🛄 -	
Address 🔍 Network Connections		💽 🔁 Go
Network Tasks	Dial-up	
Create a new connection	Mobile Data Service via USB Disconnected Nera FZ7.USB.Modem	
See Also		
<ul> <li>Network Troubleshooter</li> </ul>	· >>	
Other Places		
Control Panel		
My Network Places		
My Computer	LAN or High-Speed Internet	
Details		
Network Connections System Folder		
1		

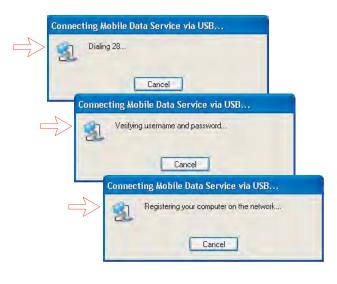
**Note:** The SAILOR vtLite program must be closed down prior to dialing up the server.

Enter the **User name** and **Password** provided for the specific server connection. Click **Dial** to establish the connection to the server. See **Connection in progress** on next page.

Connect Mob	ile Data Service via USB	? 🛛
User name:	FURUNO	
Password:	[To change the saved password, c	lick here]
O Me only	user name and password for the followi who uses this computer 28 Cancel Properties	ng users+

### **Connection in progress**

1





*Open the browser/program to be used on the connection.* 

#### **Connection status**

Appears when right-clicking the **Mobile Data Service via USB** dial-up icon and **Status**, or clicking the PC icons in the lower right corner of the screen.

Connection		
Status:		Connected
Duration:		00:01:21
Speed:		115.2 Kbps
Activity	Sent — 🗐	Received
Bytes:	1 654	329
Compression:	0%	0%
Errors:	0	0

**Note:** Click **Disconnect** when shutting down the call. It is not enough to close the browser alone.

#### For Windows Vista

#### Initiating an dial-up connection call

Open the **Control Panel** and double-click the **Network and Internet**, the **Network and Sharing Center, Manage network connection** and **Dial-up Connection** in that order.

**Note:** The SAILOR vtLite program must be closed down prior to dialing up the server. If provided for the specific server connection, enter the **User name** and **Password**. Click **Dial** to establish the connection to the server. See **Connection in progress**.

Connect Dial-u	ip Connection1	X
<u>U</u> sername:	FURUNO	
Password:	•••••	
Me o <u>nt</u>	iser name and password for the follo / who uses this computer	wing users:
Dial:	28#	•
Dial	Cancel Properties	<u>H</u> elp

## **Connection in progress**

Display on the PC screen

Connecting to Dial-up	Connection1
Dialing 28#	
Connecting to Di	al-up Connection1
Verifying	user name and password Connecting to Dial-up Connection1
	Registering your computer on the network
	Cancel

### **Connection status**

The screen appears when clicking the **View Status** in the **Network and Sharing Center**.

eneral Details		
Connection		
IPv4 Connectivi	ty:	Internet
IPv6 Connectivi	ty:	Limited
Media State:		Connected
Duration:		00:00:53
Speed:		115.2 Kbps
Details		
Activity		1.
	Sent —	Received
Bytes:	5,847	5,237
Bytes: Compression;	5,847 0 %	5,237 C 0 %
		N
Compression:	0 %	6 0 %

**Note:** Click **Disconnect** when shutting down the call. It is not enough to close the browser alone.

Problem	Probable cause	Action
1. No contact with	Wrong setup of	Check cable connection.
modem:	Communication Unit.	<ul> <li>Disconnect USB cable, and reconnect.</li> </ul>
		<ul> <li>On PC, open Phone and Modem options and check whether USB Modem driver is connected to COM port. <i>If not:</i></li> </ul>
		<ol> <li>Remove Modem in Phone and Modem options.</li> <li>Remove previous USB installations via Control Panel&gt;System&gt; Hardware&gt;Device Manager. Double-click universal serial Bus Controller and uninstall the USB universal Host Controller. Warning! Remove all USB drivers.</li> <li>Start again from page 6-71.</li> </ol>
2. Cannot find Network Connection:	Network connection not installed.	<ul> <li>Contact your PC vendor to get the software.</li> </ul>
3. Connection unsuccessful:	Other end is not an ISDN connection.	<ul> <li>It is not possible to use the USB port if the modem on the receiver side is not an ISDN modem.</li> </ul>
	Wrong connection details	<ul> <li>Check the phone number, user name and password with your service provider.</li> </ul>
		<ul> <li>Check whether the 64kbps data UDI is commissioned</li> </ul>
4. Cable length	Guaranteed length: 1.5 m	Recommended maximum length: 3 m
5. Using SAILOR vtLite via USB		• Remove SAILOR vtLite and USB drivers, see problem 1.
fails		Reinstall SAILOR vtLite.
6. Disconnects after some time	Wrong setting in dialup	Check properties>options>idle time before hang up.
7. All dialups dial in MPDS mode		<ul> <li>Use AT+WS45=1 to set port back to normal mode</li> </ul>
8. Username and password illegal	Some PCs always require user name/password	<ul> <li>Enter any name/password to ensure a successful call.</li> </ul>

# 6.4.5 Troubleshooting

# 6.5 Mobile Data Service (ISDN)

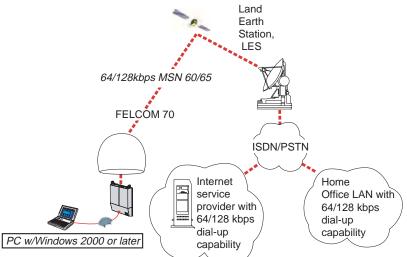
# 6.5.1 PPP modem via ISDN

The **Mobile Data Service** complies with the communication protocol defined by the Inmarsat Fleet system.

The transmission data rate over the satellite link is 64/128 kbps for FELCOM 70. The **Mobile Data Service** offers connection to the international ISDN/PSTN network.

The service is suitable for applications such as highspeed file transfer, store-and-forward video, e-mail and internet. (PPP = Point-to-Point Protocol).

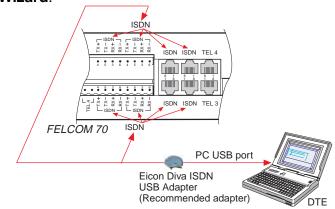
**Note:** 128 kbps ISDN Mobile Data Service is optional function. To install this function, consult with FURUNO dealer.



# 6.5.2 Connecting up

## Procedure for ISDN-to-USB installation

- 1. Connect the USB cable between the ISDN USB adapter and the PC USB port.
- Connect the ISDN cable between the ISDN USB adapter and the ISDN port on the communication unit of the FELCOM 70. We recommend Eicon Diva ISDN USB Adapter.
- 3. Turn on the FELCOM 70 and PC. Windows opens the **Found New** Hardware Wizard.



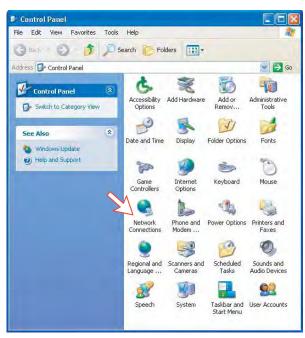
# 6.5.3 PC setup

#### For Windows XP

#### Setting up a connection

Ensure that SAILOR vtLite is closed.

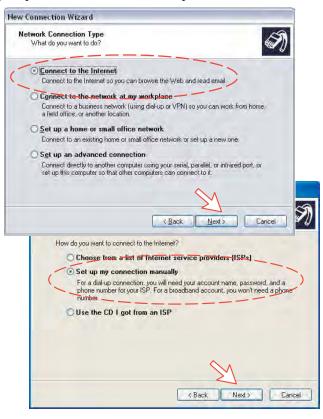
1. Open the **Control Panel** on the PC and double-click the **Network Connections** icon.



2. Click Create a new connection to open the New Connection Wizard. Click Next.



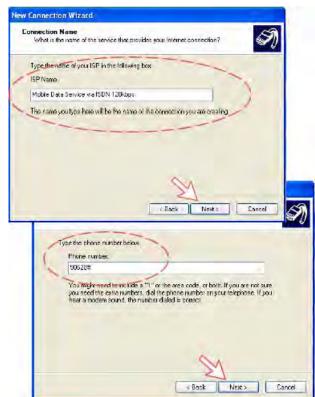
- 3. Check **Connect to the Internet**. Click **Next**.
- 4. Check Set up my connection manually. Click Next.



 Check Connect using a dial-up modem. Click Next. Check "ISDN channel Eicon DIVA 2.01 S/T (USB)" for 64 kbps transmission, or "All available lines multi-linked" for 128 kbps (example). Click Next.

d to the internet?
-up modem uses a modem and a regular of ISDN, phone in a
odband connection that requires a user name and
nection using either a DSL of cable modem. Your ISP may rection as PPPoE
adband connection that is always on weeten using ether a sable modern. DSL or LAN active, and doern't require you to agoint.
~~
(Back Next) Dancel
one datup device an your compilier
Hise méris connection:
ISDN free multificated
ref - Encon Divid 2 of 5/1 (USB)
rel – Eicon DIVA 2 01 S/T (USB) Indard 33600 box Modem (CDM1)
nda biodob bay Modern (com r)
nija i odobi bili Moden (com i )

 Enter the name for the connection e.g. Mobile Data Service via ISDN 128 kbps (example). Click Next.
 Enter phone number (through some Net Providers, dialing 90628# automatically connects you to the ISP-Internet Service Provider).
 When set up for 64 kbps transmission, dialing 28# connects you to the ISP. Click Next.



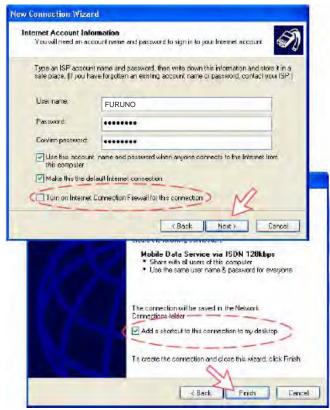
7. Check My use only, and click Next.

Connection Availability	
TOUCAN Make the new connet	ction available to any user or only to yourself.
A connection that is created for available unless you are logged	jaar toe only a saved in your user each unkend is not on
Create this connection for:	
O Anyone's use	
My use only	
	2
	>./

8. Enter name and password for the connection.

Uncheck **Turn on Internet Connection Firewall for this connection**. Click **Next**.

Complete the New Connection, click Finish.



 Click **Dial** to establish the connection to the server (the example applies to 128 kbps transmission). See **Connection in progress** later. If required, click **Properties** to check the **PPP Settings**.

Connect Mob	ile Data Service via ISDN 128kbps 🕜 🔀
User name:	FURUNO
Password:	[To change the saved password, click here]
O Me only	user name and password for the following users:
Diat	90628#
Dial	Cancel Properties Help

10. In the **Mobile Data Service via ISDN 128 kbps Properties** window, click the **Networking** tab and check that **Internet Protocol (TCP/IP)** is selected. Click **Settings**.

General Ontions Secu	e via ISDN 128kbps Prope 🕜 🔰
General Options Seco	ing realized and a second
Type of dial-up server I a	am calling:
PPP: Windows 95/98/1	NT4/2000, Internet 😪
This connection uses th	e following items:
Tr Internet Protoco	
DoS Packet Sch	
T T The send Drives of	
File and Frinter s	Sharing for Microsoft Networks
Client for Microso	
Client for Microso	oft Networks
Client for Microso	oft Networks
Client for Microso Install Description Transmission Control I	Protocol/Internet Protocol. The default
Client for Microso Install  Description Transmission Control I wide area network pro	Protocol/Internet Protocol. The default
Client for Microso Install  Description Transmission Control I wide area network pro	Protocol/Internet Protocol. The default

11. In the **PPP Settings** window, **Negotiate multilink for single link connections** should be checked for 128 kbps transmission and unchecked for 64 kbps.



#### **Connection in progress**

Connecting Mobile Data Service via ISDN 128kbps
Dising 90628#
Cancel
Connecting Mobile Data Service via ISDN 128kbps
Verifying username and password
Cancel
Connecting Mobile Data Service via ISUN 128kbps
Registering your computer on the network
Cancel
Open the browser/program to be used on the connection.

## **Connection status**

The following status window appears when right-clicking the **Mobile Data Service via ISDN 128 kbps** dial-up icon in the **Network Connections** window and clicking **Status**, or clicking the PC icons in the lower right corner of the screen.

Mobile Data Servi	e via ISDN 12	8kbps Status 🕐 🛿
General Details		
Corriectori		
Statue:		Connected
Duration:		00:10.53
Speed:		128.0 Kbp+
Activity	Sent - 🛐	Received
Bytes	3 824	2155
Compression:	0x	0%
Enors	0	0
Properties Dis	sconnect	
~		Close

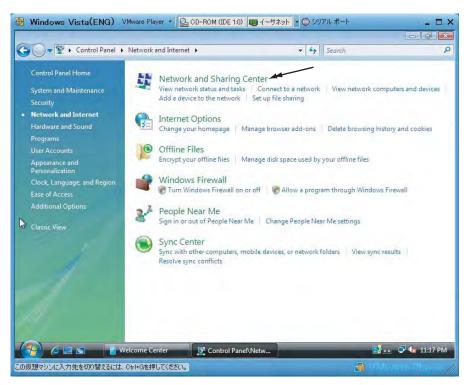
**Note:** Click **Disconnect** when shutting down the call. It is not enough to close the browser alone.

#### For Windows Vista

#### Setting up a connection

Ensure that the SAILOR vtLite is closed.

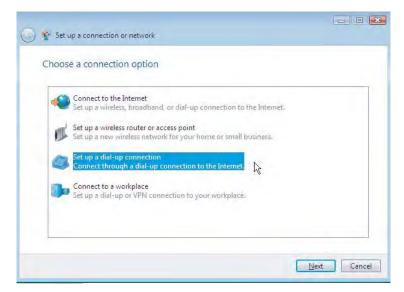
1. Open the **Control Panel** and click the **Network and Internet** and the **Network and Sharing Center** in that order.



2. Click the Set up a connection or network to open the Set up a connection or network window.



3. Select the Set up a dial-up connection and click the Next button.



4. Select the Dialogic Diva USB 2.01 S/T and click the Next button.

Set up a dial-up connection	
Which modem do you want to use?	
Standard 33600 bps Modem Modem	
SAILOR USB MODEM	
Dialogic Diva USB 2.01 S/T ISDN Channel	
Help me decide	X

5. Enter telephone number (access code) " 2 8 # ", user name, password and connection name. Clear the check box Allow other people to use this connection and click the Connect button.

Type the information f	rom your Internet service provi	der (ISP)
Dial-up phone number:	28#	Dialing Rules
<u>U</u> ser name:	FURUNO	
Password:	••••	
	Show characters	
Connection name:	Dial-up Connection	
🛞 🗐 <u>A</u> llow other people to	use this connection	
This option allows any	vone with access to this computer to use	this connection.

6. Open the Control Panel and click the Network and Internet, the Network and Sharing Center and Manage network connection in that order.

And the second second			
🕽 🔵 🖷 😨 🥊 Network and Inter	net  Network and Sharing Center	+ ++ Search	م ر
Tasks View computers and devices	Network and Sharing Center		6
Connect to a network			View full map
Set up a connection or network	1	6	
Manage network connections	FURUNO-PC		
Diagnose and repair	(This computer)	Internet	
	F Not connected		
	You are currently not connected to an	y networks.	
	Connect to a network		
1			
1			
Stellulto		12	
Internet Options			
Windows Freedall			

- 7. Right-click the **Dialup connection** icon that you created in the **Dialup** and click the **Properties**.
- **8.** Confirm the setting in the Dialup connection Properties window as follows. How to connect:
  - For 64 kbps: Check one box ISDN Channel Dialog Diva USB 2.01 ST.
  - For 128 kbps: Check two boxes ISDN Channel Dialog Diva USB 2.01 ST.

Phone number:

- For 64 kbps: 28#
- For 128 kbps: 90628#

Note that for 128 kbps, clear the check boxes for **All devices call the same numbers** and **Dial only first available device**.

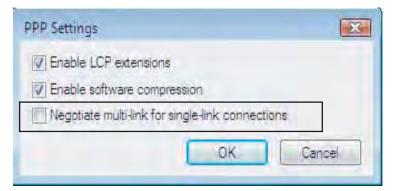
Dial-up Con	nection1 Properties	
General Optio	ns Security Networking	Sharing
Connect using		
Moder	n - Dialogic ISDN V.120 M channel - Dialogic Diva U	
	channel - Dialogic Diva U	the second se
1	m	
Al devices	call the same numbers	Configure
Dial only fin	st available device	
Phone numb	erfor Dialogic Diva USB 2 Phone number:	.01 S/T
Alea oute.	+ 90628#	Alternates
Country/rej	Issued	Arcillares
		-
Use dia	ing rules	Dialing <u>H</u> ules
	6	OK Cancel
	-	Contract M

9. Click the PPP Setting button.

Dialing options  Display progress while connecting  Display progress while connecting  Prompt for name and password, certificate, etc.  Include Windows logon domain  Prompt for phone number  Redialing options  Redialing options  Redial attempts:  Ima between redial attempts: Ima between redial attempts: Ima between redial attempts: Ima between redial attempts: Ima between redial attempts: Ima between redial attempts: Ima between redial attempts: Ima between redial attempts: Ima between redial attempts: Ima between redial attempts: Ima between redial attempts: Ima between redial attempts: Ima between redial attempts: Ima between	General	Options	Security.	Networking	Sharing	
Bedial attempts:     3       Time between redial attempts:     1 minute       Idle time before hanging up:     20 minutes       Idle threshold:     ✓       Image: Redial if line is dropped		isplay prog rompt for r nclude <u>W</u> ir	name and p ndows logo	assword, cert n domain	ificate, etc.	
Idle time before hanging up: 20 minutes  Idle threshold: Redial if line is dropped				Q	3	
Idig threshold:	Time	between	redial attem	npts:	1 minute	•
Redial if line is dropped	ldie t	i <u>m</u> e before	hanging u	ip:	20 minutes	•
	Idl <u>e</u> t	hreshold:				
PPP Settings	F	ledial if line	is dropped	đ		
	PPP	Settings	]			

**10.** For 64 kbps, clear the check box for **Negotiate multi-link for single-link connections**.

For 128 kbps, check the box **Negotiate multi-link for single-link** connections.



**Connection in progress** 



#### **Connection status**

The following status window appears when clicking the **View status** in the **Network and Sharing Center**.

	Details		
Connec	tion		
IPv	4 Connectivi	ty:	Local
IPve	5 Connectivi	ty:	Limited
Med	lia State:		Connected
Dur	ation:		00:01:36
Spe	ed:		128.0 Kbps
		Sent — 🜉	Received
Byte	es:	8,471	2,598
Com	pression:	0 %	0 %
Erro	irs;	0	1
	perties	Disconnect Dia	gnose

**Note:** Click **Disconnect** when shutting down the call. It is not enough to close the browser alone.

Problem	Probable cause	Action
1. No contact with modem:	Wrong setup of Communication Unit.	<ul> <li>Close vtLite if used via the USB port.</li> <li>Check cable connection.</li> <li>Disconnect USB or RS-232 cable, and reconnect.</li> <li>On PC, open Phone and Modem options and check whether USB Modem driver is connected to COM port. If not: <ol> <li>Remove Modem in Phone and Modem options.</li> <li>Remove previous USB installations via Control Panel &gt; System &gt; Hardware &gt; Device Manager. Double-click universal serial Bus Controller and uninstall the USB universal Host Controller. Warning! Removes all USB drivers.</li> <li>Start again from paragraph 6.5.3 PC</li> </ol> </li> </ul>
2. Connection unsuccessful:	Other end is not an ISDN connection.	<ul> <li>setup.</li> <li>It is not possible to use the RS-232 port if the modem on the receiver side is not an ISDN modem.</li> </ul>
	Wrong connection details	<ul> <li>Check the phone number, user name and password with your service provider.</li> <li>Check whether 64/128 kbps data UDI is commissioned.</li> <li>Using SAILOR vtLite, check configuration ir the Device Manager.</li> </ul>
3. CU fails to dial	Incomplete dialing	<ul> <li>Remember to add # as last digit, e.g. 28#.</li> <li>Instead of "#" try to enter 902 in front of the telephone number, e.g. 902 28#.</li> </ul>
4. Length of USB cable	Guaranteed length: 3 m	
5. Using vtLite/ SAILOR vtLite via USB fails		<ul> <li>Remove SAILOR vtLite and USB drivers, see problem 1.</li> <li>Reinstall SAILOR vtLite.</li> </ul>
6. Disconnects after some time 7. All dialups dial in	Wrong setting in Windows dialup	<ul> <li>Check properties &gt; options &gt; idle time before hang up.</li> <li>Use AT + WS45 = 1 to set port back to</li> </ul>
MPDS mode		normal mode
8. Username and password illegal	Some PCs always require username/ password	<ul> <li>Enter any name/password to ensure a successful call.</li> </ul>
9. Problem using vtLite via USB	Wrong COM port	<ul> <li>VtLite only autodetects COM1 – COM6. Select appropriate port manually.</li> </ul>
10. Unable to establish 128 kbps connection	Server rejects setup request for the 2nd 64 kbps B-channel. Occasionally, the server will not establish two connections (64 kbps) with the same username and password.	<ul> <li>Try again. If the problem persists, contact the Internet Service Provider.</li> </ul>

## 6.5.4 Troubleshooting

### 6. DATA COMMUNICATION

This page is intentionally blank.

# 7. TROUBLESHOOTING

# 7.1 Troubleshooting

# NOTICE

Do not apply paint, anti-corrosive sealant or contact spray to coating or plastic parts of the equipment.

Those items contain organic solvents that can damage coating and plastic parts, especially plastic connectors.

	Problem	Probable cause	Action
1	The FELCOM 70 CU power indicator does not light up.	The CU is not switched ON.	<ul> <li>Toggle the ON/OFF switch to ON.</li> <li>Switch off, wait 30 secs and switch back on.</li> </ul>
		Power is not connected.	<ul> <li>Check that the power cord is properly connected.</li> </ul>
2	The ISDN Handset display stays completely black.	The handset cord is not connected, damaged, or enumerating failed.	<ul> <li>Check that the handset cord is properly connected and inspect the cord.</li> <li>Power CU off/on.</li> <li>Disconnect cord from CU and connect it again.</li> </ul>
3	FELCOM 70 cannot find the satellite.	No or weak signals	<ul> <li>Check for correct position of the antenna. Check that no obstacles block the free sight to the satellite.</li> <li>The signal strength indicator should preferably exceed 550.</li> <li>Check that the coax cable is connected properly.</li> <li>Restart the search for any satellite, or try a satellite in a specific Ocean Region.</li> </ul>
4	FELCOM 70 functions abnormally.	Faulty or no power	<ul> <li>Turn off power and disconnect power cable.</li> <li>Connect power cable, and switch on again.</li> <li>Replace fuses, if needed, located near the power switch.</li> <li>Verify correct voltages to the CU: 100-240V AC.</li> </ul>

CU: Communication Unit

	Problem	Probable cause	Action
5	Unsuccessful call attempt	FELCOM 70 is not properly commissioned.	Call the Net Service Provider.
		The called party is busy. "Subscriber busy"	<ul> <li>If unsuccessful, wait for some time and try again.</li> </ul>
		appears in the display.	<ul> <li>Call another destination (another country).</li> </ul>
			Select another Ocean Region.
	messages appear in the		<ul> <li>Check that the correct Net service provider is shown in the display.</li> </ul>
		display: "No response from net" or "Not authorized for this service".	• The FELCOM 70 terminal is not properly commissioned. Check with the Net Service Provider or verily that "Network status information" function displays Region Registration: Successful.
		"Traffic log is full" message appears.	• Connect a PC to FELCOM 70 and read/print out the traffic log to allow further logging.
6	Received signal level displayed on the vtLite screen is normal (greater than 540) and "Ready for call" is displayed on the screen. However, any call among TEL/FAX/DATA can not be established.	Registration into the selected ocean region may not have been completed.	<ul> <li>Go to AT mode and reset system. Then, ocean region registration is automatically retried. (Refer to Addition 1 on this section.) However, for the system software version is REL3.3 or higher, the following status information is displayed below the" Ready for call" message.</li> <li>a) If region registration has not been completed, "Region registration failed and will be reattempted." is displayed.</li> <li>b) If region registration has been completed, "Region registration successful" Is displayed.</li> </ul>

	Problem	Probable cause	Action	
7	Problems with telefax or	Incomplete dialing	Remember to press "#" as last digit before starting transmission.	
	videophone	deophone	• Instead of "#", try to enter: 902 + 00 + country code + subscriber number.	
		Some of the Inmarsat Fleet (F55/77) service providers have not implemented the	<ul> <li>9.6kbit/s FAX call should be made through one of the following LESs (providers).</li> </ul>	
		9.6kbit/s FAX service. If you initiate the 9.6kbit/s	POR: 001, 002, 003, 004, 005, 006, 011, 012, 013, 060, and 868	
		FAX call through such a provider, the call is cleared immediately	IOR: 001, 002, 003, 004, 005, 006, 011, 012, 013, 022, 405, 555, and 868	
		after dialing a remote party fax number.	AORE & AORW: Not confirmed by FURUNO	
			Recommended LES: 001, 002, 003, 004, 005, 011, 012, and 013	
		System transmission delays	To change service provider, dial a number which "XXX (selected provider's number)*" is added at the begining of usual dialing number. (Refer to the example through 003 KDDI.)	
			Example: 003* 00 81 798 XX XXXX Country code	
			<ul> <li>The OFF-HOOK time 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>Try a different fax machine. Check that a Group 4 fax is used on the ISDN interface, and Group 3 fax via analogue interface. (e.g. TEL4).</li> </ul>	
8	No GPS	GPS alarm, or no GPS readout	• Wait for 15 minutes. The GPS may use up 15 minutes if FELCOM 70 has switched off for more than 6 hours. If not the case, GPS will report position to the SAILOR vtLite and handset display when the system logs on to the satellite.	

	Problem	Probable cause	Action
9	Problems with data communication	Wrong PC settings	<ul> <li>Check the PC program settings: speed 115200 bps, 8 data bits, 1 stop bit, no parity if RS232 is used (default settings in F77 CU).</li> <li>If shore/land side has an analogue modem, use 3.1 kHz service in FELCOM 70.</li> <li>If shore/land side has ISDN connection, use 64 kbps UDI service.</li> <li>If shore/land has 56 kbps UDI settes in America), use 56 kbps UDI data service.</li> <li>Contact the PC applications vendor for help.</li> </ul>
10	Routing of calls	MSN number not entered properly	Make sure that the MSN number entered into FELCOM 70 with the Device Manager, is also entered into connected equipment. Some ISDN devices can be programmed with multiple MSNs and will answer different services and MSNs.
11	Coast call can not be routed to a ISDN handset. (Claim from coast side): A shore-to-ship phone call is disconnected after reception of a few ring back tones.	ISDN handset has been set to "missing".	<ul> <li>On the vtLite screen of the PC terminal, click "Configure" and "Device Manager" to open the Device Manager. If a missing ISDN Handset and another Handset (available) are indicated in the dedicated Handsets column, change MSN number of the available Handset to the MSN number of the missing Handset. (Refer to Addition 2 in this section.)</li> </ul>

	Problem	Probable cause	Action
12	Problem with internal calls	Wrong dialing	<ul> <li>Check that you call the correct MSN number.</li> <li>Ex: If MSN is 01, dial "**01#" or "10301#" correctly.</li> </ul>
		Access Code is enable.	<ul> <li>To execute an internal call, dial as follows:</li> <li>1) Two methods for internal call from ISDN handset <ul> <li>Press</li> <li>Press</li> <li>Key and dial "** XX#" (XX: MSN).</li> </ul> </li> <li>Press is key and key in access code. After "Accepted Number then #" appears in the handset screen, dial "103XX#" (XX: MSN).</li> <li>2) Two methods for internal call from analog telepfone to ISDN handset</li> <li>Hook off handset and key in the access code. After hearing the dial tone, dial "** XX#" (XX: MSN).</li> <li>Hook off handset and key in the access code. After hearing the dial tone, dial "103XX#" (XX: MSN).</li> <li>Hook off handset and key in the access code. After hearing the dial tone, dial "103XX#" (XX: MSN).</li> <li>Hook off handset and key in the access code. After hearing the dial tone, dial "103XX#" (XX: MSN).</li> </ul>
13	Problem with call transfer		<ul> <li>Because analog telephone does not support "R" button, it is not possible to transfer call from analogue to ISDN.</li> </ul>
14	Problem with Distress	Distress Alarm	<ul> <li>Make sure that the ISDN Handset related to the Distress Alert Unit is properly connected.</li> <li>Test distress buzzer using the ISDN Handset function <b>Priority Call</b> or SAILOR vtLite.</li> </ul>
15	<i>No communication. Noisy at communication</i>	Displayed "All channel busy"	• Use AT command as follows to reset. "AT + WNERARESET [ENTER]"
16	Impossible to make MPDS or UDI call	Some LESs do not accept an MPDS or UDI call unless a requested call includes a user name and a password specified by respective LESs.	• To make an MPDS or UDI call, specify a Phone No., a Username and a Password for LES, referring to Table 1 (page 7-14), when creating a dial-up icon.

	Problem	Probable cause	Action	
17	Impossible to transfer E-mails on MPDS/UDI	MPDS/UDI call for an e-mail is not established if an LES, with which you are contracted for e-mail service, was not selected on the mobile terminal.	<ul> <li>i) Following one of three procedures below, set to the LES (service provider) with which you are contracted for e-mail service.</li> <li>a. Setting from Handset</li> <li>Press MENU key&gt; Select Set Network using ▲ or ▼ key&gt; Press OK key&gt; Select an applicable provider, using ▲ or ▼ key&gt; Press OK key.</li> </ul>	
			b. Setting from vtLite	
				Click <b>MENU</b> > Click "1. Set default Net provider"> Press right arrow key twice> Move cursor to an applicable provider> Click <b>Select</b> . -> Click <b>Save</b> > Click <b>YES</b> on the next menu screen to specify the same provider in all ocean regions.
			<ul> <li>c. In case of UDI call, the LES to be used can be selected by dialing number which "XXX (selected provider's number)*" is added at the top of a usual dialing number.</li> </ul>	
			Example: 003* 00 81 798 XX XXXX Country code KDDI International call	
			<ul> <li>ii) To transfer an e-mail over MPDS/UDI, the mobile terminal has to be registered with an LES which offer such service. See the notes of Table 2. Username and Password are issued by the LES (service provider) at registration. Then, Phone No., Username and Password for the LES must be set on the PC terminal by creating a dial-up icon, referring to Table 2.</li> </ul>	

	Problem	Probable cause	Action
18	Auto-log printing should not be set with no serial printer connected.	If, when no serial printer connected, the mobile terminal is set to either "a" or "b" below in the Traffic log menu of vtLite, the mobile terminal outputs a call log for serial printer after a call is terminated. This causes the serial port to become busy and MPDS/UDI calls or operations by vtLite become impossible (phone call is available). a. Enabled & Automatic printing to RS-232A; or b. Enabled & Automatic	• When a serial printer is not connected to RS-232A or B port of the mobile terminal, a traffic log has to be set to "Enabled" in the Traffic log menu of vtLite. If it has been set to either "a" or "b" left, it should be changed to "Enabled", by following the restoration procedure (See Addition 3 on page 7-16).

### Addition 1

When all communications are not established (TEL/FAX/DATA), do the following:

### Step 1: Starting up vtLite

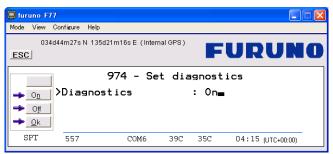
1. Start up vtLite.

G furuno F77	
Mode         View         Configure         Help           034d44m28s N         135d21m16s E (Internal OPS)         ESC	URUNO
KDD (003) in IOR	"Ready for call" indication
SPT 561 / Signal Lev	/el utc+00.00)

- 2. Confirm that Signal Level is 540 or higher.
- 3. Confirm that "Ready for call" is indicated.

### Step 2: Turning on Diagnostics

1. Click **Menu** button and enter "974" from PC terminal keyboard to display the following screen.



- 2. Click **ON** button and then click **OK** button.
- 3. Click **ESC** button four times to return to vtLite start-up screen.

📮 furuno 🖅	1				
Mode View (	Configure Help				
0340	144m28s N 135d21m	16s E (Interna	al GPS )	F	URUNO
<mark>€</mark> <u>B</u> ook ﷺ Log № <u>M</u> enu Seek	KDD (003) Spot beam Ready for	in IOF 7 call	ર		Elevation 07
SPT	559	COM6	39C	35C	04:17 (UTC+00:00)

### Step 3: Checking Forward ID

1. Click **Menu** button on vtLite start-up screen and enter "982" from keyboard to display the following screen.

📮 furuno F77							
Mode View Co	onfigure Help						
034d4 	4m27s N 135d21m	16s E (Intern	al GPS )	F	URU	NO	
Print C	01>Termin HW:	al for	ward 3F9		formation	Forw	/ard ID
<mark>→ <u>o</u>k v</mark> spt	System REL 28	3.0 Feb 20 COM6	<b>05</b> 390	35C	04:18 (UTC+00:	00)	

2. Confirm that the forward ID matches the last 6 digits of ISN inscribed on nameplate (for ex.: 66FE01\*\*\*\*\*).

### Step 4: Checking Network status

1. Click **ESC** button four times to return to vtLite start-up screen. Click **Menu** button on vtLite start-up screen and enter "989" from keyboard to display the following screen.



 Check the Region registration field. If all communications are not established, "Failed" may be indicated. If communication fails in spite of "Successful" is indicated, contact FURUNO.

### Step 5: Resetting in AT Mode

1. Click "Mode" on the menu bar and click "AT Mode".

D Mode View Configure	e Help	
Terminal <u>M</u> MI Test Interface <u>A</u> T Mode Modem Software Upgr. Offline	Ctrl+M Ctrl+T Ctrl+A	Click "AT Mode".
Exit		
SBS		

ESC FURUNO	
Send Rev	
Send Send (1) Enter "at+wnerareset"	
Base Quit Send	(2) Send key

- 2. Enter "at+wnerareset" (without quotation marks) at Send field.
- 3. Click **Send** button.

The Communication unit is reset (power OFF  $\rightarrow$  power ON) and the system is placed under "Ready for call" status a few minutes later.

4. Close SAILOR vtLite and start up SAILOR vtLite again to display the vtLite start-up screen.

Mode View Co	nfigure Help		
	<u> </u>	l 6s E (Internal GPS)	FURUNO
85% Log	KDD (003) Ready for		
SPT	561	COM6	04 16 (UTC+00:00)

5. Turn on Diagnostics, referring to step 2.

### Step 6: Checking Network status

- 1. Display "Network status" screen, referring to step 4.
- 2. Confirm that "Successful" is indicated at Region registration field.

### Addition 2

If incoming ringer tone does not sound on ISDN HANDSET, set as follows.

#### Step 1: Starting SAILOR vtLite

📮 furuno F77	
Mode View Configure Help	
034d44m28s N 135d21m16s E (Internal GPS)	FURUNO
KDD (003) in IOR Sog Menu Seek	
SPT 561 COM6	04 16 (UTC+00:00)

### Step 2: Opening Device Manager

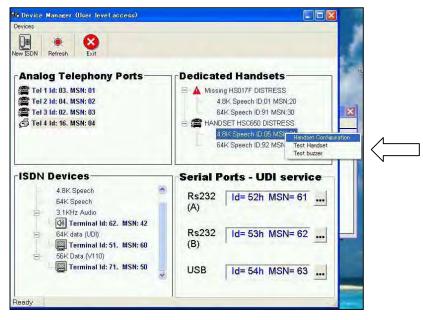
1. Click "Configure" and then "Device manager" to open the Device Manager.

Inruno F77           Mode         View         Configure         Help           Esc         03         Eorice manager         Ctrl+P           Print bandling         Ctrl+H         (Internal GPS )           Sound         Ctrl+H         (Internal GPS )		
Book       KDD (003) in IOR         Spot       beam 7         Menu       Seek         SPT       Manker (Ommer Level Access)	Elevation 09 (1) Click "+" to display detai	iled data.
New DDN Reference Control Cont	Dedicated Handsets A Bit Speech ID 01 MSN 20 Gitt Speech ID 05 MSN 21 Gitt Speech ID 02 MSN 21 Gitt Speech ID 92 MSN 21	<ul> <li>(2) Missing Hs****</li> <li>DISTRESS</li> <li>(3) Change MSN code of this</li> </ul>
ISDN Devices 3.11942 Audio Terminal Id: 62, MSN: 62 544 data (0.00) Terminal Id: 51, MSN: 60 564 Data (V10) Terminal Id: 66, MSN: 65 1104 data (V10) Terminal Id: 68, MSN: 66	Serial Ports - 64K UDI           Rs232         Id= 52h MSN= 61           (A)         Id= 53h MSN= 61           Rs232         Id= 53h MSN= 62           (B)         Id= 54h MSN= 63	handset to same value as that of missing handset (in this case, "20").

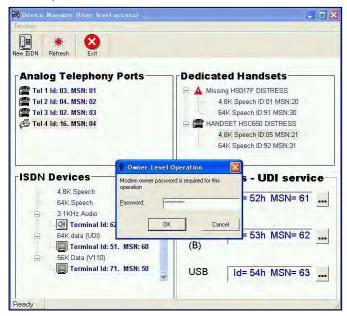
- 2. Click "+" at the Dedicated Handsets box to display detailed data.
- 3. If "Missing Hs\*\*\*\* DISTRESS" appears, go to step 3.

### Step 3: Changing MSN codes

1. Right-click on the handset to change and left-click "Handset Configuration".



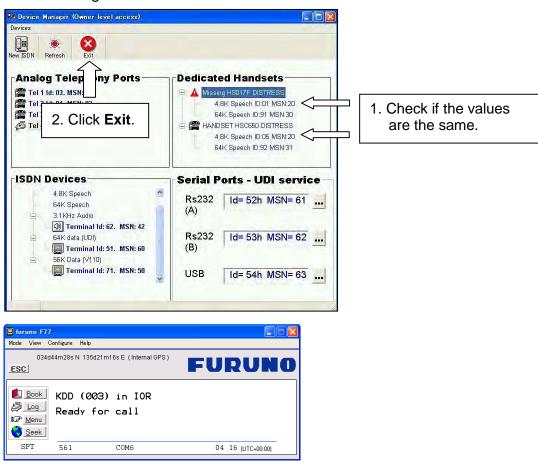
2. On the Password entry screen, enter owner's password (1234567890 by default) and click **OK**.



3. Change MSN code for 4.8k Speech and click **OK**.

Device Manager (Owner level access)	
New ISDN Refresh Exit Hands	at Setup Wizard
Tel 1 Id: 03. MSN: 01 control Tel 2 Id: 04. MSN: 02 Tel 3 Id: 02. MSN: 03 Name/Location	HSC650 h ID:01 MSN:20
Tel 4 Id: 16. MSN: 04 Service 4.8K Speech 54K Speech	MSN Terminal define the second
LISDN Devices 4.8K Speech Require Acces	Back OK POT Ser Click OK.
64K Speech 3.1KHz Audio	(A) RS232 Id= 52h MSN= 61
64K data (UDI) <b>G4K data (UDI)</b> <b>G4K data (UDI)</b> <b>G4K data (UTI)</b> <b>G4K data (V110)</b>	Rs232 Id= 53h MSN= 62 (B)
- 🕎 Terminal Id: 71. MSN: 50	USB Id= 54h MSN= 63

4. Check that the MSN codes are the same, and then click **Exit** to quit the Device Manager.



 Turn off the Communication unit → Wait 10 seconds, and then turn on the unit again. When "Ready for call" condition becomes available (approx. 5 minutes after power on), check operations with a test call (Outgoing/Incoming).

							1/03/2000
LES	MPDS			UDI			Provider
110	Phone No.	Username	Password	Phone No.	Username	Password	TIONICCI
001	**94#	optional	optional	28#	optional	optional	Telenor
004	**94#	optional	optional	28#	optional	optional	Telenor
002	**94#	optional	optional	28#	weblink	connect	Stratos
013	not confirmed	not confirmed	not confirmed	28#	weblink	connect	Stratos
012	**94#	optional	optional	28#	weblink	connect	Xantic
003	**94#	optional	optional	28#	yam003	kddi	KDDI
011	**94#	optional	optional	28#	needed*1	needed*1	Fr Telecom
210	**94#	optional	optional	65#	needed*2	needed*2	Sing Tel
005	**94#	"Fwd Id" @otemaritime. net	Fwd Id (in capital letter)	28#	optional	optional	OTE
006	not confirmed	not confirmed	not confirmed	28#	optional	optional	Kr Telecom
060* <sup>3</sup>	**94#	optional	optional	not confirmed	not confirmed	not confirmed	MI Telecom
555* <sup>3</sup>	not confirmed	not confirmed	not confirmed	not confirmed	not confirmed	not confirmed	It Telecom
868	**94#	optional	optional	not confirmed	not confirmed	not confirmed	Beijing Mar

# Table 1: Phone No., Username and Password used for Internet connection on MPDS/UDI

As of 11/05/2006

Notes:

\*1: Username and password are issued upon registering on www.francetelecom-mobilesat.com/155\_3.

\*<sup>2</sup>: Username and password are issued upon registering for Singtel mail 65 service.

\*<sup>3</sup>: IOR only

						As	of 11/05/2006
LES	MPDS			UDI			
LES	Phone No	Username	Password	Phone No	Username	Password	Provider
001	**94#	needed*1	needed*1	28#	needed*1	needed*1	Telenor
004	**94#	needed*2	needed*2	28#	needed*2	needed*2	Telenor
002	**94#	needed*3	needed*3	28#	needed*3	needed*3	Stratos
013	not confirmed	not confirmed	not confirmed	not confirmed	not confirmed	not confirmed	Stratos
012	**94#	needed*4	needed*4	65#	needed*4	needed*4	Xantic
222	**94#	needed*4	needed*4	65#	needed*4	needed*4	Xantic
003	**94#	needed*5	needed*5	78# (or 28#)	needed*5	needed*5	KDDI
011	**94#	needed* <sup>6</sup>	needed*6	28#	needed*6	needed* <sup>6</sup>	Fr Telecom
210	not confirmed	not confirmed	not confirmed	65#	needed*7	needed*7	Sing Tel
005	**94#	needed* <sup>8</sup>	needed* <sup>8</sup>	28#	needed*8	needed* <sup>8</sup>	OTE
006	not confirmed	not confirmed	not confirmed	not confirmed	not confirmed	not confirmed	Kr Telecom
060	not confirmed	not confirmed	not confirmed	not confirmed	not confirmed	not confirmed	MI Telecom
555	not confirmed	not confirmed	not confirmed	not confirmed	not confirmed	not confirmed	It Telecom
868	not confirmed	not confirmed	not confirmed	not confirmed	not confirmed	not confirmed	Beijing Mar

### Table 2: Phone No., Username and Password used for e-mail on MPDS/UDI

\*1.

Notes:

\*1: For "E-mail Advanced" service, registration is required at the following web site:

www.telenorsatellite.com/index.cfm?oa=service.display&ser=19

- \*<sup>2</sup>: For "Eik-Email" service, registration is required at the following web site: www.eikmail.com
- \*<sup>3</sup>: Registration is required at the following web site: www.stratosglobal.com
- \*<sup>4</sup>: For "AMOS Connect Mail" service, a registration is required at the following web site:

www.xantic.net/default.asp?V\_ITEM\_ID=4141

- \*<sup>5</sup>: For e-mail service through LES 003, registration for "SatMailLiner" is required.
- \*<sup>6</sup>: For "Sky File Mail" service, registration is required at the following web site: www.francetelecom-mobilesat.com/155\_3
- \*<sup>7</sup>: For e-mail service through LES 210, registration for "Singtel mail 65 service" is required.
- \*<sup>8</sup>: For "RYDEX e-mail" service, registration is required at the following web site: sales@otesat-maritel.com

### Addition 3

Restoration procedure

The procedure is described assuming that a PC terminal is connected to RS-232A port. If a PC terminal is connected to RS-232B port, replace "RS-232A" with "RS-232B" in the descriptions below.

- Select Menu -> Ports -> Com Defaults from the ISDN Handset, so as to restore the default port settings. Then, switch off the mobile terminal. Ten seconds later, switch it on again.
- 2. Disconnect the PC terminal from the RS-232A port and connect it to the RS-232B port. (If other equipment is connected to the RS-232B port, remove it from the B port temporarily.)
- Start up SAILOR vtLite. Then, change the access level from User level to Owner level by clicking Menu -> 2:Set access level -> Owner and entering the password "1234567890".
- 4. Click **Log** on the start-up screen of SAILOR vtLite to show the Traffic log menu. "Logging mode : Auto RS-232A" is displayed on the screen.
- 5. Click **Edit** and select "Enabled" on sub screen, and then click **Select** button. "Logging mode: Enabled" is displayed on the screen.
- 6. Click OK button.
- Switch off the mobile terminal. Change the PC terminal connection from the RS-232B port back to the RS-232A port. (If other equipment was disconnected from the RS-232B port for temporary connection of the PC terminal, reconnect to the RS-232B port.)
- 8. Switch on the mobile terminal and confirm that SAILOR vtLite starts up.

# 7.2 Alarms and messages

## 7.2.1 Introduction

### Alarms and Messages function

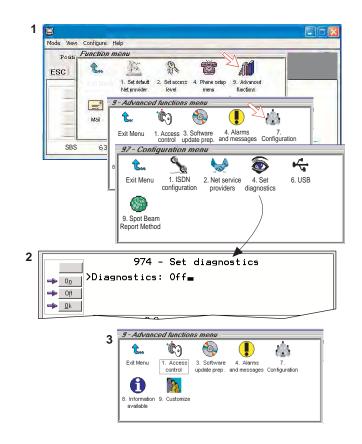
The following information may be read out:

- Active alarms and warnings that are not yet read
- Information log, list of previous alarm conditions, warnings and event information
- Clear cause log, list of abnormal conditions that have caused a call to be cleared
- Statistics list, statistics on terminal performance
- Error log
- Restart log

The **Alarms and messages** icon only appears when **Set diagnostics** is set to On.

- 1 Double-click the **Advanced functions** icon to open the **Configuration menu**.
- 2 Double-click the **Configuration** > **Set diagnostics** icons. Click **On** > **Ok** to turn on diagnostics.
- Double-click the Advanced functions icon again.
   The Alarms and messages icon now appears in the Advanced functions menu.
- **4** Double-click the icon to open the Alarms and messages menu. See next page.

For printout, see "5.15 Print handling setup."



### 7.2.2 Alarms

### Alarms and messages menu

1 Double-click **Active alarms and warnings** to open **List of active alarms** window.



2 The List of active alarms displays the alarms and warnings that are not yet read.

An alarm will remain active until the problem has been solved.

Pressing right-arrow displays detailed information and moves the alarm to the **Information Log**.

Euruno F77		
Mode View Configure Help		
Position 034d44m27s N 135d21m ESC	16s E(Internal GPS)	
→ Ennt 001>Update Handse No dis	942 - Informati d LES t Lost tress capability	
610	40C 37C	11 50 (UTC+09:00)

- **3** The **Information log** lists previous alarm conditions, warnings and event information.
- 4 Double-click **Clear cause log** to open **List of clear causes** window. The list of **CLEAR CAUSES** later in this manual indicates the possible reason for the event. Refer to page 7-8.
- 5 Statistics list and Error log are used for faultfinding purposes only.

📮 Furuno F77		
Mode View Configure Help		
Position 034d44m276N 135d21m166E (	(Internal GPS )	
94: 001>SPM events PEB events Other events Other events Dynamic st	5	>
605	40C 37C 11:51 ртс+р	9:00)
📮 Furuno F77		
Mode View Configure Help		
Prisiting 034d44m27s N 135d21m16s E (	Internal GPS )	
000>Empty list	948 - Error log t	
D	40C 37C 11;51 UTC+09	3.00)

6 The **Restart log** indicates why and when the system was restarted.

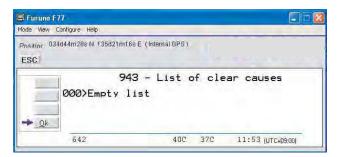
📮 Furuno F	17					= 🛃
Mode View (	Configure Help					
Position 034	4d44m28s N 135d21r	n16s E (Interna	al GPS )			
Print	1	949	- Re	start	log	
	001>Reaso	n lost				>
<b>→</b> <u>Q</u> k						
	643		40C	37C	11 52 (UTC+09:00)	

Ref.	Alarm	Information	Solution
1	Burst not sent Missing output	Internal Information	No need for action if terminal operates normally.
2	Distress Alert unit Handset failure No distress capability	The terminal does not detect the presence of a handset with a distress alert unit attached.	Check connections and restart the terminal
3	EEPROM CRC failure	Appears when terminal software was upgraded and configuration set to default	Information: does not effect terminal operation
4	External GPS position in use	The internal GPS is not providing position so the system is using the (optional) external GPS receiver	Implemented in software REL 2.0
5	Beam selection failed Not ready for call	GPS information does not convey the position	Wait 15 minutes, verify antenna view, restart MCU
6	Modem thermometer error	No connection or failure of the thermometer module on the modem unit	No need for action if terminal operates normally
7	No contact with GPS	No readings from the internal GPS module. Ignore this alarm if terminal operates normally	Wait up to 15 minutes. Replace GPS module in antenna
8	No GPS position	Readings from the module but position is not available	No GPS coverage, verify antenna view
9	Power supply thermometer error	No connection or failure of the thermometer for the power supply unit	Power unit fans will automatically be switched ON. System will operate normally, except power fans are always ONc
10	Unable to read fwd and ret ID	The Terminal ID's are stored in the CIB. Indicates that the memory circuit is defective	CIB (Connector Interface Board) should be replaced. Contact with FURUNO dealer.

### <u>Alarm list</u>

### 7.2.3 Clear causes

#### **Clear cause window**



#### List of possible clear cause messages

- 1001 Call cleared by MES terminal
- 1011 Call failed, MES terminal busy
- 1012 Call cleared, MES terminal busy
- 1021 Call failed, MES time-out (no answer)
- 1081 Call failed, MES terminal not installed
- 1091 Call failed, MES terminal out-of-service
- 1092 Call cleared, MES terminal out-of-service
- 1141 Call cleared, MES initiated preemption
- 1142 Call cleared, MES initiated preemption
- 1143 Offered call cleared, pre-empted at MES
- 1144 Call cleared, MES initiated preemption
- 1145 Attempted call cleared, pre-empted at MES
- 1146 Attempted call abandoned by MES terminal

11A0 Call cleared, credit card not accepted 11D1 Call failed, Request data invalid 11D2 Call failed, insufficient digits in service address Call failed, invalid service address 11D3 11D4 Call cleared, credit card data information invalid 11D5 Call cleared, invalid country code 11D6 Call cleared, PID information is not consistent 11D7 Call rejected, invalid service for Pri. 1 or 2 call 11D8 Call cleared, dialled number not 2 or 3 digits for Pr.1 or 2 call 11E0. Call cleared, invalid credit card PIN at this LES 11E1. Call cleared, too many invalid credit card call attempts 1202 Handover, MES ready 1262 Call cleared, MES time-out (Distress Test exceeded 120s) 1262 Call cleared, MES time-out (Distress Test exceeded 120s) 1281 Call failed, MES cannot accept 1291 Call failed, MES cannot accept at present 12B1 Call cleared by MES for unspecified reason SES is clearing due to timeout of timer TS011, NUMBER is 12B1/1 missing SES is clearing due to CESV\_OFF, Process, carrier\_lost 12B1/2 SES is clearing due to timeout of timer channel\_not\_ready, before 12B1/3 reception of CHANNEL\_READY. SES is clearing due to timeout of timer TS003, Wait for 12B1/4 assignment from NCS during shore\_call SES is clearing due to timeout of timer TS008, 12B1/5 no\_distress\_channel\_assignment SES is clearing due to timeout of timer TS005. 12B1/6 shore\_carrier\_timeout SES is clearing due to timeout of timer TS010, 12B1/7 ship carrier timeout Signal NUMBER from user carries an illegal CES access code 12B1/8 parameter, ces\_id\_not\_ok Call rejected because a call set-up is already in progress, 12B1/9 conflicting\_call\_request No response from net, verify commissioning of terminal, Wait for 12B1/10 assignment from NCS during ship\_call ipds\_man\_serv\_rej / MPDS Commissioning error, contact Net 12B1/10 provider ipds\_async\_release / PC disconnects the MPDS call 12B1/10 SES is clearing due to timeout of timer channel\_not\_ready, before 12B1/11 reception of CHANNEL READY. ipds\_too\_slow / MPDS connection too slow, and disconneted by 12B1/11 MCU Control did not grant access to terminal due to conflicting shore 12B1/12 call. 12B1/13 Control did not grant access to terminal due to conflicting ship call. 12B1/14 Control did not grant access to terminal due to too frequents request

12B1/15	Control did not grant access to terminal, had better things to do. Control_busy
12B1/16	selective_clear
12B1/17	call_preempt
12B1/18	For some reason, updating a record handler etc. couldn't be done, update_failed
12B1/19	antenna_failed
12B1/21	The communication link to ACU has failed, ant_comm_failed
12B1/25	System is not ready yet after startup, control_not_started
12B1/26	Spot beam selection is being performed, spot_beam_selection
12B1/27	Bulletin board data (satellite channel information etc.) is not yet verified, bb_not_validated
12B1/30	Ocean region registration is in progress
12B1/31	Antenna is not yet ready for use, awaiting_antenna_ready
12B1/32	Channel tuning is being performed, Rf_channel_not_ready
12B1/33	No satellite synch can be achieved
12B1/34	Antenna configuration is taking place
12B1/36	Antenna is searching for satellite(s)
12B1/37	Used in CONTROL_PP to indicate a preemption of a ship- or
	shore-call, for a MES initiated distress-call.
12B1/38	Used in DTLXMNG_DPP to indicate a timeout of timer TS308, no
	mark has been received from the LES.
12B1/41	Printer not ready. Power may be turned off, cable not connected,
	paper empty or printer not selected/on-line
12B1/42	CHANNEL_ERROR detected by CHNL_SERVICE_CP or
4004/40	CHNL_ICP. no_text
12B1/43	CHANNEL_ERROR detected by CHNL_SERVICE_CP or CHNL_ICP. no_acknowledge
12B1/44	CHANNEL_ERROR detected by CHNL_SERVICE_CP or
4004/45	CHNL_ICP. no_synch
12B1/45	CHANNEL_ERROR detected by CHNL_SERVICE_CP or CHNL_ICP. no_Rx_lock
12B1/46	CHANNEL_ERROR detected by CHNL_SERVICE_CP or
	CHNL_ICP. no_Tx1_lock
12B1/47	CHANNEL_ERROR detected by CHNL_SERVICE_CP or
	CHNL_ICP. no_Tx2_lock
12B1/48	CHANNEL_ERROR detected by CHNL_SERVICE_CP or
	CHNL_ICP. missing_or_illegal_channel
12B1/49	CHANNEL_ERROR detected by CHNL_SERVICE_CP or
	CHNL_ICP. no_authorization
12B1/50	CHANNEL_ERROR detected by CHNL_SERVICE_CP or
	CHNL_ICP. burst_not_sent
12B1/51	Precharge terminal has run out of time. Must refill before call is
	possible. out_of_charged
12B1/52	Wrong PIN code entered. incorrect_pin_code
	J

Used when access is restricted due to Enhanced Function 12B1/54 inconsistency. ses\_use\_restricted 12B1/55 A command to the ACU was not accepted (4 times), link restarted. acu\_cmd\_failed A command to the PCU was not accepted (4 times), link restarted. 12B1/56 pcu\_cmd\_failed Antenna initialize failed. ant\_init\_failed 12B1/57 12B1/59 **Operation/Function failed** 12B1/60 Operation not possible, function is busy No lcm\_connect received from shore after lcm\_estblish sent (asd) 12B1/61 12B1/62 Data link failure in asd communication 12B1/63 Radio Silence activated 12B1/64 Inactivity timeout for data calls 12B1/65 Limited duration timeout for 16QAM calls. Call duration guard activated (Menu 42) 12B1/67 Various error situations releated to SIM authentication (during call). 12B1/68 Power down requested. power\_down\_MCU 12B1/69 Traffic log buffer is full Duplex interface busy. 12B1/70 Internal call manager busy 12B1/71 12B1/72 Congestion, can't connect lines, internal dialing. Congestion, can't get line, internal dialing. 12B1/73 12B1/74 Internal number unallocated 12B1/75 Incompatible destination for internal call Invalid CallRef, (Too late, another call process got the call) 12B1/76 Too late, another call process got the call, (ISDN: 12B1/77 non\_selected\_user\_clearing) Local interface too busy to handle the call 12B1/78 12B1/79 Used by LOADING, transfer\_blocked 12B1/80 Local number analysis failed, dialled\_number\_rejected Doppler Compensation error: Too large speed or too large error 12B1/81 12B1/82 Internal interface timer expired (e.g. ISDN protocols) 12B1/83 Internal retrieve error 12B1/84 Internal retrieve blocking, can't allocate or connect channels Internal rearrangement error, probably race condition 12B1/85 Internal IPDS(MPDS) protocol error, int\_ipds\_protocol\_error 12B1/86 12B1/87 Manual control of the system (test and type approval) Internal decession to clear or abort activity due to unexpected SW 12B1/88 sequence The communication link to RFB has failed, rfb\_comm\_failed 12B1/89 The RFB failed to tune the digital attenuator, rfb\_attenuator\_failed 12B1/90 12B1/91 The IPDS(MPDS) service is not allowed due to local terminal configuration, restore to factory defaults No originator id is defined for IPDS(MPDS), local configuration is 12B1/92 incorrect, restore to factory defaults No response was received from the IPDS(MPDS) host system 12B1/93 within the allowed time

12B1/94	The device connected to the terminal (PC) cleared the call
12B1/95	The bulletin board information required for IPDS(MPDS) is
	unavailable
12B1/96	The IPDS(MPDS) call was disallowed or preemptied by another
	activity local to the MES
12B1/97	The terminal received a request to de register from the
1201/97	
	IPDS(MPDS) host
12B1/98	Synch to the LESP was lost during a call, ipds_sync_lost, verify
	correct user name/password
12B1/99	Unable to tune to one of the IPDS(MPDS) channels
12B1/100	Modem unit hardware does not support IPDS(MPDS) service,
12B1/101	RFB hardware does not support IPDS(MPDS) service,
12B1/102	The attempt to register with IPDS(MPDS) was rejected
12B1/103	The attempt to establish a IPDS(MPDS) connection was rejected
12B1/105	Timeout is attempt to setup a IPDS(MPDS) connection
12B1/106	Attempt to establish a IPDS(MPDS)connection was rejected
12B1/107	The MES failed to handle the IPDS(MPDS) data within the allowed
	time, ipds_too_slow
12B1/108	Internal error within the IPDS(MPDS) software
12B1/114	The call was preempted by a call waiting
12C2	Call cleared, no credit card valid message received
12C3	Call failed, MES time-out (no terrestrial answer)
12C4	Call cleared, authentication query not received
12C5	Call cleared, supplementary services signalling error
12C6	Call cleared, supplementary services signalling error
12C7	Call cleared, supplementary services signalling error
12C8	Handover failed, LES not detected
12D1	Call failed, Spot-beam data invalid
12D2	Call failed, invalid scrambling vector
1351	Call cleared, insufficient free memory
1361	Call cleared by MES cable unwrap
1362	Call cleared, long interruption in reception at MES
1391	Call cleared, travelled distance exceeds 700km
1392	Call cleared, spot beam transition
1393	Call cleared, cooperative mode
1451	Call failed, terrestrial circuits congested
1452	Call failed, LES congested (no channel and no circuit)
1502	Handover, LES ready, normal clear
1551	Call failed, LES congested (no channel)
1581	Call failed, service not provided at this LES
1591	Call failed, service temporarily not available at this LES
1592	Call cleared, credit card type not supported
15A1	Call failed, MES not authorised at this LES
15A2	Call failed, service not authorised at this LES
15A3	Call cleared, credit card not authorised
15A4	Call cleared, authentication reply invalid
15A5	Call failed, PID not authorised for any service
10/10	

15A6	Call failed, PID not authorised for requested service
15A7	Call cleared, dialled number illegal for Pri. 1 or 2 call
15B1	Call cleared by LES for unspecified reason
15C1	Call failed, LES time-out (no assignment)
15C2	Call failed, LES time-out (no service address)
15C3	Call failed, LES time-out (no scrambling vector)
15C4	Call failed, no service address and no scrambling vector
15C5	Call cleared, incomplete credit card data information
15C7	Call failed, LES time-out (no MES Connect)
15C9	Call cleared, no authentication reply

- 15CA Call cleared, notification ack not received
- 15CB Call cleared, invalid sequence number in notification ack

### 7.2.4 Troubleshooting: Real time status indications

### Access to AT-commands

Instead of using the PC hyperterminal facility, access can easily accomplished using SAILOR vtLite.

9			
Mode View C	onfigure 1	lelp	
✓ Terminal MMI	Ctrl+M	osition	
AT Mode	Ctrl+A		
Trace Offline Exit	Ctrl+R. Ctrl+L		
Log Menu		ehor in AOR-E y with call	(Beam 6) Elevation 16
	630		10 16

Start vtLite again:

You cab now key at + wreg =1 from vtLite.

Mode View Configure Help	
Position: No GPS position!	
ESC	
OK at+wles? +WLES: 004	~
OK at+wreg=1 REGISTERED	
Send Ray           Tx         at+wreg=1           Send         at+wreg=1	
Base Quit Ole Send	auto send

Note: For access to all advanced status indications, enable traffic log.

### Read information

MPDS status:	
inactive	- MPDS is not active
allocating	- internal pre processing
tuning	<ul> <li>terminal is tuning to the LESP</li> </ul>
tuned	- the terminal is tuned to the LESP and awaits a
	registration possibility
registering	- the terminal has sent one or more registration bursts
registered	- the terminal has successfully registered with MPDS
connected	- CONNECT has been received from the dialled host
deregistering	<ul> <li>the terminal awaits deregister ack</li> </ul>
reregister_chan	- the terminal was told to regregister to a new channel
reregister_les	- the terminal was told to regregister with a new LES
handover	<ul> <li>the terminal is following a handover instruction</li> </ul>
failed	- the last operation failed

### MPDS in traffic log explanation:

SRejTx:	<count1></count1>
Rx	<count2></count2>

The counters are respectively the number of SREJ supervisory frames send and received. This indicates errors in the forward and return path respectively.

Tx 5ms:	<count1></count1>
Tx20ms:	<count2></count2>

The counters are respectively the number of 5 ms and 20 ms bursts sent by the terminal. These are a diagnostic tool for users with technical knowledge of the MPDS system operation.

Rx CRC:	<count1></count1>
/:	<count2></count2>

The counters are the number of PDUs received with bad CRCs and the number of PDUs with correct CRCs. Take note of this ration when reporting problems related to throughput.

Connections:

<count>

The count is an estimate of the number of active connections on the shared bearer. A high number here has a bearing on the throughput that can be expected from the MPDS system.

Timt init: <count1><value1> Timecorrection: <count2><value2>

The counts are the number of timing inits and timing corrections received by the terminal respectively. The values are the last received values in symbols of the aforementioned items.

Port bytes Tx/Rx:

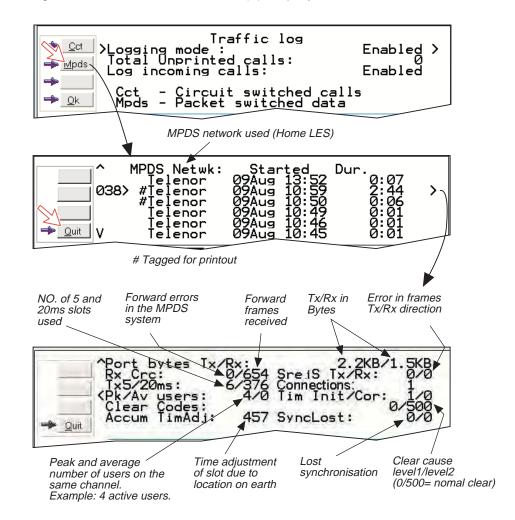
The counts are the number of bytes received from the PC and the ones sent to PC from MCU respectively.

### 7.2.5 Troubleshooting: Other logs

### Mobile Packet Data Service calls

Clicking **Mpds** in the Traffic log window opens the list of Mobile Packet Data Service call records.

Pressing at a record when in window (2) displays detailed call data.



# 7.3 Throughput

### In case of low throughput in data communication

In the Inmarsat satellite line, approximately 240ms delay time occurs. The delay causes the throughput of the TCP/IP protocol in the satellite line to go lower than the terrestrial line. In this case, if you change the window size of the TCP, the throughput may improve.

The window size of the TCP can be changed in the registry of Windows OS. However, wrong setting of the registry may cause fatal error. Therefore, we recommend that you use the following software which changes only the registry concerned with the TCP.

Example: Dr.TCP <u>http://www.dslreports.com/drtcp/</u>

**Note:** FURUNO assumes no responsibility or liability for this software. Be sure to backup the registry BEFORE changing it.

The method required to change window size may differ depending on OS or router.

### About throughput variation

Throughput variation, resulting from time delay, may occur when TCP/IP protocol is used on the satellite line.

Throughput variation occurs when the load on a server used by a terrestrial client fluctuates greatly because many clients are accessing the server at the same time. Additionally, it may occur depending on the terminal adapter pairing between mobile and terrestrial clients.

# 8. LIST OF TERMS

**AC** Alternating Current **AOR-E** Atlantic Ocean Region East. AOR-W Atlantic Ocean Region West. Azimuth horizontal direction angle between north and, e.g. the direction to the satellite. Bit rate the number of bits transmitted per second (bps). **Bps** Bits per second. CHV2 higher access level on the SIM card, corresponding to FELCOM 70 "owner" level. **DC** Direct Current. **DECT** Digital Enhanced Cordless Telecommunication **DID** Destination terminal IDentification. **DSP** Digital Signal Processor. **DTE** Data Terminal Equipment. **Elevation** vertical angle to the satellite, i.e. the height of the satellite above the horizon. Fleet F77 Inmarsat's single integrated voice, fax, Mobile Data Service and Mobile Packet Data Service. **FWD ID** forward Id, telephone network identity. GAN Inmarsat Global Area Network. Home LES Home Land Earth Station gives access to MPDS service like Internet / e-mail and handles MPDS billing system. **IMN** Inmarsat Mobile Number, a unique 9-digit number which identifies each device connected to FELCOM 70. Inmarsat International Maritime Satellite Organisation. **IOR** Indian Ocean Region. **ISDN** Integrated Services Digital Network. **ISN** Inmarsat Serial Number, individual number assigned to each FELCOM 70 terminal. **ITU** International Telecommunications Union Kbps Kilobits per second. LAN Local Area Network. **LES** Land Earth Station, a station that interconnects fixed telecommunications networks with the Inmarsat system; may also be called a CES (Coast Earth Station) or a GES (Ground Earth Station). M4 Inmarsat Multi-Media Mini-M. **MES** Mobile Earth Station, a user terminal for an Inmarsat system; the FELCOM 70 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). **MPDS** Inmarsat Mobile Packet Data Service. **MSN** Multiple Subscriber Number, the extension number that connected

equipment responds to. Also used for internal calls.

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

**OID** Originating terminal IDentification.

**Ocean Region** the coverage area of an Inmarsat satellite within which FELCOM 70 may communicate.

**PABX** Private Automatic Branch Exchange.

PIN Personal Identification Number.

POR Pacific Ocean Region.

**PPP** Point-to-Point Protocol, protocol used for serial data communication via the FELCOM 70 RS-232 or USB port.

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

**RF** Radio Frequency.

R LES Regional Land Earth Station sets terminal in MPDS list.

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

**SBS** Shared Base Station assigns channels to the MPDS user and handles the MPDS communication.

SIM Subscriber Identity Module.

SMS Short Message System.

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

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

**UDI** Unrestricted Digital Information.

**USB** Universal Serial Bus.

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

# 9. SYSTEM DESCRIPTION

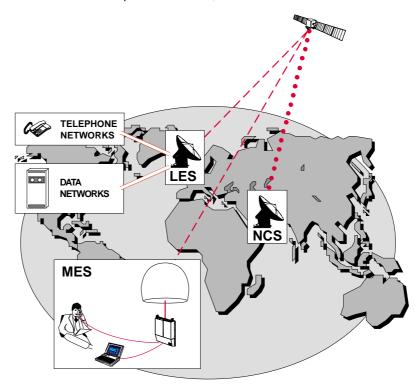
## **Inmarsat Fleet F77**

The Inmarsat Fleet F77 system provides a truly portable 64 kbps ISDN communications service for data and voice transmissions to and from mobile/fixed subscribers anywhere within the worldwide coverage of the Inmarsat 3 spot Beam system, *see map later in the Service Guide.* 

The benefit of the INMARSAT system is its high capacity, and the rapid and reliable connection between the land based (fixed) users and the **Mobile Earth Stations (MESs)**.

Each satellite region is under the control of a **Network Coordinating Station** (NCS), which controls and monitors the traffic between the MESs and the LESs.

**NCS:** Network Coordinating Station, one in each Ocean Region (supervises all messages and signals sent in the Inmarsat system). **LES:** Land Earth Station w/Net service providers interconnects fixed telecommunication networks with the Inmarsat system. **MES:** Mobile Earth Station (FELCOM 70, user terminal for the Inmarsat system).



Overview of the Inmarsat GAN system.

## **System satellites**

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

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

The satellites provide 99% landmass coverage.

FELCOM 70 can communicate via the four satellite Ocean Regions:

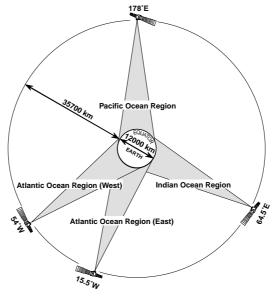
- AOR-W Atlantic Ocean West Region
- AOR-E Atlantic Ocean East Region
- IOR Indian Ocean Region
- **POR** Pacific Ocean Region

The coverage area of the satellites for FELCOM 70 (GAN) is shown on page 3-4. Communication is possible in areas marked with ellipse.

### Transmission frequencies

The Inmarsat GAN terminals operate in the following frequency bands:

- MES transmission frequencies:1626.5 MHz 1646.5 MHz
- MES receiving frequencies:1530.0 MHz 1559.0 MHz



Satellite positions.

A large number of channels are available (20 kHz channel separation), offering either 4.8 or 64 kbps voice communication, as well as 3.1 kHz audio or 64 kbps (56 kbps) data communication.

Duplex communication uses two channel frequencies, one in each direction. The LESs provide interface to the international networks for telephony and data: PSTN (Public Switched Telephone Networks) and PSDN (Packet Switched Data Networks).

## Antenna search pattern

### Azimuth sweep

A 360° rotation of the antenna in azimuth at a fixed elevation angle.

### Hemispheric search

A hemispheric search is constituted by azimuth sweeps at elevation angles 5°, 25°, 45°, 65° and 85°.

The antenna searches on the NCS Common TDM channel frequency (NCSC), initiated by the FELCOM 70 Communication Unit (CU).

When finding the satellite signal, it completes the hemispheric search and moves to the position where the strongest signal was detected.

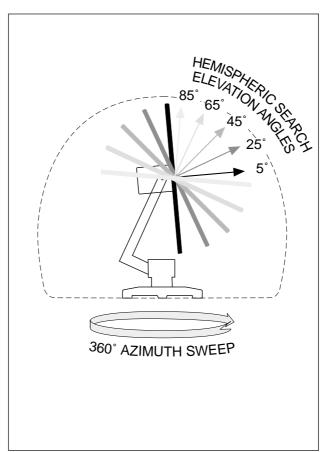
The Antenna reports back to the CU for verification of valid NCSC.

If no valid signal is detected, no further automatic action occurs until the CU initiates a new search.

A search request from the CU may contain channel frequency and an order to make a full 360° search at a specific elevation, calculated from map and GPS information. If the request contains channel frequency, a hemispheric search will be performed.

### <u>Tracking</u>

At the end of a search, FELCOM 70 performs a fine-tuning of the antenna position around the strongest detected signal. The fine-tuning is obtained by conical scan function based on an antenna rate sensor and a tilt sensor.



## **Communication services**

FELCOM 70 provides the following services:

### • ISDN:

- 4.8 kbps speech
- 64 kbps speech
- 64 kbps / 128 kbps data service (UDI)
- 56 kbps / 110 kbps data service (V110)
- 3.1 kHz audio
- 9.6 kbps fax
- RS-232/RS422:
  - 64 kbps data service (UDI)
  - MPDS
- USB
  - 64 kbps data service (UDI)
  - MPDS

Requires PC with MS Windows 2000 / XP

The FELCOM 70 CU has following ports (see figure):

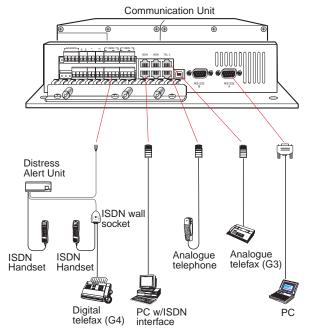
- ISDN ports for connection of ISDN telephones, telefax (Gr.4) or data equipment; a total of 7 devices.
- RS-232/RS422 and USB ports for connection of data equipment.

### 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**

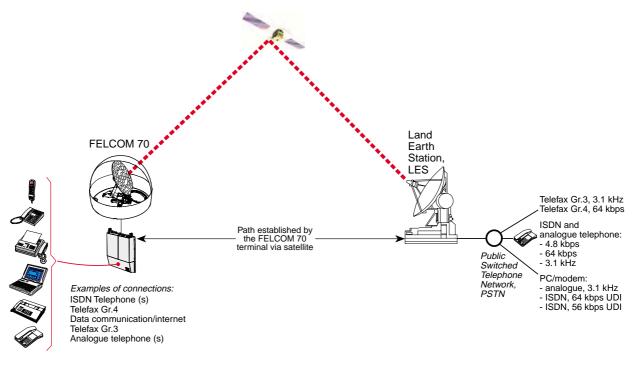
The **RS-232** or **USB** port allows connection of a PC for configuration of FELCOM 70. A PC program that provides the software to operate and configure FELCOM 70 terminal is supplied on the enclosed CD.



### • ANALOGUE

- 3.1 kHz audio
- 4.8 kbps speech
- 64 kbps speech
- 9.6 kbps fax

FELCOM 70 ports.



Communication path.

## Net service provider

The Net service provider issues your user licence and IMN (Inmarsat Mobile Number) phone numbers. It is also responsible for the billing of calls (charges). The FELCOM 70 may respond to individual IMN numbers, giving the possibility to transfer a call directly to each device attached to it.

Note: TermID is a term that includes both Originating Identity (OID) and Destination Identity (DID). The DID is used from LES to MES to identify the service, whereas OID is used from MES to LES to identify the service.TermID is used in this manual because the DID and OID have the same value.

## **Calls from Mobiles**

### See figure.

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

### System signalling

The LES uses the identifying information of the attached device for billing purposes.

The MES transmits the dialing information on a channel specially assigned by the NCS to the LES.

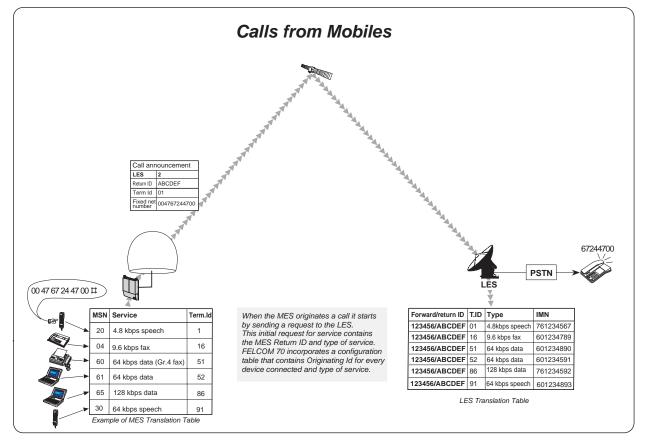
LES routes the call over the public telecommunications networks to the intended destination. When the called party responds, the call proceeds.

### Call announcement from mobile to fixed:

The MES uses the Return Identity (RTNID) to communicate with the LES. It uses the TermID to identify its **IMN** number and the service in use.

The attached equipment dials the number and transmits its **MSN** number to the **MES**. The MES routes the MSN to a TermID.

LES checks that the RTNID is commissioned before connecting the call to the fixed net.



## **Calls to Mobiles**

### See figure.

The FELCOM 70 terminal receives incoming calls via the IMN phone numbers. IMN numbers are assigned to the following ports by the user:

- ISDN port
- RS-232 serial data port
- RS-422 serial data port
- USB serial data port
- Analogue ports

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

The common Ocean Region access no. **870** connects the call to the dialed FELCOM 70 regardless of the Ocean Region the user currently communicates through.

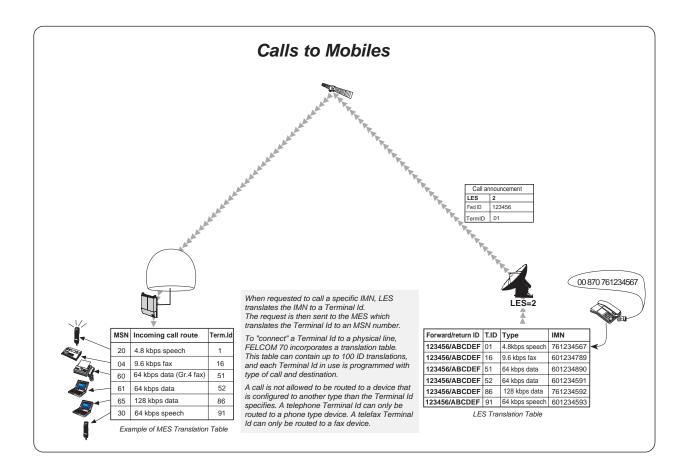
If the Net service provider does not support access no. **870**, call the Ocean Region directly:

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

### Call announcement from fixed to mobile:

The LES uses the MES's Forward Identity (FWID) to communicate with the MES, and the Terminal Identity (TermID) to identify the IMN number and the service in use.

The FWID together with the TermID replaces the need of the IMN number to be transmitted through the Inmarsat system in order to identify the MES and the specific equipment attached to it. This means that LES routes an IMN number received from the fixed net to the specific FWID and TermID identifying the MES. The MES identifies the FWID and the TermID and routes it to a Multiple Subscriber Number (MSN) which is programmed in the attached equipment. FURUNO provides a table to identify which TermID is routed to an MSN.



# **APPENDIX: TERMINAL IDENTITIES**

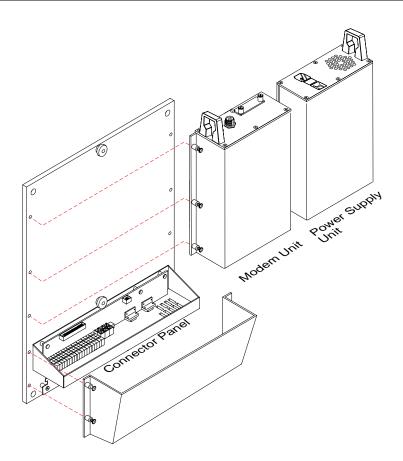
Term. Id	Service	Inmarsat services
01 - 0F	Voice	<b>B:</b> 16.8, <b>M:</b> 4.8, <b>Mini-M:</b> 4.8,
		F77/F33/F55: 4.8
11 - 1F	Fax	B: 9.6, M: 2.4, Mini-M: 2.4, F33/F55: 9.6
16-1F	Fax	<b>F77:</b> 9.6
21 - 2F	ASD	B: 9.6, M: 2.4, Mini-M: 2.4, F33: 9.6
31 - 3F	Telex	В
41 - 4F	HSD	В
51 - 5F	64k Data (UDI)	GAN/F77/F55
61 - 6F	3.1kHz Audio	GAN/F77/F55
71 - 7F	56K Data	GAN/F77/F55
86	B1-128 k Data (UDI)	F77
	B2-128 k Data (UDI)	
88	B1-128 k Data (V110)	F77
	B2-128 k Data (V110)	
91 - 9F	64K Speech	GAN/F77/F55

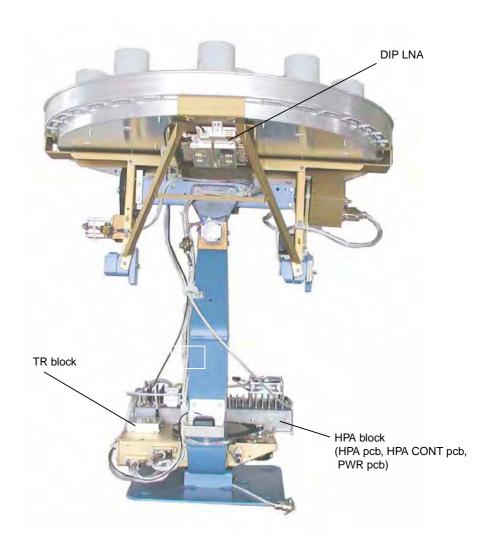
Terminal Identities and the corresponding Inmarsat Services Note: MPDS is given the Terminal Id A1 (not programmabler)

# **APPENDIX: MAINTENANCE PARTS**

This equipment contains complex modules in which fault diagnosis and repair down to component level are not practical (IMO A.694(17)/8.3.1. Only some discrete components are used. FURUNO Electric Co., Ltd. believes identifying these components is of no value for shipboard maintenance; therefore, they are not listed in the manual. Major modules can be located on the parts location photos on the next several pages.

Name	Code no.	Remarks
DIP LNA	004-446-530	
PWR 16P0192	004-446-570	
TR block	004-446-770	T. RECIVER pcb
HPA block	004-446-950	HPA pcb, HPA CONT pcb, PWE pcb
Terminal adapter 102196	000-148-909	
MUB 102195 Rev 2.0	000-148-908-01	
Power unit 103807	000-148-907	
Cable assy. R906686	000-148-340	
Fuse NGH24104/5	000-148-338	





## FURUNO

## SPECIFICATIONS OF THE INMARSAT FLEET F77 MOBILE EARTH STATION FELCOM 70

### 1. ANTENNA UNIT

Gain	Greater than 20.3dBi	
Axial Ratio	Less than 2.0dB	
Antenna Beamwidth	16 deg. approx. (at -3dB)	
Stabilization	Triple-axis control type	
Positioning	AZ: 0° to 360°	
	EL: 5° to 90°	
Positioning Accuracy	AZ: Better than ±3°	
	EL: Better than ±3°	
Tracking	Circular tracking system	
2. COMMUNICATION UNIT		
Standard Functions	Duplex voice 4.8 kbps	
	56/64 kbps ISDN (voice, G3 and G4 Telefax or Data)	
	MPDS packet data service	
	Distress alert	
Transmit Frequency	1626.5MHz to 1660.5MHz	
Receiver Frequency	1525.0MHz to 1559.0MHz	
Channel Interval	1.25 kHz (Min) at test mode	
	5 kHz (Voice)	
	40 kHz (ISDN/MPDS)	
G/T	Better than - 4dB/K	
EIRP	BPSK/O-QPSK 20 dBW	
	16QAM 32 dBW	
Modulation		
-Voice (4.8 kbps AMBE)	O-QPSK/5.6 kbps	
-MES Signaling	BPSK/3 kbps	
-ISDN Operation	16QAM/33.6k Symbols/s	
-MPDS	16QAM/33.6 k Symbols/s	
-Access Method	SCPC/FDMA Audio, HSD	
	TDMA/FDMA MPDS	
3. INTERFACE		
PC:	RS-232/RS-422	
Navigator:	IEC 61162-1 ed.2 (2000/7)/NMEA0183	
USB:	B connector	
ISDN:	Max 7 ports (RJ-45 connector and 4-terminals)	
Analogne telephone/Telefax:	Max 6 ports (RJ-45 connector and 2-terminals)	

## FURUNO

### 4. POWER SUPPLY

Power supply & rated 100-240 VAC: 1.5 A – 0.9 A Current

### 5. ENVIRONMENTAL CONDITION

Category of unit	Antenna unit: To be installed in an exposed area		
	Others: To be installed in a protected area		
Ambient Temperature	Complies with Inmarsat SDM and IEC60945 (Ed.4)		
	Antenna unit:	-25°C to +55°C	
	Communication unit: -15°C to +55°C		
	Handset:	-15°C to +55°C	
Relative Humidity	95% at 40°C (Inmarsat SDM 95 & IEC60945)		
Waterproofing	Complies with IEC 60529;		
	Antenna Unit: IPX6 Communication Unit: IPX0		
	Handset: IPX0		
Vibration	Complies with Inmars	sat SDM and IEC60945	
Motion	Roll: ± 30°/8s, Pitch:	± 10°/6s, Yaw: ± 8°/50s, Surge: ± 0.2G,	
Sway: ± 0.2G, Heave: ± 0.		e: ± 0.5G, Rotation: 6°/s, Speed: 30 kt	

### 6. COATING COLOR

Antenna Unit	Munsell N9.5
Communication Unit	Munsell N1.0
ISDN Handset	Munsell N1.0
Distress Alert Unit	Munsell N1.0

FU	RUNO		FURUNO ELECTRIC CO., LTD. 9-52 Ashihara-cho, Nishinomiya, 662-8580, Jap. Tel: +81 (798) 65-2111 Fax: +81 (798) 65-4200 www.furuno.co.jp
			Publication No. DOCQA0020
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We	FURUNO ELECTRI	C CO., LTD.	U
		(Manufacturer)	
9-52 Ash	ihara-Cho, Nishinomiya City	, 662-8580, Hyogo, Japan	
	,	(Address)	
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	Inmarsat-F	77 Ship Earth Station Type	: Felcom 70
		(Model name, type number)	
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			the normative document(s))
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		On behalf of Furuno El	ectric Co., Ltd.
		Takahila Kumuda	
Nishinomi June 23, 2	iya City, Japan	Takahikó Kusuda Manager, QMS Secreta Quality Assurance Dep	
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