



**Nera F33**  
**User Guide**







OPERATION FROM PC .....	5	- restricted dialing .....	22
Starting up .....	5	- checking the dialing setup .....	22
Phone book .....	7	- restricted dialing setup .....	23
- capacity .....	7	- access code .....	24
- abbreviated dialing .....	7	- restricted SIM usage .....	25
- adding or editing entries .....	7	- setting SIM restrictions .....	25
- saving entries to/from PC .....	8	Configuration menu .....	26
Traffic Log .....	9	- ISDN protocol configuration .....	26
Traffic log settings .....	10	- charge tone setup .....	27
Traffic log printout viewer -		- net service providers .....	28
normal calls (Cct) .....	11	- set diagnostics .....	29
Traffic log output to serial printer .....	12	Information available .....	30
CONFIGURATION FROM PC .....	13	- miscellaneous version Id information .....	30
Menu functions .....	13	- network status information .....	30
Function reference list .....	14	Customize menu .....	31
Access level .....	15	- paid functions .....	31
- changing the PIN code .....	15	- phone name setup .....	31
- functions requiring owner level .....	16	Routing of incoming calls .....	32
- shifting to owner level .....	16	- routing of incoming calls (examples) .....	33
- changing owner level password .....	16	MSN configuration .....	34
Selecting default Net service provider .....	17	- Nera ISDN Handset .....	35
Phone setup .....	19	- ISDN port .....	37
- setting call duration limit .....	19	- RS-232 port .....	38
- setting date and time .....	19	- USB port .....	39
- message indication .....	20	Saving and reloading configurations .....	40
Advanced functions .....	21	Print handling setup .....	42
Access control .....	22	Mobile Packet Data Service .....	43
		SYSTEM DESCRIPTION .....	44



## Starting up

- Switch ON Nera F33,  
For location of the ON/OFF switch, see "[Switching ON](#)" in [Getting Started](#).
- Turn ON the PC and click  
**Start>Programs>vtLite Marine**.

*Note! VtLite can only be used on one PC at a time.*

**1** The satellite search program is initialized.  
See also "[Satellite search](#)" in [Getting Started](#).

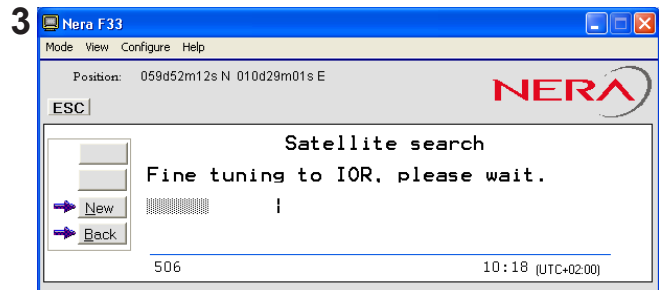
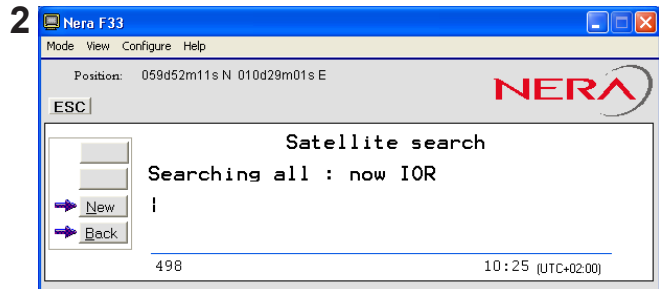
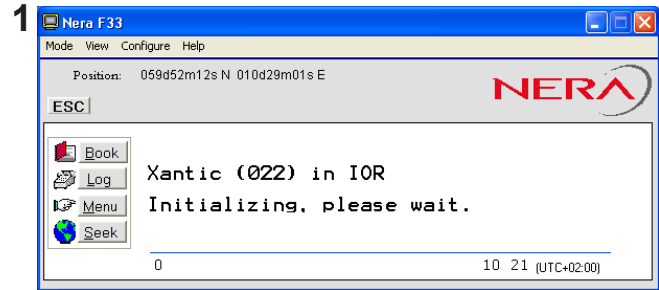
**2** Nera F33 starts searching for **last known satellite/elevation** (Ocean Region) as default.

**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.

*Note! It is recommended that the signal strength reading ( $S/N$ =Signal/Noise ratio) should be at least 500, typically 540. The antenna will automatically*





*fine-tune to the best signal and accept it.*

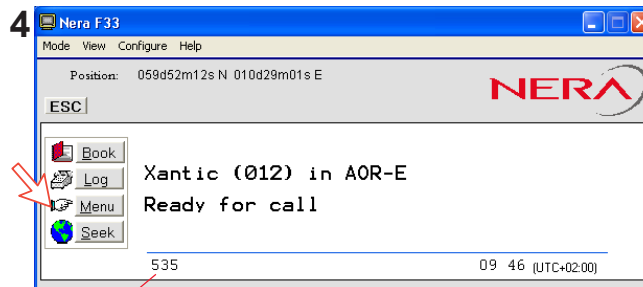
Clicking **Seek** starts the search again.

If required, select a specific satellite by clicking **New**.

See also "[Selecting default Net provider](#)" in *Getting Started*.

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

To make a connection, see "[Making a call](#)" in *Getting Started*.



*S/N=Signal/Noise ratio*

## Phone book

Adding and editing entries can also be done from the handset, see **OPERATION FROM HANDSET** in **Getting Started**.

### Phone book capacity

	<b>MCU</b>	<b>SIM card</b> <i>(Data vary with card type)</i>
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 "MCU" entries merge when the card is inserted. The list is sorted by name.

### Abbreviated dialing (prefix 23)

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

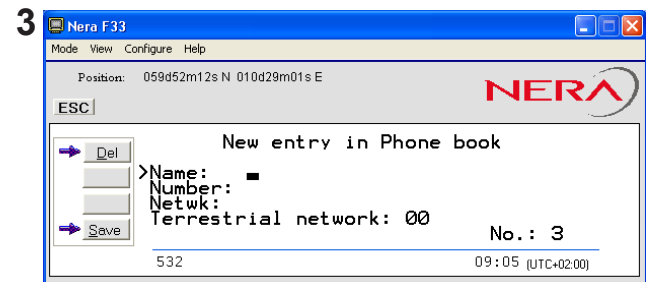
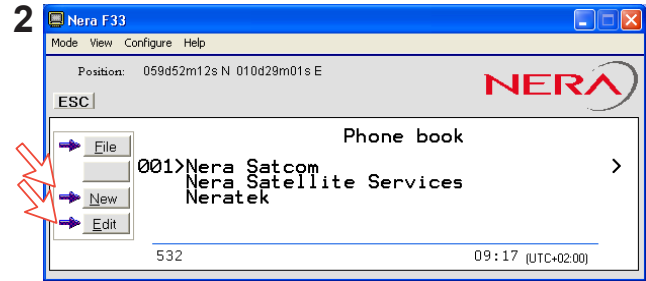
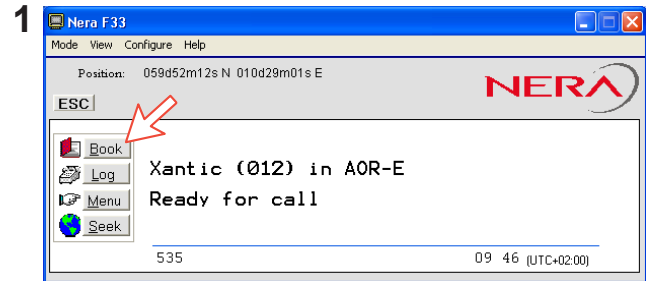
**2** Scroll through list / to wanted entry.

*Example:* dialing **(2)(3)(1)5(#)** on the analogue telephone or ISDN keypad fetches and sends the telephone number stored under short number entry 15.

### Adding or editing entries

**3** Clicking **New** (window **2**) opens the window used to add an entry to the book.

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.

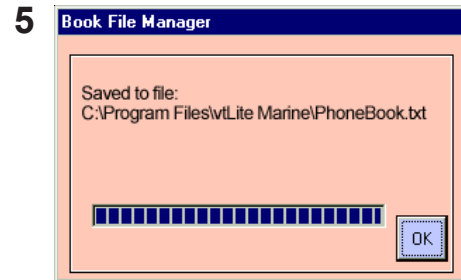
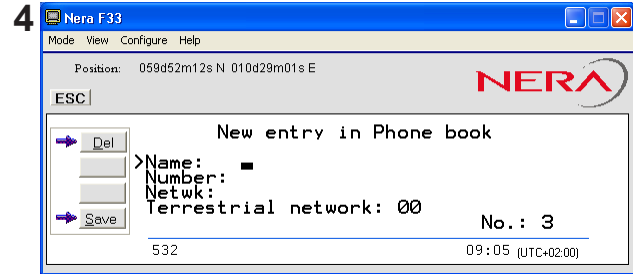
Use **Del** to modify. **Remov** erases the entry.

*Note! The book is also used with the restriction "Dial from book only", see "[Restricted dialing setup](#)".*

*Use of Terrestrial network requires special agreement. Default: 00.*

### Saving entries to/from PC

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





## 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:*

- speech
- fax
- data

*Packet switched data calls (Mpds) including:*

- Mobile Packet Data Service calls

The Nera F33 owner may set the log output mode as follows, (see "**Traffic log settings**"):

- paused
- cleared (stops logging and clears the log)
- enabled




### Traffic log readout

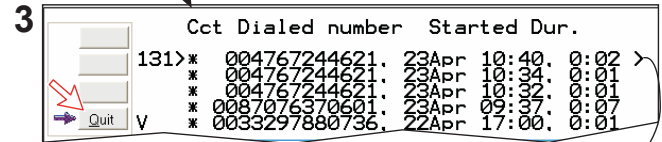
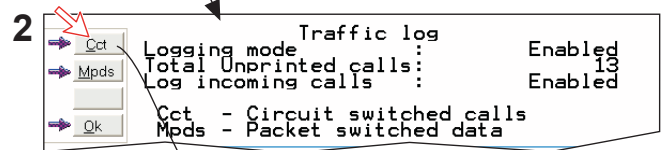
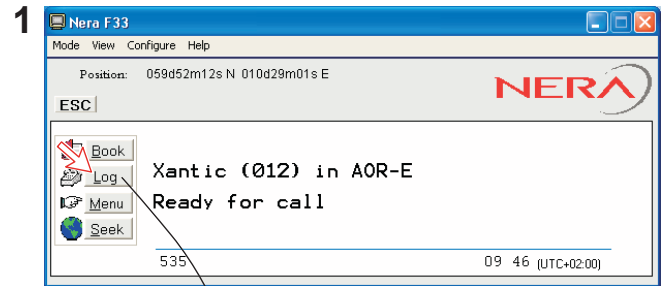
**1** Clicking **Log** opens the Traffic log window.

**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).

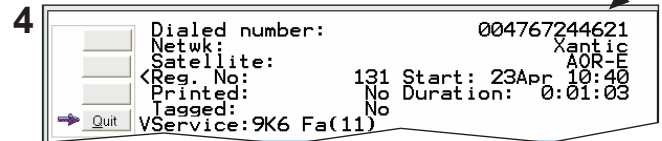
#### Circuit switched calls:

Clicking **Cct** displays the list of calls.

**3** Scroll  /  to wanted call record and press  to display details of the selected call.



\* Calls not yet printed # Tagged for printout




**4** The call details include data such as dialled number, start of the call, duration, service and terminal Id.

**Quit** reverts to main window.

## Traffic log settings

(owner level only, see "[Shifting to owner level](#)")

**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**, 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.
- **Automatic printing to RS-232 A:** output to local printer
- **Automatic printing to RS-232 B:** output to local printer

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.

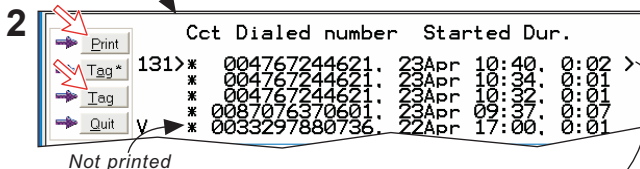
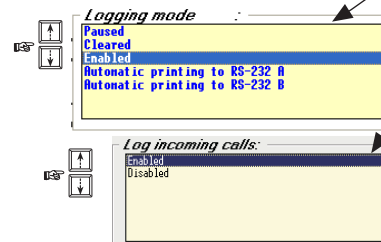
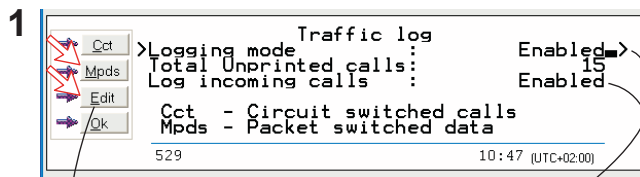
### Circuit switched calls:

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

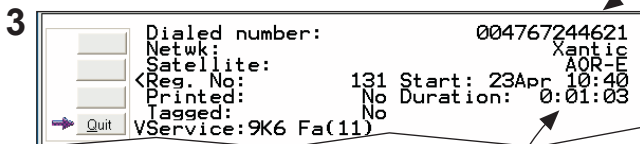
**Print** outputs all unprinted calls (marked with a star):

- 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  at a record when in window (2) displays detailed call data.



Not printed



Hours:minutes:seconds



### 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 **"PRINT HANDLING SETUP"**.

Click to save record file

Click for printout

Subscriber number

Type of service

Start date and time

Call duration in minutes and seconds

Terminal Id

MSN number

Net service provider

User name if access code is activated

Click to delete record file

The screenshot shows a window titled "Printout Viewer" with a menu bar (File, Edit, Search) and a toolbar with icons for save, print, and delete. The main area displays a list of call records with columns: Ref, Dialed number, Service, Started, Duration, Term., MSN, Net, and User. Below the list is a summary table for outgoing calls.

Ref	Dialed number	Service	Started	Duration	Term.	MSN	Net	User
114	# 65	9K6 Data	030415 20:09	0:26	21	60	012 Xantic	
115	# 004766779070	9K6 Data	030421 15:54	9:17	21	60	012 Xantic	
116	# 004795437975	9K6 Data	030421 16:10	2:25	21	60	012 Xantic	
117	# 004722225220	9K6 Data	030422 14:18	11:37	22	63	012 Xantic	
118	# 004766779016	Speech	030422 14:30	0:32	02	21	012 Xantic	
119	# 004722225220	9K6 Data	030422 14:36	53:33	22	63	012 Xantic	
120	# 004722225220	9K6 Data	030422 16:07	0:49	21	60	012 Xantic	
127	# 0033297880736	9K6 Data	030422 17:00	0:54	21	60	012 Xantic	
128	# 00870763706017	Speech	030423 09:37	6:30	02	21	012 Xantic	
131	# 004767244621	9K6 Fax	030423 10:40	1:03	11	40	012 Xantic	
133	# Incoming call	9K6 Data	030423 11:35	3:17	21	60	012 Xantic	
135	# 004766779070	9K6 Data	030423 11:43	7:29	21	60	012 Xantic	
139	# 004766779070	9K6 Data	030423 12:02	3:10	21	60	012 Xantic	
140	# 004791381198	Speech	030423 12:16	0:15	02	21	012 Xantic	captain

Outgoing calls summary:			
Speech	:	437 s (	7.28 minutes)
9K6 Fax	:	63 s (	1.05 minutes)
9K6 Data	:	5380 s (	89.67 minutes)

Ref. no.

#: record printed previously. "No hash" when printed first time.

Number of records

Duration in seconds per service

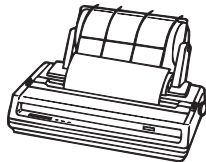
Accumulated time in minutes and 1/100 of a minute



### 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.



For setting up, see [Serial printer settings](#) in *Getting Started*.

Select logging mode in vtLite Marine Traffic log to: Automatic printing to RS232A or RS232B, see [Traffic log settings](#) earlier in this manual.

Reference number	Subscriber number	Type of service	Start date and time	Call duration in minutes and seconds	MSN number	Net service provider	User name if access code is activated	
018	004766779010	Speech	030508	08:33	0:53	20	004Tel	captain
019	004766779010	Speech	030508	08:35	1:04	20	004Tel	captain
020	004791381198	Speech	030508	08:38	0:12	20	004Tel	
021	004766779016	Speech	030508	08:40	0:24	20	004Tel	captain
022	004766779016	9k6fax	030508	08:45	0:56	40	004Tel	
023	004766779016	9k6fax	030508	08:55	2:06	40	004Tel	
024	004766779016	9k6fax	030508	09:05	0:56	40	004Tel	
025	004766779070	9k6dat	030508	10:40	10:50	60	004Tel	
026	004766779070	9k6dat	030508	11:50	0:58	60	004Tel	



## Menu functions

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

The screenshot shows the Nera F33 software interface. The main window has a menu bar (Mode, View, Configure, Help) and a status bar (Position: 059d52m12s N 010d29m01s E). The main area displays "ESC" and a sidebar with icons for Book, Log, Menu, and Seek. A "Function menu" is open, showing options: Exit Menu, 1. Set default Net provider, 2. Set access level, 4. Phone setup menu, 9. Advanced functions, and Mail. Red arrows point from the "Function menu" to three sub-menus: "4 - Phone setup menu", "9 - Advanced functions menu", and "91 - Access control menu".

**Function menu**

- Exit Menu
- 1. Set default Net provider
- 2. Set access level
- 4. Phone setup menu
- 9. Advanced functions
- Mail

**4 - Phone setup menu**

- Exit Menu
- 2. Call duration guard
- 4. Set time zone
- 7. Message Indication

**9 - Advanced functions menu**

- Exit Menu
- 1. Access control
- 3. Software update prep.
- 4. Alarms and messages
- 7. Configuration
- 8. Information available
- 9. Customize

Annotations for the 9 - Advanced functions menu:

- 8. Information available: Only appears in OWNER level
- 4. Alarms and messages: Only appears when Diagnostics is ON
- 9. Customize: Only appears in OWNER level.

**91 - Access control menu**

- Exit Menu
- 1. Restrict dial
- 2. Access code
- 3. Restrict SIM usage

**97 - Configuration menu**

- Exit Menu
- 1. ISDN configuration
- 2. Net service providers
- 4. Set diagnostics
- 7. Fcc L-Band Setup
- 8. Charge tone
- 9. Spot Beam Report Method

**98 - Information available**

- Exit Menu
- 2. Misc. version ...
- 3. Tranceiver Status
- 4. EIRP table
- 9. Network status information

Only appears in OWNER level.

**99 - Customization menu**

- Exit Menu
- 1. Paid functions
- 2. Phone name setup



Function reference list

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

Ref.	Function	Features
1	<b>Set default Net provider</b>	Allows changing Net service provider (and terrestrial network). See " <b>Selecting default Net service provider</b> ".
2	<b>Set access level</b>	Allows shifting between user level and owner level, changing PIN code and owner password. See " <b>Access level</b> ".
4	<b>Phone setup</b> menu	
42	Call duration guard	Sets maximum call duration for 64 kbps calls.
44	Set time zone	Sets MCU Time Zone (UTC and date are set automatically).
47	Message indication	Switches indication of received fax and data calls on/off.
9	<b>Advanced functions</b> menu	
91	<b>Access control</b> menu	See " <b>Advanced functions</b> ".
911	<b>Restrict dial</b>	Only allows calls from Phone Book. List of barred numbers may be established.
912	<b>Access code</b>	Sets personal codes for using the satellite terminal.
913	<b>Restrict SIM usage</b>	Only allows calls with specific card, no card or any card.
93	<b>Software update prep</b>	Prepares MCU for software update.
94	<b>Alarms and messages</b>	See information on CD
97	<b>Configuration menu</b>	
971	<b>ISDN configuration</b>	Chooses between ISDN protocols.
972	<b>Net service providers</b>	Changing Net service provider data.
974	<b>Set diagnostics</b>	Allows additional system information to be displayed
977	<b>Rx L-Band setup</b>	Not in use
978	<b>Charge tone</b>	Setup and enabling/disabling charge tone.
979	<b>Spot beam report method</b>	Sending spot ID or position
98	<b>Information available</b>	See " <b>Advanced functions</b> ".
982	<b>Misc.version Id information</b>	Displays a series of version information windows and FWD ID.
983	<b>Transceiver status</b>	Displays max/min voltages and temperatures in RF unit.
984	<b>EIRP table</b>	Carrier status (not in use)
989	<b>Network status information</b>	Displays various network status information.
99	<b>Customization menu</b>	See " <b>Advanced functions</b> ".
991	<b>Paid functions</b>	Installs additional functions, if any.
992	<b>Phone name setup</b>	Allows altering the factory and phone name.

## Access level

The Nera F33 user program (vtLite Marine) 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 Nera F33 in operation.*

### 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.


**3** Key in:

- Old PIN code (*default: 1234*)
- New PIN code (*4 - 10 digits possible*)
- Retype to confirm

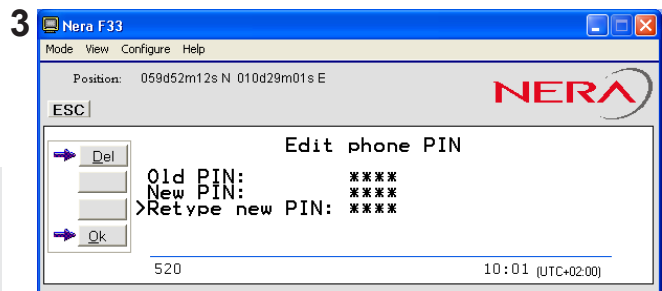
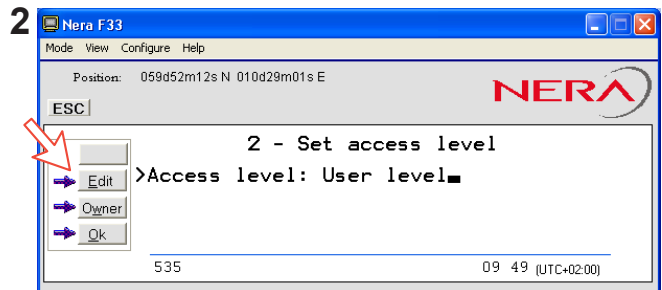
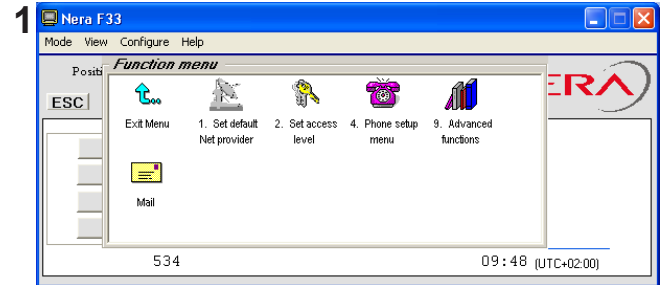
Click **Ok** for each entry and to store the new code.

*Note! Clicking **Ok** without entering any numbers for **New PIN** and **Retype new PIN** disables the PIN code. NB! The **Old PIN** code must be entered to reactivate the previous PIN code.*

*If the **PIN** is accidentally lost, it is possible to reset the user's password to default (1234) by logging in as owner:*

" + owner's password"

*(Resetting is not possible on the SIM card.)*





**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.

**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**.

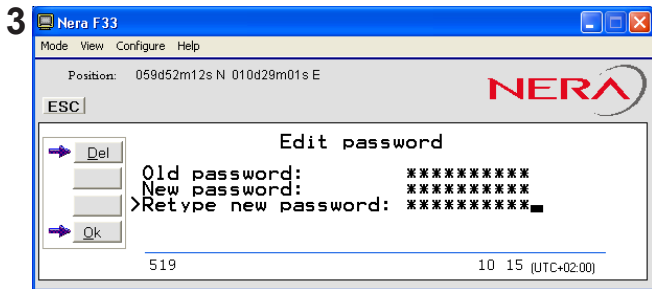
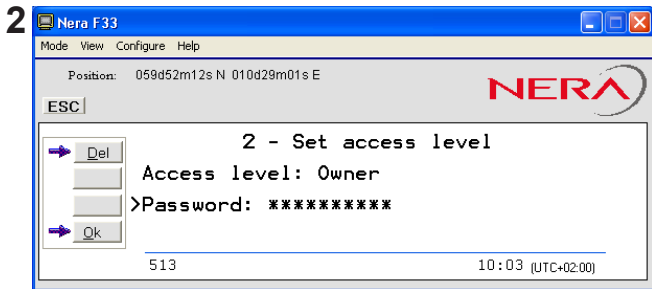
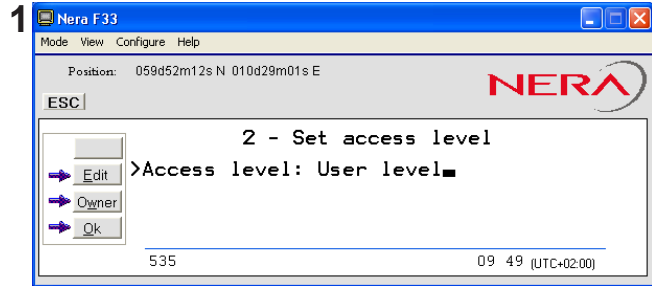
**Changing owner level password**

**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*)
- Retype to confirm

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

*To revert to **User level**, open the "Set access level" window and click **User**.*





## 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!*

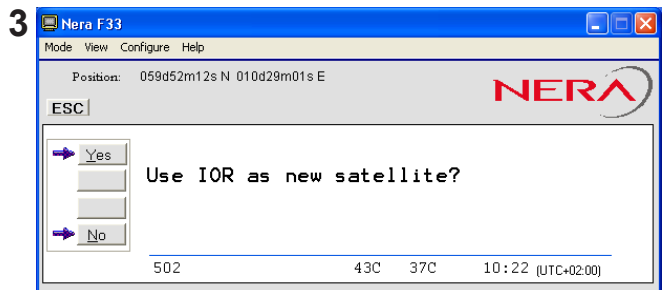
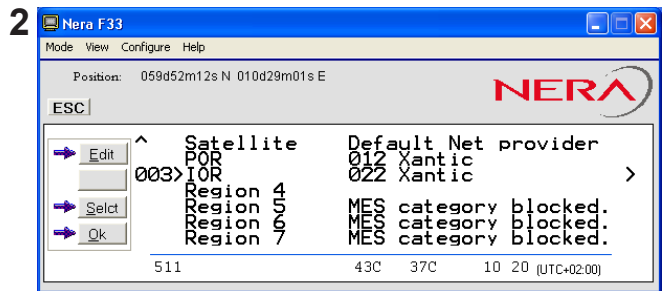
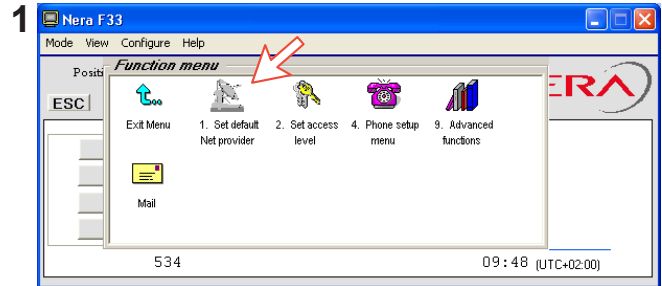
Procedure:


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




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

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

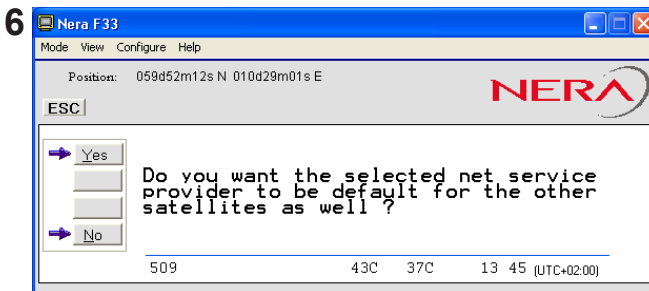
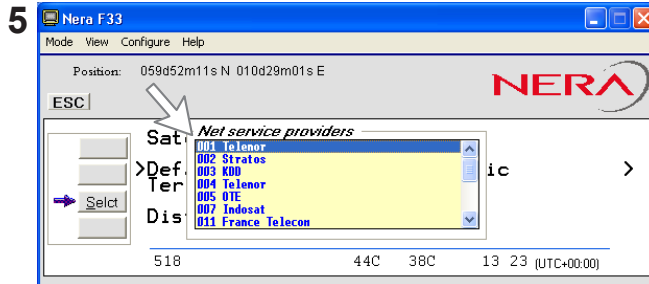
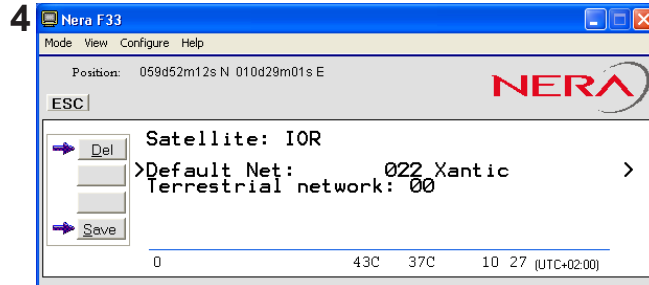
*To change default Net service provider for a satellite region, see next page.*



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

5 Scroll to required Net provider: /, and press  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).



## Phone setup



This phone setup menu includes the functions:

- Limitation of call duration.
- Setting date and time.
- Indication of received calls, *see next page*.

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



### Call duration limit

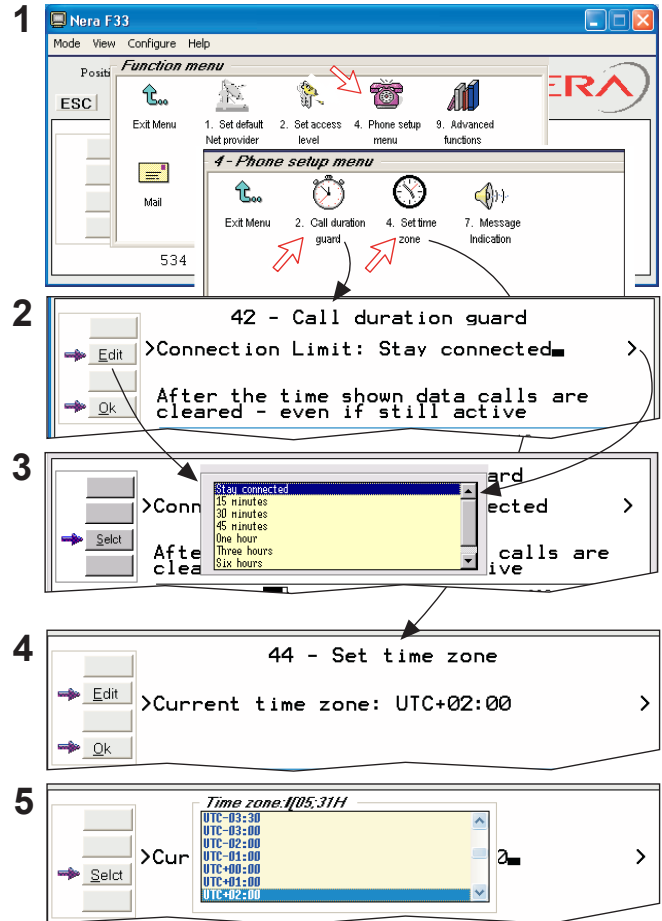
The call duration guard prevents accidental transmission of prolonged 9.6 kbps data calls. The timer sets the point at which the call is automatically cleared:

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

### Setting time zone

The function sets the time displayed in the window:

- 1 Double-click **Set time zone** to change zone.
- 4 Clicking **Edit** opens the list.
- 5 Scroll / to select the required zone. Click **Select** to store the selected zone.





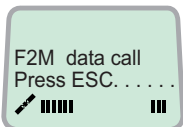
### Message indication

When the Message Indication function is set On, a received data and/or fax call is signalled in all Nera Display Handsets:



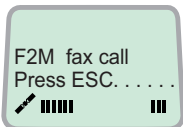
The ringing stops when pressing **ESC**, or when the call is finished.

Data call:

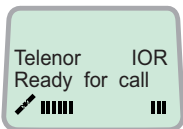


F2M = Fixed-to-Mobile

Fax call:



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

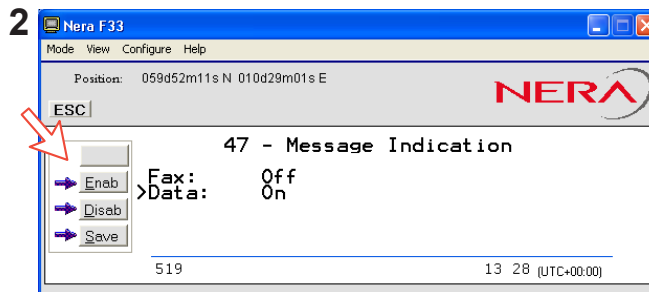
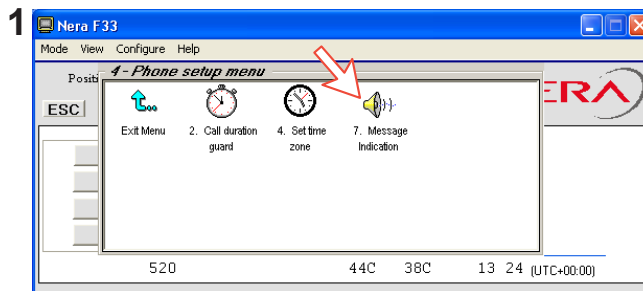


Setup:

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

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

Press **Save** to store the settings.

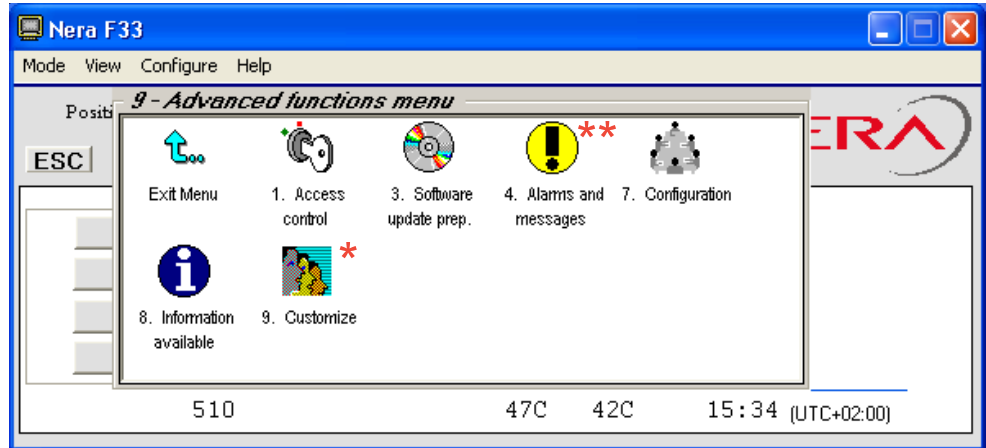


## Advanced functions

\* Some Advanced functions are accessible from **OWNER LEVEL** only.

The OWNER LEVEL is protected by password. For shifting to owner level and assignment of password, see "**Access level**".

\*\* Other Advanced functions are accessible when **Diagnostics** is turned ON.



The Advanced functions include the following menus:

- **Access control:** Restrict dial  
Access code  
Restrict SIM usage
- **Software update:** Prepare software upgrade
- **Configuration:** ISDN configuration  
Net service provider names  
Set diagnostics  
Spot Beam Report Method
- **Information available:** Misc. version Id information  
Network status information  
(when diagnostics is ON, see "**Set diagnostics**")
- **Customize:** Paid functions  
Phone name setup (owner level)

## Access control

### Restricted dialing

The restricted dialing function allows the owner to establish a Barred list of subscriber numbers that cannot be called; or set Nera F33 for dialing from Phone Book only. The restricted dialing modes prevent misuse of Nera F33:

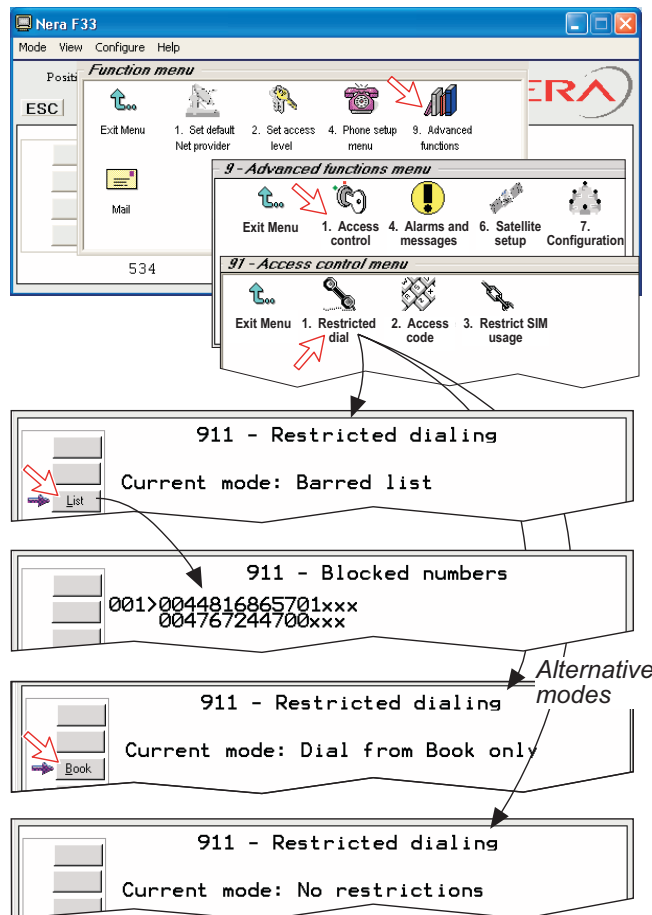
- **Barred list**, which may contain up to 10 phone numbers or part of numbers that **can not** be called. E.g. the entry "0087" in the barred list prevents all mobile-to-mobile calls.
- **Dial from Book only**, which restricts calls to the numbers in Nera F33 Phone Book. It is still possible to append: 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 **"Restricted SIM usage"**.
- **No restrictions (default)**.

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*



**Restricted dialing setup**  
*(owner level only)*

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

**1** Open the **Restricted dial** 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)

**3** Clicking **List** displays the blocked phone numbers. The List key only appears when Current mode is **Barred list**.

**4** Clicking **Edit** allows the barred number to be modified:

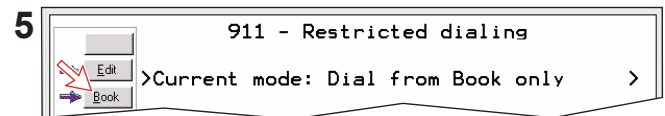
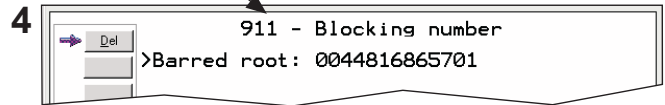
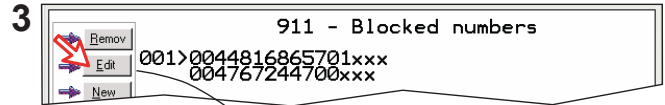
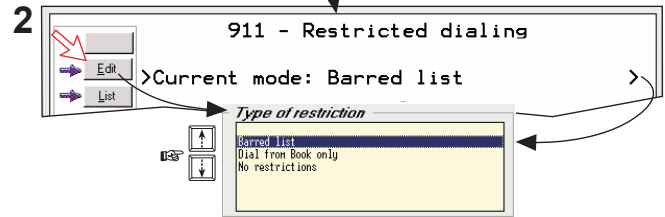
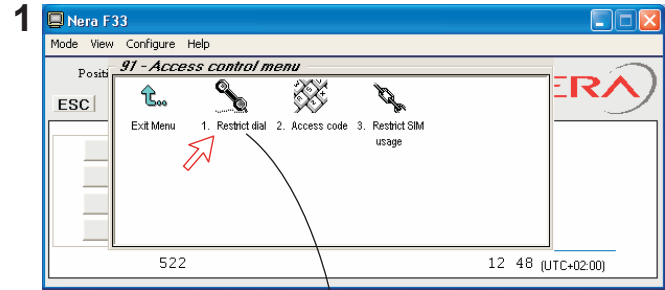
The field is empty when clicking **New** to add a phone number to the list.

**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.

*Warning! Remember to revert to **user level***



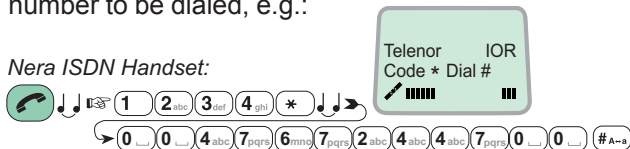
**Access code (owner level only)**

Access code can be activated for 4.8 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.

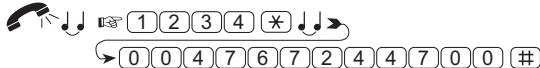
All telephones are activated. To release a telephone for use without access code, see **MSN configuration**.

Entering the personal code allows the subscriber number to be dialed, e.g.:

Nera ISDN Handset:



Analogue telephone:



Setup:

**1** Double-click the **Access code** icon in the **Access control menu**.

**2** Pressing **New** opens the **Access code 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.

**1** Nera F33  
Mode View Configure Help  
Positi 91 - Access control menu  
ESC  
Exit Menu 1. Restrict dial 2. Access code 3. Restrict SIM usage  
522 12 48 (UTC+02:00)

**2** Access codes  
000>No codes set.  
New  
Quit

**3** Access code add entry  
Del  
>Name: Captain  
Ok  
>Code: \*\*\*\*  
>Confirm code: \*\*\*\*  
Ok

**4** Access codes  
Remove  
> Captain  
Edit  
New  
Quit



**Restricted SIM usage**

Allowed SIM

Nera F33 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**.

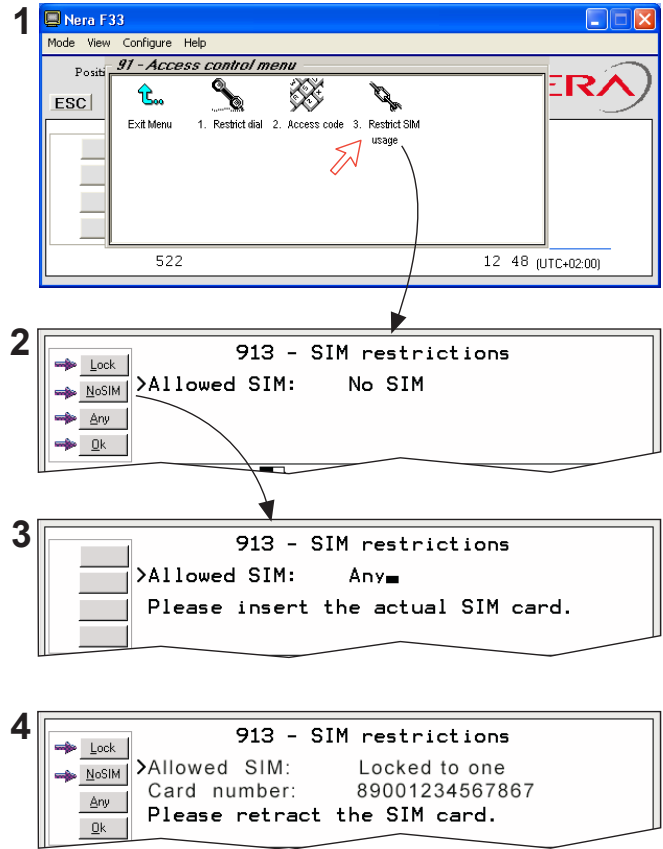
Click **Any** (default) to set Nera F33 for operation from a specific card only.

**Lock SIM:**

**3** Click **Lock** and insert the actual SIM card. Nera F33 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.



## Configuration menu

### ISDN protocol configuration

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

**2** Double-clicking the **ISDN configuration** displays the ISDN configurations implemented in Nera F33.

Switch to **owner level** to edit the entries:

#### • Protocol

Select Euro ISDN for connection of equipment conforming to the European ISDN standard. Select NI-1 protocol for equipment conforming to the NI-1 standard (National ISDN-1).

#### • 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.

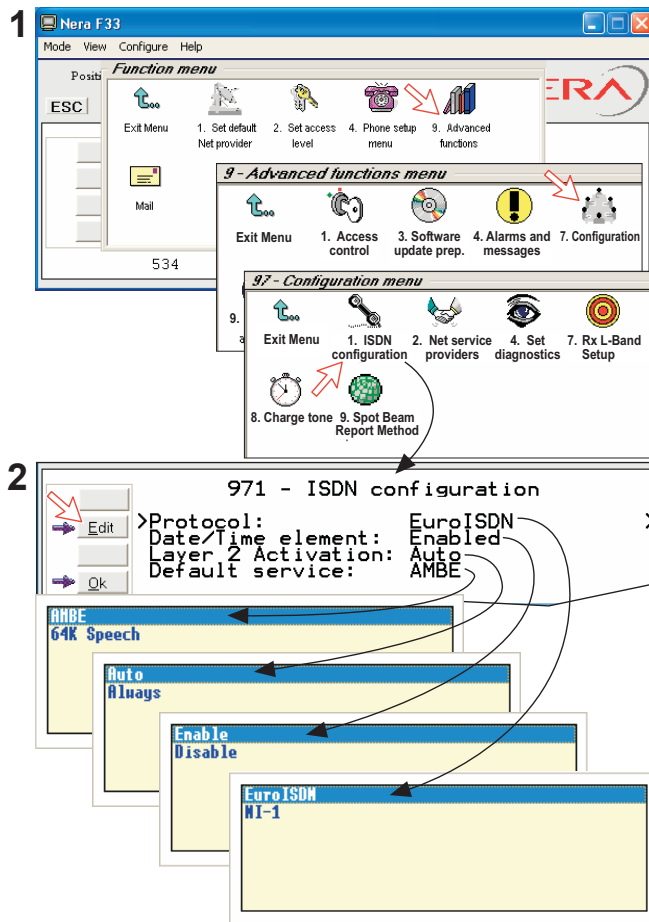
#### • Layer 2 Activation

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. When the ISDN protocol is set to NI-1, this option is on as default.

#### • Default service

Some ISDN devices can not signal their own MSN number. Such a phone will be not able to use the 64 kbps service since all "unknown" speech devices are required to use the 4.8 speech service. The user can set Nera F33 to map all "unknown" devices to 4.8 speech (AMBE) service.

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



**Charge tone setup (owner level only)**

When the charge tone function has been enabled, a single frequency tone or DTMF is transmitted once the call has been established. The tone informs an external debiting system, e.g. a pay phone connected to the MCU that charging can start.

*Procedure:*

**1** Double-click the **charge tone** icon via the **Function menu > Advanced functions menu > Configuration menu**.

**2** The **Charge tone** window appears. The example indicates that a single 2400 Hz with a duration of 1000 ms will be emitted. The window provides buttons for enabling/disabling the charge tone function.

**3** Clicking **Setup** allows selecting a single charge tone or DTMF.

**4** Clicking **Edit** allows selection between **Single tone** and **DTMF** tone emission.

**5** Clicking **Selct** with the **Single tone** activated allows entering the required tone frequency.

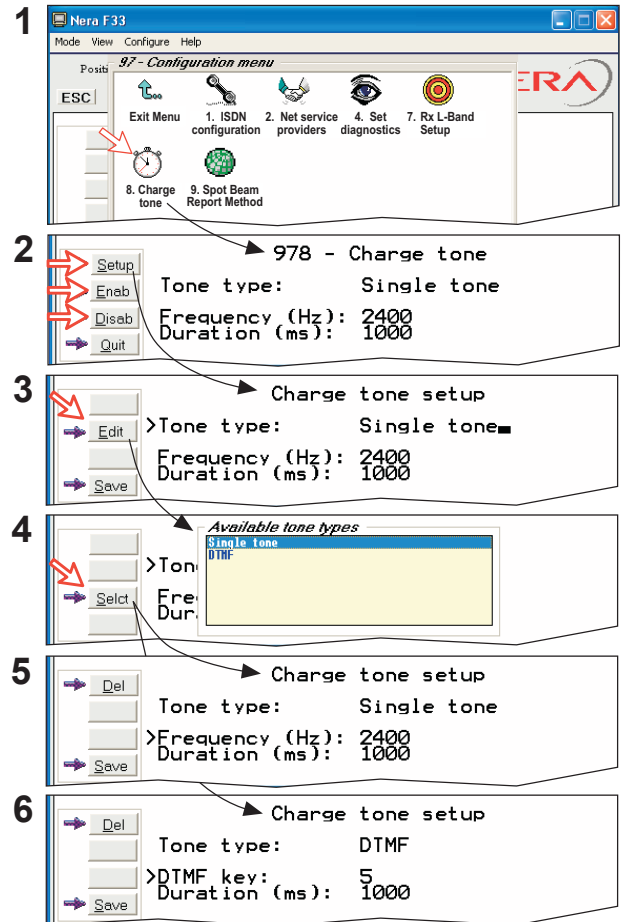
**6** Clicking **Selct** with the **DTMF** tone activated allows entering the DTMF key and duration.

*Valid settings:*

*Frequency: 400 - 3400 Hz*

*Duration: 10 - 5000 ms*



*DTMF key: 0 - 15*



**Net service providers *(owner level only)***

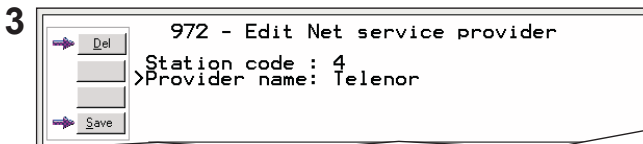
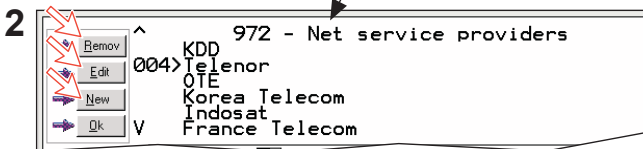
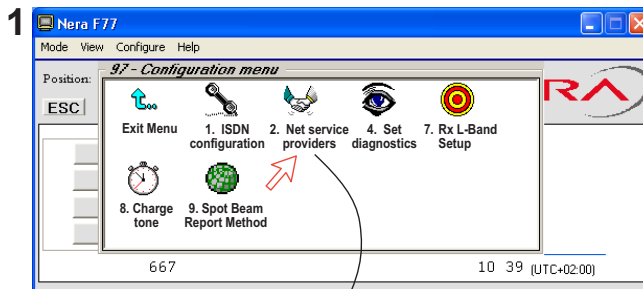
*Adding, editing, or removing entries in the list of Net service providers:*

**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, /. Clicking **Ok** returns you to the Configuration window. **Remov** deletes entry. Clicking **Edit** opens the window allowing the station code and provider name to be modified (window **3**).

**4** Clicking **New** (window **2**) opens the window allowing station code and provider name to be added. Use **Del** to modify. **Save** stores the changes.

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



**Set diagnostics**

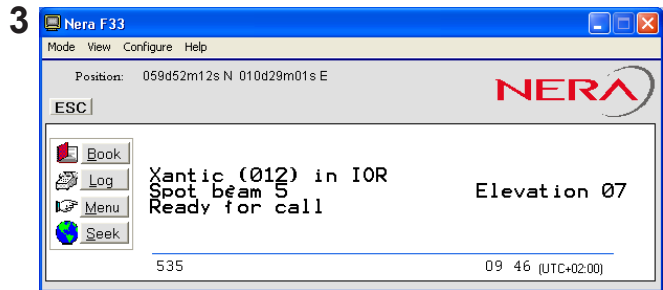
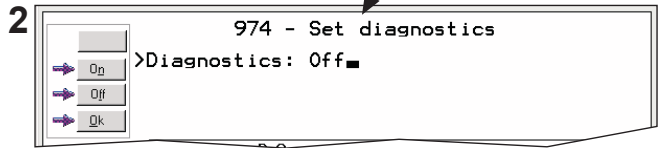
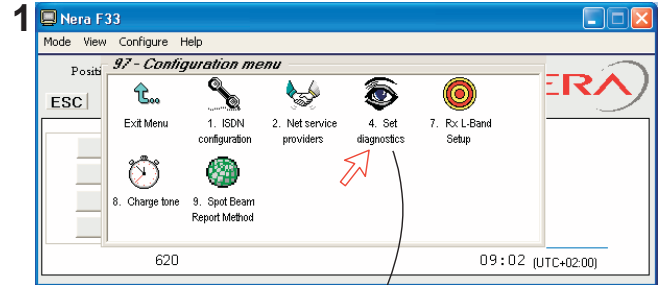
Additional system information is displayed when diagnostics is turned **On**.

See also **MENU FUNCTIONS**.

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

**2** Click **On** or **Off** as required.

**3** Shows idle window with Diagnostics is **On**.




## Information available

### Miscellaneous version Id information

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

**1** Via the **Function menu > Advanced functions menu**, double-clicking the **Miscellaneous version Id information** icon in the **Information available** menu displays the available data (window **2**).

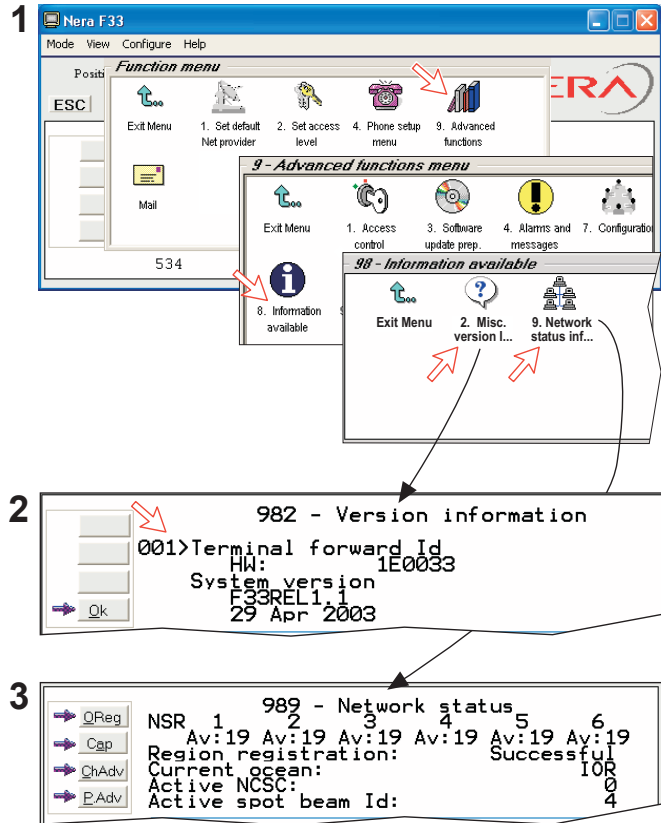
**2** With **Diagnostics On**, pressing  opens a series of version information windows.

### Network status information *(owner level only)*

This function displays various network status information.

**3** Double-click the **Network status information** icon in the **Information available** menu for readout.

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



## Customize menu *(owner level only)*

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

### Paid functions

**2** A paid function is activated by entering an "Opening key" provided when purchasing the function.

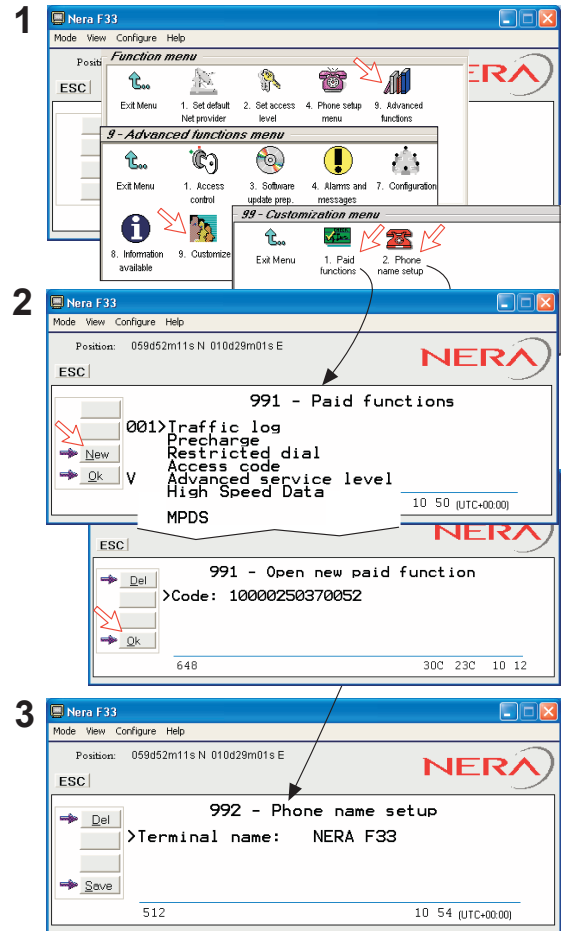
Double-clicking the **Paid functions** icon in the **Customization menu** displays the list of available functions.

Clicking **New** opens the **Open new paid functions menu**. Enter the "Opening key" and click **Ok**.

### Phone name setup

**3** Double-clicking the **Phone name setup** icon in the **Customization menu** displays the Phone name, i.e. Nera F33. To change, key in uppercase/lowercase letters as required. Use **Del** to modify. **Save** stores the changes

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



## 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 Nera F33 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 Main Communication Unit (MCU). *See later in this manual.*

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

*Numbers to be programmed into ISDN devices:*

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

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

*Note! A Term.Id already entered is not accepted.*

<b>VALID TERMINAL IDs AND MSN NUMBERS</b>					
<b>ISDN PORTS</b>		<b>ISDN / RS-232 / USB PORTS</b>		<b>9.6FAX VIA TA</b>	
<b>4.8kbps speech</b>		<b>9.6kbps data</b>		<b>9.6kbps fax</b>	
Term.Id	MSN	Term.Id	MSN	Term.Id	MSN
<b>01*</b>	<b>20*</b>	<b>21*</b>	<b>60*</b>	<b>11*</b>	<b>40</b>
<b>02*</b>	<b>21*</b>	<b>22*</b>	<b>61*</b>	<b>12</b>	<b>41</b>
<b>03*</b>	<b>22*</b>	<b>23*</b>	<b>62*</b>	<b>13</b>	<b>42</b>
04	23	24	63		
05	24	25	64		
06	25	26	65		
07	26	27	66		
08	27	28	67		
09	28	29	68		
<i>01/20: - first Nera ISDN Handset</i>		<i>21/60, preset for RS-232A port</i>		<i>11/40: - fax on TA</i>	
<i>03/22 - first Nera ISDN Handset</i>		<i>22/61, preset for RS-232B port</i>			
<i>02/21 - analogue phone on TA</i>		<i>23/62, preset for USB port</i>			

**\* 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.*

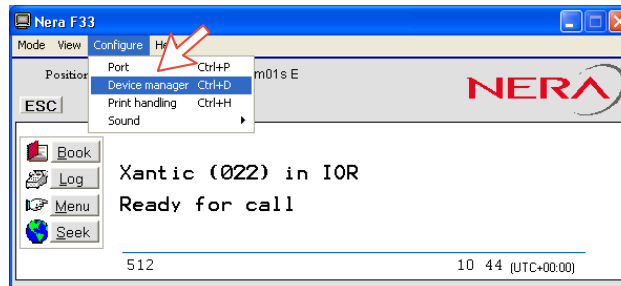
<b>Name</b>		<b>Service</b>	<b>MCU ports</b>	<b>Provided by ISP:</b>	
				<b>Term. Id</b>	<b>IMN (examples)</b>
Bridge	MSN20* 	4.8 kbps speech	 ISDN	01*	762420510 ←■■■■
Nera TA	MSN21* 	4.8 kbps speech	 TA - TEL1	02*	762420511 ←■■■■
Bridge	MSN22* 	4.8 kbps speech	 ISDN	03*	762420512 ←■■■■
Nera TA	MSN40* 	9.6 kbps fax	 TA - TEL2	11*	762420513 ←■■■■
Data	MSN60* 	9.6 kbps data	 RS-232 A	21*	762420514 ←■■■■
Data	MSN61* 	9.6 kbps data	 RS-232 B	22*	762420515 ←■■■■
Data	MSN62* 	9.6 kbps data	 USB	23*	762420516 ←■■■■

\* Preprogrammed



## 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 [ACCESS LEVEL > Changing owner level password](#).



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



## Nera ISDN Handset

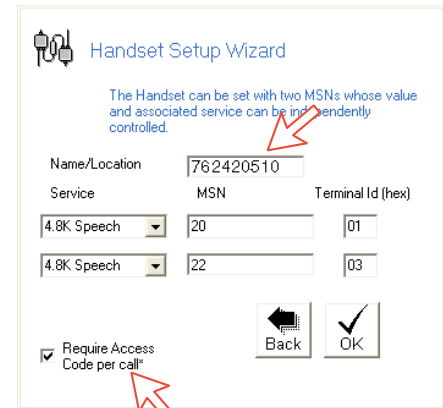
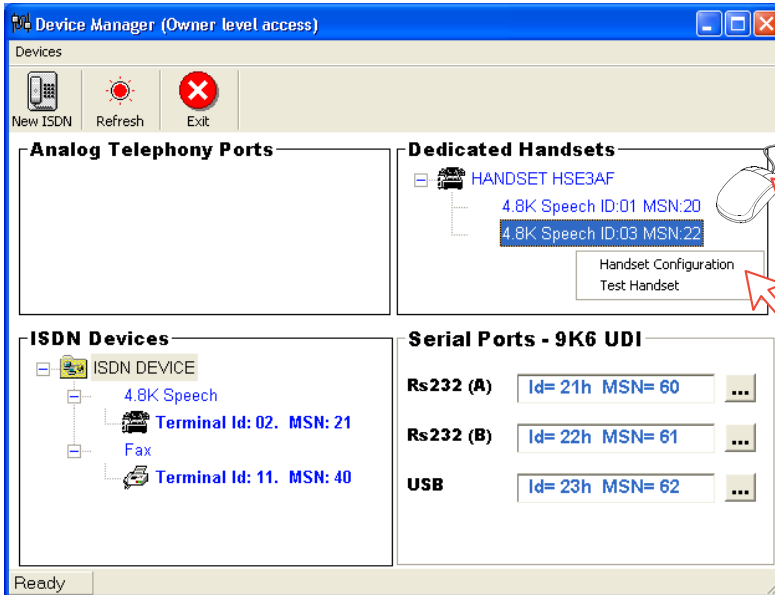
- Nera ISDN Handsets will automatically be configured with Handset MSNs in the Device Manager.
- The first Nera ISDN Handset connected will be given MSN20 & MSN22.
- The next Nera ISDN Handset will be the next available MSN.
- The MSNs can be controlled independently, e.g. if two handsets are given the same MSN, they will

both respond to an incoming call to that MSN.

- To verify selected MSN of a handset, check in the Device Manager or press the "R"-button on the Handset.

Open the 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 required.



**Require Access Code** must be unchecked to allow this Handset to be used without entering a code.

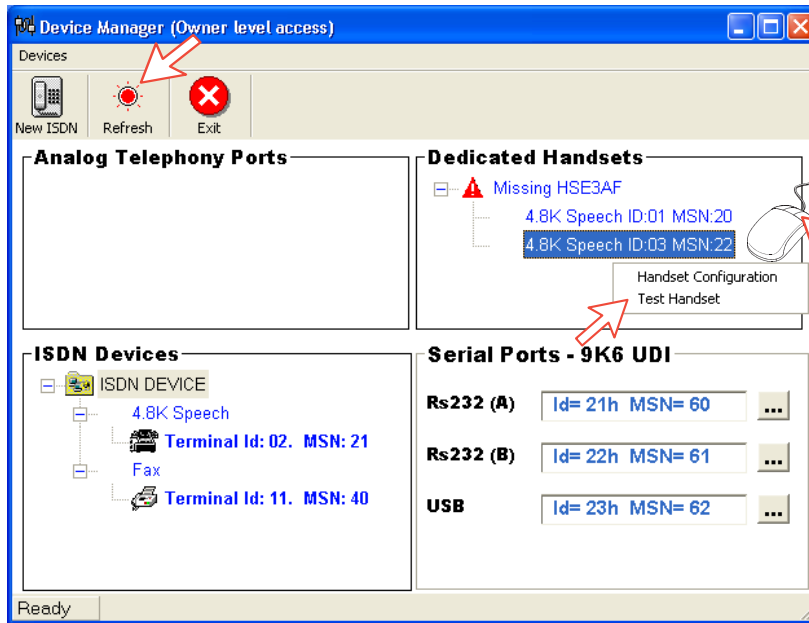


### Deleting an ISDN Handset

Unplug the Nera 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.

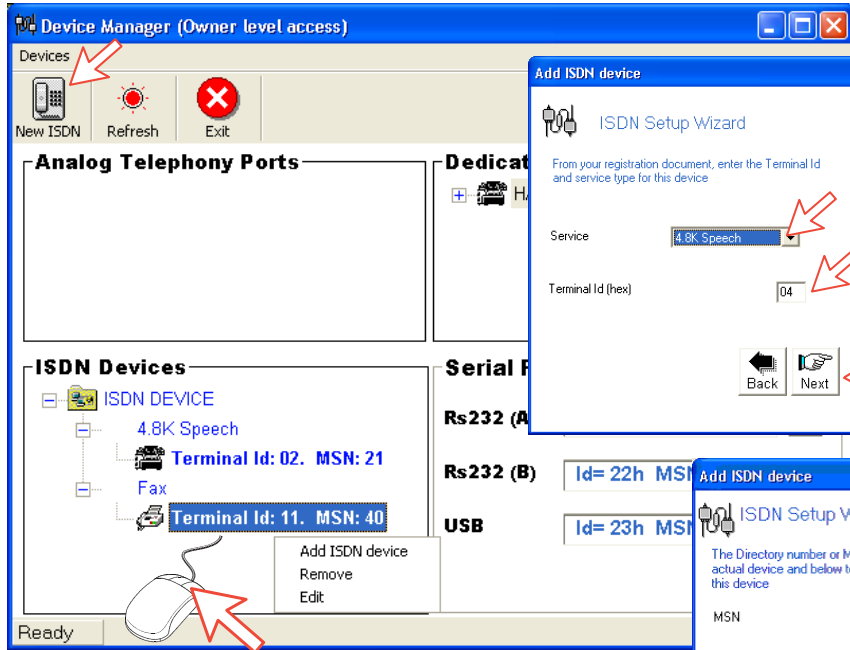
If necessary, click refresh: and repeat clicking **Test Handset**. The Main Communication Unit will remember the handset connection data. All handsets are given a unique name.

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



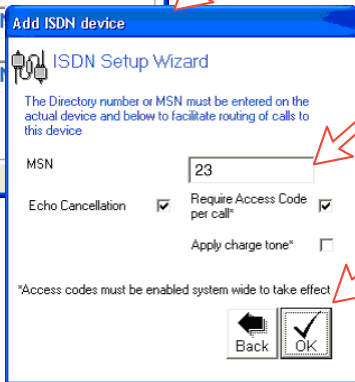
**ISDN port**

Open device manager and right-click to open ISDN Setup Wizard.



Select the required service:

- 4.8 kbps standard speech service
- 9.6 kbps fax service



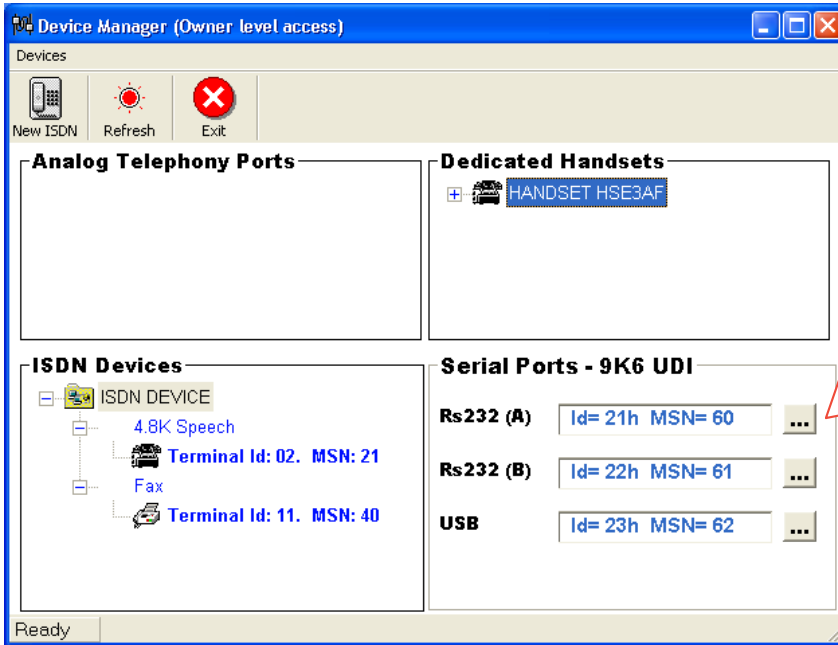
Click to continue.  
The system selects the Next available Terminal Id. Check with Terminal Id received from Net provider.

Key in MSN number if not using the recommended one.

Click to enter number.

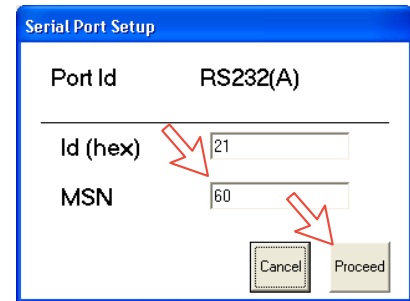
**RS-232 port**

Open device manager and right-click to open setup editor.



Click to open **Serial Port Setup**.

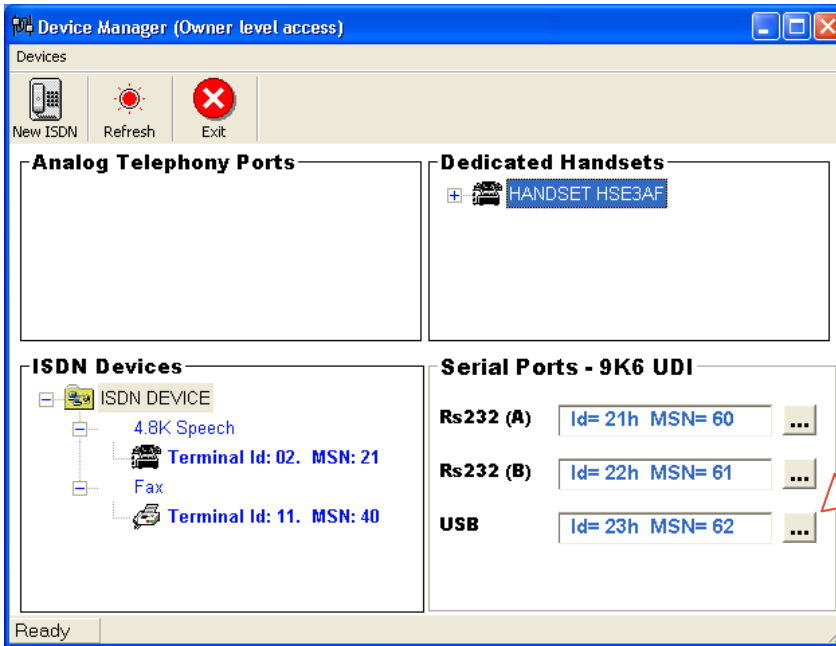
Key in MSN number if not using the recommended one.  
Click **Proceed** to enter number.





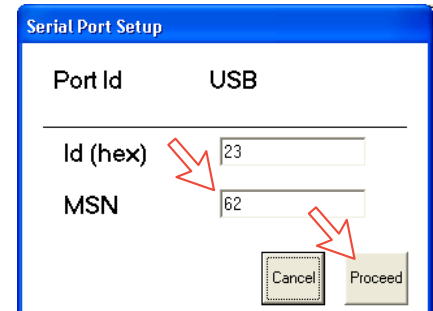
## USB port

Open device manager and right-click to open setup editor.



Click to open **Serial Port Setup**.

Key in MSN number if not using the recommended one. Click **Proceed** to enter number.



## Saving and reloading configurations

The Nera F33 configuration settings may be stored on the PC harddisk, e.g. prior to replacing software.

*Procedure:*

- 1 Open the Device Manager window as indicated
- 2 Clicking **Devices > Save config to a file** automatically stores the data in a "Config.cgf" file in the vtLite directory **c:/program files/vtLite Marine**.
- 3 After installing the software, the settings may be transferred back to Nera F33 by pressing **Load**.
- 4 Clicking **Restore Factory Defaults** loads default Nera F33 configurations.

**Printout/storing a configuration summary:**

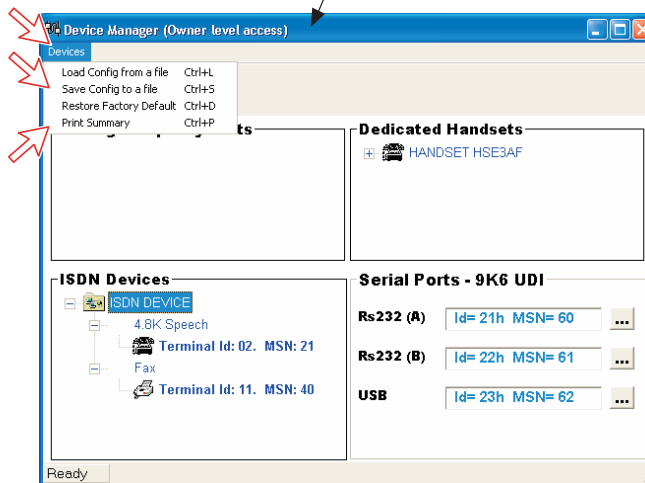
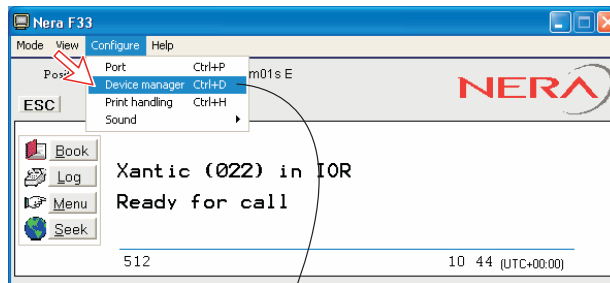
- 5 Clicking **Print Summary** opens the **Printout Viewer** (see *next page*) which lists the settings of the end user equipment, and allows filing and/or printout.

*Note!*

**Save config to a file only saves the Device Manager settings.**

*Settings such as Net provider / Access codes / ISDN protocol 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

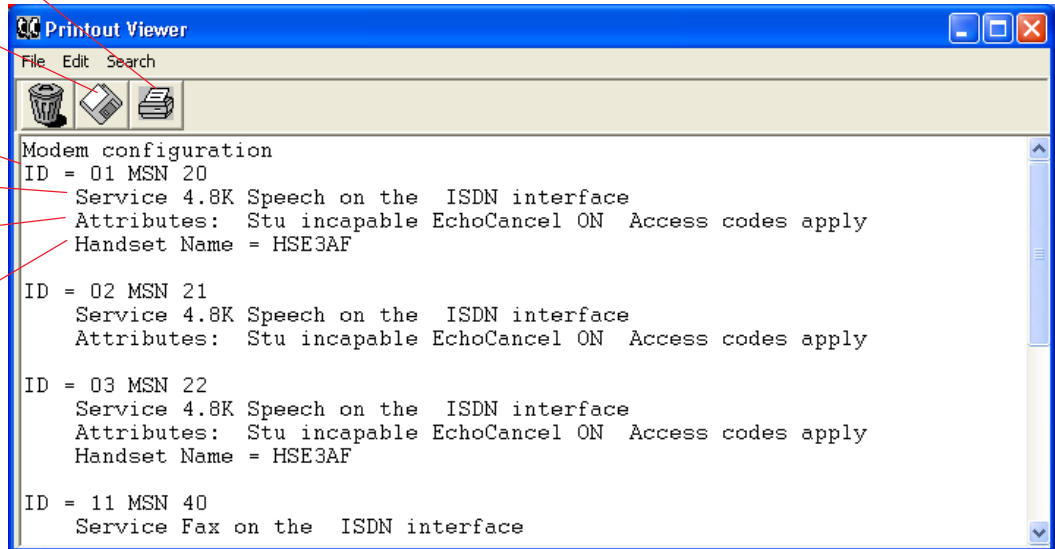
Save to disk

Terminal Id and  
MSN number

Type of service

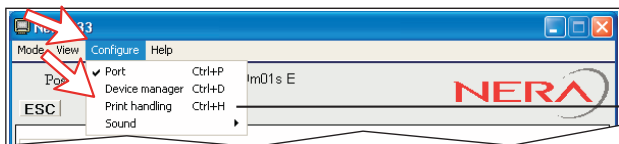
Individual device  
settings

Name/location,  
if entered



## Print handling setup

The **Printout from modem** window is used for setting of default output of Traffic log, Modem configuration etc.



Clicking **Configure > Print handling** opens the **Printout from modem** window. 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 "TRAFFIC LOG > Printout viewer".*

For direct printout, choose **Print to default windows printer**.

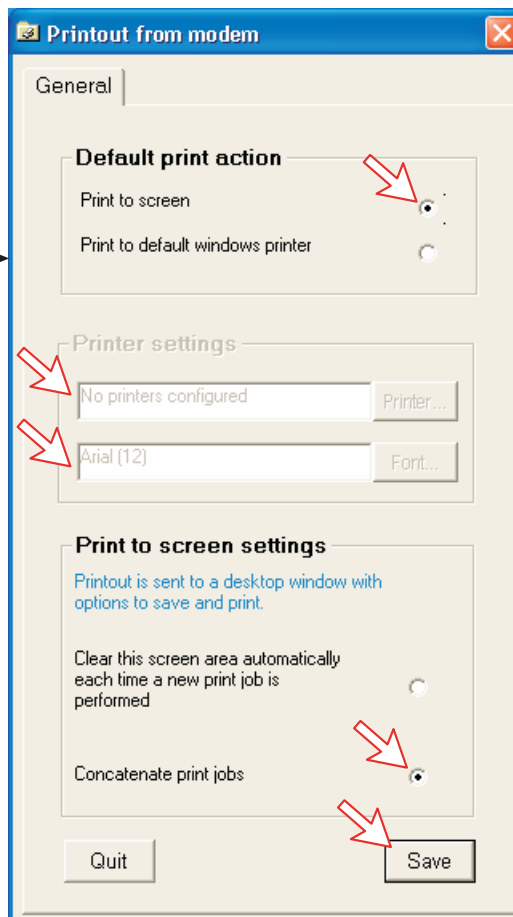
### Print to screen settings:

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.





## ***Mobile Packet Data Service***

The MPDS service can be efficient for applications such as:

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

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

*Ports supporting MPDS:*

- RS232A
- RS232B / RS422
- USB

*No configuration is needed!*

Dial number **\*\*94#** to set up an MPDS call.

*See the MPDS application on the Nera F33 CD.*

## Inmarsat GAN system/Fleet33

The Inmarsat Global Area Network service (GAN) provides 4.8 kbps voice communications service and 9.6 kbps data transmission to and from mobile/fixed subscribers anywhere within the worldwide coverage of the Inmarsat 3 spot Beam system, see [Satellite Coverage Map in Getting Started](#).

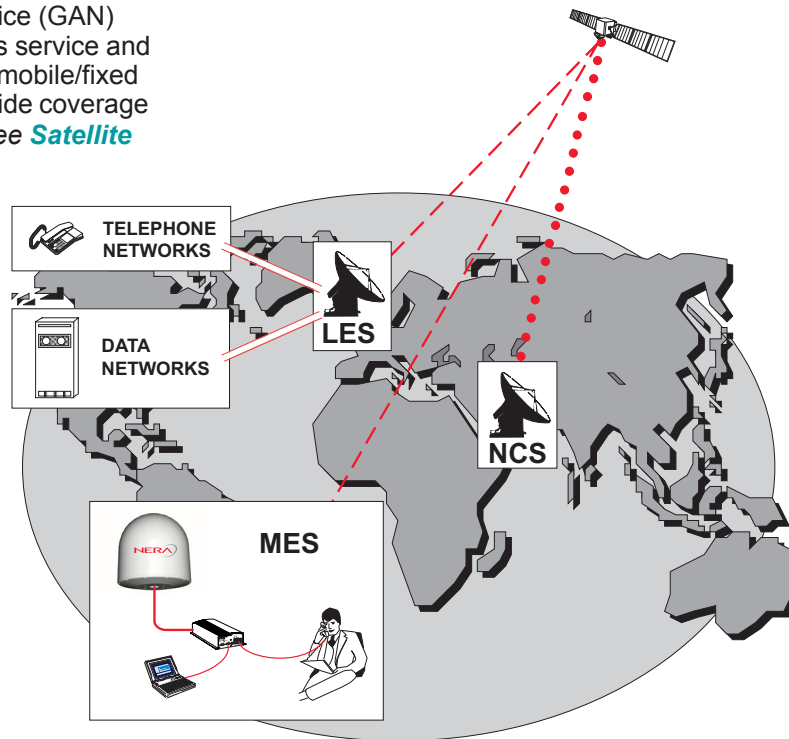
The benefit of the INMARSAT system is its high capacity, and the rapid and reliable connection between the land based (fixed) users and the **Mobile Earth Stations (MESs)**.

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 (Nera F33, a 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.

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. Nera F33 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

For coverage area of the satellites for Nera F33, see [Satellite Coverage Map in Getting Started](#).

### Transmission frequencies

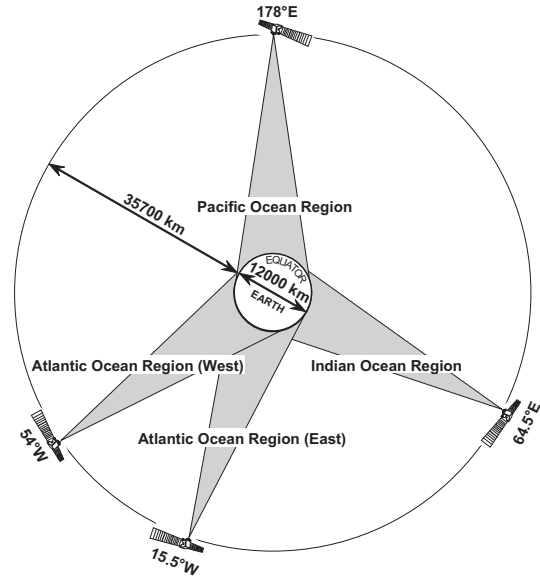
The Inmarsat terminals operate in the following frequency bands:

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 4.8 kbps voice communication, as well as 9.6 kbps fax or 9.6 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 Nera F33 Main Communication Unit (MCU).

When finding the satellite signal, it completes the hemispheric search and moves to the position where the strongest signal was detected.

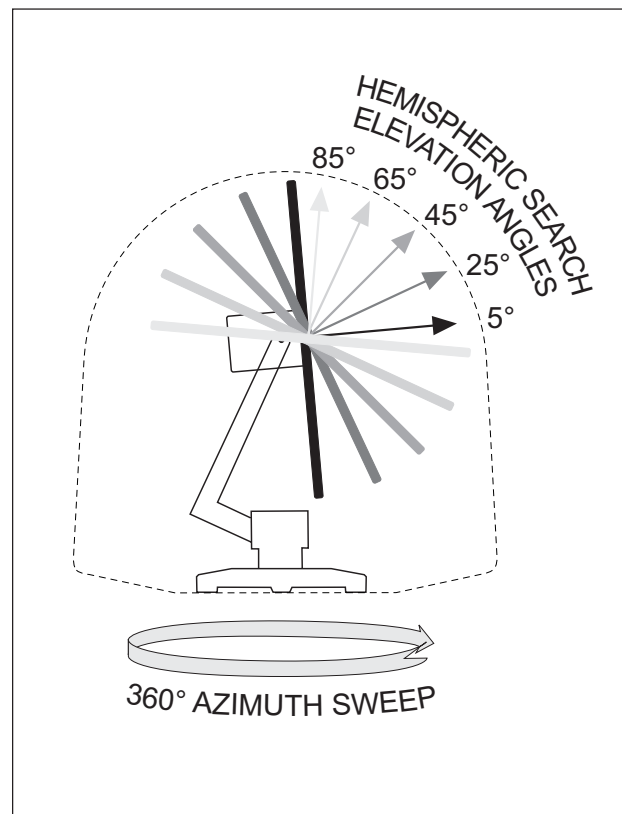
The Antenna reports back to the MCU for verification of valid NCSC.

If no valid signal is detected, no further automatic action occurs until the MCU initiates a new search.

A search request from the MCU may contain channel frequency and an order to make a full 360° search at a specific elevation, calculated from map and GPS information. If no satellite is found, a hemispheric search will be performed.

### **Tracking**

At the end of a search, Nera F33 performs a fine-tuning of the antenna position around the strongest detected signal. The fine-tuning is obtained by a squinting function based on satellite signal quality.



*Note! Nera F33 remembers the last used Ocean Region when switching the terminal off/on.*



### Communication services

Nera F33 provides the following interfaces & services:

- **ISDN connectors:**
  - 4.8 kbps speech
  - 9.6 kbps fax via Terminal Adapter
- **RS-232/RS422:**
  - 9.6 kbps data service
  - MPDS
- **USB**
  - 9.6 kbps data service
  - MPDS

Requires PC with MS Windows 98 Second Edition, or Apple OS 9.03 (or later).

The Nera F33 MCU has following ports (see figure):

- ISDN ports for connection of ISDN telephones or Nera Terminal Adapter; a total of 8 devices.
- RS-232/RS422 and USB ports for connection of data equipment.

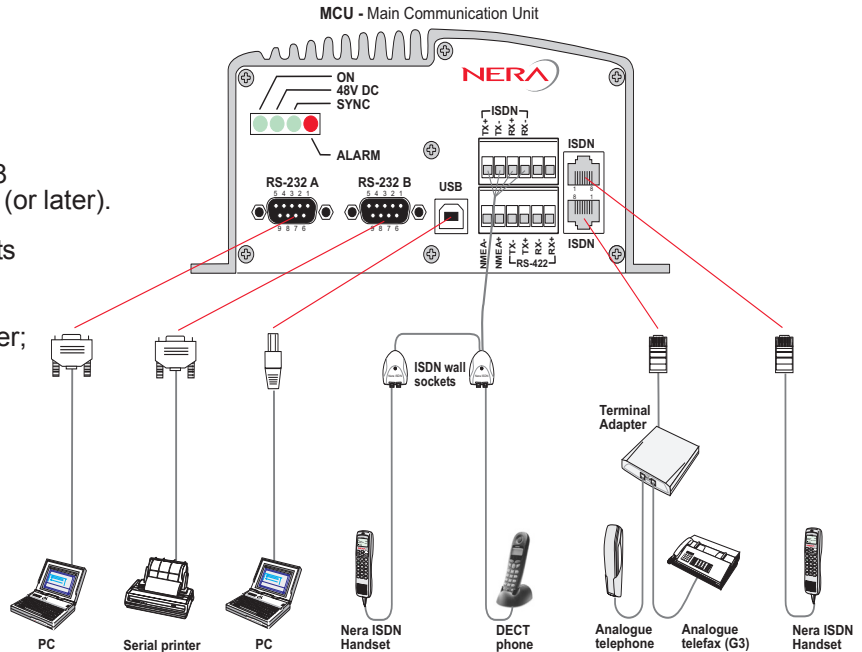
### Internal communication

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

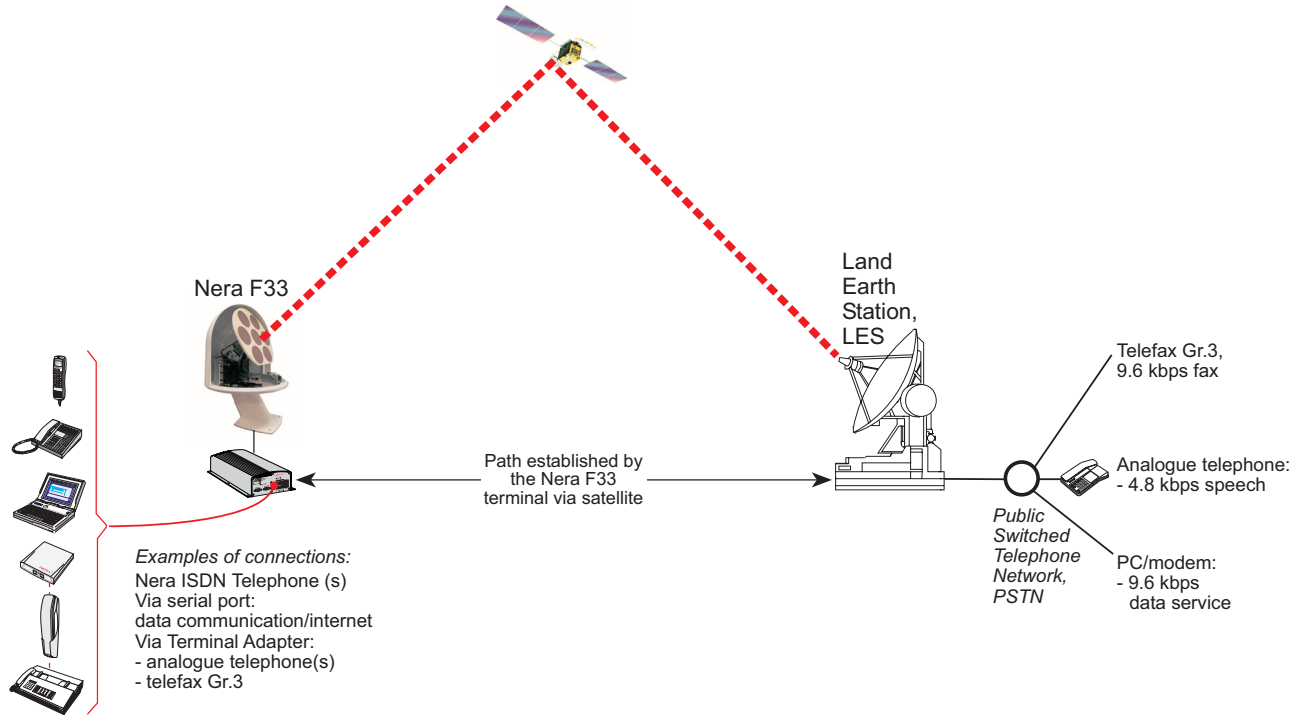
### Control interface

The **RS-232** or **USB** port allows connection of a PC for configuration of Nera F33.

A PC program (vtLite Marine) that provides the software to operate and configure Nera F33 terminal is supplied on the enclosed CD (requires at least Windows 98).



Nera F33 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 Nera F33 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.

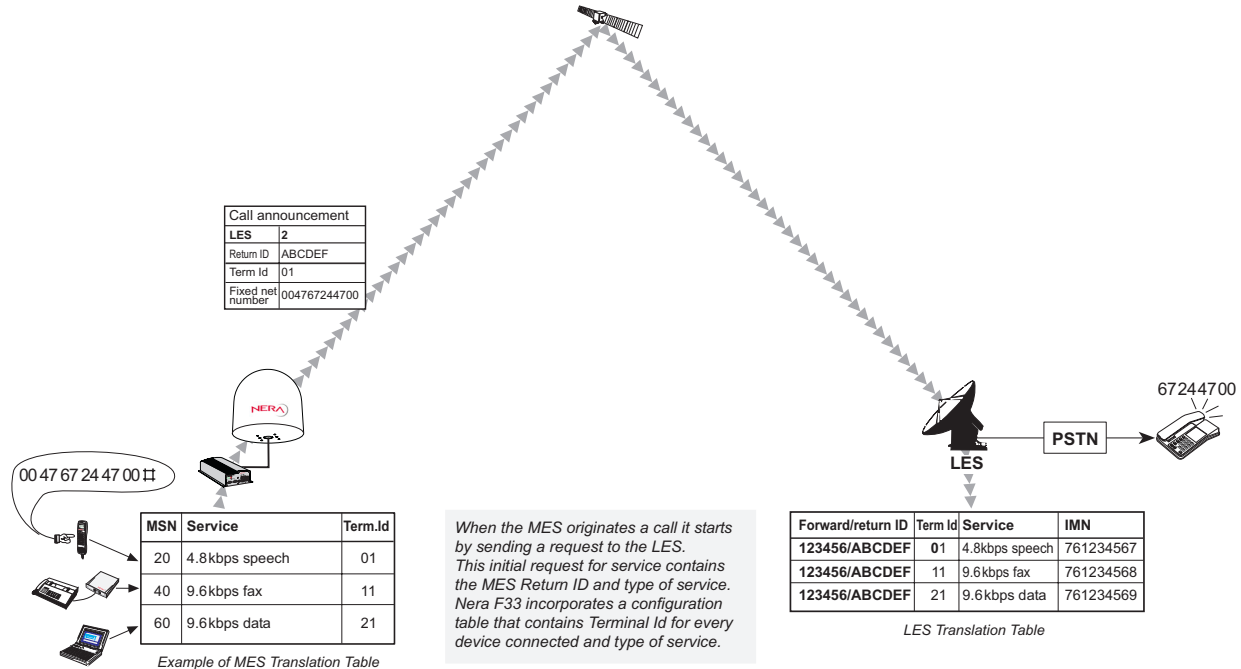
### *Call announcement from mobile to fixed:*

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 from Mobiles





## Calls to Mobiles

See figure.

The Nera F33 terminal receives incoming calls via the IMN phone numbers. IMN numbers are assigned to the following ports by the user:

- ISDN ports
- RS-232 serial data ports
- RS-422 serial data port
- USB serial data port

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 Nera F33 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)

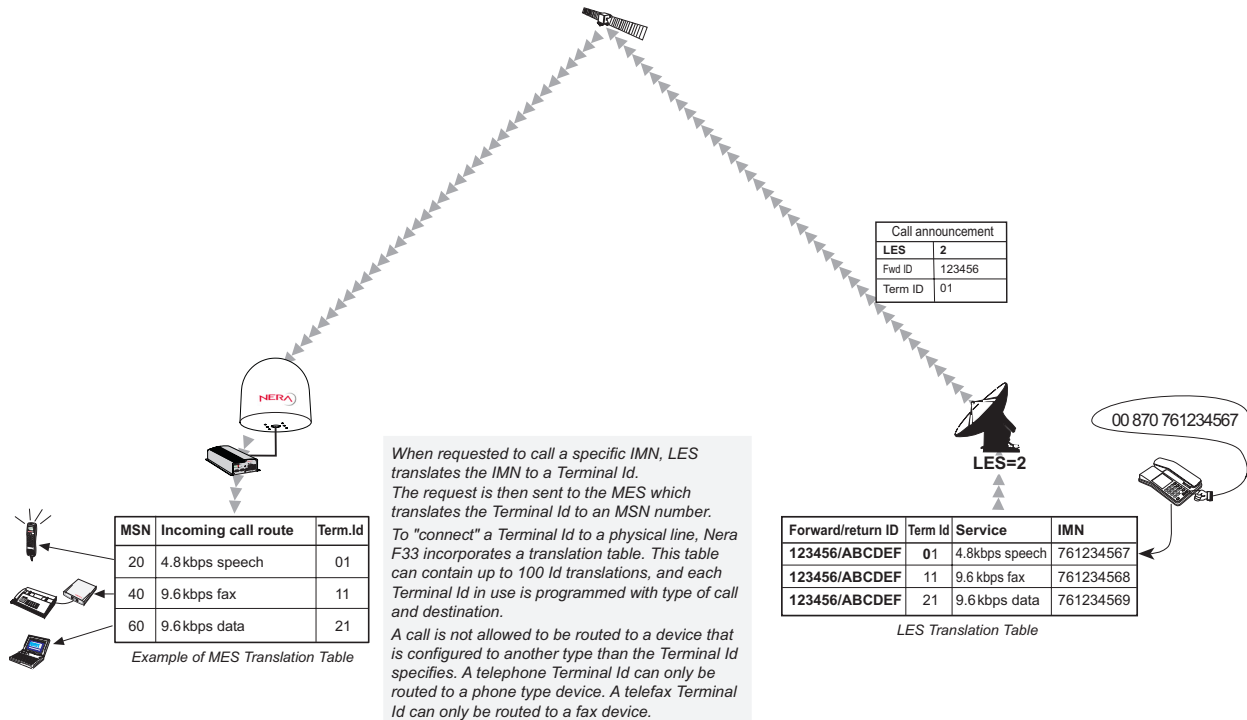
### Call announcement from fixed to mobile:

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 Mobile Subscriber Number (MSN) which is programmed in the attached equipment. Nera provides a table to identify which TermID is routed to an MSN.

## Calls to Mobiles





[Back to Start Page](#) 

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