PAMS Technical Documentation
NSC/W–3 Series Transceivers

Service Software Instructions

Original 05/98

CONTENTS

Service Software

General

To run the After Sales SW, a parallel port software protection device (PKD–1) has to be connected. TDF–4 box must connected to PC for flashing purposes. The user can use PC–locals functions in modules for testing NSC/W–3 mobile stations (MS). The test functions send test messages from PC to MS and receive results and show them in the PC display. The messages can be sent via M2BUS or FBUS.

Note: if this software is to be run on laptops, the power saving feature MUST be switched off.

Hardware requirements for Windows 3.1x

The recommended minimum hardware standard to run Service Software is any computer which is 386 33 MHz or greater with at least 4 MB of memory and VGA type display (640 x 480). This assumes that only the WinTesla with After Sales Support Modules is active, i.e. other Windows packages are not running in the background.

Hardware requirements for Windows 95

The recommended minimum hardware standard to run Service Software is any computer which has Pentium processor, memory 8 MB and meets HW requirements recommended by Microsoft.

Software Environment of the Support Modules

The Service Software user interface is intended for the following environments: Microsoft Windows 3.1x (enhanced mode) and Windows 95environment running in enhanced mode. Support for Microsoft NT may be added, if required. Detailed information about Windows and application usage can be found from the Microsoft Windows Version 3.1 Users Guide chapter one (Windows Basics) and chapter two (Application Basics).

As an ordinary Windows application, the main idea in the user interface is that selections are made with menus, push buttons and shortcut keys. Selections can be done by using keyboard and/or mouse. There is always a status bar displayed at the bottom of the main window which contains information about current actions.

Required Servicing Equipment

- Computer: At least IBM 80386 or compatible with one unused serial port (COM1 or COM2) *), one parallel port (LPT1), hard disk recommended
- Operating System: DOS Version 3.2 or later
- If PCLStart in use: DOS 6.22 and IBM 80486 or compatible
- Display: Any 80–character text display
- Service software version for 3.5” disk (product code: 0774099)
- Software protection key PKD–1 (product code: 0750018)
- Service MBUS Cable DAU–9P (product code: 0730109)
- Audio cable ADS–1 (product code: 0730011)
- External Antenna Cable XRC–1B (product code 0730128)
- Modular T–adapter (product code: 4626134)

*) Note: A number of PC’s of an older generation use the Intel, National Semiconductor, or United Microelectronics IC 8250 as the serial port UART. This is a comparatively inefficient circuit for current purposes and does not necessarily support the M2BUS adapter at 9600 baud. The newer UART’s NS16450 and NS16550AF of National Semiconductor offer solutions for these problems.

Installation

Mechanical Connections

Caution: Make sure that you have switched off the PC and the printer before making connections.

Caution: Do not connect the PKD–1 key to the serial port. You may damage your PKD–1 !

The software controls the phone via a separate adapter connected to the serial port of the PC, and to the telephone's M2BUS (DAU–9P).

Attach the dongle PKD–1 to the parallel port 1 (25–pin female D–connector) of the PC. When connecting PKD–1 to the parallel port, be sure that you insert the computer side of the PKD–1 to the PC (male side). If you use a printer on parallel port 1, install the PKD–1 between the PC and your printer cable.

The PKD–1 should not affect devices working with it. If some errors occur (errors in printing are possible) please try printing without the PKD–1. If printing is OK without the PKD–1 please contact your dealer. We will offer you a new PKD–1 in exchange for your old one.

Installing the Software on PC Hard Disk

The program is delivered on a diskette and is copy protected with a dongle PKD–1. It must be present in parallel port when using Service software.

The program can also be installed on the hard disk, which is recommendable to obtain a maximum data access rate.

Keep the original diskette safe to enable upgrading of the program !

If you plan to use PCL Start service software, you must install it before installing Service software, see PCL Start installation instructions.

To install the new Service software program, follow the steps below:

1.	insert the new Service software diskette into drive A: of your computer	
2.	start Windows, and open File Manager	
	log into drive a:	*type* **A:** *and press <Enter>*
3.	start INSTALL.EXE and install Service software to drive C:	*type* ***C:*** *and press <Enter>*

Common Properties of the User Interface

This chapter describes how the User Interface CLF must appear to the user.

The User Interface MUST be capable of being driven without the use of a mouse, as the service engineer rarely has space on the bench to use a mouse.

Login Dialog

When the Service Software application is invoked, by checking on the Service Software icon, the **Login** dialog box will be displayed on the screen.

Nokia logo and application name bitmap (–)

Displays Nokia logo and name of the application.

Application version static text (–)

Contains the name and version of the application.

Copyright notice static text (–)

Copyright is informed as: “**Nokia Mobile Phones (c) 1996. All Rights Reserved**”.

Login Box edit box (–)

The user Login ID edit box, where the user enters his faultlog user name. (See Faultlog User Guide)

OK button (default key)

The user name is stored in memory and the dialog box is closed. When the dialog box is closed, the application starts.

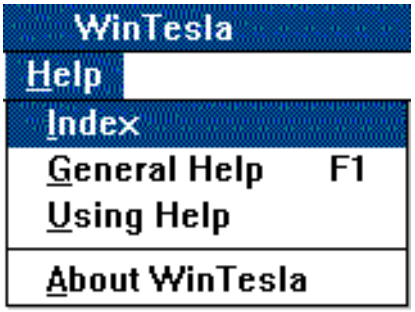
Cancel button (ESC)

The Dialog box is closed and application is started, but the Faultlog feature is disabled.

Help button (F1)

Activates the Windows Help application and displays context sensitive Help.

Main Window



Title bar

The *title bar* is located at the top of the window.

A title bar contains the following elements:

- Application Control–menu button
- Maximise button
- Minimise button
- Name of the application
- Restore button

The properties of these elements and their usage is described in Ref 3– Microsoft Windows Version 3.1 Users Guide chapter one (Windows Basics) and chapter two (Application Basics).

Menu bar

The *menu bar* is below the title bar and contains all available menu selections. The menu bar is a dynamic element and is dependent on the dongle type fitted, and whether a phone is connected.

Underlined characters in menu names and options indicates that the menu selection can be done by pressing *Alt+ underlined character*. Options can also be selected by activating menu bar with *Alt–* key (or *F10* key) and using arrow–keys to highlight the desired menu. In that case, selection is done by pressing *Enter*.

Menus can also be selected by using the mouse as described in Ref 3–Microsoft Windows Version 3.1 Users Guide

Status bar

The *status bar* is displayed at the bottom of the Service Software main window. The status bar contains information about the menu selections and events.

The left area of the status bar describes the actions of menu items as the user uses the arrow keys to navigate through menus.

The status bar texts are explained in detailed in each of command's description.

The right areas of the status bar indicate which of the following keys are latched down:

Indicator	Description
USER	Entered Login ID.
CAP	The Caps Lock key is latched down.
NUM	The Num Lock key is latched down.
SCRL	The Scroll Lock key is latched down.

Tool bar

The *tool bar* is NOT defined and will not be implemented until specified by this document.

Menu Bar

The Service Software package will have two menu bar configurations. The first, is an abbreviated version that contains the minimum number of menus that allows package configurations when a phone is NOT connected. The second is described below:

The menu bar MUST only contain the follow menus for the Service Software package when a phone is connected:

- Product*
- Configure*
- Tuning
- Testing
- Software
- Dealer
- View
- Help*

* – always displayed, even if no phone is connected.

A menu is broken down into sections that are indicated with menu separators. Each sections identifies a logical difference from itself and other sections, i.e. between transmitter and receiver. Any items that are required to be added to a menu lists will be added on the bottom of the appropriate menu section list. If a new item is to be added which is common to two or more phone types, then that menu item will become a common menu item.

The menu lists will use the Microsoft [...] symbol after an item name to indicate that selecting that item will NOT initiate an operation immediately, i.e. a dialog box will be displayed for the user to select options or type in data and press the OK button before the operation is performed.

Product

The Product menu contains the following menu items:

• New		Ctrl+R
• Open...		
• Close		
• Initialize		
	• Normal Mode	F5
	• Local Mode	Shift+F5
•Faultlog		
	• Activate Faultlog...	F9
	• Edit Faultlog...	
• Exit		Alt+F4

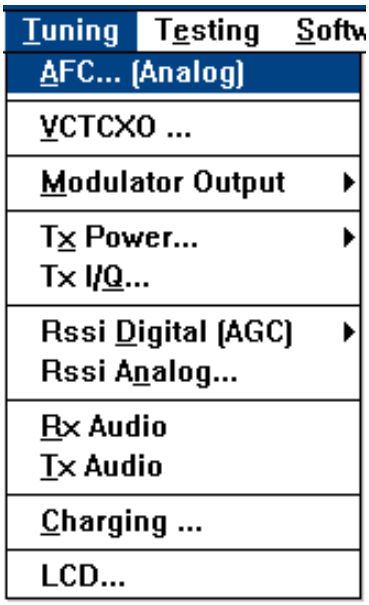
Configure

The Configure menu contains the following items:

- Options...
- Directories...
- Faultlog...
- Phone Type Specific configuration items (where applicable)

Tuning

The Tuning menu contains the following menu sections:



- AFC..(Analog)
- VCTCXO...
- Modulator Output
- Tx Power...
- Tx I/Q...
- Rssi Digital (AGC)
- Rssi Analog
- Rx Audio
- Tx Audio
- Charging...
- LCD...

Testing

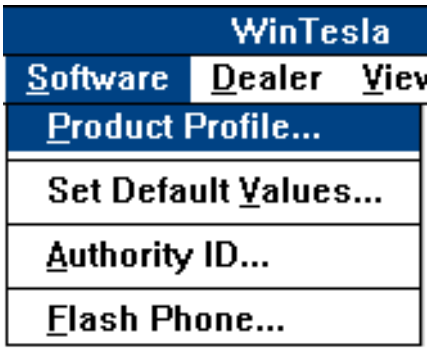
The Testing menu contains the following sections:

- RF Controls...
- Self Tests
- ADC Readings
- Audio
- User Interface

Software

The Software menu contains the following menu sections:

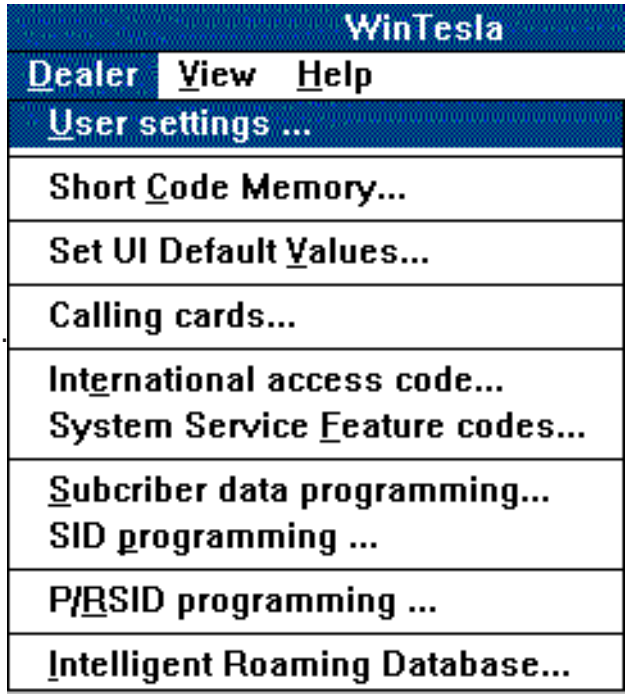
- Product Profile...
- Set Default Values...
- Authority ID...
- Flash Phone...



Dealer

The Dealer menu contains the following menu sections:

- User Settings...
- Short Code Memory...
- Set UI Default Values ...
- Calling cards...
- International access code...
- System Service Feature codes..
- Subscriber data programming..
- SID programming...
- P/RSID programming...
- Intelligent Roaming Database...



View

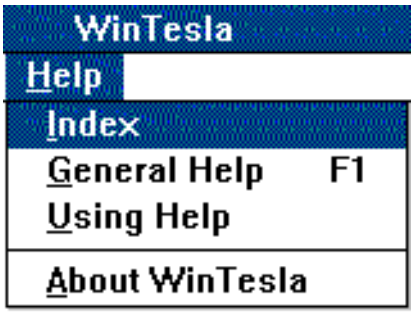
The View menu contains the following sections:

- Quick/RF Info...
- Phone Identity...

Help

The Help menu contains the following menu items:

- Index
- General Help
- Using Help
- About WinTesla



Mouse Cursors

The standards Windows pointer will be used as the mouse cursor.

During time consuming tasks e.g. communication to phone, an hour glass will be shown informing the user that a task is in progress. The application uses the hour glass cursor to inform user that the application has taken the control and any actions from user will be ignored.

When a function is initiated, the hour glass will be displayed and when the function has finished the mouse pointer will return to normal.

Reserved Keys

The following Hot keys and Short Cut keys are reserved either as Microsoft standard keys or as part of the Common Look and Feel specified by this document.

Short Cut Function Keys

Key by	Description	Defined
F1	Context Sensitive Help	Microsoft
F5	Normal Mode	NMP
Shift+F5	Local Mode	NMP
F9	Activate Faultlog	NMP
F10	Goto Menu Bar	Microsoft
Ctrl+F4	Close Active Window	Microsoft

Alt Hot Keys

Key by	Description	Defined
Alt+F4	Exit Active Application	Microsoft
Alt+H	Help	Microsoft

Ctrl Hot Keys

Key by	Description	Defined
Ctrl+N	File – New	Microsoft
Ctrl+O	File – Open	Microsoft
Ctrl+P	File – Print	Microsoft

Ctrl+R	Product – New	NMP

Shift Hot Keys

Key by	Description	Defined
Shift+F5	Local Mode	NMP

Key Strokes

Key by	Description	Defined
Alt+P	Product Menu	NMP
Alt+P,N	New	NMP
Alt+P,O	Open	NMP
Alt+P,C	Close	NMP
Alt+P,I	Initialize Pop–up	NMP
Alt+P,I,N	Normal Mode	NMP
Alt+P,I,L	Local Mode	NMP
Alt+P,F	Faultlog Pop–up	NMP
Alt+P,F,A	Activate Faultlog	NMP
Alt+P,F,E	Edit Faultlog	NMP
Alt+P,X	Exit Application	NMP
Alt+C	Configure	NMP
Alt+C,O	Option	NMP
Alt+C,D	Directories	NMP
Alt+C,F	Faultlog	NMP
Alt+C,G	GPIB instruments (disabled)	NMP
Alt+T	Tuning Menu	NMP
Alt+T,A	AFC (Analog)	NMP
Alt+T,V	VCTCXO	NMP
Alt+T,M	Modulator Output	NMP
Alt+T,X	Tx Power	NMP
Alt+T,Q	Tx I/Q	NMP
Alt+T,D	Rssi Digital (AGC)	NMP
Alt+T,N	Rssi Analog	NMP

Alt+T,R	Rx Audio	NMP
Alt+T,T	Tx Audio	NMP
Alt+T,C	Charging	NMP
Alt+E	Testing Menu	NMP
Alt+E,R	RF Controls	NMP
Alt+E,S	Self Tests	NMP
Alt+E,A	ADC Readings	NMP
Alt+E,D	Audio	NMP
Alt+E,U	User Interface	NMP
Alt+S	Software Menu	NMP
Alt+S,P	Product Profile	NMP
Alt+S,V	Set Default Values	NMP
Alt+S,A	Authority ID	NMP
Alt+S,F	Flash Phone	NMP
Alt+D	Dealer Menu	NMP
Alt+D,U	User Settings	NMP
Alt+D,C	Short Code Memory	NMP
Alt+D,V	Set UI/DEV Default Values	NMP
Alt+D,E	International access code	NMP
Alt+D,F	System Service Feature codes	NMP
Alt+D,S	Subscriber data programming	NMP
Alt+D,P	SID programming	NMP
Alt+D,R	P/RSID programming	NMP
Alt+D,I	Intelligent Roaming Database	NMP
Alt+V	View Menu	NMP
Alt+V,Q	Quick/RF Info	NMP
Alt+V,P	Phone Identity	NMP
Alt+H	Help Menu	Microsoft
Alt+H,I	Index	Microsoft
Alt+H,G	General Help	Microsoft
Alt+H,U	Using Help	Microsoft
Alt+H,A	About WinTesla	NMP

Help Functions

The Help User Interface will be the standard Windows help tool called WinHelp.

The context sensitive help is activated with **F1**–key. Help contains also Using Help which describes how to use help facility. Refer to the Windows manual for detailed description on the Windows Help.

Dialog boxes

The Service Software application uses many different dialog boxes. Dialog boxes are used to display data and prompt the user for input.

Dialog boxes are opened from menus or with shortcut keys. Dialog boxes have different properties but some features are common.

All service dialog boxes must be modal, that is, the user will not be able to start another operation without first closing the present dialog box.

All dialog boxes will contain the following entities:

– Help button

– Title bar

– At least one button other than Help

– Application Control–menu Button

Common Dialog boxes

This sections describes the common dialog boxes used in the Service Software package, and the context in which they will be used.

Note Message Box

When the user has made an illegal selection, a *note message box* dialog will be opened and message text is displayed. The message box is also opened when the program has some information for the user. The size of the dialog box may vary. An information dialog box is recognized by the **!**–icon.

The dialog box will also contain an OK button and a Help button.

OK button (default key):

Acknowledge displayed information and continue. The dialog box is closed after selection.

Help button (Alt+H):

Opens context sensitive help as F1–key does.

Query Message Box

Confirmations and questions are asked in *a query message box*. A query dialog box is recognized by the **?**–icon.

The dialog box will also contain a Yes button, a No button, and a Help button.

Yes button (Alt+Y or Y) (default key):

Accepts confirmation or question.

No button (Alt+N or N):

Denies confirmation or question.

Help button (Alt+H):

Opens context sensitive help as F1–key does.

The buttons may also be OK and Cancel. The operation of these buttons are the same as in the Note dialog box.

Error Message Box

Error message dialog boxes use the Stop–icon. When a “Stop”–dialog box is shown, the current operation is terminated.

The dialog box has a description about the failed operation and reason. Pressing F1 (Help) application opens the appropriate help topic that gives information about recommended actions.

The dialog box will also contain an OK button and a Help button.

OK button (default key):

Acknowledges displayed information and terminate current operation. The dialog box is closed after selection.

Help button (Alt+H):

Open context sensitive help as F1–key does.

Custom Dialog boxes

All custom dialog boxes will contain the predefined buttons as defined below in the section – *Buttons.* However, it is recognised that features may require additional button types, but the addition of these non–standard buttons should be carefully considered to minimise any inconsistencies between implementations.

The buttons will be positioned down the right–hand side of the dialog boxes. The default action will be **OK**, except where that default action could result in an irretrievable failure.

All tuning dialogs that contain tuning results, will display the old tuned data read from the phone before the tuning was performed, as well as the newly tuned data.

List boxes will be used to display lists of data, such as tuning data, test results etc.

The use of Radio buttons should be limited and carefully considered. The use of radio buttons defines the number of possible choices available to the user, which may be acceptable for one project, but not for another.

Buttons

All buttons must be the Microsoft style of buttons.

In general, the default button will be the action button, the Close button or the Yes button, but this will depend on the context of the dialog box that the button is associated with.

(action) button:

Accepts and validates entered settings and values and closes the dialog. If the values have not been changed, then no action will be taken. The status bar will reflect the status. The user should only be queried, if the settings or values accepted will over–write data that CAN NOT be reproduced.
A greyed **OK** button indicates that settings selected by the user are not acceptable.

Close button:

Closes the current dialog box. Does not send or store anything and closes the dialog. The Close button is only used for dialogs that do not set or change any data.

Cancel button (Esc):

Cancel operation. Does not send or store anything and closes the dialog box.
A greyed **Cancel** button indicates that it is not possible to quit from this dialog box.

Yes button (ALT+Y or Y):

Replies Yes to a question asked of the user.

No button (ALT+N or N):

Replies No to a question asked of the user.

Help button (ALT+H):

Opens context sensitive help as F1–key does.

Reporting Status

The status bar will be used to report the present status to the user. When a feature is initiated, the status bar will be updated with a brief description of the function. The status bar will also be updated at key points in a time consuming function.

If an error is to be reported to the user, it will be displayed in the status bar as well as displayed in a common error dialog box. This will mean the user is not delayed from progressing on to the next operation unless an error occurs, in which case, the user will have to acknowledge the error by pressing the OK button.

NSC/W–3 FEATURES

Menu bar

After Sales SW's menus follows the menu structure specified in WinTesla User Interface Specification. This specification will describe functionality that differs from WinTesla specification.

Product

New command

Activation	Status Bar Text
Alt, P, N Ctrl+R	Rescan a new phone

If phone is changed (with same phone type only serial number is changed) phone will be initialised to local mode. If phone is changed to different phone type the current DLLs are unloaded and new ones are loaded for that phone.

If the Quick/RF Info view is open, window will be automatically updated.

If Phone Information view is open, it will be automatically updated.

Open... command

Activation	Status Bar Text
Alt, P, O	Force load phone specific functionality

Phone is set to local mode.

Initialise... command

Activation	Status Bar Text
Alt, P, I	

Opens a submenu for Normal Mode and Local Mode

Normal Mode

Activation	Status Bar Text
Alt, P, N	Initialises phone to normal (cellular) mode
F5	

When normal mode has been activated or program has been started, self–test results will be asked from MCU. If any fault was found in the tests, an error message is shown. If normal mode has been set successfully (no self test error has been found), and paging listening has been started, the used AFC value is requested from MS.

Initialisation routine checks phone's cellular type and if unsupported phone is detected, application unloads the DLLs.

The After Sales SW sets automatically the MS state to normal mode when needed.

If phone identification view is open, window will be automatically updated. Also if RF Information Window is open it will be updated to quick info view.

Local Mode

Activation	Status Bar Text
Alt, P, L	Initialises phone to local mode
Shift+F5	

Selection will change the MS state to *local*. When user selects item from Testing or Tuning menus, the After Sales SW software will change automatically the MS state to local.

The After Sales SW sets automatically the MS state to normal mode when needed.

Also if quick info view is open it will be updated to RF Information view.

Tuning

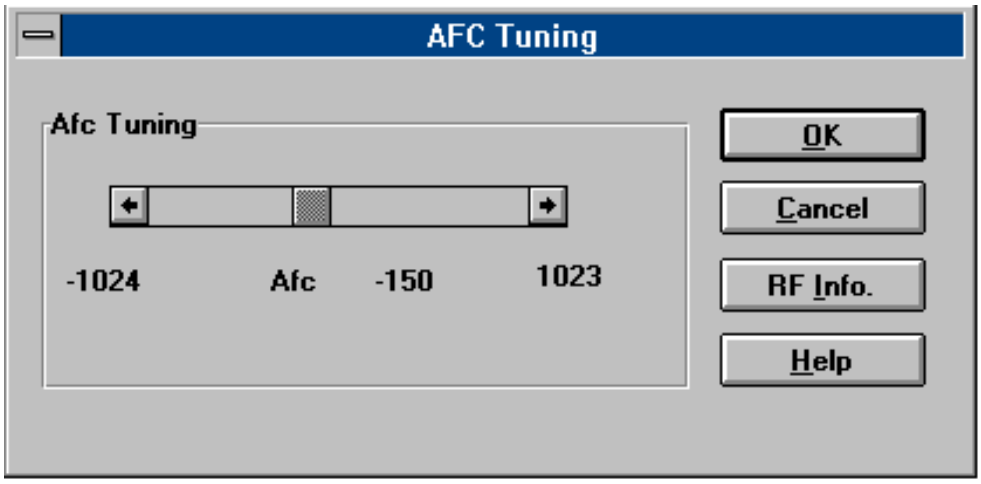
The tuning menu offers functions for ME adjustments.

AFC... command

Activation	Status Bar Text
Alt, T, A	Open AFC Tuning dialog box

The next automatic selections are made when this tuning function is activated:
- Active Unit = TX
- Operation mode = Analog
- Channel 250 (low)
- Power level 4
- low band

The **AFC Tuning** dialog is opened.



AFC tuning dialog box has following items:

Afc scroll bar

Set calibration value to phone

RF Info button (ALT+I):

The current rf state is shown

OK button (ALT+O):

Dialog box is closed and tuning *is saved* to phone.

Cancel button (ESC):

Dialog box is closed and tuning *is not saved* to phone.

VCTCXO... command

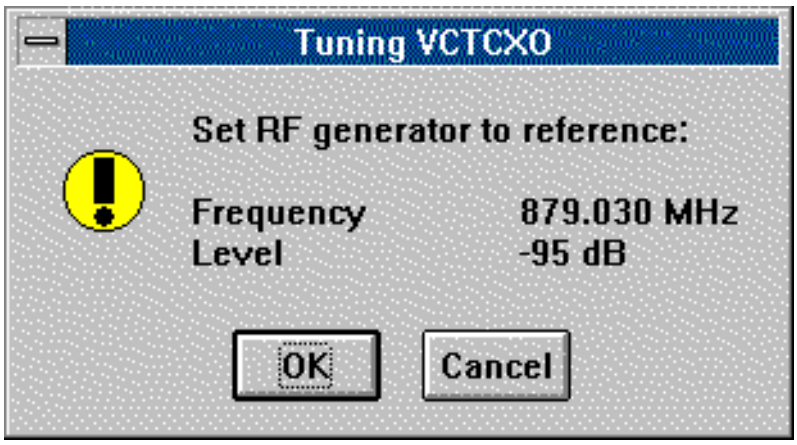
Starts Voltage Controlled Temperature compensated oscillator tuning

Activation	Status Bar Text
Alt, T, V	Open Tuning VCTCXO dialog box

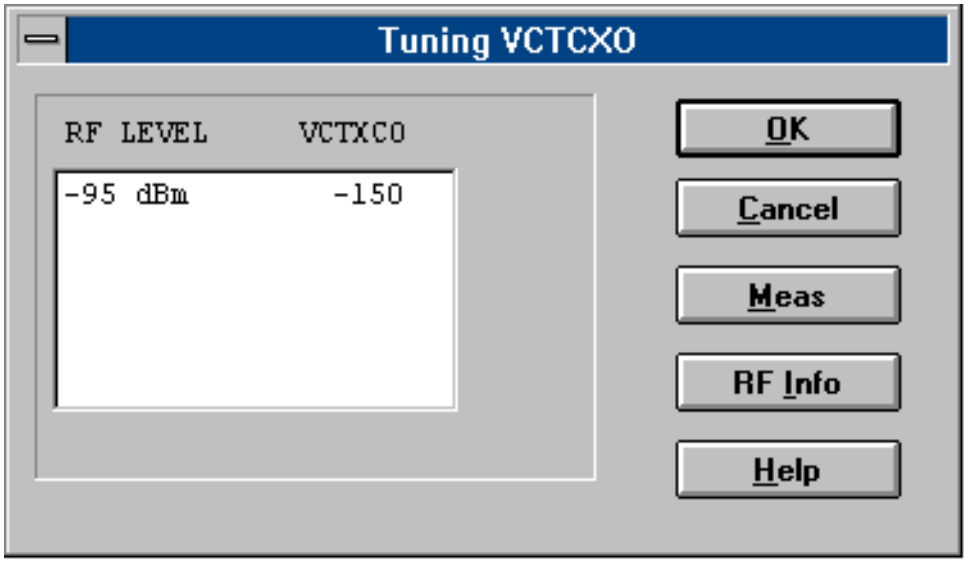
The next automatic selections are made when this tuning function is activated:
– Active Unit = RX
– Operation Mode = Continuous digital
– low band
– Channel 301
– Power level OFF

Eeprom DAC value is shown.
The measurement is started when press meas button and is done in two steps:

1. User is requested to put signal generator input level –95 dB and frequency 879.030 Mhz



2. Measurement with input level is executed and value is shown in list box



VCTCXO tuning dialog has following items:

VCTCXO List box (ALT+A):

DAC value is shown

Meas button (ALT+M):

The measurement can be started by pressing this button.

OK button (ALT+O):

Dialog is closed and tuning *is saved* to phone.

Cancel button (ESC):

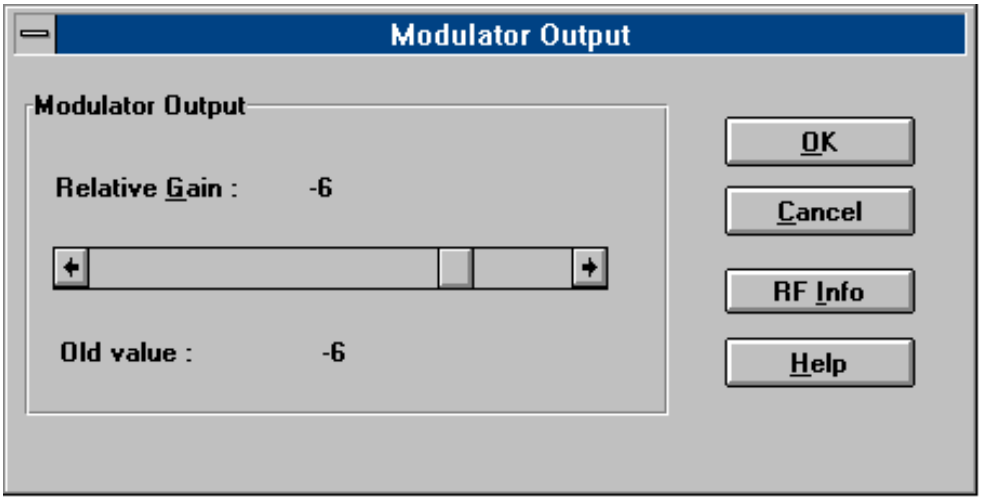
Dialog is closed and tuning *is not saved* to phone.

Modulator Output... command

Activation	Status Bar Text
Alt, T, H or L	Open Modulator Output Tuning dialog box

Starts modulator output tuning

The next **automatic selections** are made when this tuning function is activated:
– Active Unit = TX
– Operation mode = Continuous Digital
– Channel 730 (low) of 1400 (high)
– Power level 2
– Selected band



Modulator Output Diagram dialog box has following items:

Relative Gain Scroll bar
Set calibration value to phone

Old value static
Value from Eeprom

RF Info button (ALT+I):
The current rf state is shown

OK button (ALT+O):
Dialog box is closed and tuning *is saved* to phone.

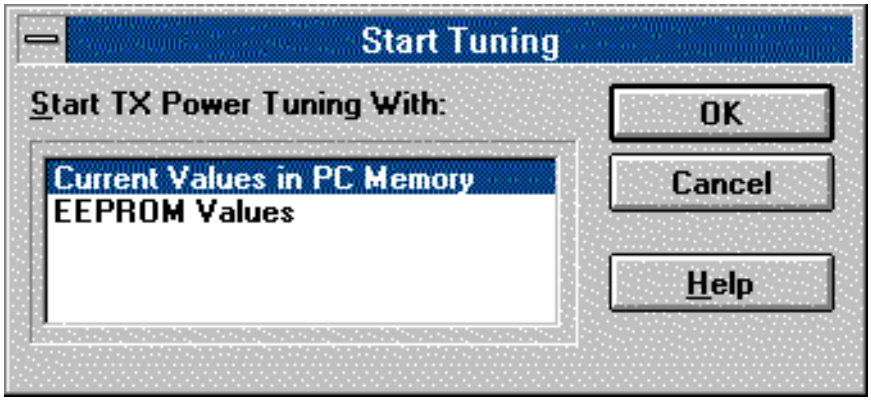
Cancel button (ESC):
Dialog box is closed and tuning *is not saved* to phone.

Tx Power... command

Activation	Status Bar Text
Alt, T, X, H or L	Open TX Power Tuning dialog box

Starts TX power tuning.

User is first requested to select with which values tuning is started in **Start Tuning** dialog.



Start Tuning dialog has following items:

Current Values in PC memory

Tuning values are load from program's internal memory.

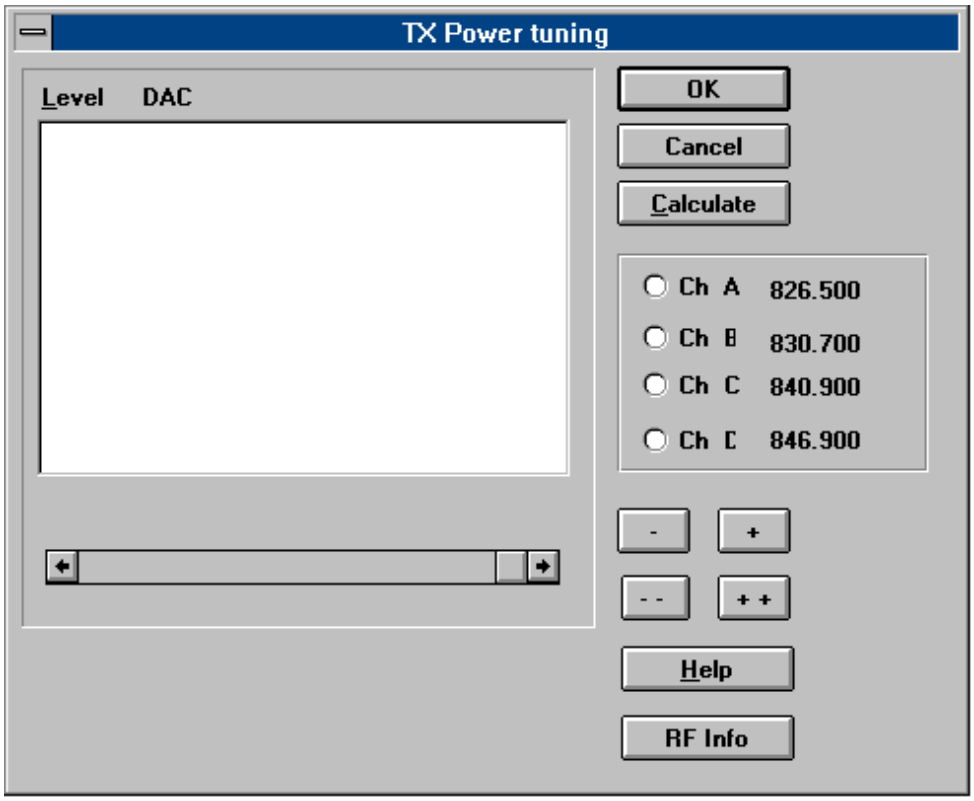
Phone EEPROM Values

Tuning values are load from ME's EEPROM.

The next automatic selections are made when this tuning function is activated:

– Active Unit = TX
– Operation Mode = Continuous digital
– Selected band
– Channel 190 (low) or 500 (high)
– Power level 6

The **TX Power Tuning** dialog will be activated automatically after value selection.



TX Power Tuning dialog has following items:

Level DAC list box (ALT+L):

The power is presented in DAMPS level values (2..10) .DACs can have values from –511 to 512.The tuning position is high-lighted and can be tuned with +/– keys or left/r**ight cursor keys or scroll bar.**

Ch A radio button: Tuning channel A. Frequency is shown.

Ch B radio button: Tuning channel B. Frequency is shown.

Ch C radio button: Tuning channel C. Frequency is shown.

Ch D radio button: Tuning channel D. Frequency is shown.

+/– buttons:

+ and – buttons will cause power DAC changing by 1steps .

++/— buttons:

+ and – buttons will cause power DAC changing by 10 steps .

OK button (ENTER):

Dialog is closed and tuning *is saved* to phone.

Cancel button (ESC):

Dialog is closed and tuning *is not saved* to phone.

Calculate button (ALT+C):

Activate calculation

When selections are used, the power value checking is made and if it is not succeeded, error message is shown.

Tx I/Q... command

Activation	Status Bar Text
Alt, T,Q	Open TX I/Q Tuning dialog box

This function is used for tuning TX I and Q branch DC offset and phase offset.

The function opens same **Start Tuning** dialog as with TX Power Tuning.

Start Tuning With list box (ALT+S):

Current in PC memory

Tuning values are load from program's internal memory.

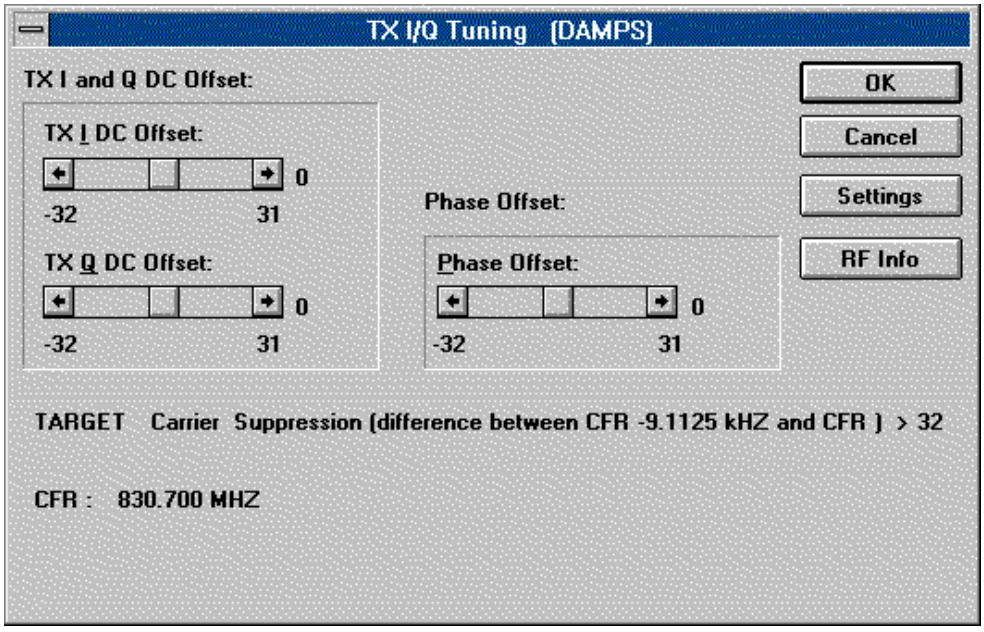
Phone EEPROM

Tuning values are load from ME's EEPROM.

The next automatic selections are made when this function is activated:

– Active Unit = TX
– Operation Mode = analog
– Low band
– Channel 190
– Power level 4

The **TX I/Q Tuning** dialog is opened.



TX I/Q Tuning has following items:

Tune TX I DC Offset scroll bar (ALT+I):

The DC Offset is shown as DAC value.
With this selection the I branch DC Offset is tuned.
The value range is –32...31.

Tune TX Q DC Offset scroll bar (ALT+Q):

The operation of this function is the same as one above, except with this selection the Q branch DC Offset is tuned. The value range is –32 ..31.

Tune Phase Difference scroll bar (ALT+P):

The operation of this function is the same as one above, except with this selection the Phase Offset is tuned. The value range is –32 ..31.

OK button (ALT+O):

Dialog box is closed and tuning *is saved* to phone.

Cancel button (ESC):

Dialog box is closed and tuning *is not saved* to phone.

RF Info button (ALT+I):

The current rf state is shown

RSSI Digital (AGC)... command

Activation	Status Bar Text
Alt, T, D, H or L	Open the Tuning AGC dialog box

Starts Automatic Gain Control calibration. This means Received Signal Strenght indicators in digital mode.

The next automatic selections are made when this tuning function is activated:

– Active Unit = RX
– Operation Mode = Continuous digital
– Selected band
– Channel 301 (low) or 500 (high)
– Power level 2

Eeprom DAC values is shown and the measurement is started by pressing Meas button. Measurement is done in eleven steps:

1. User is requested to put signal generator input level –95 dB and frequency 879.030 MHz

2. Measurement with input level is executed

3. User is requested to put signal generator input level –85 dB and frequency 879.030 MHz

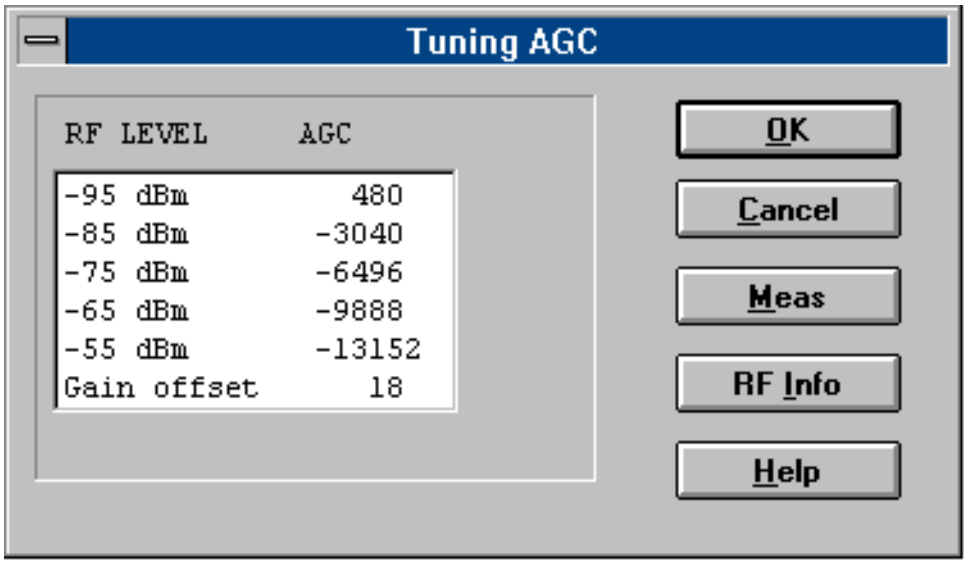
4. Measurement with input level is executed

5. User is requested to put signal generator input level –75 dB and frequency 879.030 MHz

6. Measurement with input level is executed

7. User is requested to put signal generator input level –65 dB and frequency 879.030 MHz

8. Measurement with input level is executed
9. User is requested to put signal generator input level –55 dB and frequency 879.030 MHz
10. Measurement with input level is executed
11. The AGC tuning dialog will be updated when previous steps are done



AGC tuning dialog has following items:

RF level AGC List box (ALT+R):
DAC values is shown

Meas button (ALT+M):
The measurement can be started by pressing this button.

OK button (ALT+O):
Dialog is closed and tuning *is saved* to phone.

Cancel button (ESC):
Dialog is closed and tuning *is not saved* to phone.

RF Info button (ALT+I):
The current rf state is shown

RSSI Analog... command

Activation	Status Bar Text
Alt, T, N	Open the Tuning RSSI dialog box

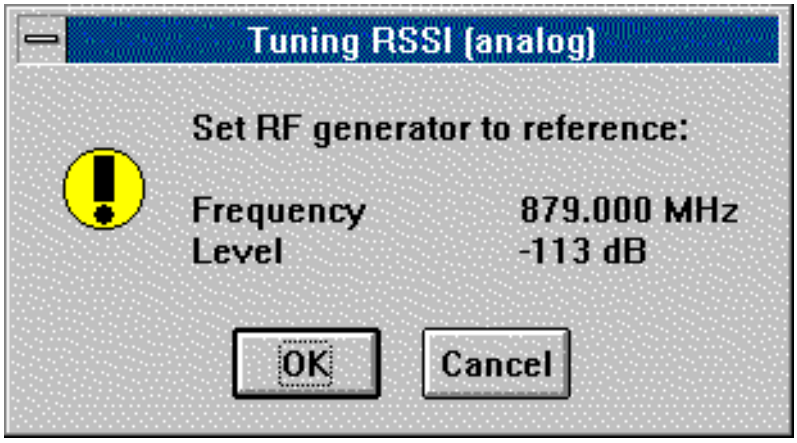
This function is used for tuning analog RSSI.

The next automatic selections are made when this tuning function is activated:

– Active Unit = RX
– Operation Mode = analog
– Power Level OFF
– Channel 300
– Low band

Values from Eeprom is shown and the measurement is started when press meas button and is done in five steps:

1. User is requested to put signal generator input level –113 dB and frequency 879.300 MHz



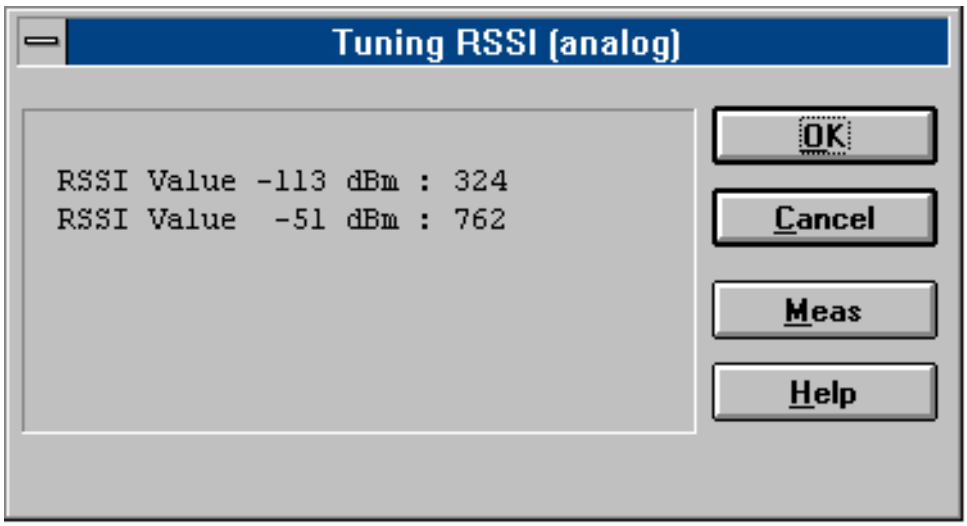
2. Measurement with input level is executed

3. User is requested to put signal generator input level –51 dB and frequency 879.300 MHz

4. Measurement with input level is executed

5. The RSSI tuning dialog will be updated when previous steps are done

RSSI analog tuning dialog has following items:



RSSI value list box

DAC values is shown

Meas button (ALT+M):

The measurement can be started by pressing this button.

OK button (ENTER):

Dialog is closed and tuning *is saved* to phone.

Cancel button (ESC):

Dialog is closed and tuning *is not saved* to phone.

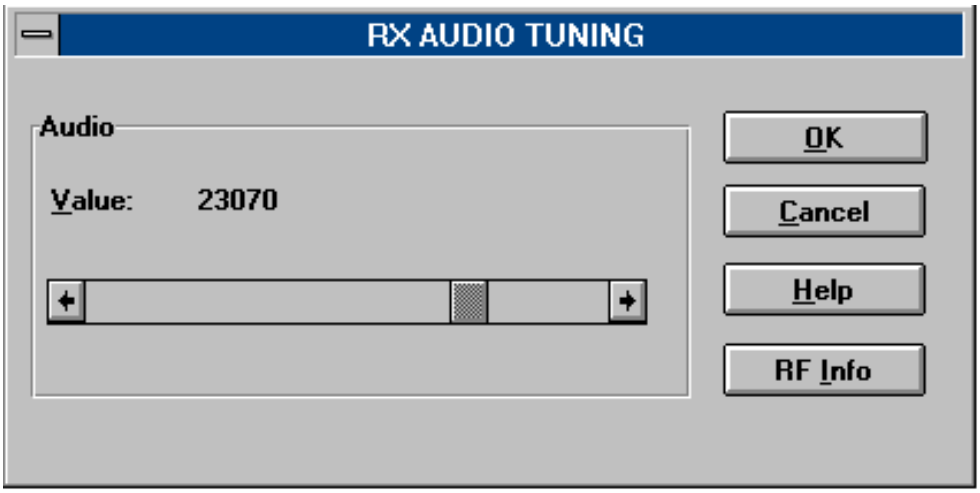
Rx Audio... command

Activation	Status Bar Text
Alt, T, R	Starts Rx audio tuning

The next automatic selections are made when this function is activated:

– Active Unit = RX
– Operation Mode = analog
– Channel 990
– Power level OFF
– low band

RX audio tuning dialog has following items:



Value scroll bar **(**ALT–V**)**

Set Calibration value to phone

OK button (ENTER):

Dialog is closed and tuning *is saved* to phone.

Cancel button (ESC):

Dialog is closed and tuning *is not saved* to phone.

RF Info button (ALT+I):

The current rf state is shown

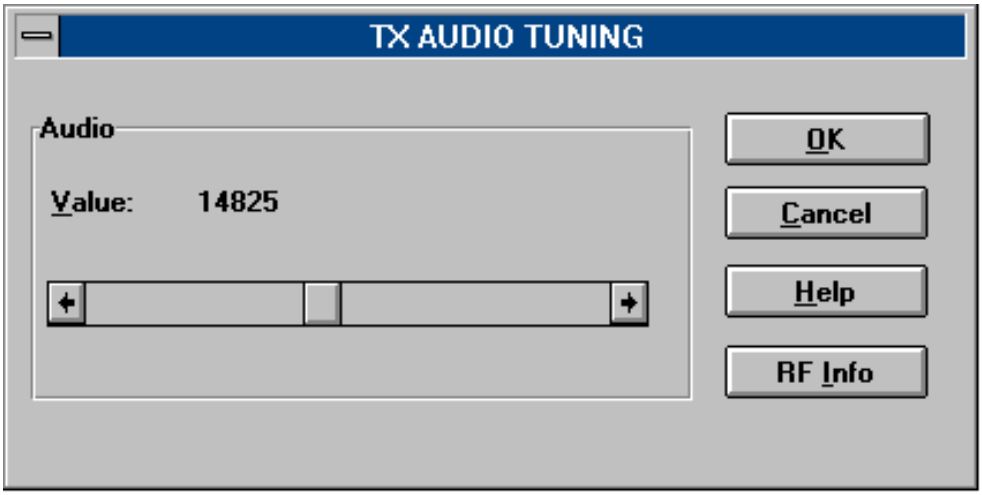
Tx Audio... command

Activation	Status Bar Text
Alt, T, T	Starts Tx audio tuning

The next automatic selections are made when this function is activated:

– Active Unit = TX
– Operation Mode = analog
– Channel 990
– Power level 3
– low band

RX audio tuning dialog has following items:



Value scroll bar **(**ALT–V**)**
Set Calibration value to phone

OK button (ENTER):
Dialog is closed and tuning *is saved* to phone.

Cancel button (ESC):
Dialog is closed and tuning *is not saved* to phone.

RF Info button (ALT+I):
The current rf state is shown

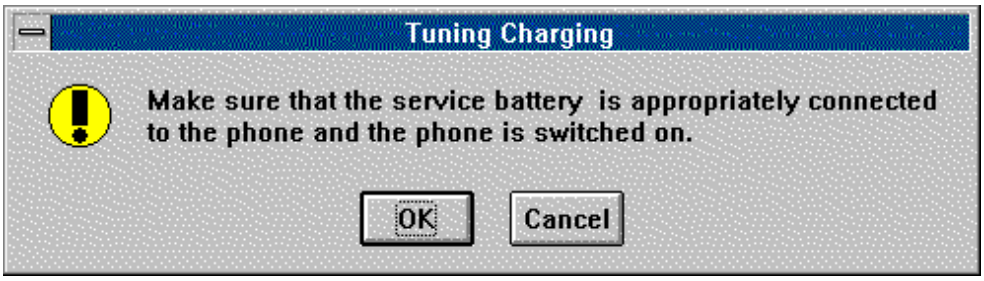
Charging... command

Activation	Status Bar Text
Alt, T, C	Starts charging tuning

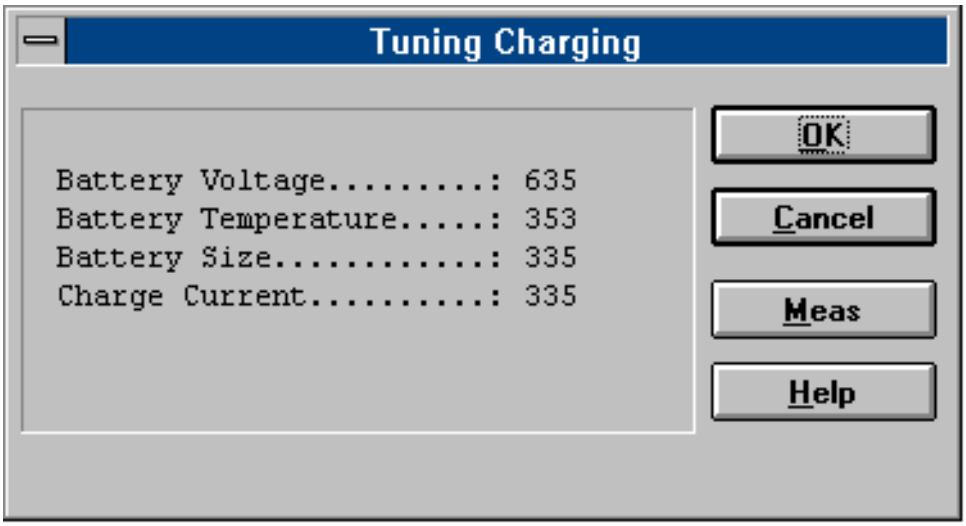
The next automatic selections are made when this function is activated:

Active Unit = RX
Operation Mode = analog
Power Level = OFF
Channel 300
Low band

Before charging tuning is started battery setting request is shown to user.



Eeprom DAC values is shown and the measurement is started when press meas button.



Charging tuning dialog has following items:

Values list box:
DAC values are shown.

Meas button (ALT+M):
The measurement can be started by pressing this button.

OK button (ENTER):
Dialog is closed and tuning *is saved* to phone.

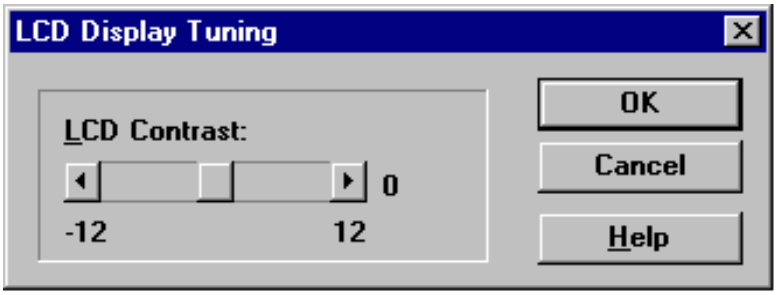
Cancel button (ESC):
Dialog is closed and tuning *is not saved* to phone.

LCD... command

Activation	Status Bar Text
Alt,	Opens LCD Display contrast tuning box

Command opens LCD Display Tuning dialog box which contains scrollbar to make display adjustments.

LCD Display Tuning dialog box has following items:



LCD Display Tuning dialog box has following items:

LCD Contrast scrollbar (ALT+L):
Enables user to tune display contrast between –12 and 12.

OK button (ENTER):
Dialog box is closed and tuning *is saved* to phone.

Cancel button (ESC):
Dialog is closed and tuning *is not saved* to phone.

Testing

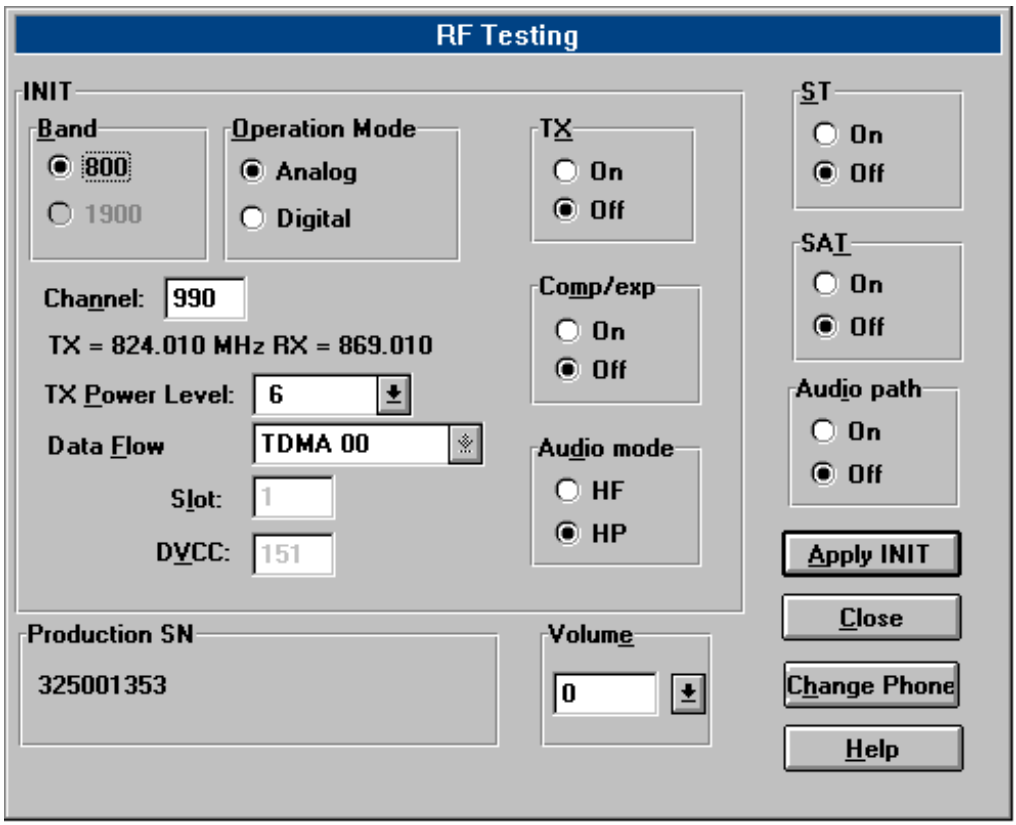
The Testing sub menu offers functions for ME testing.

RF Controls... command

Activation	Status Bar Text
Alt, E,R	Open RF Controls dialog box

This function is used for quick RF testing.

Command opens **RF Controls** dialog, which contains data for testing and adjustments.



RF Controls dialog has following items:

Band group: (ALT + B)

- 800 radio button — Select low band
- 1900 radio button — Select high band

Operation mode group (ALT + O)

- Analog radio button — Select analog mode
- Digital radio button — Select digital mode

TX group (ALT + X)

- On radio button — Activate tx power
- Off radio button — Deactivate tx power

Comp/exp group (ALT + X)

On radio button	Set compander on
Off radio button	Set expander on

Audio mode group (ALT + D)

HF radio button	Set audio handsfree mode
HP radio button	Set audio hand portable mode

ST group (ALT + X)

On radio button
Set signalling tone on in analog mode only
Off radio button
Set signalling tone off in analog mode only

SAT group (ALT+T)

On radio button
Set Supervisory Audio Tone on in analog mode only
Off radio button
Set Supervisory Audio Tone off in analog mode only

Audio path group (ALT+I)

On radio button	Set external audio path on
Off radio button	Set external audio path off

Data Flow Type drop list (ALT+D):

This list changes the transmission data type. List consists following transmissions:
* TDMA mode zero data transmission
* TDMA mode random
* Continuous digital 11

TX Power Level drop list (ALT+T):

With this value is possible to change the transmission power. The user can give the needed D–AMPS power value (2..10).

Channel edit box (ALT+H):

User can enter here channel number that is used for both transmission and receiving. The frequency of the selected channel is shown after selection.

Slot edit box (ALT+L)

Value of used time slot in digital mode only

DVCC edit box (ALT+V):

Value of Digital verification color code in digital mode only

Volume drop list

Value of audio volume can be selected

Apply init button (ALT+A):

Accepts INIT group values and validates them. After validation application sends corresponding messages to ME.

Close button (ESC) Close dialog

Change phone button (ALT+H)

Read production serial number

Production SN static

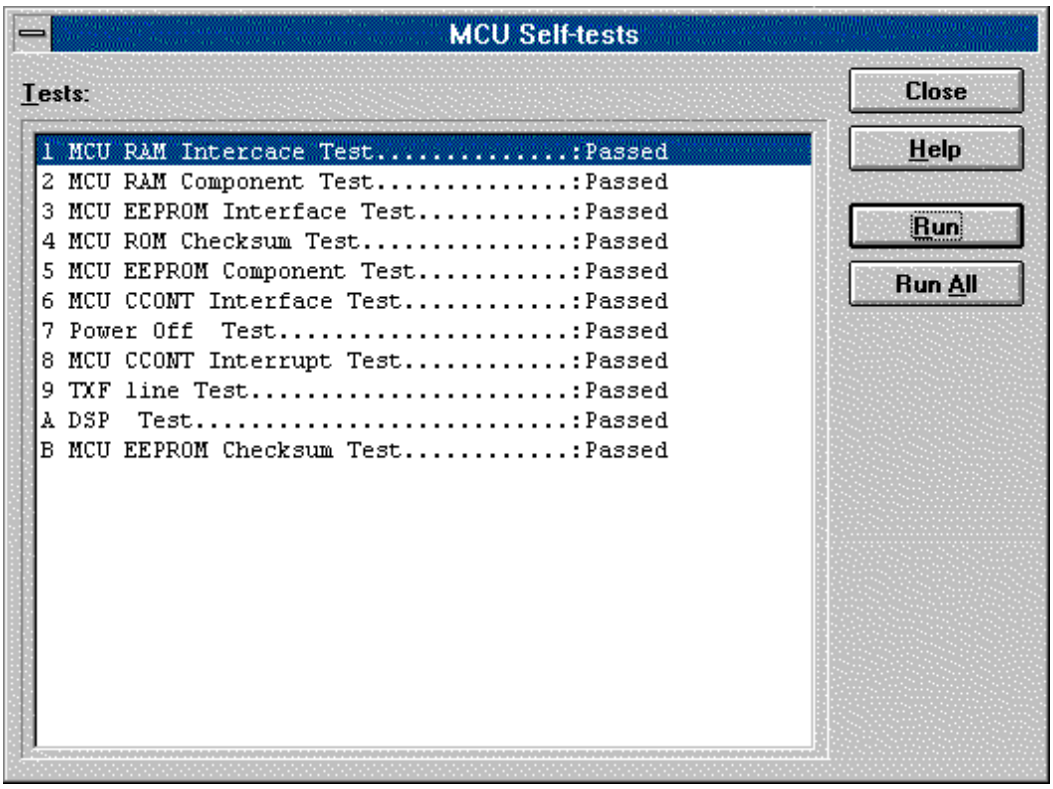
Show production serial number

Self Tests... command

Activation	Status Bar Text
Alt, E,S	Open MCU Self–tests dialog box

Command is used for reading self test results and running self tests.

When the selection is made, the test result is read from ME. The test result will be shown to the user within **MCU Self–test** dialog.



MCU Self–test dialog box has following items:

Tests list box (ALT+T):

Test states are updated according to results received from the phone. Possible test states will be one of the next:

Passed
Failed
No response
Not executed
RUNNING....

Run button (ALT+R):

User can select desired test from list and hit **Run** button. When user selects test to be run the text *RUNNING...* is shown in test

state field. When results are received the test state field is updated according to the result.

If no response was received in the defined time, an *error message box* will be shown and the test state is changed to *No response*.

Run All button (ALT+A):

User can run all listed tests. The text *RUNNING...* is shown in test state field and test is run. When results are received the test state field is updated according to the results. When state field is updated application moves to next test and repeats previous cycle.

Only last test is not executed (Power off Test) because it will turn phone power off.

Supported Self Tests

The following tests are available:

1 MCU RAM Interface.....

2 MCU RAM Component.....

3 MCU EEPROM Interface.....

4 MCU ROM Checksum.....

5 MCU EEPROM Component.....

6 MCU CCONT Interface.....

7 Power Off.....

8 MCU CCONT Interrupt.....

9 TXF line.....

A DSP.....

B MCU EEPROM Checksum.....

C SW Reset.....

D DSP Code Download.....

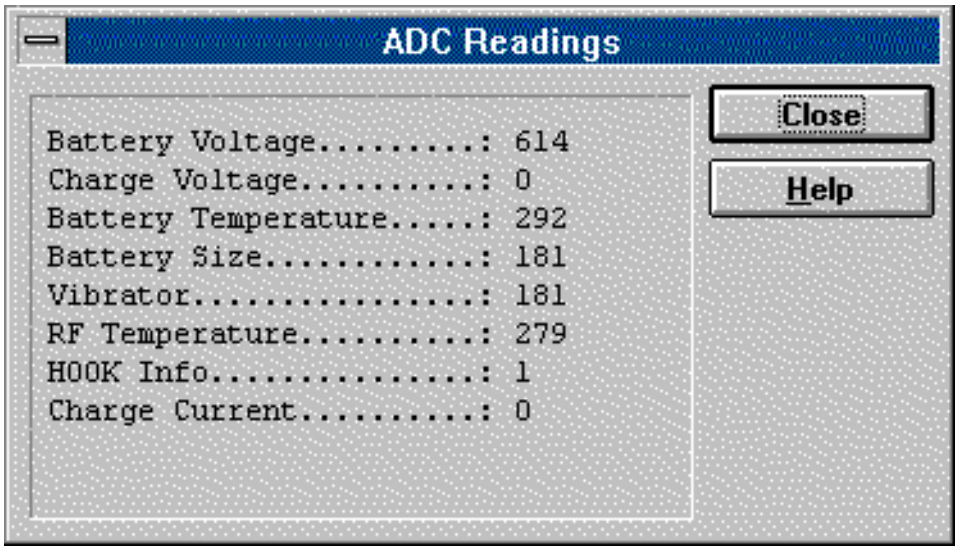
E DSP Alive.....

ADC Readings... command

Activation	Status Bar Text
Alt, E, A	Open ADC Readings dialog box.

Command is used to read and show A/D values from phone.

Command opens **ADC Readings** dialog.



ADC Readings dialog has static text field where measurements are updated to every second.

ADC Readings dialog has following items:

Close (ENTER) button:

Dialog box is closed and tuning *is not saved* to phone.

Help button (Alt+H)

Context sensitive help

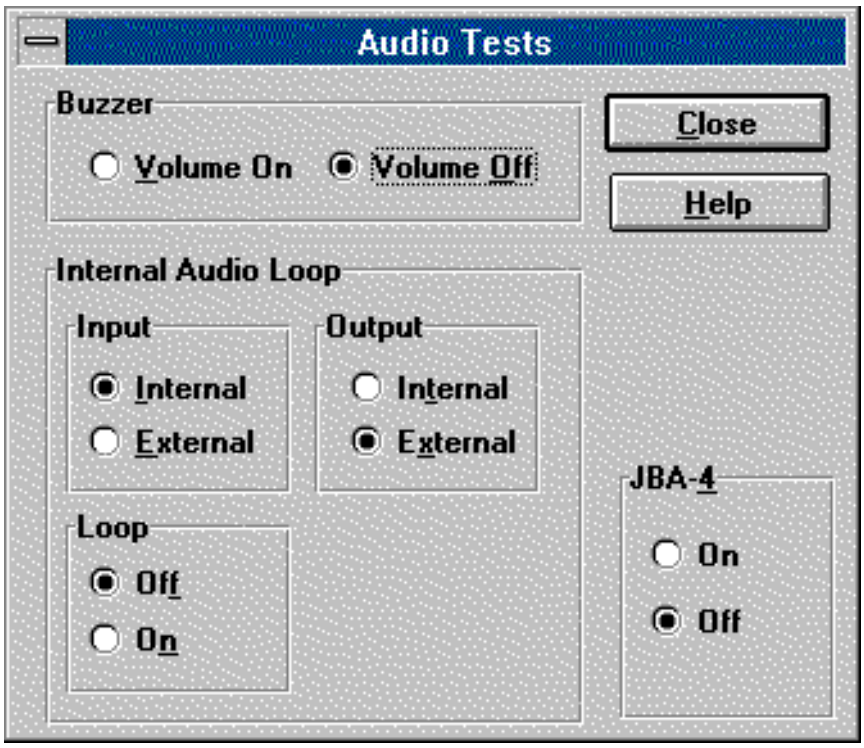
Following A/D readings are measured:

Battery Voltage.....:
Charge Voltage.....:
Battery Temperature.....:
Battery Size.....:
Vibrator.....:
Acessory Detection.....:
RF Temperature.....:
HOOK Info.....:
Charge Current.....:

Audio... command

Activation	Status Bar Text
Alt, E,U	Open Audio Tests dialog box

Command is used for making **Audio Tests**.



Audio Tests dialog has following items:

Buzzer Volume group:
Volume On radio button (ALT+V):
Turns buzzer on.
Volume Off radio button (ALT+O):
Turns buzzer off.

Internal Audio Loop group:
Input group:
Internal radio button (ALT+I):
Turns internal input.
External radio button (ALT+I):
Turns external input.
Output group:
Internal radio button (ALT+T):
Turns internal output.

External radio button (ALT+X):
Turns external output.

Loop group:

Off radio button (ALT+F):
Turns audio loop off.

On radio button (ALT+N):
Turns audio loop on.

JBA–4 group:

On radio button
Activate audio box
Deactivate loop controlling

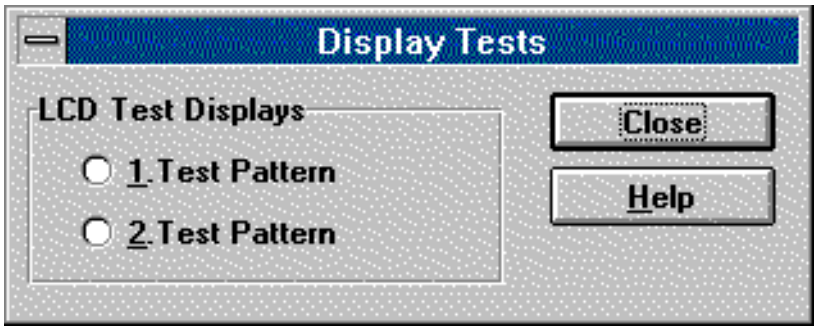
Off radio button
Activate loop controlling

Close button (ESC)
Close dialog

User Interface... command

Activation	Status Bar Text
Alt, E,U	Open User Interface Tests dialog box

Allows user to test all display pixels and back lights of attached phone.



Display Tests dialog has following items:

1. Test Pattern radio button (ALT+1):

   In test display 1 half of the indicators are displayed and the display is filled with chessboard letters.

2. Test Pattern radio button (ALT+2):

   In test display 2 rest of the (compared to test pattern 1) indicators are displayed and the display is filled with inverse chessboard letters.

When dialog is closed the phone LCD display is cleared.

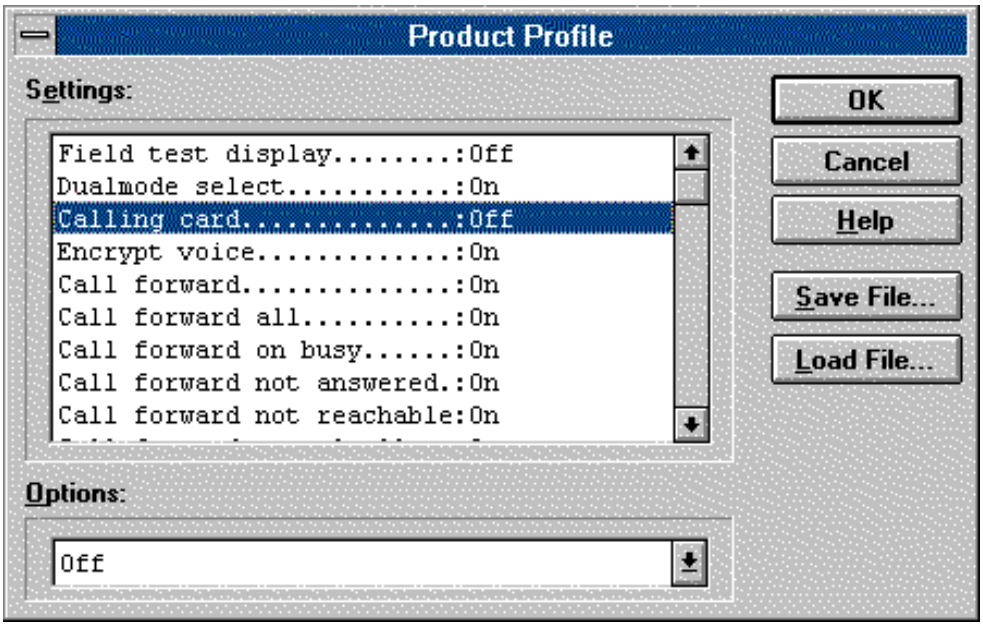
Software

Product Profile... command

Activation	Status Bar Text
Alt, S,P	Open Product Profile settings dialog box.

Function is used for making product profile settings.

When command is activated the product profile information is read from EEPROM and **Product Profile** dialog is opened.



Product Profile dialog has following items:

Settings list box (ALT+E):

A list where user can select desired setting.
User can toggle setting with following **Options** drop list or by double clicking desired setting in list box.

Options drop list (ALT+O):

List allows user to set options to each settings which are listed in **Settings** list box. Possible options per setting are:

Save File button (ALT+S):

Saves all product profile setting to a file. Filename will be asked from the user in a common file save dialog box.

Load File button (ALT+L):

Loads all product profile setting from a file. Filename will be asked from the user in a common file open dialog box.

OK button (ENTER)

Selections are accepted and saved to EEPROM.

Cancel button (ESC)

Selections are ignored and control is returne back to main menu.

NSW3 Product Profile Settings

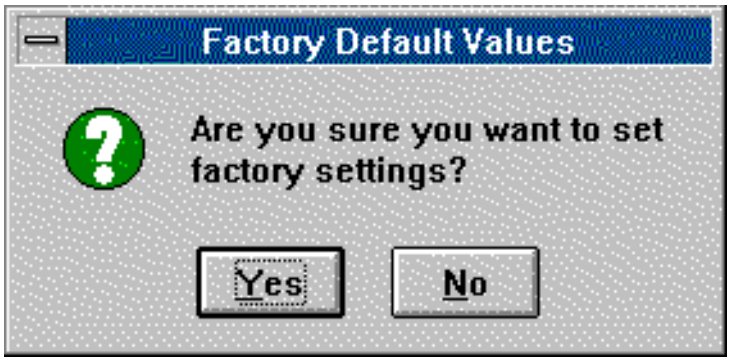
Field test display.....:On/Off
Dualmode select.....:On/Off
Calling card.....:On/Off
Encrypt voice.....:On/Off
Call forward.....:On/Off
Call forward all.....:On/Off
Call forward on busy.....:On/Off
Call forward not answered.:On/Off
Call forward not reachable:On/Off
Call forward cancel all...:On/Off
Send own caller id.....:On/Off
Call waiting.....:On/Off
Read text messages.....:On/Off
Write text messages.....:On/Off
Emergency 9 key.....:On/Off
Call VMBX key 1.....:On/Off
Feature code set.....:On/Off
SMS Privacy.....:On/Off
SMS disp time temporary...:On/Off
Keypad cover.....:On/Off

Set Default Values... command

Activation	Status Bar Text
Alt, S,V	Set default values

Command is used for resetting default values to phone's EEPROM.

After selection application asks confirmation:



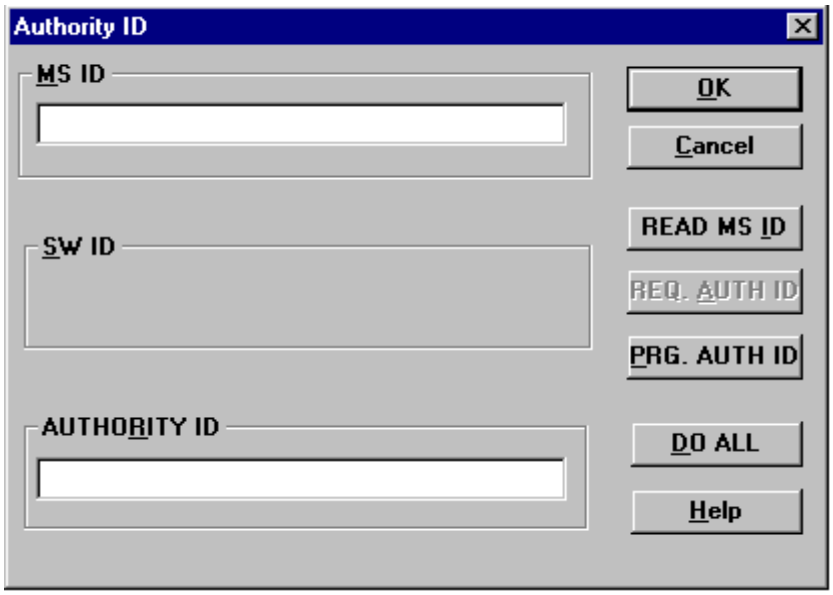
If Yes is answered, default settings are made to phone

Authority ID... command

Activation	Status Bar Text
Alt, S,A	Open Authority ID dialog box

This command is used for programming software authorization data remotely and locally.

The **Authority ID** dialog box contains the following items:



Authority ID dialog box has following items:

MS ID edit box (ALT+M)

Mobile station security id number for remote authority id programming

SW ID edit box (ALT+S)

Software id number may be needed later with with authority id
Not yet supported

AUTHORITY ID edit box (ALT+E)

Software authority id for remote authority id programming

READ MS ID button (ALT+E)

Pressing this button updates MS ID edit box from phone
Shall be used only for remote programming

REQ AUTH ID button (ALT+E)

Only for R&D use

PROG AUTH ID button (ALT+E)

Pressing this button updates value from AUTHORITY ID edit box to phone. Shall be used only for remote programming

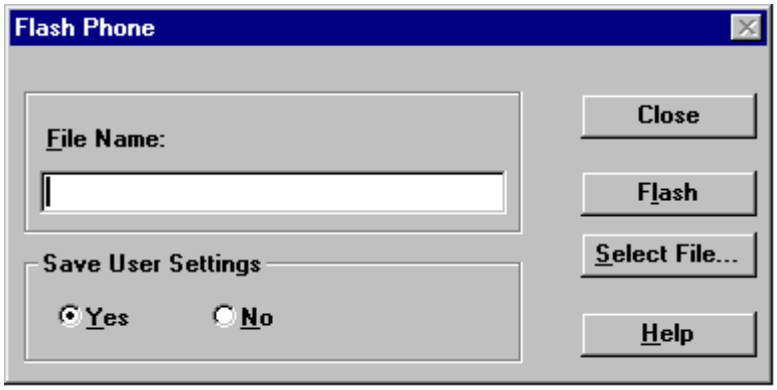
DO ALL button (ALT+E)

Pressing this button updates authority id to phone. This button shall be used when TDF–4 (or TDD–4) is connected to PC

Flash Phone... command

Activation	Status Bar Text
Alt, S,A	Open Authority ID dialog box

This command is used for flashing new software into the phone. While flashing the phone, user is shown approximately flashing time.



The **Flash Phone** dialog box contains the following items:

File Name... edit filed:

Diplays file path to be flashed.

Flash button (ALT+L)

Starts flashing of selected file to the phone.

Select File... button (ALT+S)

Starts flashing of selected file to the phone.

Close button (ESC)

Closes the dialog button and *does not* start flashing.

During flashing status dialog is shown. After phone is flashed Authority ID is set to the phone.

Dealer

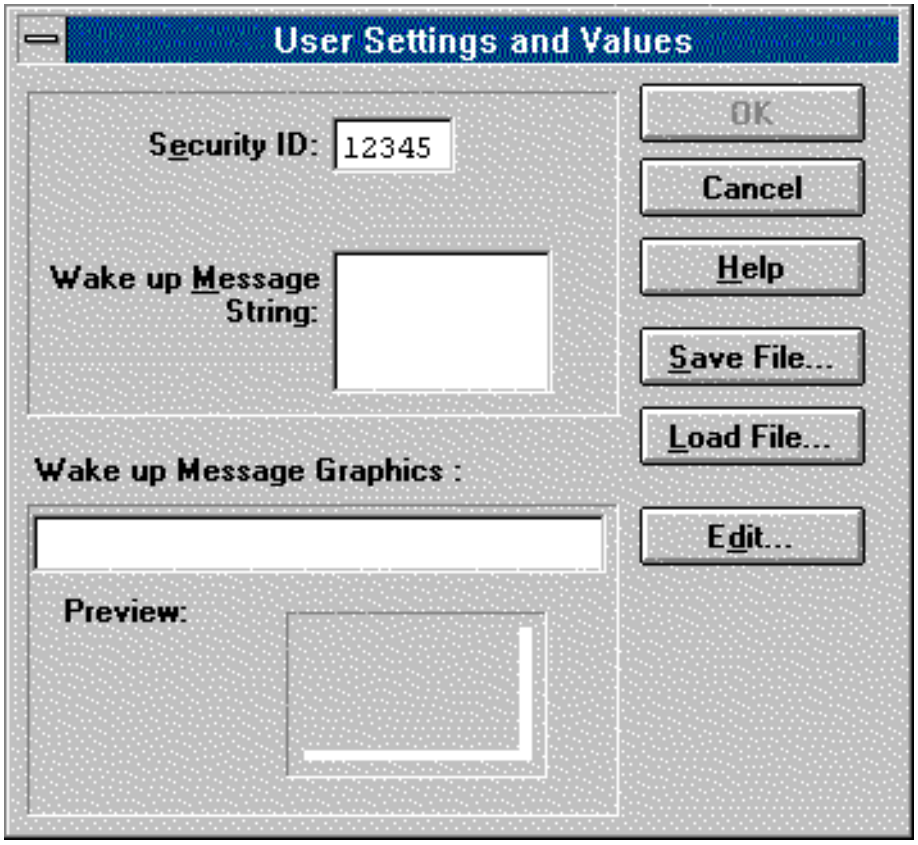
The dealer sub menu offers functions for ME settings for dealers.

User Settings... command

Activation	Status Bar Text
Alt, D,U	Open User Setting dialog box

This command is used for reading, storing, and modifying the user settings and values.

After menu selection, the program opens a *query* dialog box: “Read user settings from phone?”. If you answer **Yes**, all user settings are read from the ME including menu settings. If reading fails, an error dialog box is shown. If reading is OK, the **User Settings and Values** dialog box is opened.



The **User Settings and Values** dialog box contains the following items:

Security ID edit box (ALT+E):

Edit the security code which is saved to the ME memory together with other user settings and values. Only digits are accepted for Security code. Length must be 5 digits.

Wake up Message String edit box (ALT+M):

Edit Wake up message. The message can contain up to 16 characters.

Wake up Message Graphics group

Save File... button (ALT+S):

Opens a common **File Save As** dialog box and asks for the name of the file to contain user settings and values.

Load File... button (ALT+L):

Opens a common **File Open** dialog box, and asks for the name of the file containing the user settings and values.

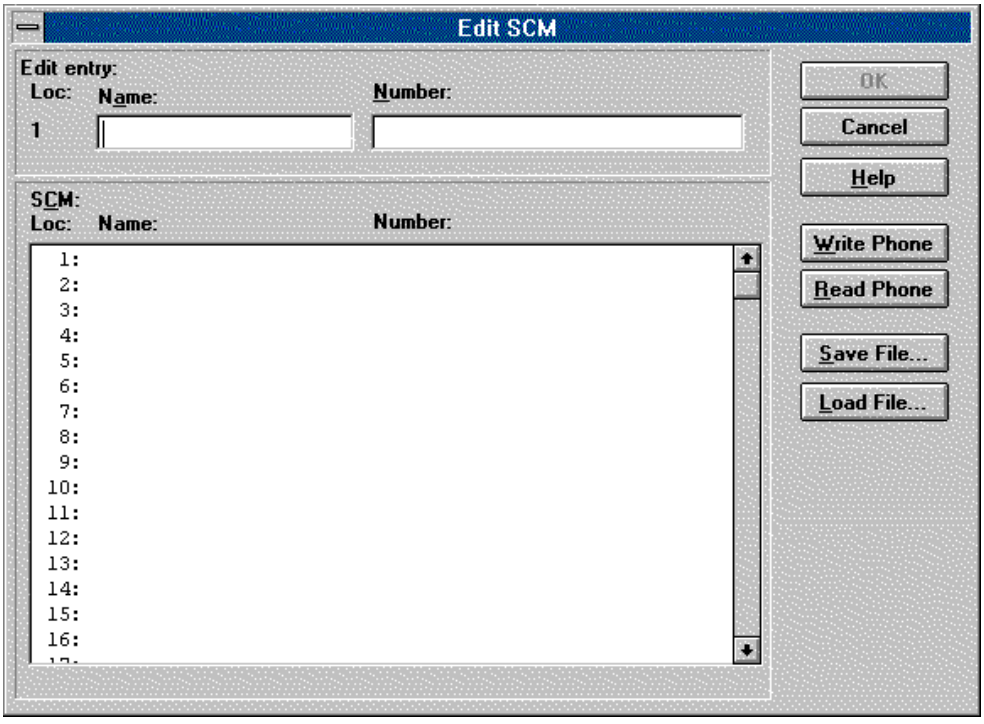
Edit button (ALT+D)

Starts Windows Paintbrush to edit the graphical Wake up message bitmap.

Short Code Memory... command

Activation	Status Bar Text
Alt, S,C	Open Edit SCM dialog box.

This command is used for reading, storing and modifying the SCM values.



Edit SCM dialog box has following items:

Loc statix text:

Display current location

Name edit box (ALT+A):

Edit the Name.

Number edit box (ALT+N):

Edit the number.

SCM list box (ALT+C):

List for available names and numbers.

Write Phone... button (ALT+W):

Write SCM values to phone and checks the validity of names and numbers.

Read Phone... button (ALT+R):

Read SCM values from phone.

Save File... button (ALT+S):

Opens a default Windows File Save As dialog box and asks filename where to save SCM values.

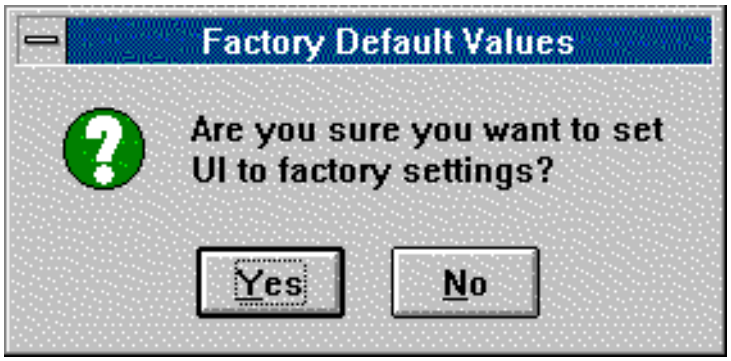
Load File... button (ALT+L):

Opens a default Windows File Open dialog box and asks file-name where from to load SCM values. Checks the validity of names and numbers.

Set Default UI Values... command

Activation	Status Bar Text
Alt, D,V	Reset the default values to phone's EEPROM.

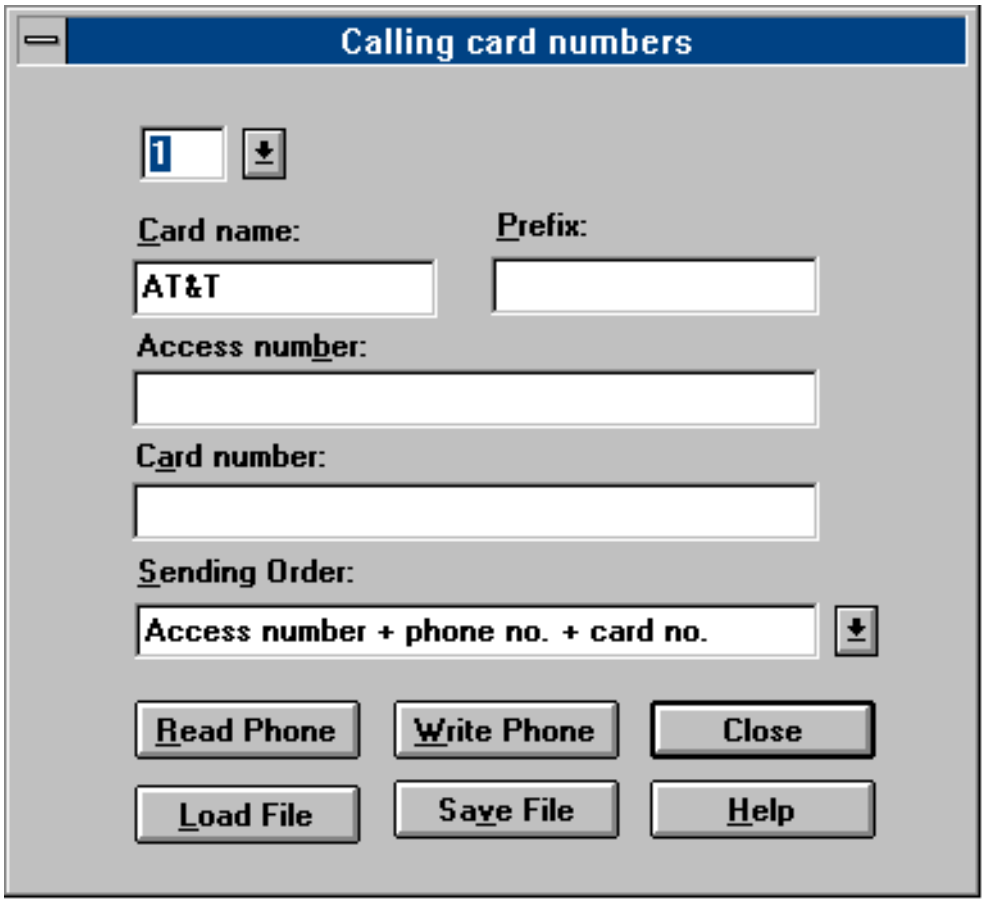
After selection application asks confirmation:
"Are you really sure you want make ui factory settings to phone?".
If Yes is answered, default settings are made to phone



Calling cards... command

Activation	Status Bar Text
	Open Calling card dialog box.

This dialog enables to program the calling card numbers and operator telephone numbers used in credit card calls.



Calling card numbers dialog has following items

Calling Card drop list

Card can be selected up to four

Card name edit box (ALT+C)

Card name can be edited.

Prefix edit box (ALT+P)

Card prefix can be edited.

Access number edit box (ALT+B)

Card access number can be edited

Card number edit box (ALT+A)

Card number can be edited

Sending order drop list

Sending order can be selected

Read Phone... button (ALT+R):

Read calling card data from phone and update dialog items

Write Phone... button (ALT+W):

Write data to calling card data to phone

Close... button (ESC)

Save File... button (ALT+S)

Opens a Windows default File Save As dialog box and asks filename where to save settings.

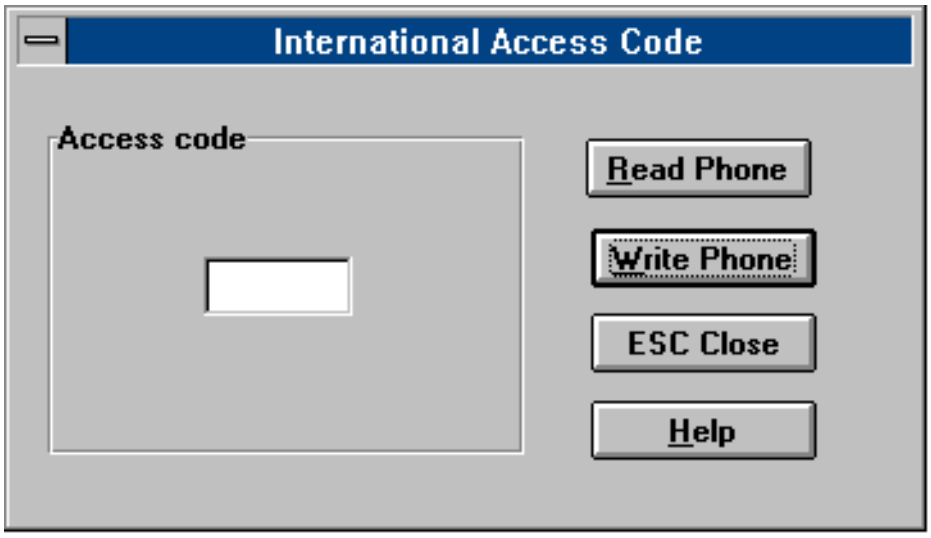
Load File... button (ALT+L)

Opens a Windows default File Open dialog box and asks file-name where to load settings.

International access code... command

Activation	Status Bar Text
Alt, D,E	Open International access code dialog box.

It is possible to change the international access code that is used for example in international call barring feature.



International Access Code dialog has following items:

Access code edit box (ALT+A):

Access code can be edit

Read Phone... button (ALT+R):

Read code value from phone

Write Phone... button (ALT+W):

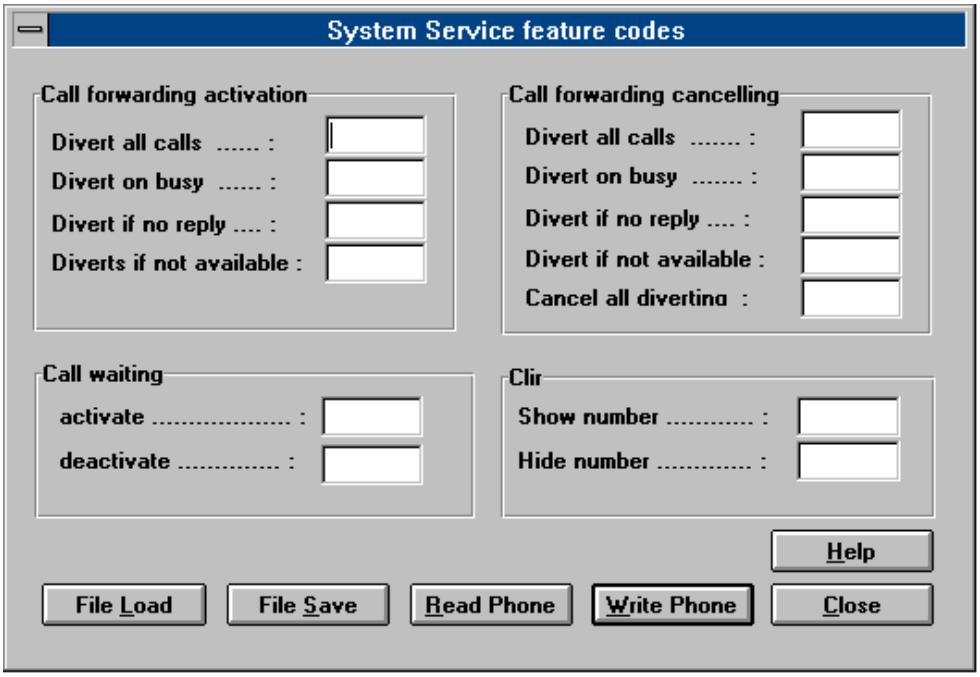
Write value to phone and checks the validity of code

Cancel button (ESC): Exit without any changes

System Service Feature codes... command

Activation	Status Bar Text
Alt, D,F	Open System service feature codes editing dialog box.

System service feature codes editing dialog box is opened displaying codes in editing fields.



System service feature codes dialog has following items:

Call forwarding activation group	Values can be edited
Call forwarding cancelling group	Values can be edited
Call waiting group	Values can be edited
Call identification and restriction group	Values can be edited

Read Phone... button (ALT+R):
Read values from phone and update dialog

Write Phone... button (ALT+W):
Write values to phone

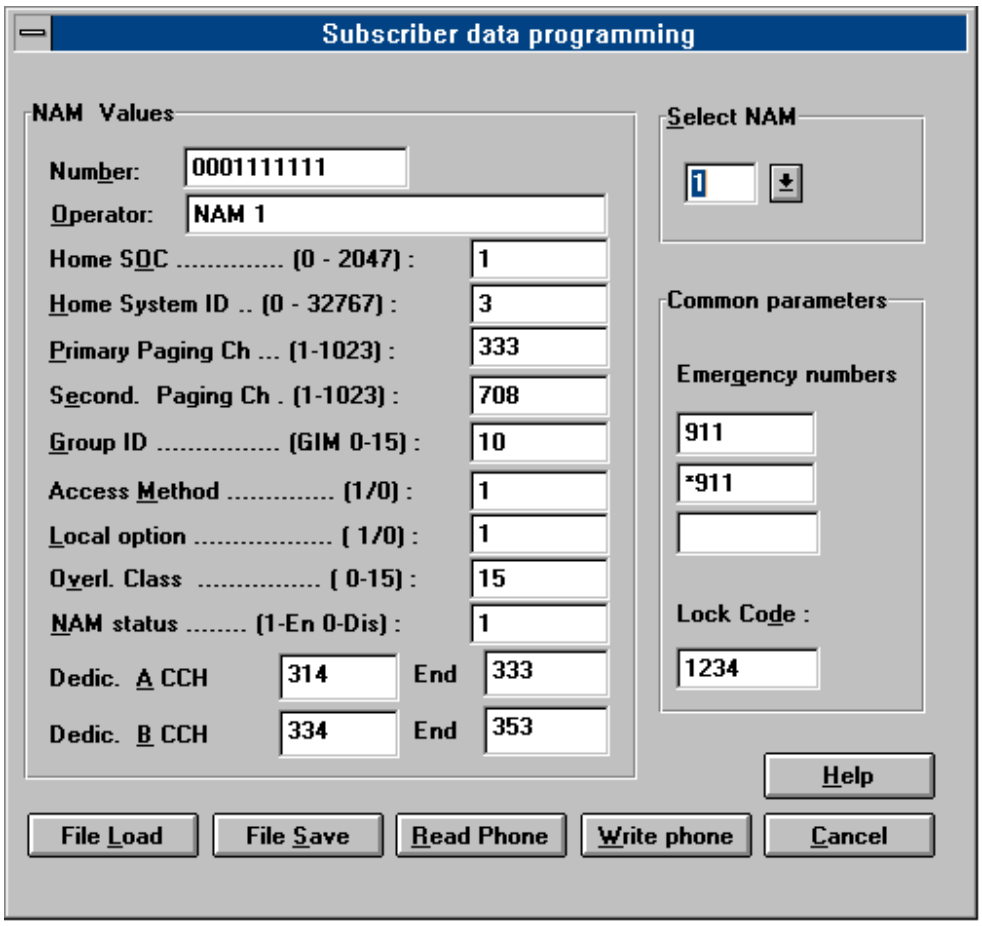
File Load ... button (ALT+R):
Read values from file

File Save ... button (ALT+W):
Write values to phone

Subscriber data programming... command

Activation	Status Bar Text
Alt, D,S	Open Subscriber data programming dialog box.

On the upper right corner there is a drop down box, where you can select the nam you want to edit. The per NAM data below is updated according to the highlighted NAM. Note that emergency numbers and lock code are common to all NAMs.



Subcriber data programming dialog has following items:

Select NAM drop list (ALT+T):

The selected position is highlighted

Number edit box (ALT+B)

The alphanumeric MIN value can be edited

Operator edit box (ALT+O):

The alphanumeric value can be edited

Home SOC edit box (ALT+O:

Numeric value can be edited if not locked

Home System ID edit box (ALT+H):

Numeric value can be edited

Primary paging ch edit box (ALT+P):

Numeric value can be edited

Secondary paging ch edit box (ALT+E):

Numeric value can be edited

Group ID Mark edit box (ALT+G):

Numeric value can be edited

Access method edit box (ALT+A):

Numeric value can be edited

Local Use Mark edit box (ALT+U):

Numeric value can be edited

Overl. Class edit box (ALT+V):

Numeric value can be edited

Nam status edit box (ALT+N):

NAM to enable or disable can be edited

Dedic. A CCH start edit box (ALT+A):

Numeric value can be edited

End

Numeric value can be edited

Dedic. B CCH start edit box (ALT+B):

Numeric value can be edited

End

Numeric value can be edited

Emergency numbers edit boxes (ALT+K):

The alphanumeric values can be edited

Lock code edit box (ALT+D):

The alphanumeric value can be edited

File Save... button (ALT+S):

Opens a default Windows **File Save As** dialog and asks file-name where to save user settings and values.

File Load... button (ALT+L):

Opens a default Windows **File Open** dialog and asks filename where from load user settings and values.

Read Phone... button (ALT+R):

Read selected NAM’s values from phone and update dialog items

Write phone... button (ALT+W):

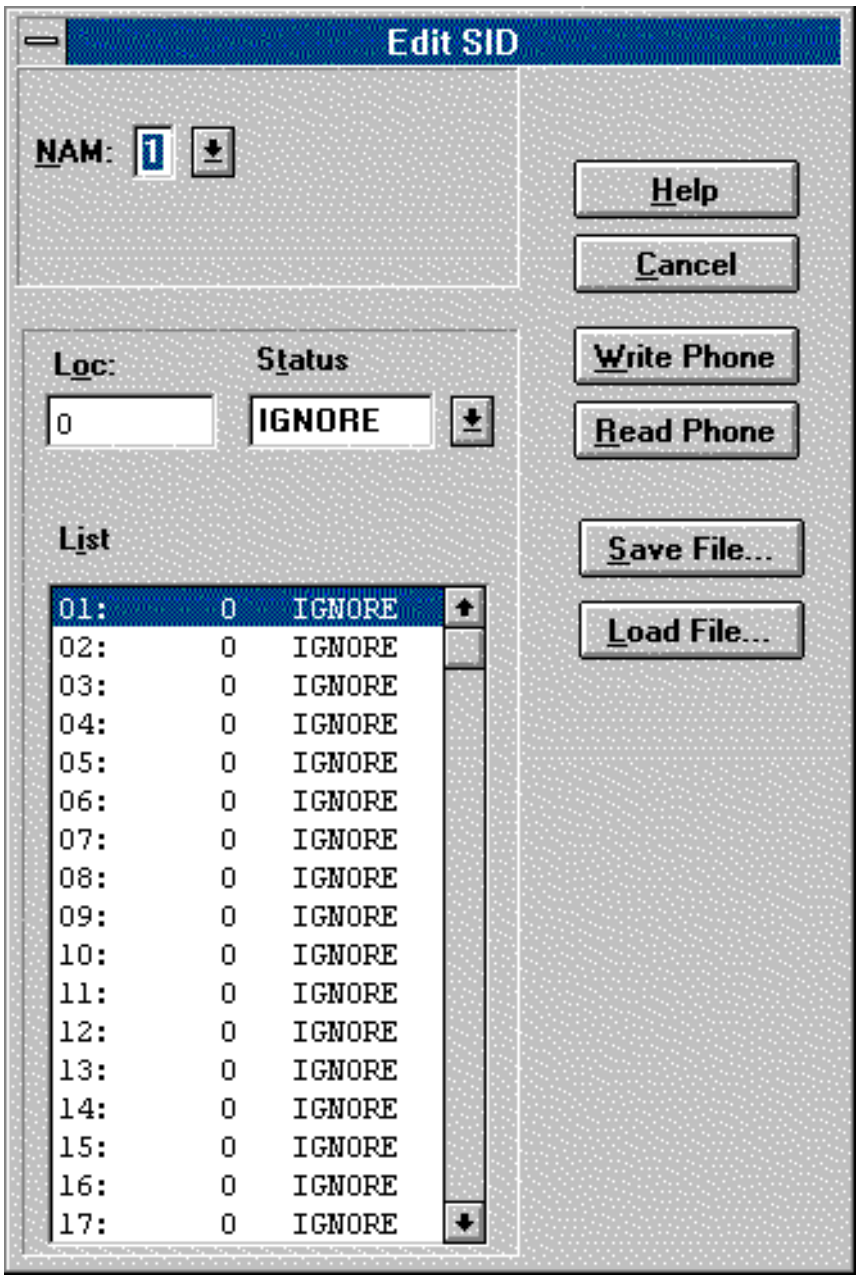
Write selected NAM’s values to phone

Close... button (ALT+S): Close dialog

SID programming... command

Activation	Status Bar Text
Alt, D,P	Open SID programming dialog box.

For NAM one and two there can be maximum of 30 SID's in the search table i.e total of 60 SIDs in all. These 30 SIDs are a mixture of frienly and unfrienldy. There is not a fixed proportion. If the SID is marked as 'ignore' it is the same as the field would be empty and the value is ignored.



SID programming dialog has following items:

NAM list box (ALT+N)

Index to NAM select

Loc edit box (ALT+I)
: SID value can be edited

Status drop list
: SID status can be selected

List box (ALT+I)
: Max 30 SID’s. The selected position is highlighted and can be edited

Read Phone... button (ALT+R):
: Read SID values from phone and update dialog

Write Phone... button (ALT+W):
: Write SID values to phone

File Load... button (ALT+R):
: Read SID values from file

File Save... button (ALT+W):
: Write SID values to phone

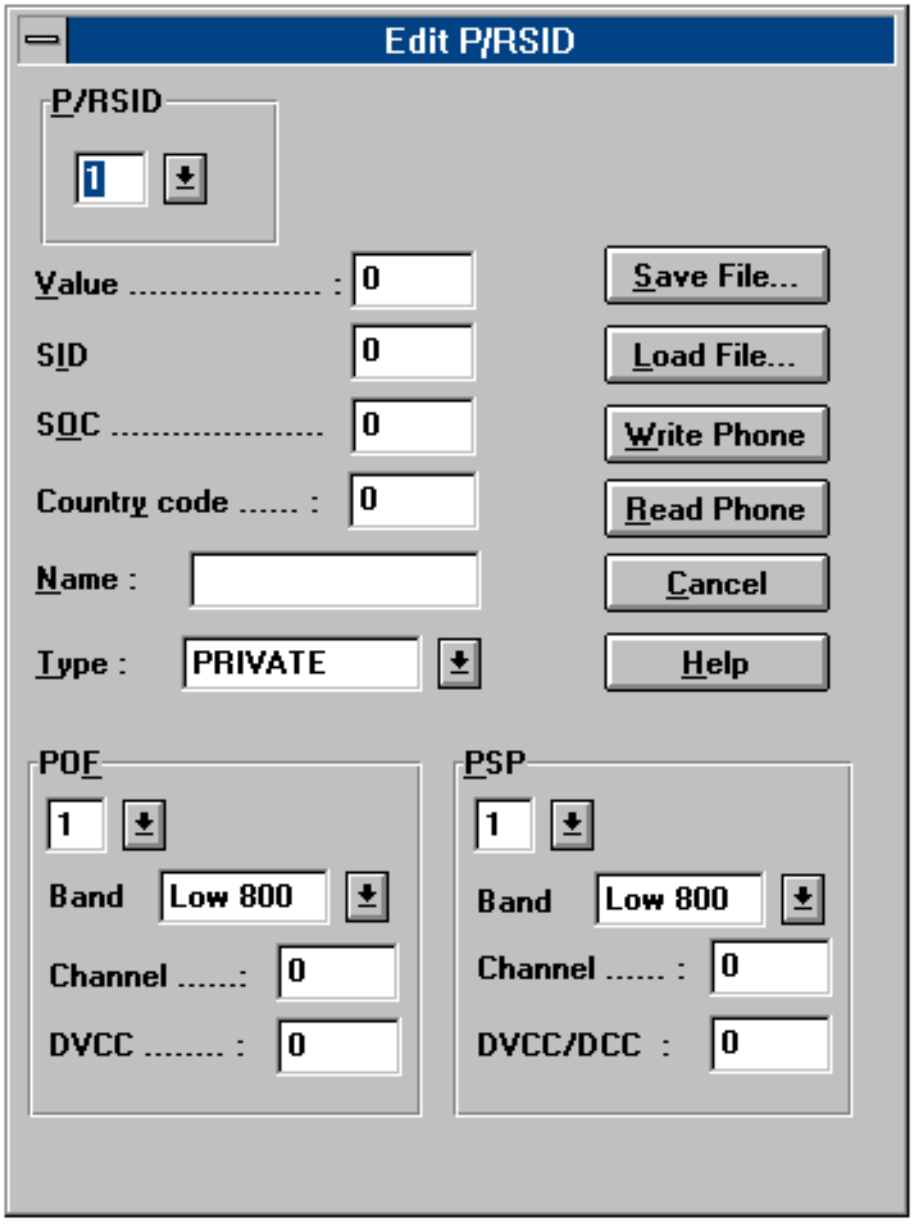
Close... button (ESC)
: Close dialog

Help button (ESC)
: Context sensitive help

P/RSID programming... command

Activation	Status Bar Text
Alt, D,R	Open P/RSID programming dialog box.

This command is used to modify Private and Residential System IDentity values. List contains up to 5 P/RSIDs.



P/RSID programming dialog has following items:

P/RSID list box (ALT+P):

Index to P/RSID list up to 5

Value edit box (ALT+V)

The numeric value of P/RSID

SID edit box (ALT+I)

The Numeric value of Home system ID stored in the mobile and uniquely associated with a MIN

SOC edit box (ALT+O)

Spesifies the System operator accociated with a P/RSID

Country code edit box (ALT+Y)

Numeric values of symbolic value which indicates if this is a Private or Residential

Name edit box (ALT+N)

The alphanumeric designator accociated with a P/RSID

Type list box (ALT+T)

Symbolic value which indicates if this is a Private or Residential

POF List box (ALT+F)

Index to private operating frequencies list up to 4

Band list box

Symbolic Value selected POF‘s band

Channel edit box

Numeric value of selected POF’s channel

DVCC edit box

Numeric value of selected POF’s module control channel

PSP List box (ALT+P)

Index to public service profiles list up to 4

Band list box

Symbolic Value selected PSP ‘s band

Channel edit box

Numeric value of selected PSP’s channel

DVCC/DCC edit box

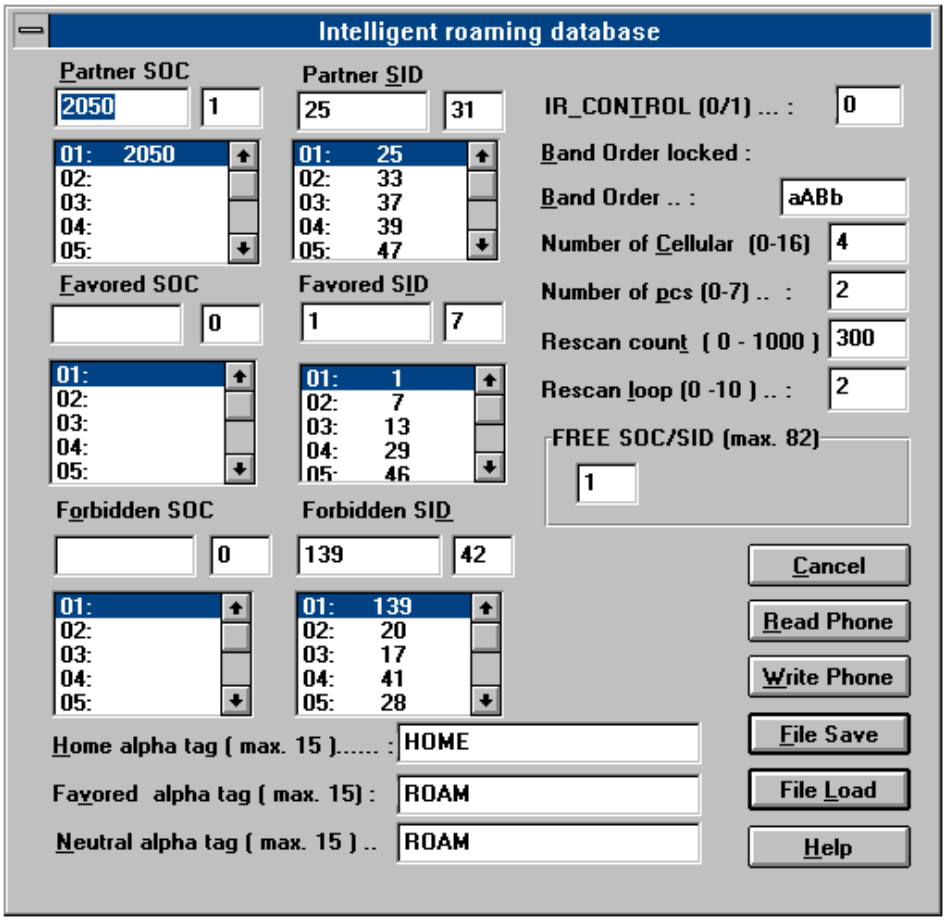
Numeric value of selected PSP’s module control channel

Intelligent Roaming Database... command

Activation	Status Bar Text
Alt, D,I	Open Intelligent Roaming Database dialog box.

This command is used to modify database which affects directly to the mobiles behaviour when scanning for control channels.

IRDB includes max 82 lenght SOC/SID list. This is calculated automaticly from tables. If selected more than max. then error code is shown when write to phone.



Intelligent roaming database dialog has following items:

Partner SOC list box (ALT+P)

Number of partner SOCs in soc_sid_list. The selected position is highlighted and can be edited.

Partner SID list box (ALT+S)

Number of partner SIDs in soc_sid_list. The selected position is highlighted and can be edited.

Favored SOC list box (ALT+F)

Number of favored SOCs in soc_sid_list. The selected position is highlighted and can be edited.

Favored SID list box (ALT+I)

Number of favored SOCs in soc_sid_list. The selected position is highlighted and can be edited.

Forbidden SOC list box (ALT+O)

Number of forbidden SOCs in soc_sid_list. The selected position is highlighted and can be edited.

Forbidden SID list box (ALT+D)

Number of forbidden SIDs in soc_sid_list. The selected position is highlighted and can be edited.

IR_control edit box (ALT+T)

”1”, only the systems broadcasting. HOME SID or SOC are accepted as a service providers.
”0”, all other systems, except systems broadcasting SID or SOC set as a forbidden in a soc_sid_list, are accepted as a service providers.

Band order locked static

Band order which are not editable

Band order edit box (ALT+B)

table tells which bands (cellular or/and PCS) and in what order the bands are searched.
a = 800 MHz
b = 800 MHz
A = 1900 MHz
B = 1900 MHz
C = 1900 MHz
D = 1900 MHz
E = 1900 MHz
F = 1900 MHz
00 = NONE

Number of cellular edit box (ALT+ M)

Number of probability blocks to scan in cellular band.

Number of pcs edit box (ALT+ P)

Number of sub blocks to scan in PCS band

Rescan count edit box (ALT+T)

Rescan time in hyperframes (HF = 1,28 seconds).

Rescan loop edit box (ALT+C)

Defines when all the band in band_order are to be scanned

FREE SID/SOC static

Number of free elements in soc_sid_list

Home alpha tag edit box (ALT+H)

Alpha tag is shown on phone’s display when on service with HOME SID or SOC. System is home system if the broadcasted

SID or SOC or both of them matches with SID/SOC in a phone's NAM.

Favored alpha tag edit box (ALT+V)

Alpha tag which is shown on phone's display when on service with PARTNER or FAVORED system. System is PARTNER/FAVORED system when the broadcasted SID or SOC matches with PARTNER/FAVORED SID/SOC in a phone's soc_sid_list in IRDB.

Neutral alpha tag edit box (ALT+N)

Alpha tag which is shown on phone's display when on service with NEUTRAL. System is NEUTRAL system when the broadcasted SID and SOC does not match the values in NAM and neither in soc_sid_list in IRDB.

Read Phone button (ALT+R):

Read values from the phone

Write Phone button (ALT+W):

Write values to phone and checks the validity of names and numbers.

Save File button (ALT+S):

Opens a default Windows **File Save As** dialog and asks filename where to save values.

Load File button (ALT+L):

Opens a default Windows **File Open** dialog and asks filename where from load values. Checks the validity of names and numbers.

Cancel button (ESC)

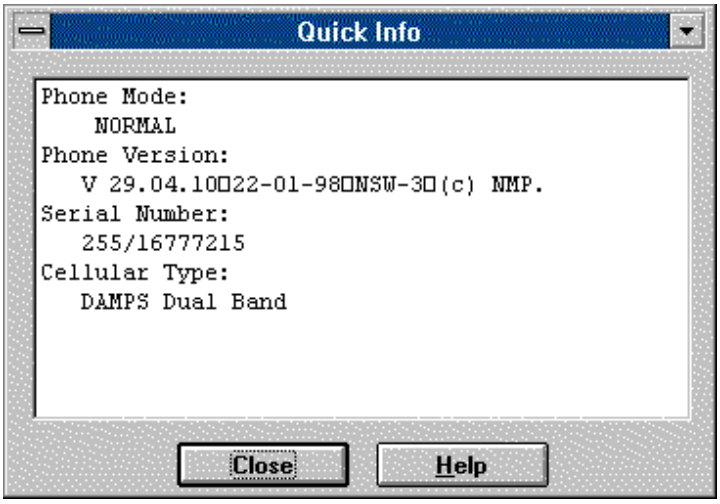
Exit without saving any changes

View

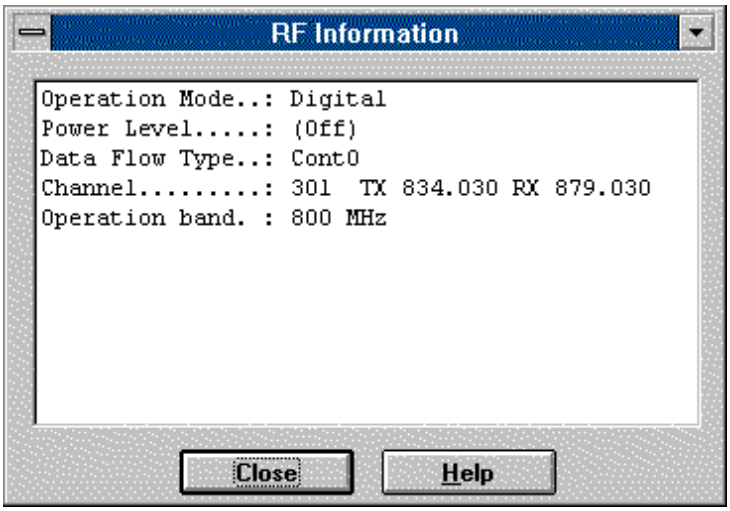
Quick/RF Info... command

Activation	Status Bar Text
Alt, V,Q	View Quick/RF information.

If phone is in *normal* mode following **Quick Info** is shown:



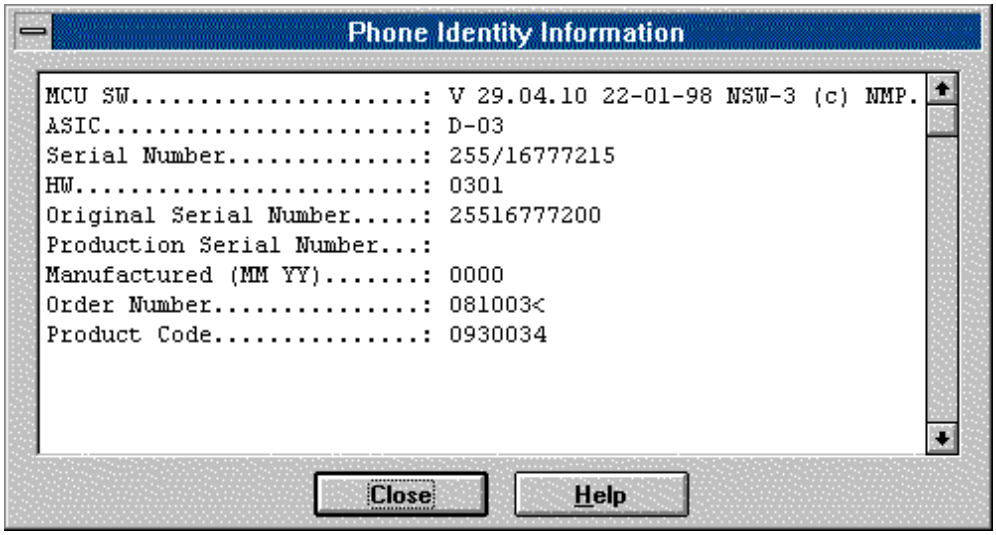
If phone is in local mode **RF Information** window is shown. Information is shown in a modeless dialog box which may be left open during other operations. It is also updated when ever needed.



Phone Identity... command

Activation	Status Bar Text
Alt, V,P	View Phone Identity.

Command opens **Phone Identity Information** dialog box, which shows identification information. Information is shown in a modeless dialog box which may be left open during other operations. It is also updated when ever needed.



Appendix 1, Vocabulary

Abreviation	Description
ADC	Analog to Digital Converter
AFC	Automatic Frequency Control
AGC	Automatic Gain Control
ASIC	Custom circuit which for instance controls communication between MCU and DSP
BBD–3	Service battery
CLF	Common Look and Feel
CLI	Calling Line Identification
COBBA	Common Base Band Analog
DAC	Digital to Analogue Converter
DATA	DATA interface module
DAU–9S/P	MBUS/FBUS cable
DLL	Dynamic Link Library
DSP	Digital Signal Processor which controls radio interface and speech coding/decoding
EEPROM	Memory for adjustment parameters (Electrically Erasable and Programmable Read Only Memory)
ESN	Electrical Serial Number
FBUS	Fast serial bus
GPIB	General Purpose Instrument Bus, also know as HPIB. Specified by IEE488.2.
IMEI	International Mobile Equipment Identification code
IR	Infra Red transmitter
M2BUS	Serial communication bus which can be connected to accessory devices and test PC
MCU	Master Control Unit processor
MDI	MCU DSP Interface; message interface via ASIC registers
ME	Mobile Equipment
MODAL (dialog box)	A modal dialog box requires the user to complete interaction within a dialog box, and close it before continuing with any further interaction outside the window.
MODELESS (dialog Box)	A modeless dialog box allows the user to interact with other windows and applications.

MS	Mobile Station
PC	IBM PS/AT or compatible personal computer
PCI	Phone Controlling Interface SW for PC
PKD–1/1NS/1CS	Hardware protection key (DESKEY DK2) for protecting service software from illegal copying. The software will not work without this key !
RF	Radio Frequency parts
RSSI	Received Signal Strength Indication
RTC	Real Time Clock
SW	Software
TDF–4	Flash security box
Tesla	Acronym, stands for **T**est and **S**ervice **L**ocals **A**pplication.
UI	User Interface
WinTesla	This Service Software program. Name copyright Nokia Mobile Phones (1996).