# NOKIA 32


FEATURE GUIDE

NOKIA

# CONTENTS

**Legal Notice**

# 1. INTRODUCTION

This document goes through the main features of Nokia 32 PBX connectivity terminal. It lists the features, describes how they are used and how settings can be changed. Additional information is available also in the user's guide and product specification of the Nokia 32 terminal, and Nokia 30 product documentation.

# 2. FEATURE LIST

The features listed here are presented and described in this document:

- Supplementary services
- Short Message Service
- Voice mail
- High Speed Circuit Switched Data (HSCSD)
- General Packet Radio Service (GPRS)
- Calling Line Identification (CLI)
- Charge Advice Information (CAI)
- Automatic Area Code (AAC)
- Faster Call Setup
- AutoPIN
- Extension Call End Detection
- Extension In Calling modes
- Extension Out Calling modes

## 2.1 SUPPLEMENTARY SERVICES

These features are network services. They are special services provided by wireless network service providers and differ from one network and country to another. For details, check with the local network service provider. The Nokia 32 terminal supports the GSM Phase 2/2+ Supplementary Services

- Number identification (see chapter 2.6)
- Call forwarding
- Call completion
- In-call handling
- Call transfer
- Call restriction

- High Speed Circuit Switched Data (HSCSD) (See chapter 2.4)
- General Packet Radio Service (GPRS) (See chapter 2.5)
- Security Options

### 2.1.1 How the supplementary services work

The activation, deactivation, request and registration of a supplementary service function in the same way as in a mobile phone. The dialled supplementary service sequence will be executed after 4 second's dial time-out. The Nokia 32 terminal responds to supplementary service activation, deactivation, request and registration by sending OK or error tones from the telephone set's receiver.

**Table 1: OK and error tones**

| Tone | Indication |
|---|---|
| OK | ——— |
| Error | – – – – |

#### 2.1.1.1 Number identification

**Calling Line Identification Presentation (CLIP)**

The CLIP (Calling Line Identification Presentation) feature displays the caller's number on an external CLI (Calling Line Identity) device. The CLI device must be connected between the Nokia 32 terminal and the DTMF telephone. In order to connect the CLI, signalling mode must be activated.

Note that the CLIP function usually has to be activated by the network operator.

To request this function, key in ***#30#**.

**Calling Line Identification Restriction (CLIR)**

The CLIR (Calling Line Identification Restriction) feature offers the user an opportunity to prevent his/her number from being shown to the recipient of the call. The network operator sets the CLIR either to ON or OFF state for the subscriber. It is also possible to revert to the CLIR status for one call at a time.

If, for example the CLIR is disabled (the phone number will be shown to the recipient of the call), invoke the CLIR by keying in **#31#PhoneNumber**. The phone makes a normal call to the **PhoneNumber** but the recipient of the call will not be able to see the Nokia 32 terminal's phone number.

If the CLIR has been set permanently to ON (the phone number is not shown to the recipient of the call), key in ***#31#** to show the number.

#### 2.1.1.2 Call forwarding (Call offering)

These functions allow the user to forward incoming calls.

**Table 2: Call forwarding functions**

| Function | Request | Activation | Deactivation |
|---|---|---|---|
| Call forwarding; Unconditional (CFU) | *#21# | *21*PhoneNumber# | ##21# |
| Call forwarding; Busy (CFB) | *#67# | *67*PhoneNumber# | ##67# |
| Call Forwarding; No reply (CFNRy) | *#61# | *61*PhoneNumber# | ##61# |
| Call Forwarding; Not reachable (CFNRc) | *#62# | *62*PhoneNumber# | ##62# |

- **Unconditional** call forwarding, also called call offering, allows incoming calls to be directed to another number (network service).
- **Busy** call forwarding allows the subscriber to direct incoming calls to another number when the telephone set is busy. Usually, the CFB service has to be first activated by calling the operator's service number (network service).
- **No reply** call forwarding enables the subscriber to direct incoming calls to another number when the calls are not answered. Usually the CFNRy service has to be activated first by ca**l**ing the operator's service number (network service).
- **Not reachable** call forwarding allows the subscriber to direct incoming calls to another number when the network is not in service or the terminal is powered off. Usually the CFNRy service has to be first activated by calling to the operator service number (network service).

#### 2.1.1.3 Call waiting (Call completion)

Call waiting, also called call completion, alerts the subscriber of another incoming call during a phone call (network service).

To request call waiting, key in ***#43#**.

To activate call waiting, key in ***43#**.

To deactivate call waiting, key in **#43#**.

#### 2.1.1.4 In-call handling

These functions allow the user to switch between phone calls. The service is controlled by the R (register recall) button.

**Table 3: In-call handling functions**

| Function | Action |
|---|---|
| Call in progress, release call waiting | 0R |
| Answer call waiting, release active call | 1R |
| Answer call waiting, hold active call | 2R |
| Switch between active and held call | R |
| Release active call | 1R |
| Release held call | 0R |
| Release all calls but waiting call | On-hook |
| Hold active call and set up new call | R number |

To transfer a call to a different number:

**1** Hold the active call by pressing R (register recall).

**2** Dial the new number to which the call is to be transferred.

**3** Press 4 and the R (register recall) button.

### 2.1.1.5 Call restriction

To activate or deactivate the barring of supplementary services, the user needs the network password from the network operator.

**Table 4: Call restriction functions**

| Function | Request | Activation | Deactivation |
|---|---|---|---|
| Barring of all outgoing calls | *#33# | *33*NetworkPassword# | #33*NetworkPassword# |
| Barring of all international calls | *#331# | *331*NetworkPassword# | #331*NetworkPassword# |
| Barring of all incoming calls | *#35# | *35*NetworkPassword# | #35*NetworkPassword# |

**Note:** Restricting calls in some networks may restrict the ability to make emergency calls. If this is the case in your network, ALL USERS OF THE TERMINAL MUST BE INFORMED by appropriate warning signs on ALL phones connected to the terminal.
The effect of call restriction varies among networks so each operator must provide its own warning signs that accurately describe any emergency restrictions.

### 2.1.1.6 Security options

These functions provide the user with security options.

**Table 5: Functions of security options**

| Security function | Action |
|---|---|
| Change PIN | **04*Old_PIN*New_PIN*New_PIN# |
| Change PIN2 | **042*Old_PIN2*New_PIN2*New_PIN2# |
| Change PIN2 when PIN2 is not known | **052*PUK2*New_PIN2*New_PIN2# |
| To unblock PIN | Enter PUK code and press #. Enter a new PIN code and press #. Verify the new PIN code and press #. |
| To change registration password1 | *03*PCC*Old_NetworkPassword*New_NetworkPassword* New_NetworkPassword# |
| To change all barring service password1 | *03*330*PCC*Old_NetworkPassword*New_NetworkPassword* New_NetworkPasswd# |
| To change outgoing barring service password1 | *03*333*PCC*Old_NetworkPassword*New_NetworkPassword* New_NetworkPassword# |
| To change incoming barring service password1 | *03*353*PCC*Old _NetworkPassword*New_NetworkPassword* New_NetworkPassword# |

The Password Control Code (PCC) is needed to change the password. The PCC code can be requested from the network operator.

## 2.2 SMS (SHORT MESSAGE SERVICE)

The Nokia 32 terminal supports both Mobile Originated (MO) and Mobile Terminated (MT) short message services with the help of AT commands. A PC and a data cable are needed when using the SMS feature.

Further description for using SMS (and other data services) can be found in the Nokia 30 product documentation, which is available at www.nokia.com.

When an SMS message is received, it is indicated to the customer with light and tone indicators.

When SMS is received, led number three (3) is blinking green/red.

**Figure 1: Nokia 32 terminal led numbering**


When SMS is received, following tone can be heard from the telephone receiver:

| | |
|---|---|
| SMS received tone | – – – – – – – – – – – – |

## 2.3 VOICE MAIL

The Nokia 32 terminal supports the GSM network voice mail service. If the network sends an SMS of received voice mail, the terminal will indicate the received SMS with light indicators and also by means of tone in the telephone set's receiver.

## 2.4 HIGH SPEED CIRCUIT SWITCHED DATA (HSCSD)

The GSM terminal supports High Speed Circuit Switched Data that enables a data transmission speed of up to 43.2 kbps. The High Speed Circuit Switched Data (HSCSD) relies on the simultaneous use of multiple GSM timeslots. The HSCSD is a network service.

More information and instructions about HSCSD can be found in the Nokia 30 product documentation, which is available at www.nokia.com.

## 2.5 GENERAL PACKET RADIO SERVICE (GPRS)

GPRS utilises packet switched technology where information is transmitted in small bursts of data. The GPRS mobile station class of the Nokia 32 terminal is class B. This means that both GPRS connections and circuit switched connections are possible, although it has to be defined which one is used each time. The Nokia 32 supports GPRS multi-slot class 6, thus multiple timeslots can be used for data transfer at the same time: 3+1, 2+2 or 2+1 slots.

More information and instructions about GPRS can be found in the Nokia 30 product documentation, which is available at www.nokia.com.

## 2.6 CALLING LINE IDENTIFICATION (CLI)

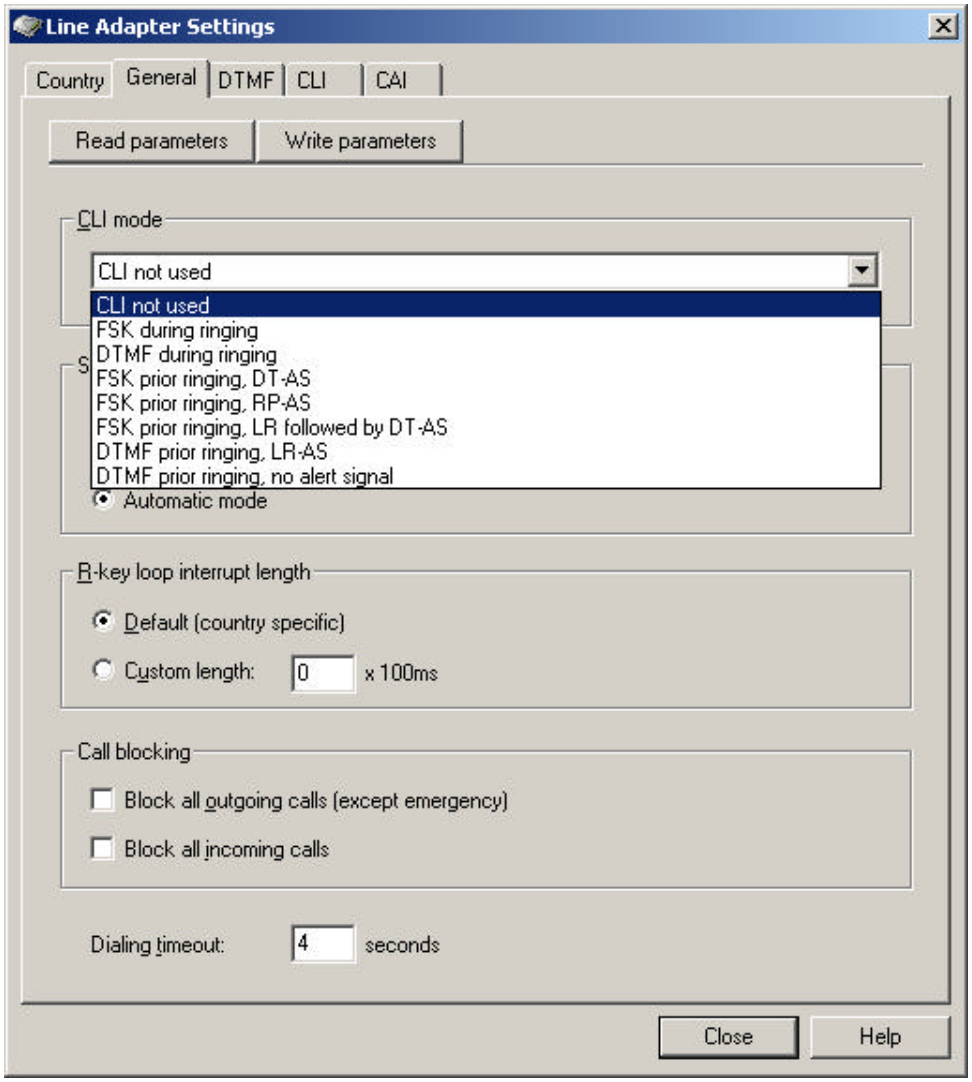
The Calling Line Identification (CLI) feature displays the caller's number with an external calling line display device. Two signalling methods are available, ETSI FSK (European Telecommunications Standards Institute Frequency Shift Keying) and DTMF (Dual Tone Multi Frequency). The signalling mode varies depending on the operator and the country. The default mode is ETSI FSK.

**Note:** Nokia does not provide The CLI devices. For details and availability, contact your service provider.

The CLI mode used can be changed either with Nokia 3 2 Configurator software or with a landline telephone.

To change the CLI mode with Configurator software, select ‘Nokia 32’ menu in the Configurator and then ‘Line Adapter Settings’ (see figure 2 below).

**Figure 2: Changing CLI mode**




For instructions how to change the CLI mode with a telephone set, see section Activating and using configuration mode.

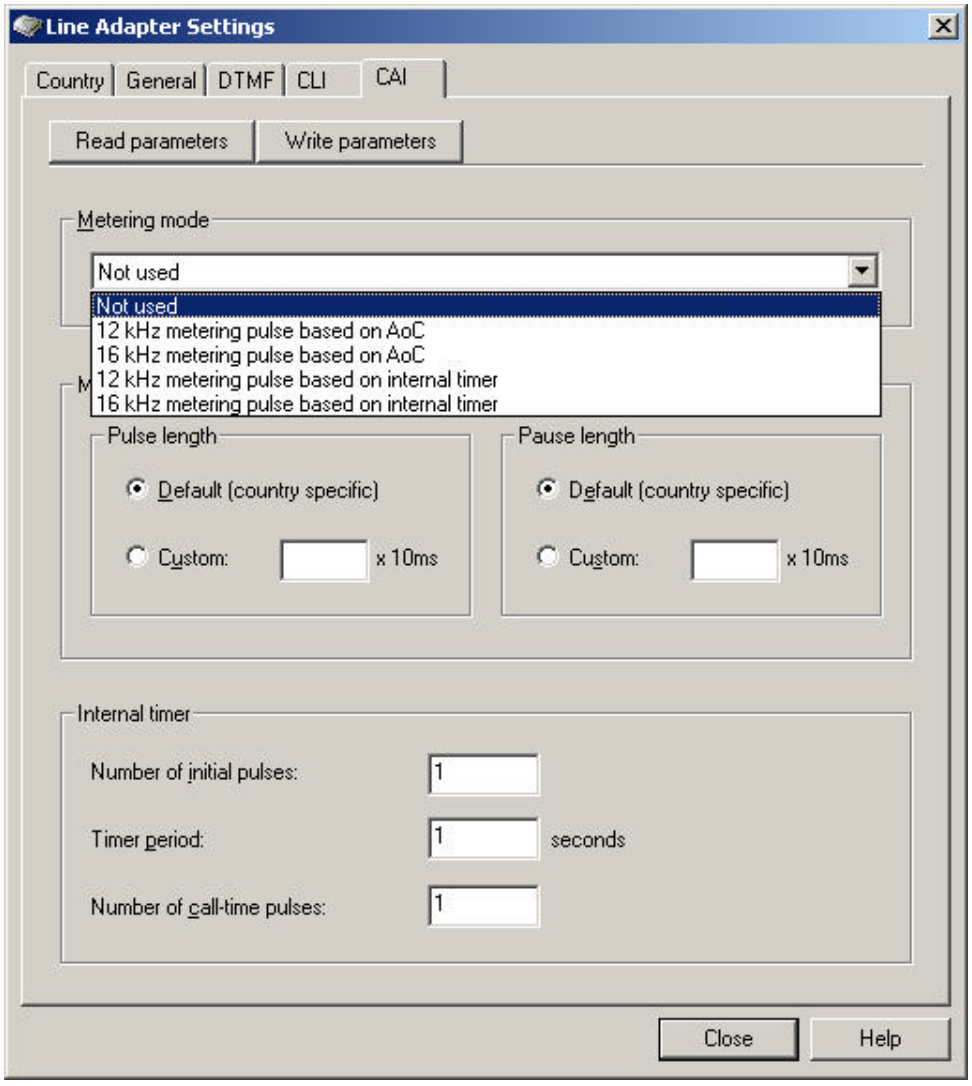
## 2.7 CHARGE ADVICE INFORMATION (CAI)

The Charge Advice Information (CAI) feature indicates the cost of the most recent calls and the total of calls in an external tariff pulse counter or display. The Nokia 32 terminal converts the GSM's standard Advice of Charge (AoC) information to Charge Advice Information (CAI) tariff pulse (12/16 kHz) information, in which case an external tariff counter or display can be used. The terminal's CAI settings can be modified using the Nokia 32 Configurator software.

**Note:** Data call costs cannot be shown on the display or counter. Nokia does not provide the CAI devices. For details and availability, contact your service provider.

To change the CAI mode, select 'Nokia 32' menu in the Nokia 32 Configurator software and then select 'Line Adapter Settings':

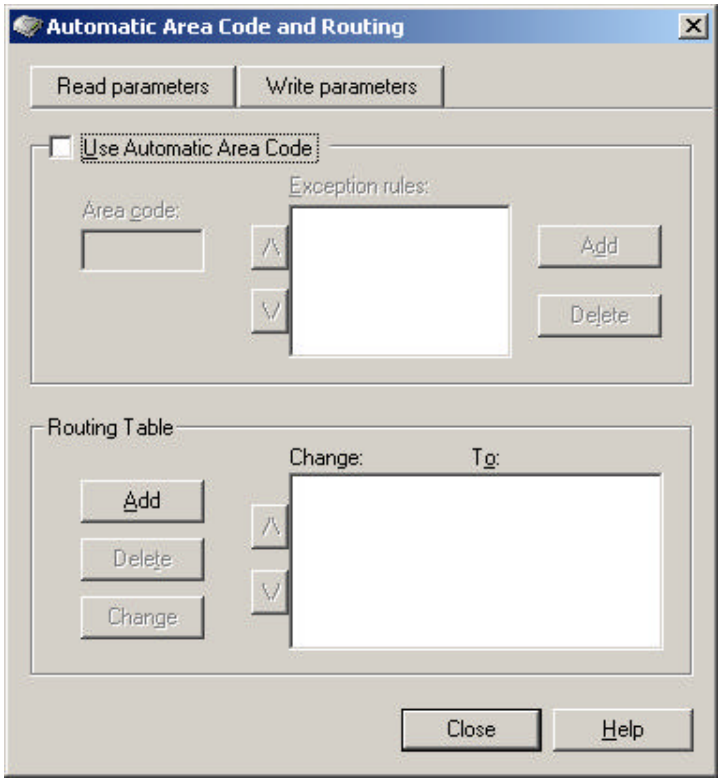
**Figure 3: Changing CAI settings**



## 2.8 AUTOMATIC AREA CODE (AAC) AND ROUTING

The Auto matic Area Code (AAC) feature allows the user to dial local numbers without a local area code in the GSM network. Before the number is sent, the Nokia 32 terminal adds a pre-programmed local area code automatically. The user can also specify the terminal to change certain prefixes automatically to provide a cost-effective route, for example. The AAC and routing settings can be modified using the Nokia 32 Configurator software (menu: Nokia 32 -> Automatic Area Code and Routing).

**Figure 4: Changing Automatic Area Code settings**




Area Code: The prefix to be added to the dialled number

Exception rules: List of numbers, to which the prefix will not be added

In Routing Table you can define certain numbers, which will be changed to some other defined number.

## 2.9 FASTER CALL SETUP

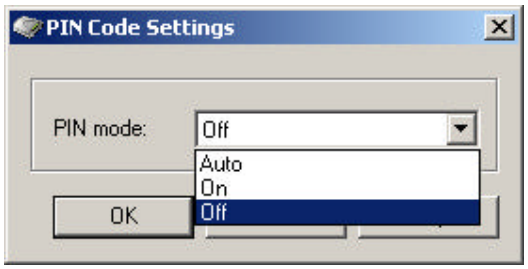
Faster call setup allows a faster call establishment. The last 10 different dialled numbers are stored in the memory of the Nokia 32 terminal. If the dialled number matches one of the stored numbers, there is no delay before the terminal sends the number and the call is established immediately.

### 2.10 AUTOPIN SECURITY FEATURE

The Nokia 32 terminal has an AutoPIN security feature. It saves the PIN code in the terminal's memory when the code is entered for the first time or when the code is changed. In addition, the AutoPIN feature enables device recovery after occasional power cuts without on-site intervention. The terminal enters the PIN code automatically the next time it switches on and requests the PIN code.

Use of the SIM card in other GSM terminals or mobile phones can be prevented. The user does not have to know the PIN code. However, other SIM cards can be used with the terminal. The AutoPIN feature can be deactivated using the Nokia 32 Configurator software (menu: GSM Security -> PIN Code Settings).

**Figure 5: Changing PIN code settings**




The default value is that the AutoPIN feature is active.

## 3. ACTIVATING AND USING CONFIGURATION MODE

Changing some Nokia 32 terminal settings is also possible using a normal telephone set. This chapter describes how this so-called configuration mode is activated and how it is used.

To activate the configuration mode, key in ****####****.

The configuration mode is protected with a four-digit access code. When the configuration mode has been activated, the Nokia 32 terminal requests for an access code for changing the settings. The default code is 1234. To change the default access code, use the Nokia 32 Configurator Software.

To enter the access code, key in **AccessCode#.**

In other words, if you use the default access code, dial ****####**1234#** to activate the configuration mode.

### 3.1 CHANGING THE LOOP INTERRUPTION TIME

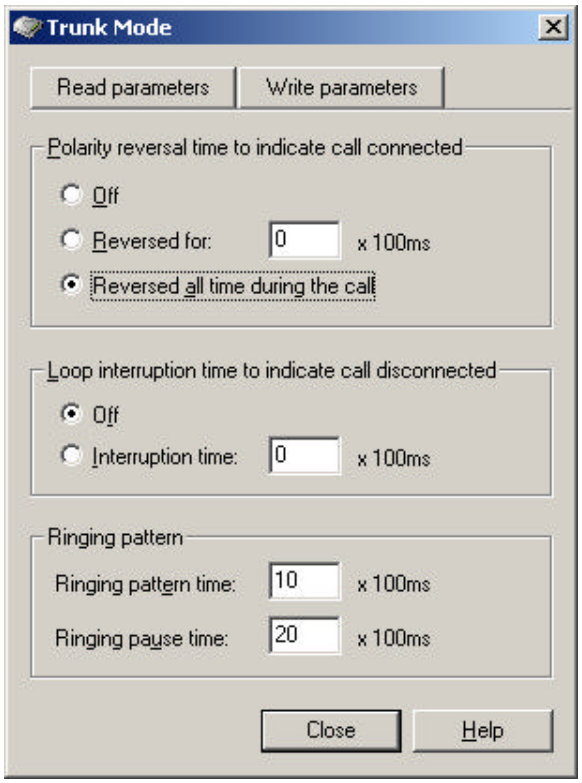
The loop interruption time is used to indicate call disconnection.

The default loop interruption time is 300 milliseconds. Key in a zero to disable the loop interruption. After you have keyed in the interruption time, the Nokia 32 terminal returns to the configuration mode.

To change the loop interruption time, key in **2**Interruption_Time#.**

The loop interruption time can also be changed with the Nokia 32 Configurator software (menu: Nokia 32 -> Trunk mode)

**Figure 6: Changing Loop interruption time**




## 3.2 CHANGING THE POLARIT Y REVERSAL TIME

The polarity reversal feature is used to indicate call connection and possibly also call disconnection.

To change the polarity reversal time, key in **3**Polarity_Reversal_Time#.**

After you have keyed in the polarity reversal time the Nokia 32 terminal returns to the configuration mode.

The polarity reversal time can also be changed with the Nokia 32 Configurator software (menu: Nokia 32 -> Trunk mode). See figure 6.

## 3.3 CHANGING CALLING LINE IDENTIFICATION (CLI) MODE

The following CLI modes can be selected in the configuration mode:

**000** =ETSI FSK (Default setting)

**001** =DTMF

**010** =DTMF-DK

To change a CLI mode, key in **4**CLI_Mode#**.

A more detailed configuration of the CLI functionality can be made using the Nokia 32 Configurator software (see 2.6 Calling Line Identification)

## 3.4 SELECTING NETWORK

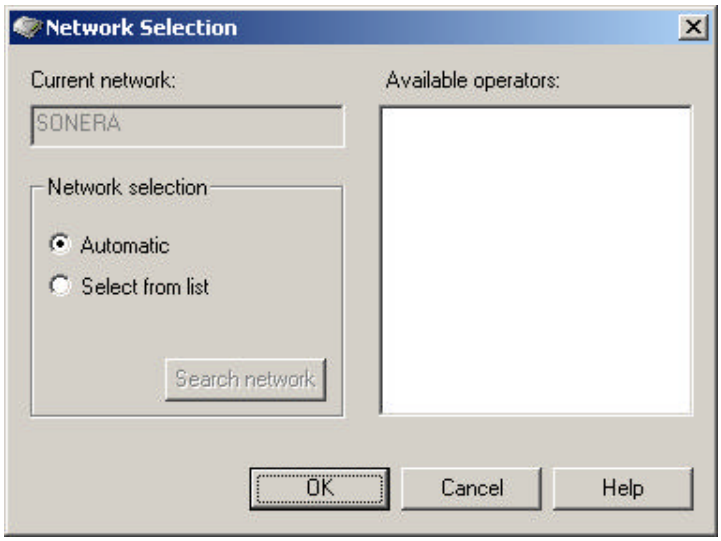
To select a certain network operator, a five-digit operator code must be keyed in.

To select a network, key in**5**Operator_Code#.**

For automatic network selection, key in**5**000#.**

The selected network can also be changed with the Nokia 32 Configurator software (menu: GSM Settings -> Network Selection).

**Figure 7: Selecting network**




## 3.5 CHANGING APPLICATION MODULE EXTENSION MODES

### Outgoing call

To change extension mode to the outgoing call mode A, key in **6**#.**

To change extension mode to the outgoing call mode B, key in **7**#.**

### Incoming call

To change extension mode to the incoming call mode A, key in **8**#.**

To change extension mode to the incoming call mode B, key in

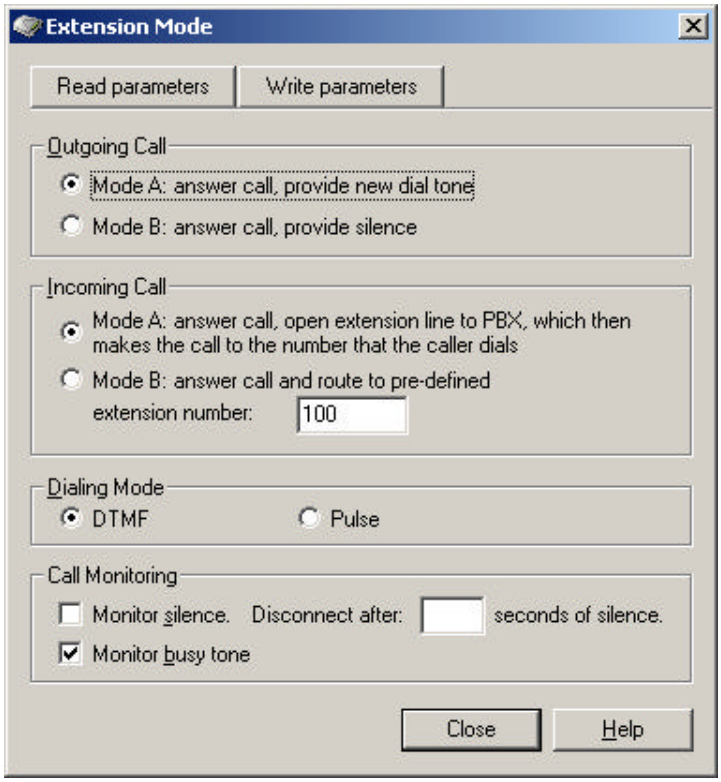
**9**Pre -Defined_Extension_Number#.**

Extension mode description:

| | |
|---|---|
| Outgoing call mode A | Nokia 32 terminal answers the call and provides a new dial tone. |
| Outgoing call mode B | Nokia 32 terminal answers the call and provides silence. |
| Incoming call mode A | Nokia 32 terminal answers the call and opens a line to the PBX, and the caller can select the line where to call. |
| Incoming call mode B | Nokia 32 terminal answers the call and opens a line to the PBX and routes the call to a predefined extension number. |

The extension modes can also be changed with the Nokia 32 Configurator software (menu: Nokia 32 -> Extension Mode).

**Figure 8: Selecting extension modes**




## 3.6 SELECTING CALL MONITOR METHOD IN EXTENSION MODE

**Note:** This setting can only be changed with the Nokia 32 Configurator software.

Call monitoring in the extension mode is used to detect a call disconnection. As the PBX can indicate call disconnection either with a busy tone or silence, this setting is changeable in the Nokia 32 terminal.

As default, the Nokia 32 terminal monitors the busy tone (see Tone Teaching instructions in the user's guid e or installation guide).

Call monitoring method is selected with the Configurator software (menu: Nokia 32 -> Extension mode), see figure 8.