User's Guide

DRAFT

Contents

FOR YOUR SAFETY

Read these simple guidelines. Breaking the rules may be dangerous or illegal. Further detailed information is given in this manual.

Do not switch the phone on when wireless phone use is prohibited or when it may cause interference or danger.

ROAD SAFETY COMES FIRST
Don't use a hand-held phone while driving.

INTERFERENCE
All wireless phones may get interference, which could affect performance.

SWITCH OFF IN HOSPITALS
Follow any regulations or rules. Switch the phone off near medical equipment.

SWITCH OFF IN AIRCRAFT
Wireless devices can cause interference in aircraft.

SWITCH OFF WHEN REFUELLING
Don't use the phone at a refuelling point. Don't use near fuel or chemicals.

SWITCH OFF NEAR BLASTING
Don't use the phone where blasting is in progress. Observe restrictions, and follow any regulations or rules.

USE SENSIBLY
Use only in the normal position. Don't touch the antenna unnecessarily.

QUALIFIED SERVICE
Only qualified personnel may install or repair phone equipment.

ACCESSORIES AND BATTERIES
Use only approved accessories and batteries. Do not connect incompatible products.

CONNECTING TO OTHER DEVICES
When connecting to any other device, read its user's guide for detailed safety instructions. Do not connect incompatible products.

BACKUP COPIES
Remember to make backup copies of all important data.

WATER–RESISTANCE
Your phone is not water-resistant. Keep it dry.

CALLING
Ensure the phone is switched on and in service. Enter the phone number, including the area code, then press ▰▰ . To end a call, press ◢ . To answer a call, press ▰▰ .

EMERGENCY CALLS
Ensure the phone is switched on and in service. Press ◢ as many times as needed (e.g. to exit a call, to exit a menu, etc.) to clear the display. Enter the emergency number, then press ▰▰ . Give your location. Do not end the call until told to do so.

■ Network Services

The wireless phone described in this guide is approved for use on the EGSM 900, GSM 1800 and GSM 1900 network.

Triband is a network dependent feature. Check with your local service provider if you can subscribe to and use this feature.

A number of features included in this guide are called Network Services. These are special services that you arrange through your wireless service provider. Before you can take advantage of any of these Network Services, you must subscribe to them through your service provider and obtain instructions for their use from your service provider.

Note: Some networks may not support all language-dependent characters and/or services.

■ About accessories

Check the model number of any charger before use with this device. This device is intended for use when supplied with power from ACP-12 and LCH-12.

Warning: Use only batteries, chargers and accessories approved by the phone manufacturer for use with this particular phone model. The use of any other types may invalidate any approval or warranty applying to the phone, and may be dangerous.

For availability of approved accessories, please check with your dealer.

When you disconnect the power cord of any accessory, grasp and pull the plug, not the cord.

General information

■ Stickers in the sales package

The stickers contain important information for services and customer support purposes.

Attach the ⬚B⬚ sticker to your warranty card.

Attach the ⬚A⬚ sticker to the Nokia Club Invitation Card supplied in the sales package.

■ Access codes

• **Security code (5 to 10 digits):** The security code protects your phone against unauthorised use, and is supplied with the phone. The preset code is 12345. Change the code, and keep the new code secret and in a safe place separate from your phone. To change the code, and to set the phone to request the code, see Security settings on page 61.

• **PIN code and PIN2 code (4 to 8 digits):** The PIN (Personal Identification Number) code protects your SIM card against unauthorised use. The PIN code is usually supplied with the SIM card.

   Set the phone to request the PIN code each time the phone is switched on, see Security settings on page 61.

   The PIN2 code may be supplied with the SIM card and is required to access some functions, such as charging unit counters.

   If you key in an incorrect PIN code several times, the phone may display *SIM blocked* and ask you to key in the PUK code. Contact your service provider to get the PUK code.

• **PUK and PUK2 codes (8 digits):** The PUK (Personal Unblocking Key) code is required to change a blocked PIN code. The PUK2 code is required to change a blocked PIN2 code.

   If the codes are not supplied with the SIM card, contact your local service provider for the codes.

- **Barring password (4 digits):** The barring password is needed when using the *Call barring service*, see Security settings on page 61. You can obtain the password from your service provider.

- **Signing PIN:** The signing PIN is needed for the digital signature. See Digital signature on page 88. The signing PIN is supplied with the SIM card if the SIM card contains a security module.

  If you key in an incorrect PIN code several times, the phone may display *SIM blocked* and ask you to key in the PUK code. Contact your service provider to get the PUK code.

- **Wallet code (4–10 digits):** The wallet code is needed to access the wallet services. If you key in a wrong wallet code several times, the wallet application is blocked for five minutes. For further information, see Wallet on page 73.

Overview of the functions in the phone

The Nokia 6100 phone provides many functions which are practical for daily use, such as Calendar, Clock, Alarm clock, Calculator, and many more. Also a range of Nokia Xpress-on™ colour covers is available for your phone. To change the cover, see Changing the front cover on page 20.

■ Multimedia messaging service (MMS)

The phone is able to send multimedia messages made up of text and a picture, and to receive messages containing text, pictures and sounds. You can save the pictures and sounds for personalising your phone. See Multimedia messages on page 43.

■ Polyphonic sound (MIDI)

Polyphonic sound consists of several sound components played at the same time like a real melody through a speaker. Polyphonic sounds are used in ringing tones and message alert tones. Your phone has sound components from over 40 instruments that can be used for polyphonic sounds but the phone can play four instruments simultaneously. The phone supports the Scalable Polyphonic MIDI (SP-MIDI) format.

You can receive polyphonic ringing tones via multimedia service, see Reading and replying to a multimedia message on page 45, or download them via the gallery menu, see Gallery (Menu 6) on page 62 or via the PC suite, see PC Suite on page 89.

■ General Packet Radio Service (GPRS)

GPRS technology allows mobile phones to be used for sending and receiving data over the mobile network. GPRS as such is a data bearer that enables wireless access to data networks like the Internet. The applications that use GPRS are WAP services, MMS and SMS messaging, MIDP Java™ application downloading and the GPRS dial-up (for example, Internet and e-mail).

Before you can use GPRS technology

- Contact your network operator or service provider for availability and subscription to the GPRS service.

- Save the GPRS settings for each of the applications used over GPRS.

  See Setting up the phone for a WAP service on page 78, Message settings on page 48 and GPRS on page 76.

Pricing for GPRS and applications

Both the active GPRS connection and the applications used over GPRS are priced. For more detailed information on pricing, contact your network operator or service provider.

■ Loudspeaker

The loudspeaker allows you to use your phone as a speakerphone, also during a conference call. See Loudspeaker on page 24.

■ MIDP Java™ applications

Your phone supports Java technology and includes some MIDP Java applications and games that have been specially designed for mobile phones. You can download new applications and games to your phone from a PC with a Java installer software or from WAP services, e.g. from Club Nokia. See Applications (Menu 9) on page 68.

■ Nokia OTA settings service

In order to use WAP, MMS, GPRS and other wireless services you need to set proper settings in your phone. You may receive the settings directly as an OTA (Over The Air) message and you only need to save the settings. For more information and availability of the settings, contact your nearest authorised Nokia dealer.

■ Dynamic memory

Your phone uses dynamic memory for some functions. Dynamic memory means that the phone's memory is shared between different functions. In addition to the dynamic memory, a minimum amount of memory is reserved for each of the functions. The phone displays a note if there is not enough memory for a function. In the *Gallery*, *Games* and *Applications* menu you can view the size of the downloaded graphic and ringing tone files and the downloaded Java applications. The maximum size of the memory for a function is available if enough dynamic memory is free

The following functions **share the phone's dynamic memory**

• Phone book (Names), see page 28.
  You may save up to 300 names and phone numbers.

• Text messages, see page 38.
  You may save up to 150 text messages or 50 picture or multi-part messages.

• Multimedia messages, see page 43.
  You may save up to 15 messages with the maximum size of 30kB each.

• Gallery (Menu 6) for ringing tones and images, see page 62.
  You may save up to 60 ringing tones with an average size of 5kB of which 20 are removable and up to 35 images with an average size of 10kB.

• Calendar, see page 64. You may save up to 250 calendar notes.

• To-do list, see page 66. You may save up to 30 notes.

• Java applications, see Games (Menu 8) on page 67 and Applications (Menu 9) on page 68.
  You may save up to six applications and/or games with a maximum size of 64kB each.

1.   Your phone

■ Keys and connectors

1. Power key ①

   Switches the phone on and off. For example, when the keypad is locked, pressing the power key briefly turns the phone's display lights on for approximately 15 seconds.

2. **Volume keys**

   Keys to adjust the earpiece, headset and loudspeaker volume.

3. **Selection keys**

   ▬ and ▬

   The function of the keys depends on the guiding text shown on the display above the keys, for example, **Menu** and **Names** in standby mode.

4. **4–way scroll key** with ▴, ▾, ◂ and ▸

   Enables scrolling through names, phone numbers, menus or settings and in the calendar. In standby mode, pressing ◂ opens the *Create message* menu and pressing ▸ opens the *Calendar* menu.

5. ▬ dials a phone number, and answers a call. In standby mode it shows the most recently called number.

6. ▬ ends an active call. **Exits from any function.**

7. ▯ ▭ - ▯ ▯ enter numbers and characters.

   ▭ and ▯ ▯ are used for various purposes in different functions.
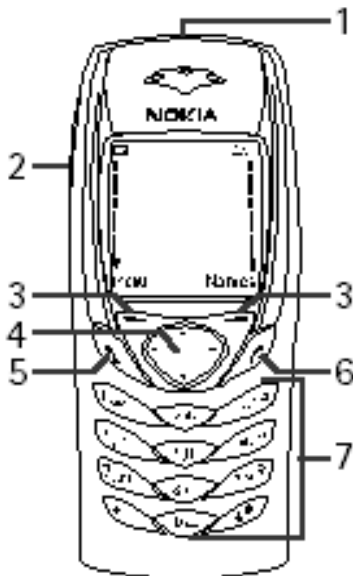
1. Charger connector
2. Pop-Port™ connector for headset and data cable, for example
3. Infrared (IR) port
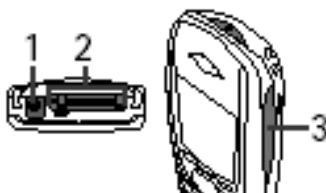
■ Standby mode

When the phone is ready for use, and you have not keyed in any characters, the phone is in standby mode.

1. Indicates in which cellular network the phone is currently being used.
2. Shows the signal strength of the cellular network at your current location. The higher the bar, the stronger the signal.
3. Shows the battery charge level. The higher the bar, the more power in the battery.
4. The left selection key in standby mode is **Menu**.
5. The right selection key in standby mode is **Names**.
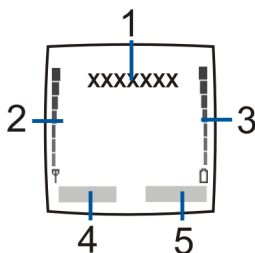
See also Essential indicators in standby mode on page 14.

Screen saver

The phone automatically activates the screen saver, a digital clock view, for power saving in standby mode. It will be activated after a certain time when no function of the phone is used. See Screen saver on page 59. Press any key to deactivate the screen saver.

Note that if you have not set the time, 00:00 is displayed. To set the time, see Clock on page 54.

Wallpaper

You can set your phone to display a background picture, wallpaper, when the phone is in standby mode. See Wallpaper on page 58.

Essential indicators in standby mode

✉ You have received one or several text or picture messages. See Reading and replying to a message or an e-mail on page 40.

✈ You have received one or several multimedia messages. See Reading and replying to a multimedia message on page 45.

ᗢᗝ You have received one or several voice messages. See Voice messages on page 47.

🔒 The phone's keypad is locked. See Keypad lock (Keyguard) on page 19.

🔇 The phone does not ring at an incoming call or text message when *Incoming call alert* is set to *Off* and *Message alert tone* is set to *Off*. See Tone settings on page 60.

⏰ The alarm clock is set to *On*. See Alarm clock (Menu 5) on page 62.

🕐 The countdown timer is running. See Countdown timer on page 72.

🕔 The stopwatch timer is running in the background. See Stopwatch on page 72.

G A GPRS dial-up connection is established, refer to GPRS modem settings on page 77. The indicator is shown on the top left of the display.

🕿 There is an incoming or outgoing call or a text message during a GPRS dial-up connection. The GPRS connection is suspended.

▶··· Infrared connection indicator, see Infrared on page 75.

↲ All your calls are diverted to another number, *Divert all voice calls*. If you have two phone lines, the divert indicator for the first line is **1↑** and for the second line **2↑**. See Call divert on page 54.

1 or **2** Indicates the selected phone line, if you have two phone lines. See Line for outgoing calls on page 56.

🔊	The loudspeaker has been activated, see Loudspeaker on page 24.
ᵀ	Calls are limited to a closed user group. See Security settings on page 61.
🕒	The timed profile is selected. See Profiles (Menu 3) on page 53.

🎧 , 🚗 or ⚖

Headset, handsfree or loopset accessory is connected to the phone.

To set the phone to show the time and date in standby mode, see Clock on page 54 and Date on page 54.

■ Putting on the wrist strap

Thread the strap as shown in the picture and then tighten it.

2. Getting started

■ Installing the SIM card and the battery

Keep all miniature SIM cards out of the reach of small children.

- The SIM card and its contacts can easily be damaged by scratches or bending, so be careful when handling, inserting or removing the card.
- Before removing the battery switch off the phone.

1. To remove the back cover from the phone:

   With the back of the phone facing you, push the back cover release button (1) and slide the back cover off (2).

   Remove the battery by lifting it with the finger grip.
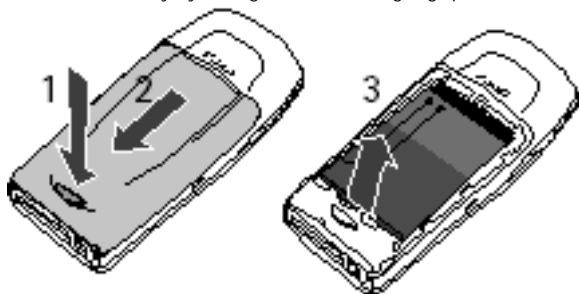
2. To release the SIM card holder, gently pull the locking of the card holder (4) and open it (5).
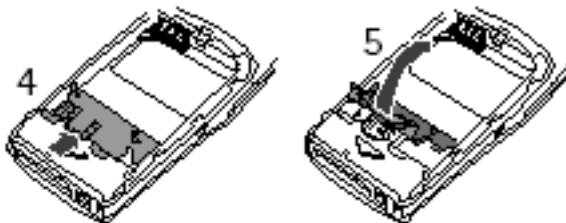
3. Insert the SIM card into the SIM card holder (6). Make sure that the SIM card is properly inserted and that the golden contact area on the card is faced like shown.

4. Close the SIM card holder (7) and press it as it locks.

5. Insert the battery (8).

6. Slide the back cover into its place (9).

■ Charging the battery

1. Connect the lead from the charger to the socket on the bottom of your phone.

2. Connect the charger to an AC wall socket.
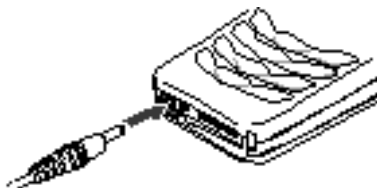
   The text *Charging* is displayed briefly if the phone is switched on. If the battery is completely empty, it may take a few minutes before the charging indicator appears on the display or any calls can be made.

You can use the phone while the charger is connected.

The charging time depends on the charger and the battery used. For example, charging a BL-4C battery with the ACP-12 charger takes up to one hour and 30 minutes in standby mode.

■ Switching the phone on and off

Press and hold the power key ①.

Note that if the phone displays *Insert SIM card* even though the SIM card is properly inserted, or *SIM card not supported*, contact your network operator or service provider. Your phone does not support 5 Volt SIM cards and the card may need to be changed.

• If the phone asks for a PIN code, key in the PIN code (displayed as ****), and press **OK**.

   See also *PIN code request* in Security settings on page 61 and Access codes on page 7.

• If the phone asks for a security code, key in the security code (displayed as *****), and press **OK**.

   See also Access codes on page 7.

Warning: Do not switch the phone on when wireless phone use is prohibited or when it may cause interference or danger.

■ Normal operating position

Use the phone only in its normal operating position.

Your phone has a built-in antenna. As with any other radio transmitting device, do not touch the antenna unnecessarily when the phone is switched on. Contact with the antenna affects call quality and may cause the phone to operate at a higher power level than otherwise needed.

Not touching the antenna area during a phone call optimises the antenna performance and the talktime of your phone.

■ Keypad lock (Keyguard)

You can lock the keypad to prevent the keys being accidentally pressed, for example, when your phone is in your handbag.

- **Locking the keypad**

  In standby mode, press **Menu** and then ⁕ — within 1.5 seconds.

- **Unlocking the keypad**

  Press **Unlock** and then ⁕ — within 1.5 seconds.

To answer a call when the keypad is locked, press ➤. During a call, the phone can be operated normally. When you end or reject the call, the keypad will automatically be locked again.

For automatic keypad lock, see Automatic keyguard on page 56.

For locking the keypad during a call, see Options during a call on page 24.

Note: When the keypad is locked, calls may be possible to the emergency number programmed into your phone (e.g. 112, 911 or other official emergency number). Key in the emergency number and press ➤. The number is displayed only after you have keyed in its last digit.

■ Changing the front cover

Before changing the front cover, always switch off the power and disconnect the phone from the charger or any other device. Always store and use the phone with the covers attached.

1. Remove the back cover of the phone. See step 1 in Installing the SIM card and the battery on page 16.

2. To remove the front cover, gently disperse the back part of the phone and the front cover beginning at the bottom of the phone.

3. Insert the key mat on the new front cover.

4. To attach the front cover, first place the back part of the phone and the front cover properly together and then gently push on the bottom and the top of the phone until the catches are locked properly.
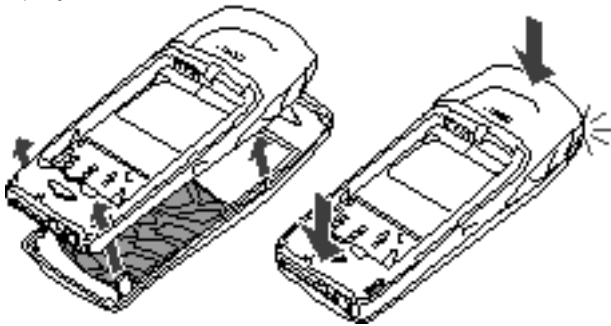
5. Slide the back cover into its place. See step 6 in Installing the SIM card and the battery on page 16.

3. Call functions

■ Making a call

1. Key in the phone number, including the area code. If you key in a wrong character, press **Clear** to delete it.

   For international calls, press ▪ ▬ twice for the international prefix (the + character replaces the international access code) and then key in the country code, area code without the leading 0, if necessary, and the phone number.

2. Press ▬▬ to call the number.

3. Press ▰▰ to end the call or to cancel the call attempt.

See also Options during a call on page 24.

Making a call using the phone book

• See Searching for a name in the phone book on page 30. Press ▬▬ to call the number on the display.

Last number redialling

• In standby mode, press ▬▬ once to access the list of the 20 numbers you last called or attempted to call. Scroll to the number or name you want, and press ▬▬ to call the number.

Calling your voice mailbox

• In standby mode, press and hold ⌐ ▫▫, or press ⌐ ▫▫ and ▬▬.

   If the phone asks for the voice mailbox number, key it in and press **OK**. See also Voice messages on page 47.

Speed dialling a phone number

Assign a phone number to one of the speed dialling keys, from ⌐ ▫▫ to ⌐ ▫▫, see Speed dials on page 32. Call the number in either of the following ways:

• Press the speed dialling key you want and then press ▬▬.

• If *Speed dialling* is set to on, press and hold a speed dialling key until the call is started. See Speed dialling on page 55.

Making a conference call

Conference calling is a network service that allows up to six persons to take part in a conference call.

1. Make a call to the first participant.

2. To make a call to a new participant, press **Options** and select *New call*.

3. Key in, or retrieve from the phone book, the phone number of the new participant and press **Call**. The first call is put on hold.

4. When the new call has been answered, join the first participant in the conference call. Press **Options** and select *Conference*.

5. To add a new participant to the call, repeat steps 2 to 4.

6. To have a private conversation with one of the participants:

   Press **Options** and select *Private* and select the desired participant. Rejoin the conference call as described in step 4.

7. To end the conference call, press ━ .

■ Answering or rejecting an incoming call

Press ━ to answer the incoming call and press ━ to end the call.

Press ━ to reject the incoming call.

Press **Silence**, if available, to mute the ringing tone. Then either answer or reject the call.

If the headset HDB-4 is connected to the phone, you can answer and end a call by pressing the headset key.

> **Tip:** If the *Divert if busy* function is activated to divert the calls, for example to your voice mailbox, rejecting an incoming call will also divert the call. See Call divert on page 54.

Call waiting

During a call, press ━ to answer the waiting call. The first call is put on hold. Press ━ to end the active call.

To activate the *Call waiting* function, see Call waiting on page 55.

■ Options during a call

Many of the options that you can use during a call, are network services. Press **Options** during a call for some of the following options:

Mute or *Unmute*, *End call*, *End all calls*, *Phone book*, *Menu* and *Hold* or *Unhold*, *New call*, *Conference*, *Private*, *Answer*, *Reject* and *Loudspeaker* or *Handset*.

Lock keypad to activate the keypad lock.

Send DTMF to send DTMF tone strings, for example, passwords or bank account numbers. Key in the DTMF string or search for it in the phone book and press **OK**. Note that you can key in the wait character w and the pause character p by repeatedly pressing ∙∙ —.

Swap to switch between the active call and the call on hold, *Transfer* to connect a call on hold to an active call, and disconnect yourself from the calls.

Loudspeaker

You can use your phone as a loudspeaker during a call. Do not hold the phone to your ear during loudspeaker operation.

• To activate the loudspeaker, press **Options** and select *Loudspeaker*, or press **Loudsp.**, if available.

• To deactivate the loudspeaker during a call, press **Options** and select *Handset*, or press **Handset**, if available.

If you have connected the handsfree unit CARK126 or the headset to the phone, *Handset* in the options list is replaced with *Handsfree* or *Headset* and the selection key **Handset** with **Handsfr.** or **Headset**, respectively.

The loudspeaker is automatically deactivated when you end the call or call attempt or connect the handsfree unit or headset to the phone.

4. Writing text

You can key in text, for example when writing messages, using the traditional or predictive text input.

When you are writing text, the predictive text input is indicated by ⟍⟍ and the traditional text input by ⟍ at the top left of the display. The character case is indicated by **Abc** , **abc**, or **ABC** next to the text input indicator. You can change the character case by pressing # ⇩. The number mode is indicated by **123**, and you can change between the letter and number mode by pressing and holding # ⇩.

■ Setting predictive text input on or off

When writing text, press **Options** and select *Dictionary*.

- To set the predictive text input on, select a language in the dictionary options list. Predictive text input is only available for the languages on the list.

- To change back to the traditional text input, select *Dictionary off*.

☼ **Tip:** To quickly set the predictive text input on or off when writing text, press # ⇩ twice, or press and hold **Options**.

■ Using predictive text input

You can key in any letter with a single keypress. The predictive text input is based on a built-in dictionary to which you can also add new words.

1. Start writing a word by using the keys **2** to **9**. Press each key only once for one letter. The word changes after each keystroke.

   🔍 **Example:** To write Nokia when the English dictionary is selected, press **6** once for N, **6** once for o, **5** once for k, **4** once for i and **2** once for a:

⟍ abc	⟍ abc	⟍ abc	⟍ abc	⟍ abc
<u>O</u>	<u>On</u>	<u>Onl</u>	<u>Onli</u>	<u>Nokia</u>

   To insert a number while in letter mode, press and hold the desired number key.

More instructions for writing text, see Tips for writing text on page 27.

2. When you have finished writing the word and it is correct, confirm it by adding a space with 🔲 ⌴ or by pressing any of the scroll keys. Pressing a scroll key also moves the cursor.

If the word is not correct, press ⁙ ▬ repeatedly or press **Options** and select *Matches*. When the word you want appears, confirm it.

If the ? character is displayed after the word, the word you intended to write is not in the dictionary. To add the word to the dictionary, press **Spell**, key in the word (traditional text input is used) and press **Save**. When the dictionary becomes full, the new word replaces the oldest one that was added.

3. Start writing the next word.

Writing compound words

Key in the first part of the word and confirm it by pressing ▬. Write the last part of the word and confirm the word.

■ Using traditional text input

Press a number key, 🔲 to 🔲 🔲, repeatedly until the desired character appears. Not all characters available under a number key are printed on the key. The characters available depend on the language selected in the *Language* menu, see Language on page 56.

To insert a number while in letter mode, press and hold the desired number key.

• If the next letter you want is located on the same key as the present one, wait until the cursor appears, or press any of the scroll keys and then key in the letter.

• The most common punctuation marks and special characters are available under the number key 🔲.

More instructions for writing text, see Tips for writing text on page 27.

■ Tips for writing text

The following functions may also be available for writing text:

- To insert a space, press ⬜ ␣.

- To move the cursor to the left, right, down or up, press the scroll keys ◣, ▼, ◀ or ▶, respectively.

- To delete a character to the left of the cursor, press **Clear**. Press and hold **Clear** to delete the characters more quickly.

  To delete all the characters at once when writing a message, press **Options** and select *Clear text*.

- To insert a word when using the predictive text input, press **Options** and select *Insert word*. Write the word using the traditional text input and press **Save**. The word is also added to the dictionary.

- To insert a special character when using the traditional text input, press ⨿, or when using the predictive text input, press and hold ⨿, or press **Options** and select *Insert symbol*.

  Press any of the scroll keys to scroll to a character and press **Use** to select the character.

  You can also scroll to a character by pressing 2 , 4 , 6 or 8 , and select the character by pressing 5 .

The following options are available when writing text messages:

- To insert a number while in letter mode, press **Options** and select *Insert number*. Key in the phone number or search it in the phone book and press **OK**.

- To insert a name from the phone book, press **Options** and select *Insert name*. To insert a phone number or a text item attached to the name, press **Options** and select *View details*.

27

5. Phone book (Names)

You can save names and phone numbers in the phone's memory (internal phone book) and in the SIM card's memory (SIM phone book).

- The internal phone book may save up to 300 names with numbers and textual notes for each name. How many names can be saved depends on the length of the names, and the number and length of phone numbers and text items.

  The internal phone book uses dynamic memory, see Dynamic memory on page 11.

- The phone supports SIM cards that can save up to 250 names and phone numbers. Names and numbers saved in the SIM card's memory, are indicated by ▣.

■ Selecting the phone book settings

Press **Names** and select *Settings*. Select

- *Memory in use* to select the phone book you want to use. To recall names and numbers from both phone books, select *Phone and SIM*. The names and numbers will be saved in the phone's memory.

- *Phone book view* to select how the names (and numbers) in the phone book are displayed.

- *Memory status* to see how many names and phone numbers are currently saved and how many can still be saved in the selected phone book.

■ Saving names and phone numbers (Add name)

Names and numbers will be saved in the used memory, see Selecting the phone book settings above.

1. Press **Names** and select *Add name*.

2. Key in the name and press **OK**. See Using traditional text input on page 26.

3. Key in the phone number, and press **OK**. To key in the numbers, see Making a call on page 22.

4. When the name and number are saved, press **Done**.

Tip: Quick save In standby mode, key in the phone number. Press **Options**, and select *Save*. Key in the name, press **OK** and **Done**.

Saving multiple numbers and text items per name

You can save different types of phone numbers and short text items per name in the phone's internal phone book.

The first number saved is automatically set as the default number and it is indicated with a frame around the number type indicator, for example ☎. When you select a name from the phone book, for example to make a call, the default number is used unless you select another number.

1. Make sure that the memory in use is either *Phone* or *Phone and SIM*. See Selecting the phone book settings on page 28.

2. To access the list of names and phone numbers, press ☷ or ☷ in standby mode.

3. Scroll to the name saved in the phone's internal phone book to which you want to add a new number or text item, and press **Details**.

4. Press **Options** and select *Add number* or *Add detail*.

5. Select one of the following number types ☎ *General*, ☷ *Mobile*, ☗ *Home*, ☷ *Office* and ☷ *Fax*,

   or text types @ *E-mail address*, ☷ *Web address*, ✉ *Postal address* and ☷ *Note*.

   To change the type of a number or text, select *Change type* in the options list.

6. Key in the number or text item and press **OK** to save it.

7. Press **Back** and then **Exit** to return to standby mode.

Changing the default number

Press ☷ or ☷ in standby mode, scroll to the name you want and press **Details**. Scroll to the number you want to set as the default number. Press **Options** and select *Set as default*.

■ Searching for a name in the phone book

1. Press **Names** and select *Search*.

2. You can key in the first characters of the name you are searching for in the pop-up window.

   Press ▼ and ▲ to scroll through the names in the list, and ◄ and ► to move the cursor in the pop-up window.

3. Scroll to the name you want, and press **Details**. Scroll to view the details of the selected name.

☀ **Tip:** To quickly find a name and phone number, press ▼ or ▲ in standby mode. Key in the first letter(s) of the name, and/or scroll to the name you want.

■ Editing a name, number or text item

Search for the name (and number) you want to edit and press **Details**. Scroll to the name, number or text item you want to edit, and press **Options**. Select *Edit name*, *Edit number*, or *Edit detail*, and edit the name, number, or text and press **OK**.

■ Erasing names and numbers

Press **Names** and select *Delete*.

• To delete names and numbers one by one, select *One by one* and scroll to the name (and number) you want to delete. Press **Delete** and press **OK** to confirm.

• To delete names and numbers in the phone book all at once, select *Delete all* and then scroll to the phone book, *Phone* or *SIM card* and press **Delete**. Press **OK** and confirm with the security code.

■ Copying phone books

You can copy names and phone numbers from the phone's memory to your SIM card's memory and vice versa.

1. Press **Names** and select *Copy*.

2. Select the copying direction, *From phone to SIM card* or *From SIM card to phone*.

3. Select *One by one*, *All* or *Default nos.*.

- If you select *One by one*, scroll to the name you want to copy and press **Copy**.

Default nos. is shown if you copy from the phone to the SIM card. Only the default numbers will be copied.

4. To choose whether you want to keep or delete the original names and numbers, select *Keep original* or *Move original*.

- If you select *All* or *Default nos.*, press **OK** when *Start copying?* or *Start moving?* is displayed.

■ Sending and receiving a business card

You can send and receive a person's contact information as a business card either via IR or as an OTA message if supported by the network.

Receiving a business card

To receive a business card via IR, make sure that your phone is ready to receive data through its IR port, see Infrared on page 75. The user of the other phone can now send the name and phone number via Infrared.

When you have received a business card via IR or as an OTA message, press **Show**. Press **Save** to save the business card in the phone's memory. To discard the business card, press **Exit** and then **OK**.

Sending a business card

You can send a business card via IR or as an OTA message to a compatible phone or other handheld device which supports the vCard standard.

1. Search for the name and phone number you want to send from the phone book, press **Details** and **Options** and select *Send bus. card*.

2. To send the business card via IR, make sure that the other phone or the PC is set up to receive data via its IR port and select *Via infrared*.

   To send the business card as an OTA message, select *Via text message*.

■ Speed dials

To make a call by using the speed dialling keys, see Speed dialling a phone number on page 22.

Assigning a number to a speed dialling key

Press **Names**, select *Speed dials* and scroll to the speed dialling key number you want.

Press **Assign**, press **Search**, and select first the name and then the number you want to assign. If a number is already assigned to the key, press **Options**, and you can view, change or delete the assigned number.

■ Info numbers

You can call the information numbers of your service provider if the numbers are included in your SIM card.

Press **Names** and select *Info numbers*. Scroll in a category to an information number and press ➤ to call the number.

■ Service numbers

You can call the service numbers of your service provider if the numbers are included in your SIM card.

Press **Names** and select *Service numbers*. Scroll to a service number and press ➤ to call the number.

■ My numbers

The phone numbers assigned to your SIM card are saved in *My numbers* if this is allowed by the card. To view the numbers press **Names** and select *My numbers*. Scroll to the desired name or number, and press **View**.

■ Caller groups

You can arrange the names and phone numbers saved in the phone book into caller groups. For each caller group, you can set the phone to play a specific ringing tone and show a selected logo on the display when you receive a call from a phone number in the group, see below. To set the phone to ring only upon calls from phone numbers belonging to a selected caller group, see *Alert for* in Tone settings on page 60.

Press **Names**, and select *Caller groups* and select the desired caller group. Select

- *Group name*, key in a new name for the caller group and press **OK**.

- *Group ringing tone* and select the ringing tone for the group. *Default* is the ringing tone selected for the currently active profile.

- *Group logo* and select *On* to set the phone to display the group logo, *Off* not to display it, or *View* to view the logo.

- *Group members* to add a name to the caller group, press **Options** and select *Add name*. Scroll to the name you want to add to the group and press **Add**.

  To remove a name from a caller group, scroll to the name you want to remove, and press **Options** and select *Remove name*.

6. Using the menu

The phone offers you an extensive range of functions which are grouped in menus. Most of the menu functions are provided with a brief help text. To view the help text, scroll to the menu function you want and wait for 15 seconds. To exit the help text, press **Back**. See Help text activation on page 58.

■ Accessing a menu function

By scrolling

1. To access the menu, press **Menu**.

2. Scroll with ▼ or ▲ through the menu and select, for example, *Settings* by pressing **Select**.

3. If the menu contains submenus, select the one you want, for example *Call settings*.

4. If the selected submenu contains further submenus, repeat step 3. Select the next submenu, for example *Anykey answer*.

5. Select the setting of your choice.

6. Press **Back** to return to the previous menu level, and **Exit** to exit the menu.

By shortcut

The menus, submenus and setting options are numbered and you can access them by using their shortcut number.

• To access the menu, press **Menu**. Key in quickly, within two seconds, the index number of the menu function you want to access.

Example: To set the *Anykey answer On*, press **Menu**, 4, 2, 2 and 1. Press **Back** to return to the previous menu level, and **Exit** to exit the menu.

■ List of menu functions

1. Messages

1. Text messages
   1. Create message
   2. Inbox
   3. Create e-mail
   4. Sent items
   5. Archive
   6. Templates
   7. My folders
   8. Distribution lists
   9. Delete messages
2. Multimedia msgs.
   1. Create message
   2. Inbox
   3. Outbox
   4. Sent items
   5. Saved items
   6. Delete messages
3. Chat
4. Voice messages
   1. Listen to voice messages
   2. Voice mailbox number
5. Info messages
   1. Info service
   2. Topics
   3. Language
   4. Info topics saved on SIM card
   5. Read
6. Message settings
   1. Text messages
   2. Multimedia msgs.
   3. Other settings
7. Service commands

2. Call register

1. Missed calls
2. Received calls
3. Dialled numbers
4. Delete recent call lists
   1. All
   2. Missed
   3. Received
   4. Dialled
5. Call duration
   1. Last call duration
   2. Received calls' duration
   3. Dialled calls' duration
   4. All calls' duration
   5. Clear timers
6. Call costs
   1. Last call units
   2. All calls' units
   3. Call cost settings
7. GPRS data counter
   1. Data sent in last session
   2. Data received in last session
   3. All sent data
   4. All received data
   5. Clear counters
8. GPRS connection timer
   1. Duration of last session
   2. Duration of all sessions
   3. Clear timers

3. Profiles

1. General
   1. Activate
   2. Personalise
   3. Timed
2. Silent (same submenus as in General)
3. Meeting (same submenus as in General)

4. Outdoor (same submenus as in General)

5. Pager (same submenus as in General)

4. Settings

1. Time and date settings
   1. Clock
   2. Date
   3. Auto-update of date & time

2. Call settings
   1. Call divert
   2. Anykey answer
   3. Automatic redial
   4. Speed dialling
   5. Call waiting service
   6. Summary after call
   7. Send my caller identity
   8. Line for outgoing calls[1]

3. Phone settings
   1. Language
   2. Automatic keyguard
   3. Cell info display
   4. Welcome note
   5. Network selection
   6. Confirm SIM service actions
   7. Help text activation
   8. Start-up tone

4. Display settings
   1. Wallpaper
   2. Colour schemes
   3. Operator logo
   4. Screen saver timeout
   5. Display brightness

5. Tone settings
   1. Incoming call alert
   2. Ringing tone
   3. Ringing volume
   4. Vibrating alert
   5. Message alert tone
   6. Keypad tones
   7. Warning tones
   8. Alert for

6. Accessory settings[2]
   1. Headset
   2. Handsfree
   3. Loopset

7. Security settings
   1. PIN code request
   2. Call barring service
   3. Fixed dialling
   4. Closed user group
   5. Security level
   6. Access codes

8. Restore factory settings

5. Alarm clock

6. Gallery

1. View folders
   1. Images
   2. Tones

2. Delete folder

3. Rename folder

4. Add folder

5. Downloads

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1. For availability, contact your network operator or service provider.
2. This menu is shown only if the phone is or has been connected to a headset, handsfree unit or loopset available for the phone.

7. Organiser

1. Calendar
2. To-do list

8. Games

1. Select game
2. Game services
3. Memory
4. Settings
   1. Game sounds
   2. Game lights
   3. Shakes
   4. Club Nokia ID

9. Applications

1. Select application
2. App. services
3. Memory

10.Extras

1. Calculator
2. Countdown timer
3. Stopwatch
4. Wallet
   1. Cards

2. Personal notes
3. Settings

11.Connectivity

1. Infrared
2. GPRS
   1. GPRS connection
   2. GPRS modem settings

12.Services

1. Home
2. Bookmarks
3. Service inbox
4. Settings
   1. Active service settings
   2. Edit active service settings
   3. Appearance settings
   4. Cookies
   5. Authority certificates
   6. Security module settings
   7. Service inbox settings
5. Go to address
6. Clear the cache

13.SIM services[1]

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1. Only shown if supported by your SIM card. The name and contents vary depending on the SIM card

7. Menu functions

■ Messages (Menu 1)

You can read, write, send and save text, multimedia, and e-mail messages. All the messages are organised in folders.

Before you can send any text, picture, and e-mail messages, you need to save your message centre number, see Message settings on page 48.

Text messages

Your phone is able to send and receive multi-part messages made of several ordinary text messages (network service). Invoicing is based upon how many ordinary messages are needed for a multi-part message.

You can also send and receive text messages which contain pictures. Each of these picture messages is made up of several text messages. Therefore, sending one picture message may cost more than sending one text message.

Note: Picture message function can be used only if it is supported by your network operator or service provider. Only phones that offer picture message features can receive and display picture messages.

Writing and sending messages

The number of available characters and the current part number of a multi-part message are shown at the top right of the display.

1. Press **Menu**, and select *Messages*, *Text messages* and *Create message*.

   Tip: To quickly open the *Create message* menu, press ◄■ in standby mode.

2. Key in a message. See Writing text on page 25. To insert text templates or a picture in the message, see Templates on page 41.

3. To send the message, press **Options** and select *Send*.

4. Enter the recipient's phone number or search for the phone number in the phone book.

    Press **OK** to send the message.

> **Note:** When sending messages via the SMS network service, your phone may display the words *Message sent*. This is an indication that the message has been sent by your phone to the message centre number programmed into your phone. This is not an indication that the message has been received at the intended destination. For more details about SMS services, check with your service provider.

Options for sending a message

After you have written a message, press **Options** and select *Sending options*.

*   To send a message to several recipients, select *Send to many*. When you have sent the message to everyone you want to send it to, press **Done**.

*   To send a message to a predefined distribution list, select *Send to list*.

    To define and edit distribution lists, see Distribution lists on page 42.

*   To send a message using a message profile, first select *Sending profile* and then the desired message profile.

    To define a message profile, see Message settings on page 48.

Writing and sending an e-mail

Before you can send any e-mails via SMS you need to save the settings for e-mail sending, see Message settings on page 48. For availability and subscription to the e-mail service, contact your network operator or service provider. To save an e-mail address in the phone book, see Saving multiple numbers and text items per name on page 29.

1. Press **Menu**, and select *Messages*, *Text messages* and *Create e-mail*.

2. Key in the recipient's e-mail address or search for it in the phone book and press **OK**.

3. You can key in the subject for the e-mail if you want and press **OK**.

4. Key in the e-mail message. See Writing text on page 25. The number of characters you can key in, is shown at the top right of the display. E-mail address and subject are included in the total number of characters.

See also Inserting a text template in a message or in an e-mail on page 41. Inserting a picture is not possible.

5. To send the e-mail, press **Options** and select *Send e-mail*. If you have not saved the settings for e-mail sending, the phone asks for the e-mail server number.

   Press **OK** to send the e-mail.

Note: When sending e-mails via the SMS network service, your phone may display the words *Message sent*. This is an indication that the e-mail has been sent by your phone to the e-mail server. This is not an indication that the e-mail has been received at the intended destination. For more details about e-mail services, check with your service provider.

Reading and replying to a message or an e-mail

When you have received a message or an e-mail, the indicator ✉ and the number of new messages followed by messages received is shown.

You may be able to receive up to 75 text messages or 25 picture or multi-part messages. Received messages are automatically stored in dynamic memory, see Dynamic memory on page 11.

The blinking ✉ indicates that the message memory is full. Before you can receive new messages, delete old messages.

1. Press Show to view the message, or press Exit to view it later.

   Reading the message later:

   Press Menu, and select Messages, Text messages and Inbox.

2. If more than one message is received, select the message you want to read. An unread text message is indicated by ✉ in front of it and an unviewed picture message by ▭.

3. While reading or viewing the message, press Options.

   You can select, for example, an option to delete, forward or edit the message as a text message or an e-mail, move and rename the message you are reading.

   Select Copy to calendar to copy text from the beginning of the message to your phone's calendar as a reminder note for the current day.

Select *Message details* to view the sender's name and phone number, the message centre used, reception date and time.

Select Use detail to extract numbers, e-mail addresses and website addresses from the current message.

When reading a picture message, select Save picture to save the picture in the Templates folder.

4. Select Reply to reply to a message. Select Original text to include the original message in the reply, or select a standard answer to be included in the reply, or select Empty screen.

When replying to an e-mail, first confirm or edit e-mail address and subject. Write your reply message.

5. Press Options, select Send, and press OK to send the message to the displayed number.

Inbox and outbox folders

The phone saves the incoming text messages in the *Inbox* folder and the sent messages in the *Sent items* folder of the *Text messages* submenu.

The text messages you want to send later, can be saved in the *Archive*, *My folders* or *Templates* folder.

Templates

Your phone offers you text templates, indicated with ▤, and picture templates, indicated with ▣.

To access the template list, press **Menu**, and select *Messages*, *Text messages* and *Templates*.

Inserting a text template in a message or in an e–mail

• When you are writing or replying to a message, or an e-mail, press **Options**. Select *Use template* and select the template you want to insert.

Inserting a picture in a text message

• When you are writing or replying to a message, press **Options**. Select *Insert picture* and select a picture to view it. Press **Insert** to insert the picture into your message. The ▣ indicator on the header of the message indicates that a picture has been attached. The number of

characters that you can enter in a message, depends on the size of the picture.

To view the text and the picture together before sending the message, press **Options** and select *Preview*.

Archive folder and my folders

To organise your messages, you can move some of your messages to the *Archive* folder, or add new folders for your messages.

While reading a message, press **Options**. Select *Move*, scroll to the folder where you want to move the message and press **OK**.

To add or delete a folder, press **Menu**, and select *Messages* and *My folders*.

* To add a folder, press **Options** and select *Add folder*.
* To delete a folder, scroll to the folder you want to delete, press **Options** and select *Delete folder*.

Distribution lists

If you need to send messages more often to a fixed group of recipients, you can define a distribution list containing those recipients and use this list, when sending a message. You can define up to 10 distribution lists containing up to 20 recipients.

Note: As recipients in a distribution list, phone book entries that are stored in your phone memory are used. Phone book entries that are stored on your SIM can be copied to your phone memory, see Copying phone books on page 30.

To view and edit distribution lists, press **Menu**, and select *Messages*, *Text messages* and *Distribution lists*.

Press Options to get the following options to edit distribution lists:
* *View list* to view the names in the selected distribution list.
* *Add list* to add a new distribution list.
* *Rename list* to rename the selected distribution list.
* *Clear list* to delete all names in the selected distribution list.
* *Delete list* to delete the selected distribution list.

To edit the content of a distribution list, you have to be in the list view with the option *View list***. Press Options to get the following options to edit the content of a distribution list:**

- *Add name* to add a name to the distribution list.
- *View details* to view the details of the selected name.
- *Delete name* to delete the selected name in the distribution list.

To send a message to the recipients in a distribution list, after writing the message, press **Options** and select *Sending options* and *Send to list*. While sending the message to the recipients, the phone displays the progress with the number of messages left to send.

If a message failed to send to one or more recipients, the message is stored in *Failed messages***, which you can find in the list of** *Distribution lists***. Select** *Failed messages* **and press Options to get the following options to handle the failed message:**

- *Resend to list* to resend the message to the failed recipients.
- *View list* to view the list of failed recipients.
- *Delete list* to delete the listof failed recipients.
- *View message* to view the failed message.

Multimedia messages

Note: This function can be used only if it is supported by your network operator or service provider. Only phones that offer multimedia message features can receive and display multimedia messages.

A multimedia message can contain text, picture and sound. The phone supports multimedia messages of size up to 30 KB. If that maximum size is exceeded, the phone may not be able to receive the message. Depending on the network, you may receive a text message including an Internet address where you can view the multimedia message.

If the message contains a picture, the phone scales them down to fit the display area.

Note: The default setting of the multimedia message service is on (*Allow multimedia reception* is set *Yes*), and your operator or service provider may charge you for every message you receive.

Multimedia messaging supports the following formats:

- Picture: JPEG, GIF, PNG, and BMP.
- Sound: Scalable Polyphonic MIDI (SP-MIDI) and monophonic ringing tones.

If the received message contains any unsupported elements, they may be replaced with the file name and the text *Object format not supported*

Note that you are not able to receive any multimedia messages if you have a call in progress, a game or another Java application running, or an active WAP connection over GSM data (see Keying in the service settings manually on page 79). Because delivery of multimedia messages can fail for a variety of reasons, do not rely solely upon them for essential communications.

Writing and sending a multimedia message

To set the settings needed for multimedia messaging, see Settings for the multimedia messages on page 49. For availability and subscription to the multimedia messaging service, contact your network operator or service provider.

1. Press **Menu**, and select *Messages*, *Multimedia msgs.* and *Create message*.

2. Key in a message. See Writing text on page 25.

   You can insert one picture in a multimedia message. To insert a picture, press **Options**, and select *Insert image*. The list of available folders in the *Gallery* is shown. To open the desired folder, select it and then select the desired picture. The ▣ indicator on the header of the message indicate that a picture has been attached.

   To insert a name from the phone book, press **Options** and select *More options* and *Insert name*. Scroll to the desired name, press **Options** and select *Insert name*.

   To insert a number, press **Options** and select *More options* and *Insert number*. Key in the number or search it in the phone book, and press **OK**.

3. To view the message before sending it, press **Options** and select *Preview*.

4. To send the message, press **Options** and select *Send to number* (or *Send to e-mail*).

5. Enter the recipient's phone number (or e-mail address) or search for the phone number (or e-mail address) in the phone book. Press **OK** and the message is moved to the *Outbox* folder for sending.

   Sending a multimedia message takes more time than sending a text message. During sending the animated indicator ⊜ is displayed and you can use other functions of the phone. If the sending is interrupted, the phone tries to resend it for a few times. If the sending fails, the message remains in the *Outbox* folder and you can try to resend it.

   The sent messages will be saved in the *Sent items* folder if the setting *Save sent messages* is set to *Yes*. See Settings for the multimedia messages on page 49.

Reading and replying to a multimedia message

When your phone is receiving a multimedia message, the animated indicator ⊜ is displayed. When the message is received, the indicator ⊜ and the text *Multimedia message received* is shown.

The blinking ⊜ indicates that the memory for multimedia messages is full, see Multimedia messages memory full on page 46.

1. Press **Show** to view the message, or press **Exit** to view it later.

   Reading the message later: Press **Menu**, and select *Messages*, *Multimedia msgs.* and *Inbox*.

2. Scroll to view the message. Press **Options** and some of the following options may be available.

   • *Delete message* to delete a saved message.

   • *Reply* to reply to a message. To send the reply message, press **Options** and select *Send*. Sender's phone number (or e-mail address) is used as the default value.

   • *Forward to no.* or *Forward to e-mail* to use a phone number or e-mail address.

   • *Edit* to edit a message. You can only edit messages you have written. See Writing and sending a multimedia message on page 44.

- *Message details* to view the message subject, size and class.
- *Play* to listen to the sound in the message.
- *Save sound clip* to save the sound in the *Gallery*.
- *Zoom in* to zoom the picture in the message bigger.
- *Save image* to save the picture in the *Gallery*.

Inbox, Outbox, Saved and Sent items folders

The phone saves the received multimedia messages in the *Inbox* folder of the *Multimedia msgs.* submenu.

Multimedia messages to be sent are moved to the *Outbox* folder of the *Multimedia msgs.* submenu.

The multimedia messages you want to send later, can be saved in the *Saved items* folder of the *Multimedia msgs.* submenu.

The sent multimedia messages are saved in the *Sent items* folder of the *Multimedia msgs.* submenu.

Multimedia messages memory full

You may be able to receive up to 15 multimedia messages with the maximum size of 30kB each. Received messages are automatically stored in dynamic memory, see Dynamic memory on page 11.

When you have a multimedia message waiting and the memory for the messages is full, the indicator ⬤ is blinking and Multimedia memory full, view waiting msg. is shown. To view the waiting message, press Show. To save the message, press Options, select Save message and delete old messages by first selecting the folder and then an old message to be deleted.

To discard the waiting message, press **Exit** and **Yes**. If you press **No**, you can view the message.

Erasing messages

1. To delete the text messages, press **Menu**, and select *Messages*, *Text messages* and *Delete messages*.

   To delete the multimedia messages, press **Menu**, and select *Messages*, *Multimedia msgs.* and *Delete messages*.

2. To delete all the messages in a folder, scroll to the folder and press **OK**. Then press **OK** when *Delete all read messages from folder?* is displayed.

   To delete all read messages from all the folders, scroll to *All read* and press **OK** . Then press **OK** when *Delete read messages from all folders?* is displayed.

Chat

You can have a conversation with another person using this text messaging application. You cannot save received or sent messages, but you can view them while chatting. Each chat message is priced as a text message.

1. To start a chat, press **Menu**, select *Messages* and *Chat*. Key in or search in the phone book the phone number of the person with whom you want to start the chat session and press **OK**.

   Another way to start a chat: When you have received a message, press **Show** to read it. To start a chat, press **Options** and select *Chat*.

2. Key in your nickname for the chat and press **OK**.

3. Write your chat message, see Writing text on page 25.

4. To send the message, press **Options** and select *Send*.

5. The reply message from the other person is shown above your original message.

   To reply to the message, press **OK** and repeat the steps 3 and 4.

6. To end the chat session, press **OK** and select *Quit*.

To view the latest messages of the current chat session, press **Options** and select *Chat history*. The messages you sent are indicated by "<" and your nickname and the messages you received by ">", and the sender's nickname. Press **Back** to return to the message you are writing. To edit your nickname, select the option *Chat name*.

Voice messages

Voice mailbox is a network service and you may need to subscribe to it first. For more information and for the voice mailbox number, contact your service provider.

Press **Menu**, and select *Messages* and *Voice messages*. Select

- *Listen to voice messages* to call your voice mailbox at the phone number you have saved within the *Voice mailbox number* menu.

  Each phone line may have its own voice mailbox number, see Line for outgoing calls on page 56.

- *Voice mailbox number* to key in, search for or edit your voice mailbox number and press **OK** to save it.

If supported by the network, the indicator ☐☐ will indicate new voice messages. Press **Listen** to call your voice mailbox number.

☼ **Tip:** Pressing and holding ⏻ calls your voice mailbox.

Info messages

With the info message network service you can receive messages on various topics, for example weather or traffic conditions, from your service provider. For available topics and relevant topic numbers, contact your service provider.

If the *GPRS connection* is set to *Always online*, the info messages may not be received. In that case, set the *GPRS connection* to *When needed*, see GPRS connection on page 76.

Message settings

The message settings affect the sending, receiving or viewing of the messages.

Settings for text and e-mail messages

1. Press **Menu**, and select *Messages*, *Message settings*, *Text messages* and *Sending profile*.

2. If more than one message profile set is supported by your SIM card, select the set you want to change.

   - Select *Message centre number* to save the phone number of the message centre needed for sending text messages. You receive the number from your service provider.

   - Select *Messages sent as* to select the message type *Text* or *E-mail*, *Paging* and *Fax*.

- Select *Message validity* to select the time for how long the network should attempt to deliver your message.

- For message type *Text*, select *Default recipient number* to save a default number to send messages for this message profile.

  For message type *E-mail*, select *E-mail server* to save the e-mail server number.

- Select *Delivery reports* to request the network to send delivery reports on your messages (network service).

- Select *Use GPRS* to set GPRS as the preferred SMS bearer.

- Select *Reply via same centre* to allow the recipient of your message to send you a reply message via your message centre (network service).

- Select *Rename sending profile* to change the name of the selected message profile. The message profile sets are displayed only if your SIM card supports more than one set.

Overwrite settings

When the text message memory is full, the phone cannot receive or send any new messages. However, you can set the phone to automatically replace old text messages in the *Inbox* and *Sent items* folders with the new ones.

Press **Menu**, and select *Messages*, *Message settings*, *Text messages* and *Overwriting in inbox* or *Overwriting in sent items*. Select *Allowed* to set the phone to replace the old text messages with new ones in the *Inbox* or the *Sent items* folder, respectively.

Settings for the multimedia messages

Press **Menu**, and select *Messages*, *Message settings* and *Multimedia msgs.*. Select

- *Save sent messages*. Select *Yes* to set the phone to save the sent multimedia messages in the *Sent items* folder. If you select *No*, the sent messages are not saved.

- *Allow multimedia reception*. Choose *No*, *Yes* or *In home network* to use multimedia service. If you choose *In home network*, you cannot receive multimedia messages when outside your home network.

- *Incoming multimedia messages*. Select *Retrieve* to set the phone automatically to fetch received multimedia messages, or select *Reject* if you do not wish to receive multimedia messages.

- *Connection settings*. Define WAP connection settings for retrieving multimedia messages. Activate the set where you want to save the connection settings and then edit the settings. Refer also Keying in the service settings manually on page 79.

  - *Settings' name*. Key in the new name for the connection set and press **OK**.

  - *Homepage*. Key in the homepage address of the WAP service that you want to use, press [≡] for a dot, and press **OK**.

  - *Session mode*. Select *Permanent* or *Temporary*.

  - *Data bearer*. Select *GPRS*.

  - *GPRS access point*. Key in the access point name and press **OK**. An access point name is needed to establish a connection to a GPRS network. You obtain the access point name from your network operator or service provider.

  - *IP address*. Key in the address, press [⁖⁚] for a dot, and press **OK**. You obtain the IP address from your network operator or service provider.

  - *Authentication type*. Select *Secure* or *Normal*.

  - *User name* . Key in the user name and press **OK**.

  - *Password*. Key in the password and press **OK**.

- *Allow adverts*. You can receive or reject adverts.

To receive the multimedia connection settings as a text message

You may receive the service settings as a text message from the network operator or service provider that offers the WAP service that you want to use. For more information, contact your network operator or service provider, or visit Club Nokia's website (www.club.nokia.com).

Font size setting

To select the font size for reading and writing messages, press **Menu**, and select *Messages*, *Message settings*, *Other settings* and *Font size*.

Service commands

Press **Menu**, and select *Messages* and *Service commands*. Key in and send service requests (also known as USSD commands) such as activation commands for network services, to your service provider.

■ Call register (Menu 2)

The phone registers the phone numbers of missed, received and dialled calls, and the approximate length and cost of your calls.

The phone registers missed and received calls only if the network supports these functions, the phone is switched on and within the network's service area.

When you press **Options** in the *Missed calls*, *Received calls* and *Dialled numbers* menu, you can, for example, view the date and the time of the call, edit or delete the phone number from the list, save the number in the phone book, or send a message to the number.

Recent calls lists

Press **Menu**, and select *Call register* and then select

• *Missed calls* to view the list of the last ten phone numbers from which somebody has tried to call you (network service). The number in the front of the (name or) phone number indicates the amount of call attempts from that caller.

> **Tip:** When a note about missed calls is being displayed, press List to access the list of phone numbers. Scroll to the number you would like to call back and press ▆▆▆ .

• *Received calls* to view the list of the last ten phone numbers from which you have most recently accepted calls (network service).

• *Dialled numbers* to view the list of the 20 phone numbers that you have most recently called or attempted to call. See also Last number redialling on page 22.

• *Delete recent call lists* to delete the recent calls lists. Select whether you want to delete all the phone numbers in the recent call lists, or

only those numbers in the missed calls, received calls or dialled numbers lists. You cannot undo the operation.

Call counters and call timers

Note: The actual invoice for calls and services from your service provider may vary, depending upon network features, rounding-off for billing, taxes and so forth.

Press **Menu**, and select *Call register* and then select

- *Call duration*, scroll to view the approximate duration of your incoming and outgoing calls in hours, minutes and seconds. To clear the timers, the security code is needed.

  Each phone line has its own call timers and the timers of the selected line are displayed. See Line for outgoing calls on page 56.

- *Call costs* (network service). Select *Last call units* or *All calls' units* to check the cost of your last call or all calls in terms of units specified within the *Show costs in* function.

  Select *Call cost settings* and select *Clear counters* to clear the counters, or select *Show costs in* to set the phone to show the remaining talk time in terms of charging units, *Units*, or units of currency, *Currency*. Contact your service provider for charging unit prices.

  Select *Call cost limit* to limit the cost of your calls to a certain amount of charging units or units of currency. The PIN2 code is needed for the call cost settings.

  Note: When no more charging units or currency units are left, calls may only be possible to the emergency number programmed into your phone (e.g. 112, 911 or other official emergency number).

- *GPRS data counter* and scroll to check the amounts of sent and received data in last session, data sent and received in total, and to clear the counters. The counters unit is a byte. To clear the counters, the security code is needed.

- *GPRS connection timer* scroll to check the duration of the last GPRS connection or the total GPRS connection. You can also clear the timers. To clear the timers, the security code is needed.

■ Profiles (Menu 3)

Your phone has various setting groups, profiles, for which
you can customise the phone tones for different events
and environments. At first, personalise the profiles to your liking and
then you only need to activate a profile to use it. Available profiles are
General, *Silent*, *Meeting*, *Outdoor*, and *Pager*.

Press **Menu**, and select *Profiles*. Scroll to a profile and press **Select**.

- To activate the selected profile, select *Activate*.

- To set the profile to be active for a certain amount of time up to 24
  hours, select *Timed* and set the end time. When the time set for the
  profile expires, the previous profile that was not timed, becomes
  active.

- To personalise the profile, select *Personalise*. Select the setting you
  want to change and make the changes.

  The settings can also be changed in the *Tone settings* menu, see Tone
  settings on page 60.

  In addition you can rename a profile, *Profile name*. The *General*
  profile can not be renamed.

Tip: To change the profile quickly in standby mode, press the
power key ⓞ, scroll to the profile you want to activate and press
Select.

53

■ Settings (Menu 4)

Time and date settings

Clock

Press **Menu**, and select *Settings*, *Time and date settings* and *Clock*.

Select *Show clock* to show the clock on the top right of the display in standby mode. Select *Set the time*, to adjust the clock to the right time, and *Time format* to select the 12-hour or 24-hour time format.

The clock serves the functions *Messages*, *Call register*, *Alarm clock*, timed *Profiles* , *Calendar* and screen saver, for example.

If the battery is removed from the phone for a long time, you may need to set the time again.

Date

Press **Menu**, and select *Settings*, *Time and date settings* and *Date*.

Select *Show date* and the date is shown on the display when the phone is in standby mode. Select *Set the date* to adjust the date. You can also select the date format.

Auto update of date and time

Press **Menu**, and select *Settings*, *Time and date settings* and *Auto-update of date & time* (network service). To set the phone to automatically update the time and date according to the current time zone, select *On*. To set the phone to ask for a confirmation before the update, select *Confirm first*.

Automatic update of date and time does not change the time you have set for the alarm clock, calendar or the alarm notes. They are in local time. Updating may cause some alarms you have set to expire.

Call settings

Call divert

Press **Menu**, and select *Settings*, *Call settings* and *Call divert* (network service). With call divert you can direct your incoming calls to another number, for example, to your voice mailbox number. For details, contact

your service provider. Divert options not supported by your SIM card or your network operator may not be shown.

Select the divert option you want, for example, select *Divert if busy* to divert the voice calls when your number is busy or when you reject an incoming call.

To set the divert setting to on, select *Activate*, to set the divert setting to off, select *Cancel*, or *Check status* to check whether the divert is activated or not. To change the timeout when the call is diverted, first select *Set delay* if this is available for the divert option, and then select *Activate* to set the divert setting to on. Several divert options may be active at the same time.

To see the divert indicators in standby mode, see Standby mode on page 13.

Anykey answer

Press **Menu**, and select *Settings*, *Call settings* and then *Anykey answer*. Select *On* and you can answer an incoming call by briefly pressing any key, except ⓪, selection keys ▬ and ▬, and ▰.

Automatic redial

Press **Menu**, and select *Settings*, *Call settings* and *Automatic redial*. Select *On* and your phone will make a maximum of ten attempts to connect the call after an unsuccessful call attempt.

Speed dialling

Press **Menu**, and select *Settings*, *Call settings* and *Speed dialling*. Select *On* and the names and phone numbers assigned to the speed dialling keys, from 2 to 9, can be dialled by pressing and holding the corresponding number key.

Call waiting

Press **Menu**, and select *Settings*, *Call settings* and *Call waiting*. Select *Activate* and the network will notify you of an incoming call while you have a call in progress (network service). See Call waiting on page 23.

Summary after call

Press **Menu**, and select *Settings*, *Call settings* and *Summary after call*. Select *On* and the phone will briefly display the duration and cost (network service) of the last call.

Send my caller identity

Press **Menu**, and select *Settings*, *Call settings* and *Send my caller identity*. Select *Yes* and your phone number will be displayed to the person you are calling (network service). Select *Set by network* and the setting agreed upon with your service provider is used.

Line for outgoing calls

Line for outgoing calls is a network service to select the phone line 1 or 2, that is subscriber number, for making calls.

Press **Menu**, and select *Settings*, *Call settings* and *Line for outgoing calls*. If you select *Line 2* and have not subscribed to this network service, you will not be able to make calls. However, calls on both lines can be answered regardless of the selected line.

If supported by your SIM card, you can prevent the line selection by selecting the option *Lock*.

For more information on availability, contact your network operator or service provider.

Tip: In standby mode you can switch from one line to the other by pressing and holding ⌗ ⏻.

Phone settings

Language

Press **Menu**, and select *Settings*, *Phone settings* and *Language*. Select the language for the display texts. If *Automatic* is selected, the phone selects the language according to the information on the SIM card.

Automatic keyguard

Note: When the keypad is locked, calls may be possible to the emergency number programmed into your phone (e.g. 112, 911 or other official emergency number). Key in the emergency number and press ⬛. The number is displayed only after you have keyed in its last digit.

You can set the keypad of your phone to lock automatically after a preset time delay. You can set the delay time from 10 seconds up to 60 minutes and when the time is up, the keypad locks automatically preventing accidental keypresses.

Press **Menu**, and select *Settings*, *Phone settings* and *Automatic keyguard*.

- To activate the automatic keyguard, select *On* and the phone displays *Set delay:*. Key in the time and press **OK**.
- To deactivate the automatic keyguard, select *Off*.

Refer also Keypad lock (Keyguard) on page 19.

Cell info display
Press **Menu**, and select *Settings*, *Phone settings* and *Cell info display*. Select *On* to set the phone to indicate when it is used in a cellular network based on Micro Cellular Network (MCN) technology.

If the *GPRS connection* is set to *Always online*, the info messages may not be received. In that case, set the *GPRS connection* to *When needed*, see GPRS connection on page 76.

Welcome note
Press **Menu**, and select *Settings*, *Phone settings* and *Welcome note*. Key in the note you would like to be shown briefly when the phone is switched on. To save the note, press **Options**, and select *Save*.

Network selection
Press **Menu**, and select *Settings*, *Phone settings* and *Network selection*. Select *Automatic* and the phone automatically selects one of the cellular networks available in your area.

If you select *Manual*, you can select a network that has a roaming agreement with your home network operator. If *No access* is displayed, you must select another network. The phone stays in manual mode until the automatic mode is selected or another SIM card is inserted into the phone.

Confirm SIM service actions
See SIM services (Menu 13) on page 88.

Help text activation

To set the phone to show or not to show the help texts, press **Menu**, and select *Settings*, *Phone settings* and *Help text activation*.

See also Using the menu on page 34.

Start–up tone

To set the phone to play or not to play a start-up tone when the phone is switched on, press **Menu**, and select *Settings*, *Phone settings* and *Start-up tone*.

Display settings

Wallpaper

You can set your phone to display a background picture, wallpaper, when the phone is in standby mode. Some pictures are presaved in the *Gallery* menu. You can also receive pictures via multimedia message, download them from WAP pages or transfer them with PC Suite from your PC and then save them in *Gallery*. Your phone supports JPEG, GIF, BMP and PNG formats.

To select a wallpaper picture

1. Press **Menu**, and select *Settings*, *Display settings* and *Wallpaper*.

2. Select *Change image* and the folder list in the *Gallery* menu will be shown.

3. Select the folder and scroll to the desired picture.

4. To set the picture as wallpaper, press **Options** and select *Set as wallpaper*.

Note that if you delete the selected wallpaper picture from the gallery, it will still be used as wallpaper until you replace it with another picture.

Note that the wallpaper is not displayed when the phone activates the screen saver.

To activate or deactivate the wallpaper

Press **Menu**, and select *Settings*, *Display settings* and *Wallpaper*. To activate/deactivate the wallpaper, select *On*/*Off*, respectively.

Colour schemes

You can change the colour in some display components, for example, indicators and signal bars.

Press **Menu**, and select *Settings*, *Display settings* and *Colour schemes*. Select the desired colour scheme.

Operator logo

To set your phone to display or hide the operator logo, press **Menu**, and select *Settings*, *Display settings* and *Operator logo*.

Note that the operator logo is not displayed when the phone activates the screen saver.

For more information and availability of an operator logo via SMS, MMS or WAP, contact your network operator and/or WAP service provider, and see also PC Suite on page 89.

Screen saver

The screen saver showing a digital clock is used for power saving in standby mode. It will be activated when no function of the phone is used for a certain time. Press any key to deactivate the screen saver. Screen saver is also deactivated when the phone is out of the network coverage area.

Press **Menu**, and select *Settings*, *Display settings* and *Screen saver timeout*. Select the timeout from 5 seconds to 5 minutes when the digital clock display will be activated.

Note that the screen saver overrides all the graphics and texts on the display in standby mode.

Display brightness

You can change the display contrast level used on the phone display.

Press **Menu**, and select *Settings*, *Display settings* and *Display brightness*. Scroll with ◄ and ► to decrease and increase the contrast level, and press **OK** to accept it.

Tone settings

Press **Menu**, and select *Settings* and then *Tone settings*. You can find the same settings in the *Profiles* menu, see Profiles (Menu 3) on page 53. Note that the settings you make, change the settings in the active profile.

Select *Incoming call alert* to select how the phone notifies you of an incoming voice call. The options are *Ringing*, *Ascending*, *Ring once*, *Beep once* and *Off*.

Select *Ringing tone* for incoming voice calls. To select ringing tones saved in the *Gallery*, select *Open gallery* from the ringing tone list.

Select *Ringing volume* and *Vibrating alert* for incoming voice calls and incoming messages. The vibrating alert does not work when the phone is connected to a charger, desktop stand, or a car kit.

Tip: If you receive a ringing tone via OTA or by downloading, you can save the ringing tone in the *Gallery*.

Select *Message alert tone* to set the alert tone for the incoming messages, *Keypad tones*, or *Warning tones* to set the phone to sound tones for example, when the battery is running out of power.

Select *Alert for* to set the phone to ring only upon calls from phone numbers that belong to a selected caller group. Scroll to the caller group you want or *All calls* and press **Mark**.

Accessory settings

Accessory settings menu is shown only if the phone is or has been connected to one of the following accessories: headset HDB-4, handsfree unit CARK126, or mobile inductive loopset LPS-4.

Press **Menu**, and select *Settings* and *Accessory settings*. You can select *Headset*, *Handsfree* or *Loopset* if the corresponding accessory is or has been connected to the phone.

• Select *Default profile* to select the profile you want to be automatically activated when you connect the selected accessory. You can select another profile while the accessory is connected.

- Select *Automatic answer* to set the phone to answer an incoming call automatically after five seconds. If the *Incoming call alert* is set to *Beep once* or *Off*, automatic answer will not be in use.

- Select *Lights* to set the lights permanently *On*. Select *Automatic* to set the lights on for 15 seconds after a keypress. The *Lights* option is available only when *Handsfree* is selected.

Security settings

Note: When security features that restrict calls are in use (call barring, closed user group and fixed dialling), calls may be possible to certain emergency numbers in some networks (e.g. 112, 911 or other official emergency numbers).

Press **Menu**, and select *Settings* and *Security settings*. Select

- *PIN code request* to set the phone to ask for your PIN code every time the phone is switched on. Some SIM cards do not allow the PIN code request to be turned off.

- *Call barring service* (network service) to restrict incoming calls to and outgoing calls from your phone. A barring password is required.

- *Fixed dialling* to restrict your outgoing calls to selected phone numbers if this function is supported by your SIM card. The PIN2 code is required.

- *Closed user group*. Closed user group is a network service that specifies the group of people whom you can call and who can call you. For more information contact your network operator or service provider.

- *Security level*. Select *Phone* and the phone will ask for the security code whenever a new SIM card is inserted into the phone.

  Select *Memory* and the phone will ask for the security code when SIM card's memory is selected and you want to change the memory in use, (see Selecting the phone book settings on page 28) or copy from one memory to another (Copying phone books on page 30).

- *Access codes* to change the security code, PIN code, PIN2 code or barring password. Codes can only include numbers from 0 to 9.

Restore factory settings

To reset some of the menu settings to their original values, press **Menu**, and select *Settings* and *Restore factory settings*. Key in the security code and press **OK**. Note that the data you have keyed in or downloaded, for example, the names and phone numbers saved in the phone book are not deleted.

■ Alarm clock (Menu 5)

The alarm clock uses the time format set for the clock. The alarm clock works even when the phone is switched off.

Press **Menu**, and select *Alarm clock*. Key in the alarm time and press **OK**. To change the time when the alarm time is set, select *On*.

When the alarm time expires

The phone will sound an alert tone, and flash *Alarm!* and the current time on the display.

Press **Stop** to stop the alarm. If you let the phone continue to alarm for a minute or press **Snooze**, the alarm stops for about ten minutes and then resumes.

If the alarm time is reached while the phone is switched off, the phone switches itself on and starts sounding the alarm tone. If you press **Stop**, the phone asks whether you want to activate the phone , *Switch the phone on?*. Press **No** to switch off the phone or **Yes** to switch on the phone.

Note: Do not press **Yes** when wireless phone use is prohibited or when it may cause interference or danger.

■ Gallery (Menu 6)

Note: Your phone must be switched on to use this function. Do not switch the phone on when wireless phone use is prohibited or when it may cause interference or danger.

You can save images and ringing tones, for example, if received in a multimedia message, in the folders of the gallery, see Reading and replying to a multimedia message on page 45.

You may save up to 60 ringing tones with an average size of 5kB of which 20 are removable and up to 35 images with an average size of 10kB. The gallery uses dynamic memory, see Dynamic memory on page 11.

1. Press **Menu** and select *Gallery*. The list of options is shown.

2. Select *View folders* to open the list of folders.

   Other options available are:

   - *Delete folder* to select the folder you want to delete. You can not delete the original folders in the phone.

   - *Rename folder* to select the folder you want to give a new name. You can not rename the original folders in the phone.

   - *Add folder* to add a new folder. Key in a name for the folder and press **OK**.

   - *Gallery services* to download more images and tones. Select *Image services* or *Tone services*, respectively. The list of available WAP bookmarks is shown. Select *More bookmarks* to access the list of WAP bookmarks in the *Services* menu, see Bookmarks on page 84.

     Select the appropriate bookmark to connect to the desired WAP page. If the connection fails, you may not be able to access the WAP page from the WAP service whose connection settings are currently active. In this case, enter the *Services* menu and activate another set of service settings, see Making a connection to a WAP service on page 80. Try again to connect to the WAP page.

     For the availability of different WAP services, pricing and tariffs, contact your network operator and/or the WAP service provider.

3. Select the desired folder and the list of files in the folder is shown. *Images* and *Tones* are the original folders in the phone.

4. Scroll to the desired file. Press **Options** and some of the following options are available:

- *Open* to open the seleted file.
- *Delete* to delete the seleted file.
- *Set as wallpaper* to set the selected file as wallpaper.
- *Set as ring tone* to set the selected file as ringing tone.
- *Move* to move a file to another folder.
- *Rename folder* to give a new name for the file.
- *Details* to see the details of the file, the size, for example.
- *Sort* to sort the files and folders by date, type, name or size.

■ Organiser (Menu 7)

Note: Your phone must be switched on to use the functions in *Organiser* menu. Do not switch the phone on when wireless phone use is prohibited or when it may cause interference or danger.

Calendar

The calendar helps you to keep track of reminders, calls that you need to make, meetings, and birthdays.

You may save up to 250 calendar notes. The calendar uses dynamic memory, see Dynamic memory on page 11.

Press **Menu**, and select *Organiser* and *Calendar*.

Tip: To quickly open the *Calendar* menu, press ◄ in standby mode.

Scroll to the day you want. The current day is indicated with a frame around the day. If there are any notes set for the day, the day is bolded. To view the day notes, press **Options** and select *Day notes*.

To view a single note, scroll to the note you want to view, press **Options** and select *View*. The note view allows you to view the details of the selected note. You can scroll through the note.

The other options for the calendar views may include:
- Options for making a note, for sending a note via IR, or as a note directly to another phone's calendar or as a text message.

- Options for deleting, editing, moving and repeating a note and for copying a note to another day.

- *Settings* to set the date, time, date or time format, or the first day of the week. In the *Auto-delete* option you can set the phone to delete old notes automatically after a specified time. However, the repeat notes, for example, birthday notes, will not be deleted.

Making a calendar note
For keying in letters and numbers, see Writing text on page 25.

Press **Menu**, and select *Organiser* and *Calendar*. Scroll to the date you want, press **Options** and select *Make a note*. Select one of the following note types:

- *Meeting* - Key in the note or search for the name in the phone book. Press **Options** and select *Save*. Key in the location for the meeting and press **OK**. Key in the start time for the meeting and press **OK**, and then the end time and press **OK**. To set the alarm for the note, select *With tone* or *Silent* (no alarm tone) and then set the alarm time.

- *Call* - Key in the phone number, press **Options** and select *Save*. Key in the name, press **Options** and select *Save*. (Instead of keying in the phone number, you can press **Options** to search for the name and number in the phone book.) Then key in the time for the call and press **OK**. To set the alarm for the note, select *With tone* or *Silent* (no alarm tone) and then set the alarm time.

- *Birthday* - Key in the person's name (or press **Options** to search for it in the phone book), press **Options** and select *Save*. Then key in the year of birth, and press **OK**. To set the alarm for the note, select *With tone* or *Silent* (no alarm tone) and then set the alarm time.

- *Memo* - Key in the note, press **Options** and select *Save*. Key in the end day for the note and press **OK**. To set the alarm for the note, select *With tone* or *Silent* (no alarm tone) and then set the alarm time.

- 🔲 *Reminder* - Key in the subject for the reminder, press **Options** and select *Save*. To set the alarm for the note, select *Alarm on* and then set the alarm time.

When you have set the alarm, the indicator 🔖 is displayed when you view the notes.

When the phone alarms for a note

The phone beeps, and displays the note. With a call note ☎ on the display, you can call the displayed number by pressing ☎. To stop the alarm and view the note, press View. To stop the alarm without viewing the note, press Exit.

To-do list

You can save a note for a task that you have to do, select a priority level for the note and mark it as done when you have completed it. You can sort the notes by priority or by date.

You may save up to 30 notes. The to-do list uses dynamic memory, see Dynamic memory on page 11.

Press **Menu**, and select *Organiser* and *To-do list* and the list of notes is shown. Press **Options**, or scroll to the desired note and press **Options**.

- To add a new note, select *Add*. Key in the subject for the note. When you have keyed in the maximum number of characters for a note, more characters are not accepted. Press **Options** and select *Save*. Select the priority for the note, *High*, *Medium*, or *Low*.

   Dictionary, refer to Setting predictive text input on or off on page 25.

- You can set, delete and edit the deadline and an alarm for a note, and also view, delete or edit the selected note and delete all the notes that you have marked as done. You can edit the priority of the selected note, send a note to another phone, save a note as a calendar note, or access the calendar.

■ Games (Menu 8)

Note: Your phone must be switched on to use this function. Do not switch the phone on when wireless phone use is prohibited or when it may cause interference or danger.

Launching a game

1. Press **Menu**, and select *Games* and *Select game*.

2. Scroll to a game or a game set (name depends on the game).

3. Press **Options** and select *Open* or press ▀▄. If the selection is a single game it will be launched.

   Otherwise, a list of games in the selected game set is displayed. To launch a single game, scroll to the desired game and press **Options** and select *Open*, or press ▀▄.

Other options available for a game or game set
Options for games, see Other options available for an application or application set on page 69.

Game services

Press **Menu**, and select *Games* and *Game services*. The list of available WAP bookmarks is shown. Select *More bookmarks* to access the list of WAP bookmarks in the *Services* menu, see Bookmarks on page 84.

Select the appropriate bookmark to connect to the desired WAP page. If the connection fails, you may not be able to access the WAP page from the WAP service whose connection settings are currently active. In this case, enter the *Services* menu and activate another set of service settings, see Making a connection to a WAP service on page 80. Try again to connect to the WAP page.

For the availability of different WAP services, pricing and tariffs, contact your network operator and/or the WAP service provider.

Note that when downloading a game or an application, it may be saved in *Applications* menu instead of the *Games* menu.

Memory status for games

To view the size of memory available for game and application installations, press **Menu**, and select *Games* and *Memory*.

You may save up to six applications and/or games with a maximum size of 64kB each. The games use dynamic memory, see Dynamic memory on page 11.

Game settings

Press **Menu**, and select *Games* and *Settings* to set sounds, lights and shakes for the game. You can save your Club Nokia membership number, *Club Nokia ID*. For more information on Club Nokia and the game services, visit www.club.nokia.com. Availability may vary by country.

■ Applications (Menu 9)

Note: The phone must be switched on to use this function. Do not switch on the phone when the use of a wireless phone is prohibited or when it may cause interference or danger.

This menu allows the management of Java applications installed on your phone. Your phone software includes some Java applications specially designed for this Nokia phone. Various service providers offer other applications via WAP services. Before you can use one of these applications you have to download it to your phone.

Launching an application

1. Press **Menu**, and select *Applications* and *Select application*.

2. Scroll to an application or an application set (name depends on the application).

3. Press **Options** and select *Open* or press 🔻. If the selection is a single application it will be launched.

   Otherwise, a list of applications in the selected application set is displayed. To launch a single application, scroll to the desired application and press **Options** and select *Open*, or press 🔻.

Other options available for an application or application set

- *Delete* to delete the application or application set from the phone.

  Note that if you delete a pre-installed application or an application set from your phone, you may download it back to your phone from the Nokia Software Market, www.softwaremarket.nokia.com/wap.

- *Web access* to restrict the application for accessing the network. Select *Ask first* and the phone asks for net access, *Allowed* to allow the net access, or *Not allowed* not to allow the net access.

- *Check version* to check if a new version of the application is available for download from the WAP services.

- *Web page* to provide further information or additional data for the application from an Internet page. This feature needs to be supported by the network. It is only shown if an Internet address has been provided with the application.

- *Details* to give additional information about the application.

Downloading an application

You can download new Java applications in different ways:

- Press **Menu**, and select *Applications* and *App. services* and the list of available WAP bookmarks is shown. Select *More bookmarks* to access the list of WAP bookmarks in the *Services* menu, see Bookmarks on page 84.

  Select the appropriate bookmark to connect to the desired WAP page. If the connection fails, you may not be able to access the WAP page from the WAP service whose connection settings are currently active. In this case, enter the *Services* menu and activate another set of service settings, see Making a connection to a WAP service on page 80. Try again to connect to the WAP page.

  For the availability of different WAP services, pricing and tariffs, contact your network operator and/or the WAP service provider.

- Press **Menu**, and select *Services* to find a WAP page to download an appropriate Java application. See Browsing the pages of a WAP service on page 81.

- Use the game download functionality, see Game services on page 67.

- Use the Java Application installer from PC Suite to download the applications in your phone.

Note that Nokia does not warrant for applications from non-Nokia sites. If you choose to download Java applications from them, you should take the same precautions, for security or content, as you would with any site.

Note that when downloading a game or an application, it may be saved in *Games* menu instead of the *Applications* menu.

The following texts may appear during a download or during an operation of a Java application:

- *Action failed* , too many applications in the phone. Erase any unwanted application and download again.

- *Application error* , an error occurs in the running application.

- *Application not supported* , the application is incompatible with the phone.

- *Call in progress* , the application tries to establish a web connection while the phone is already in call.

- *File format not recognised* , either the application is invalid or the transfer from PC has not finished.

- *File too large* , a file is too large to run on the phone or the gateway does not support large files.

- *Invalid file* , the application is invalid.

- *Launch failed* , the phone couldn't start the application. Please try again.

- *Unable to run application* , there is insufficient resource to run the application. End any active calls or features and try to open the application again.

- *Unknown* (appearing in the Application's list), the application has no name.

Memory status for applications

To view the size of memory available for game and application installations, press **Menu**, and select *Applications* and *Memory*.

You may save up to six applications and/or games with a maximum size of 64kB each. The applications use dynamic memory, see Dynamic memory on page 11.

■ Extras (Menu 10)

Note: Your phone must be switched on to use the functions in *Extras* menu. Do not switch the phone on when wireless phone use is prohibited or when it may cause interference or danger.

Calculator

The calculator in your phone adds, subtracts, multiplies, divides, counts the square and the square root and converts currency values.

This calculator has a limited accuracy and rounding errors may occur, especially in long divisions.

1. Press **Menu**, and select *Extras* and *Calculator*.

2. When '0' is displayed on the screen, key in the first number in the calculation, press 🔲 🔲 for a decimal point.

3. Press **Options** and select *Add*, *Subtract*, *Multiply*, *Divide*, *Square*, *Square root* or *Change sign*.

   Tip: Alternatively, press 🔲 once to add, twice to subtract, three times to multiply or four times to divide.

4. Key in the second number.

5. For a total, press **Options** and select *Equals*. Repeat steps 3 to 5 as many times as is necessary.

6. To start a new calculation, first press and hold **Clear**.

Making a currency conversion

1. Press **Menu**, and select *Extras* and *Calculator*.

2. To save the exchange rate, press **Options** and select *Exchange rate*. Select either of the displayed options. Key in the exchange rate, press **#** for a decimal point, and press **OK**. The exchange rate remains in the memory until you replace it with another one.

3. To make the currency conversion, key in the amount to be converted, press **Options** and select *In domestic* or *In foreign*.

Tip: You can also make the currency conversion in standby mode. Key in the amount to be converted, press **Options** and select *In domestic* or *In foreign*.

Countdown timer

Press **Menu**, and select *Extras* and *Countdown timer*. Key in the alarm time in hours and minutes and press **OK**. If you wish, write your own note text which is displayed when the time expires, and press **OK** to start the countdown timer.

• To change the countdown time, select *Change time*, or to stop the timer, select *Stop timer*.

If the alarm time is reached when the phone is in standby mode, the phone sounds a tone and flashes the note text if it is set or else *Countdown time up*. Stop the alarm by pressing any key. If no key is pressed, the alarm automatically stops within 30 seconds. To stop the alarm and to delete the note text, press **OK**.

Stopwatch

You can measure time, take intermediate times or lap times using the stopwatch. During timing, the other functions of the phone can be used. To set the timing in the background, press .

Using the stopwatch consumes the battery and the phone's operating time will be reduced. Be careful not to let it run in the background when performing other operations with your phone.

Time observation and time splitting

1. Press **Menu**, and select *Extras*, *Stopwatch* and *Split timing*. You can select *Continue* if you have set the timing in the background.

2. Press **Start** to start the time observation. Press **Split** every time you want to take an intermediate time. The intermediate times are listed below the running time on the display. Scroll to view the times.

3. Press **Stop** to stop the time observation.

4. Press **Options** and select

   Start to start the time observation again. The new time is added to the previous time.

   Save to save the time. Key in a name for the measured time and press **OK**. If no name is keyed in, the total time is used as a title.

   Reset to reset the time without saving it.

Lap times

Press **Menu**, and select *Extras*, *Stopwatch* and *Lap timing*. Press **Start** to start the time observation and **Lap** to take a lap time. Press **Stop** to stop the lap timing. Press **Options** and you can save or reset the lap times. Refer to Time observation and time splitting above.

Viewing and deleting times

Press **Menu**, and select *Extras*, and *Stopwatch*.

If the stopwatch is not reset, you can select *Show last* to view the latest measured time. Select *View times* and a list of names or final times of the time sets is shown, select the time set you want to view.

To delete the saved times, select *Delete times*. Select *All at once* and press **OK**, or select *One by one*, scroll to the times you want to delete, press **Delete** and press **OK**.

Wallet

In *Wallet* you can save personal information, for example, credit card information and make purchases with your phone.

You can access the wallet via the *Wallet* menu or via the WAP browser, see Options while browsing on page 82.

When you access the wallet for the first time, you need to create your own wallet code. At *Create wallet code:* key in the code and press **OK** to confirm it and at *Verify wallet code:* key in the code again and press **OK**.

If you want to delete all the content of the wallet and the wallet code, key in *#3925538# (*#ewallet# in letters) in standby mode. You also need the security code of the phone. See also Access codes on page 7

Saving and changing personal card information

To access the wallet, press **Menu**, select *Extras* and *Wallet*. If needed, key in your wallet code and press **OK**, see Wallet settings on page 75. Select *Cards* to view the list of cards. The maximum amount of cards is five. Scroll to the desired card.

- To save information on a card, press **Options** and select *View*. Select
    - *Card info* to key in, for example, the card holder's name, card type, number and expiry information.
    - *User info* to save user name and password.
    - *Shipping info* to save your contact information.
    - *Billing info* to save the contact information in case the invoicing address differs from the stored address, which may be the case with company credit cards.
    - *Receipt info* to save phone numbers and e-mail addresses where you want the service provider to send a receipt of your purchase.
- To make a copy of the card, press **Options** and select *Copy card*.
- To delete all the information of the card, press **Options** and select *Clear card*.
- To rename the card, press **Options** and select *Rename card*.

Personal notes

You can save up to 30 confidential personal notes, for example, passwords, codes or notations.

Press **Menu**, select *Extras*, *Wallet* and *Personal notes*. Press **Options** and you can view, add, edit a selected note and sort notes either by name or date. *Send as text* copies the note to a text message. *Copy to calendar* copies the note to the calendar as a reminder. *Use number* extracts numbers from a note.

Wallet settings

Press **Menu**, select *Extras*, *Wallet* and *Settings*. Select

- *Code request* to set the wallet code request to on or off. You need to key in the correct wallet code before you can set the code request to on or off.

- *Change code* to change the wallet code.

Guidelines for paying your purchases with wallet

1. Access the desired WAP site to do shoppings, see Making a connection to a WAP service on page 80, and choose the product you want to buy.

2. To pay your purchases, press **Options** and select *Use wallet info*. See Options while browsing on page 82.

3. Select the card you want to pay with. Fill in the data form you receive from the service provider by transferring the credit card details from the wallet. If you want to fill in all the fields automatically, select *Fill in all fields*. The option is shown only when the WAP service supports the Electronic Commerce Modeling Language standard. You can also fill the form by selecting information fields from the card one by one. The phone displays the filled form.

4. Approve the purchase, and the information is sent forward.

5. To close the wallet, select *Close wallet*. See Options while browsing on page 82.

■ Connectivity (Menu 11)

<u>Infrared</u>

You can set up the phone to receive data through its infrared (IR) port. To use an IR connection, the device with which you want to establish a connection must be IrDA compliant. You can send or receive data such as business cards and calendar notes to or from a compatible phone or data device (for example, a computer) via the IR port of your phone.

Do not point the IR (infrared) beam at anyone's eye or allow it to interfere with other IR devices. This device is a Class 1 Laser product.

> **Note:** Your phone must be switched on to use this function. Do not switch the phone on when wireless phone use is prohibited or when it may cause interference or danger.

Sending and receiving data via IR

- Ensure that the IR ports of the sending and receiving devices are pointing at each other and that there are no obstructions between the devices. The preferable distance between the two devices in an infrared connection is 60 cm (24 inches) at most.

- To activate the IR port of your phone to receive data via IR, press **Menu**, and select *Connectivity* and *Infrared*.

- The user of the sending phone selects the desired IR function to start data transfer.

If data transfer is not started within two minutes after the activation of the IR port, the connection is cancelled and has to be started again.

IR connection indicator

- When ▶••• is shown continuously, the IR connection is activated and your phone is ready to send or receive data via its IR port.

- When ▶••• blinks, your phone is trying to connect to the other device or a connection has been lost.

GPRS

GPRS connection

You can set the phone to automatically register to a GPRS network when you switch the phone on. Press **Menu**, and select *Connectivity*, *GPRS*, *GPRS connection* and *Always online*. Starting a WAP or PC dial-up application, or sending/receiving multimedia messages creates the connection between phone and network and data transfer is possible. When you end the application, GPRS connection is ended but the registration to the GPRS network remains.

If you select *When needed*, the GPRS connection is established when an application needs it and closed when you end the application.

GPRS modem settings

You can connect the phone via infrared or data cable connection to a compatible PC and use the phone as a modem to enable GPRS connectivity from the PC.

Press **Menu**, and select *Connectivity*, *GPRS* and *GPRS modem settings*. Select *Active access point* and activate the access point you want to use. Select *Edit active access point* to change the access point settings.

- Scroll to *Alias for access point* and press **Select**. Key in the name you would like for the activated access point and press **OK**.

- Scroll to *GPRS access point* and press **Select**. Key in the Access Point Name (APN) and press **OK**.

  An access point name is needed to establish a connection to a GPRS network. You can obtain the Access Point Name from your network operator or service provider.

You can also set the GPRS dial-up service settings (Access Point Name) on your PC by using the Nokia Modem Options software, see PC Suite on page 89. If you have set the settings both on your PC and on your phone, note that the settings set on the PC will be used.

■ Services (Menu 12)

You can access various WAP services such as banking, news, weather reports and flight times. These services are specially designed for mobile phones and they are maintained by WAP service providers.

Check the availability of WAP services, pricing and tariffs with your network operator and/or the service provider whose service you wish to use. Service providers will also give you instructions on how to use their services.

Note: Your phone must be switched on to use this function. Do not switch the phone on when wireless phone use is prohibited or when it may cause interference or danger.

WAP services use the Wireless Mark-Up Language (WML) on their WAP pages. Internet web pages cannot be viewed on your phone.

Basic steps for accessing and using WAP services

1. Save the service settings that are needed to access the WAP service that you want to use. See page 83.

2. Make a connection to the given WAP service. See page 80.

3. Start browsing the pages of the WAP service. See page 81.

4. Once you are finished browsing, end the connection to the WAP service. See page 83.

Setting up the phone for a WAP service

You may receive the service settings as a text message from the network operator or service provider that offers the WAP service that you want to use. For more information, contact your network operator or service provider, or visit Club Nokia's website (www.club.nokia.com).

You can also key in the settings manually or add and edit the settings with PC Suite. For appropriate settings, contact your network operator or service provider. The WAP settings may be available, for example, on their website.

Saving the service settings received as a text message

When you receive the service settings as a text message, *Service settings received* is displayed.

* To save the received settings, press **Options** and select *Save*.

  If no settings are saved in *Active service settings*, the settings are saved under the first free connection set and also activated.

  If there are settings saved in *Active service settings*, *Activate saved service settings?* will be displayed. To activate the saved settings, press **Yes**, or to save them only, press **No**.

* To discard the received settings, press **Options** and select *Discard*.

* To view the received settings first, press **Options** and select *View*. To save the settings, press **Save**.

Keying in the service settings manually

1. Press **Menu**, and select *Services*, and *Settings*.

2. Select *Active service settings*.

   You need to activate the set where you want to save the service settings. A set is a collection of settings needed for making a connection to a WAP service.

3. Scroll to the set you would like to activate and press **Activate**.

4. Select *Edit active service settings*.

   Select each of the following service settings one by one and key in all the required settings.

   - *Settings' name* - Key in the new name for the connection set and press **OK**.

   - *Homepage* - Key in the homepage address of the WAP service that you want to use, press ⌐ for a dot, and press **OK**.

   - *Session mode* - Select *Permanent* or *Temporary*.

   - *Connection security* - Select *On* or *Off*.

     When the connection security is *On*, the phone tries to use a secure connection with the WAP service. If a secure connection is not available, the connection will not be made. If you wish to connect anyway, with a non-secure connection, you must set the connection security to *Off*.

   - *Data bearer* - Select *GSM data* or *GPRS*. Settings for the selected bearer, see Settings when GSM data is the selected data bearer and Settings when GPRS is the selected data bearer below.

     For pricing, connection speed and other information, contact your network operator or service provider.

Settings when *GSM data* is the selected data bearer

- *Dial-up number* - Key in the phone number and press **OK**.

- *IP address* - Key in the address, press ⌐ for a dot, and press **OK**. You obtain the IP address from your network operator or service provider.

- *Authentication type* - Select *Secure* or *Normal*.

- *Data call type* - Select *Analogue* or *ISDN*.

- *Data call speed* - Select the speed you want to use, or select *Automatic*. *Automatic* is available only if the current selected data call type is *Analogue*. The actual data call speed depends on the service provider.

- *Login type* - Select *Manual* or *Automatic*.

- *User name* - Key in the user name and press **OK**.

- *Password* - Key in the password and press **OK**.

Settings when *GPRS* is the selected data bearer

- *GPRS access point* - Key in the access point name and press **OK**.

  An access point name is needed to establish a connection to a GPRS network. You obtain the access point name from your network operator or service provider.

- *IP address* - Key in the address, press ▄ ▄ for a dot , and press **OK**. You obtain the IP address from your network operator or service provider.

- *Authentication type* - Select *Secure* or *Normal*. If you select *Automatic*, the login type uses the user name and password keyed in the following settings. If you select *Manual*, the login information is required when establishing a connection.

- *Login type* - Select *Manual* or *Automatic*.

- *User name* - Key in the user name and press **OK**.

- *Password* - Key in the password and press **OK**.

Making a connection to a WAP service

Firstly, make sure that the service settings of the WAP service you want to use are activated. To activate the settings:

- Press **Menu**, and select *Services* and *Settings*. Select *Active service settings* and scroll to the set you want to activate and press **Activate**.

Secondly, make a connection to the WAP service. There are three ways to connect:

- Open the homepage of the WAP service:

  Press **Menu**, and select *Services* and *Home*.

  🔆 **Tip:** To quickly open the homepage, press and hold 🔲 ⌞ in standby mode.

  OR

- Select a bookmark of the WAP service:

  Press **Menu**, and select *Services*, *Bookmarks*, and select a bookmark.

  If the bookmark does not work with the current active service settings, activate another set of service settings and try again.

  OR

- Key in the address of the WAP service:

  Press **Menu**, and select *Services* and then *Go to address*. Key in the address of the WAP service, press ⌁ for special characters, and press **OK**.

  Note that it is not necessary to add the prefix http:// in front of the address since it will be added automatically.

Browsing the pages of a WAP service

After you have made a connection to the WAP service, you can start browsing its WAP pages. The function of the phone keys may vary in different WAP services. Follow the text guides on the phone display. For more information, contact your WAP service provider.

Note that if GPRS is selected as the data bearer, the indicator 🅖 is shown on the top left of the display during browsing. If you receive or make a call during a GPRS connection, the indicator 🅖 will be shown on the top right of the display to indicate that the GPRS connection is suspended.

Using the phone keys while browsing

- Use the scroll keys ▼ or ▲ to browse the WAP page.

- To select a highlighted item, press ▬▬.

- To enter letters and numbers, press the keys 🔲 ⌞ - 🔢🔢🔢 and to enter special characters, press the key ⌁.

Options while browsing

Press **Options** and select one of the options available. The service provider may also offer other options. Select

- *Home* to go back to the homepage of the WAP service.

- *Bookmarks*. See page 84.

- *Call* / *Edit* / *Open row* / *Open link* / *Open list* to call, to key in text or to select a highlighted item on the WAP page.

- *Add bookmark* to save the WAP page as a bookmark.

- *View image* or *View images* to view images and animations from the WAP page.

- *Go to address* to key in the address of the WAP service you want to access.

- *Service inbox*. See page 84.

- *Use wallet info* and *Close wallet*. See Guidelines for paying your purchases with wallet on page 75.

- *Appear. settings*. See Appearance settings of WAP browser on page 83.

- *Cookie settings*. See page 83.

- *Use number* to copy a number from the WAP page for saving or making a call. If the WAP page contains several numbers, you may select the desired one.

- *Reload* to reload and update the current WAP page.

- *Clear the cache*. See The cache memory on page 85.

- *Security info* to view security information about the current WAP connection and the server.

- *Quit*. See Ending a WAP connection on page 83.

Direct calling

The WAP browser supports functions which you can access while browsing. You can make a voice call, send DTMF tones while a voice call is in progress, and save in the phone book a name and a phone number from a WAP page.

Ending a WAP connection

To quit browsing and to end the connection, press **Options** and select *Quit*. When *Quit browsing?* is shown, press **Yes**.

Alternatively, press   . If *GSM data* is the selected data bearer, press   twice. The phone ends the connection to the WAP service.

Appearance settings of WAP browser

1. While browsing, press **Options** and select *Appear. settings*, or in standby mode, press **Menu**, and select *Services*, *Settings* and *Appearance settings*.

2. Select *Text wrapping* or *Show images*.

3. Select *On* or *Off* for *Text wrapping* and *Yes* or *No* for *Show images*.

   When *Text wrapping* is set to *On*, the text continues on the next line if it cannot be shown on one line. If you select *Off*, the text is abbreviated if it is too long to be shown on one line.

   When *Show images* is set to *No*, any pictures appearing on the WAP page are not shown. This can speed up the browsing of WAP pages that contain a lot of pictures.

Cookie settings

You can set the phone to allow or prevent receiving cookies.

A cookie is data that a WAP site saves in your phone's browser cache memory. The data can be, for example, your user information or your browsing preferences. Cookies will be saved until you clear the cache memory, see The cache memory on page 85.

1. While browsing, press **Options** and select *Cookie settings*, or in standby mode, press **Menu**, and select *Services* and *Settings*.

2. Select *Cookies* and select *Allow* or *Reject* to allow or prevent the phone receiving cookies.

Bookmarks

You can save up to 30 WAP page addresses as bookmarks in the phone's memory.

1. While browsing, press **Options** and select *Bookmarks*, or in standby mode, press **Menu**, and select *Services* and *Bookmarks*.

2. Scroll to the bookmark you want to use and press **Options**.

3. Select one of the following options:

   Go to to make a connection to the WAP page associated with the bookmark.

   Edit or *Delete* to modify or delete the selected bookmark.

   Send to send the selected bookmark directly to another phone select *As bookmark*, or to send the bookmark as a text message, select *As text message*.

   New bookmark to create a new bookmark without connection to the WAP service. Key in the address and the title of the WAP page and press **OK**.

Note that your phone may have some pre-installed bookmarks for sites not affiliated with Nokia. Nokia does not warrant or endorse these sites. If you choose to access them, you should take the same precautions, for security or content, as you would with any Internet site, for example.

Receiving a bookmark

When you have received a bookmark as a text message, press **Options** and select *View* to view the bookmark, *Save* to save the bookmark, or *Discard* to discard it.

Service inbox

The phone is able to receive service messages (pushed messages) sent by your service provider. Service messages are notifications of, for example, news headlines, and they may contain a text message or address of a WAP service.

To access the *Service inbox* in standby mode, when you have received a service message, press **View**.

- If you press **Exit** the message is moved to the *Service inbox*. To access the *Service inbox* later, press **Menu**, and select *Services*, and *Service inbox*.

To access the *Service inbox* while browsing, press **Options** and select *Service inbox*. Scroll to the message you want, press **Options** and select

- *Retrieve* to activate the WAP browser and download the indicated content.
- *Details* to display detailed information on the service notification.
- *Delete* to delete the selected service notification.

To set the phone to receive service messages
Press **Menu**, and select *Services*, *Settings*, *Service inbox settings*, and *Service messages*. To set the phone to receive service messages, select *On*. If you select *Off*, the phone will not receive service messages.

The cache memory

Note: The information or services you have accessed are stored in the cache of your phone. A cache is a buffer memory, which is used to store data temporarily. If you have tried to access or have accessed confidential information requiring passwords (for example, your bank account), empty the cache of your phone after each use.

To empty the cache,

- while browsing, press **Options** and select *Clear the cache*, or
- in standby mode, press **Menu**, and select *Services*, and *Clear the cache*.

Authority certificates

For using some WAP services, such as banking services, you need security certificates. Using the certificates can help you improve the security of connections between your phone and a WAP gateway or WAP server, if the *Connection security* is set to *On*.

You can download authority certificate from a WAP page, if the WAP service supports the use of authority certificates. After the download, you can view the certificate and then save or delete it. If you save the certificate, it is added to the certificate list in the phone.

The phone indicates if the identity of the WAP server or WAP gateway cannot be verified, if the WAP server or WAP gateway certificate is not authentic or if you do not have the correct authority certificate in your phone.

Viewing the list of authority certificates

Press **Menu**, select *Services*, and *Settings*. Select *Authority certificates*.

See also *Security info* in Using the phone keys while browsing on page 81.

Security indicator

If the security indicator 🔒 is displayed during a WAP connection, the data transmission between the phone and the WAP gateway or WAP server (identified by the *IP address* in the *Edit active service settings*) is encrypted.

However, the security indicator does not indicate that the data transmission between the gateway and the content server (the location where the requested resource is stored) is secure. It is up to the service provider to secure the data transmission between the gateway and the content server.

Browser security

Security features are needed for some WAP services, such as banking or shopping services on a WAP site. For such connections you need security certificates and probably a security module which may be available on your SIM card. For more information, contact your service provider.

Security module

The security module provides security services for WAP related applications, and allows you to use digital signatures. The security module can contain user and/or authority certificates as well as private and public keys. The certificates are saved in the security module by the SIM card issuer or the service provider.

Press **Menu**, and select *Services*, *Settings* and *Security module settings*. Select

- *Security module details* to show the security module title, its status, manufacturer and serial number.

- *Change signing PIN* to select the signing PIN you want to change. Key in the current signing PIN code. Press **Change** and key in the new code twice.

See also Access codes on page 7.

Certificates

There are three kinds of certificates; server certificates, authority certificates and user certificates. Authority certificates can either be saved in the security module by the SIM card issuer or service provider, or they can be downloaded from a WAP page and be saved in the phone's memory or on the SIM card. User certificates are saved in the security module by the SIM card issuer or the service provider. Server certificates are not saved.

- Server certificates

  A server certificate is sent from the WAP server to the phone and its validity is checked using the authority certificates saved in the phone or the security module. The phone indicates if the identity of the WAP server or WAP gateway cannot be verified, if the WAP server or WAP gateway certificate is not authentic or if you do not have the correct authority certificate in your phone.

  The security indicator 🔒 is displayed during a WAP connection, if the data transmission between the phone and the WAP gateway or WAP server (identified by the *IP address* in the *Edit active service settings*) is encrypted.

  It is up to the service provider to secure the data transmission between the gateway and the content server.

- Authority certificates

  Authority certificates are used by some WAP services, such as banking services, for checking signatures of server certificates or other authority certificates.

- User certificates

  User certificates are issued to users by a Certifying Authority. They associate a user with a specific private key in a security module and are used for digital signature.

Digital signature

You can make digital signatures with your phone. The signature can be traced back to you via the user certificate that was used to perform the signature. Making the digital signature can be the same as signing your name to a paper bill, contract or other document.

For issuing a digital signature, select a link on a WAP page, for example, the title of the book you want to buy and its price. The text to sign, possibly including amount and date, for example, will be shown.

Check that the header text is *Read* and the digital signature icon 🔒 is shown.

> **Note:** If the digital signature icon does not appear, there is a security breach, and you should not enter any personal data such as your signing PIN.

To sign the text, read all of the text first and then you can select **Sign**.

> **Note:** The text may not fit within a single screen. Therefore, make sure to scroll through and read all of the text before signing.

Select the user certificate you want to use. Key in the signing PIN (see Access codes on page 7) and press **OK**. The digital signature icon will disappear, and the WAP service may display a confirmation of your purchase.

■ SIM services (Menu 13)

In addition to the functions available on the phone, your SIM card may provide additional services that you can access in menu 13. Menu 13 is shown only if it is supported by your SIM card. The name and contents of the menu depends on the available services.

> **Note:** For availability, rates and information on using SIM services, contact your SIM card vendor, e.g. network operator, service provider or other vendor.

You can set the phone to show you the confirmation messages sent between your phone and the network when you are using the SIM services by selecting the option *Yes* within the menu *Confirm SIM service actions*, menu 4-3-6.

Note that accessing these services may involve sending a text message (SMS) or making a phone call for which you may be charged.

8.   PC Connectivity

You can send and receive e-mails, and access the Internet when your phone is connected to a compatible PC via an IR connection or a data cable. You can use your phone with a variety of PC connectivity and data communications applications. With the PC suite you can, for example, send text and picture messages, synchronise contacts, calendar and to-do notes between your phone and the PC and manage your WAP bookmarks and connection sets.

You may find more information and downloadable files on the Nokia website, www.nokia.com/phones/productsupport/6100.

■ PC Suite

The PC Suite contains the following applications :

• **Nokia Application Installer** to install Java applications from the PC to the phone.

• **Nokia Image Converter** to make images usable for multimedia messages, wallpapers or operator logos and to transfer them to your phone.

• **Nokia Sound Converter** to edit polyphonic ringing tones to be compatible with your phone and to transfer them to your phone.

• **Nokia Content Copier** to copy data or back-up data from your phone to PC or to another Nokia phone.

• **Nokia PC WAP Manager** to edit and send your WAP bookmarks or update the connection sets to your phone.

• **Nokia Phone Editor** to send text messages and edit the phone book, profiles and message settings of your phone.

• **Nokia PC Sync** to synchronise the phone book, calendar and to-do notes between your phone and PC.

• **Nokia PC Graphics** to create and edit picture messages for previous compatible Nokia phone models, for example, Nokia 8310.

• **Nokia PC Composer** to create monophonic ringing tones for previous compatible Nokia phone models, for example, Nokia 8310.

- Nokia 6100 data modem drivers enable you to use your phone as a modem.
- **Nokia Modem Options** contains settings for HSCSD and GPRS connections.
- **Nokia Connection Manager** to select the connection type between the PC and the phone.

GPRS and HSCSD

With your phone you can use GPRS (General Packet Radio Service) and HSCSD (High Speed Circuit Switched Data) high-speed data services.

For availability and subscription to high-speed data services, contact your network operator or service provider.

Note that the use of HSCSD service consumes the phone's battery faster than normal voice or data calls. You may need to connect the phone to a charger for the duration of data transfer.

See GPRS modem settings on page 77.

■ Using data communication applications

For information on using a data communication application, refer to the documentation provided with it.

1. If you use IR connection:
    - Activate the IR connection in the phone, see Infrared on page 75. Make sure that the connection is active in your PC.

    If you use the cable DKU-5:
    - Connect the cable to the USB port on the back of your computer and to the connector on your phone.
2. Start using the data communications application on the computer.

Note that making or answering phone calls during a computer connection is not recommended as it might disrupt the operation.

For better performance during data calls, place the phone on a stationary surface with the keypad facing downward. Do not move the phone by holding it in your hand during a data call.

9. Battery statements

■ Charging and Discharging

Your phone is powered by a rechargeable battery.

Note that a new battery's full performance is achieved only after two or three complete charge and discharge cycles!

The battery can be charged and discharged hundreds of times but it will eventually wear out. When the operating time (talk-time and standby time) is noticeably shorter than normal, it is time to buy a new battery.

Use only batteries approved by the phone manufacturer and recharge your battery only with the chargers approved by the manufacturer. Unplug the charger when not in use. Do not leave the battery connected to a charger for longer than a week, since overcharging may shorten its lifetime. If left unused a fully charged battery will discharge itself over time.

Temperature extremes can affect the ability of your battery to charge.

Use the battery only for its intended purpose.

Never use any charger or battery which is damaged.

Do not short-circuit the battery. Accidental short-circuiting can occur when a metallic object (coin, clip or pen) causes direct connection of the + and - terminals of the battery (metal strips on the battery) for example when you carry a spare battery in your pocket or purse. Short-circuiting the terminals may damage the battery or the connecting object.

Leaving the battery in hot or cold places, such as in a closed car in summer or winter conditions, will reduce the capacity and lifetime of the battery. Always try to keep the battery between 15°C and 25°C (59°F and 77°F). A phone with a hot or cold battery may temporarily not work, even when the battery is fully charged. Batteries' performance is particularly limited in temperatures well below freezing.

Do not dispose of batteries in a fire !

Dispose of batteries according to local regulations (e.g. recycling). Do not dispose as household waste.

10. Technical Information

Weight....................................77 grams (6.4 ounces) with BL-4C battery

Battery....................................720 mAh Li-polymer Battery

Networks...............................Wireless networks GSM 900, 1800 and1900

Size (volume)........................3.69 cubic inches (60.3 cc)

Frequency range (Tx)

....GSM 900: 880 - 915 Mhz

....GSM 1800: 1710 - 1785 Mhz

....GSM1900: 1850 - 1910 Mhz

Frequency range (Rx)

....GSM 900: 925 - 960 Mhz

....GSM1800: - 1805 - 1865 Mhz

....GSM1900: - 1930 - 1990 Mhz

Tx output power..................2 W (Max)

Battery voltage ....3.7 v DC

Number of channels...........299

11. Patents

Manufactured or sold under one or more of the following US Patents.
Asterisk (*) indicates design patents pending.:

4558302	5557639	5870683	6029128	6201876
4868846	5581244	5887266	6038238	6219560
4969192	5625274	5889770	6043760	6240076
4969192	5640395	5892475	6047196	6240079
5001372	5664053	5898925	6049796	6249584
5045973	5669069	5907823	6055439	6266330
5061928	5677620	5914796	6060193	6282373
5101175	5692032	5915440	6069923	6289205
5212834	5699406	5917868	6081534	6292668
5230091	5699482	5920826	6084962	6295286
5233634	5699482	5926138	6088746	6310609
5241284	5701392	5926769	6094587	6324412
5241583	5701392	5930233	6097964	29137976*
5303404	5729534	5946651	6112099	29137979*
5311179	5729541	5953541	6115617	29137984*
5331638	5734683	5956625	6118775	29138033*
5335362	5754976	5956633	6122498	29138035*
5353328	5754976	5960389	6128322	29138036*
5384782	5760568	5963901	6128509	D406261
5390223	5782646	5966374	6138091	D410623
5396657	5794142	5966378	6144243	D410892
5400949	5802465	5970059	6144676	D412484
5416435	5805084	5987137	6151485	D417428
5442521	5805301	5991716	6151507	D425480
5444816	5818437	5991857	6163609	D426830
5446364	5827082	5999523	6164547	D445415
5479476	5835889	6005857	6167248	RE32580
5487084	5839101	6011554	6170073	
5493255	5844884	6011853	6185295	
5519885	5845219	6014573	6188909	
5526366	5857151	6026161	6195338	
5553125	5862178	6028567	6199035	

CARE AND MAINTENANCE

Your phone is a product of superior design and craftsmanship and should be treated with care. The suggestions below will help you to fulfil any warranty obligations and to enjoy this product for many years.

- Keep the phone and all its parts and accessories out of the reach of small children.
- Keep the phone dry. Precipitation, humidity and all types of liquids or moisture can contain minerals that will corrode electronic circuits.
- Do not use or store the phone in dusty, dirty areas. Its moving parts can be damaged.
- Do not store the phone in hot areas. High temperatures can shorten the life of electronic devices, damage batteries, and warp or melt certain plastics.
- Do not store the phone in cold areas. When it warms up (to its normal temperature), moisture can form inside, which may damage electronic circuit boards.
- Do not attempt to open the phone. Non-expert handling may damage it.
- Do not drop, knock or shake the phone. Rough handling can break internal circuit boards.
- Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the phone.
- Do not paint the phone. Paint can clog the moving parts and prevent proper operation.
- Use only the supplied or an approved replacement antenna. Unauthorised antennas, modifications or attachments could damage the phone and may violate regulations governing radio devices.

All of the above suggestions apply equally to your phone, battery, charger or any accessory. If any of them is not working properly, take it to your nearest qualified service facility. The personnel there will assist you and, if necessary, arrange for service.

IMPORTANT SAFETY INFORMATION

■ Traffic safety

Don't use a hand-held telephone while driving a vehicle. If you're using a hand-held phone, park the vehicle before conversing. Always secure the phone in its holder and don't place the phone on the passenger seat or where it can break loose in a collision or sudden stop.

■ Operating environment

Remember to follow any special regulations and always switch off your phone wherever forbidden, or when it may cause interference or danger. When connecting the phone or accessory to another device, read its user's guide for safety instructions. Don't connect incompatible products. As with other mobile radio transmitting equipment, users are advised to operate this equipment only in the normal operating position (held to your ear with the antenna pointing over your shoulder).

■ Pacemakers

Pacemaker manufacturers recommend a distance of 20 cm (6 inches) be maintained between a hand-held wireless phone and a pacemaker to avoid interference with the pacemaker. These recommendations are consistent with independent research and recommendations of Wireless Technology Research.

PERSONS WITH A PACEMAKER:

• Should always keep the phone more than 20 cm (6 inches) from their pacemaker when the phone is switched on.

• Should not carry the phone in a breast pocket.

• Should use the ear opposite the pacemaker to minimize the potential for interference.

• Should switch off the phone immediately if there is any reason to suspect that interference is taking place.

■ Hearing aids

Some digital wireless phones may interfere with hearing aids. In the event of such interference, consult your wireless provider.

Other medical devices

Operation of any radio transmitting equipment, including cellular phones, may interfere with the functionality of inadequately protected medical devices. Consult a physician or the manufacturer of the medical device to determine if it is adequately shielded from external RF energy, or if you have any questions.

Switch off your phone in health care facilities when regulations posted in these areas instruct you to do so. Hospitals or health care facilities may be using equipment that could be sensitive to RF energy.

■ Electronic devices

Most modern electronic equipment is shielded from radio frequency (RF) signals. However, certain electronic equipment may not be shielded against the RF signals emanating from your wireless phone.

■ Posted facilities

Switch your phone off in any facility where posted notices so require.

■ Potentially explosive atmospheres

Switch off your phone when in any area with a potentially explosive atmosphere and obey all signs and instructions. Sparks in such areas could cause an explosion or fire resulting in bodily injury or even death. Users are advised to switch off the phone when at a refuelling point (service station). Users are reminded of the need to observe restrictions regarding the use of radio equipment in fuel depots (fuel storage and distribution areas), chemical plants, or where blasting operations are in progress.

Areas with a potentially explosive atmosphere are often but not always clearly marked. They include below deck on boats, chemical transfer/ storage facilities, vehicles using liquefied petroleum gas (such as propane or butane), areas where the air contains chemicals or particles, such as grain, dust or metal powders, and any other area where you would be advised to turn off your vehicle engine.

■ Vehicles

Only qualified personnel should install or service the phone in a vehicle. Faulty installation or service may be dangerous and invalidate the warranty. RF signals may affect improperly installed or inadequately shielded electronic systems in motor vehicles (for example, electronic fuel injection systems, electronic anti-skid (anti-lock) braking systems, electronic speed control systems, air bag systems). Check with the manufacturer or its representative regarding your vehicle.

You should also consult the manufacturer of any equipment that has been added to your vehicle. Ensure all wireless phone equipment in your vehicle is mounted and operating properly. Don't carry or store flammable liquids, gases or explosive materials in the same compartment as the phone or its accessories. For vehicles equipped with an air bag, remember that an air bag inflates with great force. Don't place any objects in the area over the air bag or in the air bag deployment area. If in-vehicle wireless equipment is improperly installed and the air bag inflates, serious injury could result.

■ Aircraft

FCC regulations prohibit using your phone while in the air.Switch off your phone before boarding an aircraft. The use of wireless telephones in an aircraft may be dangerous to the operation of the aircraft, disrupt the wireless telephone network, and may be illegal. Failure to observe these instructions may lead to suspension or denial of telephone services to the offender, legal action, or both.

■ Emergency calls

Important: This phone, like any wireless phone, operates using radio signals, wireless, and landline networks as well as userprogrammed functions. Because of this, connections in all conditions cannot be guaranteed.Therefore you should never rely solely upon any wireless phone for essential communications (for example, medical emergencies).

MAKING AN EMERGENCY CALL

Note: Some networks may require that a valid SIM card be properly inserted in the phone. Official emergency numbers vary by location (for example, 911 or other official emergency number).

1. If the phone is not on, switch it on. Check for adequate signal strength.
2. Press ✆ as many times as needed (for example, to exit a call, to exit a menu, etc.) to clear the display and ready the phone for calls.
3. Enter the emergency number for your present location (for example, 911 or other official emergency number). Emergency numbers vary by location.
4. Press ➘ .

If certain features are in use, you may first need to turn those features off before you can make an emergency call. Consult this user guide and your local cellular service provider.When making an emergency call, remember to provide all information as accurately and clearly as possible. Remember that your wireless phone may be the only means of communication at the scene of an accident – don't cut off the call until given permission to do so.

■ CERTIFICATION INFORMATION (SAR)

THIS MODEL PHONE MEETS THE GOVERNMENT'S REQUIREMENTS FOR EXPOSURE TO RADIO WAVES.

Your wireless phone is a radio transmitter and receiver. It is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF) energy set by the Federal Communications Commission of the U.S. Government. These limits are part of comprehensive guidelines and establish permitted levels of RF energy for the general population. The guidelines are based on standards that were developed by independent scientific organizations through periodic and thorough evaluation of scientific studies. The standards include a substantial safety margin designed to assure the safety of all persons, regardless of age and health. The exposure standard for wireless mobile phones employs a unit of measurement known as the Specific Absorption Rate, or SAR. The SAR limit set by the FCC is 1.6W/kg.* Tests for SAR are conducted using standard operating positions accepted by the FCC with the phone transmitting at its highest certified power level in all tested frequency bands. Although the SAR is determined at the highest

certified power level, the actual SAR level of the phone while operating can be well below the maximum value. This is because the phone is designed to operate at multiple power levels so as to use only the power required to reach the network. In general, the closer you are to a wireless base station antenna, the lower the power output. Before a phone model is available for sale to the public, it must be tested and certified to the FCC that it does not exceed the limit established by the government-adopted requirement for safe exposure. The tests are performed in positions and locations (for example, at the ear and worn on the body) as required by the FCC for each model. The highest SAR value for this model phone as reported to the FCC when tested for use at the ear is 0.88 W/kg and when worn on the body, as described in this user guide, is 1.21 W/kg. (Body-worn measurements differ among phone models, depending upon available accessories and FCC requirements). While there may be differences between the SAR levels of various phones and at various positions, they all meet the government requirement. The FCC has granted an Equipment Authorization for this model phone with all reported SAR levels evaluated as in compliance with the FCC RF exposure guidelines. SAR information on this model phone is on file with the FCC and can be found under the Display Grant section of http://www.fcc.gov/oet/fccid after searching on FCC ID PPINPL-2 or PPINPL-2H. The FCC ID of your phone can be found on the type label under the battery.

For body worn operation, this phone has been tested and meets the FCC RF exposure guidelines for use with an accessory that contains no metal and that positions the handset a minimum of 5/8 inch (1.5 cm) from the body. Use of other accessories may not ensure compliance with FCC RF exposure guidelines. If you do not use a body worn accessory, and are not holding the phone at the ear, position the handset a minimum of 5/8 inch (1.5 cm) from your body when the phone is switched on.

*In the United States and Canada, the SAR limit for mobile phones used by the public is 1.6 watts/kilogram (W/kg) averaged over one gram of tissue. The standard incorporates a substantial margin of safety to give additional protection for the public and to account for any variations in measurements. SAR values may vary depending on national reporting equirements and the network band. For SAR information in other regions please look under product information at www.nokia.com. For body worn operation, this phone has been tested and meets the FCC RF exposure guidelines when used with the Nokia accessories supplied or designated for this product. Use of other accessories may not ensure compliance with FCC RF exposure guidelines.

APPENDIX

■ A message from the CTIA

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1250 Connecticut Avenue, NW Suite 800, Washington, DC 20036.
Phone: (202) 785-0081

Safety is the most important call you will ever make.
A Guide to Safe and Responsible Wireless Phone Use

Tens of millions of people in the u.s. today take advantage of the unique combination of convenience, safety and value delivered by the wireless telephone. Quite simply, the wireless phone gives people the powerful ability to communicate by voice--almost anywhere, anytime--with the boss, with a client, with the kids, with emergency personnel or even with the police. each year, americans make billions of calls from their wireless phones, and the numbers are rapidly growing.

But an important responsibility accompanies those benefits, one that every wireless phone user must uphold. When driving a car, driving is your first responsibility. A wireless phone can be an invaluable tool, but good judgment must be exercised at all times while driving a motor vehicle--whether on the phone or not.

The basic lessons are ones we all learned as teenagers. Driving requires alertness, caution and courtesy. It requires a heavy dose of basic common sense---keep your head up, keep your eyes on the road, check your mirrors frequently and watch out for other drivers. It requires obeying all traffic signs and signals and staying within the speed limit. It means using seatbelts and requiring other passengers to do the same.

But with wireless phone use, driving safely means a little more. This brochure is a call to wireless phone users everywhere to make safety their first priority when behind the wheel of a car. Wireless telecommunications is keeping us in touch, simplifying our lives, protecting us in emergencies and providing opportunities to help others in need.

When it comes to the use of wireless phones, safety is your most important call.

Wireless Phone "Safety Tips"

Below are safety tips to follow while driving and using a wireless phone which should be easy to remember.

1. Get to know your wireless phone and its features such as speed dial and redial. Carefully read your instruction manual and learn to take advantage of valuable features most phones offer, including automatic redial and memory. Also, work to memorize the phone keypad so you can use the speed dial function without taking your attention off the road.

2. When available, use a hands free device. A number of hands free wireless phone accessories are readily available today. Whether you choose an installed mounted device for your wireless phone or a speaker phone accessory, take advantage of these devices if available to you.

3. Position your wireless phone within easy reach. Make sure you place your wireless phone within easy reach and where you can grab it without removing your eyes from the road. If you get an incoming call at an inconvenient time, if possible, let your voice mail answer it for you.

4. Suspend conversations during hazardous driving conditions or situations. Let the person you are speaking with know you are driving; if necessary, suspend the call in heavy traffic or hazardous weather conditions. Rain, sleet, snow and ice can be hazardous, but so is heavy traffic. As a driver, your first responsibility is to pay attention to the road.

5. Do not take notes or look up phone numbers while driving. If you are reading an address book or business card, or writing a "to do" list while driving a car, you are not watching where you are going. It's common sense. Don't get caught in a dangerous situation because you are reading or writing and not paying attention to the road or nearby vehicles.

6. Dial sensibly and assess the traffic; if possible, place calls when you are not moving or before pulling into traffic. Try to plan your calls

before you begin your trip or attempt to coincide your calls with times you may be stopped at a stop sign, red light or otherwise stationary. But if you need to dial while driving, follow this simple tip--dial only a few numbers, check the road and your mirrors, then continue.

7. Do not engage in stressful or emotional conversations that may be distracting. Stressful or emotional conversations and driving do not mix--they are distracting and even dangerous when you are behind the wheel of a car. Make people you are talking with aware you are driving and if necessary, suspend conversations which have the potential to divert your attention from the road.

8. Use your wireless phone to call for help. Your wireless phone is one of the greatest tools you can own to protect yourself and your family in dangerous situations--with your phone at your side, help is only three numbers away. Dial 9-1-1 or other local emergency number in the case of fire, traffic accident, road hazard or medical emergency. Remember, it is a free call on your wireless phone!

9. Use your wireless phone to help others in emergencies. Your wireless phone provides you a perfect opportunity to be a "Good Samaritan" in your community. If you see an auto accident, crime in progress or other serious emergency where lives are in danger, call 9-1-1 or other local emergency number, as you would want others to do for you.

10. Call roadside assistance or a special wireless non-emergency assistance number when necessary. Certain situations you encounter while driving may require attention, but are not urgent enough to merit a call for emergency services. But you still can use your wireless phone to lend a hand. If you see a broken-down vehicle posing no serious hazard, a broken traffic signal, a minor traffic accident where no one appears injured or a vehicle you know to be stolen, call roadside assistance or other special non-emergency wireless number.

Careless, distracted individuals and people driving irresponsibly represent a hazard to everyone on the road. Since 1984, the Cellular Telecommunications Industry Association and the wireless industry have conducted educational outreach to inform wireless phone users of

their responsibilities as safe drivers and good citizens. As we approach a new century, more and more of us will take advantage of the benefits of wireless telephones. And, as we take to the roads, we all have a responsibility to drive safely.

The wireless industry reminds you to use your phone safely when driving.

For more information, please call 1-888-901-SAFE.

For updates: http://www.wow-com.com/consumer/issues/driving/articles.cfm?ID=85

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Connecticut Avenue, NW Suite 800, Washington, DC 20036. Phone: (202) 785-0081

■ A message from the U.S. Food and Drug Administration

1. Do wireless phones pose a health hazard?

The available scientific evidence does not show that any health problems are associated with using wireless phones. There is no proof, however, that wireless phones are absolutely safe. Wireless phones emit low levels of radiofrequency energy (RF) in the microwave range while being used. They also emit very low levels of RF when in the stand-by mode. Whereas high levels of RF can produce health effects (by heating tissue), exposure to low level RF that does not produce heating effects causes no known adverse health effects. Many studies of low level RF exposures have not found any biological effects. Some studies have suggested that some biological effects may occur, but such findings have not been confirmed by additional research. In some cases, other researchers have had difficulty in reproducing those studies, or in determining the reasons for inconsistent results.

2. What is FDA's role concerning the safety of wireless phones?

Under the law, FDA does not review the safety of radiation-emitting consumer products such as wireless phones before they can be sold, as it does with new drugs or medical devices. However, the agency has

authority to take action if wireless phones are shown to emit radiofrequency energy (RF) at a level that is hazardous to the user. In such a case, FDA could require the manufacturers of wireless phones to notify users of the health hazard and to repair, replace or recall the phones so that the hazard no longer exists.

Although the existing scientific data do not justify FDA regulatory actions, FDA has urged the wireless phone industry to take a number of steps, including the following:

• Support needed research into possible biological effects of RF of the type emitted by wireless phones;

• Design wireless phones in a way that minimizes any RF exposure to the user that is not necessary for device function; and

• Cooperate in providing users of wireless phones with the best possible information on possible effects of wireless phone use on human health.

FDA belongs to an interagency working group of the federal agencies that have responsibility for different aspects of RF safety to ensure coordinated efforts at the federal level. The following agencies belong to this working group:

• National Institute for Occupational Safety and Health

• Environmental Protection Agency

• Federal Communications Commission

• Occupational Safety and Health Administration

• National Telecommunications and Information Administration

The National Institutes of Health participates in some interagency working group activities, as well.

FDA shares regulatory responsibilities for wireless phones with the Federal Communications Commission (FCC). All phones that are sold in the United States must comply with FCC safety guidelines that limit RF exposure. FCC relies on FDA and other health agencies for safety questions about wireless phones.

FCC also regulates the base stations that the wireless phone networks rely upon. While these base stations operate at higher power than do the wireless phones themselves, the RF exposures that people get from these base stations are typically thousands of times lower than those

they can get from wireless phones. Base stations are thus not the subject of the safety questions discussed in this document.

3. What kinds of phones are the subject of this update?

The term wireless phone refers here to hand-held wireless phones with built-in antennas, often called cell mobile or PCS phones. These types of wireless phones can expose the user to measurable radiofrequency energy (RF) because of the short distance between the phone and the user's head. These RF exposures are limited by Federal Communications Commission safety guidelines that were developed with the advice of FDA and other federal health and safety agencies. When the phone is located at greater distances from the user, the exposure to RF is drastically lower because a person's RF exposure decreases rapidly with increasing distance from the source. The so-called cordless phones; which have a base unit connected to the telephone wiring in a house, typically operate at far lower power levels, and thus produce RF exposures far below the FCC safety limits.

4. What are the results of the research done already?

The research done thus far has produced conflicting results, and many studies have suffered from flaws in their research methods. Animal experiments investigating the effects of radiofrequency energy (RF) exposures characteristic of wireless phones have yielded conflicting results that often cannot be repeated in other laboratories. A few animal studies, however, have suggested that low levels of RF could accelerate the development of cancer in laboratory animals. However, many of the studies that showed increased tumor development used animals that had been genetically engineered or treated with cancer-causing chemicals so as to be pre-disposed to develop cancer in the absence of RF exposure. Other studies exposed the animals to RF for up to 22 hours per day. These conditions are not similar to the conditions under which people use wireless phones, so we don't know with certainty what the results of such studies mean for human health.

Three large epidemiology studies have been published since December 2000. Between them, the studies investigated any possible association between the use of wireless phones and primary brain cancer, glioma, meningioma, or acoustic neuroma, tumors of the brain or salivary gland, leukemia, or other cancers. None of the studies demonstrated the

existence of any harmful health effects from wireless phone RF exposures. However, none of the studies can answer questions about long-term exposures, since the average period of phone use in these studies was around three years.

5. What research is needed to decide whether RF exposure from wireless phones poses a health risk?

A combination of laboratory studies and epidemiological studies of people actually using wireless phones would provide some of the data that are needed. Lifetime animal exposure studies could be completed in a few years. However, very large numbers of animals would be needed to provide reliable proof of a cancer promoting effect if one exists. Epidemiological studies can provide data that is directly applicable to human populations, but 10 or more years follow-up may be needed to provide answers about some health effects, such as cancer. This is because the interval between the time of exposure to a cancer-causing agent and the time tumors develop - if they do - may be many, many years. The interpretation of epidemiological studies is hampered by difficulties in measuring actual RF exposure during day-to-day use of wireless phones. Many factors affect this measurement, such as the angle at which the phone is held, or which model of phone is used.

6. What is FDA doing to find out more about the possible health effects of wireless phone RF?

FDA is working with the U.S. National Toxicology Program and with groups of investigators around the world to ensure that high priority animal studies are conducted to address important questions about the effects of exposure to radiofrequency energy (RF). FDA has been a leading participant in the World Health Organization International Electromagnetic Fields (EMF) Project since its inception in 1996. An influential result of this work has been the development of a detailed agenda of research needs that has driven the establishment of new research programs around the world. The Project has also helped develop a series of public information documents on EMF issues.

FDA and the Cellular Telecommunications & Internet Association (CTIA) have a formal Cooperative Research and Development Agreement (CRADA) to do research on wireless phone safety. FDA provides the scientific oversight, obtaining input from experts in government,

industry, and academic organizations. CTIA-funded research is conducted through contracts to independent investigators. The initial research will include both laboratory studies and studies of wireless phone users. The CRADA will also include a broad assessment of additional research needs in the context of the latest research developments around the world.

7. How can I find out how much radiofrequency energy exposure I can get by using my wireless phone?

All phones sold in the United States must comply with Federal Communications Commission (FCC) guidelines that limit radiofrequency energy (RF) exposures. FCC established these guidelines in consultation with FDA and the other federal health and safety agencies. The FCC limit for RF exposure from wireless telephones is set at a Specific Absorption Rate (SAR) of 1.6 watts per kilogram (1.6 W/kg). The FCC limit is consistent with the safety standards developed by the Institute of Electrical and Electronic Engineering (IEEE) and the National Council on Radiation Protection and Measurement. The exposure limit takes into consideration the body's ability to remove heat from the tissues that absorb energy from the wireless phone and is set well below levels known to have effects.

Manufacturers of wireless phones must report the RF exposure level for each model of phone to the FCC. The FCC website (http://www.fcc.gov/oet/rfsafety) gives directions for locating the FCC identification number on your phone so you can find your phone's RF exposure level in the online listing.

8. What has FDA done to measure the radiofrequency energy coming from wireless phones?

The Institute of Electrical and Electronic Engineers (IEEE) is developing a technical standard for measuring the radiofrequency energy (RF) exposure from wireless phones and other wireless handsets with the participation and leadership of FDA scientists and engineers. The standard, Recommended Practice for Determining the Spatial-Peak Specific Absorption Rate (SAR) in the Human Body Due to Wireless Communications Devices: Experimental Techniques, sets forth the first consistent test methodology for measuring the rate at which RF is deposited in the heads of wireless phone users. The test method uses a

tissue-simulating model of the human head. Standardized SAR test methodology is expected to greatly improve the consistency of measurements made at different laboratories on the same phone. SAR is the measurement of the amount of energy absorbed in tissue, either by the whole body or a small part of the body. It is measured in watts/kg (or milliwatts/g) of matter. This measurement is used to determine whether a wireless phone complies with safety guidelines.

9. What steps can I take to reduce my exposure to radiofrequency energy from my wireless phone?

If there is a risk from these products--and at this point we do not know that there is--it is probably very small. But if you are concerned about avoiding even potential risks, you can take a few simple steps to minimize your exposure to radiofrequency energy (RF). Since time is a key factor in how much exposure a person receives, reducing the amount of time spent using a wireless phone will reduce RF exposure.

If you must conduct extended conversations by wireless phone every day, you could place more distance between your body and the source of the RF, since the exposure level drops off dramatically with distance. For example, you could use a headset and carry the wireless phone away from your body or use a wireless phone connected to a remote antenna. Again, the scientific data do not demonstrate that wireless phones are harmful. But if you are concerned about the RF exposure from these products, you can use measures like those described above to reduce your RF exposure from wireless phone use.

10. What about children using wireless phones?

The scientific evidence does not show a danger to users of wireless phones, including children and teenagers. If you want to take steps to lower exposure to radiofrequency energy (RF), the measures described above would apply to children and teenagers using wireless phones. Reducing the time of wireless phone use and increasing the distance between the user and the RF source will reduce RF exposure.Some groups sponsored by other national governments have advised that children be discouraged from using wireless phones at all. For example, the government in the United Kingdom distributed leaflets containing such a recommendation in December 2000. They noted that no evidence exists that using a wireless phone causes brain tumors or other ill

effects. Their recommendation to limit wireless phone use by children was strictly precautionary; it was not based on scientific evidence that any health hazard exists.

11. What about wireless phone interference with medical equipment?

Radiofrequency energy (RF) from wireless phones can interact with some electronic devices. For this reason, FDA helped develop a detailed test method to measure electromagnetic interference (EMI) of implanted cardiac pacemakers and defibrillators from wireless telephones. This test method is now part of a standard sponsored by the Association for the Advancement of Medical instrumentation (AAMI). The final draft, a joint effort by FDA, medical device manufacturers, and many other groups, was completed in late 2000. This standard will allow manufacturers to ensure that cardiac pacemakers and defibrillators are safe from wireless phone EMI. FDA has tested hearing aids for interference from handheld wireless phones and helped develop a voluntary standard sponsored by the Institute of Electrical and Electronic Engineers (IEEE). This standard specifies test methods and performance requirements for hearing aids and wireless phones so that no interference occurs when a person uses a compatible phone and a accompanied hearing aid at the same time. This standard was approved by the IEEE in 2000.

FDA continues to monitor the use of wireless phones for possible interactions with other medical devices. Should harmful interference be found to occur, FDA will conduct testing to assess the interference and work to resolve the problem.

12. Where can I find additional information?

For additional information, please refer to the following resources:

FDA web page on wireless phones
http://www.fda.gov/cdrh/phones/index.html

Federal Communications Commission (FCC) RF Safety Program
http://www.fcc.gov/oet/rfsafety

International Commission on Non-Ionizing Radiation Protection
http://www.icnirp.de

World Health Organization (WHO) International EMF Project
http://www.who.int/emf

National Radiological Protection Board (UK)
http://www.nrpb.org.uk/

July 18, 2001 For updates: http://www.fda.gov/cdrh/phones