12 Music (Menu 6)

You can listen to music or to the FM stereo radio with your phone. You can also record music from the radio or an external music source. You can record or transfer music files of up to 2 hours of near CD-quality music to a 64 MB memory card.

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.

Transferring music files from a PC: See Nokia Audio Manager.

Using the Music key: You can quickly turn on and off, and switch between the music functions with the special Music key on the top of the phone. Press to select *Music player*, *Radio* or *Music off*.

- A quick press of the music key switches between the *Music player*, *Radio*, and *Music off.*
- A long press of the music key selects and starts the selected music function.

Music player

With the *Music player* you can listen to the music tracks stored on the memory card in your phone.

You can listen to music using the internal loudspeaker, or the headset HDS-3H (stereo) or HDB-4 (mono).

Warning: When using a headset, your ability to hear outside sounds is reduced. DO NOT USE A HEADSET WHERE IT CAN ENDANGER YOUR SAFETY.

To turn on the *Music player*, press **Menu**, and select *Music* and *Music player*. Details of the first track on the track list are shown.

Note: You must have a memory card containing audio files inserted in the phone to use the *Music player*.

When the *Music player* is on, press **Options** and select:

- *Play* to play the current track on the track list, or *Stop* to stop the playback.
- *Track list* to view and modify the track list. See Track list.
- *Play options*: Select *Random* to play the tracks on the track list in random order. Select *Continuous* to play the current track or the whole track list through repeatedly.
- *Music downloads* to connect to the WAP address attached to the current track. This function is only available when a WAP address is attached to the current track.
- *Memory status* to check the amount of free and used memory on the memory card.

Tip: When the phone is in standby mode and the *Music player* is active in the background, you can control the player by simultaneously pressing the Music key and the appropriate function on the 4-way scroll key.

To adjust the volume level, use the Volume key on the top of the phone.

Warning: Listening to music at a high volume may damage your hearing.

Listening to music

To rewind the current track, press and hold ⏮.

To fast forward the current track, press and hold ⏭.

To skip to the next or previous track on the track list, quickly press ⏭ or ⏮, respectively.

Tip: In standby mode, you can skip to the next or previous track by simultaneously pressing the Music key and ⏭ or ⏮, respectively.

To select a track from the track list, press **Options** and select *Track list*. Scroll to the track you want, press **Options** and select *Play*.

To stop the playback, press ■ .

To listen to music using the loudspeaker (or headset), press **Options** and select *Loudspeaker* (or *Headset*).

Tip: When using the headset HDB-4 and HDS-3H, press the headset key quickly to skip to the next track on the track list. Press and hold the headset key to turn off the *Music player*.

You can make a call or answer an incoming call while listening to music. During a call, the playback is stopped.

Track list

You can view and play the music tracks on the track list. You can also add tracks to the track list, change the playback order of tracks, rename tracks and delete tracks from the track list.

When the *Music player* is on, press **Options** and select *Track list*.

Scroll to the desired track. Press **Options** and the following options are available:

- *Play* to play the selected track.
- *Add track* to add a track to the track list. The *Gallery* folder list is shown. Select a folder to open it and scroll to the track you want to add. Press **Options** and select *Add to track list*.
- *Move track within track list* to change the location of the selected track on the track list. Scroll to the new location and press **Select**.
- *Rename* to edit the track title and artist name of the selected track. Key in the new track title and press **OK**. Key in the new artist name and press **OK**.
- *Remove track* to delete the track from the track list.

Radio

To listen to the radio on your phone connect the headset HDS-3 (stereo) or HDB-4 (mono) to the phone. The headset cable functions as the antenna of the radio, so let it hang freely.

To adjust the volume level, use the Volume key on the top of the phone.

Warning: Listening to music at a high volume may damage your hearing.

Note that the quality of the radio broadcast depends on the radio station's coverage in that particular area.

1 To turn on the radio, press **Menu**, and select *Music* and *Radio*. On the display are

- Station (Will Menu change to localize Channel to Station?????) location number and the name of the radio station.
- Frequency of the radio station.

Tip: To quickly turn on the radio, press the Music key on the top of the phone and select *Radio*.

2 If you have already saved radio stations, you can scroll to the station you would like to listen to, or select a radio station location 1 to 20 by pressing the corresponding number key.

Tip: When using the headset HDB-4 and HDS-3, press the headset key to scroll to the desired saved radio station. When the phone is in standby mode and the radio is on in the background, you can scroll to the next or previously saved radio station by pressing ⏭ or ⏮, respectively.

3 When the radio is on, press **Options** and select *Switch off* to turn off the radio.

Tip: To quickly turn off the radio, press and hold .

Tune a radio station

When the radio is on, press and hold ⏭ or ⏮ to start the station search. Searching stops when a station is found. To save the station, press **Options**, and select *Save station*. Key in the name of the station and press **OK**. Select the location where you want to save the station.

Tip: To quickly save the station in a location 1 to 20, press and hold the corresponding number key, then key in the name of the station and press **OK**.

Use the radio

When the radio is on, press **Options** and select:

- *Turn off* to turn off the radio.
- *Save station* to save the radio station you have found. Key in the name of the station and press **OK**. Select the location where you want to save the station. Up to 20 radio stations can be saved.
- *Automatic tuning*. Briefly press either ⏭ or ⏮ on the scroll key to start the station search upwards or downwards. The search stops when a station has been found, press **OK**. To save the station, see *Save station* above.
- *Manual tuning*. Briefly press either ⏭ or ⏮ on the scroll key to move the station search 0.1 MHz upwards or downwards or press and hold down the key to quickly search upwards or downwards for a station. To save the station you have found, press **OK** and see *Save station* above.

  To quickly select *Manual tuning*, press # G when in the *Radio* menu.
- *Set frequency*. If you know the frequency of the radio station you would like to listen to (between 87.5 MHz and 108.0 MHz), key it in and press **OK**. To save the station, see *Save station* above.

  To quickly select *Set frequency*, press * B when in the *Radio* menu.
- *Delete station*. To delete a saved station, scroll to it, press **Delete**, and **OK**.

- *Rename*. Key in a new name for the saved station and press **OK**.
- *Loudspeaker* (or *Headset*) to listen to the radio using the loudspeaker (or headset). Keep the headset connected to the phone. The lead of the headset functions as the antenna of the radio.
- *Mono output* (or *Stereo output*) to listen to the radio in mono (or in stereo).

You can normally make a call or answer an incoming call while listening to the radio. The volume of the radio is muted. When you end the call, the radio will automatically be turned on.

When an application using a GPRS or HSCSD connection is sending or receiving data, it may interfere with the radio.

Recorder

You can record music directly from the radio in your phone, or you can connect your phone to a compatible external audio source, for example, a CD-player and record your favorite music. Your recordings are saved to the memory card in your phone.

Note: Do not use this feature illegally! Music can be protected by copyright. The recording of such music and transferring of music files is permitted for your personal use only. It is illegal to copy such music tracks for the purpose of selling or distributing them.

To turn on the *Recorder*, press **Menu**, and select *Music* and *Recorder*.

Record

To record from the radio, turn on the radio, press **Menu** and select *Music* and *Recorder*. To start recording, select *Record*.

To record from external audio equipment, connect the source device to the line-in connector of the phone using the ADE-2 audio cable.

When *Device connected - start recording?* is displayed:

- Press **Yes** to start recording.
- Press **No** to just listen to the music played by the connected device. You can start recording by selecting *Recorder* and *Record* from the *Music* menu.

  To stop recording, press **Stop**. To save the recording, press **Yes** when a confirmation note is displayed. To delete the recording, press **No**.
- If you select to save the recording, key in the track title and press **OK**. Key in the artist name and press **OK**.

You cannot make phone calls while recording. To make a call, first cancel the recording.

If you receive a phone call while recording music, the recording continues unless you answer the phone. If you answer the phone, the recording is stopped and you can choose to save or dismiss the interrupted recording.

Recording list

To view a list of your recordings, select *Recording list*.

While the recording list is displayed, you can press **Options** and select

- *Play* to play the selected recording.
- *Delete* to delete the selected recording.
- *Rename* to change the track title and artist name of the selected recording.

Music settings

You can select a preset sound style of the music tracks you play to automatically set equalizer settings, or define your own sound style with customized equalizer settings. You can also adjust the balance, and turn the loudness and stereo widening effects on and off. This may enhance playback quality and audibility. You can also reset the music settings to their default values.

The music settings apply to the *Music player* and the radio. During recording, the equalizer and balance settings, and the loudness and stereo widening effects are turned off.

To access the music settings, press **Menu**, and select *Settings* and *Music settings*.

To select a preset sound style with automatic equalizer settings or define your own sound style with customized settings, select *Equalizer*.

- To select a preset sound style, scroll to the style you want and press **OK**. The available preset sound styles are *Normal*, *Rock*, *Pop* and *R'n'B*.
- To define your own equalizer settings, select *My set*. Select the frequency slider bar to adjust with ■ and ▸ . Adjust the position of the slider with ⏮ and ⏭. Press **OK** to save the settings.

To adjust the balance, select *Balance*. Move the slider to the left or right by pressing ⏮ or ⏭, respectively. Press **Select** to save the balance setting.

To turn the loudness effect on or off, select *Loudness* and then *On* or *Off*.

To turn the stereo widening effect on or off, select *Stereo widening* and then *On* or *Off*.

To reset the music settings to their default values, select *Restore default music settings*.

Nokia Audio Manager

With Nokia Audio Manager, you can select digital music tracks on a compatible PC and transfer them to a memory card in your phone. The Nokia Audio Manager software also allows you to create M3U playlists on the PC, with references to either MP3 tracks or tracks saved from CDs.

In order for the PC to access the memory card in the phone, you must connect your phone to the PC using the supplied DKU-2 USB data cable. See Data cables. The contents of the memory card can be then be displayed in the Mobile Device area of the Music Studio window of the Nokia Audio Manager. The music tracks on the playlists can be, for example, transferred from your CDs.

When using Nokia Audio Manager, you only need to connect your phone to the PC; everything else is done on the PC.

Note: Do not use this feature illegally! Music can be protected by copyright. The recording of such music and transferring of music files is permitted for your personal use only. It is illegal to copy such music tracks for the purpose of selling or distributing them.

System requirements

To install and use Nokia Audio Manager, you need the following:

- An Intel compatible PC running Windows 98, Windows ME, Windows 2000 or Windows XP operating system.

  Note that the software is not supported on a PC which has had its system upgraded from Windows 95 or 3.1 to Windows 98.
- Pentium MMC 266 MHz CPU (Pentium 300 MHz recommended),
- At least 35 MB of free disc space. Additional space for music tracks,
- Minimum of 48 MB memory space recommended, 64 MB suggested for Windows 2000,
- Display with 800 x 600 pixels and more than 65536 colors, High Color setting,
- Browser that is version 4.0 or higher of either Microsoft Internet Explorer or Netscape Navigator,
- USB port,
- CD ROM drive.

Installing Nokia Audio Manager

Note: Do not connect the USB cable to your PC before you have installed the Nokia Audio Manager PC software from the CD-ROM in the sales package.

1. Start Windows.
2. Insert the CD-ROM supplied in the sales package in the CD-ROM drive of your PC.
3. If the CD-ROM does not launch itself automatically, open Windows

Explorer and select the CD-ROM drive where you inserted the CD-ROM. Right-click the Nokia Audio Manager icon and select Autorun.

4 Follow the installation instructions that appear on the display of the computer to successfully complete the installation.

5 When the installation is complete, Nokia Audio Manager folder is added to your Program files.

Note: You must restart the computer after installation of the Nokia Audio Manager software.

Saving CD tracks with Nokia Audio Manager

1 On the PC, open Nokia Audio Manager.

2 Insert a music CD in the CD drive of your PC and click on the CD Player tab. By default, all track information should be displayed. If not, click on the Load CD button.

3 To save tracks, select the tracks and click on the Save tracks button.

Note: Do not remove the CD until the save operation is complete. A progress bar will indicate approximately how long it will take to save the tracks.

4 To transfer the saved tracks to the Music Studio, click the + Add button, select the required track(s) and click *Open*.

5 You can now transfer the tracks in the Music Studio to the memory card in your phone.

Transferring music files to your phone

1 Save the tracks and playlists in the Music Studio of the Nokia Audio Manager. See the previous section or the Audio Manager Help for further instructions.

Note: Check that the PC and phone are connected with the supplied USB cable.

1 On the PC, open Nokia Audio Manager.

2 Click on the Nokia N-Gage game deck icon in the mobile device area

of the Music Studio.

3 Select the tracks or playlists that you want to transfer to your phone: highlight the desired tracks or playlists by clicking on them.

4 Click Transfer to device.

If you selected more music than can fit on the phone memory, you get an error message. Deselect some of your selected music tracks until the selection fits.

Other features

Music track types supported

The Nokia Audio Manager supports MP3 music tracks and M3U playlists. Playlists can be created in the Music Studio. When a playlist is selected for transfer to the phone, only the tracks named in the playlist are transferred. Tracks created by the CD Player have a file extension .AAC. These files can be played on the PC by the Nokia Audio Manager and transferred to the phone.

Editing fields in tracks on the PC

When tracks or playlists are displayed in the Music Studio, it is possible to edit track and artist information. See the Nokia Audio Manager help for further details.

Transfer music files using Windows Explorer

After you have installed the Nokia Audio manager, it is possible to use Windows Explorer to transfer MP3 or .AAC music tracks to your phone.

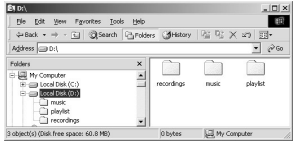
MP3 files

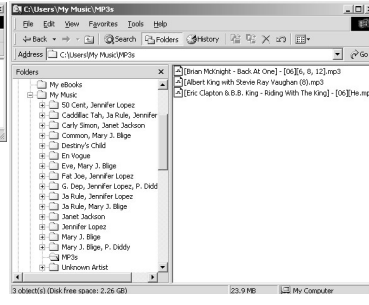
1 Connect your PC and your phone with the supplied USB cable.

Data enhancement connected is displayed on your phone.

2 Open Windows Explorer and display Local disk (D:). Drive D is created when you first connect your phone and PC with the USB cable. Three folders are shown: music, playlist, and recordings. Click on the folders to display a window that shows the contents of the folder on the phone's memory card.

3 Open a second instance of Windows Explorer and display the contents of the folder on your PC where you have MP3 files stored.





4 Select the MP3 files on your PC that you wish to transfer to the phone. Drag and drop the files from the second window into the first window and place in the music folder. The files are transferred to the phone and can be played by the *Music player*.

If you selected more music than can fit on the phone memory, you get an error note. Deselect some of your selected music tracks until the selection fits.

5 Disconnect the USB cable by double-clicking the green arrow on the taskbar at the bottom of your PC screen. A window pops up that shows **Unplug or Eject Hardware**. Click on USB Device in the Hardware devices window. A popup window shows **Stop a Hardware device.** Highlight *USB device* and click **OK**. The popup window Safe to Remove Hardware is shown with the message "The 'USB Device' device can now be safely removed from the system. Click **OK**.

ACC files

Your phone also supports advanced audio coding (ACC) files. These are recorded from a CD player, the FM radio in your phone, or other external music devices.

1 Connect the ADE-2 recording cable to your phone and to the external music device, such as a CD-Player.

Your phone displays *Device connected, start recording?*

2 Select the track from the CD player that you want to record. If you are using a CD player on your PC, select the track from a list on the CD player on your desktop.

3 Begin playing the selected track and select **Yes** on your phone display to start recording. Begin the play and record at the same time to make sure you record the song from the beginning.

Recording via audio cable is shown on your phone's display. Press **Stop** when the song ends on the CD player.

4 The phone display shows *Recorder stopped* and then *Save* and *Discard*. Select **Save**. Then enter the *Track name:* and press **OK**. Enter the *Artist:*

name and press **OK**. *Saving recording* and *Recording saved* are displayed. You can then see the track name and artist in the *Recording list* on the phone display.

5 Select **Options** to *Play*, *Delete*, or *Rename*.

6 To record another song from the CD player, select *Back* twice to return to the *Record* option. Repeat steps 3, 4, and 5.

Record from a radio

1 Connect the ADE-2 recording cable to the headphone connector on the radio and to your phone. Repeat steps 3, 4, and 5 from **ACC files** steps.

2 To name the recording go to **Menu** and scroll to *Music* and select. Select *Recorder*, then *Recording list*. The recording is saved and shown as *Track list - Artist.*

3 Select **Options**, then scroll to and select *Rename*. In the *New name:* window, press **Clear** until the window is empty. Then enter the name and artist and press **OK**. The phone displays *File renamed*, and the new name appears in *Recording list*.

Record from the FM radio in your phone

You can record music from the FM radio in your phone while listening with the headset or with the Loudspeaker.

1 Go to **Menu**, scroll to and select *Music*. Scroll to *Recorder*, and select *Record*.

2 Repeat steps 3, 4, and 5 from **ACC files** steps.

3 Rename the recording by repeating steps 2 and 3 in **Record from a radio**.

Create a playlist

13 Organizer (Menu 8)

Alarm clock

The alarm clock uses the time format (24-hour or am/pm) set for the clock. The alarm clock works even when the phone is switched off.

Press **Menu**, and select *Organizer* and *Alarm clock*. Key in the alarm time and press **OK**. Select am or pm if you are using this time format. The start screen displays when an alarm is set.

When you have already set an alarm, you can change it by selecting *On.* Then key in the new alarm time.

When the alarm goes off, your phone sounds an alert tone and flash *Alarm!* with the current time on start screen.

Press **Stop** to stop the alarm. If you let the alarm sound without stopping it, or if you press **Snooze**, the alarm will go off again in ten minutes.

When your phone is switched off, and you have an alarm set, the phone switches on at the time of the alarm. 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 make and receive calls.

Note: Do not press **Yes** 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.

The calendar uses shared memory, see Shared memory.

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

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 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 Write text.

Press **Menu**, and select *Organizer* 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 press **Options** and search for the name in **Contacts**. Press **Options** and select *Save*. Key in the location for the meeting and press **Options** and select *Save*. 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, press **Options** to search for the name and number in **Contacts**. 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** and search for it in **Contacts**, 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.

The to-do list uses shared memory, see Shared memory.

Press **Menu**, and select *Organizer* 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, no more characters are accepted. Press **Options** and select *Save*. Select

the priority for the note, *High*, *Medium*, or *Low*.

- You can set, delete and edit the deadline and an alarm for a note, and you can 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.

14 Gallery (Menu 7)

You can save images and ringing tones, for example, that have been received in multimedia messages in the folders of the gallery. See Read and reply to a multimedia message.

The gallery uses shared memory. See Shared memory.

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

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

Other available options are:

- *Add folder* to add a new folder. Key in a name for the folder and press **OK**.
- *Delete folder* to select the folder you want to delete. You cannot delete the original folders on the phone.
- *Rename folder* to select the folder you want to rename. You cannot rename the original folders on the phone.
- *Gallery downloads* 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 .

  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 . 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. *Graphics* and *Tones* are the original folders in the phone.

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

Tones

- *Open* to open the selected file.
- *Set as ring tone* to set the selected file as the ringing tone.
- *Details* to see the details of the file, for example the size of the file.
- *Sort* to sort the files and folders by date, type, name or size.

Graphics

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

15 Games (Menu 9)

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 .

Tip: If a game uses the whole display area, no selection key names are displayed. Press the selection key or to show the options list. Then select one of the options or press **Back** to continue with the game.

The game keys on your keyboard are shown in a darker gray color than the other keys. The functions of the game keys are listed in the following table.

Game keys and functions		
E **Move left**	R **Move up**	T **Move right**
D **Move left**	F **Move down**	G **Move right**
Y **Fire**		
H **Game action key = Tasks, Jump, XXXX**		

Other options available for a game or game set

Options for games, see Other options available for an application or application set.

Game downloads

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

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. Try again to connect to the WAP page.

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

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

Memory

To view free memory available for game and application installations, press **Menu**, and select *Games* and *Memory*. See also Memory status for applications .

The games use shared memory. See Shared memory.

Settings

Press **Menu**, and select *Games* and *Settings* to set sounds, lights and shakes for the game.

16 Applications (Menu10)

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*. 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*.

Tip: If an application uses the whole display area, no selection key names are displayed. Press the selection key or to show the options list. Then select one of the options or press **Back** to continue with the application.

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 or www.softwaremarket.nokia.com/3300.

- *Web access* to restrict the application for accessing the system. 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.

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

- *Missing text* to provide further information or additional data for the application from an Internet page. This feature must 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.

- 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. 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.
- Use the game download functionality, see Game services.

Note: 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.

Memory status for applications

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

The applications use shared memory. See Shared memory.

17 Extras (Menu 11)

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.

Backup/Restore

You can back up and restore your personal data in your phone to and from a memory card. Backing up your personal data regularly is recommended.

You can back up and restore **Calendar**, **Contacts**, **Games, Applications**, **Multimedia msg**. (Multimedia messages), **Text messages,** and **Bookmarks**.

Note: You must have a memory card inserted in the phone to use this function. You must also have free memory on the memory card to back up data.

Back up data to a memory card

1 Press **Menu** and select *Extras*, *Backup/Restore* and *Backup*.

2 Scroll to the data you want to back up and press **Mark** to select it. Repeat if necessary. When you have marked all the data you want to back up, press **Done**.

3 Select the folder where you want to save the backup when *Save to folder Backup?* is displayed. Backup is the default backup folder.

- Press **Yes** to save the backup to the default folder.
- Press **No** and select *Existing folder* to save the backup to another folder on the memory card. Select the folder you want and press **Yes**.

- Press **No** and select *New folder* to create and save the backup to a new folder. Key in a name for the folder and press **OK**.

4 Key in a name for the backup and press **OK** to save it.

Important: A new backup will overwrite the existing backup.

Restore data from a memory card

1 Press **Menu** and select *Extras*, *Backup/Restore* and *Restore*.

2 Select the folder containing the backup you want to restore, and then scroll to the backup and press **Select**.

3 Scroll to the data you want to restore and press **Mark** to select it. Repeat if necessary. When you have marked all the data you want to restore, press **Done**.

4 Press **Yes** to restore the data.

Important: Restoring data from the memory card will delete the corresponding data in the phone.

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 *Foreign units in home units* or *Home units in foreign units*.

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

Voice recorder

The voice recorder allows you to record, save, and listen to telephone conversations and voice memos. If you are recording a telephone conversation, both parties will hear a tone every five seconds during recording.

Note: Obey all local laws governing recording of calls. Do not use this feature illegally.

Press **Menu** and select *Extras* and *Record*. The recording begins immediately and can record sound for two minutes and 20 seconds. The screen shows *Recording* and displays a moving horizontal bar and numbers counting the amount of time left to record. Press **Stop** to end or continue until the Recorder stops.

To save the recording enter a title in the next screen. Press clear repeatedly to delete the word Recording and enter your own title. The recording is saved in the *Recordings list,* showing the title, date, and length of the recording.

In the *Recordings list* options are *Playback*, *Delete*, *Edit title*, and *Add alarm*. You can set a date and time for the alarm.

Voice commands

In voice commands you can add a voice tag or recording of your voice to open menus, start applications, and call your voice mailbox.

Options include:

- **Profiles**: *Normal*, *Silent*, *Meeting*, *Outdoor*, and *Pager*.
- **Voice mailbox**: *Call voice mailbox*
- **Recorder**: *Record*
- **Call log**: *Missed calls*, *Received calls*
- **Music Commands**: *Music Player On*, *Radio On*, *Music Off*

1. Select one of the options, then select *Add command*. The screen displays *Press Start, then speak after the tone*. This is followed by a screen that says Please speak now.
2. Speak clearly and add a command such as "Call my voice mailbox".
3. If you speak too quietly, too long, or too short, a screen displays a message and asks if you want to try again. Press **OK** and **Start** again.
4. The symbol is displayed when a voice command is saved to one of the options.

Use the voice commands

5 After you have added your voice commands, you can use them by pressing and holding the right selection key . The Start screen displays the message *Please speak now*. Say the command you saved for the application you want to select, such as "Call my voice mailbox". The phone will automatically dial your voice mailbox, or select an application you have set up in voice commands.

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 .

Note: 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.

   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.

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

   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**.

Memory card

Format memory card

Delete file from memory card

Mid let installer

18 Services (Menu 12)

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 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.

The WAP services use 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.
2. Make a connection to the given WAP service.
3. Start browsing the pages of the WAP service.
4. Once you are finished browsing, end the connection to the WAP service.

Set 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.

You can also key in the settings manually. For appropriate settings, contact your service provider. The WAP settings may be available, for example, on their website.

Save 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**.

Key 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 1 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 *SMS* or *GSM data*. 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 *Analog* 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 *Analog*. The actual data call speed depends on the service provider.
- *Login type* - Select *Manual* or *Automatic*. 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.

- *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 Connection* - Select *Always online* to set your phone automatically register to a GPRS network when you switch the phone on. Starting a WAP application or sending/receiving multimedia messages creates the connection between phone and network and so 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 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*.
- *Login type* - Select *Manual* or *Automatic*. 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.
- *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 of a WAP service, press and hold 0 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 G is shown on the top left of the display during browsing. If you receive or make a call during a GPRS connection, the indicator G will be shown on the top right of the display to indicate that the GPRS connection is on hold.

Use the phone keys while browsing

- Use ⏭ or ⏮ on the scroll key to browse the WAP page.
- To select a highlighted item, press .
- To enter letters and numbers, press the keys 0 - 9 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*.
- *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*.
- *Appear. settings*. See Appearance settings of WAP browser.
- *Cookie settings*.
- *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 Cache memory.
- *Security info* to view security information about the current WAP connection and the server.
- *Quit*. See Ending a WAP connection.

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 a name and a phone number from a WAP page in **Contacts**.

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 Cache memory.

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 *Decline* to allow or prevent the phone receiving cookies.

Bookmarks

You can save 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 WML browser and download the indicated content.
- *Details* to display detailed information on the service notification.
- *Delete* to delete the selected service notification.

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.

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 an 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.

View authority certificates

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

See also *Security info* in Use the phone keys while browsing.

Security indicator

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.

19 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 depend entirely on the service available.

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.

20 Reference information

Battery statements

Charging and Discharging

Your phone is powered by a rechargeable battery.

Note that a new battery's full performance may be 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; allow it to cool down or warm up first.

For good operation times with Ni-Cd/NiMh batteries, discharge the battery from time to time by leaving your phone switched on until it turns itself off (or by using the battery discharge facility of any approved accessory available for your phone). Do not attempt to discharge the battery by any other means.

Use the battery only for its intended purpose.

Never use any charger or battery which is damaged or worn out.

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 59°F and 77°F (15°C and 25°C). 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 applicable local regulations (for example, recycling). Do not dispose of as household waste.

Use proper 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 fulfill 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. Nonexpert 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. Unauthorized 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 are not working properly, take them to your nearest qualified service facility. The personnel there will assist you, and if necessary, arrange for service.

Understand IMPORTANT SAFETY INFORMATION

Traffic Safety

Do not use a handheld telephone while driving a vehicle. Always secure the phone in its holder; do not place the phone on the passenger seat or where it can break loose in a collision or sudden stop.

Remember road safety always comes first!

Operating environment

Remember to follow any special regulations in force in any area and always switch off your phone whenever it is forbidden to use it, or when it may cause interference or danger.

Use the phone only in its normal operating positions.

Magnetic precautions – only in phones with magnetic interference issues

Parts of the phone are magnetic. Metallic materials may be attracted to the phone, and persons with a hearing aid should not hold the phone to the ear with the hearing aid. Always secure the phone in its holder, because metallic materials may be attracted by the earpiece. Do not place credit cards or other magnetic storage media near the phone, because information stored on them may be erased.

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 from your wireless phone.

Pacemakers

Pacemaker manufacturers recommend that a minimum separation of 6 inches (20 cm) be maintained between a handheld wireless phone and a pacemaker to avoid potential interference with the pacemaker. These recommendations are consistent with the independent research by and recommendations of Wireless Technology Research. Persons with pacemakers:

- Should always keep the phone more than 6 inches (20 cm) 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.
- If you have any reason to suspect that interference is taking place, switch off your phone immediately.

Hearing aids

Some digital wireless phones may interfere with some hearing aids. In the event of such interference, you may want to consult your service 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 they are adequately shielded from external RF energy or if you have any questions. Switch off your phone in health care facilities when any regulations posted in these areas instruct you to do so. Hospitals or health care facilities may be using equipment that could be sensitive to external RF energy.

Vehicles

RF signals may affect improperly installed or inadequately shielded electronic systems in motor vehicles (for example, electronic fuel injection systems, electronic antiskid/antilock 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.

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 refueling point (service station). Users are reminded of the need to observe restrictions on 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 or 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 normally be advised to turn off your vehicle engine.

Vehicles

Only qualified personnel should service the phone or install the phone in a vehicle. Faulty installation or service may be dangerous and may invalidate any warranty which may apply to the unit.

Check regularly that all wireless phone equipment in your vehicle is mounted and operating properly.

Do not store or carry flammable liquids, gases, or explosive materials in the same compartment as the phone, its parts, or accessories.

For vehicles equipped with an air bag, remember that an air bag inflates with great force. Do not place objects, including both installed or portable wireless equipment 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.

Using your phone while in the air is prohibited. 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.

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 user-programmed 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).

Emergency calls may not be possible on all wireless phone networks or when certain network services and/or phone features are in use. Check with local service providers.

To make an emergency call:

1. If the phone is not on, switch it on. Check for adequate signal strength.

   Some networks may require that a valid SIM card is properly inserted in the phone.

2. Press [handset down] 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. Key in the emergency number for your present location (for example, 911 or other official emergency number). Emergency numbers vary by location.
4. Press the [handset up] /[send] key.

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 give all the necessary information as accurately as possible. Remember that your wireless phone may be the only means of communication at the scene of an accident - do not end 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 0.62 W/kg, and when worn on the body, as described in this user guide, is 0.87 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 **OW3NEM-2**.

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.

*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 requirements and the network band. For SAR information in other regions please look under product information at www.nokia.com.

Use Accessories safely

A few practical rules for accessory operation:

- Keep all accessories out of the reach of small children.
- When you disconnect the power cord of any accessory, grasp and pull the plug, not the cord.
- Check regularly that any vehicle-installed accessories are mounted and are operating properly.
- Installation of any complex car accessories must be made by qualified personnel only.
- Use only batteries, chargers, and accessories that have been approved by the phone manufacturer. The use of any other types could

invalidate any approval or warranty applying to the phone and could be dangerous.

Accessories

Add accessory information for your phone here.

Frequently Asked Questions

Glossary

Business card	A business card is the same as an entry in Contacts. It may contain a name, phone number, and text entry. It can also be sent to other devices.
Call forwarding	A network services feature you use to forward incoming calls to another number.
Call lists	A list used to track numbers for incoming, outgoing, or missed calls.
Call log	A log that registers information about calls you make and receive.
Call timers	Timers used to track the amount of time you spend on calls.
Call waiting	A network services feature that enables your phone to beep while you are in the middle of a call. The beep lets you know that someone else is calling you.
Electronic serial number (ESN)	The identification number that is assigned to the phone. This number is located under the battery.
In-call options	Features available for use while you are in a call.
Keyguard	Locks the keypad to prevent accidental key presses.
Keypad tones	The tone you hear when you press a key.
Menu	A list of choices you can make to change settings on your phone or use various phone features.

Profile	A group of settings you can use to customize the way your phone works.
Quick save	A fast method for saving a number.
Ringing tone	The sound your phone makes when you receive a call. Ringing tones can be ringing sounds or short tunes.
Scroll bar	A bar that appears on the right side of the screen when you scroll through the main menus.
SMS	The quick way to say short message service.
Start screen	Your phone's idle screen.
Voice mail	A network services feature that enables people who call and miss you to leave a voice message on your phone.
Warning tones	Sounds your phone makes during error conditions, during confirmations, when the battery is low, and when you need to recharge the battery.

Technical information

Feature	Specification
Weight	4.41 oz. (125 g) with BLD-3 720 mAh Li-Ion battery
Size	4.35 in W x 2.48 in H x 0.79 in T (115 mm W x 63 mm H x 20 mm T)
Frequency Range	Lowband 824 - 849 MHz (TX) 869 - 894 MHz (RX) Highband 1850 - 1910 MHz (TX) 1930 - 1990 MHz (RX)
Transmitter Output Power	850 MHz Up to 2 W / 33 dBm 1900 MHz up to 1 W / 30 dBm
Battery Voltage	4.0 V nominal
Operating Temperature	Phone -4°F to + 131°F (-20°C to + 55°C) Radio 14°F to + 131°F (-10°C to + 55°C)
Number of Channels	Lowband CH 128 - 251 = 124 channels CH 512 - 810 = 299 channels
Phone numbers	#
Memory Locations	#

Troubleshooting

This section lists and answers the questions phone users most frequently ask. Some of the answers tell you to use menu shortcuts. For a complete listing of these shortcuts, refer to **add cross reference to menu shortcuts**.

Q. What is my security code?

A. The default security code is 12345. However, Nokia recommends that you change this code immediately. Certain features can be used only after the correct security code has been successfully entered.

Q. How do I lock and unlock the keypad?

A. You can lock the keypad by pressing **Menu >** . To unlock the keypad press **Unlock** and then press .

The term **Keyguard** is also used in connection with this feature.

Q. How do I make the ringing louder?

A. Press **Menu 3** (**Profiles**), and scroll through the list of profiles until you find the one for which you want to set the ringing volume. Then press **Options**.

- Highlight **Customize** and press **Select**.
- Scroll to **Ringing tone**, and then press **Select**.
- Scroll through the options. After you hear the tone you want to use, press **Select**.

Q. How do I change the ringing tone?

A. Press **Menu 3** (**Profiles**) and scroll through the list of profiles until you find the one for which you want to set the ringing tone. Then press **Options**.

- Highlight **Customize** and press **Select**.
- Scroll to **Ringing tone**, and then press **Select**.

- Scroll through the options. After you hear the tone you want to use, press **Select**.

Q. How do I store my voice mailbox number?

A. Press **Menu 1-8-2** (**Messages > Voice messages > Voice mailbox number**). Enter your voice mailbox phone number, and press **OK**. The screen tells you that the number is saved.

This voice mailbox number is valid unless your phone number changes. If your phone number changes, you will have to save a new voice mailbox number.

Q. How do I call my voice mailbox number (retrieve voice messages)?

A. When your phone alerts you to new voice messages, press **Listen** and follow the instructions on the phone. If you'd rather listen to your messages later, press **Exit**.

To listen to your voice messages at a later time, perform one of the following actions:

- Press and hold .
- Press **Menu 1-8-1** (**Messages > Voice messages > Listen to voice messages**). Follow the voice prompts to review your messages.

Q. How do I redial the last-dialed number?

A. Press twice.

Q. How do I assign a key to 1-touch dialing?

A. Press **Names** and scroll to **1-touch dialing**.

Press **Select**.

Use or to scroll to the first number that includes the message (empty) and press **Assign**.

Enter or retrieve the name/number you want to assign this key and press **Select**.

Repeat these steps as many times as necessary.

Q. How do I find out the amount of memory I have used in my phone?

A. Press **Names** and scroll to **Options**.

Press **Select**. Scroll to **Memory status** and press **Select** again. Your memory status appears.

Q. How do I find my phone's Model number and ESN number?

A. The model number and ESN numbers are located on a label under the phone's battery. Turn your phone off, remove the back cover and then remove the battery from the phone.

Q. How do I clear my call timers?

A. **WARNING**: The clearing of call timers cannot be undone.

Press **Menu 2-5-3** (**Call log** > **Call timers** > **Clear timers**). When the security code prompt appears, enter your security code and press **OK**.

• Nokia ONE-YEAR LIMITED WARRANTY

Nokia Inc. (“Nokia”) warrants that this cellular phone (“Product”) is free from defects in material and workmanship that result in Product failure during normal usage, according to the following terms and conditions:

1. The limited warranty for the Product extends for ONE (1) year beginning on the date of the purchase of the Product. This one year period is extended by each whole day that the Product is out of your possession for repair under this warranty.
2. The limited warranty extends only to the original purchaser (“Consumer”) of the Product and is not assignable or transferable to any subsequent purchaser/end-user.
3. The limited warranty extends only to Consumers who purchase the Product in the United States of America.
4. During the limited warranty period, Nokia will repair, or replace, at Nokia’s sole option, any defective parts, or any parts that will not properly operate for their intended use with new or refurbished replacement items if such repair or replacement is needed because of product malfunction or failure during normal usage. No charge will be made to the Consumer for any such parts. Nokia will also pay for the labor charges incurred by Nokia in repairing or replacing the defective parts. The limited warranty does not cover defects in appearance, cosmetic, decorative or structural items, including framing, and any non-operative parts. Nokia’s limit of liability under the limited warranty shall be the actual cash value of the Product at the time the Consumer returns the Product for repair, determined by the price paid by the Consumer for the Product less a reasonable amount for usage. Nokia shall not be liable for any other losses or damages. These remedies are the Consumer’s exclusive remedies for breach of warranty.

5 Upon request from Nokia, the Consumer must prove the date of the original purchase of the Product by a dated bill of sale or dated itemized receipt.

6 The Consumer shall bear the cost of shipping the Product to Nokia in Melbourne, Florida. Nokia shall bear the cost of shipping the Product back to the Consumer after the completion of service under this limited warranty.

7 The Consumer shall have no coverage or benefits under this limited warranty if any of the following conditions are applicable:

a) The Product has been subjected to abnormal use, abnormal conditions, improper storage, exposure to moisture or dampness, unauthorized modifications, unauthorized connections, unauthorized repair, misuse, neglect, abuse, accident, alteration, improper installation, or other acts which are not the fault of Nokia, including damage caused by shipping.

b) The Product has been damaged from external causes such as collision with an object, or from fire, flooding, sand, dirt, windstorm, lightning, earthquake or damage from exposure to weather conditions, an Act of God, or battery leakage, theft, blown fuse, or improper use of any electrical source, damage caused by computer or internet viruses, bugs, worms, Trojan Horses, cancelbots or damage caused by the connection to other products not recommended for interconnection by Nokia.

c) Nokia was not advised in writing by the Consumer of the alleged defect or malfunction of the Product within fourteen (14) days after the expiration of the applicable limited warranty period.

d) The Product serial number plate or the accessory data code has been removed, defaced or altered.

e) The defect or damage was caused by the defective function of the cellular system or by inadequate signal reception by the external antenna, or viruses or other software problems introduced into the Product.

8 Nokia does not warrant uninterrupted or error-free operation of the Product. If a problem develops during the limited warranty period, the Consumer shall take the following step-by-step procedure:

a) The Consumer shall return the Product to the place of purchase for repair or replacement processing.

b) If "a" is not convenient because of distance (more than 50 miles) or for other good cause, the Consumer shall ship the Product prepaid and insured to:
Nokia Inc., Attn: Repair Department
795 West Nasa Blvd.
Melbourne, FL 32901

c) The Consumer shall include a return address, daytime phone number and/or fax number, complete description of the problem, proof of purchase and service agreement (if applicable). Expenses related to removing the Product from an installation are not covered under this limited warranty.

d) The Consumer will be billed for any parts or labor charges not covered by this limited warranty. The Consumer will be responsible for any expenses related to reinstallation of the Product.

e) Nokia will repair the Product under the limited warranty within 30 days after receipt of the Product. If Nokia cannot perform repairs covered under this limited warranty within 30 days, or after a reasonable number of attempts to repair the same defect, Nokia at its option, will provide a replacement Product or refund the purchase price of the Product less a reasonable amount for usage. In some states the Consumer may have the right to a loaner if the repair of the Product takes more than ten (10) days. Please contact the Customer Service Center at Nokia at the telephone number listed at the end of this warranty if you need a loaner and the repair of the Product has taken or is estimated to take more than ten (10) days.

f) If the Product is returned during the limited warranty period, but the problem with the Product is not covered under the terms and conditions of this limited warranty, the Consumer will be notified and given an estimate of the charges the Consumer must pay to have the Product repaired, with all shipping charges billed to the Consumer. If the estimate is refused, the Product will be returned freight collect. If the Product is returned after the expiration of the limited warranty period, Nokia's normal service policies shall apply and the Consumer will be responsible for all shipping charges.

9 You (the Consumer) understand that the product may consist of refurbished equipment that contains used components, some of which have been reprocessed. The used components comply with Product performance and reliability specifications.

10 ANY IMPLIED WARRANTY OF MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE OR USE, SHALL BE LIMITED TO THE DURATION OF THE FOREGOING LIMITED WRITTEN WARRANTY. OTHERWISE, THE FOREGOING LIMITED WARRANTY IS THE CONSUMER'S SOLE AND EXCLUSIVE REMEDY AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED. NOKIA SHALL NOT BE LIABLE FOR SPECIAL, INCIDENTAL, PUNITIVE OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO LOSS OF ANTICIPATED BENEFITS OR PROFITS, LOSS OF SAVINGS OR REVENUE, LOSS OF DATA, PUNITIVE DAMAGES, LOSS OF USE OF THE PRODUCT OR ANY ASSOCIATED EQUIPMENT, COST OF CAPITAL, COST OF ANY SUBSTITUTE EQUIPMENT OR FACILITIES, DOWNTIME, THE CLAIMS OF ANY THIRD PARTIES, INCLUDING CUSTOMERS, AND INJURY TO PROPERTY, RESULTING FROM THE PURCHASE OR USE OF THE PRODUCT OR ARISING FROM BREACH OF THE WARRANTY, BREACH OF CONTRACT, NEGLIGENCE, STRICT TORT, OR ANY OTHER LEGAL OR EQUITABLE THEORY, EVEN IF NOKIA KNEW OF THE LIKELIHOOD OF SUCH DAMAGES. NOKIA SHALL NOT BE LIABLE FOR DELAY IN RENDERING SERVICE UNDER THE LIMITED WARRANTY, OR LOSS OF USE DURING THE PERIOD THAT THE PRODUCT IS BEING REPAIRED.

11 Some states do not allow limitation of how long an implied warranty lasts, so the one year warranty limitation may not apply to you (the Consumer). Some states do not allow the exclusion or limitation of incidental and consequential damages, so certain of the above limitations or exclusions may not apply to you (the Consumer). This limited warranty gives the Consumer specific legal rights and the Consumer may also have other rights which vary from state to state.

12 Nokia neither assumes nor authorizes any authorized service center or any other person or entity to assume for it any other obligation or liability beyond that which is expressly provided for in this limited warranty including the provider or seller of any extended warranty or service agreement.

13 This is the entire warranty between Nokia and the Consumer, and supersedes all prior and contemporaneous agreements or understandings, oral or written, relating to the Product, and no representation, promise or condition not contained herein shall modify these terms.

14 This limited warranty allocates the risk of failure of the Product between the Consumer and Nokia. The allocation is recognized by the Consumer and is reflected in the purchase price.

15 Any action or lawsuit for breach of warranty must be commenced within eighteen (18) months following purchase of the Product.

16 Questions concerning this limited warranty may be directed to:
Nokia Inc.
Attn: Customer Service
7725 Woodland Center Blvd., Ste. 150
Tampa, FL 33614
Telephone: 1-888-NOKIA-2U (1-888-665-4228)
Facsimile: (813) 287-6612
TTY/TDD Users Only: 1-800-24-NOKIA (1-800-246-6542)

17 The limited warranty period for Nokia supplied attachments and accessories is specifically defined within their own warranty cards and packaging.

Nokia is a registered trademark of Nokia Corporation

What information is needed?	Numbers	Where is the number?
My number		Wireless service provider
Voice mail number		Wireless service provider
Wireless provider's number		Wireless service provider
Provider's customer care		Wireless service provider
Model number		Label on back of phone (under battery)
Phone type	850 and 1900 GSM	Back of title page
IMEI number		Label on back of phone (under battery). Also on label located ---

Appendix A

Message from the CTIA (Cellular Telecommunications & Internet Association) to all users of mobile phones.

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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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Appendix B Message from the FDA (U.S. Food and Drug Administration) to all users of mobile phones.

July 18, 2001 ..... For updates: http://www.fda.gov/cdrh/phones

Consumer Update on Wireless Phones

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 radio frequency 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 radio frequency 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 radio frequency 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 radio frequency 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 radio frequency 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 radio frequency 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 radio frequency 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 radio frequency energy coming from wireless phones?

The Institute of Electrical and Electronic Engineers (IEEE) is developing a technical standard for measuring the radio frequency 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 radio frequency 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 radio frequency 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 radio frequency 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?

Radio frequency 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, 2001For updates: http://www.fda.gov/cdrh/phones