* Depending on the software installed or your service provider or country, some of the descriptions in this guide may not match your phone exactly.
* Depending on your country, your phone and accessories may appear different from the illustrations in this guide.

SAMSUNG ELECTRONICS

World Wide Web
http://www.samsungmobile.com

Printed in Korea
Code No.:GH68-xxxxxA
English. 08/2005. Rev 1.0

SAMSUNG

Draft
2005. 08. 24
(Version:S500AGEH4)

SGH-S500i
User's Guide

Important safety precautions

☑ Failure to comply with the following precautions may be dangerous or illegal.

Drive safely at all times

Do not use a hand-held phone while driving. Park the vehicle first.

Switch off the phone when refuelling

Do not use the phone at a refuelling point (service station) or near fuels or chemicals.

Switch off in an aircraft

Wireless phones can cause interference. Using them in an aircraft is both illegal and dangerous.

Switch off the phone near all medical equipment

Hospitals or health care facilities may be using equipment that could be sensitive to external radio frequency energy. Follow any regulations or rules in force.

Interference

All wireless phones may be subject to interference, which could affect their performance.

Be aware of special regulations

Meet 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.

Water resistance

Your phone is not water-resistant. Keep it dry.

Sensible use

Use only in the normal position (held to the ear). Avoid unnecessary contact with the antenna when the phone is switched on.

Emergency calls

Key in the emergency number for your present location, then press .

Keep your phone away from small children

Keep the phone and all its parts, including accessories, out of the reach of small children.

Accessories and batteries

Use only Samsung-approved accessories and batteries. Use of any unauthorised accessories could damage your phone and may be dangerous.

- The phone could explode if the battery is replaced with an incorrect type.
- Dispose of used batteries according to the manufacturer's instructions.

Qualified service

Only qualified service personnel may repair your phone.

For more detailed safety information, see "Health and safety information" on page 89.

About this Guide

This User's Guide provides you with condensed information about how to use your phone. To quickly learn the basics for your phone, please refer to "Get started" and "Step outside the phone."

In this guide, the following instruction icons appear:

☑	Indicates that you need to pay careful attention to the subsequent information regarding safety or phone features.
▶	Indicates that you can get more information on the referenced page.
→	Indicates that you need to press the Navigation keys to scroll to the specified option and then select it.
[ ]	Indicates a key on the phone. For example, [i OK].
< >	Indicates a soft key, whose function is displayed on the phone screen. For example, <**Menu**>

- **Camera and camcorder**
  Use the camera module on your phone to take a photo or record a video.

Special features of your phone

- **Image editor**
  Crop, resize, rotate, and decorate your photos.

- **Music player**
  Play music files using your phone as a Music player.

- **File viewer**
  Open documents in various formats on the phone without corruption.

- **Bluetooth**
  Transfer media files and personal data and connect to other devices using free, wireless Bluetooth technology. You can also use a stereo Bluetooth headset to let you enjoy music with high quality stereo sound.

- **IrDA**
  Send and receive media files and Contacts and Calendar item via an infrared port.

- **Get personal with photo/video caller ID**
  See who's calling you when their very own photo or video displays.

- **Name card**
  Create name cards with your number and profile.

- **Multimedia Message Service (MMS)**
  Send and receive MMS messages with a combination of text, images, video, and audio.

- **E-mail**
  Send and receive e-mails with images, video, and audio attachments.

- **i-mode browser**
  Access the wireless web to get current information and up-to-the-minute a wide variety of media content.

- **Java**
  Enjoy Java™-based embedded games and download new games.

- **Calendar**
  Keep track of your daily, weekly, and monthly schedule.

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Overview of menu functions

To access Menu mode, press [i OK] in Idle mode.

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* Shows only if supported by your SIM card.

** Shows only if a memory card is inserted.

Unpack

Make sure you have each item

Phone

Travel Adapter

Battery

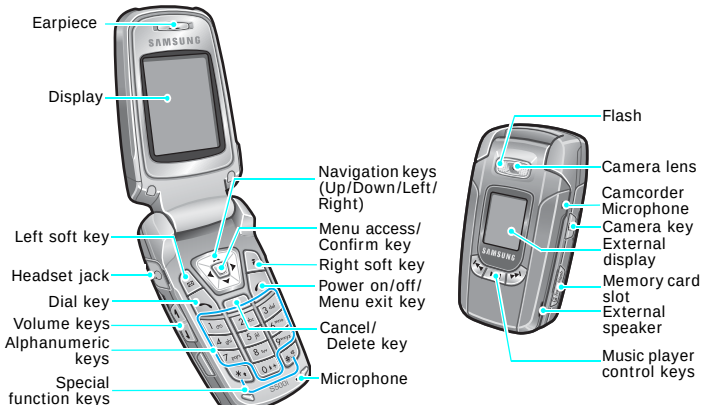
User's Guide

You can obtain various accessories from your local Samsung dealer.

☑ The items supplied with your phone and the accessories at your Samsung dealer may vary, depending on your country or service provider.

Your phone

Buttons, features, and locations



Get started

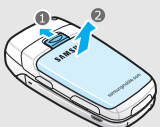
First steps to operating your phone

SIM card information

When you subscribe to a cellular network, you receive a plug-in SIM (Subscriber Identity Module) card loaded with your subscription details, such as your PIN, and available optional services.

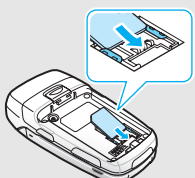
Install and charge the phone

1 Remove the battery.



☑ If the phone is already on, first turn it off by holding [ ].

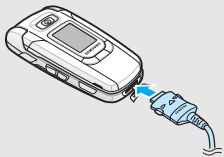
2 Insert the SIM card.



☑ Make sure that the gold-coloured contacts on the card face down into the phone.

3 Install the battery.

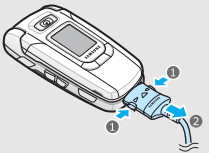
4 Plug the travel adapter into the phone.



5 Plug the adapter into a standard AC wall outlet.

6 When the phone is completely charged (the battery icon becomes still), unplug the adapter from the power outlet.

7 Remove the adapter from the phone.



Low battery indicator

When the battery is low:

- a warning tone sounds,
- the low battery message displays, and
- the empty battery icon blinks.

If the battery level becomes too low, the phone automatically turns off. Recharge your battery.

Power on or off

Switch on	1. Open the phone.
	2. Press and hold [ ] to turn on the phone.
Do not turn on the phone when mobile phone use is prohibited.	3. If necessary, enter the PIN and press <**OK**>.

Switch off	1. Open the phone.
	2. Press and hold [ ].

Keys and display

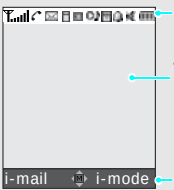
Keys

	Perform the function indicated on the bottom line of the display.
	In Idle mode, access your favourite menus directly. ▶ p. 76 In Menu mode, scroll through menu options.
	In Idle mode, enter Menu mode. Also, launch the i-mode browser when held down. In Menu mode, select the highlighted menu option or confirm input.
	Make or answer a call. In Idle mode, retrieve the recent numbers dialled, missed, or received.
	Delete characters from the display. In Menu mode, return to the previous menu level.
	End a call. Press and hold to switch the phone on or off. In Menu mode, cancel input and return the phone to Idle mode.
	Enter numbers, letters, and some special characters. In Idle mode, press and hold [**1**] to access your voicemail server. Press and hold [**0**] to enter an international call prefix.
	Enter special characters. In Idle mode, press and hold [#] to activate or deactivate Quiet mode. Press and hold [*] to enter a pause between numbers.
	Adjust the phone volume. In Idle mode, with the phone open, adjust the keypad tone volume. With the phone closed, press and hold to turn on the external display or to turn the flashlight on or off.
	In Idle mode, press and hold to turn on the camera. In Camera mode, take a photo or record a video.
	Press and hold to launch or close the Music player. Start playing music or pause playback.

	Move back to the previous file during playback.
	Skip to the next file during playback.

Display

Layout



Icons
display various icons.

Text and graphics
display messages, instructions, and information you enter.

Soft key function indicators
show the current functions assigned to the soft keys.

Icons*

	Received signal strength
	Call in progress
	Out of your service area; you cannot make or receive calls
	GPRS network
	Connecting to GPRS network
	Roaming network
	New SMS message
	New voicemail
	New i-mail or i-MMS message •Grey: a message on your phone; when a message is being retrieved, the icon blinks. •Yellow: a message on the i-mode server •Red: Inbox is full
	i-mode is active •Yellow: in a GPRS network •Grey: in a GSM network
	i-mode connection is being made
	i-mode is locked

	Home Zone, if registered for the appropriate service
	Office Zone, if registered for the appropriate service
	Bluetooth active
	Infrared port active
	Connected to Bluetooth hands-free car kit or headset
	Synchronised with PC
	MP3 playback in progress
	MP3 playback paused
	Memory card inserted
	Alarm set
	Call ringer set to vibrate
	Quiet mode (Vibration)
	Quiet mode (Mute)
	Mute mode, during a call
	Battery power level

* Depending on your country or service provider, the icons shown on the display may vary.

Access menu functions

Use the soft keys

The roles of the soft keys vary depending on the function you are using. The bottom line of the display indicates their current role.

Press the left soft key to access the **Mail** menu.

Press the right soft key to access the **i-mode** menu.

Select an option	1. Press the appropriate soft key. 2. Press the Navigation keys to move to the next or previous option. 3. Press <**Select**> or [i OK] to confirm the function displayed or option highlighted. 4. To exit, choose either of the following methods. • Press <**Back**> or [**C**] to move up one level. • Press [ ] to return to Idle mode.
Use shortcuts	Press the number key corresponding to the option you want.

Customise your phone

Display language

1. In Idle mode, press [i OK] and select **Settings** → **Phone settings** → **Language**.
2. Select a language.

Idle mode wallpaper

You can set wallpaper for the idle screen on the main display.

1. In Idle mode, press [i OK] and select **Settings** → **Display settings** → **Wallpaper** → **Main display**.
2. Select an image or video category.
3. Select an image or video.
4. Press <**Select**>.
5. Press <**Save**>.

Menu mode skin colour

You can change the colour for the display components, such as title bars and highlight bars.

1. In Idle mode, press [i OK] and select **Settings** → **Display settings** → **Skin**.
2. Select a colour pattern.

Call ringer melody

1. In Idle mode, press [i OK] and select **Settings** → **Sound settings** → **Incoming call** → **Ringtone**.
2. Select a ringtone category.
3. Select a ringtone.
4. Press <**Save**>.

Menu shortcuts

You can set the Navigation keys as shortcuts to access your favourite menus.

1. In Idle mode, press [i OK] and select **Settings** → **Phone settings** → **Short cut**.
2. Select a key.
3. Press <**Options**> and select **Change**.
4. Select a menu to be assigned to the key.

Quiet mode

You can switch the phone to Quiet mode to avoid disturbing other people.

Press and hold [#] in Idle mode.

Phone lock

You can protect the phone against unauthorised use with a phone password. The phone will require the password on power-up.

1. In Idle mode, press [i/OK] and select **Settings** → **Security** → **Change password**.
2. Enter the default password, **00000000**, and press <**OK**>.
3. Enter a new 4- to 8-digit password and press <**OK**>.
4. Enter the new password again and press <**OK**>.
5. Select **Phone lock**.
6. Select **Enable**.
7. Enter the password and press <**OK**>.

Make / Answer calls

Make a call

1. In Idle mode, enter an area code and phone number.
2. Press [ ].
3. To end the call, press [ ].

Answer a call

1. When the phone is ringing, press [ ].
2. To end the call, press [ ].

Adjust the volume during a call

Press [▲ / ▼].

Step outside the phone

Begin with your camera, Music player, web, and other special features

Use the camera

Take a photo

1. Open the phone.
2. In Idle mode, press and hold [📷] to turn on the camera.
3. Adjust the image to be captured.
4. Press [📷] to take a photo. The photo is saved automatically.
5. Press <**Preview**> to take another photo.

View a photo

1. In Idle mode, press [i OK] and select **File manager** → **Images** → **Photos**.
2. Select the photo you want.

Record a video

1. In Idle mode, press and hold [📷] to turn on the camera.
2. Press [**1**] to switch to Record mode.
3. Press [📷] to start recording.
4. Press [📷] to stop recording. The video is saved automatically.
5. Press <**Preview**> to record another video.

Play a video

1. In Idle mode, press [i OK] and select **File manager** → **Videos** → **Video clips**.
2. Select the video you want.

Play music

Copy music files to the phone

Use these methods:

- Download from the wireless web ▶ p. 49
- Download from a computer using the optional Samsung PC Studio ▶ Samsung PC Studio User's Guide
- Receive via Bluetooth or the infrared port ▶ p. 84
- Copy to a memory card and insert the card into the phone. ▶ p. 21

Create a play list

1. In Idle mode, press <**Menu**> and select **Applications** → **Music player**.
2. Press <**Options**> and select **Add to play list** → **Add all** or **Add files**.
3. For **Add files**, press [i OK] to select the files you want and press <**Select**>.
4. Press <**Back**> to return to the Music player screen.

Play music files

1. From the Music player screen, press [i OK].
2. During playback, use the following keys:
   - i OK : pauses or resumes playback.
   - Left: moves back to the previous file.
   - Right: skips to the next file.
   - Up: opens the play list.
   - ▲/▼ : adjusts the volume.
   - Down: stops playback.

Browse the web

Using the i-mode browser, you can get easy access to the wireless web to get a variety of up-to-date services and information and to enjoy downloads of web content.

Launch the i-mode browser

In Idle mode, press and hold [i OK].

Navigate the i-mode browser

- To scroll through browser items, press [Up] or [Down].
- To select an item, press [i OK].
- To return to the previous page, press <**Back**>.
- To move to the next page, press <**Options**> and select **Go** → **Forward**.
- To access browser options, press <**Options**>.

Use Contacts

Add an entry

To the phone's memory:

1. In Idle mode, enter a phone number and press <**Options**>.
2. Select **Save contact** → **Phone** → a number type.
3. Specify contact information: First name, Last name, Mobile, Home, Office, Fax, Other, Email, Caller ID, Ringtone, Group, and Memo.
4. Press <**Save**> to save the entry.

To the SIM card:

1. In Idle mode, enter a phone number and press <**Options**>.
2. Select **Save contact** → **SIM**.
3. Enter a name.
4. Press <**Save**> to save the entry.

Find an entry

1. In Idle mode, press [i OK] and select **Contacts** → **Contacts list**.
2. Select an entry.
3. Scroll to a number and press [ ] to dial, or press [i OK] to edit contact information.

Create and send a name card

1. In Idle mode, press [i OK] and select **Contacts** → **My name card**.
2. Specify your contact information.
3. Press <**Save**> to save the name card.
4. To send the name card to other people, press <**Options**> and select **Send via** → a sending method.

Send messages

Send a text message (SMS)

1. In Idle mode, press [i OK] and select **Messages** → **Create message**.
2. Enter the message text.
3. Press <**Options**> and select **Save and send** or **Send only**.
4. Enter destination numbers.
5. Press [i OK] to send the message.

Send an i-MMS message (MMS)

1. In Idle mode, press <**i-mail**> and select **Compose iMMS**.
2. Select **Destination**.
3. Enter destination numbers or e-mail addresses and press [i OK].

4. Select **Title**.
5. Enter the message title and press [i OK].
6. Select **SMIL** → **Media** and add images, sounds, and videos.
7. Select **Send** to send the message.

Send an i-mail

1. In Idle mode, press <**i-mail**> and select **Compose iMail**.
2. Select **Destination**.
3. Enter destination numbers or e-mail addresses and press [i OK].
4. Select **Title**.
5. Enter the e-mail title and press [i OK].
6. Select the Attach field and select one of the following options for adding files.
   - **Attach File**: add images, sounds, videos, music files, name cards, or schedule items.
   - **Attach Melody**: add MFi (Melody Format for i-mode) melody files.
   - **Attach Bookmark**: add bookmarks.
7. Select **Text**.
8. Enter the e-mail text and press [i OK].
9. Select **Send** to send the e-mail.

View messages

View a text message

When a notification appears:

1. Press <**View**>.
2. Select the message from the Inbox.

From the Inbox:

1. In Idle mode, press [i OK] and select **Messages** → **My messages** → **Inbox**.
2. Select a message.

View an i-mail or i-MMS message

From the Inbox:

1. In Idle mode, press <**i-mail**> and select **Inbox** → an Inbox folder.
2. Select a message.

Use Bluetooth

Your phone is equipped with Bluetooth technology which enables you to connect the phone wirelessly to other Bluetooth devices and exchange data with them, talk hands-free, or control the phone remotely.

Turn on Bluetooth

In Idle mode, press [i OK] and select **Settings** → **Bluetooth** → **Activation** → **On**.

Search for and pair with a Bluetooth device

1. In Idle mode, press [i OK] and select **Settings** → **Bluetooth** → **My devices** → **Search for new devices**.
2. Select a device.
3. Enter a Bluetooth PIN or the other device's Bluetooth PIN, if it has one, and press <**OK**>.

   When the owner of the other device enters the same code, pairing is complete.

Send data

1. Access an application, **Contacts**, **File manager**, or **Calendar**.
2. Scroll to an item.
3. Press <**Options**> and select **Send via** → **Bluetooth**.
4. Select a device.
5. If necessary, enter the Bluetooth PIN and press <**OK**>.

Receive data

To receive data via Bluetooth, your phone's Bluetooth feature must be active and you set other devices to search for your phone.

If necessary, press <**Yes**> to confirm the reception.

Use a memory card

You can use an optional memory card (microSD) to enlarge your phone's memory capacity.

Important memory card information

- Frequent erasing and writing will shorten a card's lifespan.
- Do not remove a card from the phone or turn off the phone while data is being accessed or transferred. This could result in loss of data and/or damage to the card or phone.
- Do not subject cards to strong shocks.
- Do not touch card terminals with your fingers or metal objects. If dirty, wipe the card with a soft cloth.

Important memory card information (continued)

- Do not expose cards in a place subject to electro static discharge and/or electrical noise.
- Keep cards away from small children or pets.

Insert a memory card

1. Slide a memory card into the card slot, with the label side face up.
2. Press the card until it locks into place.

Use a card adapter

Using a card adapter and a USB card reader/writer, you can read the card on a PC.

1. Insert a memory card into a card adapter, and then the adapter into a card reader/writer.
2. Plug the USB connecter of the card reader/writer into the USB port on your PC.
3. Access the appropriate memory disk and copy to and from the card.

Enter text

AB, T9, Number, and Symbol mode

You can enter text for some features, such as Messages, Contacts, or Calendar, using AB mode, T9 mode, Number mode, and Symbol mode.

Changing the text input mode

- Press and hold [*] to switch between T9 mode (T9Ab) and AB mode (ABAb). Depending on your country, you may also be able to access an input mode for your specific language.
- Press [*] to change case or switch to Number mode (123).
- Press and hold [#] to switch to Symbol mode.

Using AB mode

Press the appropriate key until the character you want appears on the display.

Key	Characters in order displayed	
	Upper case	Lower case
1	. , - ? ! @ : ( ) / _ 1	
2	A B C 2 Ä Å Æ Ç Γ	a b c 2 à ä å æ Γ
3	D E F 3 É Δ Φ	d e f 3 è é Φ
4	G H I 4 Θ Ψ	g h i 4 ì Ψ
5	J K L 5 Λ	j k l 5 Λ
6	M N O 6 Ñ Ø Ö ö	m n o 6 ñ ø ò ö
7	P Q R S 7 Π Σ Ξ	p q r s 7 ß Σ Ξ
8	T U V 8 Ü ü	t u v 8 ù ü
9	W X Y Z 9 Ω	w x y z 9 Ω
0	Space + = < > € £ $ % & ¥ ¤ 0	

Tips for using AB mode

- To enter the same letter twice or to enter a different letter on the same key, wait for the cursor to move to the right automatically or press [Right]. Then, enter the next letter.
- Press [#] to insert a space.
- Press the Navigation keys to move the cursor.
- Press [**C**] to delete characters one by one. Press and hold [**C**] to clear the display.

Using T9 mode

T9 is a predictive text input mode that allows you to key in any character using single keystrokes.

Entering a word in T9 mode

1. Press [**2**] to [**9**] to start entering a word. Press each key once for each letter.

   For example, press [**4**], [**3**], [**5**], [**5**], and [**6**] to enter *Hello* in T9 mode.

   T9 predicts the word that you are typing, and it may change with each key that you press.
2. Enter the whole word before editing or deleting characters.
3. When the word displays correctly, go to step 4. Otherwise, press [**0**] to display alternative word choices for the keys that you have pressed.

   For example, *Of* and *Me* use [**6**] and [**3**].
4. Press [#] to insert a space and enter the next word.

Tips for using T9 mode

- Press [**1**] to enter periods or apostrophes automatically.
- Press [#] to insert a space.
- Press the Navigation keys to move the cursor.
- Press [**C**] to delete characters one by one. Press and hold [**C**] to clear the display.

Adding a new word to the T9 dictionary

This feature may not be available for some languages.

1. Enter the word that you want to add.

2. Press [**0**] to display alternative words for your key presses. When there are no more alternative words, **Add** appears on the bottom line.
3. Press <**Add**>.
4. Enter the word you want using AB mode and press <**OK**>.

Using Number mode

Number mode enables you to enter numbers.

Press the keys corresponding to the digits you want.

Using Symbol mode

Symbol mode enables you to insert symbols.

To	Press
display more symbols	[Up] or [Down].
select a symbol	the corresponding number key.
clear the entered symbols	[**C**].
insert the symbols	<**OK**>.

Call functions

Advanced calling features

Making a call

1. In Idle mode, enter the area code and phone number.
2. Press [ ].

- Press [**C**] to clear the last digit or press and hold [**C**] to clear the whole display. You can move the cursor to edit an incorrect digit.
- Press and hold [*] to enter a pause between numbers.

Making an international call

1. In Idle mode, press and hold [**0**]. The **+** character appears.
2. Enter the country code, area code, and phone number, then press [ ].

Redialling recent numbers

1. In Idle mode, press [ ] to display the list of recent numbers.
2. Scroll to the number you want and press [ ].

Making a call from Contacts

Once you have stored a number in Contacts, you can dial the number by selecting it from Contacts. ▶ p. 31

You can also use the speed dial feature to assign your most frequently called numbers to specific number keys. ▶ p. 33

You can quickly dial a number from the SIM card using its location number assigned when stored.

1. In Idle mode, enter a location number and press [#].
2. Press [Left] or [Right] to scroll through other numbers.
3. Press <**Dial**> or [ ] to dial the number you want.

Ending a call

Close the phone or press [ ].

Answering a call

When you receive an incoming call, the phone rings and displays the incoming call image.

Press <**Accept**> or [ ] to answer the call.

Tips for answering a call

- When **Anykey answer** is active, you can press any key, except for [ ] and <**Reject**>. ▶ p. 76
- When **Active folder** is active, you can simply open the phone. ▶ p. 76
- Press [ ] or <**Reject**> to reject a call.
- Press and hold [▲/▼] to reject a call or mute the ringer, depending on the **Volume key** setting. ▶ p. 76

Viewing missed calls

If you have missed calls, the screen displays how many calls you have missed.

1. Press <**View**>.
2. If necessary, scroll through the missed calls.
3. Press [ ] to dial the number you want.

Using the headset

Use the headset to make or answer calls without holding the phone.

Connect the headset to the jack on the left side of the phone. The button on the headset works as listed below:

To	Press
redial the last call	and hold the button twice.
answer a call	the button.
end a call	the button.

Options during a call

You can access a number of functions during a call.

Adjusting the volume during a call

Use [▲/▼] to adjust the earpiece volume during a call.

Press [▲] to increase the volume level and [▼] to decrease the volume level.

Placing a call on hold/Retrieving

Press <**Hold**> or <**Retrieve**> to place a call on hold or retrieve the call.

Making a second call

You can make another call if your network supports it.

1. Press <**Hold**> to put the call on hold.
2. Make the second call in the normal way.
3. Press <**Swap**> to switch between the calls.
4. Press <**Options**> and select **End held call** to end the call on hold.
5. To end the current call, press [ ].

Answering a second call

You can answer an incoming call while already on the phone, if your network supports it and you have activated the call waiting feature. ▶ p. 80

1. Press [ ] to answer the call. The first call is automatically put on hold.
2. Press <**Swap**> to switch between the calls.
3. Press <**Options**> and select **End held call** to end the call on hold.
4. To end the current call, press [ ].

Using the Speakerphone feature

Use the stereo speakers on the sides of the phone to talk and listen with the phone a short distance away.

Press [ ] to activate the Speakerphone feature. Press the key again to switch back to the earpiece.

Using In-call options

Press <**Options**> to access the following options during a call:

- **Speaker on**/**Normal**: turn on the Speakerphone feature or switch back to Normal mode.
- **Switch to headset**/**Switch to phone**: switch the call to a Bluetooth headset or hands-free car kit or back to the phone.
- **Menu**: access the phone's menu functions.
- **Voice on**/**Voice off**: switch off the phone's microphone so that the other person on the phone cannot hear you, or switch it back on.
- **Mute keys**/**Send keys**: switch the key tones on or off.

  ☑ To communicate with answering machines or computerised telephone systems, **Send keys** must be selected.

- **Contacts**: access the contact list.
- **End held call**: disconnect the call currently on hold.

- **Transfer**: transfer the currently active call to a caller on hold. The two callers can talk to each other, but you are disconnected from the call.
- **Join**: set up a multi-party call by adding a caller on hold to a currently active call. You can include up to 5 people on a multi-party call.
- **Select one**: select one of multi-party call participants. You can then use the following options:

  Private: have a private conversation with one multi-party call participant. The other participants can converse with each other. After the private conversation, select **Join** to return to the multi-party call.

  Remove: disconnect one multi-party call participant.

Menu functions

All menu options listed

Call log *(Menu 1)*

Use this menu to view the calls you have dialled, received, or missed, and the length of calls. You can also check the cost of your calls, if your SIM card supports this function.

To access this menu, press [i OK] in Idle mode and select **Call log**.

Recent contacts *(Menu 1.1)*

This menu displays the most recent calls dialled, received, or missed.

Accessing a call record

1. Press [Left] or [Right] to move to another call type.
2. Press [Up] or [Down] to scroll through the call list.

3. Press [i OK] to view the details of a call, or [ ] to dial a number.

Using call record options

While viewing call details, press <**Options**> to access the following options:

- **Call**: edit the number.
- **Save contact**: save the number to Contacts.
- **Send message**: send an SMS, i-mail, or i-MMS message to the selected number.
- **Delete**: delete the selected call record or all records.

Missed calls *(Menu 1.2)*

This menu displays the most recent calls you did not answer.

Dialled calls *(Menu 1.3)*

This menu displays the most recent calls you have dialled.

Received calls *(Menu 1.4)*

This menu displays the most recent calls you have received.

Delete all *(Menu 1.5)*

Use this menu to delete all of the records in each call type.

1. Press [i OK] to select the call types to be cleared.
2. Press <**Delete**>.
3. Press <**Yes**> to confirm the deletion.

Call time *(Menu 1.6)*

This menu displays the time log for calls made and received. The actual time invoiced by your service provider will vary.

- **Last call time**: check the length of your last call.
- **Total dialled calls**: check the total length of all the calls you have dialled.
- **Total received calls**: check the total length of all the calls you have received.

To reset the call timers, press <**Reset**>. You need to enter the phone password.

☑ The password is preset to **00000000**. You can change this password. ▶ p. 85

Call cost *(Menu 1.7)*

This network feature displays the cost of calls. This menu is available only if supported by your SIM card. Note that this is not intended to be used for billing purposes.

- **Last call cost**: check the cost of your last call.
- **Total cost**: check the total cost of all of your calls. If the total cost exceeds the maximum cost set in **Set max. cost**, you must reset the counter before you can make another call.
- **Max. cost**: check the maximum cost limit set in **Set max. cost**.
- **Reset counters**: reset the cost counters.
- **Set max. cost**: set the maximum cost authorised for your calls.
- **Price / Unit**: set the price per unit that is applied when the cost of your calls is calculated.

Contacts *(Menu 2)*

You can store phone numbers on your SIM card and in your phone's memory. The SIM card and phone's memory are physically separate, but they are used as a single entity called Contacts.

To access this menu, press [i OK] in Idle mode and select **Contacts**.

Contacts list *(Menu 2.1)*

Use this menu to search for numbers in Contacts.

Finding an entry

1. Enter the first few letters of the name that you want to find.
2. Select the name from the list.
3. Scroll to a number and press [⌒] to dial, or press [i OK] to edit contact information.

Using Contacts options

While viewing contact details, press <**Options**> to access the following options:

- **Edit**: edit contact information.
- **Send message**: send an SMS, i-mail, or i-MMS to the selected number, or to the selected e-mail address.
- **Copy to**: copy the contact to the phone's memory or to the SIM card.
- **Send via**: send the contact via SMS, i-mail, or i-MMS, Bluetooth, or the infrared port.
- **Delete**: delete the selected contact.

Add new contact *(Menu 2.2)*

Use this menu to add a new contact to Contacts.

Storing a number in the phone's memory

1. Select **Phone**.
2. Change the settings or enter information about the contact.
   - **First name**/**Last name**: assign a name.
   - **Mobile**/**Home**/**Office**/**Fax**/**Other**: add a number in any type.
   - **Email**: assign an e-mail address.
   - **Caller ID**: assign an image or video to alert you to a call from the person.
   - **Ringtone**: assign a ringtone to alert you to a call from the person.
   - **Group**: assign the contact to a caller group.
   - **Memo**: add a memo about the person.
3. Press <**Save**> to save the contact.

Storing a number on the SIM card

1. Select **SIM**.
2. Enter information about the contact.
   - **Name**: assign a name.
   - **Phone number**: add a number.
   - **Location**: assign a location number.

   ☑ To assign a caller ID image, ringtone, or group, the contact must be saved to the phone's memory.
3. Press <**Save**> to save the contact.

Group *(Menu 2.3)*

Use this menu to organise your contacts in caller groups.

Creating a new caller group

1. Press <**Options**> and select **Add**.
2. Enter a name for the group.
3. Select the caller ID line and set an image.
4. Select the ringtone line and set a melody.
5. Press <**Save**> to save the group.

Adding members to a caller group

1. Select a group.
2. Press <**Add**>.
3. Press [*i* OK] to select the contacts to be added.
4. Press <**Select**>.

Managing caller groups

While viewing the group list, press <**Options**> to access the following options:

- **View**: display the members of the selected group.
- **Add**: add a new group.
- **Edit**: change the group properties.
- **Send message**: send an SMS, i-mail, or i-MMS to the group members you want.
- **Delete**: delete the selected group or all groups. Group members, however, will not be deleted from Contacts.

Speed dial *(Menu 2.4)*

Use this menu to assign a speed dial number (2 to 9) for 8 of your most frequently called numbers.

Assigning speed dial numbers

1. Select a key location from **2** to **9**. Key **1** is reserved for your voicemail server.
2. Select a contact from the contact list.
3. Select a number, if the contact has more than one number.

Managing speed dial entries

From the Speed dial screen, press <**Options**> to access the following options:

- **Add**: assign a number to an unassigned key.

- **View**: check the name and number assigned to a key.
- **Change**: assign a different number to a key.
- **Remove**: clear the speed dial setting for a key.

Dialling speed dial entries

In Idle mode, press and hold the appropriate key.

My name card *(Menu 2.5)*

Use this menu to create a name card and send it to other people.

Saving your name card

The procedure for creating your name card is the same as the one for saving a phone number in the phone's memory. ▶ p. 32

Using name card options

After saving your name card, press <**Options**> to access the following options:

- **Edit**: edit the name card.
- **Send via**: send the name card via SMS, i-mail, i-MMS, Bluetooth, or the infrared port.
- **Exchange contact details**: exchange name cards with another person via Bluetooth.
- **Delete**: delete the name card.

Own number *(Menu 2.6)*

Use this feature to check your phone numbers, or to assign a name to each of the numbers. Changes made here do not affect the actual subscriber numbers on your SIM card.

Management *(Menu 2.7)*

Use this menu to manage Contacts entries.

- **Saving location**: select a default memory location for saving contacts. If you select **Ask on saving**, the phone will ask you to select a memory location each time you save a number.
- **Copy all to**: copy all of the contacts stored on the SIM card to the phone's memory, or vice versa.
- **Delete all**: delete all of the contacts from your phone's memory, your SIM card, or both.

- **Memory status**: check the number of contacts you have stored in the phone's memory and on the SIM card.

Service number *(Menu 2.8)*

Use this menu to view the list of Service Dialling Numbers (SDN) assigned by your service provider, including emergency numbers and numbers for directory enquiries. This menu is available if your SIM card supports SDN.

1. Scroll to the number you want and press <**View**>.
2. Press <**Dial**> or [ ].

Applications *(Menu 3)*

Use this menu to play music files, edit photos, or play Java games. You can also use convenient features, such as a voice recorder, world clock, alarm clock, calculator, converter, timer, and stopwatch.

To access this menu, press [i OK] in Idle mode and select **Applications**.

Music player *(Menu 3.1)*

Use this menu to enjoy music. First, you need to save music files into your phone's memory or on a memory card. You can play MP3, ACC, and ACC+ files.

To enjoy high quality music, you can use an optional Bluetooth stereo headset.

☑ Normal headsets are not compatible with the Music player.

Downloading or receiving music files

Use these methods to save music files to your phone's memory:

- Download from the wireless web ▶ p. 48
- Download from a computer using the optional Samsung PC Studio ▶ Samsung PC Studio User's Guide
- Via an active Bluetooth connection or infrared port ▶ p. 84
- Copy to a memory card and insert the card into the phone. ▶ p. 22

The downloaded or received files are stored in the **Music** or **Mp3** folder. ▶ p. 61

Creating a play list

1. From the Music player screen, press <**Options**> and select **Add to play list** → **Add all** or **Add files**.
2. If you select **Add files**, press [i OK] to select the files to be added and press <**Select**>.
3. Press <**Back**> to return to the Music player screen.

Playing music files

1. From the Music player screen, press <**Options**> and select **Play**.
2. Select **Phone** to use the phone speaker.

   Select **A/V headset** to use a Bluetooth headset.

During playback, use the following keys:

Key	Function
i OK	Pauses or resumes playback.
Left	Moves back to the previous file.
Right	Skips to the next file.
Up	Opens the current play list.
Down	Stops playback.
▲/▼	Adjusts the volume level.
1	Turns 3D sound on or off.
2	Changes the skin type.
3	Changes the repeat mode.
4	Changes the equalizer mode.
6	Turns Shuffle mode on or off.

Using Music player options

From the Music player screen, press <**Options**> to access the following options:

- **Play**/**Pause**: begin or pause playback.
- **Open**: access the play list of the current album or album list.
- **Go to music/MP3**: access the **Music** or **Mp3** folder. Press [Left] or [Right] to move to another folder.

- **Remove from playlist**: remove the selected file from the play list.
- **Settings**: change the default settings for playing music files.

  Repeat mode: select a repeat mode.

  Shuffle: set the Music player to play music at random.

  Equalizer: select an equalizer setting.

  3D sound: turn 3D sound on or off.

  Skin: select a skin type.

  Volume: select a volume level.
- **Details**: access the file properties.

Accessing the play list

From the Music player screen, press [Up].

Press <**Options**> to access the following options:

- **Play**: play the currently selected file.
- **Add to play list**: add files to the play list.
- **Go to album list**: access the album list.
- **Move to**: move the selected file to another play list.
- **Copy to**: copy the selected file to another play list.
- **Change order**: move the selected file to the position you want within the play list.
- **Remove**: remove the selected file or all files from the play list.
- **Details**: access the file properties.

Playing music files with the phone closed

Press and hold [►II] to launch the Music player. Use the following keys to control the Music player:

Key	Function
►II	Begins or pauses playback.
I◄◄	Moves back to the previous file.
►►I	Skips to the next file.
▲/▼	Adjusts the volume.
📷	Locks the exposed keys when held down to keep accidental presses from affecting playback.

Voice recorder *(Menu 3.2)*

Use this menu to record voice memos. A voice memo can be up to one hour long.

Recording a voice memo

1. Press [i OK] to start recording.
2. Speak into the microphone.

   Press [i OK] to pause or resume recording.
3. Press <**Stop**> or [Down] to end recording. The voice memo is saved automatically.
4. Press [i OK] to review the voice memo, or [Up] to record a new memo.

Playing a voice memo

1. From the Voice recorder screen, press <**Options**> and select **Go to voice recorder files**.
2. Select a voice memo.

During playback, use the following keys:

Key	Function
i OK	Pauses or resumes playback.
Left	Moves to the previous file.
Right	Skips to the next file.
▲/▼	Adjusts the volume.
Down	Stops playback.

Changing the recording mode

You can change the recording mode of the voice recorder. The maximum recording time is determined by this setting. Before recording a memo, press <**Options**> and select **Setting** → a recording mode:

- **Limit for message**: record a voice memo for adding to an i-mail or i-MMS message.
- **Maximum 1 hour**: record a voice memo of up to one hour.

Image editor *(Menu 3.3)*

Use this menu to edit your photos using various editing tools.

Applying an effect

1. Press <**Options**> and select **New image** → **Open** or **Take photo**.
2. Select a photo or take a new photo.
3. Press <**Options**> and select **Effects** → an effect option.
4. Press <**Done**>.
5. Press <**Options**> and select **Save as**.
6. Enter a new file name and press <**OK**>.

Transforming

1. Select a photo or take a new photo.
2. Press <**Options**> and select **Transform** → an option:
   - **Resize**: change the photo size.
   - **Rotate**: rotate the photo 90 degrees clockwise or counterclockwise.
   - **Flip**: flip the photo.
3. Press <**Done**>.
4. Press <**Options**> and select **Save as**.
5. Enter a new file name and press <**OK**>.

Cropping

1. Select a photo or take a new photo.
2. Press <**Options**> and select **Crop**.
3. Move the cropping frame to the area of the image you want.

   Press <**Options**> and select **Resize** to change the frame size.
4. Press <**Options**> and select **Done**.
5. Press <**Options**> and select **Save as**.
6. Enter a new file name and press <**OK**>.

Adding visual features

You can decorate photos by adding a frame, an image, or a note.

1. Select a photo or take a new photo.
2. Press <**Options**> and select **Insert** → a feature type.
3. Select an item or enter text to be inserted.
4. Adjust the position of the inserted item or text using the Navigation keys.

5. Press <**Done**>, or press <**Options**> and select **Done**.
6. Press <**Options**> and select **Save as**.
7. Enter a new file name and press <**OK**>.

Merging a stamp effect

This editing tool allows you to make an outline stamp of a photo and then merge it with another photo. You can use this tool to create your own photo postcard by taking a photo of a handwritten message and merging it with a photo.

1. Select a photo or take a new photo.
2. Press <**Options**> and select **Merge stamp**. The photo appears in the background image box.
3. Press <**Options**> and select **Add image**.
4. Add a photo by selecting or taking a photo. The added photo also appears in the foreground image box. This will be the stamp.
5. Press <**Options**> and select **Merge**. The stamp photo is added to the background photo as an outline.
6. Press <**Options**> to access the following stamp edit options:
   - **Move**: change the position of the stamp.
   - **Resize**: change the stamp size.
   - **Rotate**: rotate the stamp.
   - **Stamp color**: change the stamp colour.
   - **Shadow on**: apply a shadow to the stamp.
7. When you have finished, press <**Options**> and select **Done**.
8. Press <**Options**> and select **Save as**.
9. Enter a new file name and press <**OK**>.

Java world *(Menu 3.4)*

Use this menu to access the list of the applications you have downloaded from the wireless web. ▶ p. 55

World time *(Menu 3.5)*

Use this menu to set your local time zone and find out what time it is in another part of the world.

Viewing world time

1. From the world map, press [Left] or [Right] to scroll to the city you want. As the time line moves, the time and date of the given zone display.
2. Press [i OK] to save the city as your local time zone.

Applying daylight savings time

1. From the world map, press <**Options**> and select **Set daylight saving time**.
2. Press [i OK] to select the time zones you want.
3. Press <**Save**>.

Alarm *(Menu 3.6)*

Use this menu to set alarms. The alert type for a normal alarm corresponds to the call alert type settings. A wake-up alarm is not affected by your sound settings.

Setting an alarm

1. Select the type of alarm.
2. Set each alarm option:
   - **Alarm**: activate the alarm.
   - **Alarm time**: enter the time for the alarm to ring.
   - **AM**/**PM**: set **AM** or **PM** in 12-hour format.
   - **Repeat**: select a repeat option.
   - **Alarm tone**: select an alarm tone.
3. Press <**Save**>.

Stopping an alarm

- For a non-wake-up alarm, press any key.
- For a wake-up alarm, press <**Confirm**> or [i OK].

  Press any key, except <**Confirm**> and [i OK], to cause it to sound again after 5 minutes. You can do this a maximum of 5 times.

Setting the alarm to ring even if the phone is off

From the Alarm screen, select **Auto power** → **On**.

If the phone is off when it is time for the alarm to ring, the phone switches on and sounds the alarm.

Calculator *(Menu 3.7)*

Use this menu to perform basic arithmetic functions, such as addition, subtraction, multiplication, and division.

1. Enter the first number.
   - Press <**.()**> to insert a decimal point or bracket.
   - Press [*] or [#] to move the cursor.
2. Press one of the Navigation keys to access the math function you want.
3. Enter the second number.
4. Press [i OK] to view the result.
5. If necessary, repeat from step 2 to continue the calculation.

Converter *(Menu 3.8)*

Use this menu for common conversions, such as currency and temperature.

1. Select a converter.
2. Press [Left] or [Right] to select the original unit and press [Down].
3. Enter the value to be converted and press [Down].
   - Press [*] to insert a decimal point.
   - Press [#] to change the temperature to above zero (+) or below zero (-).
4. Press [Left] or [Right] to select the unit to which you want to convert.

   The equivalent value for the amount you entered displays.

☑ For the currency converter, you can view and set currency rates by pressing <**View rate**>.

Timer *(Menu 3.9)*

Use this menu to set a period of time for the phone to count down. The phone will sound an alarm when the specified period of time has expired.

Starting the timer

1. Press <**Set**>.
2. Enter the length of time you want to count down and press <**OK**>.
3. Press [i OK] to start counting down.

Stopping the timer

- Press any key when the timer rings.
- Press [i OK] on the Timer screen to stop the timer before it rings.

Stopwatch *(Menu 3.0)*

Use this menu to measure elapsed time. The maximum time is 10 hours.

1. Press [i OK] to start the stopwatch.
2. Press [i OK] to check an interval. You can repeat this step for a total of 4 intervals.

SIM AT *(Menu 3.∗)*

This menu is available if you use a SIM AT card that supports SIM Application Tool kit menus and provides additional services, such as news, weather, sports, entertainment, and location services. Available services may vary, depending on your service provider's plans. For details, see your SIM card instructions or contact your service provider.

Messages *(Menu 4)*

Use the **Messages** menu to send and receive text messages. You can also use the cell broadcast message feature.

To access this menu, press [i OK] in Idle mode and select **Messages**.

Create message *(Menu 4.1)*

Short Message Service (SMS) allows you to send or receive text messages that may include simple pictures, animated images, and melodies.

1. Enter your message.

   ☑ The maximum number of characters allowed in a message varies by service provider. If your message exceeds the maximum number of characters, the phone will split the message.

2. Press <**Options**> to access the following options for creating a message:
   - **Insert**: add a template, Contacts entry, or bookmark to text.

- **Add image**/**Add animation**/**Add melody**: attach a simple image, animated image, or melody.
- **Attach**: attach a name card or calender data as a data format attachment.
- **Text style**: change the text attributes.

3. When you have finished, press <**Options**> and select **Save and send** or **Send only**.
4. Enter a destination number.

   To send the message to more than one recipient, fill in additional destination fields.
5. Press [i OK] to send the message.

My messages *(Menu 4.2)*

Use this menu to access text messages you have received, sent, or which have failed in sending.

Inbox *(Menu 4.2.1)*

This folder stores all the text messages you have received.

Viewing a message

The following icons may appear on the message list to show the message type:

- SMS
- Delivery report for your sent messages

Using message options

While viewing a message, press <**Options**> to access the following options:

SMS messages

- **Reply via**: reply to the sender via SMS or MMS.
- **Forward**: forward the message to other people.
- **Delete**: delete the message.
- **Move to phone**/**Move to SIM**: move the message between the SIM card and the phone's memory.
- **Copy address**: extract URLs, e-mail addresses, or phone numbers from the message.
- **Copy media**: save media content from the message to your phone's memory.

- **Protection**: protect the message from being deleted. You can protect only messages stored in the phone's memory.

Delivery reports

- **Copy address**: extract URL, e-mail addresses, or phone numbers from the message.
- **Delete**: delete the message.
- **Protection**: protect the message from being deleted.

Drafts *(Menu 4.2.2)*

This folder stores text messages you have saved to send at a later time.

When you select a message, it opens in Edit mode so that you can edit and send the message.

Outbox *(Menu 4.2.3)*

This folder stores text messages that the phone is attempting to send or has failed to send.

The following icons are available to show the message status:

- Being sent
- Failed to send

While viewing a message, press <**Options**> to access the following options:

- **Send again**: retry sending the message.
- **Forward**: forward the message to other people.
- **Copy address**: extract URLs, e-mail addresses, or phone numbers from the message.
- **Delete**: delete the message.
- **Protection**: protect the message from being deleted.

Sent *(Menu 4.2.4)*

This folder stores text messages that you have sent.

While viewing a message, press <**Options**> to access the following options:

- **Forward**: forward the message to other people.
- **Copy address**: extract URLs, e-mail addresses, or phone numbers from the message.
- **Delete**: delete the message.
- **Protection**: protect the message from being deleted.

My folders *(Menu 4.2.5)*

Use this menu to create new folders and organise your text messages.

Creating a new folder

1. Press <**Yes**>.
2. Enter a folder name and press <**OK**>.

Using folder options

On the folder list, press <**Options**> to access the following options:

- **Open**: open the selected folder.
- **Add folder**: add a new folder.
- **Rename folder**: change the folder name.
- **Delete**: delete the selected folder.

Templates *(Menu 4.3)*

Use this menu to make and use templates of frequently used messages.

Creating a template

1. Select an empty location.
2. Enter a message and press <**OK**>.

Using template options

From the template list, press <**Options**> to access the following options:

- **Edit**: edit the selected template.
- **Send message**: create and send a text message using the template.
- **Delete**: delete the selected template.
- **Add new**: add a new template.

Delete all *(Menu 4.4)*

Use this menu to delete messages in each message folder all at once.

1. Press [i OK] to select the message folders to be cleared.

   Pressing the key twice displays the message types so that you can specify the ones to be cleared.
2. Press <**Delete**>.
3. Press [i OK] to select the check box to delete protected messages, and then press <**Yes**>.
4. Press <**Yes**> to confirm the deletion.

Settings *(Menu 4.5)*

Use this menu to set up various options for using SMS and CB messages.

Text message *(Menu 4.5.1)*

You can configure SMS settings.

- **Send settings**: set up the options for sending SMS messages:

  Reply path: allow recipients to reply to you through your SMS server.

  Delivery report: set the network to inform you when your messages have been delivered.

  Character support: you can check the encoding type for entering text.

  Bearer selection: you can check the network bearer type.
- **Current profile**: select an SMS setting profile.
- **Profile settings**: set the properties of each profile.

  Service centre: store or change the number of your SMS server.

  Default destination: enter the default destination.

  Default type: set the default message type. The network can convert the messages into the selected format.

  Default validity: set the length of time your messages are stored in the SMS server.

  Setting name: enter a profile name.

Broadcast *(Menu 4.5.2)*

You can change the settings for receiving CB messages.

- **Receive**: select to receive CB messages, or not.
- **Channel list**: indicate the channels from which you wish to receive CB messages. Please contact your service provider for further details.
- **Language**: select the preferred languages in which CB messages display.

Memory status *(Menu 4.6)*

Use this menu to view the amount of memory currently in use in each folder.

i-mode *(Menu 5)*

In this menu, you can use the i-mode browser, send or receive i-mode mails and MMS messages, and access Java applications.

To access this menu, press [i OK] in Idle mode and select **i-mod**e. You can also quickly access this menu by pressing <**i-mode**> in Idle mode.

i-Menu *(Menu 5.1)*

Use this menu to access the i-mode browser. You can also quickly launch the browser by pressing and holding [i OK] in Idle mode.

About i-mode

In i-mode, browse through your favourite magazines, book tickets and hotels for your vacations, find your favourite club, download the best ringtones and games at the lowest price, send live e-mails with photographs. You can do all of these economically since with i-mode you are charged by the amount of data you send and receive, not by the length of time you are on-line.

Navigating the i-mode browser

To	Press
scroll through browser items	[Up] or [Down].
select an item	[i OK].
return to the previous page	[Left] or [**C**].

- Key operations on an i-mode screen depend on the screen contents at that time.
- You can answer a call while using the i-mode feature. After ending the call, the display returns to the function screen you were using.

Using browser options

From any web page, press <**Menu**> to access the following options:

- **Add Bookmark**: add a bookmark for the current web page.
- **Save Page**: save the current web page.
- **Save Image**: save an image from the current web page.

- **Show Properties**: access the properties for the i-mode browser.
- **Bookmark List**: access the bookmark list.
- **Go to Webpage**: enter a URL address or select one from the Address history list.
- **Saved Page List**: access the URL addresses you have saved.
- **Browser Settings**: change the settings for the i-mode browser to suit your preference.
- **i-Menu**: access the homepage of your service provider.
- **Home**: return to the homepage.
- **Reload**: update the current web page.
- **Compose Mail**: send the URL address of the current page via i-mail or i-MMS.
- **Save in Contacts**: save the selected phone number or e-mail address to Contacts.
- **Play Animation**: play animations.
- **Sound Effect**: turn the sound effect on or off.

Exiting the i-mode browser

To exit the browser at any time, press [ ].

Mail *(Menu 5.2)*

Use this menu to use i-mail and i-MMS message services. You can quickly access this menu by pressing <**i-mail**> in Idle mode.

Compose iMail *(Menu 5.2.1)*

You can create and send a mail, attaching various types of media files.

☑ According to the Digital Rights Management (DRM) system, web content may not be able to be forwarded.

Creating and sending an i-mail

1. Select the **Destination** field.
2. Enter a phone number or e-mail address and press [ ].
3. Select the **Title** field.
4. Enter the mail title and press [ ].
5. Select the Attach field.

6. Use the following options to add files:
   - **Attach File**: add images, sounds, videos, music files, name cards, or schedule items.
   - **Attach Melody**: add MFi (Melody Format for i-mode) melody files.
   - **Attach Bookmark**: add URL addresses you have bookmarked.
7. Select the **Text** field.
8. Enter the mail text and press [i OK].

   To insert pictograms into text, press <**Options**> and select **Pictographic**.

   You can use the copy and paste feature to quickly and easily enter text. ▶ p. 50
9. When you have finished, select **Send** to send the mail.

Using mail options

While creating a mail, press <**Opt.**> access the following options:

- **Send**: send the mail.
- **Save**: save the mail to the Draft box.
- **Add Address**: add destination numbers or addresses.
- **Address Menu**: edit destination numbers or addresses. You can change the selected number or address to another, or change an address type (To, Cc, Bcc).
- **Attach File Menu**: add media files, name cards, schedule items, or bookmarks.
- **Attach Signature**: attach your signature, as specified in the **Edit signature** option of **Mail settings**.
- **Delete Body**: delete the body of the mail.
- **Delete Message**: cancel composing the mail.

Copying and pasting text

1. While entering text in a mail, place the cursor next to the text you want to copy.
2. Press <**Options**> and select **Copy Messages**.
3. Press <**Copy On**>.
4. Highlight the text as you want by pressing the Navigation keys and press [i OK].

5. Select **Copy** to copy the highlighted text.

   You can also copy all text in the message by selecting **Copy all**.

6. Press <**Options**> and select **Paste** to paste the copied text.

Compose iMMS *(Menu 5.2.2)*

Multimedia Message Service (MMS) delivers messages containing a combination of text, image, video, and audio, from phone to phone or from phone to e-mail.

> ☑ According to the Digital Rights Management (DRM) system, web content may not be able to be forwarded.

Creating and sending an i-MMS message

1. Select the **Destination** field.
2. Enter a phone number or e-mail address and press [i OK].
3. Select the **Title** field.
4. Enter the message title and press [i OK].
5. Select the **SMIL** field.
6. Use the following options to create an SMIL slide.
   - **Media**: add text, images, sounds, or videos.
   - **Fit mode**: select the size in which the image displays.

     Hidden: the image displays in its actual size.

     Fill: the image is scaled to fit into the display area.

     Meet: the image is scaled so that the longer side, either the height or width, fits the corresponding side of the display area.

     Slice: the image is scaled so that the shorter side, either the height or width, fits the corresponding side of the display area.
   - **Options**: change the display time for each item in the message, such as a slide, text, an image, or an sound.
   - **Arrange Slide**: customise slide settings.

     Text Color: select a colour for the message text.

     Background Color: select a colour for the slide background.

     Change Region Size: change the size of the image area. Press [Up] or [Down] to move the border line.

Swap Position: switch the order of the image and text.

- **Slide**: add or delete slides.

  Add: add a new slide after the last slide. Once you have added slides, you can scroll between them by pressing [Left] or [Right].

  Insert: insert a new slide after the slide you are creating.

  Delete: delete the selected slide.

  Clear: delete the last slide.

7. When you have finished, select **Send** to send the message.

Using message options

While creating an i-MMS message, you can access a variety of options by pressing <**Menu**>. ▶ p. 50

Inbox *(Menu 5.2.3)*

Use this menu to access i-mails and i-MMS messages you have received.

☑ When the Inbox reaches its maximum limit, new i-mails or i-MMS messages will overwrite old messages that have already been read.

Viewing a message

1. Select a folder.
2. Select a message.
3. Press [Left] or [Right] to scroll through slides.

Using message options

While viewing an i-mail or i-MMS message, press <**Menu**> to access the following options:

- **Reply**: send a reply to the sender or all of the recipients of the message. You can also send a reply with the message included.
- **Forward**: forward the message to other people.
- **Move**: move the message to another folder.
- **Delete**: delete the message.
- **Protect On/Off**: protect the message from being deleted.
- **Save in Contacts**: save the sender's address or phone number to Contacts.
- **Save Melody**: save the melody attached to the message.
- **Save Attached File**: save the attached files in the phone's memory.

- **Copy**: copy the message title or sender's address. You can also copy the text of the mail.
- **Play SMIL**: play the SMIL slides of an i-MMS message automatically.
- **Browse SMIL**: set the SMIL slides to be played manually. Press [Left] or [Right] to move to the next slide.

On the message list, press <**Menu**> to access the following options:

- **Move**: move the selected message to another folder.
- **Delete**: delete the selected message.
- **Selective Delete**: delete the messages you select.
- **Delete All**: delete all messages.
- **Protect On/Off**: protect the message from being deleted.
- **Sort**: sort messages by title, address, or date.
- **Filter**: set messages to be displayed by the selected filter.
- **Export**: save the selected message in the **My vMessages** folder.

Sent *(Menu 5.2.4)*

Use this menu to access the i-mails and i-MMS messages you have sent.

While viewing a message, press <**Menu**> to access the following options:

- **Edit**: edit the message and then send it.
- **Delete**: delete the current message.
- **Protect On/Off**: protect the message from being deleted.
- **Save in Contacts**: save the sender's address or phone number to Contacts.
- **Copy**: copy the message's title or sender's address.
- **Play SMIL**: play the SMIL slides of an i-MMS message.
- **Browse SMIL**: set the SMIL slides to be played manually. Press [Left] or [Right] to move to the next slide.

On the message list, press <**Menu**> to access the following options:

- **Title sort**: sort messages by title.
- **Edit**: edit the message.
- **Delete**: delete the selected message.
- **Selective Delete**: delete the messages you select.
- **Delete all**: delete all messages.
- **Protect On/Off**: protect the message from being deleted.
- **Sort**: sort messages by title, address, or date.
- **Filter**: set messages to be displayed by the selected filter.
- **Export**: save the selected message in the **My vMessages** folder.

Draft *(Menu 5.2.5)*

Use this menu to access i-mails and i-MMS messages you have saved before sending.

When you select a message in the Draft box, the message opens in Edit mode so that you can edit and send the message.

Check New Mail *(Menu 5.2.6)*

Use this menu to check the i-mode centre for new i-mails and i-MMS messages and then retrieve them to the phone.

Mail Settings *(Menu 5.2.7)*

Use this menu to change the various settings for sending and receiving i-mails and i-MMS messages.

- **Communication**: change the settings for sending or receiving messages.

  Auto Receive: set the phone to retrieve new messages from the i-mail server at the time of their receipt.

  Receive Attach File: select types of attachments you want to receive.
- **Edit**: change the edit settings.

  Edit Signature: enter a tag line to be inserted at the end of your mail text. If you select **Auto**

Attach, the signature will be automatically inserted into all of your outgoing messages.

Edit Quotation: enter quotations to be inserted at the start of your mail text.

- **View**: change the view settings.

  Screen Scroll: set a time interval the page scrolls to the next page.

  Font Size: select a font size to be used for displaying a message.

  List Display: select the number of lines for displaying a message and the message display type, for example subject or address, on the list.

  Folder Security: locks message folders to pro.

  Auto Play: set a sound, video, or SMIL slide to be automatically played when you open a message.

  Pasted Data: set MFi (Melody Format for i-mode) melody files or links to java resources to be inserted to the body when you are creating a message. The added data, however, will be sent as a data format attachment.

- **Check Settings**: check your current mail settings.
- **Reset Settings**: restore the default settings.

Java *(Menu 5.3)*

You can download and play games and MIDlets (Java applications that run on mobile phones) from various sources using the i-mode browser, and store them on your phone.

On the application list, press <**Opt.**> to access the following Java system options:

- **Create Folder**: create a folder
- **Delete Folder**: delete the selected folder.
- **Rename Folder**: change the name of the folder.
- **Move To Folder**: move the selected application to another folder.
- **Upgrade**: update the selected application.
- **Delete**: delete the selected Java application.
- **Delete All**: delete all Java applications.
- **Sort**: sort Java applications by name, time, used memory.
- **Properties**: access the application properties.

- **Certificate**: access the application certificate.
- **Network Setting**: select whether or not the application connects to the network when it runs, if the selected one is an online application.
- **i-Appli To Setting**: set whether or not the selected application starts with a link. This option is available only when the LaunchByBrowser key or the AllowPushBy key is stated in the ADF.
- **Icon Info Setting**: set whether or not your phone operates the selected application using system information of your phone. This option is available only when the GetSysInfo key is stated in ADF.
- **AutoStart Setting**: select whether or not the application launches automatically when selected.
- **Show Desc Setting**: set whether or not the description of an application is displayed before downloading.
- **AutoStart Failure**: set whether or not the application launches automatically after the launch fails.
- **Trace Info.**: access trace information for a Java application.
- **System Info**: access system information for a Java application.

SMS *(Menu 5.4)*

Use this menu to access the **Create message** menu directly. ▶ p. 43

Bookmarks *(Menu 5.5)*

Use this menu to access URL addresses of websites you have bookmarked while navigating the wireless web.

Press <**Menu**> to access the following options:

- **Go To**: go to the bookmarked page.
- **Title**: edit the title of the bookmark.
- **Delete**: delete the selected bookmark.
- **Selective Delete**: delete the messages you select.
- **Delete All**: delete all bookmarks.
- **Show Address**: display URL addresses you have bookmarked.

- **Copy Address**: copy the URL address of the bookmark.
- **Compose Mail**: send the bookmark via i-mail or i-MMS.
- **Send via Infrared**: send the bookmark via the infrared port.

Go to Webpage *(Menu 5.6)*

Use this menu to access a specific website by manually entering a URL address or selecting one from the Address history list.

Saved Pages *(Menu 5.7)*

Use this menu to access the web pages you have saved.

While viewing a web page, press <**Menu**> to access the following options:

- **Save Image**: save an image from the current page.
- **Show Properties**: access various page and server properties.

  Address: display the URL address of the current page.

  Page Properties: access the properties of the current page.

  Certificates: access the server certificate.
- **Play Animation**: play animations.
- **Sound Effect**: turn the sound effect on or off.
- **Edit Title**: change the title of the page.
- **Delete**: delete the page.
- **Protect On/Off**: protect the page from being deleted, or not.

From the web page list, press <**Menu**> to access the following options:

- **Show**: open the selected page.
- **Edit Title**: change the title of the currently selected page.
- **Delete**: delete the selected page.
- **Selective Delete**: delete the messages you select.
- **Delete all**: delete all saved pages.

- **Show Address**: display the address of the web page.
- **Protect On/Off**: protect the currently selected page from being deleted.

Browser Settings *(Menu 5.8)*

Use this menu to change the settings for i-mode browser connections and display.

- **Home**: enable or disable the homepage of the i-mode browser.
- **View**: change the view settings for text and display on web pages.

  Font size: select a font size to be used for displaying text on web pages.

  Images: set whether or not the phone displays images on web pages.

  Table Layout: select a layout for the web page.

  Wrap text: set whether the phone wraps text on web pages to fit your phone's display, or displays text as it is on the web page.

  CSS: set whether or not the phone uses a style sheet for presenting documents on a web page.

  Screen Scroll: select the number of lines the web page displays.
- **Certificates**: view the list of server certificates you have received while navigating the wireless web, or switch the selected certificate from valid to invalid, or vice versa.
- **Others**: change other settings.

  Connection Timeout: set the phone to disconnect from the network after a specified length of time of inactivity.

  Send Terminal Info: set whether or not the phone sends its information to the web server while navigating the wireless web.

  Auto Play: set whether or not the phone automatically plays videos after downloading.

  Sound Effect: turn the sound effect on or off.
- **Check settings**: check your current settings.
- **Reset Settings**: restore the default settings.
- **Reset Data**: reset data you have downloaded.

File manager *(Menu 6)*

The **File manager** menu allows you to access images, videos, music files, and sound files stored in the phone's memory or on a memory card.

To access this menu, press <**Menu**> in Idle mode and select **File manag**er.

☑ According to the Digital Rights Management (DRM) system, web content may not be able to be forwarded.

Images *(Menu 6.1)*

This menu displays photos you have taken and images you have downloaded, received in messages, or imported from your computer.

Viewing an image

1. Select an image folder.
2. Select an image.

Viewing a slide show

You can view your photos as a slide show, a sequential presentation of each photo in the current folder.

1. Select **Photos**.
2. Press <**Options**> and select **Slide show**.
3. Select an interval option.
   The slide show begins.
4. Press <**Stop**> to stop the slide show.

Using image options

While viewing an image, press <**Options**> to access the following options:

- **List**: return to the image list.
- **Send via**: send the file via i-mail, i-MMS, Bluetooth, or the infrared port.
- **Set as**: set the image as wallpaper for the displays or as a caller ID image for a Contacts entry.
- **Edit**: edit the image using the Image editor, if it is a photo taken by the camera on the phone.
  ▶ p. 38
- **Delete**: delete the file or all files.
- **Rename**: change the file name.
- **Move to**: move the file to another folder or to a memory card.

- **Copy to memory card**: copy the file to a memory card.
- **Visible to Bluetooth**: share the file or all files with other Bluetooth devices.
- **Protection**: protect the file from being deleted.
- **Details**: access the file properties.

Videos *(Menu 6.2)*

This menu displays video clips you have recorded, downloaded, received in messages, or imported from your computer.

☑ Video clips recorded on other devices, such as camcorders, may not play correctly.

Playing a video clip

1. Select a video folder.
2. Select a video clip.

During playback, use the following keys:

Key	Function
i OK	Pauses or resumes playback.
Left	Moves backward in a file.
Right	Skips forward in a file.
▲/▼	Adjusts the volume.
Down	Stops playback.

Using video options

From a video screen, press <**Options**> to access the following options:

- **Play**: play the file.
- **Send via**: send the file via i-mail, i-MMS, Bluetooth, or the infrared port.
- **Set as**: set the video clip, if saved as a 3gp file, as wallpaper for the main display, your ringtone, or a caller ID image for a Contacts entry.
- **Delete**: delete the file or all files.
- **Rename**: change the file name.
- **Move to**: move the file to another folder or to a memory card.

- **Copy to memory card**: copy the file to a memory card.
- **Visible to Bluetooth**: share the file or all files with other Bluetooth devices.
- **Protection**: protect the file from being deleted.
- **Details**: access the file properties.

Music *(Menu 6.3)*

This menu displays 3gp (AAC and AAC+) files you have downloaded, received in messages, or imported from your computer.

Select a file. The Music player opens. ▶ p. 36

Using music options

From a music screen, press <**Options**> to access the following options:

- **Play**: play the file through the phone speaker or a Bluetooth headset.
- **Send via**: send the file via i-mail, i-MMS, Bluetooth, or the infrared port.
- **Add to playlist**: add the selected file to the play list you want.
- **Set as**: set the file as your ringtone or as a ringtone for a Contacts entry.
- **Delete**: delete the selected file or all files.
- **Rename**: change the file name.
- **Move to memory card**: move the file to a memory card.
- **Copy to memory card**: copy the file to a memory card, if you use.
- **Visible to Bluetooth**: share the file or all files with other Bluetooth devices.
- **Protection**: protect the file from being deleted.
- **Details**: access the file properties.

Mp3 *(Menu 6.4)*

This menu displays MP3 files you have downloaded, received in messages, or imported from your computer.

Select a file. The Music player opens. ▶ p. 36

Using Mp3 options

From a Mp3 screen, press <**Options**> to access the following options:

- **Play**: play the file through the phone speaker or a Bluetooth headset.
- **Send via**: send the file via Bluetooth or the infrared port.
- **Add to playlist**: add the selected file to the play list you want.
- **Delete**: delete the selected file or all files.
- **Rename**: change the file name.
- **Move to memory card**: move the file to a memory card.
- **Copy to memory card**: copy the file to a memory card.
- **Visible to Bluetooth**: share the file or all files with other Bluetooth devices.
- **Protection**: protect the file from being deleted.
- **Details**: access the file properties.

Sounds *(Menu 6.5)*

This menu displays voice memos you have recorded, and sound files you have downloaded, received in messages, or imported from your computer.

Playing a sound clip

1. Select a sound folder.
2. Select a sound clip. For a voice memo, see **Voice recorder**. ▶ p. 38

Using sound options

From a sound screen, press <**Options**> to access the following options:

- **Play**: play the file.
- **Send via**: send the file via i-mail, i-MMS, Bluetooth, or the infrared port.
- **Set as**: set the file as your ringtone or as a ringtone for a Contacts entry, if the file is downloaded.
- **Delete**: delete the selected file or all files.
- **Rename**: change the file name.

- **Move to**: move the file to another folder or to a memory card.
- **Copy to memory card**: copy the file to a memory card, if you use.
- **Visible to Bluetooth**: share the file or all files with other Bluetooth devices.
- **Protection**: protect the file from being deleted.
- **Details**: access the file properties.

Frame *(Menu 6.6)*

This menu displays photo decorative frames you have downloaded from the wireless web.

Using frame options

While viewing a frame, press <**Options**> to access the following options:

- **List**: return to the file list.
- **Take photo**: take a photo using the selected frame. ▶ p. 69
- **Send via**: send the file via i-mail, i-MMS, Bluetooth, or the infrared port.
- **Delete**: delete the selected file or all files.
- **Rename**: change the file name.
- **Move to memory card**: move the file to a memory card.
- **Copy to memory card**: copy the file to a memory card, if you use.
- **Visible to Bluetooth**: share the file or all files with other Bluetooth devices.
- **Protection**: protect the file from being deleted.
- **Details**: access the file properties.

My vMessages *(Menu 6.7)*

This menu displays i-mails or i-MMS messages you have backed up from the i-mode server to the phone's memory.

Using i-mode message options

From a vMessage screen, press <**Options**> to access the following options:

- **Import**: retrieve the selected message from the i-mode server and open it.
- **Send via**: send the message via i-mail, i-MMS, Bluetooth, or the infrared port.

- **Delete**: delete the selected message or all messages.
- **Rename**: change the name for the message.
- **Move to memory card**: move the message to a memory card.
- **Copy to memory card**: copy the message to a memory card.
- **Visible to Bluetooth**: share the message or all messages with other Bluetooth devices.
- **Protection**: protect the message from being deleted.
- **Details**: access the message properties.

Other files *(Menu 6.8)*

Use this menu to view various document files and files stored in the phone's memory without corruption. Available file formats are DOC, XLS, PPT, PDF, and TXT.

Viewing a file

Select a file. Picsel File Viewer runs to open the document.

☑ Depending on the file size or memory capacity of Picsel File Viewer, a file may not open properly.

Use the following keys to view the document:

Key	Function
Up/Down/ Left/Right	Pans around the page.
▲/▼	Zooms in or out.
i OK	Fits the document to the page size.
2	Returns to the first page.
4	Returns to the previous page.
5	Rotates the document.
6	Moves to the next page.
8	Moves to the last page.
*	Changes the display to Full screen view or Normal screen view.

Using document options

While viewing a document, press <**Options**> to access the following options:

- **Full screen view**/**Normal view**: change the display to Full screen view or to Normal screen view.
- **File viewer function**: use the Viewer functions for viewing a document.

  Zoom: zoom in or out.

  Fit to: fit the document to the page size, screen width, or screen height.

  Go to: move to another page of the document.

  Rotate: rotate the document.

  Screen panning/**Normal panning**: change the panning mode to by screen or by preset picsel.
- **Hide controller**/**Show controller**: (for Full screen view) hide or display the Viewer control bar.
- **Send via**: send the file via Bluetooth or the infrared port.
- **Move to memory card**: move the file to a memory card.
- **Copy to memory card**: copy the file to a memory card.
- **Delete**: delete the selected file.
- **Rename**: change the file name.
- **Visible to Bluetooth**: share the file or all files with other Bluetooth devices.
- **Protection**: protect the file from being deleted.
- **Details**: access the file properties.
- **Shortcut**: view the functions of the keys you can use in Picsel File Viewer.

Memory card *(Menu 6.9)*

Use this menu to access the files stored in a memory card. This menu is shown only when a memory card is inserted into the phone.

Memory status *(Menu 6.0)*

Use this menu to view memory information for media items in the phone's memory or on a memory card. For the phone's memory, press [Left] or [Right] to view the memory status by size or number of items.

Calendar *(Menu 7)*

The **Calendar** menu enables you to keep track of your schedule.

To access this menu, press <**Menu**> in Idle mode and select **Calendar**.

Consulting the calendar

When you enter the **Calendar** menu, the calendar in Month view appears with today's date indicated by a red box.

Selecting a day

- Press [Left] or [Right] to move by day.
- Press [Up] or [Down] to move by week.
- Press [▲/▼] to move by month.

Using calendar options

Press <**Options**> to access the following options:

- **View mode**: change the view mode of the calendar. ▶ p. 68
- **Create**: add a new event. ▶ next section
- **Go to**: select today's date or enter a specific date.
- **Sort by**: sort items by type of event.
- **Delete**: delete the items stored on the calendar by using various deleting options.

  ☑ You can delete recurring events in Day view only.

- **Missed alarm events**: view events whose alarms you have missed.
- **Memory status**: access memory information for the event items stored on the calendar.

Creating an event

You can store scheduled events, anniversaries, memos, and To do items on the calendar. More than one event per day can be stored.

Entering a new scheduled event

1. Select a date on the calendar.
2. Press <**Options**> and select **Create** → **Schedule**.
3. Enter information or change the settings:
   - **Subject**: enter a title for the event.
   - **Details**: enter event details.

- **Start date** and **Start time**: enter the starting date and time for the event.
- **AM/PM**: select **AM** or **PM** in 12-hour time format.
- **End date** and **End time**: enter the ending date and time for the event.
- **AM/PM**: select **AM** or **PM** in 12-hour time format.
- **Location**: enter information about the event location.
- **Alarm**: set an alarm for the event.
- **Before**: set how long before the event the alarm is to alert you.
- **Alarm tone**: select an alarm tone.
- **Repeat**: set the event to recur and select a repeat unit.
- **Until**: set the ending date, if the event will recur.

4. Press <**Save**> to save the event.

Entering a new anniversary

1. Select a date on the calendar.
2. Press <**Options**> and select **Create** → **Anniversary**.
3. Enter information or change the settings:
   - **Occasion**: enter information about the anniversary.
   - **Date**: enter the date.
   - **Alarm**: select to set an alarm for the anniversary.
   - **Before**: set how long before the event the alarm is to alert you.
   - **Alarm time**: enter the time for the alarm to ring.
   - **AM/PM**: select **AM** or **PM** in 12-hour time format.
   - **Alarm tone**: select an alarm tone.
   - **Repeat every year**: set the phone to remind you of the anniversary every year.
4. Press <**Save**> to save the event.

Entering a memo

1. Select a date on the calendar.
2. Press <**Options**> and select **Create** → **Memo**.

3. Enter a memo and press <**Save**>.

Entering a To do item

1. Select a date on the calendar.
2. Press <**Options**> and select **Create** → **To do**.
3. Enter information or change the settings:
   - **To do**: enter information about the item.
   - **Start date**: enter the starting date.
   - **Due date**: enter the ending date.
   - **Select priority**: select a priority level.
4. Press <**Save**> to save the event.

Viewing an event

Once you have scheduled events, the event icons and the number of events for a specific day appears at the bottom of the calendar.

- Scheduled event
- Anniversary
- To do item
- Memo

Accessing an event

1. Select a date on the calendar to display the events for the day.
2. Select an event to view its details.
3. Press [Left] or [Right] to access the other events scheduled for the selected day.

Using event options

While viewing an event, press <**Options**> to access the following options:

- **Edit**: edit the event.
- **Create**: add a new event.
- **Send via**: send the event via SMS, i-mail, i-MMS, Bluetooth, or the infrared port.
- **View mode**: change the view mode of the calendar.
- **Delete**: delete the event.
- **Memory status**: access memory information for the events stored on the calendar.

Viewing an event in a different mode

You can change the calendar display to Day view or Week view. Press <**Options**> and select **View mode** → a view mode.

Day view

You can view events for the selected date. Select an event to view its details.

The following icons may display to indicate the event status:

- Alarm set
- Recurring event
- To do item priority (Red: high, Blue: normal, Grey: low)
- Completed To do item

Week view

You can view events for the selected week. A cell on the timetable indicates the presence of a schedule item. Select a cell in the day you want.

Camera *(Menu 8)*

You can use the camera module embedded in your phone to take photos and record videos.

To access this menu, press <**Menu**> in Idle mode and select **Camera**, or press and hold [ ].

- Do not take photos of people without their permission.
- Do not take photos in a place where cameras are not allowed.
- Do not take photos in a place where you may interfere with another person's privacy.

Taking a photo

You can take photos in various modes. The camera produces JPEG photos.

When you take a photo in direct sunlight or in bright conditions, shadows may appear on the photo.

1. Access the **Camera** menu or press and hold [ ] to turn on the camera.
2. Adjust the image to be captured.
   - Press the left soft key to access camera options. ▶ next section
   - Use the keypad to change the camera settings or switch to other modes. ▶ p. 71
3. Press [ ] to take a photo. The photo is saved in the **Photos** folder.

4.

To	Press
access photo options	<**Options**>. ▶ p. 72
return to Capture mode	<**Preview**>.

Using camera options in Capture mode

In Capture mode, press the left soft key to access the following options:

- **Record video**: switch to Record mode.
- **Shooting mode**: take a photo in the following modes:

  Single shot: take a photo in normal mode. You can select whether or not the camera automatically saves a photo.

  Multi shot: take a series of action stills. You can select the number of photos the camera will take and the shutter speed.

  Mosaic shot: take several stills and save them in one frame. You can select the layout.
- **Effects**: change the colour tone or apply a special effect.
- **Frames**: apply a decorative frame. You can also apply one of the downloaded frames and take a photo. ▶ p. 63
- **Flash**: determine the use of the flash.
- **Timer**: set a time delay before the camera takes a photo.
- **Go to photos**: access the **Photos** folder.
- **Settings**: change the default settings for taking a photo.

  Size: select an image size.

  Quality: select an image quality setting.

  Viewfinder: select a preview screen.

  Shutter sound: select the sound that you hear when you press the shutter release, [📷].

  Zoom sound: turn the sound effect for zooming on or off.

  Brightness sound: turn the sound effect for brightness adjustment on or off.

White balance: adjust the colour balance of the image. You can make your photo appear warmer or cooler.

ISO: change the ISO setting, which controls the sensitivity of your camera. For low light situations, select a higher ISO number. The higher the ISO number, the faster the camera shutter functions and the more sensitive the camera is to light. Higher ISO settings may bring some distortion to an image.

Save: select the memory location to store photos, if a memory card is inserted.

- **Short cuts**: view the functions of the keys you can use in Capture mode.

Using the keypad in Capture mode

You can use the keypad to customise your camera settings in Capture mode.

Key	Function
Left/Right	Adjusts the image brightness.
Up/Down	Zooms in or out.
▲	Flips the image vertically.
▼	Shows the mirror image.
1	Switches to Record mode. ▶ p. 72
2	Changes the image size.
3	Changes the image quality.
4	Changes the shooting mode.
5	Changes the colour tone or applies a special effect.
6	Changes the ISO setting.
7	Selects a decorative frame.
8	Sets the timer.
9	Goes to the **Photos** folder. ▶ p. 59
*	Changes the preview screen.
0	Determines the use of the flash.
#	Changes the white balance.

Using photo options

After saving a photo, press <**Options**> to access the following options:

- **Take another**: return to Capture mode.
- **Send via**: send the file via i-mail, i-MMS, Bluetooth, or the infrared port.
- **Set as**: set the photo as wallpaper for the displays or as a caller ID image for a Contacts entry.
- **Edit**: edit the photo using the Image editor. ▶ p. 38
- **Delete**: delete the file.
- **Rename**: change the file name.
- **Go to photos**: access the **Photos** folder.
- **Protection**: protect the file from being deleted.
- **Details**: access the file properties.

Taking a photo with the phone closed

1. Press and hold [📷].
2. If necessary, press [►II] to highlight 📷.
3.

To	Press
flip the image vertically	[▲].
show the mirror image	[▼].
turn the flash on or off	and hold [▲/▼].
adjust the brightness	[I◄◄].
zoom in or out	[►►I].

4. Press [📷] to take a photo. The photo is automatically saved.

Recording a video

You can record a video of what is displayed on the camera screen and save it.

1. In Capture mode, press [**1**].
2. Adjust the image to be captured.
   - Press the left soft key to access camera options. ▶ next section
   - Use the keypad to change the camera settings or switch to other modes. ▶ p. 74
3. Press [📷] to start recording.

4. Press [📷] or < ■ > to stop recording. The video is automatically saved in the **Video clips** folder.

5.

To	Press
play back the video clip	[i OK].
access video options	<**Options**>.
return to Record mode	<**Preview**>.

Using camera options in Record mode

In Record mode, press the left soft key to access the following options:

- **Take photo**: switch to Capture mode.
- **Effects**: change the colour tone or apply a special effect.
- **Flash**: determine the use of the flash.
- **Timer**: set a time delay before the camera starts recording.
- **Go to videos**: access the **Video clips** folder.
- **Settings**: change the following settings for recording a video:

Recording mode: select a video recording mode.

Select **Limit for MMS/Wallpaper** to record a video suitable for i-mail or i-MMS or for setting as wallpaper. The video clip is saved in 3GP format.

Select **Normal** to record a video within the limit of the currently available memory. The video clip is saved in MP4 format.

Size: select a frame size.

Quality: select an image quality setting.

Viewfinder: select a preview screen.

Audio record: record audio with a video clip.

Zoom sound: turn the sound effect for zooming on or off.

Brightness sound: turn the sound effect for brightness adjustment on or off.

White balance: adjust the colour balance of the image. You can make your video appear warmer or cooler.

Save: select the memory location to store video clips, if a memory card is inserted.

- **Short cuts**: view the functions of the keys you can use in Record mode.

Using the keypad in Record mode

You can use the keypad to customise your camera settings in Record mode:

Key	Function
Left/Right	Adjusts the image brightness.
Up/Down	Zooms in or out.
▲	Flips the image vertically.
▼	Shows the mirror image.
1	Switches to Capture mode. ▶ p. 69
2	Changes the frame size.
3	Changes the image quality.
4	Changes the video recording mode.
5	Changes the colour tone or applies a special effect.
7	Mutes or unmutes audio.
8	Sets the timer.
9	Goes to the **Video clips** folder. ▶ p. 60
*	Changes the preview screen.
0	Determines the use of the flash.
#	Changes the white balance.

Using video options

After saving a video clip, press <**Options**> to access the following options:

- **Record another**: return to Record mode.
- **Send via**: send the file via i-mail, i-MMS, Bluetooth, or the infrared port.
- **Set as**: set the video clip, if saved as a 3gp file, as wallpaper for the main display, your ringtone, or a caller ID image for a Contacts entry.
- **Delete**: delete the file.

- **Rename**: change the file name.
- **Go to videos**: access the **Video clips** folder.
- **Protection**: protect the file from being deleted.
- **Details**: access the file properties.

Recording a video with the phone closed

1. Press and hold [📷].
2. If necessary, press [►II] to highlight 🎥.
3.

To	Press
flip the image vertically	[▲].
show the mirror image	[▼].
turn the flash on or off	and hold [▲/▼].
adjust the brightness	[I◄◄].
zoom in or out	[►►I].

4. Press [📷] to start recording.
5. Press [📷] to stop recording. The video clip is automatically saved.

Settings *(Menu 9)*

The **Settings** menu provides you with various setting options to customise the phone to your preferences and needs. You can also reset the settings to their default status.

To access this menu, press [*i* OK] in Idle mode and select **Settings**.

Time and date *(Menu 9.1)*

Use this menu to change the time and date displayed on your phone. Before setting the time and date, specify your time zone in the **World time** menu. ▶ p. 40

- **Set time**: enter the current time.
- **AM/PM**: select **AM** or **PM** in 12-hour time format.
- **Time format**: select a time format.
- **Set date**: enter the current date.
- **Calendar starting day**: set which day of the week the calendar starts with.

Phone settings *(Menu 9.2)*

Many different features of your phone's system can be customised to suit your preferences.

Language *(Menu 9.2.1)*

Use this menu to select one of several languages for the display text.

Greeting message *(Menu 9.2.2)*

Use this menu to enter the greeting that is displayed briefly when the phone is switched on.

Short cut *(Menu 9.2.3)*

You can use the Navigation keys as shortcuts to access specific menus directly from Idle mode. Use this menu to assign a shortcut to a key.

Assigning a shortcut menu

1. Select a key to be used as a shortcut key.
2. Press <**Options**> and select **Change**.
3. Select the menu to be assigned to the key.

Using shortcut options

Press <**Options**> to access the following options:

- **Change**: assign or change a shortcut menu.
- **Remove**: deactivate the shortcut assignment to the selected key.
- **Remove all**: deactivate all shortcut assignments.

Volume key *(Menu 9.2.4)*

Use this menu to set whether the phone mutes the call ringer or rejects a call if you press and hold [▲/▼] when a call comes in.

Extra settings *(Menu 9.2.5)*

You can turn the automatic redialling or answering feature on or off, and lock the external keys.

- **Auto redial**: set the phone to make up to ten attempts to redial a phone number after an unsuccessful call.
- **Active folder**: answer an incoming call by opening the phone.
- **Anykey answer**: answer an incoming call by pressing any key, except for [ ] and <**Reject**>.
- **Cover keypad lock**: lock the exposed keys to keep accidental presses from affecting your phone's operation when the phone is closed.

Display settings *(Menu 9.3)*

Use this menu to change settings for the display and backlight.

Wallpaper *(Menu 9.3.1)*

You can set up the idle screen on both displays.

- **Main display**: select an image or video clip to be displayed on the main display.
- **Cover display**: select an image to be displayed on the external display.
- **Text position**: select a text position. If you don't want to display text in Idle mode, select **Off**.
- **Text mode**: select a font style.
- **Text colour**: select a font colour.
- **Graphic logo**: set the phone to display a graphic icon instead of the service provider's logo on the idle screen. This is only available if a graphic icon has been received in a message.

Skin *(Menu 9.3.2)*

You can select a skin colour pattern for Menu mode.

Brightness *(Menu 9.3.3)*

You can adjust the brightness of the main display for varying lighting conditions.

Back light *(Menu 9.3.4)*

You can select the length of time the backlight stays on or the length of time the display stays on in Dim mode, in which the backlight is off.

- **Main display normal**: select the length of time the backlight stays on.
- **Main display dim**: select the length of time the display stays on in Dim mode after the backlight turns off. After a specified time, the display turns off.
- **Show cover indicators**: set whether or not the cover display icons are shown on the external display.

Dialing display *(Menu 9.3.5)*

Use this menu to select a font colour for the numbers entered while dialling.

Show caller information *(Menu 9.3.6)*

Use this menu to set the phone to display missed call notifications with the most recently missed caller's information. To set the external display to show caller information, select **With Cover Display**.

Sound settings *(Menu 9.4)*

Use this menu to customise various sound settings.

Incoming call *(Menu 9.4.1)*

Use this menu to change the sound settings for incoming calls.

- **Ringtone**: select a ringtone to be used for the call ringer.
- **Volume**: select a ringtone volume.
- **Alert type**: specify how you are to be informed of incoming calls.

Keypad tone *(Menu 9.4.2)*

Use this menu to select the tone that the phone sounds when you press a key.

☑ You can adjust the keypad tone volume using [▲/▼] in Idle mode.

Message tone *(Menu 9.4.3)*

Use this menu to change the sound settings for incoming SMS messages, i-mails, i-MMS messages, and CB messages individually.

- **Tone**: select one of several message tones.
- **Alert type**: specify how you are to be informed when a message comes in.
- **Repetition**: specify how often the phone informs you of a new message.

Power on/off *(Menu 9.4.4)*

Use this menu to select the melody that the phone sounds when it is switched on or off.

Flip tone *(Menu 9.4.5)*

Use this menu to select the tone that the phone sounds when you open or close the phone.

Quiet mode *(Menu 9.4.6)*

Use this menu to set how the phone acts to alert you to a specific event while in Quiet mode.

Extra tones *(Menu 9.4.7)*

Use this menu to customise additional tones for the phone.

- **Minute minder**: set the phone to beep every minute during an outgoing call to keep you informed of the length of your call.
- **Connection tone**: set the phone to beep when an outgoing call connects to the system.
- **Alert on call**: set the phone to beep when you receive a new message or when the time for an alarm comes during a call.
- **Indicative tone**: set the phone to beep when you have made a mistake or something wrong happens on the phone.

Network services *(Menu 9.5)*

Use this menu to access network services. Please contact your service provider to check their availability and subscribe to them, if you wish.

Call diverting *(Menu 9.5.1)*

This network service reroutes incoming calls to a phone number that you specify.

1. Select a call diverting option:
   - **Divert always**: divert all calls.
   - **Busy**: divert calls when you are on another call.
   - **No reply**: divert calls when you do not answer the phone.
   - **Unreachable**: divert calls when you are not in an area covered by your service provider or when your phone is switched off.
   - **Cancel all**: cancel all call diverting options.
2. Select the type of calls to be diverted.
3. Select **Activate**. To deactivate call diverting, select **Deactivate**.
4. Move to the **Divert to** line.
5. Enter the number to which calls are to be diverted.
6. If you selected **No reply**, move to the **Seconds** line and select the length of time the network delays before diverting a call.
7. Press <**Select**>.

Call barring *(Menu 9.5.2)*

This network service allows you to restrict your calls.

1. Select a call barring option:
   - **All outgoing**: prohibit all outgoing calls.
   - **International**: prohibit international calls.
   - **International except home**: only allow calls to numbers within the current country when you are abroad, and to your home country.
   - **All incoming**: prohibit incoming calls.
   - **Incoming while abroad**: prohibit incoming calls when you use your phone outside of your home country.
   - **Cancel all**: cancel all call barring settings, allowing calls to be sent and received normally.
   - **Change barring password**: change the call barring password obtained from your service provider.
2. Select the type of calls to be barred.
3. Select **Activate**. To deactivate call barring, select **Deactivate**.
4. Enter the call barring password supplied by your service provider and press <**Select**>.

Call waiting *(Menu 9.5.3)*

This network service informs you when someone is trying to reach you while you are on another call.

1. Select the type of calls to which call waiting option will apply.
2. Select **Activate** and press <**Select**>. To deactivate call waiting, select **Deactivate**.

Network selection *(Menu 9.5.4)*

This network service allows you to either automatically or manually select the network to be used while roaming outside of your home area. You can select a network other than your home network only if there is a valid roaming agreement between the two.

Caller ID *(Menu 9.5.5)*

This network service allows you to prevent your phone number from being displayed on the phone of the person being called. If you select **Default**, the phone will use the default setting provided by the network.

☑ Some networks may not allow you to change this setting.

Voice mail server *(Menu 9.5.6)*

Use this menu to store the number of the voicemail server and access your voicemails.

> ☑ You must store the voicemail server number before accessing the server. Your service provider can give you the number.

- **Connect to voice server**: connect to the voicemail server to listen to your messages.
- **Voice server number**: change the voicemail server number.

Closed user group *(Menu 9.5.7)*

Use this menu to set incoming and outgoing calls to be restricted to a selected user group. For details about how to create a closed user group (CUG), contact your service provider.

- **Index list**: add, delete, or activate CUG index numbers.
- **Outside access**: enable calls to numbers other than those in the closed user group. This feature depends on the nature of your CUG subscription.
- **Default group**: enable the default CUG, if you have set one with your service provider. When making a call, you are given the option of using your default CUG, instead of selecting one from the list.

Band selection *(Menu 9.5.8)*

For the phone to make and receive phone calls, it must register with an available network. Your phone can handle any of the following types of networks: GSM 1900 and Combined GSM 900/1800.

The country where you purchased your phone determines the default band that it uses. When you travel abroad, you may need to change to an appropriate band.

Bluetooth *(Menu 9.6)*

Using the Bluetooth feature, you can connect the phone wirelessly to other Bluetooth devices and exchange data with them, talk hands-free, or control the phone remotely.

Bluetooth technology allows free wireless connections between all Bluetooth-compliant devices within a range of 10 meters. Since the devices communicate using radio waves, they do not need to be in line of sight to each other.

- If there are obstacles between the devices, the operating distance may be reduced.
- It is recommended that you don't use the Bluetooth feature while using multimedia features, such as voice recorder, camera, and Music player, or vice versa, for better performance.
- Some devices may not be compatible with your phone.

Setting up the Bluetooth feature

The **Bluetooth** menu provides the following options:

- **Activation**: activate or deactivate the Bluetooth feature.
- **My devices**: search for connectable Bluetooth devices.
- **My phone's visibility**: allow other Bluetooth devices to search for your phone.
- **My phone's name**: assign a Bluetooth device name to your phone, which is then displayed on other devices.
- **Secure mode**: determine if the phone asks for your confirmation when other devices access your data.
- **Bluetooth services**: display available Bluetooth services.

Searching for and pairing with a Bluetooth device

1. From the Bluetooth setting options, select **My devices**.
2. Select **Search for new devices**.

   After searching, a list of devices to which you can connect displays. The following icons indicate the type of device:

   - Stereo headset
   - Computer
   - Mobile phone
   - Unknown device
   - Mono headset
   - Hands-free car kit
   - Printer
   - PDA

The colour of the icon indicates the status of the the device:

- Grey for unpaired devices
- Blue for paired devices
- Red for devices that are currently connected to your phone

3. Select a device.
4. Enter a Bluetooth PIN and press <**OK**>. This code is used just once and you don't need to memorise it.

   When the owner of the other device enters the same code, pairing is complete.

☑ Some devices, especially headsets or hands-free car kits, may have a fixed Bluetooth PIN, such as **0000**. If the other device has a code, you must enter it.

Using device options

From the device list, press <**Options**> to access the following options:

- **Connect**: connect to a headset or hands-free car kit.
- **Disconnect**: end the connection with the connected device.
- **Browse files**: search for data from the device and import data directly to your phone.
- **Service list**: access the Bluetooth service list of the device.
- **Rename**: rename the paired device.
- **Authorise device**/**Unauthorised device**: determine whether or not the phone asks you to permit connection when other devices try to connect to your phone.
- **Delete**: remove the selected device or all devices from the list.

Sending data via Bluetooth

1. Activate the Bluetooth feature.
2. Select the application in which the item you want to send is stored.
3. Scroll to the item you want and press <**Options**>.
4. Select **Send via** → **Bluetooth**.

   The phone searches for devices within range and displays a list of available devices.
5. Select a device.

6. If necessary, enter the Bluetooth PIN needed for pairing and press <**OK**>.

Receiving data via Bluetooth

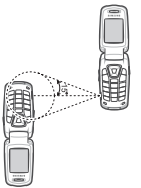
To receive data via Bluetooth, your phone's Bluetooth feature must be active and you set other devices to search for your phone.

1. If an unauthorised Bluetooth device sends data to your phone, press <**Yes**> to allow the device to access your phone.
2. Press <**Yes**> to receive data.

Infrared *(Menu 9.7)*

Use this feature to send and receive data through the infrared (IrDA) port. To use an infrared connection, you must do the following:

- Configure and activate an IrDA-compliant infrared port on the other device.
- Activate the infrared feature on your phone; select **Infrared** → **Activate**.
- Align the infrared port on the phone with the infrared port on the other device.



If there is no communication between your phone and the other IrDA-compliant device within 60 seconds of activating the feature, it is automatically deactivated.

Security *(Menu 9.8)*

Use this menu to protect the phone against unauthorised use by managing the several access codes of your phone and SIM card.

☑ If you enter an incorrect PIN/PIN2 three times in succession, the SIM card is blocked. To unblock it you need to enter your PUK/PUK2 (Personal Unblocking Key). The codes are supplied by your service provider.

PIN check *(Menu 9.8.1)*

The 4- to 8-digit PIN (Personal Identification Number) protects your SIM card against unauthorised use.

When this feature is enabled, the phone requires your PIN each time it is switched on.

Change PIN *(Menu 9.8.2)*

Use this menu to change your PIN. The PIN check feature must be enabled to change the PIN.

Phone lock *(Menu 9.8.3)*

Use this menu to lock the phone from unauthorised use.

When this feature is enabled, you must enter a 4- to 8-digit phone password each time the phone is switched on.

The password is preset to **00000000**. To change the password, use the **Change password** menu.

Change password *(Menu 9.8.4)*

Use this menu to change your phone password.

Privacy *(Menu 9.8.5)*

Use this menu to lock access to messages, files, i-mode access, or all menu functions on the phone, except for call functions.

When a privacy option is enabled, you must enter the phone password to access the locked items or functions.

SIM lock *(Menu 9.8.6)*

This menu allows your phone to work only with the current SIM by assigning a SIM lock code. You must enter the SIM lock code to use a different SIM card.

Fixed dialling mode *(Menu 9.8.7)*

If supported by your SIM card, Fixed Dialling Number (FDN) mode restricts your outgoing calls to a limited set of phone numbers. When this feature is enabled, you can make calls only to phone numbers stored on the SIM card.

Change PIN2 *(Menu 9.8.8)*

If supported by your SIM card, use this menu to change your current PIN2.

i-mode settings *(Menu 9.9)*

Use this menu to create and customise the i-mode profiles containing the settings for accessing the i-mode browser or sending i-mails and i-MMS messages.

> ☑ Your phone is suited for connecting to the network by default. If you change the settings without first checking with your service provider, the i-mode browser, i-mail, and i-MMS features may not work properly.

Creating an i-mode profile

1. Press [Left] or [Right] to select a profile.
2. Enter information for the profile.
   - **Profile name**: enter a profile name.
   - **Proxy host - imode**: enter the host of the proxy server for accessing the i-mode browser.
   - **Proxy host - streaming**: enter the host of the proxy server for accessing streaming services.
   - **Proxy port - imode**: enter the port number of the proxy server for accessing the i-mode browser.
   - **Proxy port - streaming**: enter the port number of the proxy server for accessing streaming services.
   - **SSL port**: enter the port number of the SSL (Secure Sockets Layer) server.
   - **Portal URL**: enter the URL address for the startup page of the i-mode browser.
   - **Location Server URL**: enter the URL address of your network cell ID.
   - **Mail Server**: enter the URL address of the i-Mail server.
   - **MMS Server**: enter the URL address of the i-MMS server.
   - **APN**: enter the access point used for the address of the GPRS network.
   - **User ID**: enter the user ID required to connect to the GPRS network.
   - **User password**: enter the password required to connect to the GPRS network.
3. Press <**Save**>.

Reset settings *(Menu 9.0)*

Use this menu to reset the phone's settings you have changed.

1. Press [i OK] to select the setting categories to be reset.
2. Press <**Reset**>.
3. Press <**Yes**> to confirm the reset.
4. Enter the phone password and press <**OK**>.

> ☑ The password is preset to **00000000**. You can change this password. ▶ p. 85

Solve problems

Help and personal needs

To save the time and expense of an unnecessary service call, perform the simple checks in this section before contacting a service professional.

When you switch on your phone, the following messages may appear:

"Insert SIM"

- Be sure that the SIM card is correctly installed.

"Enter password"

- The automatic locking function has been enabled. You must enter the phone's password before you can use the phone.

"Enter PIN"

- You are using your phone for the first time. You must enter the PIN supplied with the SIM card.
- The PIN check feature is enabled. Every time the phone is switched on, the PIN has to be entered. To disable this feature, use the **PIN check** menu.

No number is dialled when you re-call a Contacts entry

- Use the **Contacts list** menu to ensure the number has been stored correctly.
- Re-store the number, if necessary.

The battery doesn't charge properly or the phone sometimes turns itself off

- Wipe the charging contacts both on the phone and on the battery with a clean soft cloth.

If the above guidelines do not help you to solve the problem, take note of:

- The model and serial numbers of your phone
- Your warranty details
- A clear description of the problem

Then contact your local dealer or Samsung after-sales service.

Health and safety information

Exposure to Radio Frequency (RF) Signals

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 (FCC) 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 the safety standards that were developed by independent scientific organizations through periodic 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 phones employs a unit of measurement known as Specific Absorption Rate (SAR). The SAR limit recommended by the FCC is 1.6W/kg.*

SAR tests are conducted using standard operating positions specified 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 of the phone.

Before a new model phone 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 (e.g., at the ear and worn on the body) as required by the FCC for each model. While there may be differences between the SAR levels of various phones and at various positions, they all meet the government requirement.

* In the U.S. and Canada, the SAR limit for mobile phones used by the public is 1.6 watts/kg (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.

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 printed in the label on the phone.

For Body Operation

For body worn operation, this model phone has been tested and meets the FCC RF exposure guidelines when used with a Samsung-supplied or approved accessory designated for this product or when used with an accessory that contains no metal and that positions the handset a minimum distance from the body.

The minimum distance for this model phone from the body is written in the FCC certification information. None compliance with the above conditions may violate FCC RF exposure guidelines.

For more Information concerning exposure to radio frequency signals, see the following websites:

Federal Communications Commission (FCC)
http://www.fcc.gov

Cellular Telecommunications Industry Association (CTIA):
http://www.wow-com.com

U.S.Food and Drug Administration (FDA)
http://www.fda.gov/cdrh/consumer

World Health Organization (WHO)
http://www.who.int/peh-emf/en

Precautions When Using Batteries

- Never use any charger or battery that is damaged in any way.
- Use the battery only for its intended purpose.
- If you use the phone near the network's base station, it uses less power; talk and standby time are greatly affected by the signal strength on the cellular network and the parameters set by the network operator.
- Battery charging time depends on the remaining battery charge, the type of battery and the charger used. The battery can be charged and discharged hundreds of times, but it will gradually wear out. When the operation time (talk time and standby time) is noticeably shorter than normal, it is time to buy a new battery.
- If left unused, a fully charged battery will discharge itself over time.
- Use only Samsung-approved batteries and recharge your battery only with Samsung-approved chargers. When a charger is not in use, disconnect it from the power source. Do not leave the battery connected to a charger for more than a week, since overcharging may shorten its life.
- Extreme temperatures will affect the charging capacity of your battery: it may require cooling or warming first.
- Do not leave the battery in hot or cold places, such as in a car in summer or winter conditions, as you will reduce the capacity and lifetime of the battery. Always try to keep the battery at room temperature. A phone with a hot or cold battery may temporarily not work, even when the battery is fully charged. Li-ion batteries are particularly affected by temperatures below 0 °C (32 °F).
- Do not short-circuit the battery. Accidental short-circuiting can occur when a metallic object (coin, clip or pen) causes a direct connection between the + and – terminals of the battery (metal strips on the battery), for example when you carry a spare battery in a pocket or bag. Short-circuiting the terminals may damage the battery or the object causing the short-circuiting.

- Dispose used batteries in accordance with local regulations. Always recycle. Do not dispose batteries in a fire.

Road Safety

Your wireless phone gives you the powerful ability to communicate by voice, almost anywhere, anytime. But an important responsibility accompanies the benefits of wireless phones, one that every user must uphold.

When driving a car, driving is your first responsibility. When using your wireless phone behind the wheel of a car, practice good common sense and remember the following tips:

- Get to know your wireless phone and its features, such as speed dial and redial. If available, these features help you to place your call without taking your attention off the road.
- When available, use a hands-free device. If possible, add an extra layer of convenience and safety to your wireless phone with one of the many hands-free accessories available today.
- Position your wireless phone within easy reach. Be able to access your wireless phone without removing your eyes from the road. If you get an incoming call at an inconvenient time, let your voice mail answer it for you.
- 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, ice and even heavy traffic can be hazardous.
- Do not take notes or look up phone numbers while driving. Jotting down a To Do list or flipping through your phonebook takes your attention away from your primary responsibility, driving safely.
- Dial sensibly and assess the traffic; if possible, place calls when you are not moving or before pulling into traffic. Try to plan calls when your car will be stationary. If you need to make a call while moving, dial only a few numbers, check the road and your mirrors, then continue.
- Do not engage in stressful or emotional conversations that may be distracting. Make the people to whom you are talking aware that you are driving and suspend conversations that have the potential to divert your attention from the road.
- Use your wireless phone to call for help. Dial the emergency number in the case of fire, traffic accident or medical emergencies. Remember, it is a free call on your wireless phone!
- Use your wireless phone to help others in emergencies. If you see a car accident, crime in progress or other serious emergency where lives are

in danger, call the emergency number, as you would want others to do for you.

- 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 any other special non-emergency wireless number.

Operating Environment

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

When connecting the phone or any accessory to another device, read its user's guide for detailed safety instructions. Do not connect incompatible products.

As with other mobile radio transmitting equipment, users are advised that for the satisfactory operation of the equipment and for the safety of personnel, it is recommended that the equipment should only be used in the normal operating position (held to your ear with the antenna pointing over your shoulder).

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. Consult the manufacturer to discuss alternatives.

Pacemakers

- Pacemaker manufacturers recommend that a minimum distance of 15 cm (6 inches) be maintained between a wireless phone and a pacemaker to avoid potential interference with the pacemaker. These recommendations are consistent with the independent research and recommendations of Wireless Technology Research.
- Persons with pacemakers:
- should always keep the phone more than 15 cm (6 inches) from their pacemaker when the phone is switched on.
- should not carry the phone in a breast pocket.
- should use the ear opposite the pacemaker to minimize potential interference.

If you have any reason to suspect that interference is taking place, switch your phone off immediately.

Hearing Aids

Some digital wireless phones may interfere with some hearing aids. In the event of such interference, you may wish to consult your hearing aid manufacturer to discuss alternatives.

Other Medical Devices

If you use any other personal medical devices, consult the manufacturer of your device to determine if it is adequately shielded from external RF energy. Your physician may be able to assist you in obtaining this information. Switch your phone off 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. 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. 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 require you to do so.

Potentially Explosive Environments

Switch your phone off 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 the phone off while 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 the areas 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.

Emergency Calls

This phone, like any wireless phone, operates using radio signals, wireless and landline networks as well as user-programmed functions, which cannot guarantee connection in all conditions. Therefore, you should never rely solely on any wireless phone for essential communications (medical emergencies, for example).

Remember, to make or receive any calls the phone must be switched on and in a service area with adequate signal strength. 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.
2. Key in the emergency number for your present location (for example, 911 or other official emergency number). Emergency numbers vary by location.
3. Press [ ].

If certain features are in use (call barring, for example), you may first need to deactivate those features before you can make an emergency call. Consult this document 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 phone may be the only means of communication at the scene of an accident; do not cut off the call until given permission to do so.

Other Important Safety Information

- 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 applicable to the device.
- 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 wireless equipment is improperly installed and the air bag inflates, serious injury could result.

- Switch your phone off before boarding an aircraft. The use of wireless phones in aircraft is illegal and may be dangerous to the aircraft's operation.
- Failure to observe these instructions may lead to the suspension or denial of telephone services to the offender, or legal action, or both.

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 fulfill any warranty obligations and allow you to enjoy this product for many years:

- Keep your phone and all its parts and accessories out of the reach of small children and pets. They may inadvertently damage these things or choke on small parts.
- Keep the phone dry. Precipitation, humidity and liquids contain minerals that will corrode electronic circuits.
- Do not use the phone with a wet hand. Doing so may cause an electric shock to you or damage to the phone.
- Do not use or store the phone in dusty, dirty areas, as its moving parts may 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 the phone warms up to its normal operating temperature, moisture can form inside the phone, which may damage the phone's electronic circuit boards.
- 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. Wipe it with a soft cloth slightly dampened in a mild soap-and-water solution.
- Do not paint the phone. Paint can clog the device's moving parts and prevent proper operation.
- Do not put the phone in or on heating devices, such as a microwave oven, a stove or a radiator. The phone may explode when overheated.
- When the phone or battery gets wet, the label indicating water damage inside the phone changes colour. In this case, phone repairs are no longer guaranteed by the manufacturer's warranty, even if the warranty for your phone has not expired.

- If your phone has a flash or light, do not use it too close to the eyes of people or animals. This may cause damage to their eyes.
- Use only the supplied or an approved replacement antenna. Unauthorized antennas or modified accessories may damage the phone and violate regulations governing radio devices.
- If the phone, battery, charger or any accessory is not working properly, take it to your nearest qualified service facility. The personnel there will assist you, and if necessary, arrange for service.

Acknowledging Special Precautions and the FCC and Industry Canada Notice

Cautions

Modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC Compliance Information

This device complies with Part 15 of FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received.

- Including interference that may cause undesired operation.

Information to User

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/ TV technician for help.

Appendix A: 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 safety 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 (SAR). The SAR limit set by the FCC is 1.6 W/kg. SAR Tests 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 new model phone 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(e.g., at the ear and worn on the body) as required by the FCC for each model.

The highest SAR values of this model phone as reported to FCC are Head:0.853W/kg, Body-worn: 0.192W/kg in GSM 1900.

Body-worn operations are restricted to Samsung-supplied, approved or none Samsung designated accessories that have no metal and must provide at least 1.5cm separation between the device, including its antenna whether

extended or retracted, and the user's body. None compliance to the above restrictions may violate FCC RF exposure guidelines.

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 A3LSGHS5001.

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 ma gin of safety to give additional protection for the public and to account for any variations in measurements.

Appendix B: Guide to Safe and Responsible Wireless Phone Use

Cellular Telecommunications & Internet Association

"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 seat belts 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."

Cellular Telecommunications & Internet Association For more information, please call 1-888-901-SAFE.
For updates: http://www.wow-com.com/consumer/issues/driving/articles.cfm?ID =85

Appendix C: Consumer Update on Wireless Phones

U.S. Food and Drug Administration

1. 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 well within the FCC's compliance limits.

2. 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.

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 primary subject of the safety questions discussed in this document.

3. 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.

4. 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.

5. 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.

6. Do hands-free kits for wireless phones reduce risks from exposure to RF emissions?

Since there are no known risks from exposure to RF emissions from wireless phones, there is no reason to believe that hands-free kits reduce risks. Hands-free kits can be used with wireless phones for convenience and comfort. These systems reduce the absorption of RF energy in the head because the phone, which is the source of the RF emissions, will not be placed against the head. On the other hand, if the phone is mounted against the waist or other part of the body during use, then that part of the body will absorb more RF energy. Wireless phones marketed in the U.S. are required to meet safety requirements regardless of whether they are used against the head or against the body. Either configuration should result in compliance with the safety limit.

7. Do wireless phone accessories that claim to shield the head from RF radiation work?

Since there are no known risks from exposure to RF emissions from wireless phones, there is no reason to believe that accessories that claim to shield the head from those emissions reduce risks. Some products that claim to shield the user from RF absorption use special phone cases, while others involve nothing more than a metallic

accessory attached to the phone. Studies have shown that these products generally do not work as advertised. Unlike "hand-free" kits, these so-called "shields" may interfere with proper operation of the phone. The phone may be forced to boost its power to compensate, leading to an increase in RF absorption. In February 2002, the Federal trade Commission (FTC) charged two companies that sold devices that claimed to protect wireless phone users from radiation with making false and unsubstantiated claims. According to FTC, these defendants lacked a reasonable basis to substantiate their claim.

8. 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 compatible 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.

9. 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, gioma, 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.

10. 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.

11. Which other federal agencies have responsibilities related to potential RF health effects?

Additional information on the safety of RF exposures from various sources can be obtained from the following organizations.

FCC RF Safety Program:
http://www.fcc.gov/oet/rfsafety/

Environmental Protection Agency (EPA):
http://www.epa.gov/radiation/

Occupational Safety and Health Administration's (OSHA):
http://www.osha-slc.gov/SLTC/radiofrequencyradiation/index.html

National Institute for Occupational Safety and Health (NIOSH):
http://www.cdc.gov/niosh/emfpg.html

World health Organization (WHO):
http://www.who.int/peh-emf/

International Commission on Non-Ionizing Radiation Protection:
http://www.icnirp.de

National Radiation Protection Board (UK):
http://www.nrpb.org.uk

Updated 4/3/2002: US Food and Drug Administration
http://www.fda.gov/cellphones

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