* 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.

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DRAFT

SGH-E116
User's Guide

Important safety precautions

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

Copyright information

- Bluetooth® is a registered trademark of the Bluetooth SIG, Inc. worldwide.
- Java™ is a trademark or registered trademark of Sun Microsystems, Inc.

Drive safely at all times

Do not use a hand-held phone while driving. Park your 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 your 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 batteries and accessories, such as headsets and PC data cables. Use of any unauthorized accessories could damage you or 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.

At very high volumes, prolonged listening to a headset can damage your hearing.

Qualified service

Only qualified service personnel may repair your phone.

For more detailed safety information, see "Health and safety information" on page 87.

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, [ ]
< >	Indicates a soft key, whose function is displays 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

- **Music player**

  Play music files on your phone. You can use other phone functions while listening to music.

- **Java**

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

- **Offline mode**

  Switch your phone to Offline mode to use its non-wireless functions while on an airplane.

- **Web browser**

  Access the wireless web to get up-to-the-minute information and a wide variety of media content.

- **Multimedia Message Service (MMS)**

  Send and receive MMS messages with a combination of text, images, video, and audio.

- **SOS message**

  Send SOS messages to your family or friends for help in an emergency.

- **Name card**

  Create name cards with your number and profile. Whenever introducing yourself to others, use this convenient electronic name card.

- **Voice recorder**

  Record memos or sounds.

- **Calendar**

  Keep track of your daily, weekly, and monthly schedule.

- **Timer and Stopwatch**

  Count down to a specific event or measure the time it takes to do your exercise or work.

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1. Shows only if supported by your SIM card.
2. Shows only if a memory card is inserted.

Unpack

Make sure you have each item

- Phone
- Travel Adapter
- Battery
- User's Guide

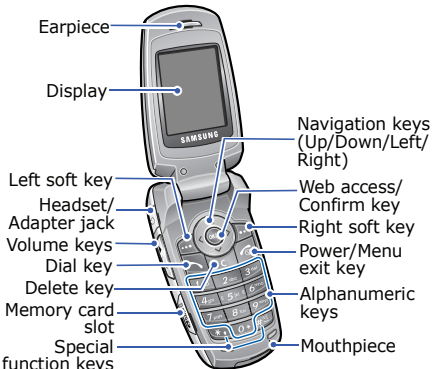
You can obtain various accessories from your local Samsung dealer.

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

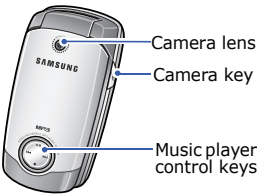
Your phone

Keys, features, and locations

With the phone open



With the phone closed



Get started

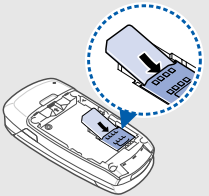
First steps to operating your phone

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.

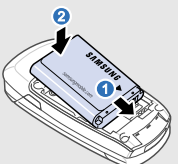
Assemble and charge the phone

1 Insert the SIM card.

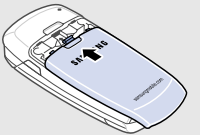


☑ Make sure that the gold-colored contacts on the card are face down.

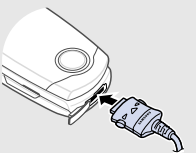
2 Insert the battery.



3 Reattach the battery cover.



4 Plug the travel adapter into the phone.



5 Plug the adapter into a standard AC power outlet.

6 When the phone is completely charged, unplug the adapter from the power outlet and from the phone.

Power on or off

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

Offline mode

You can switch the phone to Offline mode, in which the phone functions requiring network connections are deactivated. This mode is helpful when you want to use your phone in a place where you are not allowed to use mobile devices, such as in an airplane or at a hospital.

To switch to Offline mode, press <**Menu**> and select **Settings** → **Phone settings** → **Offline mode** → **On**.

In Offline mode, you can use non-wireless functions, such as games, calendar, camera, and music player.

Keys and icons

Keys

	Perform the function indicated on the bottom line of the display.
	In Idle mode, access your favourite menus directly. ▶ p. 14 In Menu mode, scroll through menu options.
	In Idle mode, launch the web browser. In Menu mode, select the highlighted menu option or confirm input.
	Make or answer a call. In Idle mode, retrieve the numbers recently dialled, missed, or received.
	Delete characters from the display or items in an application.
	Press and hold to switch the phone on or off. End a call. In Menu mode, cancel input and return the phone to Idle mode.
	Enter numbers, letters, and some special characters.
	Enter special characters or perform special functions.
	Adjust the phone volume.

	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.
	Return to the previous file while playing music.
	Skip to the next file while playing music.
	Stop music playback.

Icons

The following icons may appear on the screen to indicate your phone's status. Depending on your country or service provider, the icons shown on the display may vary.

	Signal strength
	Call in progress
	Out of your service area or Offline mode; you cannot make or receive calls
	GPRS network
	Roaming network
	Call diverting feature active ▶ p. 78
	Home Zone, if registered for the appropriate service

	Office Zone, if registered for the appropriate service
	Call ringer set to vibrate ▶ p. 76
	Quiet mode (Vibration)
	Quiet mode (Mute)
	Mute mode, during a call ▶ p. 31
	New message
	New voicemail
	SOS message feature active ▶ p. 23
	Memory card inserted ▶ p. 24
	Alarm set ▶ p. 44
	Battery power level

Access menu functions

Select an option	1. Press a desired soft key.
	2. Press the Navigation keys to move to the next or previous option.
	3. Press <**Select**>, or [OK/*i*] to confirm the function displayed or option highlighted.
	4. To exit, choose either of the following methods: • Press <**Back**> to move up one level. • Press [ ] to return to Idle mode.

Use menu numbers	Press the number key corresponding to the option you want.

Customize your phone

Display language

1. In Idle mode, press <**Menu**> and select **Settings** → **Phone settings** → **Language**.
2. Select a language.

Call ringer melody

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

Idle mode wallpaper

You can set the wallpaper for the idle screen.

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

Menu mode skin color

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

1. In Idle mode, press <**Menu**> and select **Settings** → **Display settings** → **Skin**.
2. Select a color pattern.

Menu shortcuts

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

1. In Idle mode, press <**Menu**> and select **Settings** → **Phone settings** → **Shortcuts**.
2. Select a key.
3. Select a menu to be assigned to the key.

Quiet mode

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

In Idle mode, press and hold [#].

Phone lock

You can protect the phone against unauthorized use with a phone password. The phone will require the password when turned on.

1. In Idle mode, press <**Menu**> 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 or 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 rings, 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 browser 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. Aim the lens at the subject and make any desired adjustments.
4. Press [OK/i] or [ ] to take a photo. The photo is saved automatically.
5. Press <**Preview**> to take another photo.

View a photo

1. In Idle mode, press <**Menu**> 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 [OK/i] or [📷] to start recording.
4. Press [OK/i], <▢>, or [📷] to stop recording. The video is saved automatically.
5. Press <**Back**> to record another video.

View a video

1. In Idle mode, press <**Menu**> 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. 47
- Download from a computer using the optional Samsung PC Studio ▶ Samsung PC Studio User's Guide
- Copy to a memory card and insert the card into the phone ▶ p. 24

Create a play list

1. In Idle mode, press <**Menu**> and select **Applications** → **Music player**.
2. Press <**Options**> and select **Add music from** → a memory location.
3. Press [OK/i] to select the files you want and press <**Add**>.
4. Press <**Back**> to return to the Music player screen.

Play music files

1. From the Music player screen, press [OK/i].
2. During playback, use the following keys:
   - OK/i: pause or resume playback.
   - Left: return to the previous file.
   - Right: skip to the next file.
   - ▲/▼: adjust the volume.
3. Press [Down] to stop playback.

Browse the web

Using the built-in web browser, you can easily access the wireless web to get a variety of up-to-date services and information and to download web content.

Launch the web browser

In Idle mode, press [OK/*i*]. The homepage of your service provider opens.

Navigate the web

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

Use Phonebook

Add a contact

1. In Idle mode, enter a phone number and press <**Options**>.
2. Select **Save contact** → a memory location.
3. For **Phone**, select a number type.
4. Specify contact information.
5. Press <**Save**> to save the contact.

Find a contact

1. In Idle mode, press <**Contacts**>.
2. Enter the first few letters of the name you want.
3. Select a contact.
4. Scroll to a number and press [ ] to dial, or press [OK/i] to edit contact information.

Create and send a name card

1. In Idle mode, press <**Menu**> and select **Phonebook** → **My namecard**.
2. Specify your contact information.
3. Press <**Save**> to save the name card.
4. To send the name card, press <**Options**> and select **Send via** → a sending method.

Send messages

Send a text message (SMS)

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

Send a multimedia message (MMS)

1. In Idle mode, press <**Menu**> and select **Messaging** → **Create message** → **MMS**.
2. Select **Subject**.
3. Enter the message subject and press [OK/*i*].
4. Select **Image and video** and add an image or a video clip.
5. Select **Sound** and add a sound clip.
6. Select **Message**.
7. Enter the message text and press [OK/*i*].
8. Press <**Options**> and select **Send**.
9. Enter destination numbers or email addresses.
10. Press [OK/*i*] to send the message.

View messages

View a text message

When you receive a message:

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

From the Inbox:

1. In Idle mode, press <**Menu**> and select **Messaging** → **My messages** → **Inbox**.
2. Select an SMS message ( ).

View a multimedia message

When you receive a message:

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

From the Inbox:

1. In Idle mode, press <**Menu**> and select **Messaging** → **My messages** → **Inbox**.
2. Select an MMS message ( ).

Send an SOS message

You can send an SOS message to your family or friends for help in an emergency.

Set up SOS message options

1. In Idle mode, press <**Menu**> and select **Messaging** → **SOS messages** → **Sending options**.
2. Select **On** on the **Sending SOS** field.
3. Select **Recipients**.
4. Enter the phone numbers to which you want to send the SOS message and press [OK/*i*].
5. Press <**Options**> and select **Save** to save your settings.
6. Press <**Yes**> to send the notification to the registered numbers.

Send the SOS message

In Idle mode, with the phone closed, press [▲/▼] 4 times.

The phone sends the SOS message.

Use a memory card

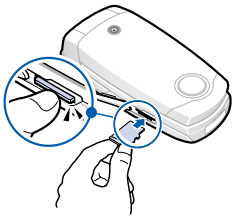
You can use a memory card to increase your phone's memory capacity.

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

Insert a memory card

1. Insert the card into the card slot, with the label side face up.



2. Press the card until it locks into place.

Remove the memory card

1. Press the card so that it is disengaged from the phone.
2. Remove the card from the slot.

Enter text

AB, T9, Number, and Symbol modes

You can enter text in some features, such as Messaging, Phonebook, 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 (T9 Ab) and AB mode (AB Ab). 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 (1 2 3).
- Press and hold [#] to switch to Symbol mode.

Using AB mode

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

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.

Other AB mode operations

- Press [**1**] to enter special characters.
- 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 entire display.

Using T9 mode

T9 is a predictive text input mode that allows you to enter 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.

   T9 predicts the word 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.
4. Press [#] to insert a space and enter the next word.

Other T9 mode operations

- 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 entire display.

Adding a new word to the T9 dictionary

This feature may not be available for some languages.

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

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 an area code and phone number.

   ☑ Press and hold [✱] to enter a pause between numbers.

2. Press [ ].
3. When you want to end the call, press [ ].

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 [ ].

Redialing recent numbers

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

Making a call from Phonebook

Once you have stored a number in Phonebook, you can dial the number by selecting it from Phonebook. ▶ p. 37

You can also use the speed dialing feature to assign your most frequently dialed numbers to specific number keys. ▶ p. 37

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.

Answering a call

When you receive a call, the phone rings or vibrates, depending on your call alert type setting. ▶ p. 77

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

Tips for answering a call

- When **Anykey answer** is active, you can press any key, except for <**Reject**> and [ ]. ▶ p. 74
- When **Active folder** is active, you can simply open the phone. ▶ p. 74
- Press <**Reject**> or [ ] to reject a call.

- Press and hold [▲/▼] to reject a call or mute the ringer, depending on the **Volume key** setting. ▶ p. 74

Viewing missed calls

When you have missed calls, the display shows 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.

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 press [▼] to decrease the volume level.

Placing a call on hold/Retrieving

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

Making a second call

You can make a second call if your network supports this function.

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 a call while already on the phone, if your network supports the call waiting feature and you have activated it. ▶ p. 79

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 your phone as a speaker phone to talk and listen with the phone a short distance away.

Press [OK/*i*] and then <**Yes**> to activate the speakerphone feature. Press [OK/*i*] again to switch back to the earpiece.

Using In-call options

During a call, press <**Options**> to access the following options:

- **Speaker on**/**Normal**: turn on the Speakerphone feature or switch back to Normal mode.
- **Menu**: access the phone's menu functions.
- **Voice on**/**Voice off**: mute the phone's mouthpiece so that the person you are talking with is unable to hear you, or unmute it.
- **Mute keys**/**Send keys**: turn the key tones off or on.

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

- **Send DTMF**: send DTMF (Dual tone multi-frequency) tones of a specific number as a group. This option is helpful for entering a password or an account number when you call an automated system, like a banking service.
- **Contacts**: access the contact list to locate or store contact information.
- **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.

  Removed: 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 dialed, received, or missed, and the length of the calls. You can also check the cost of your calls, if your SIM card supports this function.

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

Recent contacts *(Menu 1.1)*

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

Accessing a call log

1. Press [Left] or [Right] to move to another call type.
2. Press [Up] or [Down] to scroll through the call list.
3. Press [OK/*i*] to view the details of a call, or press [ ] to dial a number.

Using call log options

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

- **Call**: insert the number to the dialing screen.
- **Save contact**: save the number to Phonebook.
- **Send message**: send a message to the selected number.
- **Delete**: delete the selected call log or all logs.

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 dialed.

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 logs in each call type.

1. Press [OK/*i*] 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 record for calls made and received. The actual time invoiced by your service provider may vary.

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. 81

Call costs *(Menu 1.7)*

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

Phonebook *(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 Phonebook.

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

Contact list *(Menu 2.1)*

Use this menu to search for contact information stored in Phonebook.

Finding a contact

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

Using contact options

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

- **Edit**: edit contact information.
- **Send message**: send a message to the selected number or email address.
- **Copy**: copy the contact to the phone's memory, to the SIM card, or to the FDN list.
- **Copy to phone**: copy the e-mail address with the name to a new contact.
- **Send via**: send the contact via SMS or MMS.
- **Delete**: delete the selected contact.

Add new contact *(Menu 2.2)*

Use this menu to add a new contact to Phonebook.

1. Select a memory location.

2. Change the settings or enter information about the contact.
3. Press <**Save**> to save the contact.

Group *(Menu 2.3)*

Use this menu to organise your contacts in caller groups.

Creating a 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 ringtone.
5. Press <**Save**> to save the group.

Adding members to a caller group

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

Managing caller groups

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

- **View**: check the members of the selected group.
- **Add**: add members to the selected group.
- **Edit**: change the group properties.
- **Send message**: send a message to the group members you want.
- **Delete**: delete the selected group or all groups. Group members, however, will not be deleted from Phonebook.

Speed dial *(Menu 2.4)*

Use this menu to assign a speed dial number (2 to 8)[1] for your most frequently dialed numbers.

Assigning speed dial numbers

1. Scroll to a key location from **2** to **8**. Key **1** is reserved for your voicemail server and key 9 for the emergency center. (It may vary, depending on your country or service provider.)
2. Select a contact from the contact list.
3. Select a number, if the contact has more than one number.

1. The amount of memory available for speed dialing depends on the carrier's requirements.

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 phone number to a key.
- **Remove**: clear the speed dial setting for a key.

Dialing speed dial numbers

In Idle mode, press and hold the appropriate key.

My namecard *(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. 35

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 or MMS.
- **Delete**: delete the name card.

Own number *(Menu 2.6)*

Use this menu 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 in Phonebook or change the default settings for Phonebook.

- **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 phone**: copy all of the contacts stored on the SIM card to the phone's memory.
- **Delete all**: delete all of the contacts from your phone's memory, the 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 SDN (Service Dialing Number) list assigned by your service provider, including emergency numbers and numbers for directory enquiries. This menu is available if your SIM card supports SDN.

Select the service you want and press [ ].

Applications *(Menu 3)*

The **Applications** menu provides you with various entertaining and convenient features, such as games, music player, voice recorder, etc.

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

Java world *(Menu 3.1)*

Use this menu to access the embedded Java games and downloaded Java applications.

Launching a Java application

Select an application from the application list and follow the onscreen instructions. The procedure may differ from application to application.

Using Java application options

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

- **Launch**: launch the selected application.
- **Delete**: delete the selected application.
- **Details**: access the application properties.
- **Upgrade**: upgrade the application to the latest version, except for the embedded games.

- **Protection**: lock the application to prevent it from being deleted, or unlock the application.
- **Send information**: send the URL address containing the application via SMS, except for the embedded games.

Music player *(Menu 3.2)*

Use this menu to listen to music.

Downloading or receiving music files

You can play mp3, aac, and aac+ files. Use the following methods to save music files to your phone's memory:

- Download from the wireless web ▶ p. 47
- Download from a PC using the optional Samsung PC Studio ▶ Samsung PC Studio User's Guide
- Copy to a memory card and insert the card into the phone ▶ p. 24

> ☑ You can only play mp3 files from a memory card.

Downloaded or received files are stored in the **Music** folder.

Creating a play list

1. From the Music player screen, press <**Options**> and select **Add music from** → a memory location.
2. Press [OK/*i*] to select the files to be added and press <**Add**>.
3. Press <**Back**> to return to the Music player screen.

Playing music files

From the Music player screen, press [OK/*i*].

During playback, use the following keys:

Key	Function
OK/*i*	Pauses or resumes playback.
Left	Returns to the previous file.
Right	Skips to the next file.
Up	Opens the play list.
Down	Stops playback.
▲/▼	Adjusts the volume level.
1	Changes the repeat mode.
2	Changes the playback animation.
3	Turns Shuffle mode on or off.
5	Changes the skin type.

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. Within the album list, you can set up multiple albums.
- **Set as**: set the file as your ringtone or as a ringtone for a Phonebook entry.
- **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 type.

  Shuffle: set the Music player to play tracks in random order.

  Skin: select a skin type.

  Visualisation: change the playback animation.

Volume: select a volume level.

- **Properties**: 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 selected file.
- **Add music from**: add files to the play list.
- **Move in playlist**: 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.
- **Properties**: access the file properties.

Voice recorder *(Menu 3.3)*

Use this menu to record voice memos and any other sounds.

Recording a voice memo

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

Playing a voice memo

1. Press <**Options**> and select **Go to voice recorder files**.
2. Select a voice memo. The selected memo plays.

During playback, use the following keys:

Key	Function
OK/*i*	Pauses or resumes playback.

Key	Function
Left	Moves backward in a memo.
Right	Moves forward in a memo.
▲/▼	Adjusts the volume.
Down	Stops playback.

Using voice memos options

After recording or playing a voice memo, press <**Options**> to access the following options:

- **Play**: play the selected voice memo in Review mode.
- **Record**: record a new voice memo.
- **Go to voice recorder files**: access the voice memo list.
- **Send via MMS**: send the file via MMS.
- **Delete**: delete the file.
- **Rename**: change the file name.
- **Protection**: lock the application to prevent it from being deleted, or unlock the application.
- **Details**: access the file properties.

World time *(Menu 3.4)*

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 [OK/*i*] to save the city as your local time zone.

Applying daylight saving time

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

Alarm *(Menu 3.5)*

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

Setting an alarm

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

Stopping an alarm

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

  Press any key, except for <**Confirm**> and [OK/i], to cause it to sound again after 5 minutes.

Deactivating an alarm

1. Select the alarm you want to deactivate.
2. Select **Off** on the **Alarm** line.
3. Press <**Save**>.

Setting alarms to sound when 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 sound, the phone switches on and sounds the alarm.

Calculator *(Menu 3.6)*

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

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

Converter *(Menu 3.7)*

Use this menu for common conversions, such as length 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.

Timer *(Menu 3.8)*

Use this menu to set a period of time for the phone to count down. The phone sounds an alarm when the specified period of time expires.

Starting the timer

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

Stopping the timer

- Press any key when the timer sounds.
- Press [OK/*i*] on the timer screen to stop the timer before it sounds.

Stopwatch *(Menu 3.9)*

Use this menu to measure elapsed time.

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

SIM AT *(Menu 3.0)*

This menu is available if you use a SIM card that supports SIM Application Toolkit menus and provides additional services, such as news, weather, sports, entertainment, and location services. Available services may vary, depending on your service provider.

For details, see your SIM card instructions or contact your service provider.

Browser *(Menu 4)*

The Wireless Application Protocol (WAP) browser on your phone allows you to access the wireless web. From the wireless web, you can access up-to-date information and a wide variety of media content, such as games, wallpapers, ringtones, and music files.

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

Home *(Menu 4.1)*

Use this menu to connect your phone to the network and load the homepage of the wireless web service provider.

Navigating the web browser

Press [Up] or [Down] to scroll through browser items and press [OK/*i*] to select an item.

Using browser options

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

- **Bookmarks**: bookmark the current page or access the bookmark list.
- **Reload**: reload the current page with updated information.
- **Home**: return to the homepage.
- **Go to URL**: enter a URL address manually.
- **Show URL**: display the URL address of the current web page. You can also set the current page as the homepage for the web browser or a bookmark.
- **Clear cache**: clear the cache. A cache is a temporary memory that stores recently accessed web pages.
- **Inbox**: access push messages in the web browser.

- **Show images**: display images on the current page.
- **Certificates**: access certificate information.

Bookmarks *(Menu 4.2)*

Use this menu to save URL addresses in order to quickly access web pages, or access ones you have bookmarked while navigating the wireless web.

Adding a bookmark

1. Select an empty location.
2. Enter a title for the bookmark and press [Down].
3. Enter a URL address and press <**Save**>.

Accessing a bookmarked page

Selecting a bookmark item launches the web browser and accesses the associated web page.

Using bookmark options

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

- **Go to URL**: access the bookmarked web page.
- **Edit**: edit the URL address and title of the bookmark.
- **Delete**: delete the selected bookmark or all bookmarks.

http:// *(Menu 4.3)*

Use this menu to manually enter a URL address and access the associated web page.

WAP profile *(Menu 4.4)*

Use this menu to select a connection profile to be used for accessing the wireless web. You can also create or edit a profile. ▶ p. 83

Clear cache *(Menu 4.5)*

Use this menu to clear the cache. A cache is a temporary memory site that stores recently accessed web pages.

Messaging *(Menu 5)*

Use the **Messaging** menu to send and receive text messages and multimedia messages. You can also access push messages and broadcast messages.

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

Create message *(Menu 5.1)*

Use this menu to create and send messages.

SMS *(Menu 5.1.1)*

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

Creating and sending an SMS message

1. Enter the message text and press [OK/*i*].

- 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.
- You can use various options by pressing <**Options**>. ▶ next section

2. Enter a destination number.
   To send the message to more than one recipient, fill in additional destination fields.
3. Press [OK/*i*] to send the message.

Using options while composing an SMS message

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

- **Save and send**: send the message and then save it in the **Sent messages** folder.
- **Send only**: send the message.
- **Insert**: add a text template, Phonebook entry, or bookmarked URL address.
- **Add image**/**Add animation**/**Add melody**: add a media file stored in the phone's memory.
- **Attach**: attach a Phonebook entry as a name card or a calendar item as a data format attachment.
- **Save to**: save the message in another message folder.
- **Select language**: change the language to be used in T9 input mode.
- **Text style**: change the text attributes.
- **Input method**: change the input method.

MMS *(Menu 5.1.2)*

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

Creating and sending an MMS message

1. Select the **Subject** line.

   ☑ You can use various options by pressing <**Options**> in each field. ▶ next section

2. Enter the message subject and press [OK/*i*].
3. Select the **Image and video** line.
4. Select **Add image** or **Add video** and add an image or a video clip.

- The maximum size allowed for a message can differ, depending on your service provider.
- Depending on the file type or DRM (Digital Rights Management) system, some files may not be able to be forwarded.

5. Select the **Sound** line.
6. Select **Add sound** and add a sound clip.
7. Select the **Message** line.
8. Enter the message text and press [OK/*i*].
9. When you have finished, press <**Options**> and select **Send**.
10. Enter a phone number or an email address. To send the message to more than one recipient, fill in additional destination fields.
11. Press [OK/*i*] to send the message.

Using options while composing an MMS message

The table below shows all options without regarding whether an item is added or not. You can check common options in the last cell of the table:

Subject	• **Add**: add the message subject. • **Edit**: edit the subject. • **Clear subject**: remove the message subject.
Image or video	• **Add image**/**Add video**: add a media file. • **Change image**/**Change video**: replace an added item.

Image or video (continued)	• **Add memory card**: add a file stored on a memory card. This option is only available when you insert a memory card into the phone. • **Remove media**: remove an added item.
Sound	• **Add sound**: add a media file. • **Add memory card**: add a file stored on a memory card. This option is only available when you insert a memory card into the phone. • **Change sound**: replace an added item. • **Remove sound**: remove an added item.
Text	• **Add**: add the message text. • **Edit**: edit the text. • **Clear message**: remove the message text.
Attached items	• **View**: open the selected item. • **Remove**: remove an added item or all items.
Common	• **Preview**: view the message as it will be shown on the recipient's phone. • **Send**: send the message. • **Save to**: save the message in another message folder. • **Add page**: add pages. Move to each page by pressing [Left] or [Right]. • **Delete page**: delete a page.

- **Edit page**: change the duration of page display or move the page between the other pages.
- **Attach**: attach a Phonebook entry as a name card or a calendar item as a data format attachment.

My messages *(Menu 5.2)*

Use this menu to access messages you have received, sent, or that have failed during sending.

Inbox *(Menu 5.2.1)*

This folder stores all of the messages you have received.

Viewing a message

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

- : SMS message
- : MMS message
- : MMS notification (: Being retrieved, : Failed to be retrieved)
- : Voicemail
- : Push message from web servers
- : Configuration message, containing network parameters from your service provider
- : CB (Cell broadcast) message from your service provider
- : Delivery report for your sent messages

- Depending on the DRM (Digital Rights Management) system, messages having web content may not be able to be forwarded.
- An **!** icon next to a message means that the message is of high priority.

To view a message:

1. Select the message you want.
2. Press [Left] or [Right] to view other 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 entry**: extract URL addresses, email addresses, or phone numbers from the message.
- **Copy media**: save media content from the message to your phone's memory.
- **Protection**: lock the message to prevent it from being deleted, or unlock the message.
- **Block number**: add the sender's number to the block list to reject the messages from the sender.

MMS messages

- **Retrieve**: retrieve the MMS message from the MMS server.
- **Reply via text message**: reply to the sender via SMS.
- **Reply via multimedia message to**: reply to the sender via MMS.
- **Forward**: forward the message to other people.

- **Delete**: delete the message.
- **Copy entry**: extract URL addresses, email addresses, or phone numbers from the message.
- **Copy media**: save media content from the message to your phone's memory.
- **Protection**: lock the message to prevent it from being deleted, or unlock the message.
- **Details**: access the message properties.

Configuration messages

- **Install**: apply the configuration specified in the message to your phone.
- **Delete**: delete the message.
- **Protection**: lock the message to prevent it from being deleted, or unlock the message.

Push messages

- **Go to URL**: connect to the URL address specified in the message.
- **Delete**: delete the message.
- **Copy entry**: extract URL addresses, email addresses, or phone numbers from the message.
- **Protection**: lock the message to prevent it from being deleted, or unlock the message.

Broadcast messages

- **Save**: save the message to the phone's memory.
- **Delete**: delete the message.
- **Copy entry**: extract URLs, email addresses, or phone numbers from the message.

Delivery reports

- **Delete**: delete the report.
- **Copy entry**: extract URLs, email addresses, or phone numbers from the report.
- **Protection**: protect the report from being deleted.

Drafts *(Menu 5.2.2)*

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

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

When you select an MMS message, it opens in Preview mode as in the Inbox. To edit the message, press <**Options**> and select **Edit**.

Outbox *(Menu 5.2.3)*

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

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

- : Being sent
- : Failed to be sent

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 entry**: extract URL addresses, email addresses, or phone numbers from the message.
- **Delete**: delete the message.
- **Protection**: lock the message to prevent it from being deleted, or unlock the message.
- **Properties**: access the message properties.

Sent messages *(Menu 5.2.4)*

This folder stores messages that you have sent.

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

- **Forward**: forward the message to other people.
- **Copy entry**: extract URLs, email addresses, or phone numbers from the message.

- **Delete**: delete the message.
- **Protection**: lock the message to prevent it from being deleted, or unlock the message.
- **Properties**: access the message properties.

My folders *(Menu 5.2.5)*

Use this menu to create new folders and organise your 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 5.3)*

Use this menu to access embedded text templates or create ones with the sentences you use frequently so that you can use them in composing an SMS message.

Creating a template

1. Press <**Options**> and select **Add new**.
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 new message using the selected template.
- **Delete**: delete the selected template.
- **Add new**: add a new template.

Delete all *(Menu 5.4)*

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

1. Press [OK/i] 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 deleted.
2. Press <**Delete**>.
3. Press [OK/i] to select **With protection** to delete locked messages, and then press <**Yes**>.
4. Press <**Yes**> to confirm the deletion.

Settings *(Menu 5.5)*

Use this menu to set up various options for using the messaging services.

SMS *(Menu 5.5.1)*

You can configure default 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 are delivered.

  Character support: select a character encoding type. When you select **Automatic**, the phone switches the encoding type from GSM-alphabet to Unicode if you enter a Unicode character. Using Unicode encoding will reduce the maximum number of characters in a message to about half. If this menu is not shown, your phone provides automatic character encoding by default.
- **Bearer selection**: select either **GSM** or **GPRS preferred**, depending on your network.

- **Block number**: specify phone numbers from which you want to reject messages.
- **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. It will be displayed in the first field on the destination field.

  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.

MMS *(Menu 5.5.2)*

You can configure default MMS settings.

- **Sending settings**: set up the options for sending MMS messages:

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

  Hide address: set your address to be hidden from the recipient's phone.

  Read reply: send a read-reply request along with your messages.

  Priority: set the priority level of messages.

  Expiry date: set the length of time messages are stored in the MMS server.

  Delivery time: set a time delay before messages are sent.
- **Retrieve settings**: set up the options for receiving MMS messages:

  Reject unknown senders: reject messages from unknown senders.

Allow adverts: accept advertisements.

Allow information: accept information messages.

Allow reports: set the network to inform the sender when a message is delivered to you.

Recep. in home network: determine if your phone retrieves new messages automatically when you are in your home service area.

Reception when abroad: determine if your phone retrieves new messages automatically when you are roaming on another network.

Reception within your home network or abroad has the following options:

- **Automatic**: the phone automatically retrieves messages from the server.
- **Reject**: the phone rejects all messages.
- **Manual**: the phone displays notifications. Use the **Retrieve** option to manually retrieve new messages.

- **Profile**: select a connection profile to be used for MMS. You can also create or edit a profile. ▶ p. 83

Push message *(Menu 5.5.3)*

You can change the settings for receiving push messages from the wireless web server.

- **Receive**: set how to receive push messages from the web server.
- **Black list**: manage blocked server addresses.

Broadcast *(Menu 5.5.4)*

You can change the settings for receiving broadcast messages.

- **Receive**: set whether to receive broadcast messages.
- **Channel list**: indicate the channels from which you wish to receive broadcast messages. Please contact your service provider for further details.

- **Language**: select the preferred languages in which broadcast messages display.

SOS messages *(Menu 5.6)*

In an emergency, you can send an SOS message to your family or friends for help. You can also receive an SOS message from other people who are in an emergency. Use this menu to specify options for sending and receiving an SOS message.

- **Sending options**: set up the options for sending SOS messages.

  Sending SOS: activate or deactivate the SOS message feature. To send an SOS message, press [▲/▼] 4 times in Idle mode, with the phone closed.

  > ☑ While the phone is attempting to send an SOS message, blinks and you cannot access menu functions in this mode. To use the phone as normal, press [ ].

  Recipients: specify the phone numbers to which you want to send an SOS message.

  Repeats: set the number of times the phone resends the SOS message.

  Message: check the preset SOS message text.

- **Receiving options**: set whether or not the phone uses the preset alert type (siren and alert message) for incoming SOS messages. If you select **Normal**, the phone uses the message ringer setting.

Memory status *(Menu 5.7)*

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

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 manager**.

> ☑ As a result of the Digital Rights Management (DRM) system, some of the media items you download from the Internet or receive by MMS may require a licence key to access them.

Images *(Menu 6.1)*

Use this menu to access photos you have taken and images you have downloaded, received in messages, or imported from your PC.

Viewing an image

1. Select an image folder.
2. Select an image.
3. Press [Left] or [Right] to view other images.

Viewing a slide show

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. Depending on the selected file, available options may vary:

- **List**: return to the image list.
- **Send via MMS**: send the file via MMS.
- **Set as**: set the image as your wallpaper for the display or as a caller ID image for a Phonebook entry.

- **Delete**: delete the file.
- **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. This option is only available when you insert a memory card into the phone.
- **Protection**: lock the file to prevent it from being deleted, or unlock the file.
- **Properties**: access the file properties.

Videos *(Menu 6.2)*

Use this menu to access video clips you have recorded, downloaded, received in messages, or imported from your PC.

☑ 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. The selected video plays.

During playback, use the following keys:

Key	Function
OK/*i*	Pauses or resumes playback.
▲/▼	Adjusts the volume.
Down	Stops playback.

Using video options

After playback, press <**Options**> to access the following options.

- **List**: return to the video list.
- **Send via MMS**: send the file via MMS.
- **Set as wallpaper**: set the video clip as wallpaper for the display.

- **Delete**: delete the file.
- **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. This option is only available when you insert a memory card into the phone.
- **Protection**: lock the file to prevent it from being deleted, or unlock the file.
- **Properties**: access the file properties.

Music *(Menu 6.3)*

Use this menu to access music files you have downloaded or imported from your PC.

Playing a music file

Select a file. The Music player opens and the selected music file plays. ▶ p. 40

Sounds *(Menu 6.4)*

Use this menu to access voice memos you have recorded, and sound files you have downloaded, received in messages, or imported from your PC.

Playing a sound clip

1. Select a sound folder.
2. Select a sound clip. The selected sound plays. For a voice memo, see **Voice recorder**. ▶ p. 42

Using sound options

While playing a sound clip, press <**Options**> to access the following options. Depending on the selected file, available options may vary:

- **List**: return to the sound list.
- **Send via MMS**: send the file via MMS.

- **Set as**: set the sound as your ringtone or a ringtone for a Phonebook entry.
- **Delete**: delete the file.
- **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. This option is only available when you insert a memory card into the phone.
- **Protection**: lock the file to prevent it from being deleted, or unlock the file.
- **Properties**: access the file properties.

Other files *(Menu 6.5)*

Files that you have received but which are not supported by your phone are stored in this folder. You cannot open these files on the phone.

Memory card *(Menu 6.6)*

Use this menu to access the files stored on a memory card. This menu is only available when you insert a memory card into the phone.

Memory status *(Menu 6.7)*

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**.

Selecting a day on the calendar

When you enter the **Calendar** menu, the calendar in Month view appears with the current date indicated by a colored box.

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

Creating an item

You can store appointments, anniversaries, memos, and tasks on the calendar.

1. Select a date on the calendar.
2. Press <**Options**> and select **Create** → an item type.
3. Enter information or change the settings.
4. Press <**Save**> to save the item.

Consulting the calendar

Once you have created items, the item type icons and the number of items for a specific day appear at the bottom of the calendar.

- : Appointment
- : Anniversary
- : Task
- : Memo

Viewing an item

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

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

- **Edit**: edit the item.

- **Create**: add a new item.
- **Send via**: send the item via SMS or MMS.
- **View mode**: change the view mode of the calendar.
- **Delete**: delete the selected item.
- **Memory status**: access memory information for the items stored on the calendar.

Using calendar options

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

- **View mode**: change the view mode of the calendar.
- **Create**: add a new item.
- **Go to**: select today's date or enter a specific date.
- **Sort by**: sort items by type of item.
- **Delete**: delete the items stored on the calendar by using various deleting options.
- **Missed alarm events**: view items whose alarms you have missed.
- **Memory status**: access memory information for the items stored on the calendar.

Viewing items 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 items for the selected date. The following icons may display to indicate the item's status:

- : Alarm set
- : Recurring item
- : Task priority (: high, : normal, and : low)
- : Completed task

Select an item to view its details.

Week view

You can view items for the selected week. A cell on the timetable indicates the presence of item information.

Select a cell on the date you want.

Camera *(Menu 8)*

You can use the camera 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 or record videos of people without their permission.
- Do not take photos or record videos in a place where cameras are not allowed.
- Do not take photos or record videos 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.

Taking a photo

1. Access the **Camera** menu or press and hold [📷] to turn on the camera.
2. Make any desired adjustments.
   - Press < > to access camera options.
     ▶ next section
   - Use the keypad to change the camera settings or switch to other modes.
     ▶ p. 70
3. Press [OK/i] or [📷] to take a photo. The photo is saved in the **Photos** folder.

4.

To	Press
access photo options	<**Options**>.
delete the photo	[**C**] and then <**Yes**>.
return to Capture mode	<**Preview**>.

Using camera options in Capture mode

In Capture mode, press < > 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 the photo.

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

  Mosaic shot: take several stills and save them on one frame. You can select the layout.
- **Effects**: change the color tone or apply a special effect.
- **Frames**: apply a decorative frame.
- **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 photos:

  Size: select an image size.

  Quality: select an image quality setting.

  Viewfinder: select a preview screen.

  Scene programs: set whether to use Night shot mode.

  Shutter sound: select the sound that you hear when you press the shutter release key.

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

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

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

Using the keypad in Capture mode

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

Key	Function
Left/Right	Adjusts the brightness.
Up/Down	Zooms in or out.
▲	Flips the image vertically.
▼	Shows the mirror image.
1	Switches to Record mode. ▶ p. 75
2	Changes the image size.
3	Changes the image quality.
4	Changes the shooting mode.
5	Changes the color tone or applies a special effect.
7	Selects a decorative frame.
8	Sets the timer.
9	Goes to the **Photos** folder.
*	Changes the preview screen.

Recording a video

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

1. In Capture mode, press [**1**].
2. Make any desired adjustments.

- Press <> to access camera options.
  ▶ next section
- Use the keypad to change the camera settings or switch to other modes.
  ▶ p. 72

3. Press [OK/i] or [] to start recording.
4. Press [OK/i], <>, or [] to stop recording. The video is automatically saved in the **Video clips** folder.
5.

To	Press
play back the video clip	[OK/i].
access video options	<**Options**>.
delete the video clip	[**C**] and then <**Yes**>.
return to Record mode	<**Back**>.

Using camera options in Record mode

In Record mode, press <> to access the following options:

- **Take photo**: switch to Capture mode.
- **Effects**: change the color tone or apply a special effect.
- **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:

  Size: select a frame size.

  Viewfinder: select a preview screen.

  Audio record: record a video with audio.

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

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

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

Using the keypad in Record mode

You can use the keypad to customize your camera settings in Record mode.

Key	Function
Left/Right	Adjusts the brightness.
Up/Down	Zooms in or out.
▲	Flips the image vertically.
▼	Shows the mirror image.
1	Switches to Capture mode. ▶ p. 68
2	Changes the frame size.
5	Changes the color tone or applies a special effect.
7	Mutes or unmutes audio.
8	Sets the timer.
9	Goes to the **Video clips** folder.
*	Changes the preview screen.

Settings *(Menu 9)*

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

To access this menu, press <**Menu**> 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.

- **Set time**: enter the current time.
- **AM/PM**: set **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.
- **Auto update**: select a mode for updating the current time and date.

  On: your phone will receive time information from the network.

  Confirm first: your phone will read the MCC (Mobile Country Code) from the network and automatically update the current time for the country that you are in when you travel abroad. Before updating, the phone will ask you if you want to update time information.

> ☑ Time information may not be updated when you move to one time zone to another within a country.

  Off: you can set the time and date manually.

Phone settings *(Menu 9.2)*

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

Language *(Menu 9.2.1)*

Use this menu to select a language for the display text or T9 text input mode.

Greeting message *(Menu 9.2.2)*

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

Shortcuts *(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. Select a menu to be assigned to the key.

Using shortcut options

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

- **Change**: change a shortcut assignment.
- **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)*

Use this menu to change additional settings for using the phone.

- **Auto redial**: set the phone to make up to ten attempts to redial a phone number after an unsuccessful call.
- **Active folder**: set whether a call is automatically answered when you open your phone.
- **Anykey answer**: set whether a call is answered when you press any key, except for <**Reject**> and [ ].

Offline mode *(Menu 9.2.6)*

Use this menu to switch the phone to Offline mode, or back to Online mode.

Display settings *(Menu 9.3)*

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

Wallpaper *(Menu 9.3.1)*

You can change the background image that is displayed on the display.

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

Skin *(Menu 9.3.2)*

You can select a skin color pattern for Menu mode.

Brightness *(Menu 9.3.3)*

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

Contrast *(Menu 9.3.4)*

You can adjust the contrast for the display. Adjust this setting with the display brightness to see the display clearly in different lighting conditions.

Back light *(Menu 9.3.5)*

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.

Dialling display *(Menu 9.3.6)*

Use this menu to customize the settings for numbers entered and the background color of the display while dialing.

Show caller information *(Menu 9.3.7)*

Use this menu to block caller ID information on all incoming calls.

Sound settings *(Menu 9.4)*

Use this menu to customize various sound settings.

Incoming call *(Menu 9.4.1)*

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

- **Ringtone**: select a call ringtone.
- **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.

Message tone *(Menu 9.4.3)*

Use this menu to change the sound settings for incoming messages individually according to message type.

- **Tone**: select one of the 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.

Folder tone *(Menu 9.4.5)*

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

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 customize 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 a call is connected 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 a pop-up window displays.

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 your service area 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 and enter the number to which calls are to be diverted.
5. If you selected **No reply**, move to the **Seconds** line and select the length of time the network delays before diverting a call.
6. 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 calls**: prohibit all outgoing calls.
   - **International**: prohibit international calls.

- **International except home**: only allow calls to numbers within the current country, and to your home country when you are abroad.
- **All incoming calls**: prohibit all incoming calls.
- **Incoming while abroad**: prohibit incoming calls when you use your phone outside of your service area.
- **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 calling you while you are on another call.

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

Network selection *(Menu 9.5.4)*

This network service allows you to manually select the network to be used while roaming outside of your home area, or to let the network be chosen automatically. 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 hide your phone number from the person you are calling. 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.

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

> ☑ You must store the voicemail server number before accessing the server. Your service provider can give you the 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.
- **Deactivate**: disable an activated CUG index number.

Security *(Menu 9.6)*

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

> ☑ If you enter an incorrect PIN/PIN2 three times, 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 9.6.1)*

The 4- to 8-digit PIN (Personal Identification Number) protects your SIM card against unauthorized use. When this feature is enabled, the phone requires your PIN each time it is switched on.

Change PIN code *(Menu 9.6.2)*

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

Phone lock *(Menu 9.6.3)*

Use this menu to lock the phone, and keep it safe from unauthorized 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 9.6.4)*

Use this menu to change your phone password.

Privacy *(Menu 9.6.5)*

Use this menu to lock access to call logs, contacts, messages, and files. When a privacy option is enabled, you must enter the phone password to access the locked items or functions.

SIM lock *(Menu 9.6.6)*

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

Fixed dialling mode *(Menu 9.6.7)*

If supported by your SIM card, FDN (Fixed Dialing Number) 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 code *(Menu 9.6.8)*

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

Mobile tracker *(Menu 9.6.9)*

When someone tries to use your phone with another SIM card, the phone will automatically send the preset tracking message to your family or friends. You can check the phone number from which the messages are sent and then track your phone. This feature is useful when the phone is stolen or lost.

> ☑ Sending of the tracking message will be billed to the user of the unauthorized SIM card. To use your phone with any other SIM card, you must first deactivate the mobile tracking feature.

1. Enter the phone password and press <**OK**>.
2. Specify the following options:
   - **Mobile tracker**: activate the Mobile tracker feature.
   - **Recipients**: specify phone numbers to which you want to send the tracking messages.

- **Sender**: enter the sender's name.
- **Message**: check the preset tracking message text.

3. When you have finished, press <**Save**>.
4. Press <**Accept**> if you agree to the terms and conditions of service listed on the screen.

Connection settings *(Menu 9.7)*

Use this menu to create and customize the profiles containing the settings for connecting your phone to the network. You need these settings to use the web browser or send MMS messages.

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

Creating a profile

1. Press <**Options**> and select **Add new connection**.
2. Set profile parameters:
   - **Profile name**: enter a profile name.
   - **Homepage URL**: enter the URL address of the page to be used as your homepage.
   - **Proxy**: activate or deactivate the proxy server.
   - **IP address**: enter the IP address of the proxy server.
   - **Port**: enter the port number of the proxy server.
   - **DNS**: activate or deactivate the DNS (Domain Name Server) addresses.
   - **DNS1** and **DNS2**: enter the primary and secondary DNS addresses.
   - **Bearer**: select the network bearer type.

- **Advanced settings**: change the advanced options. Depending on the bearer setting, available options vary.
  *When the bearer is set to **GPRS***:
  APN: enter the access point name.
  Login ID: enter the login ID.
  Password: enter the login password.
  *When the bearer is set to **GSM***:
  Dial number: enter the PPP phone number.
  Login ID: enter the login ID.
  Password: enter the login password.
  Data call type: select a call type for data transmission.

3. Press <**Save**> to save the profile.

Using profile options

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

- **Edit**: edit the selected profile.
- **Delete**: delete the profile.
- **Add new connection**: add a new profile.

Reset settings *(Menu 9.8)*

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

1. Press [OK/*i*] 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. 81

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.

"Phone lock"

- 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.

"Enter PUK"

- The PIN code has been entered incorrectly three times in succession, and the phone is now blocked. Enter the PUK supplied by your service provider.

"No service," "Network failure," or "Not done" displays

- The network connection has been lost. You may be in a weak signal area. Move and try again.
- You are trying to access an option for which you have no subscription with your service provider. Contact the service provider for further details.

You have entered a number but it was not dialled

- Be sure that you have pressed [ ].
- Be sure that you have accessed the right cellular network.
- Be sure that you have not set an outgoing call barring option.

Your correspondent cannot reach you

- Be sure that your phone is switched on. ([ ] pressed for more than one second.)

- Be sure that you are accessing the correct cellular network.
- Be sure that you have not set an incoming call barring option.

Your correspondent cannot hear you speaking

- Be sure that you have switched on the microphone.
- Be sure that you are holding the phone close enough to your mouth. The microphone is located at the bottom of the phone.

The phone starts beeping and "Battery low" flashes on the display

- Your battery is insufficiently charged. Recharge the battery.

The audio quality of the call is poor

- Check the signal strength indicator on the display ( ). The number of bars indicates the signal strength from strong ( ) to weak ( ).
- Try moving the phone slightly or moving closer to a window if you are in a building.

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

- Use the Contact list feature 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 and through 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 set 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

* 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.

levels of various phones and at various positions, they all meet the government requirement.

The FCC has granted an Equipment Authorization for this model phone with all reported SAR levels evaluated as in compliance with the FCC RF exposure guidelines. SAR information on this model phone is on file with the FCC and can be found under the Display Grant section of http://www.fcc.gov/oet/fccid after searching on FCC ID 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 and accessory that contains no metal and that positions the handset a minimum from the body.

The minimum distance for this model phone is written in the FCC certification information from the body. 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.ctia.org

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 and the type of battery and 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 of used batteries in accordance with local regulations. Always recycle. Do not dispose of 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.

1. 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.

2. 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.
3. 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 voicemail answer it for you.
4. 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.
5. 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.
6. 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.
7. Do not engage in stressful or emotional conversations that may be distracting. Make the people with whom you are talking aware that you are driving and suspend conversations that have the potential to divert your attention from the road.
8. 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!
9. 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.
10. Call roadside assistance or a special nonemergency wireless assistance number when necessary. 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 nonemergency wireless number.

Operating environment

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

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 off your phone 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 off your phone in health care facilities when any regulations posted in these areas instruct you to do so. Hospitals or health care facilities may be using equipment that could be sensitive to external RF energy.

Vehicles

RF signals may affect improperly installed or inadequately shielded electronic systems in motor vehicles. Check with the manufacturer or its

representative regarding your vehicle. You should also consult the manufacturer of any equipment that has been added to your vehicle.

Posted facilities

Switch off your phone in any facility where posted notices require you to do so.

Potentially explosive environments

Switch off your phone when in any area with a potentially explosive atmosphere and obey all signs and instructions. Sparks in such areas could cause an explosion or fire resulting in bodily injury or even death. Users are advised to switch off the phone 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 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, 112 or any 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 end the call until given permission to do so.

FCC Notice and Cautions

FCC Notice

- The device complies with Part 15 of the 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.
- 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 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 receiveing 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.

The phone may cause TV or radio interference if used in close proximity to receiving equipment. The FCC can require you to stop using the phone if such interference cannot be eliminated.

Vehicles using liquefied petroleum gas (such as propane or butane) must comply with the National Fire Protection Standard (NFPA-58). For a copy of this standard, contact the National Fire Protection Association, One Battery march Park, Quincy, MA 02269, Attn: Publication Sales Division.

Cautions

Changes or modifications made in the radio phone, not expressly approved by Samsung, will void the user's authority to operate the equipment.

Only use approved batteries, antennas and chargers. The use of any unauthorized accessories may be dangerous and void the phone warranty if said accessories cause damage or a defect to the phone.

Although your phone is quite sturdy, it is a complex piece of equipment and can be broken. Avoid dropping, hitting, bending or sitting on it.

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 off your phone before boarding an aircraft. The use of wireless phones in aircraft may be dangerous to the operation of the aircraft, and is illegal.
- 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 accidentally 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 for this model phone as reported to the FCC are:

GSM850 Head: 1.23 W/kg, Body-worn: 1.27 W/kg;
GSM1900 Head: 1.04 W/kg, Body-worn: 0.580 W/kg.

Body-worn operations are restricted to Sam sung supplied, approved or none Samsung designated accessories that have no metal and must provide at least 1.5 cm 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 A3LSGHAE116.

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 voicemail 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.

3. 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.

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/topics/emf/

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

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

Health Protection Agency (UK)
http://www.hpa.org.uk/radiation/*

* US Food and Drug Administration http://www.fda.gov/cellphones

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