SCH-i640/645

User's Manual

Please read this manual before operating the phone,
and keep it for future reference.

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Safety Precautions

Compliance with Safety Standards

The Samsung Cellular phone meets all standards and recommendations for the protection of the public from exposure to radio frequency (RF) electromagnetic energy established by governmental bodies and other qualified organizations. To reduce the risk of fire, electric shock, serious personal injury, or property damage, please follow these guidelines:

Driving

Using a wireless phone while driving is illegal in some states and countries. Know the laws and regulations for your area, and pull off the road and park if you need to make a call. If you must use the phone while driving, purchase and install the optional Hands-Free Car Kit.

Electronic Devices

Your wireless telephone is a radio transmitter and receiver. When the power is on, the phone receives and sends out RF energy. Most modern electronic equipment, such as cars, contains an RF signal shield. RF energy may affect some inadequately shielded electronic equipment.
Turn off your phone in health care facilities, and always request pacemakers and hearing aids, to determine if they are shielded adequately from external RF signals. Note if there are any regulations posted in area regarding the operation of wireless phones, and learn where you can use them safely within facility.

Aircraft

Turn off your phone before boarding any aircraft. The Federal Aviation Administration (FAA) requires that you have prior permission from the crew to use your phone while the plane is on the ground. FCC regulations prohibit using your phone is in the air. Do not use your phone at any time while traveling on board a plane.

Blasting Areas

Construction crews often use remote-control RF devices to set off explosives. To avoid interfering with blasting operation, turn off your phone when you are in a blasting area or in any area with signs posted as "Turn off two-way radio."

Other Dangerous Areas

Turn off your phone in any area with a potentially explosive atmosphere. It is rare, but your phone or its accessories could generate sparks, which could lead to explosion or fire.
* Fueling areas, such as gas stations
* Below deck on boats
* Fuel or chemical transfer or storage facilities
* Areas where the air contains chemicals or particles such as grain, dust, or metal powders
* Any other area where you would normally be advised to turn off your vehicle engine
Do not transport or store flammable gas, liquid, or explosives in the compartment of a vehicle containing your phone or accessories.

FCC/IC Notice

This device compiles 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.

Introduction to SCH-i640/645

The following features provide a range of user options that make the phone both fun and easy to use. SCH-i640/645 is based on Microsoft® Windows Mobile® Smartphone 2003 Second Edition.

- Phone features: You can use advanced phone capabilities.

- PDA features: Contacts, Calendar, Messaging, Internet Explorer, Windows Media, MSN Messenger, Tasks, Voice Notes, Games, etc.

- Messaging features: You can receive four kinds of messages - voicemail, text, E-mail, and MMS (645 only).

- Data capability: ActiveSync® technology to synchronize your phone and PC.

- Input methods: 3 standard modes - Numeric, T9, multi-press

Unpacking

Your package contains th following items:

- Handset
- Battery
- User’s manual
- Travel adapter/charger
- Desktop charger
- Headset
- Holster

In addition, you can obtain the following accessories for your phone from your local Samsung dealer.

- Headset
- Travel adapter
- Data cable
- Hands-free kit
- Car charger
- Holster
- QWERTY Keyboard
- Battery

Layout

The following pictures show the main elements of SCH-i645.
(Design can be changed later)

[Picture 1] Inside of SCH-i645

Earphone jack: Connects the optional 2.5mm ear/microphone.

External screen: A secondary screen for phone features.

IR port: Uses infrared technology to transmit data to and receive data from other computing platform handhelds, and to perform ActiveSync® operations.

Accessory connector: Connects your phone to the cradle, which in turn connects to the back of your computer and through the AC adapter to the wall current.

SD slot: Inserts SD card for extended memory, and connects peripherals using SD I/O interface.

Volume keys: Press to adjust voice volume during conversation, and adjust audio volume in standby mode.

Record button: Press to launch Voice Notes, and press one more time to record the voice memo. Press and hold to activate voice recognition command.

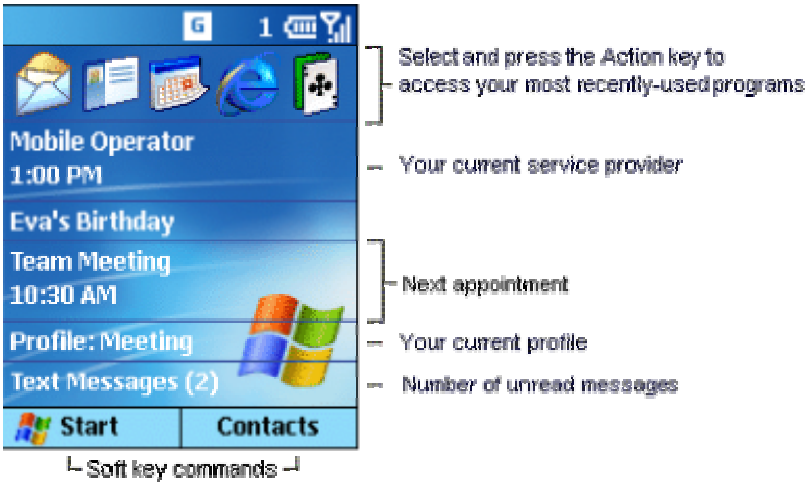
Quick List key: Press to launch the Quick List and press and hold to turn phone (radio module) on/off.

Camera key (Side): Press and hold to launch the camera application, and press one more time to take a picture or record a video (645 only).

How to use Smartphone

Home screen

The Home screen plays an integral part in the navigational model of Smartphone. It is the first screen displayed every time the device is turned on. The user can easily return.



Sample Home Screen

Home screen customization

The Home screen provides users a customizable starting page for their Smartphone. It can be used to display a variety of information, such as phone-specific status, information from over-the-air services, and information from personal information manager (PIM) applications. The user can fully customize the Home screen by installing new plug-ins and schemes.

Home screen icons

The top part of the Home screen displays icons for the most recently used applications (MRUs). If you are creating a new application, you must provide an icon to represent your application that can be incorporated into the MRU list.

Start

The top part of the Home screen displays icons for the most recently used applications. Start key displays the top-level list of applications supported by the device. The first five applications in this list are those most typically used by users and are fixed in position. Other applications follow and the list of applications is numbered serially.

The user can navigate to programs by pressing the left soft key from the Home screen.

Programs

The user can scroll through the list of applications and press the action button to select any list item to launch the application. Additionally, the applications are mapped to the numbers; the user can launch them directly by pressing the associated number.

Title Bar

The top 20 pixels of the Smartphone screen are reserved for the title bar, as an always visible bar that provides application information and status. The title bar uses font 10-point bold Nina, and supports right-justified icons.

Most of the title bar is devoted to application-specific information. The text is context dependent and can be changed for child windows. For example, in the Calendar application, the date is shown in the title bar, as illustrated in the following figure. As another example, in the messaging application the title for the list view is the appropriate mail folder name (see the next figure).

Date shown in title bar

Folder name shown in title bar

Icons also appear in the title bar to provide information such as battery and signal strength or text entry mode. Default icons include the signal strength icon and a battery icon. Default icons may be overridden by other icons in some contexts. For example, the battery icon is overwritten by the text entry indicator when the user composes an e-mail message.

Text entry indicator

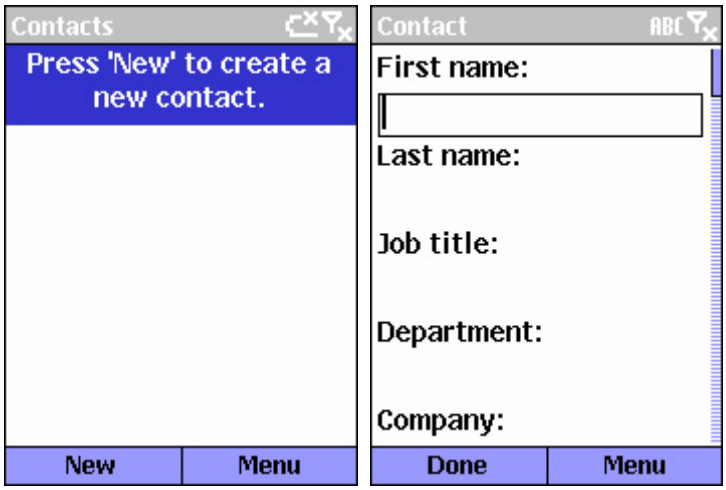
Menu bar

The menu bar is 20 pixels high at the bottom of the screen and contains the two soft keys shown in the following figure. The menu bar font is 10-point bold Nina.

Soft key tray

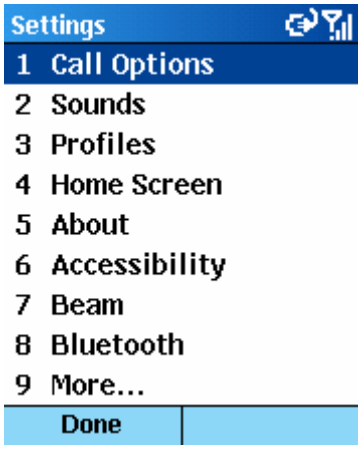
Smartphone uses two soft keys to display menus and action options to the user. The user can activate a soft key by pressing the corresponding hardware button located physically near the display.

The menu bar is part of the device shell UI; it is context sensitive and can be changed dynamically by an application. For example, in the Contacts list view the soft keys are **New** and **Menu**. When the user starts to create a new contact in the edit view, the soft keys change to **Done** and **Menu**.



Different soft keys in menu bar

Applications should use the right soft key to display the menu and the left soft key as a context-sensitive Action button. For example, the left soft key in the edit view of the preceding figure is **Done**. The left soft key may appear even when there is no label on the right soft key, as shown in the following figure.

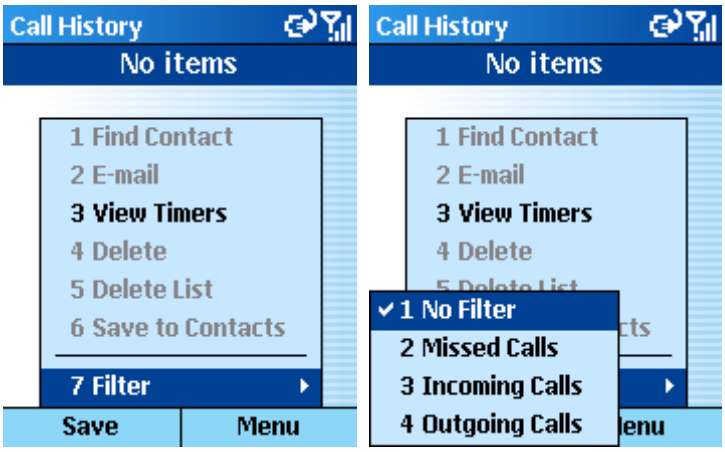


Left soft key with no right key

Cascading Menus

Smartphone supports cascading menus only to one additional level. They can be used as long as they don't clutter the screen; in addition, the most common options must be available at the top level and must not cascade. In the following figure, options for filtering calls are provided in a cascading menu that appears at the bottom of the menu.

A right-justified triangle next to a menu item indicates that it opens a cascading menu. When the user presses the right arrow or the Action button, the second menu is displayed. The user can then scroll up and down and press the Action button to select the menu item.



Cascading Menus

Navigation Buttons

Smartphone provides two navigational buttons for users: the Home button and the Back button.

The Home button is a powerful one-touch navigational tool that returns a user to the Home screen from anywhere at any time.

The Back button is context dependent and is implemented to perform different functions depending on the state of the application. It is generally designed to return the user to the previous screen, with a few exceptions.

Dialer and Call Progress

When a user places a call, the dialer/call progress application starts. The dialer UI appears when a user makes a call by entering numbers on the keypad from the Home screen, as shown in the left of the following figure. Dialed calls from the keypad can be executed from the Home screen or the call progress screen. After the user finishes entering the numbers, call progress appears. Call progress shows the connect progress for outgoing calls, call notification for incoming calls, and the current status of ongoing calls as shown on the right of the following figure.

Dialer and call progress screen

If a user navigates to another screen while on a phone call, a call in progress icon is displayed in the title bar. This icon remains the same for conference calls or calls on hold. The right soft key on the home screen provides a shortcut back to call progress.

Calls can also be made from other applications, for example, from a hyperlink in Calendar, from Contacts, or a tel: URL in the browser. In this case the dialer UI is not used and the user is taken directly to call progress

Making a call

Enter numbers on the keypad from the Home screen and press the **SEND** button to make a call to the number.

Ending a call

Press the **END** button.

Answering a call

When somebody calls you, the phone rings. If the caller can be identified, the caller's phone number (or name if pre-stored in your Contacts) is displayed.

To answer the call, press any button on the keypad (except **END**).

You can answer a call while using another application. The screen alerts you with the incoming call message. Press **SEND** button to answer the call, or **END** to reject the call.

Redialing Calls

Press **SEND** for a second to redial the latest number.

Input Methods

All Smartphone devices with keypads support text entry from the keypad buttons. There are three standard modes for keypad text entry on Smartphone 2003: numeric, T9, and multi-press.

Switching Modes

Each text field can have a default mode, depending on the expected content. For example, phone number fields are in numeric mode by default, and e-mail addresses are in multi-press mode. If the user changes modes in a text field, moves away from the field, and then returns to it, the mode reverts to the default mode for that field.

For text fields that do not have a default mode, the mode is whatever the user used last in a field without a default mode—T9 or multi-press mode. This does not default to numeric mode. The very first time the user moves into a text field on the device, it defaults to T9.

Special Keys

The following keys perform special functions for text input.

The "*" Key

Switching modes between T9, multi-press, and numeric is done by pressing and holding the * key. Pressing and holding the * key continues to cycle through each mode. The user should not have to press and hold twice to get from T9 mode to another mode.

The "#" Key

In each mode, pressing and holding the # key allows the user to access a screen of symbols. The user navigates left, right, up, or down to get to the symbol of choice and presses the Action button or the Done soft key. The user is then returned to the active text field, with the symbol entered and the insertion point on the next character.

The "0" Key

In T9 mode, you can see the next recommended word by pressing 0 key.

Action (OK)

The user enters a carriage return in multi-line fields by pressing the Action button.

Other Applications

Messaging

Your phone can send and receive e-mail, text messages and Pix messages (645 only).

Contacts

This enables you to keep names, addresses, phone numbers and other information about your personal or business contacts.

Calendar

This lets you quickly and easily schedule appointments or any kind of activity associated with a time and date.

Internet Explorer

You can navigate Internet, but there are limitations to support some tags.

Tasks

This is a convenient place to create reminders and prioritize the things that you have to do.

Voice Notes

This enables you to record important voice notes and the user's voice during phone call.

Windows Media

You can play and watch several kinds of multimedia files.

Accessories

You can use accessory programs such as Calculator, Modem Link, etc.

Games

You can play the games such as Jawbreaker and Solitaire.

Various Settings for Your Phone

You can customize the configuration options on your phone.

Call Options

Call answer, Auto answer, Phone number, Voice mail number, Country code, Area code

Sounds

Ring tone, Reminders, New e-mail, New text/voice/instant message, Alarm clock, Exclamation, Question, Warnings, Keypad control

Profiles

Normal, Silent, Meeting, Outdoor, Automatic, Headset, Car and Speakerphone

Home Screens

Home screen layout, Color scheme, Background image and Time out

About

Build version, Radio version, Storage, Memory, Processor and other information

Accessibility

System font size, Multipress time out, Confirmation time out and In-call alert volume

Beam

Receive incoming beams

Bluetooth

No Bluetooth hardware is installed on this device

Certificates

Personal and Root

Data Connections

Data/Fax mode, Internet connection, Work connection, WAP connection and Secure WAP connection

Date and Time

Time zone, Date, Time, Alarm and Alarm time

Owner Information

Name, Telephone number, E-mail address and Notes

Power Management

Main battery, Brightness level, Backlight time out, Power saving time out and In-call screen time out

Regional Settings

Language, Locale, Short date style, Long date style, Time format, Positive number, Negative number, Positive currency and Negative currency

Remove Programs

Security

Enable Phone Lock, Emergency Numbers, Phone Reset and Initialize Memory

Phone Settings

NAM/Roam Mode – NAM mode and Roaming option

Beep/Alert – Minute beep, Connect tone and Disconnect tone

Version – S/W version, H/W version and PRL version

Other – Voice privacy, GPS and Time

Port Setting

You can select the USB/UART path to phone or PDA

Installing ActiveSync®

Using Microsoft® ActiveSync®, you can *synchronize* the information on your desktop computer with the information on your device. Synchronization compares the data on your device with your desktop computer and updates both computers with the most recent information.

Before you begin synchronization, install ActiveSync® on your desktop computer from the Companion CD. ActiveSync® is already installed on your device.

Insert the Companion CD into the CD-ROM drive of your desktop computer. Click the yellow arrow, click Start Here, and then follow the directions on your screen.

After installation is complete, the ActiveSync® Setup Wizard helps you connect your device to your desktop computer, set up a partnership so you can synchronize information between your device and your desktop computer, and customize your synchronization settings. Your first synchronization process will automatically begin when you finish using the wizard.

For More Information

You can get more information about Microsoft® Windows Mobile® Smartphone at

http://www.microsoft.com/windowsmobile/products/smartphone/default.mspx

Health and Safty 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 *.

*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.

SAR tests are conducted using standard operating positions specified by the FCC with the phone transmitting at its highest certified power level in all tested frequency bands. Although the SAR is determined at the highest certified power level, the actual SAR level of the phone while operating can be well below the maximum value. This is because the phone is designed to operate at multiple power levels so as to use only the power required to reach the network. In general, the closer you are to a wireless base station antenna, the lower the power output of the phone.
Before a new model phone is available for sale to the public, it must be tested and certified to the FCC that it does not exceed the limit established by the government-adopted requirement for safe exposure.
The tests are performed in positions and locations (e.g., at the ear and worn on the body) as required by the FCC for each model. While there may be differences between the SAR levels of various phones and at various positions, they all meet the government requirement.

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. FCC certification information for this model phone is attached separation paper.

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/rfsafety

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

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

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

Precautions When Using Batteries

. Never use any charger or battery that is damaged in any way.

. Use the battery only for its intended purpose.

. If you use the phone near the network's base station, it uses less power; talk and standby time are greatly affected by the signal strength on the cellular network and the parameters set by the network operator.

. Battery charging time depends on the remaining battery charge 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 shortcircuiting 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 voice mail 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 Atmospheres

Switch off your phone when in any area with a potentially explosive atmosphere and obey all signs and instructions. Sparks in such areas could cause an explosion or fire resulting in bodily injury or even death.

Users are advised to switch off the phone 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, proceed as follows.

1. If the phone is not on, switch it on.
2. Key in the emergency number for your present location. Emergency numbers vary by location.
3. Press TALK.

If certain features are in use (call barring, for example), you may first need to deactivate those features before you can make an emergency call. Consult this document and your local cellular service provider.

When making an emergency call, remember to give all the necessary information as accurately as possible. Remember that your phone may be the only means of communication at the scene of an accident; do not cut off the call until given permission to do so.

Other Important Safety Information

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

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

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

. For vehicles equipped with an air bag, remember that an air bag inflates with great force. Do not place objects, including both installed or portable wireless equipment in the area over the air bag or in the air bag deployment area. If wireless equipment is improperly installed and the air bag inflates, serious injury could result.

. Switch 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 the phone and all its parts and accessories out of the reach of small children's.

. Keep the phone dry. Precipitation, humidity and liquids contain minerals that will corrode electronic circuits.

. Do not touch the phone with a wet hand while it is charging. 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 it. 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.

. 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

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 governmentadopted 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 SCH-i640 as reported to the FCC are Head: 0.687W/Kg, Body-worn: 1.25W/Kg (CDMA Mode), and Head: 1.18 W/Kg, Body-worn: 1.12 W/Kg (PCS Mode). The highest SAR values for SCH-i645 as reported to the FCC are Head: 1.06W/Kg, Body-worn: 1.28W/Kg(CDMA Mode) and Head: 0.818 W/Kg, Body-worn: 1.35 W/Kg(PCS Mode). Body-worn operations are restricted to Samsungsupplied, approved or none Samsung designated accessories that have no metal and must provide at least 1.5cm separation between the device, including its antenna whether extended or retracted, and the user's body. None compliance to the above restrictions may violate FCC RF exposure guidelines
The FCC has granted an Equipment Authorization for this model phone with all reported SAR levels evaluated as in compliance with the FCC RF exposure guidelines. SAR information on this model phone is on file with the FCC and can be found under the Display Grant section of http://www.fcc.gov/oet/fccid after searching on FCC ID A3LSCHI645(640).

In the United States and Canada, the SAR limit for mobile phones used by the public is 1.6 watts/kilogram(W/kg) averaged over one gram of tissue. The standard incorporates a substantial margin of safety to give additional protection for the public and to account for any variations in measurements.

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 seatbelts and requiring other passengers to do the same. But with wireless phone use, driving safely means a little more. This brochure is a call to wireless phone users everywhere to make safety their first priority when behind the wheel of a car. Wireless telecommunications is keeping us in touch, simplifying our lives, protecting us in emergencies and providing opportunities to help others in need. When it comes to the use of wireless phones, safety is your most important call.
Wireless Phone "Safety Tips" Below are safety tips to follow while driving and using a wireless phone which should be easy to remember.

1. Get to know your wireless phone and its features such as speed dial and redial. Carefully read your instruction manual and learn to take advantage of valuable features most phones offer, including automatic redial and memory. Also, work to memorize the phone keypad so you can use the speed dial function without taking your attention off the road.

2. When available, use a hands free device. A number of hands free wireless phone accessories are readily available today. Whether you choose an installed mounted device for your wireless phone or a speaker phone accessory, take advantage of these devices if available to you.

3. Position your wireless phone within easy reach. Make sure you place your wireless phone within easy reach and where you can grab it without removing your eyes from the road. If you get an incoming call at an inconvenient time, if possible, let your voice mail answer it for you.

4. Suspend conversations during hazardous driving conditions or situations. Let the person you are speaking with know you are driving; if necessary, suspend the call in heavy traffic or hazardous weather conditions. Rain, sleet, snow and ice can be hazardous, but so is heavy traffic. As a driver, your first responsibility is to pay attention to the road.

5. Do not take notes or look up phone numbers while driving. If you are reading an address book or business card, or writing a “to do” list while driving a car, you are not watching where you are going. It’s common sense.
   Don’t get caught in a dangerous situation because you are reading or writing and not paying attention to the road or nearby vehicles.

6. Dial sensibly and assess the traffic; if possible, place calls when you are not moving or before pulling into traffic. Try to plan your calls before you begin your trip or attempt to coincide your calls with times you may be stopped at a stop sign, red light or otherwise stationary.
   But if you need to dial while driving, follow this simple tip-dial only a few numbers, check the road and your mirrors, then continue.

7. Do not engage in stressful or emotional conversations that may be distracting. Stressful or emotional conversations and driving do not mix-they are distracting and even dangerous when you are behind the wheel of a car. Make people you are talking with aware you are driving and if necessary, suspend conversations which have the potential to divert your attention from the road.

8. Use your wireless phone to call for help. Your wireless phone is one of the greatest tools you can own to protect yourself and your family in dangerous situationswith 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 nonemergency 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.wowcom.
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 radiofrequency energy (RF) because of the short distance between the phone and the user s head. These RF exposures are limited by Federal Communications Commission safety guidelines that were developed with the advice of FDA and other federal health and safety agencies. When the phone is located at greater distances from the user, the exposure to RF is drastically lower because a person's RF exposure decreases rapidly with increasing distance from the source. The so-called "cordless phones," which have a base unit connected to the telephone wiring in a house, typically operate at far lower power levels, and thus produce RF exposures 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 radiofrequency energy (RF) in the microwave range while being used. They also emit very low levels of RF when in the stand-by mode. Whereas high levels of RF can produce health effects (by heating tissue), exposure to low level RF that does not produce heating effects causes no known adverse health effects. Many studies of low level RF exposures have not found any biological effects. Some studies have suggested that some biological effects may occur, but such findings have not been confirmed by additional research. In some cases, other researchers have had difficulty in reproducing those studies, or in determining the reasons for inconsistent results.

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 radiofrequency energy (RF) at a level that is hazardous to the user. In such a case, FDA could require the manufacturers of wireless phones to notify users of the health hazard and to repair, replace or recall the phones so that the hazard no longer exists.

Although the existing scientific data do not justify FDA regulatory actions, FDA has urged the wireless phone industry to take a number of steps, including the following:

Support needed research into possible biological effects of RF of the type emitted by wireless phones; Design wireless phones in a way that minimizes any RF exposure to the user that is not necessary for device function; and Cooperate in providing users of wireless phones with the best possible information on possible effects of wireless phone use on human health

FDA belongs to an interagency working group of the federal agencies that have responsibility for different aspects of RF safety to ensure coordinated efforts at the federal level. The following agencies belong to this working group:
National Institute for Occupational Safety and Health
Environmental Protection Agency
Federal Communications Commission
Occupational Safety and Health Administration
National Telecommunications and Information Administration

The National Institutes of Health participates in some interagency working group activities, as well.

FDA shares regulatory responsibilities for wireless phones with the Federal Communications Commission (FCC). All phones that are sold in the United States must comply with FCC safety guidelines that limit RF exposure. FCC relies on FDA and other health agencies for safety questions about wireless phones.
FCC also regulates the base stations that the wireless phone networks rely upon. While these base stations operate at higher power than do the wireless phones themselves, the RF exposures that people get from these base stations are typically thousands of times lower than those they can get from wireless phones. Base stations are thus not the primary subject of the safety questions discussed in this document.

4. What is FDA doing to find out more about the possible health effects of wireless phone RF?

FDA is working with the U.S. National Toxicology Program and with groups of investigators around the world to ensure that high priority animal studies are conducted to address important questions about the effects of exposure to radiofrequency energy (RF).

FDA has been a leading participant in the World Health Organization International Electromagnetic Fields (EMF) Project since its inception in 1996. An influential result of this work has been the development of a detailed agenda of research needs that has driven the establishment of new research programs around the world. The Project has also helped develop a series of

public information documents on EMF issues.

FDA and the Cellular Telecommunications & Internet Association (CTIA) have a formal Cooperative Research and Development Agreement (CRADA) to do research on wireless phone safety. FDA provides the scientific oversight, obtaining input from experts in government, industry, and academic organizations. CTIA-funded research is conducted through contracts to independent investigators. The initial research will include both laboratory studies and studies of wireless phone users. The CRADA will also include a broad assessment of additional research needs in the context of the latest research developments around the world.

5. What steps can I take to reduce my exposure to radiofrequency energy from my wireless phone?

If there is a risk from these products.and at this point we do not know that there is.it is probably very small. But if you are concerned about avoiding even potential risks, you can take a few simple steps to minimize your exposure to radiofrequency energy (RF). Since time is a key factor in how much exposure a person receives, reducing the amount of time spent using a wireless phone will reduce RF exposure.

If you must conduct extended conversations by wireless phone every day, you could place more distance between your body and the source of the RF, since the exposure level drops off dramatically with distance. For example, you could use a headset and carry the wireless phone away from your body or use a wireless phone connected to a remote antenna

Again, the scientific data do not demonstrate that wireless phones are harmful. But if you are concerned about the RF exposure from these products, you can use measures like those described above to reduce your RF exposure from wireless phone use.

6. What about children using wireless phones?

The scientific evidence does not show a danger to users of wireless phones, including children and teenagers. If you want to take steps to lower exposure to radiofrequency energy (RF), the measures described above would apply to children and teenagers using wireless phones. Reducing the time of wireless phone use and increasing the distance between the user and the RF source will reduce RF exposure.
Some groups sponsored by other national governments have advised that children be discouraged from using wireless phones at all. For example, the government in the United Kingdom distributed leaflets containing such a recommendation in December 2000. They noted that no evidence exists that using a wireless phone causes brain tumors or other ill effects. Their recommendation to limit

wireless phone use by children was strictly recautionary; it was not based on scientific evidence that any health hazard exists.

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

Since there are no known risks from exposure to RFemissions 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.

8. 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 f 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.

9. What about wireless phone interference with medical equipment?

Radiofrequency energy (RF) from wireless phones can interact with some electronic devices. For this reason, FDA helped develop a detailed test method to measure electromagnetic interference (EMI) of implanted cardiac pacemakers and defibrillators from wireless telephones.

This test method is now part of a standard sponsored by the Association for the Advancement of Medical instrumentation (AAMI). The final draft, a joint effort by FDA, medical device manufacturers, and many other groups, was completed in late 2000. This standard will allow manufacturers to ensure that cardiac pacemakers and defibrillators are safe from wireless phone EMI.

FDA has tested hearing aids for interference from handheld wireless phones and helped develop a voluntary standard sponsored by the Institute of Electrical and Electronic Engineers (IEEE). This standard specifies test methods and performance requirements for hearing aids and wireless phones so that 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.

10. What are the results of the research done already?

The research done thus far has produced conflicting results, and many studies have suffered from flaws in their research methods. Animal experiments investigating the effects of radiofrequency energy (RF) exposures characteristic of wireless phones have yielded conflicting results that often cannot be repeated in other laboratories. A few animal studies, however, have suggested that low levels of RF could accelerate the development of cancer in laboratory animals. However, many of the studies that showed increased tumor development used animals that had been genetically engineered or treated with cancer-causing chemicals so as to be pre-disposed to develop cancer in the absence of RF exposure. Other studies exposed the animals to RF for up to 22 hours per day. These conditions are not similar to the conditions under which people use wireless phones, so we don t know with certainty what the results of such studies mean for human health.

Three large epidemiology studies have been published since December 2000. Between them, the studies investigated any possible association between the use of wireless phones and primary brain cancer, glioma, meningioma, or acoustic neuroma, tumors of the brain or salivary gland, leukemia, or other cancers. None of the studies demonstrated the existence of any harmful health effects from wireless phone RF exposures. However, none of the studies can answer questions about long-term exposures, since the average period of phone use in these studies was around three years.

11. 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.

12. 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.oshaslc.

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

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

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

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

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