



USER GUIDE

# LG Escape 2™

LG-H445





# User Guide

ENGLISH

- Some content and illustrations may differ from your device depending on the region, service provider, software version, or OS version, and are subject to change without prior notice.
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- This device is not suitable for people who have a visual impairment due to the touchscreen keyboard.
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# Important notice




## Please read this before you start using your phone!

Please check to see whether any problems you encountered with your phone are described in this section before taking the phone in for service or calling a service representative.

### 1. Phone memory

When there is less than 10 MB of space available in your phone memory, your phone cannot receive new messages. You may need to check your phone memory and delete some data, such as applications or messages, to make more memory available.

To uninstall applications:

- 1 Tap  >  >  > **General** tab > **Apps**.
- 2 Once all applications appear, scroll to and select the application you want to uninstall.
- 3 Tap **Uninstall** > **OK**.

### 2. Optimizing battery life

Extend your battery's power by turning off features that you do not need to run constantly in the background. You can monitor how applications and system resources consume battery power.

Extending your phone's battery life:

- Turn off radio communications when you are not using. If you are not using Wi-Fi, Bluetooth or GPS, turn them off.
- Reduce screen brightness and set a shorter screen timeout.
- Turn off automatic syncing for Gmail, Calendar, Contacts and other applications.

- Some applications you download may consume battery power.
- While using downloaded applications, check the battery charge level.

### 3. Before installing an open source application and OS

#### WARNING

If you install and use an OS other than the one provided by the manufacturer it may cause your phone to malfunction. In addition, your phone will no longer be covered by the warranty.

#### WARNING

To protect your phone and personal data, only download applications from trusted sources, such as Play Store™. If there are improperly installed applications on your phone, the phone may not work normally or a serious error may occur. You must uninstall those applications and all associated data and settings from the phone.

### 4. Using the Hard Reset (Factory Reset)

If your phone does not restore to its original condition, use a Hard Reset (Factory Reset) to initialize it.

- 1 Turn the power off.
- 2 Press and hold the **Power/Lock Key + Volume Down Key** on the back of the phone.
- 3 Release the **Power/Lock Key** only when the boot logo is displayed, then immediately press and hold the **Power/Lock Key** again.
- 4 Release all keys when the Factory reset screen is displayed.
- 5 Press the **Volume Keys** to highlight **Yes**, then press the **Power/Lock Key** to continue.



- 6 Press the **Volume Keys** to highlight **Yes** once more, then press the **Power/Lock Key** to confirm.

### **WARNING**

If you perform a Hard Reset, all user applications, user data and DRM licenses will be deleted. Please remember to backup any important data before performing a Hard Reset.

## 5. Opening and switching applications

Multitasking is easy with Android; you can keep more than one application running at the same time. There is no need to quit an application before opening another. Use and switch between several open applications. Android manages each application, stopping and starting them as needed to make sure that idle applications don't consume resources unnecessarily.

- 1 Tap . App previews of recently used applications will be displayed.
- 2 Tap the application you want to access. This does not stop the previous app from running in the background. Make sure to tap  to back out of an app after using it.
  - To close an app from the recent apps list, swipe the app preview to the left or right. To clear all apps, tap **Clear all**.

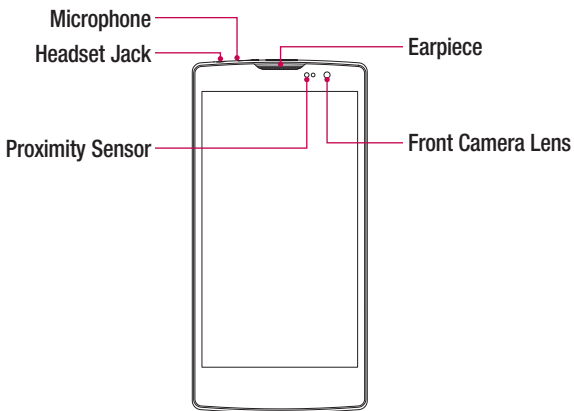
## 6. If the screen freezes

If the screen freezes or the phone does not respond when you try to operate it, remove the battery and reinsert it. Then power the phone back on.



# Getting to know your phone

## Phone layout

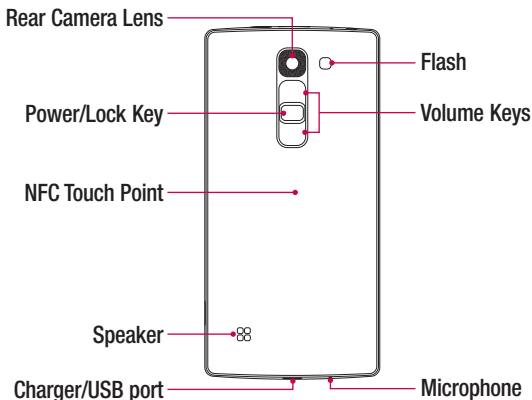


### **NOTE: Proximity sensor**

When receiving and making calls, the proximity sensor automatically turns the backlight off and locks the touch screen by sensing when the phone is near your ear. This extends battery life and prevents you from unintentionally activating the touch screen during calls.

### **⚠ WARNING**

Placing a heavy object on the phone or sitting on it can damage the display and touch screen functions. Do not cover the proximity sensor with screen protectors or any other type of protective film. This could cause the sensor to malfunction.



<b>Power/Lock Key</b>	<ul style="list-style-type: none"> <li>• Turn your phone on/off by pressing and holding this key.</li> <li>• Press once quickly to lock/unlock the screen.</li> </ul>
<b>Volume Keys</b>	<p><b>While the screen is off:</b></p> <ul style="list-style-type: none"> <li>• Press and hold the Volume Up Key to launch QuickMemo+.</li> <li>• Press and hold the Volume Down Key to launch the camera.</li> </ul> <p><b>While the screen is on:</b></p> <ul style="list-style-type: none"> <li>• From the Home screen, press to change the ringer type.</li> <li>• While listening to music or on a call, press to adjust the volume.</li> </ul>

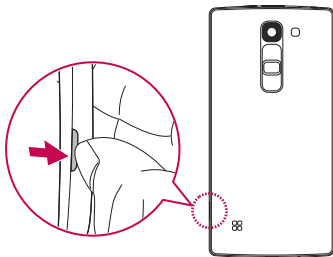
**⚠ WARNING**

- The NFC antenna for this model is on the back cover.
- Be careful not to damage the NFC touch point on the phone, which is part of the NFC antenna.

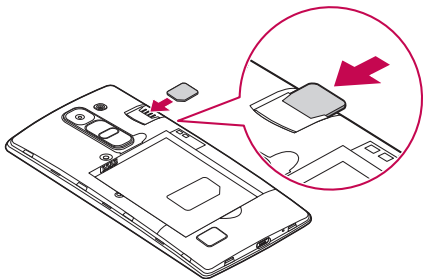
## Installing the SIM or USIM card and battery

Before you can start exploring your new phone, you need to set it up.

- 1 To remove the back cover, hold the phone firmly in one hand. With your other hand, lift off the back cover with your thumbnail as shown in the figure below.



- 2 Slide the SIM card into the lower slot for the SIM card as shown in the figure. Make sure the gold contact area on the card is facing downward.

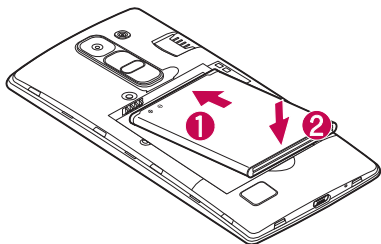


**⚠ WARNING**

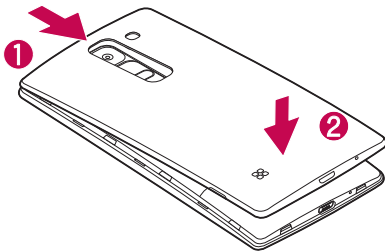
Do not insert a memory card into the SIM card slot. If a memory card happens to be lodged in the SIM card slot, take the device to a LG Service Center to remove the memory card.

**NOTE:** Only microSIM cards work with this device.

**3** Insert the battery.



**4** To replace the cover onto the device, align the back cover over the battery compartment **1** and press it down until it clicks into place **2**.



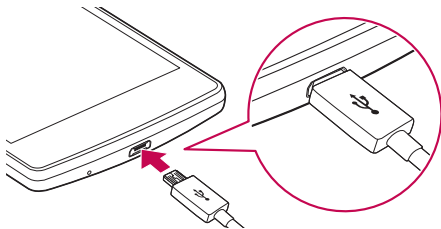
## Charging the battery

Charge the battery before using it for first time. Use the charger to charge the battery. A computer can also be used to charge the battery by connecting the phone to it using the USB cable.

### **WARNING**

Use only LG-approved chargers, batteries and cables. If you use unapproved chargers, batteries or cables, it may cause a battery charging delay. This can also cause the battery to explode or damage the device, which is not covered by the warranty.

The Charger/USB Port is located at the bottom of the phone. Insert the charger and plug it into a power outlet.



**NOTE:** Do not open the back cover while your phone is charging.

## Inserting a memory card

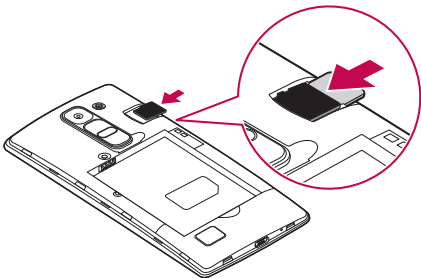
Your device supports up to a 32 GB microSD card. Depending on the memory card manufacturer and type, some memory cards may not be compatible with your device.

### **WARNING**

Some memory cards may not be fully compatible with the device. Using an incompatible card may damage the device or the memory card, or corrupt the data stored in it.

**NOTE:** Frequent writing and erasing of data shortens the lifespan of memory cards.




- 1 Remove the back cover.
- 2 Insert a memory card with the gold-colored contacts facing downwards.



- 3 Replace the back cover.

## Removing the memory card

Before removing the memory card, first unmount it for safe removal.

- 1 Tap  >  >  > **General tab > Storage > Unmount SD card.**
- 2 Remove the back cover and pull out the memory card.

### **WARNING**

Do not remove the memory card while the device is transferring or accessing information. Doing so can cause data to be lost or corrupted or damage to the memory card or device. LG is not responsible for losses that result from the misuse of damaged memory cards, including the loss of data.

## Locking and unlocking the device

Pressing the **Power/Lock Key** turns off the screen and puts the device into lock mode. The device automatically gets locked if it is not used for a specified period. This helps to prevent accidental taps and saves battery power.

To unlock the device, press the **Power/Lock Key** and swipe the screen in any direction.

**NOTE:** Double-tapping on the screen also can wake up the screen instead of the **Power/Lock Key**.

## Changing the screen lock method

You can change the way that you lock the screen to prevent others accessing your personal information.

- 1 Tap  >  >  > **Display tab > Lock screen > Select screen lock.**
- 2 Select a desired screen lock from **Knock Code, Pattern, PIN** and **Password**.




**NOTE:** Create or sign in to a Google account before setting an screen lock and remember the backup PIN you created when creating your screen lock.

**Caution!** If you haven't created or signed in to a Google account on the phone and you forgot your PIN, Password, and the backup PIN, you need to perform a hard reset. Performing a hard reset deletes all user applications and user data. Please remember to back up any important data before performing a hard reset.

### **TIP! Smart Lock**

You can use Smart Lock to make unlocking your phone easier. You can set it to keep your phone unlocked when you have a trusted Bluetooth device connected to it, when it's in a familiar location like your home or work, or when it recognises your face.

#### **Setting up Smart Lock**

- 1 Tap  >  > .
- 2 Tap **Display** tab > **Lock screen** > **Smart Lock**.
- 3 Before you add any trusted devices, trusted places, or trusted face, you need to set up a screen lock (pattern, PIN, or password).



# Your Home screen

## Touch screen tips


Here are some tips on how to navigate on your phone.

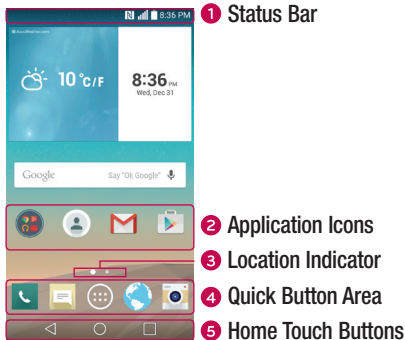
- **Tap or touch** – A single finger tap selects items, links, shortcuts and letters on the on-screen keyboard.
- **Touch and hold** – Touch and hold an item on the screen by tapping it and not lifting your finger until an action occurs.
- **Drag** – Touch and hold an item for a moment and then, without lifting your finger, move your finger on the screen until you reach the target position. You can drag items on the Home screen to reposition them.
- **Swipe or slide** – To swipe or slide, quickly move your finger across the surface of the screen, without pausing when you first tap it (so you don't drag an item instead).
- **Double-tap** – Double-tap to zoom on a webpage or a map.
- **Pinch-to-Zoom** – Use your index finger and thumb in a pinching or spreading motion to zoom in or out when using the browser, Maps, or when viewing pictures.
- **Rotate the screen** – From many applications and menus, the screen orientation adjusts to the device's physical orientation.

### NOTE:




- Do not press too hard; the tap screen is sensitive enough to pick up a light, yet firm tap.
- Use the tip of your finger to tap the option you want. Be careful not to tap any other buttons.

## Home screen

The Home screen is the starting point for many applications and functions. It allows you to add items like app shortcuts and Google widgets to give you instant access to information and applications. This is the default canvas and accessible from any menu by tapping .



- 1 Shows the phone's status information, including the time, signal strength, battery status and notification icons.
- 2 Tap an icon (application, folder, etc.) to open and use it.
- 3 Indicates which Home screen canvas you are currently viewing.
- 4 Provides one-touch access to the function from any Home screen canvas.

5  <b>Back Button</b>	Returns to the previous screen. Also closes pop-up items, such as menus, dialog boxes and the on-screen keyboard.
 <b>Home Button</b>	Return to the Home screen from any screen. Touch and hold to access Google Now.
 <b>Recent Apps Button</b>	Displays recently used applications. If you touch and hold this button, it opens a menu of available options.

## Extended Home screen

The operating system provides multiple Home screen canvases to provide more space for adding icons, widgets and more.

- Slide your finger left or right across the Home screen to access additional canvases.

## Customizing the Home screen

You can customize your Home screen by adding apps and widgets and changing wallpapers.

### Adding items on your Home screen

- 1 Touch and hold the empty part of the Home screen.
- 2 Tap the **Widgets** tab and select the item you want to add. You then see this added item on the Home screen.
- 3 Drag it to the desired location and lift your finger.

**TIP!** To add an application icon to the Home screen from the Apps screen, touch and hold the application you want to add.

### Removing an item from the Home screen


- While on the Home screen, touch and hold the icon you want to remove, then drag it to  and release it.

### Adding an app to the Quick Button area


- From the Apps screen or on the Home screen, touch and hold an application icon and drag it to the Quick Button area. Then release it in the desired location.

### Removing an app from the Quick Button area

- Touch and hold the desired Quick Button, drag it to , and release it.


**NOTE:** The **Apps Button**  cannot be removed.

## Customizing app icons on the Home screen

- 1 Touch and hold an application icon until it unlocks from its current position, then release it. The editing icon  appears in the upper-right corner of the application.
- 2 Tap the application icon again and select the desired icon design and size.
- 3 Tap **OK** to save the change.

**NOTE:** You can also tap **Add new** to personalize icons with your pictures.

## Returning to recently-used applications

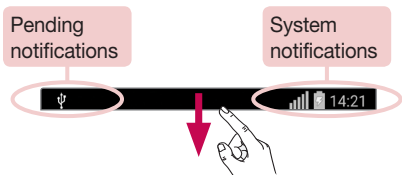
- 1 Tap . App previews of recently used applications will be displayed.
- 2 Tap an app preview to open the application. Or tap  to return to your previous screen.

## Notifications panel

Notifications alert you to the arrival of new messages, calendar events and alarms, as well as ongoing events, such as when you are on a call.

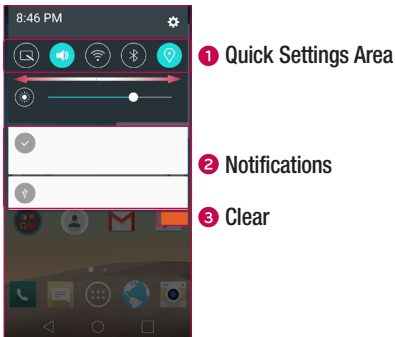
When a notification arrives, its icon appears at the top of the screen. Icons for pending notifications appear on the left, and system icons, such as Wi-Fi and battery strength are shown on the right.


**NOTE:** The available options may vary depending on the region or service provider.



## Opening the Notifications panel

Swipe down from the Status bar to open the Notifications panel. To close the Notifications panel, swipe the screen upwards or tap .












- 1 Tap each quick setting button to toggle it on/off. Touch and hold the desired button to directly access the settings menu for the function. To see more toggle keys, swipe left or right. Tap  to remove, add or rearrange quick setting buttons.
- 2 Current notifications are listed, each with a brief description. Tap a notification to view it.
- 3 Tap to clear all of the notifications.












## Indicator icons on the Status Bar

Indicator icons appear on the status bar at the top of the screen to report missed calls, new messages, calendar events, device status and more.



The icons displayed at the top of the screen provide information about the status of the device. The icons listed in the table below are some of the most common ones.

Icon	Description
	No SIM card inserted
	No network signal available
	Airplane mode is on
	Connected to a Wi-Fi network
	Wired headset connected
	Call in progress
	Missed call
	Bluetooth is on
	System warning
	An alarm is set
	New voicemail available

Icon	Description
	A song is currently playing
	Ringer is silenced
	Vibrate mode is on
	Battery fully charged
	Battery is charging
	The phone is connected to a PC via a USB cable
	Downloading data
	Uploading data
	GPS is on
	Data is synchronizing
	Choose input method



New text or multimedia message



Media server content sharing is on








NFC is on

**NOTE:** The icon's location in the Status bar may differ according to the function or service.

## On-screen keyboard

You can enter text using the on-screen keyboard. The on-screen keyboard appears on the screen when you tap an available text entry field.

### Using the keypad and entering text

-  Tap once to capitalize the next letter you type. Double-tap for all caps.
-  Tap to go to the keyboard settings. Touch and hold to enter text by voice or access the Clip Tray.
-  Tap to enter a space.
-  Tap to create a new line.
-  Tap to delete the previous character.

### Entering special characters

The on-screen keyboard allows you to enter special characters. For example, to input "á", touch and hold the "a" button until the zoom-in key expands and displays special characters. Without lifting your finger, drag your finger to the desired special character. Once it's highlighted, lift your finger.

**NOTE:** A symbol at the top right corner of a key indicates that additional characters are available for that key.

# Special Features

## Gesture shot

The Gesture shot feature allows you to take a picture with a hand gesture using the front camera.

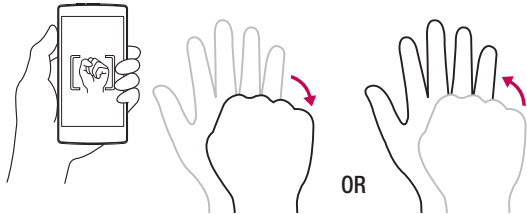
### To take photo

There are two methods for using the Gesture shot feature.

- Raise your hand, with an open palm, until the front camera detects it and a box appears on the screen. Then close your hand into a fist to start the timer, allowing you time to get ready.

**OR**

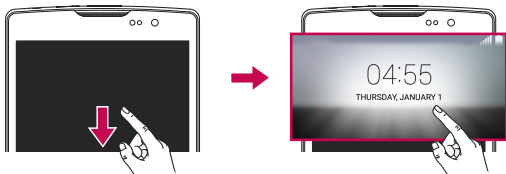
- Raise your hand, in a clenched fist, until the front camera detects it and a box appears on the screen. Then unclench your fist to start the timer, allowing you time to get ready.





## Glance View

When the phone screen is off, you can see the Status bar, time and date by dragging your finger down from the top of the screen.



## KnockON

The KnockON feature allows you to double-tap the screen to easily turn it on or off.

### To turn the screen on

- 1 Double-tap the center of the Lock screen to turn the screen on.
- 2 Unlock the screen or access any of the available shortcuts or widgets.

### To turn the screen off

- 1 Double-tap an empty area of the Home screen or the Status Bar.
- 2 The screen will turn off.




**NOTE:** Tap on the center area of the screen. If you tap on the bottom or the top area, the recognition rate may decrease.

## Knock Code

The Knock Code feature allows you to create your own unlock code using a combination of knocks on the screen. You can access the Home screen directly when the screen is off by tapping the same sequence on the screen.

## NOTE:

- If you enter the wrong Knock Code 6 times, it will compulsorily take you to your Google account log in/backup PIN.
- Use the fingertip instead of finger nail to tap the screen for turning it on or off.
- When the Knock Code is not in use, you can use Knock On function by tapping the screen.

- 1 Tap  >  >  > **Display** tab > **Lock screen** > **Select screen lock** > **Knock Code**.
- 2 Tap the squares in a pattern to set your Knock Code. Your Knock Code pattern can be 3 to 8 taps.

## Unlocking the screen using the Knock Code

You can unlock the screen by tapping the Knock Code pattern you already set, when the screen turns off.

## QuickMemo+

The QuickMemo+ feature allows you to create memos and capture screen shots. You can use QuickMemo+ to easily and efficiently create memos during a call, with a saved picture or on the current phone screen.







- 1 Drag the Status bar down and tap .



- 2 Create a memo using the following options:



Tap to undo the most recent action.

	Tap to redo the most recently deleted action.
	Tap to insert text into your memo.
	Tap to select the pen type and color.
	Tap to use the eraser to erase the pen marks on the memo.
	Tap to save the memo you've created.
	Tap to hide or display the toolbar.




**NOTE:** Please use a fingertip while using the QuickMemo+ feature. Do not use your fingernail.

- 3 Tap  to save the current memo to the **QuickMemo+** or **Gallery**.




# Google account setup

The first time you open a Google application on your phone, you will be required to sign in with your existing Google account. If you do not have a Google account, you will be prompted to create one.

## Creating your Google account

- 1 Tap  > .
- 2 Tap  > **General tab** > **Accounts & sync** > **Add account** > **Google** > **Create a New Account**.
- 3 Enter your first and last name, then tap **Next**.
- 4 Enter a username and tap **Next**. Your phone will communicate with Google servers and check for username availability.
- 5 Enter your password and tap **Next**.
- 6 Follow the instructions and enter the required and optional information about the account. Wait while the server creates your account.

## Signing into your Google account

- 1 Tap  > .
- 2 Tap  > **General tab** > **Accounts & sync** > **Add account** > **Google**.
- 3 Enter your email address and tap **Next**.
- 4 Once you have set up your Google account, your phone will automatically synchronize with your Google account on the web (if a data connection is available).

After signing in, your phone will sync with your Google services, such as Gmail, Contacts, and Google Calendar. You can also use Maps, download applications from Play Store, back up your settings to Google servers, and take advantage of other Google services on your phone.

## **IMPORTANT**





- Some applications, such as Calendar, work only with the first Google Account you add. If you plan to use more than one Google Account with your phone, be sure to sign into the one you want to use with such applications first. When you sign in, your contacts, Gmail messages, Calendar events, and other information from these applications and services on the web are synchronized with your phone. If you don't sign into a Google Account during setup, you will be prompted to sign in or to create a Google Account the first time you start an application that requires one, such as Gmail or Play Store.
- If you have an enterprise account through your company or other organization, your IT department may have special instructions on how to sign into that account.

# Connecting to Networks and Devices

## Wi-Fi





You can use high-speed Internet access while within the coverage of the wireless access point (AP).

### Connecting to Wi-Fi networks

- 1 Tap  >  >  > **Networks** tab > **Wi-Fi**.
- 2 Tap  to turn Wi-Fi on and start scanning for available Wi-Fi networks.
- 3 Tap a network to connect to it.
  - If the network is secured with a lock icon, you will need to enter a security key or password.
- 4 The Status bar displays icons that indicate Wi-Fi status.

**NOTE:** If you are out of the Wi-Fi zone or have set Wi-Fi to Off, the device may automatically connect to the Web using mobile data, which may incur data charges.

### TIP! How to obtain the MAC address

Tap  >  >  > **Networks** tab > **Wi-Fi** >  > **Advanced Wi-Fi** > **MAC address**.





## Bluetooth

Bluetooth is a short-range communications technology that allows you to connect wirelessly to a number of Bluetooth devices, such as headsets and hands-free car kits, and Bluetooth-enabled handhelds, computers, printers, and wireless devices.

### NOTE:

- LG is not responsible for the loss, interception or misuse of data sent or received via the Bluetooth feature.
- Always make sure that you share and receive data with devices that are trusted and properly secured.
- If there are obstacles between the devices, the operating distance may be reduced.
- Some devices, especially those that are not tested or approved by Bluetooth SIG, may be incompatible with your device.

### Pairing your phone with another Bluetooth device

- 1 Tap  >  >  > **Networks** tab > **Bluetooth**.
- 2 Tap  to turn Bluetooth on.
- 3 Tap **Search for devices** to view the visible devices in range.
- 4 Choose the device you want to pair with from the list. Once the pairing is successful, your phone connects to the other device.

**NOTE:** Pairing between two Bluetooth devices is a one-time process. Once a pairing has been created, the devices will continue to recognize their partnership and exchange information.

**TIP!** Please consult documentation included with Bluetooth device for information on pairing mode and passcode (typically 0 0 0 0 – four zeroes).

## Sending data via Bluetooth

- 1 Select a file or item, such as a contact or media file.
- 2 Select the option for sending data via Bluetooth.
- 3 Search for and pair with a Bluetooth-enabled device.
  - Due to different specifications and features of other Bluetooth-compatible devices, display and operations may be different, and functions such as transfer or exchange, may not be possible with all Bluetooth compatible devices.

## Receiving data via Bluetooth

- 1 Tap  >  >  > **Networks** tab > **Bluetooth**.
- 2 Tap  to turn Bluetooth on.
- 3 You will receive a request to accept a pairing attempt from the sending device. Be sure to select **Accept**.

## Wi-Fi Direct

Wi-Fi Direct provides a direct connection between Wi-Fi enabled devices without requiring an access point.

### Turning on Wi-Fi Direct

- 1 Tap  >  >  > **Networks** tab > **Wi-Fi**.
- 2 Tap  > **Advanced Wi-Fi** > **Wi-Fi Direct**.

**NOTE:** When in this menu, your device is visible to other visible Wi-Fi Direct devices nearby.



## Transferring data between a PC and the device

You can copy or move data between a PC and the device.

### Transferring data

- 1 Connect your device to a PC using the USB cable that came with your phone.
- 2 Open the Notifications panel, , tap the current USB connection, and select **Media sync (MTP)**.
- 3 A window will pop-up on your PC, allowing you to transfer the desired data.





**NOTE:** The LG United Mobile Driver is required to be installed on your PC to be able to detect the phone.


Items	Requirement
OS	Microsoft Windows XP SP3, Vista or higher
Window Media Player version	Windows Media Player 10 or higher

**NOTE:** Please refer to [www.android.com/filetransfer/#tips](http://www.android.com/filetransfer/#tips) in order to use MTP on the MAC OS.



# Calls

## Making a call



- 1 Tap  to open the dialer.
- 2 Enter the number using the dialer. To delete a digit, tap .
- 3 After entering the desired number, tap  to place the call.
- 4 To end the call, tap .

**TIP!** To enter "+" to make international calls, touch and hold .

## Calling your contacts





- 1 Tap  to open your contacts.
- 2 Scroll through the contact list. You can also enter the contact's name in the Search field or scroll along the alphabet letters on the right edge of the screen.
- 3 In the list that is displayed, tap the contact you want to call.
- 4 Tap  next to the number you want to dial.

## Answering and rejecting a call

- Swipe  in any direction to answer the incoming call.
- Swipe  in any direction to decline an incoming call.

**NOTE:** Tap or swipe the **Decline with message** if you want to send a message to the caller.

## Making a second call

- 1 During your first call, tap  > **Add call** and enter the number.
- 2 Tap  to place the call.
- 3 Both calls are displayed on the call screen. Your initial call is locked and put on hold.
- 4 Tap the displayed number to toggle between calls. Or tap  to start a conference call.
- 5 To end all calls, tap .


**NOTE:** You are charged for each call you make.

## Viewing your call logs

From the Home screen, tap  and select **Call logs**.


View a list of all dialed, received and missed calls.

### TIP!

- Tap any call log entry to view the date, time and duration of the call.
- Tap , then tap **Delete all** to delete all of the recorded items.

## Call settings


You can configure phone call settings, such as call forwarding, as well as other special features offered by your carrier.

- 1 From the Home screen, tap  to open the dialer.
- 2 Tap  to display the available options.
- 3 Tap **Call settings** and configure the desired options.



# Contacts

You can add contacts on your phone and synchronize them with the contacts in your Google Account or other accounts that support syncing contacts.

## Searching for a contact

- 1 Tap  to open your contacts.
- 2 Tap **Search contacts** and enter the contact name using the keyboard.


## Adding a new contact

- 1 Tap  and enter the new contact's number. Then tap  > **Add to Contacts**.
- 2 If you want to add a picture to the new contact, tap the image area.  
Choose **Take photo** or **Select from Gallery**.
- 3 Enter the desired information for the contact.
- 4 Tap **Save**.


## Favorite contacts

You can classify frequently called contacts as favorites.



### Adding a contact to your favorites

- 1 Tap  to open your contacts.
- 2 Tap a contact to view its details.
- 3 Tap the star at the top right of the screen. The star turns gold.

## Removing a contact from your favorites list

- 1 Tap  to open your contacts.
- 2 Tap the **Favorites** tab, and choose a contact to view its details.
- 3 Tap the gold star at the top right of the screen. The star turns a dark color and the contact is removed from your favorites.

## Creating a group

- 1 Tap  to open your contacts.
- 2 Tap **Groups** >  > **New group**.
- 3 Enter a name for the new group. You can also set a distinct ringtone for the newly created group.
- 4 Tap **Add members** to add contacts to the group.
- 5 Tap **Save** to save the group.



### NOTE:

- If you delete a group, the contacts assigned to that group will not be lost. They will remain in your contact list.


# Messaging


Your phone combines text and multimedia messaging into one intuitive, easy-to-use menu.

## Sending a message

- 1 From the Home screen, tap  and tap  to create a new message.
- 2 Enter a contact name or contact number into the **To** field. As you enter the contact name, matching contacts appear. You can tap a suggested recipient and add more than one contact.

**NOTE:** You may be charged for each text message you send. Please consult with your service provider.

- 3 Tap the text field and start entering your message.
- 4 Tap  to open the options menu. Choose from any of the available options.

**TIP!** You can tap  to attach the file that you want to share with message.

- 5 Tap **Send** to send your message.

### TIP!

- The 160-character limit may vary from country to country depending on how the text message is coded and the language used in the message.
- If an image, video, or audio file is added to a text message, it will be automatically converted into a multimedia message and you will be charged accordingly.



**NOTE:** When you get a text message during a call, there will be an audible notification.

## Conversation view

Messages exchanged with another party are displayed in chronological order so that you can conveniently see and find your conversations.

## Changing your messaging settings

Your phone's messaging settings are predefined to allow you to send messages immediately. You can change the settings based on your preferences.

- Tap  on the Home screen, tap  > **Settings**.

You can use the Email application to read email from providers other than Gmail. The Email application supports the following account types: POP3, IMAP and Microsoft Exchange (for Enterprise users).






## Managing email accounts

To open the Email application





Tap  >  > .

The first time you open the Email application, a setup wizard opens to help you add an email account.

Adding another email account:

- Tap  >  >  >  > **Settings** >  **Add account.**

Changing the email general settings:

- Tap  >  >  >  > **Settings** > **General settings.**

Deleting an email account:

- Tap  >  >  >  > **Settings** >  > **Remove account** > Select the account to delete > **Remove** > **Yes.**



## Working with account folders

Tap  >  >  >  > **Folders.**

Each account has Inbox, Outbox, Sent and Drafts folders. Depending on the features supported by your account's service provider, you may have additional folders.



## Composing and sending email

- 1 In the  application, tap  to create a new email.
- 2 Enter an address for the message's intended recipient. As you enter text, matching addresses will be offered from your contacts. Separate multiple addresses with semicolons.
- 3 Tap the **Cc/Bcc** field to copy or blind copy to other contacts/email addresses.
- 4 Tap the text field and enter your message.
- 5 Tap **Attach** to attach the file you want to send with your message.
- 6 Tap **Send** to send the message.

# Camera and Video

## Camera options on the viewfinder

To open the Camera application, tap  >  > .

You can use the camera or camcorder to take and share pictures and videos.


**NOTE:** Be sure to clean the protective lens cover with a microfiber cloth before taking pictures. A lens cover with smudges from fingers can cause blurry pictures with a "halo" effect.








- 1 **Hide/Display Options** – Tap to hide/display the camera options on the viewfinder.
- 2 **Flash** – Allows you to manage the camera's flash.
- 3 **Swap camera** – Tap to swap between the rear camera lens and the front camera lens.
- 4 **Settings** – Tap this icon to open the camera settings menu.
- 5 **Gallery** – Tap to view the last photo or video you captured.
- 6 **Record** – Tap to start recording.

- 7 **Capture** – Tap to take a photo.
- 8 **Exit** – Tap to exit the camera.


## Using the advanced settings

In the camera viewfinder, tap  to show the advanced options. Tap each icon to adjust the following camera settings.

	Set the size of your picture and video.
	Allows you to say a voice command to take pictures. You can say LG, Cheese, Smile, or any other supported command.
	Set your camera's timer. This is ideal if you want to be a part of the picture or video.
	Allows you to take better pictures and record better videos by displaying a grid line for help with alignment.
	Allows you to learn how a function works. This icon will provide you with a help guide.




**NOTE:** The shutter sound is not available when Vibrate mode or Silent mode is enabled.

## Taking a photo


- 1 Open the **Camera** application and point the lens toward the subject you want to photograph.
- 2 Focus indicators will appear in the center of the viewfinder screen. You can also tap anywhere on the screen to focus on that spot.
- 3 When the focus indicators turn blue, the camera has focused on your subject.
- 4 Tap  to capture the photo.

## Once you have taken a photo

Tap the image thumbnail on the screen to view the last photo you took. The following options are available.

	Tap to edit the photo.
	Tap to take another photo immediately.
	Tap to send your photo to others or share it via any available social network services.
	Tap to delete the photo.
	Tap to access additional options.
	Tap to add the photo to your favorites.


## Recording a video


- 1 Open the **Camera** application and point the lens toward the subject you want to capture in your video.
- 2 Tap  once to start recording.

**NOTE:** The timer will be displayed on the screen.

3 Tap  to stop recording.






**TIP!**

 – Tap to capture a screen shot while recording a video.

 – Tap to pause the recording.

## After recording a video

Tap the video thumbnail on the screen to view the last video you recorded. The following options are available.

	Tap to record another video immediately.
	Tap to send your video to others or share it via any available social network services.
	Tap to delete the video.
	Tap to access additional options.
	Tap to add the video to favorites.

## Multi-point Auto Focus




When you take a picture, the Multi-point Auto Focus (AF) function operates automatically and allows you to see a clear image.

## Burst shot

Allows you to take multiple shots quickly. Touch and hold .

## Gallery

The Gallery application presents the pictures and videos in your storage, including those you've taken with the Camera application and those you downloaded from the web or other locations.

- 1 Tap  >  >  to view the images stored in the storage.
- 2 Tap an album to open it and view its contents. (The pictures and videos in the album are displayed in chronological order.)
- 3 Tap a picture in an album to view it.

### NOTE:

- Depending on the software installed, some file formats may not be supported.
- Some files may not play properly due to their encoding.

## Viewing pictures

The Gallery displays your pictures in folders. When some apps save a picture, a folder is automatically created to contain the picture.

Pictures are displayed by the date they were created. Select a picture to view it full screen. Scroll left or right to view the next or previous image.

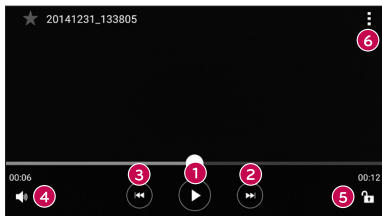
## Zooming in and out







Use one of the following methods to zoom in and out on an image:

- Double-tap anywhere to zoom in and out.
- Spread two fingers apart on any place in the picture zoom in. Pinch in to zoom out.

## Video options

- 1 Tap  >  > .
- 2 Select the video you want to watch.



	Touch to pause/resume video playback.
	Touch to fast-forward.
	Touch to rewind.
	Touch to adjust video volume.
	Touch to lock/unlock the screen.
	Tap to access additional options.

### NOTE:



- While a video is playing, the following options are available:
  - Slide the right side of the screen up or down to adjust the sound.
  - Slide the left side of the screen up or down to adjust the brightness.
  - Slide your finger from left to right (or vice versa) to fast-forward and rewind.

## Editing photos


While viewing a photo, tap .

## Deleting photos/videos

Use one of the following methods:

- While in a folder, tap , select the photos/videos you want to delete. Then tap **Delete**.
- While viewing a photo, tap .

## Setting wallpaper

While viewing a photo, tap  > **Set image as** to set the image as wallpaper or assign it to a contact.

### NOTE:

- Depending on the software installed, some file formats may not be supported.
- If the file size exceeds the available memory, an error can occur when you open files.






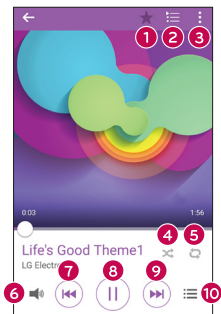
# Multimedia





## Music








Your phone has a music player that lets you play all your favorite tracks.

### Playing a song

- 1 Tap  >  > .
- 2 Tap the **Songs** tab.
- 3 Select the song you want to play.
- 4 The following options are available.



1		Tap to add the song to your favorites.
2		Tap to open the current playlist.
3		Tap to access additional options.
4		Tap to play the current playlist in shuffle mode (tracks are played in random order).

5		Tap to toggle through repeat all songs, repeat current song and repeat off.
6		Tap to adjust the volume.
7		Tap to restart the current track or skip to the previous track in the album, playlist or shuffle list. Touch and hold to rewind.
8		Tap to pause playback.
		Tap to resume playback.
9		Tap to skip to the next track in the album, playlist or shuffle list. Touch and hold to fast-forward.
10		Tap to open the music library.

#### NOTE:

- Depending on the software installed, some file formats may not be supported.
- If the file size exceeds the available memory, an error can occur when you open files.
- Music file copyrights may be protected by international treaties and national copyright laws. Therefore, it may be necessary to obtain permission or a licence to reproduce or copy music. In some countries, national laws prohibit private copying of copyrighted material. Before downloading or copying the file, please check the national laws of the relevant country concerning the use of such material.


## Clock

The Clock app gives you access to the Alarms, Timer, World clock and Stopwatch functions. Access these functions by tapping the tabs across the top of the screen or swiping horizontally across the screen.

Tap  >  > .

### Alarms


The Alarms tab allows you to set alarms.

- 1 Open the  app, then select the **Alarms** tab.
- 2 Tap  to add a new alarm, tap an alarm.
- 3 Adjust the settings as necessary and tap **Save**.

**NOTE:** You can also tap an existing alarm to edit it.



### Timer

The Timer tab can alert you with an audible signal when a set amount of time has passed.

- 1 Open the  app, then select the **Timer** tab.
- 2 Set the desired time on the timer.
- 3 Tap **Start** to start the timer.
- 4 Tap **Stop** to stop the timer.


## World clock

The World clock tab allows you to easily check the current time in other cities around the world.

- 1 Open the  app, then select the **World clock** tab.
- 2 Tap  and select the desired city.




## Stopwatch

The Stopwatch tab allows you to use your phone as a stopwatch.

- 1 Open the  app, then select the **Stopwatch** tab.
- 2 Tap the **Start** button to initiate the stopwatch.
  - Tap the **Lap** button to record lap times.
- 3 Tap the **Stop** button to stop stopwatch.

## Calculator

The Calculator app allows you to perform mathematical calculations using a standard or scientific calculator.

- 1 Tap  >  > .
- 2 Tap the number keys to enter numbers.
- 3 For simple calculations, tap the function you want to perform (+, -, x or ÷) followed by =.

**NOTE:** For more complex calculations, tap  > **Scientific calculator**.

## Calendar





The Calendar app allows you to track your schedule of events.


- 1 Tap  >  > .
- 2 Tap the date you want to add an event to. Then tap .
- 3 Enter the event details and tap **Save**.

## Voice Recorder

The Voice Recorder app records audible files for you to use in a variety of ways.





### Recording a sound or voice

- 1 Tap  >  > .
- 2 Tap  to begin recording.
- 3 Tap  to end the recording.
- 4 Tap  to listen to the recording.

**NOTE:** Tap  to access your recordings. You can listen to your saved recordings.

## Voice Search




Use this application to search webpages using voice.

- 1 Tap  >  > **Google** folder  > .
- 2 Say a keyword or phrase when **Speak now** appears on the screen. Select one of the suggested keywords that appear.

**NOTE:** This application may not be available depending on the region or service provider.

## Downloads

Use this application to see what files have been downloaded through the applications.




- Tap  >  > .

**NOTE:** This application may not be available depending on the region or service provider.

## LG SmartWorld

LG SmartWorld offers an assortment of exciting content – fonts, themes, games, applications.


### How to Get to LG SmartWorld from Your Phone

- 1 Tap  >  > .
- 2 Tap **Sign in** and enter your user name and password. If you have not signed up yet, tap **Register** to create an account.
- 3 Browse and download the content you want.

#### **NOTE:**

- You may incur data fee charges when using your mobile network to access LG SmartWorld.
- LG SmartWorld may not be available for all carriers or in all countries.

### What if there is no LG SmartWorld icon?

- 1 Using a mobile Web browser on your device, access LG SmartWorld ([www.lgworld.com](http://www.lgworld.com)) and select your country.
- 2 Download the LG SmartWorld App.
- 3 Run and install the downloaded file.
- 4 Access LG SmartWorld by tapping the  icon.

### **Special benefits available for LG SmartWorld**




- Personalize your device with home themes, keyboard themes, and fonts.
- Enjoy special promotions only offered on LG SmartWorld.
- Note that LG SmartWorld is only available for certain devices. Please check the [www.lgworld.com](http://www.lgworld.com) for more information.

# Browsing the Web

## Browser






The Browser gives you a fast, full-color world of games, music, news, sports, entertainment, and much more, right on your mobile phone.

**NOTE:** Additional charges apply when connecting to these services and downloading content. Check data charges with your network provider.

1 Tap  >  > .

## Using the Web toolbar

Scroll towards the top of the webpage to access the browser toolbar.

	Tap to go back one page.
	Tap to go forward one page.
	Tap to go to the Home page.
	Tap to open a new window.
	Tap to access your bookmarks.

## Viewing webpages

Tap the address field, enter the web address and tap **Go** on the keyboard.


## Opening a page

To go to a new page, tap  > .

To go to another webpage, tap , scroll up or down, and tap the page to select it.




## Searching the web by voice

Tap the address field and then tap . When prompted, say a keyword and select one of the suggested keywords that appear.

**NOTE:** This feature may not be available depending on the region or service provider.

## Bookmarks

To bookmark the current webpage, tap  > **Add to bookmarks** > **OK**.




To open a bookmarked webpage, tap  and select the desired bookmark.

## History

Tap  > **History** tab to open a list of recently visited webpages. To clear all of your history, tap  > **Yes**.

## Chrome

Use Chrome to search for information and browse webpages.

1 Tap  >  > .



**NOTE:** This application may not be available depending on your region and service provider.

## Viewing webpages

Tap the address field, and then enter a web address or search criteria.

## Opening a page

To open a new page, tap  > **New tab**.

To go to another webpage, tap  (if tabs are merged with apps) or  at the top right corner of the browser (if tabs are not merged with apps). Then tap the desired page to view it.

# Settings

The Settings application contains most of the tools for customizing and configuring your phone. All of the settings in the Settings application are described in this section.

## To open the Settings application

- Tap  > touch and hold  > **System settings**.
- or -
- Tap  >  > .

## Networks

### < WIRELESS NETWORKS >

#### Airplane mode

Airplane Mode (flight mode) allows you to use many of your phone's features, such as games, and music, when you are in an area where making or receiving calls or data use is prohibited. When you set your phone to Airplane Mode, it cannot send or receive any calls or access online data.

#### Wi-Fi

Turns on Wi-Fi to connect to available Wi-Fi networks.

#### Bluetooth

Turns the Bluetooth wireless feature on or off to use Bluetooth.

#### Data Manager

Displays the data usage and allows you to set a personalized mobile data usage limit.

#### Call

Configure phone call settings, such as call forwarding and other special features offered by your carrier.

- **Voicemail** – Allows you to select your carrier's voicemail service.
- **Fixed dialing numbers** – Turn on and compile a list of numbers that can be called from your phone. You need your PIN2, which is available from your operator.

Only numbers in the fixed dial list can be called from your phone.

- **Caller ID** – Use default operator settings to display your number in outgoing calls.
- **Incoming voice call pop-up** – Displays incoming voice call pop-up when an app is in use.
- **Call reject** – Allows you to set the call decline function.
- **Decline with message** – When you want to decline a call, you can send a quick message using this function. This is useful if you need to decline a call during a meeting.
- **Auto answer** – Sets the time before a connected hands-free device automatically answers an incoming call.
- **Connection vibration** – Vibrates your phone when the other party answers the call.
- **TTY mode** – Sets the TTY mode to communicate with other TTY devices.
- **Hearing aids** – Allows you to turn on hearing aid compatibility.
- **Noise suppression** – Suppresses background noise on your device during a call.
- **Power key ends call** – Allows you to select your end call.
- **Call duration** – View the duration of calls, including Last call, Outgoing calls, Incoming calls and All calls.
- **Sound settings** – Allows you to control the sounds on the phone.
- **Additional settings** – Allows you to change the following settings.

**Call forwarding:** Allows you to set the call forwarding options.

**Call waiting:** If call waiting is activated, the handset will notify you of an incoming call while you are on a call (depending on your network provider).

## < CONNECTIVITY >

### Share & connect

- **NFC** – NFC (Near Field Communication) is a wireless technology that enables data transmission between two objects when they are brought within a few inches of each others. When you enable NFC on your phone, your phone can exchange data with other NFC-enabled devices or read information from smart tags embedded in posters, stickers, and other products.

- **Android Beam** – When this feature is turned on, you can beam app content to another NFC-capable device by holding the devices close together. For example, you can beam Browser pages, YouTube videos, contacts, ThinkFree Viewer, and more. Just bring the devices together (typically back to back) and then touch your screen. The app determines what gets beamed.
- **LG PC Suite** – Connect LG PC Suite with your phone to easily manage multimedia content and apps.

### More...

- **Mobile networks** – Allows you to configure various mobile network settings.
- **VPN** – From your phone, you can add, set up, and manage virtual private networks (VPNs) that allow you to connect and access resources inside a secured local network, such as your corporate network.

**NOTE:** You must set a screen lock before you can use VPN.

- **Emergency alerts** – If emergency alerts are issued, those alerts will appear on this screen.

## Sound

### < BASIC >

#### Sound profile

Allows you to set the sound profile to **Sound**, **Vibrate only** and **Do not disturb**.

#### Volume

Adjust the phone's volume settings to suit your needs and environment.

### < RINGTONES & VIBRATIONS >

#### Ringtone

Select the ringtone for incoming calls.

#### Default notification sound

Select the ringtone for notifications, such as receiving new messages or calendar events.

## Sound with vibration

Checkmark to set the phone to vibrate in addition to the ringtone when you receive calls.

## Vibration type

Allows you to set a vibration type for notifications.

## < NOTIFICATIONS >

### Do not disturb

Allows you to set a schedule when to prevent interruptions from notifications. You can set to allow certain features to interrupt when Priority only is set.

### Lock screen

Allows you to choose if you want to show or hide notifications on the lock screen.

### Apps

Allows you to prevent apps from displaying notifications or set apps to show notifications with priority when Do not disturb is set to Priority only.

## < ADVANCED SETTINGS >

### Vibrate on tap

Checkmark to vibrate when tapping the Home touch buttons and during other UI interactions.

### Sound effects

This menu lets you select whether you hear tones when touching numbers on the dial pad, selecting on-screen options, and screen lock sound.

- **Dialpad touch sounds** – Checkmark to play tones while using the dial pad.
- **Touch sound** – Checkmark to play sound when making screen selections.
- **Screen lock sound** – Checkmark to play a sound when locking and unlocking the screen.

### Message/call voice notifications

Allows the device to read out the incoming call and the message event automatically.

## Display

### < HOME & LOCK >

#### Home screen

- **Select Home** – Select the desired Home theme. Choose from **Home** (standard Android layout) or **EasyHome** (simplified version for users less familiar with Android navigation).
- **Theme** – Sets the screen theme for your device. You can download new themes from LG SmartWorld.
- **Wallpaper** – Allows you to set the desired wallpaper for your Home screen.
- **Screen swipe effect** – Choose the desired type of effect to display when you swipe from one Home screen canvas to the next.
- **Allow Home screen looping** – Checkmark to allow continuous Home screen scrolling (loop back to first screen after last screen).
- **Home backup & restore** – Set to back up and restore Home app layout and wallpaper.
- **Help** – Touch to get information on using the Home screen of your device.

#### Lock screen

- **Select screen lock** – Allows you to set a screen lock to secure your phone.
- **Smart Lock** – Sets to keep your phone unlocked when you have a trusted Bluetooth device connected to it, when it's in a familiar location like your home or work, or when it recognizes your face.
- **Screen swipe effect** – Sets the effect used when swiping the lock screen.
- **Wallpaper** – Select the wallpaper to display for your lock screen.
- **Shortcuts** – Customize shortcuts on the lock screen.
- **Contact info for lost phone** – Select whether to display the owner information on the lock screen and customize the owner information.
- **Lock timer** – Allows you to set the amount of time before the screen automatically locks after the screen has timed-out.
- **Power button instantly locks** – Checkmark to instantly lock the screen when the Power/Lock Key is pressed. This setting overrides the Security lock timer setting.

## Home touch buttons

Select the home touch button combination and color.

### < FONT >

#### Font type

Select the desired font type for the phone and menus.

#### Font size

Select the desired font size for the phone and menus.

### < OTHER SCREEN SETTINGS >

#### Brightness

Allows you to adjust the screen brightness. Checkmark **Night brightness** to set brightness at 0% automatically between 12:00 AM ~ 06:00 AM.

#### Auto-rotate screen

Allows you to set to switch the screen orientation automatically when you physically rotate the phone.

#### Screen timeout

Allows you to set the amount of time before the screen times out.

### < ADVANCED SETTINGS >

#### Screen-off effect

Allows you to set the effect used when the screen turns off.

#### Daydream

Select the screensaver to display when the phone is sleeping while docked and/or charging.

## General

### < PERSONAL >

#### Language & input

Select the language for the text on your phone and for configuring the on-screen keyboard, including words that you've added to its dictionary.

- **Language** – Choose a language to use on your phone.
- **Spelling correction** – Allows spelling correction when using the on-screen keyboard.
- **Default** – Allows you to select the default keyboard type.
- **Google Keyboard** – Tap the Settings icon to change the Google Keyboard settings.
- **LG Keyboard** – Tap the Settings icon to change the LG Keyboard settings.
- **Google voice typing** – Checkmark to select Google voice typing to enter text. Tap the Settings icon to change the Google voice settings.
- **Voice Search** – Touch to configure the Voice Search settings.
- **Text-to-speech output** – Touch to set the preferred engine or general settings for text-to-speech output.
- **Pointer speed** – Adjust the pointer speed.

## Location

Turn on location service, your phone determines your approximate location using Wi-Fi and mobile networks. When you select this option, you're asked whether you consent to allowing Google to use your location when providing these services.

- **Mode** – Sets the how your current location information is determined.
- **Recent Location Request** – Displays applications and services that have recently requested your location information.
- **Camera** – Checkmark to tag photos or videos with their locations.
- **Google Location History** – Allows you to view and manage your Google location history.

## Accounts & sync

Use the Accounts & sync settings menu to add, remove, and manage your Google and other supported accounts. You also use these settings to control how and whether all applications send, receive, and sync data on their own schedules and whether all applications can synchronize user data automatically.

Gmail™, Calendar, and other applications may also have their own settings to control how they synchronize data; see the sections on those applications for details. Touch

**Add account** to add new account.



## Accessibility

Use the Accessibility settings to configure accessibility plug-ins you have installed on your phone.

- **TalkBack** – Allows you to set up the TalkBack function which assists people with impaired vision by providing verbal feedback.
- **Font size** – Sets the font size.
- **Invert colors** – Checkmark to invert the colors of the screen and content.
- **Color adjustment** – Allows you to adjust screen and content colors.
- **Touch zoom** – Allows you to zoom in and out by triple-tapping the screen.
- **Message/call voice notifications** – This feature allows you to hear automatic spoken alerts for incoming calls and messages.
- **Screen shade** – Checkmark to set the screen to a darker contrast.
- **Accessibility shortcut** – Allows you to open the Accessibility feature quickly on any screen.
- **Text-to-speech output** – Tap to customize text-to-speech (TTS) settings.
- **Audio type** – Sets the audio type.
- **Sound balance** – Sets the audio route. Move the slider on the slide bar to set it.
- **Flash alerts** – Checkmark to set the flash to blink for incoming calls and notifications.
- **Turn off all sounds** – Checkmark to turn off all device sounds.
- **Captions** – Allows you to customize caption settings for those with hearing impairments.
- **Touch feedback time** – Sets the touch feedback time.
- **Touch assistant** – Show a touch board with easy access to common actions.
- **Screen timeout** – Sets the amount of time before the backlight turns off automatically.
- **Touch control areas** – Allows you to select an area of the screen to limit touch activation to just that area of the screen.
- **Auto-rotate screen** – Checkmark to allow the phone to rotate the screen depending on the phone orientation (portrait or landscape).

- **Password voice confirmation** – Checkmark so that your phone can read passwords you touch.
- **Power key ends call** – Checkmark so that you can end voice calls by pressing the Power/Lock Key.
- **Accessibility settings shortcut** – Sets quick, easy access to selected features when you triple-tap the Home Button.
- **One-touch input** – Checkmark to enable one-touch input. It allows each finger touch to enter a letter or character on the LG keyboard.
- **Switch Access** – Allows you to interact with your device using one or more switches that work like keyboard keys. This menu can be helpful for users with mobility limitations that prevent them from interacting directly with the your device.

### One-handed operation

Allows you to adjust the position of the dial keypad, LG keyboard, or lock screen to the left or right side of the screen to easily use it with one hand.

- **Dial keypad** – Checkmark to enable you to move the dial keypad to the right or left side of the device. Simply tap the arrow to move it to one side or the other.
- **LG keyboard** – Checkmark to enable you to move the keyboard to the right or left side of the device. Simply tap the arrow to move it to one side or the other.
- **Lock screen** – Checkmark to enable you move the PIN Lock screen keypad to the right or left side of the phone. Simply tap the arrow to move it to one side or the other.
- **Help** – Displays information regarding one-handed operation.

### Shortcut key

Get quick access to apps by pressing and holding the Volume Keys when the screen is off or locked.

## < PRIVACY >

### Security

Use the Security menu to configure how to help secure your phone and its data.

- **Lock screen** – Allows you to set your lock screen settings.
- **Encrypt phone** – Allows you to encrypt data on the phone for security. You will be

required to enter a PIN or password to decrypt your phone each time you power it on.

- **Encrypt SD card storage** – Encrypt SD card storage and keep data unavailable for other devices.
- **Set up SIM card lock** – Allows you to set a PIN to be required to use the phone. You can also change the PIN after setting it.
- **Password typing visible** – Checkmark to briefly show each character of passwords as you enter them so that you can see what you enter.
- **Phone administrators** – View or deactivate phone administrators.
- **Unknown sources** – Allow installation of non-Play Store applications.
- **Verify apps** – Disallow or warn before installation of apps that may cause harm.
- **Storage type** – Displays the storage type for credentials.
- **Trusted credentials** – Allows you to check trusted CA certificates list.
- **Install from storage** – Touch to install a secure certificate.
- **Clear credentials** – Deletes all secure certificates and related credentials and erases the secure storage's own password.
- **Trust agents** – Select apps to use without unlocking screen.
- **Screen pin** – This feature allows you to lock your device so that the current user can only access the pinned app. This is useful for users with children.
- **App usage access** – Allow apps to view app usage info on your phone.

## < SMART FUNCTIONS >

### Gestures

- **Silence incoming calls** – Checkmark to enable you to flip the phone to silence incoming calls.
- **Snooze or stop alarm** – Checkmark to enable you to simply flip the phone to snooze or stop the alarm.
- **Pause video** – Checkmark to enable you to simply flip the phone to pause the currently playing video.
- **Help** – Touch to get information on using the Gesture functions of your phone.
- **Motion sensor calibration** – Allows you to improve the accuracy of the tilt and

speed of the sensor.

## < PHONE MANAGEMENT >

### Date & time

Set your preferences for how the date and time is displayed.

### Storage

You can monitor the used and available internal memory in the device.

### Battery

- **Battery information** – The Battery charge information is displayed on a battery graphic along with the percentage of the remaining charge and its status.
- **Battery usage** – View battery usage.
- **Battery percentage on status bar** – Checkmark to display the battery level percentage on the Status bar next to the Battery icon.
- **Battery saver** – Tap the Battery Saver switch to toggle it on or off. You can also set when to turn battery saver on.
- **Help** – Displays battery saving items information.

### Apps

Allows you to view details about the apps installed on your phone, manage their data, and force them to stop.

### Default message app

This menu allows you to choose what messaging app to use as your default messaging app.

### Backup & reset

Change the settings for managing your settings and data.

- **Back up my data** – Back up app data, Wi-Fi passwords, and other settings to Google servers.
- **Backup account** – Displays the account that is currently being used to back up information.
- **Automatic restore** – When reinstalling an app, restore backed up settings and data.

- **LG Backup service** – Backs up all information on the device and restores it in the event of data loss or replacement.
- **Factory data reset** – Reset your settings to the factory default values and delete all your data. If you reset the phone this way, you are prompted to re-enter the same information as when you first started Android.

## Printing

- **Cloud Print** – Allows you to manage your Google Cloud Print settings and print jobs.

## About phone

View legal information, check phone status and software versions, and perform a software update.

# PC software (LG PC Suite)

## For Windows OS

LG PC Suite helps you manage media contents and applications in your phone by allowing you to connect to your phone to your PC.

### With the LG PC Suite software, you can...

- Manage and play your media contents (music, movie, pictures) on your PC.
- Send multimedia contents to your device.
- Synchronizes data (schedules, contacts, bookmarks) in your device and PC.
- Backup the applications in your device.
- Update the software in your device.
- Play multimedia contents of your PC from other device

**NOTE:** Some functions may not be available, depending on the model.

**NOTE:** You can use the Help menu from the application to find out how to use the LG PC Suite software.

## Installing the LG PC Suite Software

To download the LG PC Suite software, please do the following:

- 1 Go to [www.lg.com](http://www.lg.com).
- 2 Go to **SUPPORT > MOBILE SUPPORT > PC Sync**.
- 3 Select the model information and click **GO**.
- 4 Scroll down, select the **PC SYNC** tab > **Windows > DOWNLOAD** to download LG PC Suite.

## System Requirements for LG PC Suite software

- OS: Windows XP (Service pack 3) 32 bit, Windows Vista, Windows 7, Windows 8
- CPU: 1 GHz or higher processors
- Memory: 512 MB or higher RAMs
- Graphic card: 1024 x 768 resolution, 32 bit color or higher
- HDD: 500 MB or more free hard disk space (More free hard disk space may be needed depending on the volume of data stored.)
- Required software: LG United drivers, Windows Media Player 10 or later.

### **NOTE: LG United USB Driver**

The LG United USB driver is required to connect an LG device and PC. It is installed automatically when you install the LG PC Suite software application.

## For Mac OS

### With the LG PC Suite software, you can...

- Manage and play your media contents (music, movie, pictures) on your PC.
- Send multimedia contents to your device.
- Synchronizes data (schedules, contacts, bookmarks) in your device and PC.

**NOTE:** Some functions may not be available, depending on the model.

**NOTE:** You can use the Help menu from the application to find out how to use the LG PC Suite software.

## Installing the LG PC Suite Software

To download the LG PC Suite software, please do the following:

- 1 Go to [www.lg.com](http://www.lg.com).
- 2 Go to **SUPPORT > MOBILE SUPPORT > PC Sync**.
- 3 Select the model information and click **GO**.
- 4 Scroll down, select the **PC SYNC** tab > **Mac OS > DOWNLOAD** to download LG PC Suite.

## System Requirements for LG PC Suite software

- OS: Mac OS X (10.6.8) or higher
- Memory : 2 GB RAM or higher
- Graphics card: 1024 x 768 screen resolution or higher and 32-bit color
- Hard disc: Storage of 500 MB or higher (Additional space may be required for data)
- Required software: LG United Mobile driver

### **NOTE: LG United USB Driver**

The LG United USB driver is required to connect an LG device and PC. It is installed automatically when you install the LG PC Suite software application.



# Phone software update

## Phone software update

### LG Mobile phone software update from the Internet

For more information about using this function, please visit <http://www.lg.com/common/index.jsp> → select your country and language.

This feature allows you to conveniently update the firmware on your phone to a newer version from the Internet without needing to visit a service center. This feature will only be available if and when LG makes a newer firmware version available for your device. Because the mobile phone firmware update requires the user's full attention for the duration of the update process, please make sure you check all instructions and notes that appear at each step before proceeding. Please note that removing the USB data cable during the upgrade may seriously damage your mobile phone.

**NOTE:** LG reserves the right to make firmware updates available only for selected models at its own discretion and does not guarantee the availability of the newer version of the firmware for all handset models.

### LG Mobile Phone software update via Over-the-Air (OTA)

This feature allows you to conveniently update your phone's software to a newer version via OTA, without connecting using a USB data cable. This feature will only be available if and when LG makes a newer firmware version available for your device.

You should first check the software version on your mobile phone: Tap  >  >   
> **General** tab > **About phone** > **Update Center** > **Software Update** > **Check now for update**.

**NOTE:** Your personal data from internal phone storage—including information about your Google account and any other accounts, your system/application data and settings, any downloaded applications and your DRM licence—might be lost in the process of updating your phone's software. Therefore, LG recommends that you backup your personal data before updating your phone's software. LG does not take responsibility for any loss of personal data.

**NOTE:** This feature depends on your network service provider, region and country.

# About this user guide

## About this user guide

- Before using your device, please carefully read this guide. This ensures that you use your phone safely and correctly.
- Some of the images and screenshots provided in this guide may appear differently on your phone.
- Your content may differ from the final product or from software supplied by service providers or carriers. This content is subject to change without prior notice. For the latest version of this guide, please visit the LG website at [www.lg.com](http://www.lg.com).
- Your phone's applications and their functions may vary by country, region or hardware specifications. LG cannot be held liable for any performance issues resulting from the use of applications developed by providers other than LG.
- LG cannot be held liable for performance or incompatibility issues resulting from edited registry settings or modified operating system software. Any attempt to customize your operating system may cause the device or its applications to work incorrectly.
- Software, audio, wallpaper, images, and other media supplied with your device are licensed for limited use. If you extract and use these materials for commercial or other purposes, you may be infringing copyright laws. As a user, you are fully and entirely responsible for the illegal use of media.
- Additional charges may apply for data services, such as messaging, uploading, downloading, auto-syncing and location services. To avoid additional charges, select a data plan suitable to your needs. Contact your service provider to obtain additional details.

## Trademarks

- LG and the LG logo are registered trademarks of LG Electronics.
- All other trademarks and copyrights are the property of their respective owners.

## Accessories

These accessories are available for use with the your phone. **(Items described below may be optional.)**

- Travel adaptor
- Quick Start Guide
- Stereo headset
- USB cable
- Battery

### **NOTE:**

- Always use genuine LG accessories. The supplied items are designed only for this device and may not be compatible with other devices.
- The items supplied with the device and any available accessories may vary depending on the region or service provider.

# Troubleshooting

This chapter lists some problems you might encounter when using your phone. Some problems require you to call your service provider, but most are easy to fix yourself.



Message	Possible causes	Possible corrective measures
SIM or USIM card error	There is no SIM or USIM card in the phone or it is inserted incorrectly.	Make sure that the SIM or USIM card is correctly inserted.
No network connection/ Dropped network	Signal is weak or you are outside the carrier network.	Move toward a window or into an open area. Check the network operator coverage map.
	Operator applied new services.	Check whether the SIM or USIM card is more than 6~12 months old. If so, change your SIM or USIM card at your network provider's nearest branch. Contact your service provider.
Codes do not match	To change a security code, must need to confirm the new code by re-entering it.	If you forget the code, contact your service provider.
	The two codes you entered do not match.	


Message	Possible causes	Possible corrective measures
No applications can be set	Not supported by service provider or registration required.	Contact your service provider.
Calls not available	Dialing error	New network not authorized.
	New SIM or USIM card inserted.	Check for new restrictions.
	Pre-paid charge limit reached.	Contact service provider or reset limit with PIN2.
Phone cannot be turned on	On/Off key pressed too briefly.	Press the On/Off key for at least two seconds.
	Battery is not charged.	Charge battery. Check the charging indicator on the display.
Charging error	Battery is not charged.	Charge battery.
	Outside temperature is too hot or cold.	Make sure phone is charging at a normal temperature.
	Contact problem	Check the charger and its connection to the phone.
	No voltage	Plug the charger into a different outlet.
	Charger defective	Replace the charger.
	Wrong charger	Use only original LG accessories.


Message	Possible causes	Possible corrective measures
Number not allowed.	The Fixed dialling number function is on.	Check the Settings menu and turn the function off.
Impossible to receive/send SMS & photos	Memory full	Delete some messages from your phone.
Files do not open	Unsupported file format	Check the supported file formats.
The screen does not turn on when I receive a call.	Proximity sensor problem	If you use a protection tape or case, make sure it has not covered the area around the proximity sensor. Make sure that the area around the proximity sensor is clean.
No sound	Vibration mode	Check the settings status in the sound menu to make sure you are not in vibration or silent mode.
Hangs up or freezes	Intermittent software problem	Try to perform a software update through the website.



Category	Question	Answer
Bluetooth Devices	What functions are available via Bluetooth?	You can connect a Bluetooth audio device, such as a Stereo/Mono headset or car kit.
Contacts Backup	How can I back up Contacts?	Contacts data can be synchronized between your phone and your Google account.
Synchronization	Is it possible to set up one-way sync with Gmail?	Only two-way synchronization is available.
Synchronization	Is it possible to synchronize all email folders?	The Inbox is automatically synchronized. You can view other folders by tapping <b>☰</b> and selecting <b>Folders</b> to choose a folder.
Gmail Log-In	Do I have to log into Gmail whenever I want to access Gmail?	Once you have logged into Gmail, there is no need to log into Gmail again.
Google Account	Is it possible to filter emails?	No, the phone does not support email filtering.
Email	What happens when I execute another application while writing an email?	Your email is automatically saved as a draft.
Ringtone	Is there a file size limit for using MP3 files as ringtones?	There is no file size limit.



Category	Question	Answer
Message Time	My phone does not display the time of receipt for messages older than 24 hrs. How can I change this?	Open the conversation and touch and hold the desired message. Then tap <b>Details</b> .
Navigation	Is it possible to install another navigation application on my phone?	Any application that is available at Play Store™ and is compatible with the hardware can be installed and used.
Synchronisation	Is it possible to synchronize my contacts from all my email accounts?	Only Gmail and MS Exchange server (company email server) contacts can be synchronized.
Wait and Pause	Is it possible to save a contact with Wait and Pause in the numbers?	If you transferred a contact using the Wait & Pause functions saved into the number, you cannot use those features. You must save each number again. How to save with Wait and Pause: 1. From the Home screen, tap  . 2. Dial the number, then tap  . 3. Tap <b>Add 2-sec pause</b> or <b>Add wait</b> .
Security	What are the phone's security functions?	You can set the phone to require an Unlock Pattern to be entered before the phone can be accessed or used.

Category	Question	Answer
Unlock Pattern	How do I create the Unlock Pattern?	<ol style="list-style-type: none"> <li>1. From the Home screen, touch and hold .</li> <li>2. Tap <b>System settings &gt; Display tab &gt; Lock screen.</b></li> <li>3. Tap <b>Select screen lock &gt; Pattern.</b> The first time you do this, a short tutorial about creating an Unlock Pattern appears.</li> <li>4. Set up your pattern by drawing it then drawing it a second time for confirmation.</li> </ol> <p>Precautions to take when using the pattern lock.</p> <p>It is very important to remember the unlock pattern you set. You can no longer access your phone if you use an incorrect pattern five times. You have five chances to enter your unlock pattern, PIN or password. If you have used all 5 opportunities, you can try again after 30 seconds. (Or, if you preset the backup PIN, you can use the backup PIN code to unlock the pattern.)</p>

Category	Question	Answer
Unlock Pattern	What should I do if I forget the unlock pattern and I did not create my Google account on the phone?	<p>If you forgot your pattern: If you logged into your Google account on the phone but failed to enter the correct pattern 5 times, tap the <b>Forgot pattern</b> button. You are then required to log in with your Google account to unlock your phone. If you have not created a Google account on the phone or you have forgotten it, you must perform a hard reset.</p> <p>Caution: If you perform a factory reset, all user applications and user data are deleted. Please remember to back up any important data before performing a factory reset.</p>
Memory	Will I know when my memory is full?	Yes, you will receive a notification.
Language Support	Is it possible to change my phone's language?	<p>The phone has multilingual capabilities. To change the language:</p> <ol style="list-style-type: none"> <li>1. From the Home screen, touch and hold  and tap <b>System settings</b>.</li> <li>2. Tap <b>General</b> tab &gt; <b>Language &amp; input</b> &gt; <b>Language</b>.</li> <li>3. Tap the desired language.</li> </ol>
VPN	How do I set up a VPN?	VPN access configuration is different for each company. To configure VPN access on your phone, you must obtain the details from your company's network administrator.

Category	Question	Answer
Screen time out	My screen turns off after only 15 seconds. How can I change the amount of time for the backlight to turn off?	<ol style="list-style-type: none"> <li>1. From the Home screen, touch and hold .</li> <li>2. Tap <b>System settings</b> &gt; <b>Display</b> tab.</li> <li>3. Tap <b>Screen timeout</b>.</li> <li>4. Tap the preferred screen backlight timeout time.</li> </ol>
Wi-Fi & mobile network	When the Wi-Fi and mobile networks are both available, which service does my phone use?	<p>When using data, your phone may default to the Wi-Fi connection (if Wi-Fi connectivity on your phone is set to On). However, there is no notification when your phone switches from one to the other.</p> <p>To know which data connection is being used, view the mobile network or Wi-Fi icon at the top of your screen.</p>
Home screen	Is it possible to remove an application from the Home screen?	Yes. Just touch and hold the icon until the trash can icon appears at the top and center of the screen. Then, without lifting your finger, drag the icon to the trash can.
Application	I downloaded an application and it causes a lot of errors. How do I remove it?	<ol style="list-style-type: none"> <li>1. From the Home screen, touch and hold .</li> <li>2. Tap <b>System settings</b> &gt; <b>General</b> tab &gt; <b>Apps</b> &gt; <b>DOWNLOADED</b>.</li> <li>3. Tap the application, then tap <b>Uninstall</b>.</li> </ol>
Charger	Is it possible to charge my phone using a USB data cable without installing the necessary USB driver?	Yes, the phone is charged through the USB cable regardless of whether the necessary drivers are installed.

Category	Question	Answer
Alarm	Can I use music files for my alarm?	Yes. After saving a music file as a ringtone, you can use it as an alarm. 1. Touch and hold a song in a library list. In the menu that opens, tap <b>Set as ringtone</b> > <b>Phone ringtone</b> or <b>Contact ringtone</b> . 2. On the Alarm Clock Setting screen, select the song as a ringtone.
Alarm	Will my alarm be audible or will it go off if the phone is turned off?	No, this is not supported.
Alarm	If my ringer volume is set to Off or Vibrate, will I hear my alarm?	Your alarm is programmed to be audible even in these scenarios.
Hard Reset (Factory Reset)	How can I perform a factory reset if I cannot access the phone's Settings menu?	If your phone does not restore to its original condition, use a hard reset (factory reset) to initialize it.

## Safety Information

Please read and observe the following information for safe and proper use of your phone and to prevent damage.

**WARNING!** This product contains chemicals known to the State of California to cause cancer and birth defects or reproductive harm. **Wash hands after handling.**

**Caution** Violation of the instructions may cause minor or serious damage to the product.

- Do not disassemble or open crush, bend or deform, puncture or shred.
- Do not modify or remanufacture, attempt to insert foreign objects into the battery, immerse or expose to water or other liquids, expose to fire, explosion or other hazard.
- Only use the battery for the system for which it is specified.
- Only use the battery with a charging system that has been qualified with the system per CTIA Certification Requirements for Battery System Compliance to IEEE1725. Use of an unqualified battery or charger may present a risk of fire, explosion, leakage, or other hazard.
- Do not short circuit a battery or allow metallic conductive objects to contact battery terminals.
- Replace the battery only with another battery that has been qualified with the system per this standard, IEEE-Std-1725. Use of an unqualified battery may present a risk of fire, explosion, leakage or other hazard.
- Only authorized service providers shall replace battery (If the battery is non-user replaceable).
- Promptly dispose of used batteries in accordance with local regulations.
- Battery usage by children should be supervised.
- Avoid dropping the phone or battery. If the phone or battery is dropped, especially on a hard surface, and the user suspects damage, take it to a service center for

inspection.

- Improper battery use may result in a fire, explosion or other hazard.
- Repairs under warranty, at LG's option, may include replacement parts or boards that are either new or reconditioned, provided that they have functionality equal to that of the parts being replaced.
- For those host devices that utilize a USB port as a charging source, the host device's user manual shall include a statement that the phone shall only be connected to products that bear the USB-IF logo or have completed the USB-IF compliance program.

### **Charger and Adapter Safety**

- The charger and adapter are intended for indoor use only.
- Insert the battery pack charger vertically into the wall power socket.
- Unplug the power cord and charger during lightning storms to avoid electric shock or fire.
- Use the correct adapter for your phone when using the battery pack charger abroad.

### **Battery Information and Care**

- Please read the manual of proper installation and removal of the battery.
- Please read the manual of specified charger about charging method.
- Do not damage the power cord by bending, twisting, or heating. Do not use the plug if it is loose as it may cause electric shock or fire.
- Do not place any heavy items on the power cord. Do not allow the power cord to be crimped as it may cause electric shock or fire.
- Unplug the power cord prior to cleaning your phone, and clean the power plug pin when it's dirty. When using the power plug, ensure that it's firmly connected. If not, it may cause excessive heat or fire. If you put your phone in a pocket or bag without covering the receptacle of the phone (power plug pin), metallic articles (such as a coin, paperclip or pen) may short-circuit the phone. Short-circuit of the terminal may damage the battery and cause an explosion. Always cover the receptacle when not in use.

- Recharge the battery after long periods of non-use to maximize battery life. Battery life will vary due to usage pattern and environmental conditions.
- Never store your phone in temperature less than -4 °F or greater than 122 °F.
- Charging temperature range is between 32 °F and 113 °F. Do not charge the battery out of recommended temperature range. Charging out of recommended range might cause the generating heat or serious damage of battery. And also, it might cause the deterioration of battery's characteristics and cycle life.
- Do not use or leave the battery under the blazing sun or in heated car by sunshine. The battery may generate heat, smoke or flame. And also, it might cause the deterioration of battery's characteristics or cycle life.
- The battery pack has protection circuit to avoid the danger. Do not use near places that can generate static electricity more than 100V which could damage the protection circuit. Damaged protection circuits may generate smoke, rupture or ignite.
- When using the battery for the first time, if it emits a bad smell, you see rust on it, or anything else abnormal, do not use the equipment and bring the battery to the shop which it was bought.
- Keep batteries away from babies and small children. If children use the battery, their parents or legal guardians are responsible for supervising and teaching them about the safe handling of batteries and how to use batteries according to the manual with care.
- If liquid from the battery rubs against skin or clothing, wash with fresh water. It may cause the skin inflammation. Remove and do not use the battery. Be careful that children do not swallow any parts (such as earphone, connection parts of the phone, etc.). This could cause asphyxiation or suffocation resulting in serious injury or death.
- Do not handle the phone with wet hands while it is being charged. It may cause an electric shock or seriously damage your phone.
- Do not place or answer calls while charging the phone as it may short-circuit the phone and/or cause electric shock or fire.
- Do not use harsh chemicals (such as alcohol, benzene, thinners, etc.) or detergents



to clean your phone. This could cause a fire.

- Always unplug the charger from the wall socket after the phone is fully charged to save unnecessary power consumption of the charger.

## Care and Maintenance

Your mobile device 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 Mobile Device away from:**

#### **Liquids of any kind**

Keep the mobile device dry. Precipitation, humidity, and liquids contain minerals that will corrode electronic circuits. If the mobile device does get wet, do not accelerate drying with the use of an oven, microwave, or dryer, because this may damage the mobile device and could cause a fire or explosion.

Do not use the mobile device with a wet hand.

Doing so may cause an electric shock to you or damage to the mobile device.

#### **Extreme heat or cold**

Avoid temperatures below 0°C / 32°F or above 45°C / 113°F.

#### **Microwaves**

Do not try to dry your mobile device in a microwave oven. Doing so may cause a fire or explosion.

#### **Dust and dirt**

Do not expose your mobile device to dust, dirt, or sand.

#### **Sunscreen lotion**

Do not expose or wear your device to any liquid like sunscreen lotion.

Doing so may cause your device to or damage to the mobile device.

## **Cleaning solutions**

Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the mobile device.

Wipe it with a soft cloths lightly dampened in a mild soap-and-water solution.

## **Shock or vibration**

Do not drop, knock, or shake the mobile device.

Rough handling can break internal circuit boards.

## **Paint**

Do not paint the mobile device. Paint can clog the device'smoving parts or ventilation openings and prevent proper operation.

## **General Notice**

- An emergency call can be made only within a service area. For an emergency call, make sure that you are within a service area and that the phone is turned on.
- Do not place items containing magnetic components such as a credit card, phone card, bank book, or subway ticket near your phone. The magnetism of the phone may damage the data stored in the magnetic strip.
- Talking on your phone for a long period of time may reduce call quality due to heat generated during use.
- When the phone is not used for a long period time, store it in a safe place with the power cord unplugged.
- Using the phone in proximity to receiving equipment (i.e., TV or radio) may cause interference to the phone.
- Do not use the phone if the antenna is damaged. If a damaged antenna contacts skin, it may cause a slight burn. Please contact an LG Authorized Service Center to replace the damaged antenna.
- The data saved in your phone might be deleted due to careless use, repair of the phone, or upgrade of the software. Please backup your important phone numbers. (Ringtones, text messages, voice messages, pictures, and videos could also be deleted.) The manufacturer is not liable for damage due to the loss of data.
- When you use the phone in public places, set the ringtone to vibration so you don't

disturb others.

- Do not turn your phone on or off when putting it to your ear.
- Your phone is an electronic device that generates heat during normal operation. Extremely prolonged, direct skin contact in the absence of adequate ventilation may result in discomfort or minor burns. Therefore, use care when handling your phone during or immediately after operation.

Use accessories, such as earphones and headsets, with caution. Ensure that cables are tucked away safely and do not touch the antenna unnecessarily.

### **Part 15.19 statement**

This 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.

### **Part 15.21 statement**

Change or Modifications that are not expressly approved by the manufacturer for compliance could void the user's authority to operate the equipment.

### **Part 15.105 statement**

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.

## **FCC RF Exposure Information**

### **WARNING! Read this information before operating the phone.**

In August 1996, the Federal Communications Commission (FCC) of the United States, with its action in Report and Order FCC 96-326, adopted an updated safety standard for human exposure to Radio Frequency (RF) electromagnetic energy emitted by FCC regulated transmitters. Those guidelines are consistent with the safety standard previously set by both U.S. and international standards bodies. The design of this phone complies with the FCC guidelines and these international standards.

### **Body-worn Operation**

This device was tested for typical body-worn operations with the back of the phone kept 0.39 inches (1cm) between the user's body and the back of the phone. To comply with FCC RF exposure requirements, a minimum separation distance of 0.39 inches (1cm) must be maintained between the user's body and the back of the phone. Any belt-clips, holsters, and similar accessories containing metallic components may not be used. Body-worn accessories that cannot maintain 0.39 inches (1cm) separation distance between the user's body and the back of the phone, and have not been tested for typical body-worn operations may not comply with FCC RF exposure limits and should be avoided.

### **Vehicle-Mounted External Antenna**

(Optional, if available.)

To satisfy FCC RF exposure requirements, keep 8 inches (20 cm) between the user / bystander and vehicle-mounted external antenna. For more information about RF exposure, visit the FCC website at [www.fcc.gov](http://www.fcc.gov).

### **Caution**

Use only the supplied antenna. Use of unauthorized antennas (or modifications to the antenna) could impair call quality, damage the phone, void your warranty and/or violate FCC regulations.

Don't use the phone with a damaged antenna. A damaged antenna could cause a minor skin burn. Contact your local dealer for a replacement antenna.

# Consumer Information About Radio Frequency Emissions

Your wireless phone, which contains a radio transmitter and receiver, emits radio frequency energy during use. The following consumer information addresses commonly asked questions about the health effects of wireless phones.

## Are wireless phones safe?

Scientific research on the subject of wireless phones and radio frequency (“RF”) energy has been conducted worldwide for many years, and continues. In the United States, the Food and Drug Administration (“FDA”) and the Federal Communications Commission (“FCC”) set policies and procedures for wireless phones. The FDA issued a website publication on health issues related to cell phone usage where it states, “The scientific community at large . . . believes that the weight of scientific evidence does not show an association between exposure to radiofrequency (RF) from cell phones and adverse health outcomes. Still the scientific community does recommend conducting additional research to address gaps in knowledge. That research is being conducted around the world and FDA continues to monitor developments in this field. You can access the joint FDA/FCC website at <http://www.fda.gov> (under “C” in the subject index, select Cell Phones > Research). You can also contact the FDA toll-free at (888) 463-6332 or (888) INFO-FDA. In June 2000, the FDA entered into a cooperative research and development agreement through which additional scientific research is being conducted. The FCC issued its own website publication stating that “there is no scientific evidence that proves that wireless phone usage can lead to cancer or a variety of other problems, including headaches, dizziness or memory loss.”

This publication is available at <http://www.fcc.gov/oet/rfsafety> or through the FCC at (888) 225-5322 or (888) CALL-FCC.

## What does “SAR” mean?

In 1996, the FCC, working with the FDA, the U.S. Environmental Protection Agency, and other agencies, established RF exposure safety guidelines for wireless phones in the United States. Before a wireless phone model is available for sale to the public, it must be tested by the manufacturer and certified to the FCC that it does not exceed

limits established by the FCC. One of these limits is expressed as a Specific Absorption Rate, or “SAR.” SAR is a measure of the rate of absorption of RF energy in the body. Tests for SAR are conducted with the phone transmitting at its highest power level in all tested frequency bands. Since 1996, the FCC has required that the SAR of handheld wireless phones not exceed 1.6 watts per kilogram, averaged over one gram of tissue. Although the SAR is determined at the highest power level, the actual SAR value of a wireless phone while operating can be less than the reported SAR value. This is because the SAR value may vary from call to call, depending on factors such as proximity to a cell site, the proximity of the phone to the body while in use, and the use of hands-free devices.

For more information about SARs, see the FCC’s OET Bulletins 56 and 65 at [http://www.fcc.gov/Bureaus/Engineering\\_Technology/Documents/bulletins](http://www.fcc.gov/Bureaus/Engineering_Technology/Documents/bulletins) or visit the Cellular Telecommunications Industry Association website at [http://www.ctia.org/consumer\\_info/index.cfm/AID/10371](http://www.ctia.org/consumer_info/index.cfm/AID/10371). You may also wish to contact the manufacturer of your phone.

### **Can I minimize my RF exposure?**

If you are concerned about RF, there are several simple steps you can take to minimize your RF exposure. You can, of course, reduce your talk time. You can place more distance between your body and the source of the RF, as the exposure level drops off dramatically with distance. The FDA/FCC website states that “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.” Also, if you use your wireless phone while in a car, you can use a phone with an antenna on the outside of the vehicle. You should also read and follow your wireless phone manufacturer’s instructions for the safe operation of your phone.

### **Do wireless phones pose any special risks to children?**

The FDA/FCC website states that “the scientific evidence does not show a danger to

users of wireless communication devices, including children.” The FDA/FCC website further states that “some groups sponsored by other national governments have advised that children be discouraged from using wireless phones at all”. For example, the Stewart Report from the United Kingdom [“UK”] made such a recommendation in December 2000. In this report a group of independent experts noted that no evidence exists that using a cell phone causes brain tumors or other ill effects. [The UK’s] recommendation to limit cell phone use by children was strictly precautionary; it was not based on scientific evidence that any health hazard exists. A copy of the UK’s leaflet is available at <http://www.dh.gov.uk> (search “mobile”), or you can write to: NRPB, Chilton, Didcot, Oxon OX11 0RQ, United Kingdom. Copies of the UK’s annual reports on mobile phones and RF are available online at [www.iegmp.org.uk](http://www.iegmp.org.uk) and <http://www.hpa.org.uk/radiation/> (search “mobile”). Parents who wish to reduce their children’s RF exposure may choose to restrict their children’s wireless phone use.

### **Where can I get further information about RF emissions?**

For further information, see the following additional resources (websites current as of April 2005):

#### **U.S. Food and Drug Administration**

FDA Consumer magazine

November-December 2000

Telephone: (888) INFO-FDA

<http://www.fda.gov> (Under “C” in the subject index, select Cell Phones > Research.)

#### **U.S. Federal Communications Commission**

445 12th Street, S.W.

Washington, D.C. 20554

Telephone: (888) 225-5322

<http://www.fcc.gov/oet/rfsafety>

#### **Independent Expert Group on Mobile Phones**

<http://www.iegmp.org.uk>

**Royal Society of Canada Expert Panels on Potential Health Risks of Radio Frequency Fields from Wireless Telecommunication Devices**

283 Sparks Street  
Ottawa, Ontario K1R 7X9  
Canada  
Telephone: (613) 991-6990

**World Health Organization**

Avenue Appia 20  
1211 Geneva 27  
Switzerland  
Telephone: 011 41 22 791 21 11  
<http://www.who.int/mediacentre/factsheets/fs193/en/>

**International Commission on Non-Ionizing Radiation Protection**

c/o Bundesamt für Strahlenschutz  
Ingolstaedter Landstr. 1  
85764 Oberschleissheim  
Germany  
Telephone: 011 49 1888 333 2156  
<http://www.icnirp.de>

**American National Standards Institute**

1819 L Street, N.W., 6th Floor  
Washington, D.C. 20036  
Telephone: (202) 293-8020  
<http://www.ansi.org>

**National Council on Radiation Protection and Measurements**

7910 Woodmont Avenue, Suite 800  
Bethesda, MD 20814-3095  
Telephone: (301) 657-2652  
<http://www.ncrponline.org>



## **TIA Safety Information**

The following is the complete TIA Safety Information for wireless handheld phones.

### **Consumer Information on SAR (Specific Absorption Rate)**

This model phone meets the government's requirements for exposure to radio waves. Your wireless phone is a radio transmitter and receiver. It is designed and manufactured not to exceed the emission limits for exposure to Radio Frequency (RF) energy set by the Federal Communications Commission of the U.S. Government. These limits are part of comprehensive guidelines and establish permitted levels of RF energy for the general population. The guidelines are based on standards that were developed by independent scientific organizations through periodic and thorough evaluation of scientific studies. The standards include a substantial safety margin designed to assure the safety of all persons, regardless of age and health.

The exposure standard for wireless mobile phones employs a unit of measurement known as the Specific Absorption Rate, or SAR. The SAR limit set by the FCC is 1.6 W/kg. Tests for SAR 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 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. Because the phone is designed to operate at multiple power levels to use only the power required to reach the network, in general, the closer you are to a wireless base station antenna, the lower the power output.

Before a phone model is available for sale to the public, it must be tested and certified to the FCC that it does not exceed the limit established by the government-adopted requirement for safe exposure. The tests are performed in positions and locations (e.g., at the ear and worn on the body) as required by the FCC for each model.

The highest SAR values are:

\* Head: 1.02 W/kg

\* Body (Body-worn/Hotspot): 1.23 W/kg

(body measurements differ among phone models, depending upon available accessories and FCC requirements).

While there may be differences between SAR levels of various phones and at various positions, they all meet the government requirement for safe exposure.

The FCC has granted an Equipment Authorization for this model phone with all reported SAR levels evaluated as in compliance with the FCC RF emission 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 ZNFH443. Additional information on Specific Absorption Rates (SAR) can be found on the Cellular Telecommunications Industry Association (CTIA) website at <http://www.ctia.org/>.

\* In the United States 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.

### **Exposure to Radio Frequency Signal**

Your wireless handheld portable phone is a low power radio transmitter and receiver. When ON, it receives and sends out Radio Frequency (RF) signals.

In August, 1996, the Federal Communications Commissions (FCC) adopted RF exposure guidelines with safety levels for handheld wireless phones. Those guidelines are consistent with the safety standards previously set by both U.S. and international standards bodies:

ANSI C95.1 (1992) \*

NCRP Report 86 (1986)

ICNIRP (1996)

\* American National Standards Institute; National Council on Radiation Protection and Measurements; International Commission on Non-Ionizing Radiation Protection

Those standards were based on comprehensive and periodic evaluations of the relevant

scientific literature. For example, over 120 scientists, engineers, and physicians from universities, government health agencies, and industry reviewed the available body of research to develop the ANSI Standard (C95.1).

The design of your phone complies with the FCC guidelines (and those standards).

### **Antenna Care**

Use only the supplied or an approved replacement antenna. Unauthorized antennas, modifications, or attachments could damage the phone and may violate FCC regulations.

### **Phone Operation**

**NORMAL POSITION:** Hold the phone as you would any other telephone with the antenna pointed up and over your shoulder.

### **Tips on Efficient Operation**

For your phone to operate most efficiently:

Don't touch the antenna unnecessarily when the phone is in use. Contact with the antenna affects call quality and may cause the phone to operate at a higher power level than otherwise needed.

### **Electronic Devices**

Most modern electronic equipment is shielded from RF signals. However, certain electronic equipment may not be shielded against the RF signals from your wireless phone.

### **Pacemakers**

The Health Industry Manufacturers Association recommends that a minimum separation of six (6) inches be maintained between a handheld wireless phone and a pacemaker to avoid potential interference with the pacemaker. These recommendations are consistent with the independent research by and recommendations of Wireless Technology Research.

Persons with pacemakers:

- Should ALWAYS keep the phone more than six (6) inches from their pacemaker when the phone is turned ON;
- Should not carry the phone in a breast pocket;

- Should use the ear opposite the pacemaker to minimize the potential for interference;
- Should turn the phone OFF immediately if there is any reason to suspect that interference is taking place.

## **Hearing Aids**

Some digital wireless phones may interfere with some hearing aids. In the event of such interference, you may want to consult your service provider (or call the customer service line to discuss alternatives).

## **Other Medical Devices**

If you use any other personal medical device, 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.

## **Health Care Facilities**

Turn your phone OFF in health care facilities when any regulations posted in these areas instruct you to do so. Hospitals or health care facilities may use 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**

Turn your phone OFF in any facility where posted notices so require.

## **Aircraft**

FCC regulations prohibit using your phone while in the air. Switch OFF your phone before boarding an aircraft.

## **Blasting Areas**

To avoid interfering with blasting operations, turn your phone OFF when in a “blasting area” or in areas posted: “Turn off two-way radio”. Obey all signs and instructions.

## Potentially Explosive Atmosphere

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

Areas with a potentially explosive atmosphere are often, but not always marked clearly. Potential areas may include: fueling areas (such as gasoline stations); below deck on boats; fuel or 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.

## For Vehicles Equipped with an Air Bag

An air bag inflates with great force. DO NOT place objects, including either installed or portable wireless equipment, in the area over the air bag or in the air bag deployment area. If in-vehicle wireless equipment is improperly installed and the air bag inflates, serious injury could result.

## FDA Consumer Update



The U.S. Food and Drug Administration's Center for Devices and Radiological Health Consumer Update on Mobile Phones:

### 1. Do wireless phones pose a health hazard?

The available scientific evidence does not show that any health problems are associated with using wireless phones. There is no proof, however, that wireless phones are absolutely safe. Wireless phones emit low levels of Radio Frequency (RF) energy in the microwave range while being used. They also emit very low levels of RF when in idle mode. Whereas high levels of RF can produce health effects (by heating tissue), exposure to low level RF that does not produce heating effects causes no known adverse health effects. Many studies of low level RF exposures have not found any biological effects. Some studies have suggested that some biological effects may occur, but such findings have not been confirmed by additional research. In some cases, other researchers have had difficulty in reproducing those studies, or in determining the

reasons for inconsistent results.

## **2. What is the FDA's role concerning the safety of wireless phones?**

Under the law, the 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 (RF) energy at a level that is hazardous to the user. In such a case, the 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 does not justify FDA regulatory actions, the 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.

The 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
- Occupational Safety and Health Administration
- National Telecommunications and Information Administration

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

The 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. The FCC relies on the FDA and other health agencies for safety questions about wireless phones.

The FCC also regulates the base stations that the wireless phone networks rely upon.

While these base stations operate at higher power than do the wireless phones themselves, the RF exposures that people get from these base stations are typically thousands of times lower than those they can get from wireless phones. Base stations are thus not the subject of the safety questions discussed in this document.

### **3. What kinds of phones are the subject of this update?**

The term “wireless phone” refers here to handheld 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 (RF) energy because of the short distance between the phone and the user’s head.

These RF exposures are limited by FCC safety guidelines that were developed with the advice of the FDA and other federal health and safety agencies. When the phone is located at greater distances from the user, the exposure to RF is drastically lower because a person’s RF exposure decreases rapidly with increasing distance from the source. The so-called “cordless phones,” which have a base unit connected to the telephone wiring in a house, typically operate at far lower power levels, and thus produce RF exposures far below the FCC safety limits.

### **4. What are the results of the research done already?**

The research done thus far has produced conflicting results, and many studies have suffered from flaws in their research methods. Animal experiments investigating the effects of Radio Frequency (RF) energy 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 do not know with certainty what the results of such studies mean for human health. Three large epidemiology studies have been published since December 2000. Between them, the studies investigated any possible association between the use of wireless phones and primary brain cancer, glioma, meningioma, or

acoustic neuroma, tumors of the brain or salivary gland, leukemia, or other cancers. None of the studies demonstrated the existence of any harmful health effects from wireless phone RF exposures. However, none of the studies can answer questions about long-term exposures, since the average period of phone use in these studies was around three years.

## **5. What research is needed to decide whether RF exposure from wireless phones poses a health risk?**

A combination of laboratory studies and epidemiological studies of people actually using wireless phones would provide some of the data that are needed. Lifetime animal exposure studies could be completed in a few years. However, very large numbers of animals would be needed to provide reliable proof of a cancer promoting effect if one exists. Epidemiological studies can provide data that is directly applicable to human populations, but ten or more years follow-up may be needed to provide answers about some health effects, such as cancer. This is because the interval between the time of exposure to a cancer-causing agent and the time tumors develop — if they do — may be many, many years. The interpretation of epidemiological studies is hampered by difficulties in measuring actual RF exposure during day-to-day use of wireless phones. Many factors affect this measurement, such as the angle at which the phone is held, or which model of phone is used.

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

The 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 (RF) energy.

The FDA has been a leading participant in the World Health Organization International Electro Magnetic 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.

The FDA and the Cellular Telecommunications & Internet Association (CTIA) have a



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

## **7. How can I find out how much Radio Frequency energy exposure I can get by using my wireless phone?**

All phones sold in the United States must comply with Federal Communications Commission (FCC) guidelines that limit Radio Frequency (RF) energy exposures. The FCC established these guidelines in consultation with the FDA and the other federal health and safety agencies. The FCC limit for RF exposure from wireless phones is set at a Specific Absorption Rate (SAR) of 1.6 watts per kilogram (1.6 W/kg). The FCC limit is consistent with the safety standards developed by the Institute of Electrical and Electronic Engineering (IEEE) and the National Council on Radiation Protection and Measurement. The exposure limit takes into consideration the body's ability to remove heat from the tissues that absorb energy from the wireless phone and is set well below levels known to have effects. Manufacturers of wireless phones must report the RF exposure level for each model of phone to the FCC. The FCC website (<http://www.fcc.gov/oet/rfsafety>) gives directions for locating the FCC identification number on your phone so you can find your phone's RF exposure level in the online listing.

## **8. What has the FDA done to measure the Radio Frequency energy coming from wireless phones?**

The Institute of Electrical and Electronic Engineers (IEEE) is developing a technical standard for measuring the Radio Frequency (RF) energy exposure from wireless phones and other wireless handsets with the participation and leadership of FDA scientists and engineers. The standard, "Recommended Practice for Determining the Spatial-Peak Specific Absorption Rate (SAR) in the Human Body Due to Wireless Communications Devices: Experimental Techniques", sets forth the first consistent test methodology for measuring the rate at which RF is deposited in the heads of wireless

phone users. The test method uses a tissue-simulating model of the human head. Standardized SAR test methodology is expected to greatly improve the consistency of measurements made at different laboratories on the same phone. SAR is the measurement of the amount of energy absorbed in tissue, either by the whole body or a small part of the body. It is measured in watts/kg (or milliwatts/g) of matter. This measurement is used to determine whether a wireless phone complies with safety guidelines.

## **9. What steps can I take to reduce my exposure to Radio Frequency energy from my wireless phone?**

If there is a risk from these products — and at this point we do not know that there is — it is probably very small. But if you are concerned about avoiding even potential risks, you can take a few simple steps to minimize your exposure to Radio Frequency (RF) energy. 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 does not demonstrate that wireless phones are harmful. But if you are concerned about the RF exposure from these products, you can use measures like those described above to reduce your RF exposure from wireless phone use.

## **10. What about children using wireless phones?**

The scientific evidence does not show a danger to users of wireless phones, including children and teenagers. If you want to take steps to lower exposure to Radio Frequency (RF) energy, the measures described above would apply to children and teenagers using wireless phones. Reducing the time of wireless phone use and increasing the distance between the user and the RF source will reduce RF exposure.

Some groups sponsored by other national governments have advised that children be discouraged from using wireless phones at all. For example, the government in the United Kingdom distributed leaflets containing such a recommendation in December

2000. They noted that no evidence exists that using a wireless phone causes brain tumors or other ill effects. Their recommendation to limit wireless phone use by children was strictly precautionary; it was not based on scientific evidence that any health hazard exists.

### **11. What about wireless phone interference with medical equipment?**

Radio Frequency (RF) energy from wireless phones can interact with some electronic devices. For this reason, the FDA helped develop a detailed test method to measure Electro Magnetic 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 the 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.

The 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.

The FDA continues to monitor the use of wireless phones for possible interactions with other medical devices. Should harmful interference be found to occur, the FDA will conduct testing to assess the interference and work to resolve the problem.

### **12. Where can I find additional information?**

For additional information, please refer to the following resources:

Federal Communications Commission (FCC) RF Safety Program  
(<http://www.fcc.gov/oet/rfsafety>)

International Commission on Non-Ionizing Radiation Protection  
(<http://www.icnirp.de>)

World Health Organization (WHO) International EMF Project  
(<http://www.who.int/emf>)

National Radiological Protection Board (UK)  
For Your Safety

## Driving

Check the laws and regulations on the use of wireless phones in the areas where you drive and always obey them. Also, if using your phone while driving, please observe the following:

- Give full attention to driving -- driving safely is your first responsibility;
- Use hands-free operation, if available;
- Pull off the road and park before making or answering a call if driving conditions or the law require it.

### **HAC statement**

This phone has been tested and rated for use with hearing aids for some of the wireless technologies that it uses.

However, there may be some newer wireless technologies used in this phone that have not been tested yet for use with hearing aids.

It is important to try the different features of this phone thoroughly and in different locations, using your hearing aid or cochlear implant, to determine if you hear any interfering noise.

Consult your service provider or the manufacturer of this phone for information on hearing aid compatibility.

If you have questions about return or exchange policies, consult your service provider or phone retailer.

### **FCC Hearing-Aid Compatibility (HAC) Regulations for Wireless Devices**

While some wireless phones are used near some hearing devices (hearing aids and cochlear implants), users may detect a buzzing, humming, or whining noise. Some hearing devices are more immune than others to this interference noise, and phones also vary in the amount of interference they generate.

The wireless telephone industry has developed a rating system for wireless phones, to assist hearing device users to find phones that may be compatible with their hearing devices. Not all phones have been rated. Phones that are rated have the rating on their

box or a label located on the box.

The ratings are not guarantees.

Results will vary depending on the user's hearing device and hearing loss. If your hearing device happens to be vulnerable to interference, you may not be able to use a rated phone successfully.

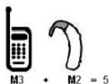
Trying out the phone with your hearing device is the best way to evaluate it for your personal needs.

M-Ratings: Phones rated M3 or M4 meet FCC requirements and are likely to generate less interference to hearing devices than phones that are not labeled. M4 is the better/higher of the two ratings.

T-Ratings: Phones rated T3 or T4 meet FCC requirements and are likely to generate less interference to hearing devices than phones that are not labeled. T4 is the better/higher of the two ratings.

Hearing devices may also be rated. Your hearing device manufacturer or hearing health professional may help you find this rating. Higher ratings mean that the hearing device is relatively immune to interference noise. The hearing aid and wireless phone rating values are then added together. A sum of 5 is considered acceptable for normal use.

A sum of 6 is considered for best use.



In the above example, if a hearing aid meets the M2 level rating and the wireless phone meets the M3 level rating, the sum of the two values equal M5. This should provide the hearing aid user with “normal usage” while using their hearing aid with the particular wireless phone. “Normal usage” in this context is defined as a signal quality that’s acceptable for normal operation.

The M mark is intended to be synonymous with the U mark. The T mark is intended to be synonymous with the UT mark.

The M and T marks are recommended by the Alliance for Telecommunications Industries Solutions (ATIS). The U and UT marks are referenced in Section 20.19 of the

FCC Rules.

The HAC rating and measurement procedure are described in the American National Standards Institute (ANSI) C63.19 standard.

To enter that the Hearing Aid Compatibility rating for your phone is maintained, secondary transmitters such as Bluetooth and WLAN components must be disabled during a call.

**For information about hearing aids and digital wireless phones** **Wireless Phones and Hearing Aid Accessibility** <http://www.accesswireless.org/>

**FCC Hearing Aid Compatibility and Volume Control**  
[http://www.fcc.gov/cgb/consumerfacts/hac\\_wireless.html](http://www.fcc.gov/cgb/consumerfacts/hac_wireless.html)

### **Open Source Software Notice Information**

To obtain the source code under GPL, LGPL, MPL, and other open source licenses, that is contained in this product, please visit <http://opensource.lge.com>.

In addition to the source code, all referred license terms, warranty disclaimers and copyright notices are available for download.

LG Electronics will also provide open source code to you on CD-ROM for a charge covering the cost of performing such distribution (such as the cost of media, shipping, and handling) upon email request to [opensource@lge.com](mailto:opensource@lge.com). This offer is valid for three (3) years from the date on which you purchased the product.

# Limited Warranty Statement

## 1. WHAT THIS WARRANTY COVERS:

LG offers you a limited warranty that the enclosed subscriber unit and its enclosed accessories will be free from defects in material and workmanship, according to the following terms and conditions:

- (1) The limited warranty for the product extends for TWELVE (12) MONTHS beginning on the date of purchase of the product with valid proof of purchase, or absent valid proof of purchase, FIFTEEN (15) MONTHS from date of manufacture as determined by the unit's manufacture date code.
- (2) The limited warranty extends only to the original purchaser of the product and is not assignable or transferable to any subsequent purchaser/end user.
- (3) This warranty is good only to the original purchaser of the product during the warranty period as long as it is in the U.S., including Alaska, Hawaii, U.S. Territories and Canada.
- (4) The external housing and cosmetic parts shall be free of defects at the time of shipment and, therefore, shall not be covered under these limited warranty terms.
- (5) Upon request from LG, the consumer must provide information to reasonably prove the date of purchase.
- (6) The customer shall bear the cost of shipping the product to the Customer Service Department of LG. LG shall bear the cost of shipping the product back to the consumer after the completion of service under this limited warranty.

## 2. WHAT THIS WARRANTY DOES NOT COVER:

- (1) Defects or damages resulting from use of the product in other than its normal and customary manner.
- (2) Defects or damages from abnormal use, abnormal conditions, improper storage, exposure to moisture or dampness, unauthorized modifications, unauthorized connections, unauthorized repair, misuse, neglect, abuse, accident, alteration, improper installation, or other acts which are not the fault of LG, including damage caused by shipping, blown fuses, spills of food or liquid.
- (3) Breakage or damage to antennas unless caused directly by defects in material or workmanship.
- (4) That the Customer Service Department at LG was not notified by consumer of the alleged defect or malfunction of the product during the applicable limited warranty period.
- (5) Products which have had the serial number removed or made illegible.
- (6) This limited warranty is in lieu of all other warranties, express or implied either in fact or by operations of law, statutory or otherwise, including, but not limited to any implied warranty of marketability or fitness for a particular use.
- (7) Damage resulting from use of non LG approved accessories.
- (8) All plastic surfaces and all other externally exposed parts that are scratched or damaged due to normal customer use.
- (9) Products operated outside published maximum ratings.
- (10) Products used or obtained in a rental program.
- (11) Consumables (such as fuses).

### **3. WHAT LG WILL DO:**

LG will, at its sole option, either repair, replace or refund the purchase price of any unit that is covered under this limited warranty. LG may choose at its option to use functionally equivalent re-conditioned, refurbished or new units or parts or any units. In addition, LG will not re-install or back-up any data, applications or software that you have added to your phone. It is therefore recommended that you back-up any such data or information prior to sending the unit to LG to avoid the permanent loss of such information.

### **4. STATE LAW RIGHTS:**

No other express warranty is applicable to this product. THE DURATION OF ANY IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTY OF MARKETABILITY OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, IS LIMITED TO THE DURATION OF THE EXPRESS WARRANTY HEREIN. LG SHALL NOT BE LIABLE FOR THE LOSS OF THE USE OF THE PRODUCT, INCONVENIENCE, LOSS OR ANY OTHER DAMAGES, DIRECT OR CONSEQUENTIAL, ARISING OUT OF THE USE OF, OR INABILITY TO USE, THIS PRODUCT OR FOR ANY BREACH OF ANY EXPRESS OR IMPLIED WARRANTY, INCLUDING THE IMPLIED WARRANTY OF MARKETABILITY OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE APPLICABLE TO THIS PRODUCT.

Some states do not allow the exclusive limitation of incidental or consequential damages or limitations on how long an implied warranty lasts; so these limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

### **5. HOW TO GET WARRANTY SERVICE:**

To obtain warranty service, please call or fax to the following telephone numbers from anywhere in the continental United States:

**Tel. 1-800-793-8896**

Or visit <http://us.lgservice.com>. Correspondence may also be mailed to:  
LG Electronics Service- Mobile Handsets, P.O. Box 240007, Huntsville, AL 35824

**DO NOT RETURN YOUR PRODUCT TO THE ABOVE ADDRESS.** Please call or write for the location of the LG authorized service center nearest you and for the procedures for obtaining warranty claims.



## 7.11 Warranty Laws

The following laws govern warranties that arise in retail sales of consumer goods:

- The California Song-Beverly Consumer Warranty Act [CC §§1790 et seq],
- The California Uniform Commercial Code, Division Two [Com C §§2101 et seq], and
- The federal Magnuson-Moss Warranty Federal Trade Commission Improvement Act [15 USC §§2301 et seq; 16 CFR Parts 701– 703]. A typical Magnuson-Moss Act warranty is a written promise that the product is free of defects or a written promise to refund, repair, or replace defective goods. [See 15 USC §2301(6).] Remedies include damages for failing to honor a written warranty or service contract or for violating disclosure provisions. [See 15 USC §2310(d).] Except for some labeling and disclosure requirements, the federal Act does not preempt state law. [See 15 USC §2311.]

The Consumer Warranty Act does not affect the rights and obligations of parties under the state Uniform Commercial Code, except the provisions of the Act prevail over provisions of the Commercial Code when they conflict. [CC §1790.3.]

For purposes of small claims actions, this course will focus on rights and duties under the state laws.