




## Composing and sending email

### To compose and send a message

- 1 While in the Email application, tap **Compose** .
- 2 Enter an address for the message's intended recipient. As you enter text, matching addresses will be proposed from your Contacts. Separate multiple addresses using semicolons.
- 3 Tap the **Cc** and **Bcc** fields to copy contacts and tap **Attach**  to attach files, if required.
- 4 Enter the subject and your message.
- 5 Tap **Send**  to send the message.

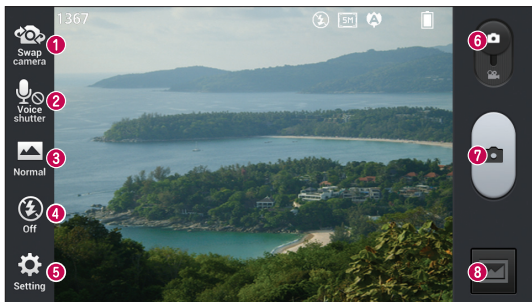
If you aren't connected to a network, for example, if you're working in airplane mode, the messages that you send will be stored in your Outbox folder until you connect to a network again. If it contains any pending messages, the Outbox will be displayed on the Accounts screen.

**TIP!** When a new email arrives in your Inbox, you will be notified by a sound or vibration. Tap the email notification to stop receiving notifications.

# Camera

To open the Camera application, tap **Camera**  on the Home screen.



## Getting to know the viewfinder














- 1 Swap camera** – Switch between the rear-facing camera lens and the front-facing camera lens.
- 2 Voice shutter** – To take a photo, say one of the following words: Cheese, Smile, Whisky, Kimchi or LG.
- 3 Shot mode** – Choose from **Normal**, **Panorama** or **Continuous shot**.
- 4 Flash** – Allows you to turn on the flash when taking a photo in dark conditions.
- 5 Settings** – Touch this icon to open the settings menu. See **Using the advanced settings** on the following page.
- 6 Swap mode** – Touch this icon and drag it downwards to switch to video mode.
- 7 Capture** – Touch to capture a picture.
- 8 Gallery** – Touch to view the last photo you captured. This enables you to access your Gallery and view saved photos while in camera mode.






**NOTE:** Please ensure the camera lens is clean before taking pictures.

## Using the advanced settings

In the viewfinder, tap  to open the advanced options. You can change the camera settings by scrolling through the list. After selecting the option, tap the **Back Key** .

	Touch if you want to change the viewfinder menu.
	Zoom in or out.
	Defines and controls the amount of sunlight entering the photo.
	Focuses on a specific spot.
	Selects photo resolution. If you choose high resolution, file size will increase, which means you will be able to store fewer photos in the memory.
	Finds the appropriate color and light settings for the current environment.
	The ISO rating determines the sensitivity of the camera's light sensor. The higher the ISO, the more sensitive the camera. This is useful in darker conditions when you cannot use the flash.
	Improves color quality in various lighting conditions.
	Applies artistic effects to your pictures.
	Sets a delay after the capture button is pressed. This is ideal if you want to be in the photo.
	Activate this to use your phone's location-based services. Take pictures wherever you are and tag them with the location. If you upload tagged pictures to a blog that supports geo tagging, you can see the pictures displayed on a map.


**NOTE:** This function is only available when the GPS function is active.

	Selects a shutter sound.
	Automatically shows you the picture you just took.
	Set the storage location for your pictures. Choose from Internal memory and SD card.
	Restore all camera default settings.
	Touch this whenever you want to know how a function works. This icon will provide you with a quick guide.

### TIP!






- When you exit the camera, some settings return to their defaults, such as white balance, color effect, timer and scene mode. Check these before you take your next photo.
- The setting menu is superimposed over the viewfinder, so when you change photo color or quality elements, you will see a preview of the changed image behind the Settings menu.

## Taking a quick photo

- 1 Open the **Camera** application.
- 2 Holding the phone horizontally, point the lens towards the subject you want to photograph.
- 3 A focus box will appear in the center of the viewfinder screen. You can also tap anywhere on the screen to focus on that spot.
- 4 When the focus box turns green, the camera has focused on your subject.
- 5 Touch  to capture the photo.

### Once you've taken a photo

Your captured photo will appear on the screen if Auto review is set to On (refer to Using the advanced settings). Touch image preview in the bottom right corner of the screen to view the last photo you took. The following options are available:

	Tap to view the Gallery of your saved photos.
	Touch to share your photo using the <b>SmartShare</b> function.
	Touch to take another photo immediately.
	Touch to send your photo to others or share it via social network services.
	Touch to delete the photo.

**TIP!** If you have a social networking account and set it up on your phone, you can share your photo with your social networking community.

Touch the Menu Key  to open all advanced options.

**Set image as** – Touch to use the photo as a **Contact photo, Home screen wallpaper** or **Lock screen wallpaper**.

**Move** – Touch to move the photo to another place.


**Copy** – Touch to copy the selected photo and save it to another album.




**Rename** – Touch to edit the name of the selected photo.

**Rotate left/right** – To rotate left or right.

**Crop** – Crop your photo. Move your finger across the screen to select the area to be cropped.

**Edit** – View and edit the photo.

	Applies a brightness effect to your photo.
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	Applies artistic effects to your photos.
	Applies color effects to your photos.
	Applies additional options to your photos.

**Slideshow** – Automatically shows you the images in the current folder one after the other.

**Details** – Find out more information about the contents.

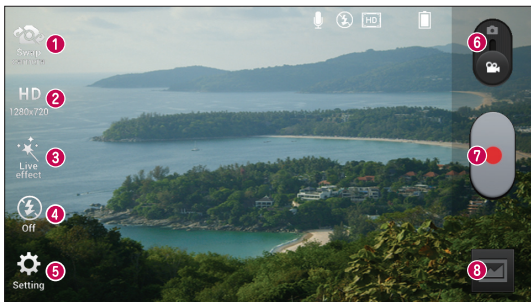
## Viewing your saved photos

You can access your saved photos when in camera mode. Just tap the image preview in the bottom right corner of the screen and your Gallery will be displayed.

- To view more photos, scroll left or right.
- To zoom in or out, double-tap the screen or place two fingers and spread them apart (move your fingers closer together to zoom out).

# Video camera

## Getting to know the viewfinder














- 1 Swap camera** – Switch between the rear-facing camera lens and the front-facing camera lens.
- 2 Video size** – Touch to set the size (in pixels) of the video you are recording.
- 3 Live effect** – Live effect provides various visual effects when taking a video.
- 4 Flash** – Allows you to turn on the flash when taking a video in dark conditions.
- 5 Settings** – Touch this icon to open the settings menu. See **Using the advanced settings** on the following page.
- 6 Swap mode** – Touch this icon and drag it upwards to switch to camera mode.
- 7 Record** – Starts recording video.
- 8 Gallery** – Touch to view the last video you recorded. This enables you to access your Gallery and view your saved videos while in video mode.


**TIP!** When recording a video, place two fingers on the screen and pinch to use the Zoom function.

## Using the advanced settings

Using the viewfinder, touch  to open all the advanced options.


	Touch if you want to change the viewfinder menu.
	Zoom in or zoom out.
	Defines and controls the amount of sunlight entering the video.
	Improves color quality in various lighting conditions.
	Choose a color tone to use for your new view.
	Activate this to use your phone's location-based services.
	Allows you to record with or without sound.
	Auto review automatically shows you the video you just recorded.
	Set the storage location for your pictures. Choose from Internal memory and SD card.
	Restore all video camera default settings.
	Touch this if you want to know how this function works. This icon will provide you with a quick guide.


## Recording a quick video

- 1 Open the **Camera** application and touch the **Swap mode** button.
- 2 The video camera viewfinder appears on the screen.
- 3 Holding the phone, point the lens towards the subject you wish to capture in your video.
- 4 Touch  once to start recording.







## Video camera

- 5 A timer showing the length of the video will appear.
- 6 Touch  on the screen to stop recording.

**NOTE:** Touch  on the screen to take a picture while you're recording.

### After recording a video

A still image representing your video will appear on the screen if Auto review is set to On. Touch the image preview in the bottom right corner of the screen to view the video. The following options are available:

	Touch to share your video using the <b>SmartShare</b> function.
	Touch to record another video immediately.
	Touch to send your video to others or share it via social network services.
	Touch to view the Gallery of your saved videos.

### Watching your saved videos

- 1 In the viewfinder, touch the image preview in the bottom right corner of the screen.
- 2 Your Gallery will appear on the screen.
- 3 Tap a video to play it automatically.

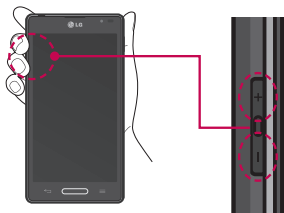
### Adjusting the volume when viewing a video

To adjust the volume of a video while it is playing, use the Volume Keys on the left side of the phone.

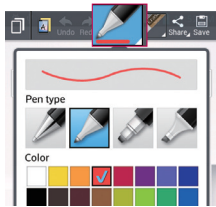
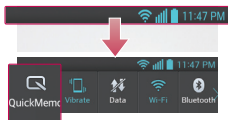
# LG Unique Functions


## QuickMemo

The **QuickMemo** feature allows you to create memos and capture screen shots. Capture screens, draw on them, and share them with family and friends with QuickMemo.



OR






- 1 Enter the QuickMemo screen by pressing both the Volume Keys for one second on the screen you want to capture. Or open the Notifications Panel and tap .

- 2 Select the desired menu option from **Pen type**, **Color**, and **Eraser**. Then create a memo.

## LG Unique Functions










- 3 Tap  in the Edit menu and select  to save the memo. To exit QuickMemo at any time, tap the **Back Key** .

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

### Using the QuickMemo options

You can easily use the QuickMenu options when using the QuickMemo.

	Touch to keep the current memo on the screen and use the phone simultaneously.
	Selects whether to use the background screen or not.
	Allows you to undo and redo previous actions.
	Selects the pen type and the color.
	Erases the memo that you created.
	Touch to send your memo to others or share it via social network services.
	Saves the memo in the <b>Gallery</b> .

### Viewing the saved QuickMemo

From the Home screen, tap **Apps**  > **Gallery**  and select the **QuickMemo** album.

## Live Zooming

**Live Zooming** allows you to zoom in or zoom out on a portion of a video that is being played to make the desired scan appear larger or smaller.

When viewing the video, use your index finger and thumb in a pinching or spreading motion to zoom in or out.



### NOTE:

- When in video playback mode, slide the screen up or down to adjust the screen brightness.
- When in video playback mode, slide the screen left or right to rewind or fast-forward.

**NOTE:** Do not to press too hard; the touch screen is sensitive enough to pick up a light, but firm touch.

# LG Unique Functions

## QSlide

The **QSlide** function enables an overlay on your phone's display for easy multi-tasking.



- |   |  |  |
|---|--|--|
| 1 |  | Tap to exit the QSlide function and return to full window. |
| 2 |  | Slide to adjust transparency.                              |
| 3 |  | Tap to exit the QSlide function.                           |

**NOTE:** The QSlide function can support up to two windows at the same time.

- 1 Open the Notifications Panel and tap the desired app from the **QSlide apps** section.

**OR**

While using an application that supports QSlide, tap . The function will be displayed continuously as a small window on your screen.

- 2 Slide to adjust the transparency level.

## Gallery

You can store multimedia files in internal memory for easy access to all your multimedia files. Use this application to view multimedia files like pictures and videos.

- 1 From the Home screen, tap **Apps**  > **Apps** tab > **Gallery** .

You can manage and share all your image and video files with Gallery.

### NOTE:

- Some file formats are not supported, depending on the software installed on the device.
- Some files may not play properly, depending on how they are encoded.

## Viewing pictures

Launching Gallery displays your available folders. When another application, such as Email, saves a picture, the download folder is automatically created to contain the picture. Likewise, capturing a screenshot automatically creates the Screenshots folder. Tap a folder to open it.

Pictures are displayed by creation date in a folder. 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 on an image:

- Double-tap anywhere to zoom in. Double-tap again to return to fullscreen view.
- Spread two fingers apart on any place to zoom in. Pinch in to zoom out.

## Playing videos

Video files show the  icon in the preview. Select a video and tap  to play it.



# Multimedia

## Viewing photo and video options

When viewing a photo or video, tap the **Menu Key**  and use the advanced editing options.

## Deleting images and videos

Use one of the following methods:

- In a folder, tap  and select the photos and videos you want to delete, then tap **Delete**.
- When viewing a photo or video, tap .


## Setting as wallpaper

When viewing a photo, touch the **Menu Key**  > **Set image as** and select **Home screen wallpaper** or **Lock screen wallpaper**.

### NOTE:



- Some file formats are not supported, depending on the device software.
- If the file size exceeds the available memory, an error can occur when you open files.

## Videos

Your phone has a video player that lets you play all of your favorite videos. To access the video player, from the Home screen tap **Apps**  > **Apps** tab >








**Videos** .

## Playing a video

- 1 From the Home screen, tap **Apps**  > **Apps** tab > **Videos** .
- 2 Select the video you want to play.





Touch to pause video playback.

	Touch to resume video playback.
	Touch to go 10 seconds forward.
	Touch to go 10 seconds backward.
	Touch to manage the video volume.
	Touch to change the ratio of the video screen.
	Touch access QSlide and display the video in small window.
	Touch to share your video via the SmartShare function.
	Touch to lock the window.

To change the volume while watching a video, press the Volume Keys on the left side of the phone.

Touch and hold a video in the list to access the following options: **Share**, **Delete** and **Details**.

## Music

Your phone has a music player that lets you play all your favorite tracks. To access the music player, from the Home screen, tap **Apps**  > **Apps** tab > **Music** .

### Add music files to your phone

Start by transferring music files to your phone:



- Transfer music using Media sync (MTP).
- Download from the wireless Web.
- Synchronize your phone to a computer.
- Receive files via Bluetooth.












## Transfer music using Media sync (MTP)

- 1 Connect the phone to your PC using the USB cable.
- 2 Select the **Media sync (MTP)** option. Your phone will appear as another hard drive on your computer. Click on the drive to view it. Copy the files from your PC to the drive folder.
- 3 When you're finished transferring files, swipe the Status Bar down and touch **USB connected > Charge only**. You may now safely unplug your device.

## Playing a song

- 1 From the Home screen, tap **Apps**  > **Apps** tab > **Music** .
- 2 Touch the **Songs** tab.
- 3 Select the song you want to play.

	Touch to find the files with YouTube
	Touch to share your music via SmartShare function.
	Touch to set shuffle mode
	Touch to set repeat mode
	Touch to manage the music volume
	Touch to pause playback
	Touch to resume playback
	Touch to skip to the next track on the album or in the playlist
	Touch to go back to the beginning of the song. Touch twice to return to the previous song



Touch to set the current song as a favorite



Touch to see the current playlist

To change the volume while listening to music, press the Volume Keys on the left side of the phone.

Touch and hold any song in the list to access the following options: **Play, Add to playlist, Share, Set as ringtone, Delete, Details** and **Search**.

**NOTE:**

- Some file formats are not supported, depending on the device software.
- If the file size exceeds the available memory, an error can occur when you open files.



**NOTE:** 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, check the national laws of the relevant country concerning the use of such material.


## 411 & More

This offers a lot more than just access to directory assistance and other portals. Available categories include: 411 Directory Assistance, Current Weather, etc.





- 1 From the Home screen, tap **Apps**  > **411 & More** .
- 2 Tap the on-screen options and follow the on-screen prompts. Choices include: 411 Directory Assistance with Maps, Current Weather, Sports Report and Horoscopes.

## Setting your alarm





- 1 From the Home screen, tap **Apps**  > **Apps** tab > **Alarm/Clock**  > .
- 2 Set the desired alarm time.
- 3 Set **Repeat**, **Snooze duration**, **Vibration**, **Alarm sound**, **Alarm volume**, **Auto app starter**, **Puzzle lock** and **Memo**.
- 4 Touch **Save**.

**NOTE:** To change alarm settings in the alarm list screen, touch the **Menu Key**  and select **Settings**.

## Using your calculator



- 1 From the Home screen, tap **Apps**  > **Apps** tab > **Calculator** .
- 2 Touch the number keys to enter numbers.
- 3 For simple calculations, touch the function you want to perform (**+**, **-**, **x** or **÷**) followed by **=**.
- 4 For more complex calculations, touch the **Menu Key** , select the **Advanced panel**, then choose the desired function.
- 5 To view the calculation history, tap .

## Adding an event to your calendar

- 1 From the Home screen, tap **Apps**  > **Apps** tab > **Calendar** .
- 2 Tap  to change the calendar view (Day, Week, Month, Agenda).
- 3 Tap on the date for which you wish to add an event and touch . Then select the calendar you wish to add the event to (if necessary).
- 4 Touch the **Event name** field and enter the event name.
- 5 Touch the **Location** field and enter the location. Check the date and enter the time you wish your event to start and finish.
- 6 If you wish to add a note to your event, touch the **Description** field and enter the details.
- 7 If you wish to repeat the alarm, set **REPEAT** and set **REMINDERS**, if necessary.
- 8 Touch **Save** to save the event in the calendar.

## Lookout Security

Lookout™ offers you mobile device security features that have little effect on your phone's overall performance. Lookout Mobile Security gives you key security options that are special to the mobile market. In addition to antivirus and anti-malware technology, there is also a lost and stolen phone locator service, an application privacy adviser, and a backup service.

- 1 From the Home screen, tap **Apps**  > **Lookout Security** .
- 2 Read the on-screen descriptions and tap **Activate Lookout** to begin the configuration process.
- 3 Read the on-screen Security information and if needed, tap the **Enable Security** box to activate this feature.
- 4 Tap **Next**.
- 5 Read the on-screen information about Backup and if desired, tap the **Enable Backup** box to activate the feature.
- 6 Tap **Next**.



## Utilities

- 7 Read the Mobile Threat Network information and if desired, tap the **Enable the Mobile Threat Network** box to enable this feature.
- 8 Tap **Next**.
- 9 Read the on-screen information about the feature that can aid in locating your missing phone and if needed, tap **New user** (to setup a new account) or **Existing user** (to log into your account field to activate the feature).
- 10 Tap **Start Lookout**.

From the main application, the features are shown as buttons. Touch one to show a button that will run the feature.

## T-Mobile TV



This application lets you watch live TV and Video on Demand on your phone.

- 1 From the Home screen, tap **Apps**  > **T-Mobile TV** . The T-Mobile Terms and Conditions page will be shown.
- 2 Tap **Accept** if you accept the Terms and Conditions.  
**OR**  
Tap **Exit** to close the application.
- 3 Set your location settings.
- 4 Tap any of the available categories to begin viewing.

**NOTE:** T-Mobile TV must be configured over network before first use. 30-days free offer is available for a limited time and subject to change. Unsubscribe during the first 30 days to avoid any charges; access to free content will remain available. See T-Mobile TV app for details. Qualifying data plan and/or Wi-Fi connection required.



## T-Mobile Name ID

Lets you modify the on-screen Caller ID information. Name ID identifies unknown callers by Name, City, and State.

- 1 From the Home screen, tap **Apps**  > **T-Mobile Name ID** .
- 2 Choose an on-screen option.

## Slacker Radio

Slacker® offers Internet radio for mobile devices.

- 1 From the Home screen, tap **Apps**  > **Slacker Radio** .
- 2 If prompted, enter your email address and password.  
**OR**  
Tap **Create Account** if you have not created an account.
- 3 Begin selecting the music you want to listen to.





## File manager

The **File Manager** application allows you to manage files in your internal/external storage.

### To open the File Manager application

- From the Home screen, tap **Apps**  > **Files Manager** .

### File Manager Options

-  : Allows you to create a new folder.
-  : Allows you to move files and folders to another folder.
-  : Allows you to delete files and folders.
-  : Allows you to search for files.

Tap the **Menu Key**  to access the following options.



- **Sort by:** Allows you to sort files and folders by Name, Size, Date, and Type.
- **View by:** Allows you to change the view mode to List or Grid.

## Utilities


- **Copy:** Allows you to copy files and folders and paste them in another location.
- **Share:** Allows you to share files and folders with others.
- **Zip:** Allows you to compress files and folders into a .zip file.
- **Exit:** Allows you to exit the application.

## Application Manager

You can manage your programs with Application Manager.

- 1 From the Home screen, tap **Apps**  > **Application Manager** .
- 2 The **Application Manager** lists your installed apps along with their size and version.
- 3 Tap **Uninstall** to uninstall the app, then tap **OK** to confirm.



## Application Manager Settings

To adjust the Application Manager settings, tap the **Menu Key**  and select **Settings**. The following settings are available.

- **Update notification cycle:** Allows you to set the notification cycle for app updates.
- **Auto app update:** Automatically updates apps if available.
- **Update over Wi-Fi only:** Updates apps only via Wi-Fi.

## Scout



TeleNav GPS Navigator provides driving assistance that offers both visual and voice navigation instructions for GPS navigation.

- 1 From the Home screen, tap **Apps**  > **Scout** .
- 2 If prompted, read the GPS Settings notification, tap **OK** and enable the necessary GPS location features.
- 3 Read the agreement and tap **Accept** to accept the terms, or tap **Exit** to close the window. Allow some time for the application to load the required first-time user files.

- 4 Select to either upgrade to the premium application or select to use basic navigation.
- 5 Use the available on-screen functions.

## Visual Voicemail

The **Visual Voicemail** application allows users to view a list of people who left voicemail messages on your phone. You can listen to your message without being limited by the date.

- 1 From the Home screen, tap **Apps**  > **Visual Voicemail** .
- 2 A list of the voicemail messages will be displayed.

**Important!** If this is the first time accessing Visual Voicemail, you may be prompted to enter a new PIN code and touch **Next** to activate Visual Voicemail.






**NOTE:** To use your phone's Visual Voicemail capability, you must have the Visual Voicemail service added to your rate plan.

- 3 Tap an on-screen voicemail message to play it back.


## Voice Recorder

Use the voice recorder to record voice memos or other audio files.


### Recording a sound or voice

- 1 From the Home screen, tap **Apps**  > **Apps** tab > **Voice Recorder** .
- 2 Touch  to begin recording.
- 3 Touch  to end the recording.
- 4 Touch  to listen to the recording.



**NOTE:** Touch  to access your list of recordings. You can listen to the saved recordings. The available recording time may differ from actual recording time.


### Sending the voice recording

- 1 Once you have finished recording, you can send the audio clip by touching .
- 2 Choose from any of the available methods for sharing.

## Task Manager

You can manage your applications using Task Manager. You can easily check the number of applications that are currently running and shut down certain applications. You can also uninstall the applications you have installed on your device.

### Task Manager Options

- Touch **Stop** to stop individual apps.
- Tap **Stop all** to stop all currently running apps.
- Tap the **Menu Key**  to access help information, sorting options, and advanced settings.

## Polaris Office 4

Polaris Office 4 is a professional mobile office solution that lets users conveniently view various types of office documents, including Word, Excel and PowerPoint files, anywhere or anytime, using their mobile devices.




From the Home screen, tap **Apps**  > **Apps** tab > **Polaris Office 4** .

### Viewing files

Mobile users can now easily view a wide variety of file types, including Microsoft Office documents and Adobe PDF, right on their mobile devices. When viewing documents using Polaris Office 4, the objects and layout remain the same as in the original documents.

## FileShare

This feature allows you to share files from your phone.

- 1 From the Home screen, tap **Apps**  > **Apps** tab > **FileShare** .
- 2 Choose the types of content you would like to share. Choose from **Images**, **Videos**, **Music** and **Documents**.
- 3 Tap **Send file**  in the upper right corner of the screen, then checkmark the file(s) you want to share.
- 4 Tap **Send** at the bottom of the screen to begin scanning for available devices, then select the device you want from the list.
- 5 Tap **Send** at the bottom of the screen to use the selected device to send your file(s).

## Backup

### About backing up and restoring smartphone data

It is recommended that you regularly create and save a backup file on the internal storage, especially before updating any software. Maintaining a current backup file in storage memory may allow you to recover smartphone data if your smartphone is lost, stolen, or corrupted by an unforeseen issue.

This Backup application is supported between LG smartphones, other S/W or OS versions. As a result, when you buy the new LG smartphone, you can backup the current phone data to your new phone.

If you have the Backup application preloaded on your smartphone, you can backup and restore most of your smart phone data, including downloaded and pre-installed applications, bookmarks, calendar entries, call logs, contacts, home screen settings, messages, and system settings. You may also:



- Perform a manual backup of your smartphone data.
- Schedule automatic backups of your smartphone data.
- Restore your smartphone data.

## Utilities

**NOTE:** Please note that the Backup function does not support the backup of User data & Media data (Picture/Video/Music). Please backup those files using the Media sync (MTP). Connect your phone to your computer using a USB cable and touch Media sync (MTP).



**Warning!** To protect against unexpected shutoff during backup or restore operations, due to insufficient battery power, you should always keep your battery fully charged.

### Backup your smart phone data

- 1 From the Home screen, tap **Apps**  > **Apps** tab > **Backup**  > **Backup** > **Internal Storage** or **SD Card**.
- 2 Touch **Add new** to enter a name for your backup file and select **Continue**.
- 3 Select the check box next to the item you want to backup and select **Continue** to backup.
- 4 When all selected files have been backed up, you will see the message 'Done'. Select **Continue** to finish backing up data.

### Scheduling automatic backups



You can also program automatic backups for the data on your smartphone according to your schedule setting. To do this, complete the following steps:

- 1 From the Home screen, tap **Apps**  > **Apps** tab > **Backup**  > **Schedule**.
- 2 On the **Scheduled Backup Location** screen, touch **Internal Storage** or **SD Card**.
- 3 From the list, select how often you want to backup your device data and settings, and select **Continue**.
- 4 Select the check box next to the data you want to backup, and select **Continue** to finish the schedule set.

## Restoring smartphone data

To restore data that is in your internal memory, Media sync mode must be turned off.

**NOTE:** All files that are stored on your smart phone are deleted before the backup file is restored.


- 1 From the Home screen, tap **Apps**  > **Apps** tab > **Backup**  > **Restore** > **Internal Storage** or **SD Card**.
- 2 On the **Restore** screen, select a backup file that contains the data you wish to restore.
- 3 Select the check box next to the item you wish to restore and select **Continue**. Then tap **Restore** to restore it to your phone.


**NOTE:** Please note that your phone data will be overwritten with the content of your backup.

- 4 If the backup file is encrypted, type the password that you created to encrypt it.
- 5 When all selected files have been restored, you will see the message 'Done'. Select **Continue** to restart the phone.

## Enable encryption

You can set Enable encryption to encrypt your backup files for extra protection.

- 1 Open the Backup application and tap the **Menu Key** .
- 2 Tap **Settings** > **Security** > **Enable encryption** to select the check box. You must have an activation password in order to restore synchronized organizer data.

**NOTE:** You can also schedule automatic delete for old backups and keep only the most recent backup. Open the Backup application and tap **Menu Key**  > **Settings** > **Scheduled backup** > **Auto delete old backups** to select the number of scheduled backups to keep.

## Utilities

### Google+



Use this application to stay connected with people via Google's social network service.

From the Home screen, tap **Apps**  > **Apps** tab > **Google+** .

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

### Voice Search

Use this application to search webpages using voice.

- 1 From the Home screen, tap **Apps**  > **Apps** tab > **Voice Search** .
- 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.

From the Home screen, tap **Apps**  > **Apps** tab > **Downloads** .

# The Web

## Browser







Use this application to browse the Internet. Browser gives you a fast, full-color world of games, music, news, sports, entertainment and much more, right on your mobile phone wherever you are and whatever you enjoy.

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

From the Home screen, tap **Apps**  > **Apps** tab > **Browser** .

## Using the Web toolbar



Touch and hold the Web toolbar and slide it upwards with your finger to open.

	Touch to go back one page.
	Touch to go forward one page, to the page you connected to after the current one. This is the opposite of what happens when you touch the <b>Back Key</b>  , which takes you to the previous page.
	Touch to go to the Home page.
	Touch to add a new window.
	Touch to access bookmarks.

## Viewing webpages


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

## Opening a page

- To open a new page, tap  on the Browser toolbar.
- To go to another webpage, tap  2, scroll up or down, and tap the page to view it.



# The Web

## Searching the web by voice



Tap the web address field, tap , speak a keyword, and then 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 the **Menu Key**  > **Save to bookmarks**. Enter the desired information and tap **OK**.
- To open a bookmarked webpage, tap  on the Browser toolbar and select one.

## History

Tap  on the Browser toolbar and select the **History** tab to open a webpage from the list of recently-visited webpages. To clear the history, tap the **Menu Key**  > **Clear all history**.

## Using QSlide

Use this feature to access the Internet without closing the current application. While viewing content on the Browser, tap . You can then browse other information on your phone. To view the browser in full screen, tap . To close the browser, tap .

## Chrome

Use Chrome to search for information and browse webpages.



From the Home screen, tap **Apps**  > **Apps** tab > **Chrome** .

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


## Viewing webpages

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

## Opening a page


- To go to a new page, tap  > **New tab**.
- 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, tap , speak a keyword and select one of the suggested keywords that appear.

## Syncing with other devices

Sync open tabs and bookmarks to use with Chrome on another device when you are logged in with the same Google account.

To view open tabs on other devices, tap the **Menu Key**  > **Other devices**. You must be signed in to the same Google account on all devices. Select a webpage to open.




## Viewing bookmarks

To view bookmarks, tap .




# Settings

## Access the Settings menu

- 1 From the Home screen, tap **Apps**  > **Apps** tab > **Settings**   
OR  
From the Home screen, tap the **Menu Key**  > **System settings**.
- 2 Select a setting category and select an option.

## WIRELESS & NETWORKS

### < Airplane mode >

Tap the **Airplane mode** switch  to toggle between On and Off. Activating Airplane mode disables all wireless connections.

### < Wi-Fi >

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

#### **TIP! How to obtain the MAC address**

To set up a connection in some wireless networks with MAC filters, you may need to enter the MAC address of your phone in the router.

You can find the MAC address in the following user interface: From the Home screen, tap **Apps**  > **Settings**  > **Wi-Fi** > **Menu Key**  > **Advanced** > **MAC address**.

### < Bluetooth >

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

### < Mobile data >

Displays the data usage and set mobile data usage limit.

### < Call >

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

**Fixed dialing numbers** – Turn on and compile a list of numbers that can be called from your phone. You'll need your PIN2, which is available from your

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

**Voicemail** – Allows you to select your carrier's voicemail service.

**Call reject** – Allows you to set the call reject function. Choose from **Call reject mode** or **Rejection list**.

**Decline with message** – When you want to reject a call, you can send a quick message using this function. This is useful if you need to reject a call during a meeting.

**Power button ends call** – Allows you end calls by pressing the Power/Lock Key instead of the End button on your screen.

**TTY mode** – Opens a dialog box to set TTY mode to communicate with other TTY devices.

**Hearing aids** – Checkmark enables hearing aid compatibility.

**Call forwarding** – Choose whether to divert all calls when the line is busy, when there is no answer or when you have no signal.

## Wi-Fi Calling

### Important!

Wi-Fi Calling requires that you use the SIM card that is shipped with your phone. Also, you must register your address for 9-1-1. Wi-Fi Calling will not work until you have registered for 9-1-1 by logging into your account at [www.T-Mobile.com](http://www.T-Mobile.com). Go to your profile and click **Customer Info** and continue on to enter your address.

## About Wi-Fi Calling

Wi-Fi Calling can improve your coverage and allows you to make phone calls and send messages over a Wi-Fi network (when a Wi-Fi network is available). Unless your rate plan provides otherwise, Wi-Fi Calling minutes count the same as T-Mobile cellular calling minutes on your phone bill.

- To use Wi-Fi Calling, you must first turn on Wi-Fi, connect to a Wi-Fi network, and then turn on Wi-Fi Calling.
- When the Wi-Fi Calling feature is on, your phone displays the **Wi-Fi Calling** icon on the Status Bar.
- To stay on a Wi-Fi call, you must remain within range of the Wi-Fi network. Your call will drop as you leave the Wi-Fi range. When your Wi-Fi signal

## Settings

weakens, your phone will beep and display a warning message alerting you that your call will drop if the signal gets weaker.

Wi-Fi Calling offers three connection options:

- **Wi-Fi Preferred:** All calls are made over an available Wi-Fi network. If there are no available Wi-Fi networks calls are made over the cellular network.
- **Cellular Network Preferred:** All calls are made over the cellular network unless the cellular network is not available, then calls are made over an available Wi-Fi network.
- **Never use Cellular Network:** All calls are made over an available Wi-Fi network. If there are no available Wi-Fi networks, your calls will not connect.

**Call duration** – View the duration of calls including Last call, All calls, Dialed calls and Received calls.

**Additional settings** – Allows you to change the following settings:

**Caller ID:** Choose whether to display your number in an outgoing call.

**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).

< **More...** >

**USB tethering & Mobile Hotspot** – Allows you to share mobile network via Wi-Fi and you can configure portable Wi-Fi hotspot settings.

**VPN** – Displays the list of Virtual Private Networks (VPNs) that you've previously configured. Allows you to add different types of VPNs.

**NOTE:** You must set a lock screen PIN or password before you can use credential storage.

**Mobile networks** – Set options for data roaming, network mode & operators, access point names (APNs) etc.

## DEVICE

### < Sound >

**Sound profile** – Choose the Sound, either Vibrate only or Silent.

**Volumes** – Manage the volume of Phone ringtone, Notification sound, Touch feedback & system, Music, video, games and other media.

**Quiet time** – Set times to turn off all sounds except alarm and media.

**Ringtone with vibration** – Vibration feedback for calls and notifications.

**Phone ringtone** – Allows you to set your default incoming call ringtone.

**Notification sound** – Allows you to set your default notification ringtone.

**Dial pad touch tones** – Allows you to set the phone to play tones when using the dialpad to dial numbers.

**Touch sounds** – Allows you to set your phone to play a sound when you touch buttons, icons and other onscreen items that react to your touch.

**Screen lock sound** – Allows you to set your phone to play a sound when locking and unlocking the screen.

**Vibrate on touch** – Allows you to set the vibration feedback when the phone screen is touched.

### < Display >

**Brightness** – Adjust the screen brightness.

**Screen timeout** – Set the time for screen timeout.

**Auto-rotate screen** – Set to switch orientation automatically when you rotate the phone.

**Font type** – Change the type of display font.

**Font size** – Change the size of the display font.

**Front key light** – Set the front key light duration.

**Aspect ratio correction** – Change the resolution size of downloaded applications to fit the screen size.

### < Home screen >

**Theme** – Sets the screen theme for your device.

**Animation** – Sets the device to use the available animations.

# Settings

**Screen swipe effect** - Sets the effect when you swipe to change screens.

**Wallpaper** - Sets the wallpaper to use on your Home screen.

**Portrait view only** - Checkmark to always display the Home screen in portrait view.

**Scroll home screens circularly** - Checkmark to set the Home screens to scroll continuously, eliminating the need to scroll back in the opposite direction when you reach one end.

**Home backup & restore** - Allows you to backup and restore app and widget configurations and themes.

## < Lock screen >

**Select screen lock** - Set a screen lock type to secure your phone. Choose from **None, Swipe, Face Unlock, Pattern, PIN** or **Password**.

**Wallpaper** - Select the wallpaper for your lock screen from Gallery or Wallpaper gallery.

**Clocks & shortcuts** - Customize clocks and shortcuts on the lock screen.

**Screen effect** - Select the screen effect.

**Owner info** - Show owner info on the lock screen.

**Lock timer** - Set the lock time after screen timeout.

**Power button instantly locks** - Set the screen lock when the power button is pressed.

**Vibrate on touch** - Allows you to set the vibration feedback for phone screen touch.

## < Storage >

**INTERNAL STORAGE** - Displays the total amount of space in the phone's memory and lists what type of data is using up space.

**SD CARD** - Displays the total amount of memory space on the microSD card.

**Mount/Unmount SD card** - Mounts and unmounts the microSD card from your phone so that you can access the data stored in it, format the card, or safely remove it. This setting is dimmed if there's no microSD card installed, if you've already unmounted it, or if you've mounted the microSD card on your computer.

**Erase SD card** - Permanently erases everything on the microSD card and

prepares it for use with your phone.

#### < **Power saver** >

Manage the battery and select the features you want to turn off or change when the battery is low. You can also check the battery use.

#### < **Apps** >

Use the Apps menu to view details about the applications installed on your phone, manage their data, and force them to stop.

## PERSONAL

#### < **Accounts & sync** >

Permits applications to synchronize data in the background, whether or not you are actively working in them. Deselecting this setting can save battery power and lower (but not eliminate) data usage.

#### < **Location access** >

**Access to my location** – Lets apps that have asked your permission use your location information.

**GPS satellites** – Lets apps use GPS satellites to determine your location to street-level accuracy.

**Wi-Fi & mobile network location** – Let apps use Google's location service to estimate your location faster. Anonymous location data will be collected and sent to Google.

#### < **Security** >

**Set up SIM card lock** – Set up Micro SIM card lock or change the Micro SIM PIN.

**Password typing visible** – Show the last character of the hidden password as you type.

**Phone administrators** – View or deactivate phone administrators.

**Unknown sources** – Allows you to install non-Play Store applications.

**Trusted credentials** – Display trusted CA certificates.

**Install from storage** – Choose to install encrypted certificates.

## Settings

**Clear credentials** – Remove all certificates.

### < Language & input >

Use the Language & input settings to select the language for the text on your phone and to configure the on-screen keyboard, including words you've added to its dictionary.

### < Backup & reset >

**Backup my data** – Set to backup your settings and application data to the Google server.

**Backup account** – Set the account to which you want to backup data to.

**Automatic restore** – Set to restore your settings and application data when the applications are reinstalled on your device.

**Collect diagnostics** – Allows you to select if you want to allow diagnostic data to be sent to T-Mobile.

**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.

## SYSTEM

### < Date & time >


Use **Date & time** settings to set how dates will be displayed. You can also use these settings to set your own time and time zone rather than obtaining the current time from the mobile network.

### < Accessibility >

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

**NOTE:** Requires additional plug-ins to become selectable.

## SERVICES

- **TalkBack:** Allows you to set up the Talkback function which assists people with impaired vision by providing verbal feedback. Tap the **TalkBack** switch  at

the top right corner of the screen to turn it on. Tap **SETTINGS** at the bottom of the screen to adjust the TalkBack settings.


## VISION

- **Install web scripts:** Allows you to enable (or disable) installation of web scripts.
- **Large text:** Checkmark to increase the size of the text.
- **Invert color:** Checkmark to invert color.
- **Shades:** Set the screen to be shade of black.


## HEARING

- **Vibrate type:** Set vibrate type for calls, notifications and touch feedbacks.
- **Mono audio:** Checkmark to allow headset sound routed both right and left channel.

## PHYSICAL AND MOTOR

- **Touch & hold delay:** Sets the touch and hold delay (short, medium, or long).
- **Assistive touch:** Switch  to toggle between on and off. Assistive touch can replace all hardware buttons.

## SYSTEM

- **Auto-rotate screen:** Checkmark to allow the device to rotate the screen depending on the device orientation (portrait or landscape).
- **Speak passwords:** Checkmark so that you can say your log in passwords (instead of typing your passwords).
- **Power button ends call:** Checkmark so that you can end voice calls by pressing the **Power/Lock Key** . When this option is enabled, pressing the **Power/Lock Key** during a call does not lock the screen.
- **Easy access:** Allows you to select easy access.
- **Text-to-speech output:** Text-to-speech output provides audible readout of text, for example, the contents of text messages, and the Caller ID for incoming calls.

## < PC connection >

**USB connection type** – Set the desired mode you want to use by default when connecting to a PC. Choose from **Charge only**, **Media sync (MTP)**, **LG software** or **Camera (PTP)**.



# Settings

**Ask on connection** – Ask in USB connection mode when connecting to a computer.

**Help** – Displays connection settings information.

## < Developer options >

Keep in mind that turning on these developer settings may result in irregular device behavior. The developer options are recommended only for advanced users.

**Take bug report** - This will collect information about your current device state, to send as an email message.

**Desktop backup password** - Sets a password to back up the desktop.

**Stay awake** - Checkmark to set the screen to never timeout while charging.

**Protect SD card** - Checkmark to protect the microSD card. When the microSD card is protected, applications must request permission to read data from external storage.

## DEBUGGING

**USB debugging** - Checkmark to turn on debug mode when USB is connected.

**Allow mock locations** - Checkmark to set the device to a mock location.

**Select debug app** - Allows you to select the debugging application.

**Wait for debugger** - Checkmark to wait for debugger. Debugged application waits for debugger to attach before executing.

## INPUT

**Show touches** - Checkmark to show visual feedback when the screen is tapped.

**Show touch data** - Checkmark to make tap data visible on the screen.

## DRAWING

**Show layout bounds** - Checkmark to show clip bounds, margins, etc.

**Show GPU view updates** - Checkmark to flash views inside windows when drawn with the GPU.

**Show screen updates** - Checkmark to flash areas of the screen when they are updated.

**Window animation scale** - Allows you to set the window animation scale.

**Transition animation scale** - Allows you to set the transition animation scale.

**Animator duration scale** - Allows you to set the animator duration scale.

**Disable HW overlays** - Checkmark to use the GPU for screen compositing.

**Force GPU rendering** - Checkmark to use the 2D hardware acceleration in applications.

## MONITORING

**Enable strict mode** - Checkmark to flash the screen when applications operate for a long period of time on the main thread.

**Show CPU usage** - Checkmark to overlay the current CPU usage on the screen.

**Profile GPU rendering** - Checkmark to measure rendering time in adb shell `dumpsys gfxinfo`.

**Enable traces** - Allows you to select enabled traces.

## APPS

**Don't keep activities** - Checkmark to force stop every activity as soon as the user leaves it.

**Background process limit** - Allows you to set the background process limit.

**Show all ANRs** - Checkmark to show a dialog box when applications running in the background are not responding.

## < About phone >

View legal information and check your phone status and software version.

**System updates** - Allows you to check for Android system software updates and other current information.

**Network** - Allows you to view your network, network type and strength, service state, roaming status, mobile network state, and IP address.

**Phone identity** - Allows you to view the model number, phone number, IMEI, IMEI SV, and Up time.

**Battery** - Allows you to view battery status, battery level, and battery use information.

**Hardware information** - Allows you to view Wi-Fi MAC address and Bluetooth address.

**Software information** - Allows you to view Android version, baseband version, kernel version, build number, and software version.

**Legal information** - Allows you to view open source licenses and Google legal information.

**Patent information** - Displays LG patent information.

# Phone software update

## Phone software update

This feature allows you to update the firmware of your phone to the latest version conveniently from the internet without the need to visit a service center. For more information on how to use this function, please visit:


<http://www.lg.com>


As the mobile phone firmware update requires the user's full attention for the duration of the update process, please make sure to check all instructions and notes that appear at each step before proceeding. Please note that removing the USB cable or battery during the upgrade may seriously damage your mobile phone.

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

This feature allows you to update the firmware of your phone to the newer version conveniently via OTA without connecting the USB data cable. This feature is only available if and when LG makes the newer version of the firmware available for your device.

First, you can check the software version on your mobile phone:

From the Home screen, tap the **Menu Key**  > **System settings** > **About phone** > **Software information**.

To perform the phone software update, from the Home screen, tap the **Menu Key**  > **System settings** > **About phone** > **System updates** > **Check now**.

**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.

**NOTE:** Your personal data—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 back up your personal data before updating your phone's software. LG does not take responsibility for any loss of personal data.

## About this user guide

### **NOTICE: Open Source Software**

To obtain the corresponding source code under GPL, LGPL, MPL and other open source licences, please visit

<http://opensource.lge.com/>

All referred licence terms, disclaimers and notices are available for download with the source code.



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# Accessories

These accessories are available for use with the LG Optimus L9. (Items described below may be optional and sold separately.)

## Travel adapter



## Data cable

Connect your LG Optimus L9 and PC.



## User Guide

Learn more about your LG Optimus L9.



## Battery



### NOTE:

- Always use genuine LG accessories. Failure to do this may void your warranty.
- Accessories may vary in different regions.

## Technical data

### Ambient Temperatures

**Max:** +50°C (discharging), +45°C (charging)

**Min:** -10°C

### Battery Standby and Talk Time

Standby and talk times will vary depending on phone usage patterns and conditions. Battery power consumption depends on factors such as network configuration, signal strength, operating temperature, features selected, frequency of calls, and voice, data, and other application usage patterns.

# 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
Micro SIM error	There is no Micro SIM card in the phone or it is inserted incorrectly.	Make sure that the Micro SIM 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 Micro SIM card is more than 6-12 months old. If so, change your Micro SIM at your network provider's nearest branch. Contact your service provider.
Codes do not match	To change a security code, you will need to confirm the new code by re-entering it.	If you forget the code, contact your service provider.
	The two codes you have entered do not match.	



## Troubleshooting

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	Dialling error	New network not authorized.
	New Micro SIM card inserted.	Check for new restrictions.
	Pre-paid charge limit reached.	Contact service provider or reset limit with PIN2.
Phone cannot be switched on	Power/Lock Key pressed too briefly.	Press the Power/Lock Key for at least two seconds.
	Battery is not charged.	Charge battery. Check the charging indicator on the display.

<b>Message</b>	<b>Possible causes</b>	<b>Possible corrective measures</b>
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 socket.
	Charger defective	Replace the charger.
	Wrong charger	Use only original LG accessories.
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.

## Troubleshooting

Message	Possible causes	Possible corrective measures
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 via the website.

# For Your Safety

## 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.
- 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.
- 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 this standard. 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-1725-200x. Use of an unqualified battery may present a risk of fire, explosion, leakage or other hazard.
- 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.

## For Your Safety

- 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  $-4^{\circ}\text{F}$  or greater than  $122^{\circ}\text{F}$ .
- Charging temperature range is between  $32^{\circ}\text{F}$  and  $113^{\circ}\text{F}$ . 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's moving 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



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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 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 causes undesired operation.

### **Part 15.21 statement**

Any changes or modifications not expressly approved by the manufacturer 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 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.

## **Bodily Contact During Operation**

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

## **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. 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 value for this model phone when tested for use at the ear is 0.51 W/kg and when worn on the body, as described in this user guide, is 1.12 W/kg (body-worn 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/ea/fccid/> after searching on FCC ID ZNFD801.

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>

### **Engineering in Medicine and Biology Society, Committee on Man and Radiation (COMAR) of the Institute of Electrical and Electronics Engineers**

<http://ewh.ieee.org/soc/embs/comar/>

## TIA Safety Information

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

### 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

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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)

(<http://www.hpa.org.uk/radiation/>)

## 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.

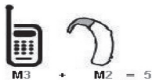
Trying out the phone with your hearing device is the best way to evaluate it for your personal needs.

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 (this phone does not have 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)

#### **WiFi Caution!**

This device is capable of operating in 802.11a/n mode. For 802.11a/n devices operating in the frequency range of 5.15 - 5.25 GHz, they are restricted for indoor operations to reduce any potential harmful interference for Mobile Satellite Services (MSS) in the US.

WiFi Access Points that are capable of allowing your device to operate in 802.11a/n mode (5.15-5.25 GHz band) are optimized for indoor use only.

If your WiFi network is capable of operating in this mode, please restrict your WiFi use indoors not to violate federal regulations to protect MSS.

# 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.