

Settings

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



To open the Settings application

- From the Home screen, tap the **Apps Key**  > **Settings** .
- From the Home screen, tap the **Menu Key**  > **System settings**.



Networks tab

Airplane mode

Airplane mode allows you to quickly turn off all wireless connections.

- 1 From the Home screen, tap the **Menu Key**  > **System settings**.
- 2 Select the **Networks** tab.
- 3 Tap the **Airplane mode** switch  to turn it on.
- 4 Tap the switch again to turn it off.



OR

- 1 Press and hold the **Power/Lock Key**  and tap **Turn on Airplane mode**.
- 2 Press and hold the **Power/Lock Key**  and tap **Turn off Airplane mode** to turn it off.

Wi-Fi

To use Wi-Fi on your phone, you need access to a wireless access point, or "hotspot." Some access points are open and you can simply connect to them. Others are hidden or implement other security features, so you must configure your phone in order to connect to them.

Turn on Wi-Fi





From the Home Screen, open the Notifications panel and tap  to turn Wi-Fi on. A blue colored icon  indicates that Wi-Fi is on.

OR

From the Home screen, tap the **Menu Key**  and tap **System settings > Networks** tab. Then tap the **Wi-Fi** switch  to turn it on.

To connect to a Wi-Fi Network

Turn off Wi-Fi when you're not using it to extend the life of your battery.

- 1 From the Home screen, tap the **Menu Key**  and tap **System settings > Networks** tab > **Wi-Fi**.
- 2 Tap the **Wi-Fi** switch  to turn it on and begin scanning for available Wi-Fi networks.
 - A list of available Wi-Fi networks will be displayed. Secured networks are indicated by a lock icon .
- 3 Tap a network to connect to it.
 - If the network is open, you are prompted to confirm that you want to connect to that network by tapping **Connect**.
 - If the network is secured, you are prompted to enter a password or other credentials. (Ask your network administrator for details).
 - Tap the **Menu Key**  to access additional options.
- 4 The Status Bar at the top of your screen will display an icon that indicates your Wi-Fi status.

TIP! If you are not in range of a Wi-Fi network and use a network connection. Additional data charges may apply.

NOTE:

- Access to the Internet and a wireless router required. As an added convenience, T-Mobile has shipped certain smartphones with Wi-Fi enabled as a default setting. Leaving Wi-Fi enabled when not connected to a Wi-Fi network may affect battery charge. Qualifying data plan required.
- This device supports WEP, WPA/WPA2-PSK and 802.1x EAP. (Some EAP methods are not supported.) If your Wi-Fi service provider or network administrator sets encryption for network security, enter the key in the pop-up window. If encryption is not set, this pop-up window will not be shown. You can obtain the key from your Wi-Fi service provider or network administrator.


Bluetooth

Bluetooth is a short-range communications technology that allows you to connect wirelessly to a number of Bluetooth devices, such as headsets and hands-free car kits, and Bluetooth-enabled handhelds, computers, printers, and wireless devices. The Bluetooth communication range is usually up to approximately 30 feet.

Turn on Bluetooth


From the Home screen, tap the **Menu Key**  > **System settings** > **Networks** tab, then tap the **Bluetooth** switch  to turn on the Bluetooth functionality.

To visible my phone from other devices.

- 1 From the Home screen, tap the **Menu Key**  > **System settings** > **Networks** tab > **Bluetooth**.
- 2 Make sure Bluetooth is turned on.
- 3 Tap the check box next to the device name. Visibility is set to 2 minutes by default.

Settings

NOTE:

To change the visibility time length, tap the **Menu Key**  > **Visibility timeout**. Choose from **2 minutes**, **5 minutes**, **1 hour**, or **Never time out**.

To scan other Bluetooth devices.

- 1 Access the Bluetooth menu and make sure that it is on.
- 2 Tap **Search for devices**.

NOTE:

To find the other devices, make it discoverable mode.

Pairing Bluetooth devices

- 1 Access the Bluetooth menu and make sure that it is on.
- 2 Tap **Search for devices**. Your device will display a list of discovered in-range Bluetooth devices.
- 3 Tap the device you want to pair from the list.
- 4 Tap **Pair**.

NOTE:

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

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

How to send data from your phone via Bluetooth

You can send data via Bluetooth by running a corresponding application, not from Bluetooth menu.

- * **Sending pictures:** Open the **Gallery** application and tap a picture. Then tap  > **Bluetooth**. Check the devices if Bluetooth is turned on. Then tap the device you want to send data to from the list.
- * **Sending contacts:** Open the Contacts application. Tap the contact you want to share, then tap the **Menu Key**  > **Share** > **Bluetooth**. Check if Bluetooth is turned on and tap **Search for devices**. Then tap the device you want to send data to from the list.

TIP! The supported Bluetooth version is Bluetooth 4.0 and certified by Bluetooth SIG. It is compatible with other Bluetooth SIG certified devices.

- Due to different specifications and features of other Bluetooth-compatible devices, display and operations may be different, and functions such as transfer or exchange may not be possible with all Bluetooth compatible devices.
- Supported profiles are HFP/HSP, A2DP, AVRCP, OPP, FTP(Server), HID, MAP and PBAP.

To switch between a Bluetooth headset and the phone

When a Bluetooth headset is paired and connected to your phone, you can conduct calls on the headset for hands-free conversation. During a call, you can opt to use the Bluetooth headset or just the phone. When using the Bluetooth headset during a call, the Ongoing Call notification icon is blue in the Status Bar (the icon is green when using the phone).

NOTE:

Tap the Bluetooth button to switch the call from the phone to the Bluetooth device, or vice versa.

Settings

Mobile data

You can check the current data usage, set to enable/disable mobile data, or set the mobile data limit.

Mobile data - Tap the switch  to enable mobile data.

Limit mobile data usage - Checkmark to set the mobile data usage limit.

Data usage cycle - Allows you to change the data usage cycle to display in the graph.

NOTE:

Tap an application to view data usage information.

Call

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

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

Fixed dialing numbers - Turn on and compile a list of numbers that can be called from your phone. You'll need your PIN2, which is available from your operator. Only numbers within the fixed dial list can be called from your phone.

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. 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 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.

Incoming call pop-up – Displays an incoming call pop-up when an all is in use.

Call reject – Allows you to set call rejection and manage the reject list.

Decline with message – When you want to reject a call, you can send a quick message instead. This is useful if you need to reject a call during a meeting. This menu allows you to manage the messages you can send.

Privacy keeper – Hides the caller name and number for an incoming call.

Call forwarding – Allows you to set the call forwarding options.

Auto answer – Automatically answer after the set time, when handsfree is connected.

Connection vibration – Vibrates your phone when the other party answers the call.

TTY mode – Allows you to activate TTY mode.

Hearing aids – Allows you to turn on hearing aid compatibility.

Voice enhancement – Allows you to suppress background noise during a call.

Settings

Power button ends call – Allows you to end the call by pressing the Power/Lock Key.

Call barring – Tap to lock incoming and/or outgoing international calls.

Call duration – View the duration of calls including Last call, Outgoing calls, Incoming calls and All calls.

Additional settings – Allows you to change the following settings:

Caller ID: Allows you to set the call forwarding options.

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



Share & connect

Allows you to transfer data and media with other devices.

NFC

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

To turn on NFC:

- 1 From the Home screen, tap the **Menu Key**  > **System settings**.
- 2 Tap **Share & connect** and tap the **NFC** switch .

Direct/Android Beam

When this feature is turned on, you can beam app content to another NFC-capable device by holding the devices close together. For example, you can beam Browser pages, YouTube videos, contacts, POLARIS Office files, and more. Just bring the devices together (typically back to back) and then touch your screen. The app determines what gets beamed.

To activate Direct/Android Beam:

From the Home screen, tap the **Menu Key**  > **System settings** > **Share & connect** > **Direct/Android Beam** .



NOTE:

You must enable NFC to activate Direct/Android Beam.

SmartShare Beam

Allows you to receive multimedia content from LG phones or tablets.

To activate SmartShare Beam:



From the Home screen, tap the **Menu Key**  > **System settings** > **Share & connect** > **SmartShare Beam**. Then tap the switch  to activate SmartShare Beam and set the desired options.

NOTE:

You must enable Wi-Fi to activate SmartShare Beam.

Miracast

You can mirror phone screen and sound onto LG Miracast dongle or TV wirelessly.


- 1 From the Home screen, tap the **Menu Key**  > **System settings**.
- 2 Tap the **Networks** tab.
- 3 Tap **Share & connect** > **Miracast**.
- 4 Tap the switch  to turn on the feature.
- 5 Turn on the Miracast feature on your TV or connect to the LG Miracast dongle.

TIP! To start the Miracast feature quickly, tap the Miracast icon in the Notification Panel. While mirroring, Mobile Hotspot cannot be used simultaneously.

Settings

Wireless storage

To manage files on your phone in the computer or copy files to the phone from the computer without a USB connection.

- 1 Tap  to activate Wireless storage.
- 2 Make sure that the phone and computer are connected to the same network.
- 3 Enter the URL shown on your phone in the address bar of the browser on your computer.



Tethering & networks

Allows you to configure mobile networks, tethering, and VPNs (Basic VPN, LG VPN).

USB tethering

You can use your phone to provide a data connection to a computer by activating data tethering and connecting them with a USB cable.

To tether your phone with your computer using the USB

- 1 Connect your phone to your computer with a USB cable.
- 2 Tap the **Menu Key**  > **System settings** > **Networks** tab > **Tethering & networks**. Then tap the **USB tethering** switch  to activate the feature.

NOTE:

Data Tethering requires an appropriate data plan. Devices connected by tethering use data from your plan. Plans are not unlimited and significant charges may be incurred if the included data allowance is exceeded. Performance may vary depending on the number of devices connected and other factors.

Mobile HotSpot

You can also use your smartphone to provide a mobile broadband connection for up to 8 other devices. Create a hotspot and share your connection. To create a portable hotspot, from the Home screen, tap the **Menu Key** (☰) > **System settings** > **Networks** tab > **Tethering & networks** > **Mobile HotSpot**. Then tap the **Mobile HotSpot** switch (OFF) to activate the feature. Tap **Configure Mobile HotSpot** to change the SSID, password, security type, and other hotspot options.

NOTE:

Mobile HotSpot requires an appropriate data plan. Devices connected to your Mobile HotSpot use data from your plan. Plans are not unlimited and significant charges may be incurred if the included data allowance is exceeded. Performance may vary depending on the number of devices connected and other factors. If you do not use a password, others will be able to use your Mobile HotSpot connection.

Help

Tap to view help information on the Mobile HotSpot and USB tethering functions.

Wi-Fi Calling

Refer to page 108 for Wi-Fi calling.

Mobile networks

You can set whether to enable or disable data access on your phone.

Data enabled - Select whether to enable or disable data access.

Data roaming - Select whether to enable or disable data access while roaming.

Network mode - Allows you to choose your preferred network mode.

Access point names - You can select the access point name, add a new APN, or reset to default.

Network operators - Allows you to select a network operator (if necessary).

Settings

VPN(Basic VPN)

From your phone, you can add, set up, and manage virtual private networks (VPNs) that allow you to connect and access resources inside a secured local network, such as your corporate network.

Prepare Your Device for VPN Connection

Depending on the type of VPN you are using at work, you may be required to enter your login credentials or install security certificates before you can connect to your company's local network.

You can get this information from your network administrator. Before you can initiate a VPN connection, you must set the screen lock option (Pattern, PIN, or Password only).

Add a VPN Connection

- 1 From the Home screen, tap the **Menu Key**  > **System settings**.
- 2 Select the **Networks** tab.
- 3 Tap **Tethering & networks** > **VPN** > **Basic VPN** > **Add Basic VPN network**.

NOTE:

You must change your screen lock before you use credential storage. You can set a pattern, PIN, or password.

- 4 Enter the VPN network according to the security details you have obtained from your network administrator.
- 5 When finished, tap **Save**.

VPN(LG VPN)


From your phone, you can add, set up, and manage virtual private networks (VPNs) that allow you to connect and access resources inside a secured local network, such as your corporate network.

Prepare Your Device for VPN Connection

Depending on the type of VPN you are using at work, you may be required to enter your login credentials or install security certificates before you can connect to your company's local network.

You can get this information from your network administrator. Before you can initiate a VPN connection, you must set the local key store password.

Add a VPN Connection

- 1 From the Home screen, tap the **Menu Key**  > **System settings**.
- 2 Select the **Networks** tab.
- 3 Tap **Tethering & networks** > **VPN** > **LG VPN** > **Add LG VPN network**.

NOTE:

You must set the local key store password before you use LG VPN credential storage.

- 4 Enter the VPN network according to the security details you have obtained from your network administrator.
- 5 When finished, tap **Save**.

Sound tab

Sound profile

Allows you to set the sound profile to Sound, Vibrate only, or Silent.

Volumes


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

Vibrate strength

Allows you to set the vibrate strength for calls, notifications, and touch feedback.

Settings

Quiet mode

Tap the **Quiet mode** switch  to enable this function. Tap **Quiet mode** to set the days and times to automatically turn off all sounds except for alarms and media and to set allowed calls during the quiet mode.

Phone ringtone

Select the ringtone for incoming calls.

Smart ringtone

Select to automatically increase the volume of the ringtone when outside noise is loud.

Incoming call vibration

Allows you to choose the type of vibration for incoming calls.

Gentle vibration

Gradually increases vibration up to the current strength set.

Ringtone with vibration

Checkmark for vibration feedback for calls.

Voice notifications

Read out incoming call and message event automatically.

Notification sound

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

Touch feedback & system

Allows you to set dial pad touch tones, touch sounds, screen lock sound, and vibrate on touch.

Dial pad touch tones

Allows you to play tones when using dial pad.

Touch sounds

Allows you to play sound when making screen selection.

Screen lock sound

Allows you to play sound when locking and unlocking the screen

Vibrate on touch

Allows you to vibrate when tapping the front key and on certain UI interactions.

Display tab

Home screen

Select Home - Sets the home style for your device. Choose **Home** or **EasyHome**.

Theme - Sets the screen theme for your device. Choose **Flex** or **LG**.

Wallpaper - Allows you to set the wallpaper.

Screen swipe effect - Choose the desired type of effect to display when you swipe from one Home screen canvas to the next.

Allow Home screen looping - Loops back to the first canvas after scrolling past the last canvas when viewing the Home screen.

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

Home backup & restore - Select to backup and restore app/widget configurations.

Help - Touch to get information on using the Home screen of your device.

Lock screen

Select screen lock - Select the desired option to secure your phone from the below.

None - No lock screen.

Swipe - Swipe any part of the screen to unlock screen.

Face Unlock - Unlocks the screen through facial recognition. Follow the prompts. You are asked to select Pattern and/or PIN as a backup.

Settings

Pattern - Allows you to set a pattern as your screen lock. It's recommended that you enter a backup PIN as well in case you forget the pattern.

PIN - Enter a numeric PIN to unlock the screen.

Password - Enter a password to unlock the screen.

Swing Lock screen - Tilt your phone up or down to move Lock screen naturally in that direction. Tap to view the screen with emotional effect.

Screen swipe effect - Select the screen effect you want to use when unlocking the screen.

Weather animation - Show weather animation for current location or primary city set in Weather based on auto data updates.

Wallpaper - Select the wallpaper to display for your lock screen.

Shortcuts - Customize shortcuts on the lock screen.

1 From the Home screen, tap the **Menu Key**  > **System settings** > **Display** tab > **Lock screen** > **Shortcuts**.

2 Select one of the shortcut icons that you want to replace. Then select the app you want to replace it with and tap **Save**.

Owner info - Display the owner info on the lock screen.

Lock timer - Allows you to set the amount of time before the screen automatically locks after the screen has timed-out.

Power button instantly locks - Checkmark to instantly lock the screen when the

Power/Lock Key  is pressed.

Front touch buttons

Select the front touch button combination, theme, hide front touch buttons and if you want to use a transparent background, swipe front touch buttons.

Brightness

Adjust the screen brightness by using the slider. Tap **Auto** to set the brightness to automatically change.

Screen timeout

Set the time delay before the screen automatically turns off.

Screen-off effect

Set the screen off effect used when the screen turns off.

Auto-rotate screen

Set to switch orientation automatically when you rotate the phone.

Screen mode

Set the screen mode. Choose from **Standard**, **Vivid**, or **Natural**.

Daydream

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

Font type

Select the desired font type.

Font size

Select the desired font size.

Smart screen

Checkmark this to keep screen on when the phone detects your face looking at the screen.

Smart video

Checkmark this to pause videos while playing automatically when the phone detects you are not looking at the screen.

Notification LED

Select which type of notifications to display the front or back side LEDs for.

Auto-adjust screen tone

Checkmark to save battery power by adjusting screen brightness automatically with analysis of image color.

Settings

Screen capture area

Allow you to set capture screen area. Choose from **Capture full screen** or **Capture part of screen**.

Aspect ratio correction

Change the resolution size of downloaded applications to fit the screen size.

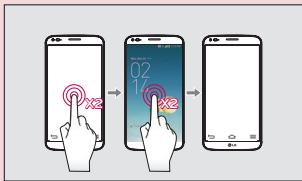
General tab

Gestures

Screen on/off - You can set the phone to turn the screen on by quickly double-tapping the phone. Tap an empty area in the Home screen, Status Bar, and Lock screen to turn the screen off.

NOTE:

Tap on the center area. If you tap on the bottom or the top area, the recognition rate may not be decreased. This feature is also available using the QuickWindow case.



Answer an incoming call - During the incoming call, bring the phone to ear to accept the incoming call.

NOTE:

Do not cover the proximity sensor. Doing so will cause the phone to behave incorrectly.

Fade out ringtone - During the incoming call, pick up the phone from the flat surface to fade out the ringtone.

NOTE:

Do not cover the proximity sensor. Doing so will cause the phone to behave incorrectly.

Silence incoming calls - Flip the device to silence incoming calls.

Snooze or turn off alarm - Flip the device to snooze or stop the alarm.

Pause video - Flip the device to pause the video.

Move Home screen items - Touch and hold an item and tilt the device to move to other home screens.

Help - Touch to get information on using the Gesture function of your device.

Motion sensor calibration - Improve the accuracy of the tilt and speed of the sensor.

One-handed operation

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

Dial keypad - Checkmark to allow you to adjust the position of the dial keypad to the left or right.

LG keyboard - Checkmark to allow you to adjust the position of the LG keyboard to the left or right.

Gesture control - Checkmark to allow you to swipe the keyboard to the left or right to adjust the position of the LG keyboard.

Lock screen - Checkmark to allow you to adjust the position of the the PIN entry to the left or right.

Swipe front touch buttons - Checkmark to allow you to swipe the front touch buttons left or right to adjust the position of buttons.

Settings

Help - Displays help information for each available option.

Storage


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

Battery

See how much battery power is used for device activities. The battery level displays in a percentage. The remaining time of use is also displayed.

Battery percentage on status bar - Displays the battery percentage on the Status Bar.

Battery saver

Tap the switch  to turn this feature on. Tap the switch again to turn it off. Tap **Battery saver** for the following options.

Turn Battery saver on: Select the level you want to turn on the Battery saver.

Auto-sync: Turns off Auto-sync.

Wi-Fi: Turns off Wi-Fi if not in use.

Bluetooth: Turns off Bluetooth if not connected.

Vibrate on touch: Turns off touch feedback.

Brightness: Adjust the brightness.

Auto-adjust screen tone: Turn off auto-adjust screen tone when Battery saver is activated.

Screen timeout: Adjust the screen timeout.

Notification LED: Turns off the notification LED.

Battery saver tips - Touch to access some tips for Battery saver.



Apps

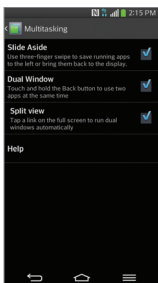
You use the Applications settings menu to view details about the applications installed on your phone, manage their data, force them to stop, and to set whether you want to permit installation of applications that you obtain from websites and email. Swipe to the left or right to access the DOWNLOADED, RUNNING or ALL tabs to view information about your installed apps.

Multitasking

Slide Aside

Slide Aside allows you to quickly switch between three open applications (or tasks) using a three finger gesture.



- 1 From the Home screen, tap the **Menu Key**  > **System settings** > **General** tab > **Multitasking**.
- 2 Tap the **Slide Aside** checkbox to enable/disable the feature.
- 3 Tap the **Home Key**  and open an app.
- 4 Place three fingers on the screen and drag the app off the screen to the left.
- 5 To bring the app back, drag three fingers to the right.



*Some apps may restart when brought back later.

Dual Window

Tap the Dual Window checkbox to use two apps.

- 1 From the Home screen, tap **Home Key**  > **Menu Key**  > **System settings** > **General** tab > **Multitasking** > **Dual Window**.
- 2 Tap the **Dual Window** checkbox to enable/disable the feature.

Settings

Split view

When you select a link on the full screen, the lined contents run on a split screen.

Help

Allows you to view the help information for multitasking features.

Accounts & sync

Use the Accounts & sync settings menu to add, remove, and manage your Google and other supported accounts. You also use these settings to control how and whether all applications send, receive, and sync data on their own schedules and whether all applications can synchronize user data automatically. Gmail, Calendar, and other applications may also have their own settings to control how they synchronize data; see the sections on those applications for details. Touch **Add account** to add new account.

Cloud

Register and add cloud account to quickly and easily use cloud service on LG apps.

NOTE:

If the mobile network is enabled, additional charges may apply, depending on your plan.




Guest mode

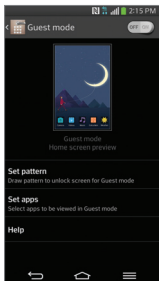
Use **Guest mode** when you let someone else use your phone. They will only be able to use the applications that you've selected. Once you set it up, you can easily put your phone in Guest mode by drawing the guest pattern on the Lock screen that you set, which is different from your normal unlock pattern.

NOTE:

Guests can also use applications that your selected applications link to.

Setting up Guest mode


- 1 From the Home screen, tap the **Menu Key**  > **System settings** > **General** tab > **Guest mode**.
- 2 Tap **Set pattern**, then set the pattern you want to use to put your device in Guest mode.
- 3 Tap **Set apps** to view which apps can be accessed in Guest mode. Tap the **Add** icon  in the upper right corner of the screen to change the Guest apps list.
- 4 Tap the **Use Guest mode** switch  to enable this mode.



Using Guest mode


Guest mode is automatically disabled if your lock sequence is changed from Pattern. Otherwise, manually disable it if you no longer want to allow guest access.

NOTE:

The **Use Guest mode** switch  is off automatically if your lock sequence is changed from Pattern. Otherwise, manually disable it if you no longer want to allow guest access.

Settings

Location access

Use the Location access menu to set your preferences for using and sharing your location when you search for information and use location-based applications, such as Maps. Tap the **Access to my location** switch  to enable the location sources.

GPS satellites - Checkmark to enable your phone's standalone global positioning system (GPS) satellite receiver to pinpoint your location to within an accuracy as close as several meters ("street level"). Actual GPS accuracy depends on a clear view of the sky and other factors.

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

Security

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

Encrypt phone - Allows you to encrypt data on the phone for security. You will be required to enter a PIN or password to decrypt your phone each time you power it on.

Set up SIM card lock - Allows you to set if you want to require a PIN to use or, if set, allows you to change the PIN.

Password typing visible - Checkmark to briefly show each character of passwords as you enter them so that you can see what you enter.

Phone administrators - Add or remove phone administrators.

Unknown sources - Allow installation of non-Play Store applications.

Verify apps - Disallow or warn before installation of apps that may cause harm.

Trusted credentials - Checkmark to allow applications to access your phone's encrypted store of secure certificates and related passwords and other credentials. You use credential storage to establish some kinds of VPN and Wi-Fi connections. If you have not set a password for the secure credential storage, this setting is dimmed.

Install from storage - Touch to install a secure certificate.

Clear credentials - Deletes all secure certificates and related credentials and erases the secure storage's own password, after prompting you to confirm that you want to do this.


Language & input

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

Language - Choose a language to use on your phone.

Personal dictionary - Allows you to view, edit, and add words to your personal dictionary.

Default - Allows you to select the default keyboard type.

Checkmark the keyboard you want to use from **Google voice typing** and **LG Keyboard**. Tap  to configure each keyboard's settings.

Voice Search - Touch to configure the Voice Search settings.

Text-to-speech output - Touch to set the preferred engine or general settings for text-to-speech output.

Pointer speed - Adjust the pointer speed.

Backup & reset

Backup my data - Back up app data, Wi-Fi passwords, and other settings to Google servers.

Backup account - Displays the account that is currently being used to back up information.

Automatic restore - When reinstalling an app, restore backed up settings and data.

Settings

Collect diagnostics - Allows you to use the Diagnostics system manager application. Consistent with your carrier's privacy policy, this software collects diagnostics data so that your carrier can better troubleshoot technical issues with your device or service.

LG Backup service - Backup, scheduled backup, restore and quick data transfer are available.

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.

Date & time


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

Accessibility

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


NOTE:

Requires additional plug-ins to become selectable.

TalkBack - Allows you to set up the TalkBack function which assists people with impaired vision by providing verbal feedback. Tap the switch  the top right corner of the screen to turn it on. Tap **Settings** at the bottom of the screen to adjust the TalkBack settings.

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 - Sets the color contrast for better screen viewing. Tap the switch  at the top right corner of the screen to turn it on. Then tap the screen and drag across the screen in any direction until you see the color contrast you want to use.

Magnification gestures - This feature is turned on, you can zoom in and out by triple-tapping the screen.

Shades - Set the screen to be shade of black.

Mono audio - Checkmark to allow headset sound to be routed to both the right and left channel. To manually set the audio route, move the slider on the mono audio slide bar.


Touch & hold delay - Sets the touch and hold delay (short, medium, or long).

Universal touch - Tap the switch  to toggle it on or off. On allows you to replace the hardware keys with a Universal touch board . Tap the Universal touch icon  to access the **Power, Home, Volume down, Volume up, and Pinch** buttons. Draw a "C" on the board to automatically display the Dial tab. Draw an "M" on the board to automatically display the Messaging application. Draw a "W" on the board to automatically launch the browser application.

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 - Turning this feature on allows you to activate an accessibility feature by tapping the **Home Key**  three (3) times. Select an accessibility option to use with this feature from **Off, Show all, TalkBack, Invert color, Universal touch, and Accessibility settings**.

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

Select USB connection method - Opens a dialog box to choose the default connection mode when connecting your phone to a PC via USB. Choose from **Charge phone, Media sync (MTP), LG software, or Send images (PTP)**.

Ask upon connecting - Checkmark to have the phone ask you to choose which USB connection mode it should connect with to a PC.

Help - Touch to get information on the different types of USB connections.

Settings

PC Suite - Allow Wi-Fi connection to transfer music and images between computer and phone.

On-Screen Phone - Turns the On-Screen Phone function on so that you can receive Wi-Fi connection requests. Refer to page 131 for LG On-Screen Phone.

Help - Displays help information for the PC Suite and the On-Screen Phone function.

Accessory

QuickWindow case - Activate the QuickWindow case which lets you see a small portion of the screen with the cover closed.

USB storage - When USB is connected to the phone via OTG(On The Go) USB cable, app panel will be displayed automatically.

Earphone - When earphone is connected, app panel will be displayed automatically.

About phone

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






Regulatory and Safety

Go to **System settings** > **General** tab > **About phone** > **Regulatory and Safety** to get regulatory and safety information.

LG SOFTWARE

On-Screen Phone allows you to view your mobile phone screen from a PC via a USB and Wi-Fi. You can also control your mobile phone from your PC, using the mouse or keyboard.

On-Screen Phone icons

-  Changes the On-Screen Phone preferences.
-  Connects your mobile phone to your PC, or disconnects it.
-  Minimizes the On-Screen Phone window.
-  Maximizes the On-Screen Phone window.
-  Exits the On-Screen Phone program.

On-Screen Phone features

- **Real-time transfer and control:** Displays and controls your mobile phone screen when connected to your PC.
- **Mouse control:** Allows you to control your mobile phone by using the mouse to click and drag on your PC screen.
- **Text input with keyboard:** Allows you to compose a text message or note using your computer keyboard.
- **File transfer (mobile phone to PC):** Sends a file from your mobile phone (e.g. Gallery, Video Player, Music and POLARIS Viewer 5) to your PC. Simply right-click on the file and drag it to send it to your PC.
- **File transfer (PC to mobile phone):** Sends files from your PC to your mobile phone. Just select the files you wish to transfer and drag and drop them into the On-Screen Phone window. The sent files are stored in the OSP folder.

LG On-Screen Phone

NOTE: Please make sure that LG Home is the default launcher.

• **Real-time event notifications:**


Prompts a pop-up to inform you of any incoming calls or text messages, as well as alarm and event notifications.

How to install On-Screen Phone on your PC

Visit **LG.com** (<http://www.lg.com/us>). Locate the search box in the upper right corner and enter the model number. From the **SUPPORT** list, select your model. Scroll down and select the **OSP** tab and click on **DOWNLOAD**. When prompted, select **Run** to install On-Screen Phone on your PC.

How to connect your mobile phone to your PC

On-Screen Phone provides, USB, and Wi-Fi connection. Please follow the instructions on the Connection Wizard of the On-Screen Phone program.

NOTE: To use On-Screen Phone using Wi-Fi connection, from the Home screen tap the **Menu Key**  > **System settings** > **General** tab > **PC connection** > **On-Screen Phone** checkbox is selected.

Please make sure that the battery may run out more quickly due to the current consumption if On-Screen Phone is connected via Wi-Fi.


When you connect your mobile phone to your PC via Mobile Hotspot and access to the Internet on the PC, additional data charges may be incurred depending on your data plan.

Access to the Internet using Wi-Fi networks may not work well depending on the network's traffic. When you enlarge the On-Screen Phone window, the display on the screen might become slow.

To check the phone-to-PC connection

Once the devices have been connected, drag the Status Bar down to check the On-Screen Phone connection status.

To disconnect your phone from your PC

Click  in the top left of the On-Screen Phone window. Alternatively, drag the Status Bar down and select **On-Screen Phone connected** > **OK**.

LG PC Suite

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

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

- Manage and play your media contents (music, movie, picture) on your PC.
- Send multimedia contents to your device.
- Backup the applications in your device.
- Update your device's software.
- Play multimedia contents of your PC from your device.
- Backup, create, and edit the memos in your device.

NOTE:

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

Installing the LG PC Suite Software

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

- 1 Go to www.lg.com/us.
- 2 Go to **SUPPORT > MOBILE SUPPORT > PC Sync**.
- 3 Select the model information and click **GO**.
- 4 Scroll down, select the **PC Sync** tab and click **DOWNLOAD** to download LG PC Suite.

System Requirements for LG PC Suite software

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

NOTE: LG Integrated USB Driver

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

Phone software update

Phone software update

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** > **General** tab > **About phone** > **Software information**.

To perform the phone software update, from the Home screen, tap the **Menu Key** (≡) > **System settings** > **General** tab > **About phone** > **Update Center** > **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.

Trademarks

Trademarks

- Copyright 2013 LG Electronics, Inc. All rights reserved. LG and the LG logo are registered trademarks of LG Group and its related entities.
- Bluetooth® is a registered trademark of the Bluetooth SIG, Inc. worldwide.
- Wi-Fi®, the Wi-Fi CERTIFIED logo, and the Wi-Fi logo are registered trademarks of the Wi-Fi Alliance.
- All other trademarks and copyrights are the property of their respective owners.



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ABOUT DIVX VIDEO-ON-DEMAND: This DivX Certified® device must be registered in order to play purchased DivX Video-on-Demand (VOD) movies. To obtain your registration code, locate the DivX VOD section in your device setup menu. Go to vod.divx.com for more information on how to complete your registration.

DivX Certified® to play DivX® video up to HD 720p, including premium content. DivX®, DivX Certified® and associated logos are trademarks of Rovi Corporation or its subsidiaries and are used under license.

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.

- Wi-Fi® and Wi-Fi Protected Access® are registered trademarks of the Wi-Fi Alliance.

Dolby Digital Plus



Manufactured under license from Dolby Laboratories. Dolby and the double-D symbol are trademarks of Dolby Laboratories.

Accessories

These accessories are available for use with your phone. (Items described below may be optional and sold separately.)

Travel adapter



Data cable

Connect your phone and PC.



User Guide

Learn more about your phone.



SIM opener



NOTE:

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

Troubleshooting

This section 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.

Message	Possible causes	Possible corrective measures
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 text and picture messages	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.

- The flexibility of this product is limited to withstand ordinary and normal use. This phone may be bent flat up to 180 degrees for a limited period of time but should not be bent inward. Damages caused by misuse, including but not limited to intentionally bending or continually exerting force on the product, may lead to permanent damage to the display and/or other parts and functions of the phone.
- For your safety, do not remove the battery incorporated in the product.
- Do not disassemble or open crush, bend or deform, puncture or shred.
- Only use the battery with a charging system that has been approved and qualified with the system per IEEE-Std-1725-2006. Use of an unqualified and non-LG-approved battery or charger may present a risk of fire, explosion, leakage, or other hazard.
- Repairs under warranty, at LG's option, may include replacement parts or boards that are either new or reconditioned, provided that they have functionality equal to that of the parts being replaced.
- 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.
- Avoid dropping the phone. If the phone is dropped, especially on a hard surface, and the user suspects damage, take it to a service center for inspection.

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 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.
- Never store your phone in temperature less than -4°F or greater than 122°F .
- Charging temperature range is between 32°F and 113°F . Do not charge the battery out of recommended temperature range. Charging out of recommended range might cause the generating heat or serious damage of battery. And also, it might cause the deterioration of battery's characteristics and cycle life.

- 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.
- 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.
- Use your phone in temperatures between 0°C /32°F and 40°C/104°F, if possible. Exposing your phone to extremely low or high temperatures may result in damage, malfunction, or even explosion.

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 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.

Wi-Fi Caution

This device is capable of operating in 802.11a/n/ac mode. For 802.11a/n/ac 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/ac 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 to not violate federal regulations to protect Mobile Satellite Services.

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.

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 values are:

* Head: 0.92 W/kg

* Body (Body-worn/Hotspot): 1.15 W/kg

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

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

The FCC has granted an Equipment Authorization for this model phone with all reported SAR levels evaluated as in compliance with the FCC RF emission guidelines. SAR information on this model phone is on file with the FCC and can be found under the Display Grant section of <http://www.fcc.gov/oet/ea/fccid/> after searching on FCC ID ZNFD959.

For more information about SARs, see the FCC's OET Bulletins 56 and 65 at 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. 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 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>

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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 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.

For Your Safety

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 ensure that the Hearing Aid Compatibility rating for your phone is maintained, secondary transmitters such as Bluetooth or 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

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.