



# QUICK REFERENCE GUIDE

## LED TV\*

\* LG LED TV applies LCD screen with LED backlights.

Please read this manual carefully before operating your set and retain it for future reference.


32LP560M  
42LP560M


# IMPORTANT SAFETY INSTRUCTIONS

Always comply with the following precautions to avoid dangerous situations and ensure peak performance of your product.



TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER TO QUALIFIED SERVICE PERSONNEL.

 The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

 The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

## WARNING/CAUTION

- TO REDUCE THE RISK OF FIRE AND ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.

### WARNING

If you ignore the warning message, you may be seriously injured or there is a possibility of accident or death.

### CAUTION

If you ignore the caution message, you may be slightly injured or the product may be damaged.

### NOTE

The note helps you understand and use the product safely. Please read the note carefully before using the product.

Read these instructions.  
Keep these instructions.  
Heed all warnings.  
Follow all instructions.



- Do not use this apparatus near water.



- Clean only with a dry cloth.



- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.



- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.



- Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet (Can differ by country).



- Do not press strongly upon the panel with a hand or a sharp object such as a nail, pencil or pen, or make a scratch on it.



- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.



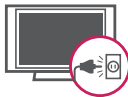
- Only use attachments/accessories specified by the manufacturer.



- Use only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.



- Unplug this apparatus during lightning storms or when unused for long periods of time.



- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.



- Do not stick metal objects or any other conductive material into the power cord. Do not touch the end of the power cord while it is plugged in.
- Keep the packing anti-moisture material or vinyl packing out of the reach of children. Anti-moisture material is harmful if swallowed. If swallowed by mistake, force the patient to vomit and visit the nearest hospital. Additionally, vinyl packing can cause suffocation. Keep it out of the reach of children.

- **CAUTION** concerning the Power Cord (Can differ by country):  
It is recommended that appliances be placed upon a dedicated circuit; that is, a single outlet circuit which powers only that appliance and has no additional outlets or branch circuits. Check the specification page of this owner's manual to be certain. Do not connect too many appliances to the same AC power outlet as this could result in fire or electric shock. Do not overload wall outlets. Overloaded wall outlets, loose or damaged wall outlets, extension cords, frayed power cords, or damaged or cracked wire insulation are dangerous. Any of these conditions could result in electric shock or fire. Periodically examine the cord of your appliance, and if its appearance indicates damage or deterioration, unplug it, discontinue use of the appliance, and have the cord replaced with an exact replacement part by an authorized service. Protect the power cord from physical or mechanical abuse, such as being twisted, kinked, pinched, closed in a door, or walked upon. Pay particular attention to plugs, wall outlets, and the point where the cord exits the appliance. Do not move the TV with the power cord plugged in. Do not use a damaged or loose power cord. Be sure do grasp the plug when unplugging the power cord. Do not pull on the power cord to unplug the TV.



- **Warning** - To reduce the risk of fire or electrical shock, do not expose this product to rain, moisture or other liquids. Do not touch the TV with wet hands. Do not install this product near flammable objects such as gasoline or candles, or expose the TV to direct air conditioning.

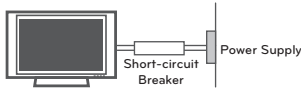


- Do not expose to dripping or splashing and do not place objects filled with liquids, such as vases, cups, etc. on or over the apparatus (e.g. on shelves above the unit).



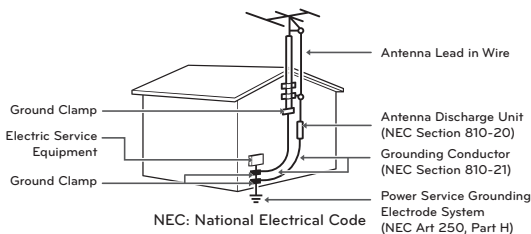
- **Grounding**

(Except for devices which are not grounded.) Ensure that you connect the earth ground wire to prevent possible electric shock (i.e. a TV with a three-prong grounded AC plug must be connected to a three-prong grounded AC outlet). If grounding methods are not possible, have a qualified electrician install a separate circuit breaker. Do not try to ground the unit by connecting it to telephone wires, lightening rods, or gas pipes.



- As long as this unit is connected to the AC wall outlet, it is not disconnected from the AC power source even if the unit is turned off.
- Do not attempt to modify this product in any way without written authorization from LG Electronics. Unauthorized modification could void the user's authority to operate this product.
- **Outdoor Antenna Grounding** (Can differ by country): If an outdoor antenna is installed, follow the precautions below. An outdoor antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can come in contact with such power lines or circuits as death or serious injury can occur. Be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges. Section 810 of the National Electrical Code (NEC) in the U.S.A. provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes and requirements for the grounding electrode.

**Antenna grounding according to the National Electrical Code, ANSI/NFPA 70**



- **Cleaning**

When cleaning, unplug the power cord and wipe gently with a soft cloth to prevent scratching. Do not spray water or other liquids directly on the TV as electric shock may occur. Do not clean with chemicals such as alcohol, thinners or benzine.

- **Moving**

Make sure the product is turned off, unplugged and all cables have been removed. It may take 2 or more people to carry larger TVs. Do not press or put stress on the front panel of the TV.

- **Ventilation**

Install your TV where there is proper ventilation. Do not install in a confined space such as a bookcase. Do not cover the product with cloth or other materials while plugged. Do not install in excessively dusty places.

- If you smell smoke or other odors coming from the TV, unplug the power cord and contact an authorized service center.
- Keep the product away from direct sunlight.
- Never touch this apparatus or antenna during a thunder or lightning storm.
- When mounting a TV on the wall, make sure not to install the TV by hanging the power and signal cables on the back of the TV.
- Do not allow an impact shock or any objects to fall into the product, and do not drop anything onto the screen.
- **Disconnecting the Main Power**  
The power outlet used with this device must remain easily accessible.
- Store the accessories (battery, etc.) in a safe location out of the reach of children.
- This apparatus use batteries. In your community there might be regulations that require you to dispose of these batteries properly due to environmental considerations. Please contact your local authorities for disposal or recycling information.
- Do not dispose of batteries in a fire.
- Do not short circuit, disassemble or allow the batteries to overheat.

- **Dot Defect**

The Plasma or LCD panel is a high technology product with resolution of two million to six million pixels. In a very few cases, you could see fine dots on the screen while you're viewing the TV. Those dots are deactivated pixels and do not affect the performance and reliability of the TV.

- **Generated Sound**

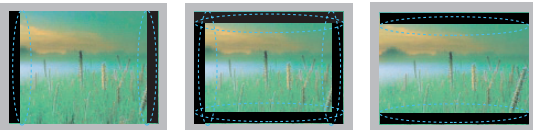
"Cracking" noise: A cracking noise that occurs when watching or turning off the TV is generated by plastic thermal contraction due to temperature and humidity. This noise is common for products where thermal deformation is required.

Electrical circuit humming/panel buzzing: A low level noise is generated from a high-speed switching circuit, which supplies a large amount of current to operate a product. It varies depending on the product.

This generated sound does not affect the performance and reliability of the product.

- Take care not to touch the ventilation openings. When watching the TV for a long period, the ventilation openings may become hot. This does not affect the performance of the product or cause defects in the product.
- If the TV feels cold to the touch, there may be a small "flicker" when it is turned on. This is normal, there is nothing wrong with TV. Some minute dot defects may be visible on the screen, appearing as tiny red, green, or blue spots. However, they have no adverse effect on the TV's performance. Avoid touching the LCD screen or holding your finger(s) against it for long periods of time. Doing so may produce some temporary distortion effects on the screen.

### Preventing "Image burn" or "Burn-in" on your TV screen



- If a fixed image displays on the TV screen for a long period of time, it will be imprinted and become a permanent disfigurement on the screen. This is "image burn" or "burn-in" and not covered by the warranty.
- If the aspect ratio of the TV is set to 4:3 for a long period of time, image burn may occur on the letterboxed area of the screen.
- Avoid displaying a fixed image on the TV screen for a long period of time (2 or more hours for LCD, 1 or more hours for the Plasma TV) to prevent image burn.

## LICENSES

Supported licenses may differ by model. For more information about licenses, visit 'www.lg.com'.



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ABOUT DIVX VIDEO-ON-DEMAND: This DivX Certified<sup>®</sup> 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](http://vod.divx.com) for more information on how to complete your registration.

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

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

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### NOTE

- Image shown may differ from your TV.
- Your TV's OSD (On Screen Display) may differ slightly from that shown in this manual.
- The available menus and options may differ from the input source or product model that you are using.
- New features may be added to this TV in the future.

## INSTALLATION PROCEDURE

- 1 Open the package and make sure all the accessories are included.
- 2 Attach the stand to the TV set.
- 3 Connect an external device to the TV set.

## ASSEMBLING AND PREPARING

### Unpacking

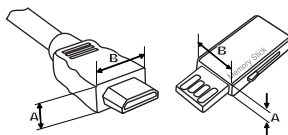
Check your product box for the following items. If there are any missing accessories, contact the dealer where you purchased your product. The illustrations in this manual may differ from the actual product and item.

#### CAUTION

- Do not use any unapproved items to ensure the safety and product life span.
- Any damages or injuries by using unapproved items are not covered by the warranty.
- In case of some model, the thin film on screen is a part of TV, So don't take it off.

#### NOTE

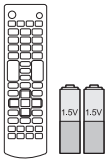
- The items supplied with your product may vary depending on the model.
- Product specifications or contents of this manual may be changed without prior notice due to upgrade of product functions.
- For an optimal connection, HDMI cables and USB devices should have bezels less than 10 mm (0.39 inches) thick and 18 mm (0.7 inches) width.
- Use an extension cable that supports USB 2.0 if the USB cable or USB memory stick does not fit into your TV's USB port.



\*A ≤ 10 mm (0.39 inches)

\*B ≤ 18 mm (0.7 inches)





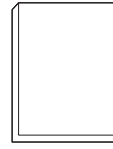
**Remote Control, Batteries (AAA)**  
(See p. 18)

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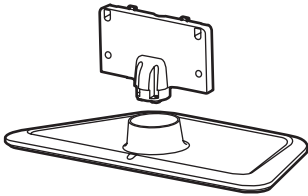
**Power Cord**

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**Quick Reference Guide**

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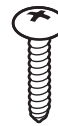
**Stand Body, Stand Base**  
(See p. 13)

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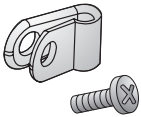
**Stand Screws**  
7 EA, M4 x 14  
(See p. 13)

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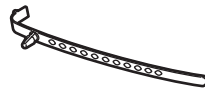
**Desk-Mount Screw**  
(See p. 14)

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**Power Cord Holder and Screw**  
(See p. 16)

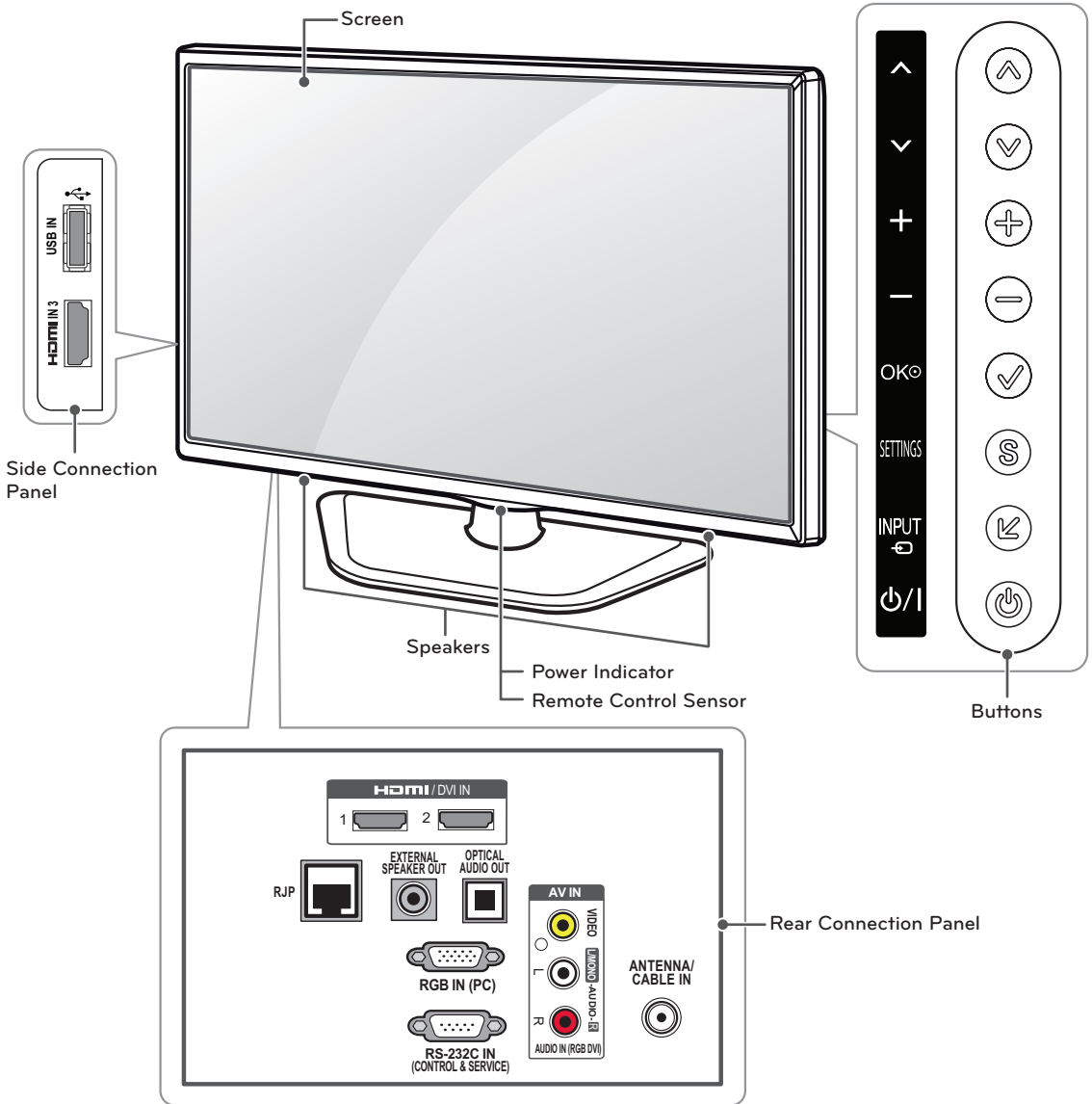
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**Cable Holder**  
(See p. 16)

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## Parts and Buttons



ENGLISH

Button	Description
▲/▼ (▲/▼)	Scrolls through the saved channels.
+/- (+/-)	Adjusts the volume level.
✓ (OK)	Selects the highlighted menu option or confirms an input.
S (SETTINGS)	Accesses the main menus, or saves your input and exits the menus.
↶ (INPUT)	Changes the input source.
⏻/⏿	Turns the power on or off.

PORT	Description
HDMI/DVI IN	Digital Connection. Support HD video and Digital audio. Accepts DVI video using an adapter or HDMI to DVI cable(not included).
RJP	Connect to remote jack pack control out port.
EXTERNAL SPEAKER OUT	For use with external speakers.
OPTICAL AUDIO OUT	Connect digital audio to various types of equipment. Connect to a Digital Audio Component. Use an Optical audio cable.
RGB IN(PC)	Analog PC Connection. Use a D-sub 15pin cable(VGA cable).
RS-232C IN (CONTROL & SERVICE)	Used by third party devices. This port is used for service of Hotel mode.
AV IN	Analog composite connection. Support standard definition video only(480i). Used for PC/DTV audio input jack.
ANTENNA/CABLE IN	Connect over-the air signals to this jack.

## Lifting and Moving the TV

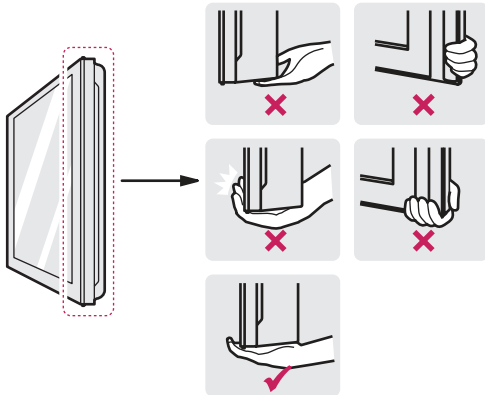
When moving or lifting the TV, read the following to prevent the TV from being scratched or damaged and for safe transportation regardless of its type and size.

### CAUTION

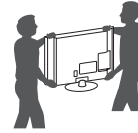
- Avoid touching the screen at all times, as this may result in damage to the screen.
- It is recommended to move the TV in the box or packing material that the TV originally came in.
- Before moving or lifting the TV, disconnect the power cord and all cables.
- When holding the TV, the screen should face away from you to avoid damage.



- Hold the top and bottom of the TV frame firmly. Make sure not to hold the transparent part, speaker, or speaker grill area.



- Use at least two people to move a large TV.
- When transporting the TV by hand, hold the TV as shown in the following illustration.



- When transporting the TV, do not expose the TV to jolts or excessive vibration.
- When transporting the TV, keep the TV upright; never turn the TV on its side or tilt towards the left or right.

## Setting up the TV

You can mount your TV to a wall or attach the stand if you wish to place the TV on an entertainment center or other furniture.

### Attaching the Stand

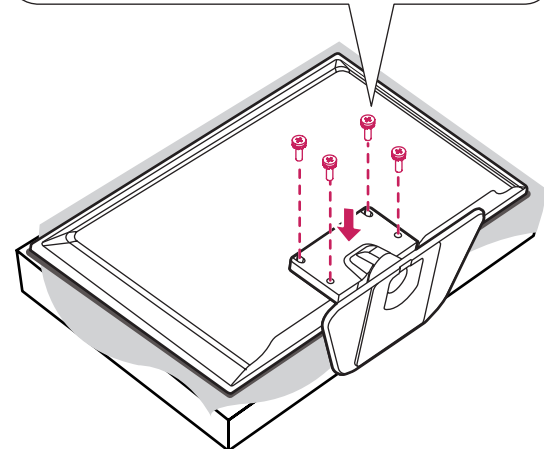
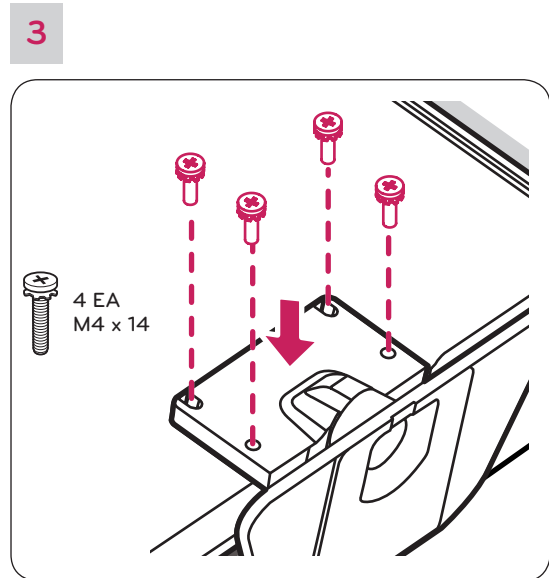
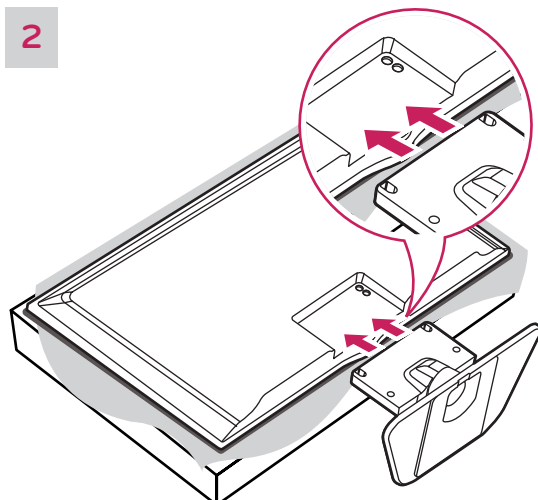
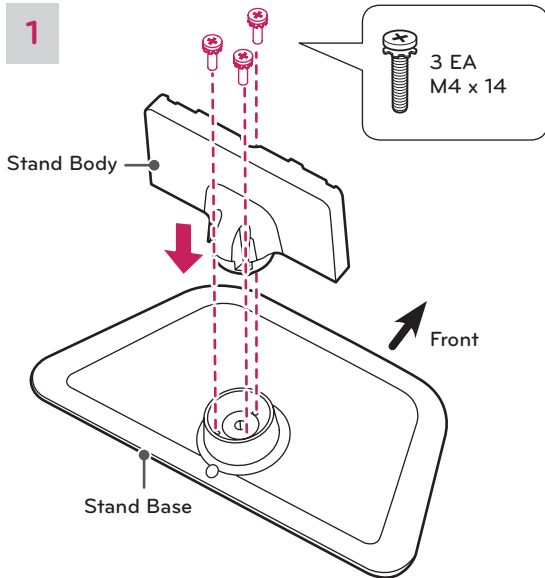
If you are not mounting the TV to a wall, use the following instructions to attach the stand.

#### ⚠ CAUTION

- When attaching the stand to the TV set, place the screen facing down on a cushioned table or flat surface to protect the screen from scratches.
- Make sure that the screws are fastened tightly. (If they are not fastened securely enough, the TV may tilt forward after being installed.)
- Do not tighten the screws with too much force; otherwise they may be damaged and come loose later.

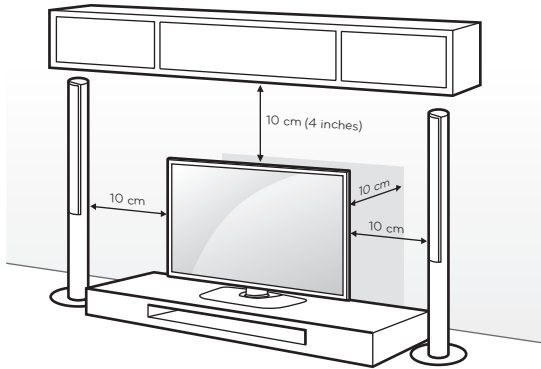
#### ! NOTE

- Remove the stand before installing the TV on a wall mount by performing the stand attachment in reverse.



## Mounting on a Table

- 1 Lift and tilt the TV into its upright position on a table.
  - Leave a 10 cm (4 inches) (minimum) space from the wall for proper ventilation.



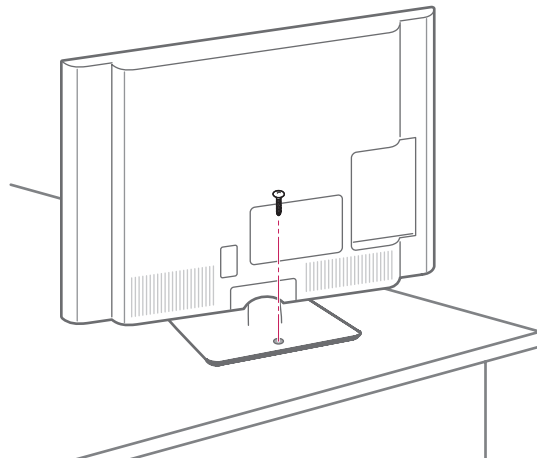
- 2 Connect the power cord to a wall outlet.

### CAUTION

- Do not place the TV near or on sources of heat, as this may result in fire or other damage.

### Securing the TV to a table

Attach the TV to a table to prevent from tilting forward, damage, and potential injury. Mount the TV on a table, and then insert and tighten the supplied screw on the rear of the stand.



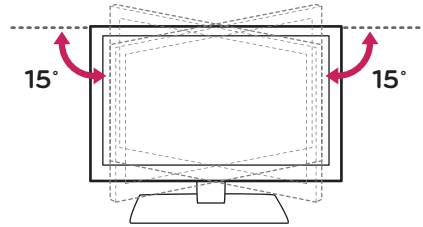
### WARNING

- To prevent TV from falling over, the TV should be securely attached to the floor/wall per installation instructions. Tipping, shaking, or rocking the TV may cause injury.

### Adjusting the angle of the TV to suit view

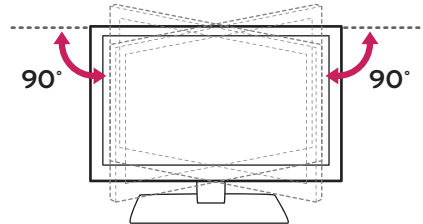
(For 32LP560M)

Swivel 15 degrees to the left or right and adjust the angle of the TV to suit your view.



(For 42LP560M)

Swivel 90 degrees to the left or right and adjust the angle of the TV to suit your view.



### CAUTION

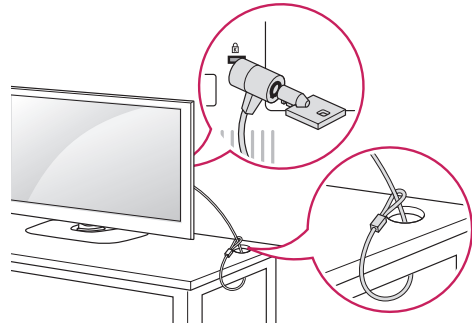
- When adjusting the angle of the TV, watch out for your fingers.
  - Personal injury may occur if hands or fingers are pinched. If the product is tilted too much, it may fall, causing damage or injury.

### Using the Kensington security system (optional)

The Kensington security system connector is located at the rear of the TV.

For more information of installation and using, refer to the manual provided with the Kensington security system or visit <http://www.kensington.com>.

Connect the Kensington security system cable between the TV and a table.

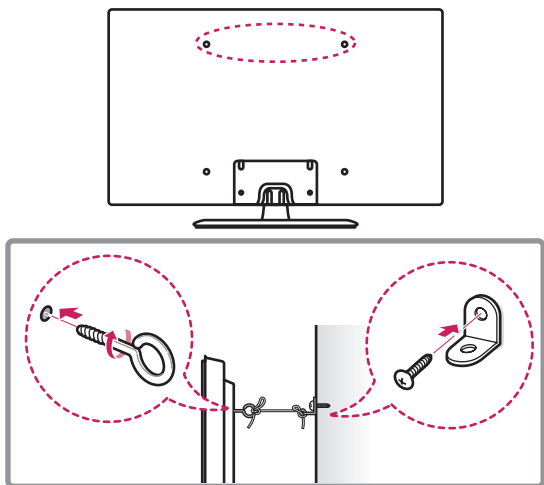


### NOTE

- The Kensington security system is optional. You can obtain additional accessories from your local dealer.

**Securing the TV to a wall (optional)**

(Depending on model)



- 1 Insert and tighten the eye-bolts, or TV brackets and bolts on the back of the TV.  
- If there are bolts inserted at the eye-bolts position, remove the bolts first.
- 2 Mount the wall brackets with the bolts to the wall. Match the location of the wall bracket and the eye-bolts on the rear of the TV.
- 3 Connect the eye-bolts and wall brackets tightly with a sturdy rope or cable. Make sure to keep the rope parallel to the flat surface.

**CAUTION**

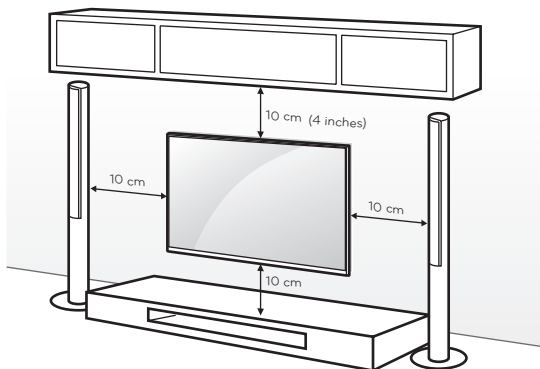
- Make sure that children do not climb on or hang on the TV.

**NOTE**

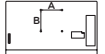
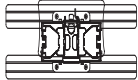

- Use a platform or cabinet that is strong and large enough to support the TV securely.
- Brackets, bolts, and ropes are optional. You can obtain additional accessories from your local dealer.

**Mounting on a Wall**

An optional wall mount can be used with your LG Television. Consult with your local dealer for a wall mount that supports the VESA standard used by your TV model. Carefully attach the wall mount bracket at the rear of the TV. Install the wall mount bracket on a solid wall perpendicular to the floor. If you are attaching the TV to other building materials, please contact qualified personnel to install the wall mount. Detailed instructions will be included with the wall mount. We recommend that you use an LG brand wall mount.



Make sure to use screws and wall mounts that meet the VESA standard. Standard dimensions for the wall mount kits are described in the following table.

Model	32LP560M	42LP560M
VESA (A x B) 	200 x 100	200 x 200
Standard screw	M4	M6
Number of screws	4	4
Wall mount bracket (optional)  	LSW130B	LSW230B

**! CAUTION**

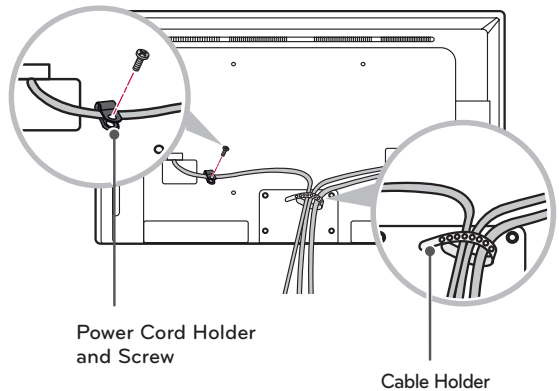
- Disconnect the power before moving or installing the TV. Otherwise electric shock may occur.
- If you install the TV on a ceiling or slanted wall, it may fall and result in severe injury. Use an authorized LG wall mount and contact the local dealer or qualified personnel.
- Do not over tighten the screws as this may cause damage to the TV and void your warranty.
- Use the screws and wall mounts that meet the VESA standard. Any damages or injuries by misuse or using an improper accessory are not covered by the warranty.

**! NOTE**

- The wall mount bracket is optional. You can obtain additional accessories from your local dealer.
- Use the screws that are listed in the VESA standard screw specifications.
- The wall mount kit includes an installation manual and necessary parts.
- The length of screws may differ depending upon the wall mount. Make sure to use the proper length.
- For more information, refer to the manual supplied with the wall mount.

**Tidying Cables**

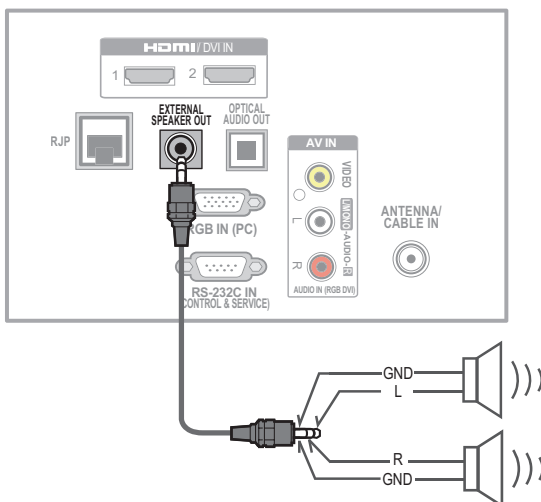
- 1 Install the power cord holder and power cord. It will help prevent the power cable from being removed by accident.
- 2 Gather and bind the cables with the cable holder.

**! CAUTION**

- Do not move the TV by holding the cable holder and power cord holder, as the cable holders may break, and injuries and damage to the TV may occur.

**External Speaker Out**

Connect the external speaker.

**! NOTE**

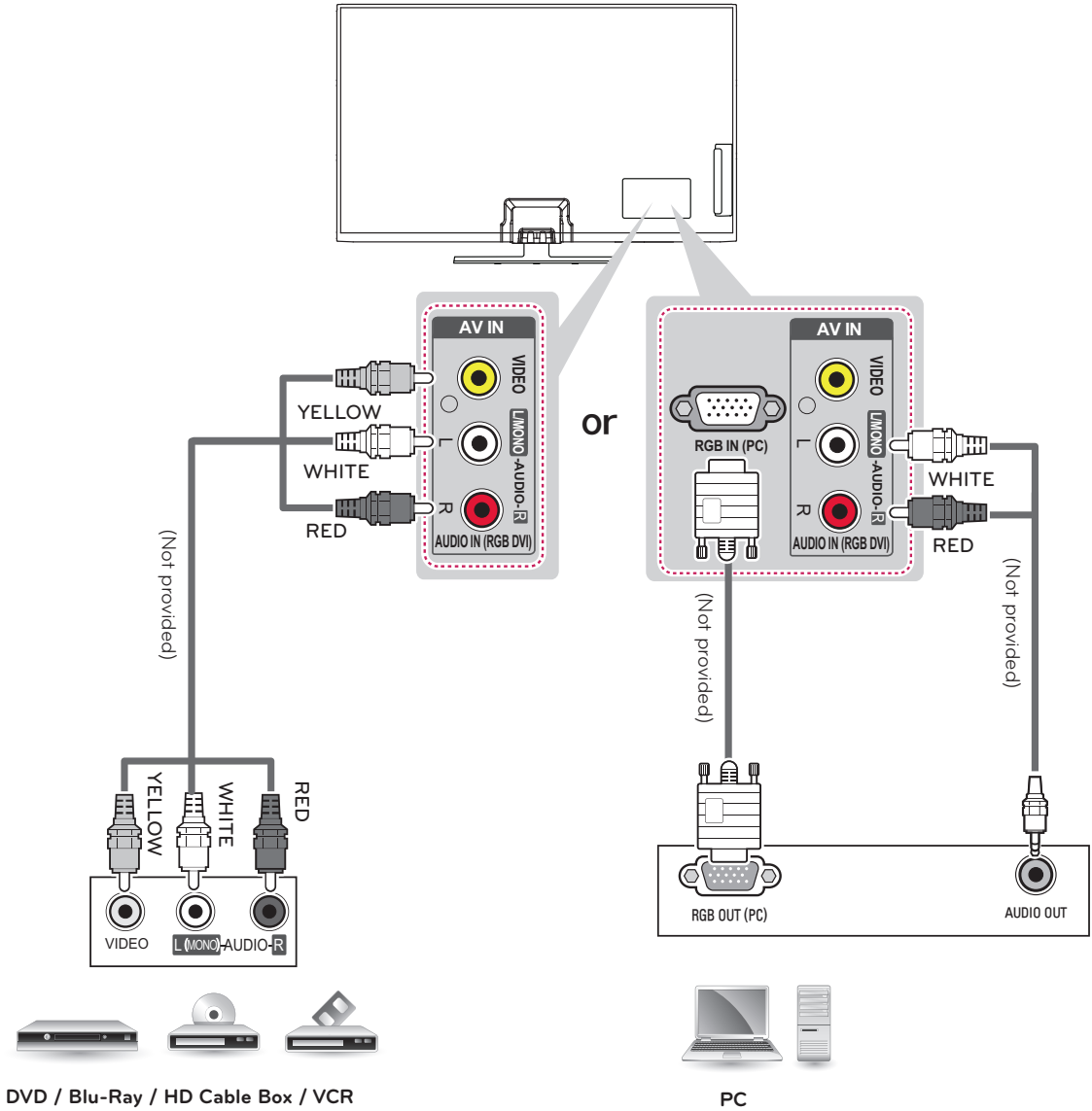
- Make sure that the external speaker should be connected with TV under power-off state.
- Use external speaker with SE type (3 pin).



## Making Connections

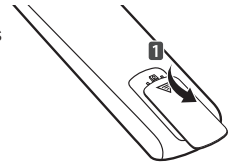
- Image shown may differ from your TV.

Connect the external devices.



# REMOTE CONTROL

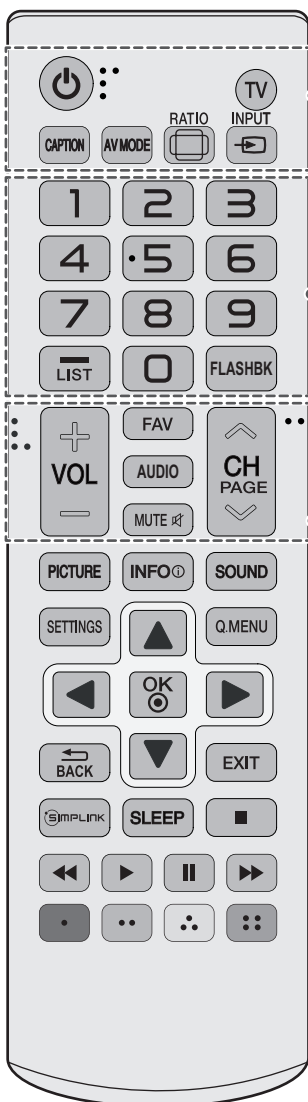
The descriptions in this manual are based on the buttons on the remote control. Please read this manual carefully and use the TV correctly. To install batteries, open the battery cover, replace batteries (1.5 V AAA) matching the ⊕ and ⊖ ends to the label inside the compartment, and close the battery cover. To remove the batteries, perform the installation actions in reverse.



## ⚠ CAUTION

- Do not mix old and new batteries, as this may damage the remote control.

This remote uses infrared light. When in use, it should be pointed in the direction of the TV's remote sensor.



### ⏻ (POWER)

Turns the TV on or off.

### TV

Returns to the last TV channel.

### CAPTION

Activates or deactivates the subtitles.

### AV MODE

Selects an AV mode.

### ⏏ RATIO

Resizes an image.

### ⏪ INPUT

Changes the input source.

### Number button

Enters numbers.

### - (Dash)

Inserts a dash between numbers such as 2-1 and 2-2.

### LIST

Accesses the saved channel list.

### FLASHBK

Tunes to the last channel or input viewed.

### + VOL -

Adjusts the volume level.

### FAV

Accesses your favorite channel list.

### AUDIO

Digital signal: Changes the audio language.  
Analog signal: Changes the sound setting.

### MUTE 🔇

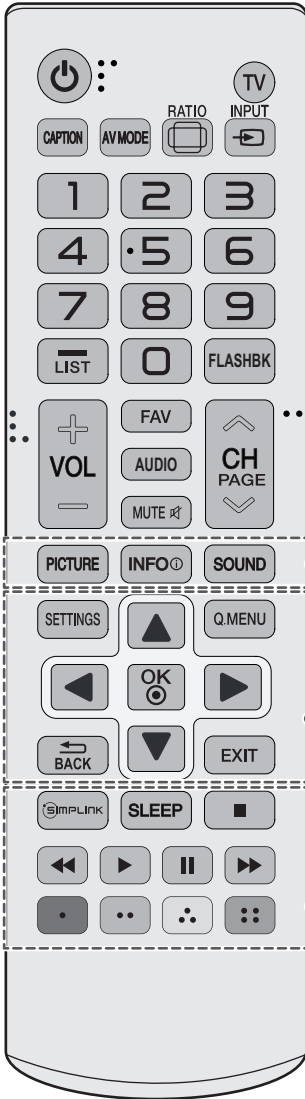
Mutes all sounds.

### ⏪ CH ⏩

Scrolls through the saved channels.

### ⏪ PAGE ⏩

Moves to the previous or next screen.



**PICTURE**

Changes the image mode.

**INFO** ⓘ

Shows information on the current program.

**SOUND**

Changes the sound mode.

**SETTINGS**

Accesses the main menu.

**Q.MENU**

Accesses the quick menu.

**Navigation buttons** (up/down/left/right)

Scrolls through menus or options.

**OK** ⓘ

Selects menus or options and confirms your input.

**BACK**

Returns to the previous screen.

**EXIT**

Clears all on-screen displays and returns to TV viewing.

**SIMPLINK**

Accesses the AV devices connected to the TV.  
Opens the SIMPLINK menu.

**SLEEP**

Sets the length of time until the TV to turns off.

**Control buttons** (■, ▶, ||, ◀, ▶▶)

Controls SIMPLINK compatible devices (USB, SIMPLINK).

**Color buttons** (■): Red, (■): Green, (■): Yellow, (■): Blue

These access special functions in some menus.

# SPECIFICATIONS

Product specifications may be changed without prior notice due to upgrade of product functions.

<b>Power requirement</b>		AC 100 - 240 V ~ 50 / 60 Hz
<b>Television System</b>		NTSC-M, ATSC, 64 & 256 QAM
<b>Program Coverage</b>		VHF 2-13, UHF 14-69, CATV 1-135, DTV 2-69, CADTV 1-135
<b>External Antenna Impedance</b>		75 $\Omega$
<b>Environment condition</b>	Operating Temperature	0 °C ~ 40 °C (32 °F ~ 104 °F)
	Operating Humidity	Less than 80 %
	Storage Temperature	-20 °C ~ 60 °C (-4 °F ~ 140 °F)
	Storage Humidity	Less than 85 %

MODELS		32LP560M (32LP560M-UZ)
Dimensions (W x H x D)	With stand	738 x 497 x 207 (mm)
		29.1 x 19.6 x 8.1 (inch)
	Without stand	738 x 449 x 79 (mm)
		29.1 x 17.7 x 3.1 (inch)
Weight	With stand	7.0 kg (15.4 lbs)
	Without stand	6.4 kg (14.1 lbs)
Current Value / Power consumption		1.3 A / 80 W

MODELS		42LP560M (42LP560M-UZ)
Dimensions (W x H x D)	With stand	968 x 629 x 236 (mm)
		38.1 x 24.8 x 9.3 (inch)
	Without stand	968 x 579 x 79 (mm)
		38.1 x 22.8 x 3.1 (inch)
Weight	With stand	10.7 kg (23.6 lbs)
	Without stand	9.6 kg (21.2 lbs)
Current Value / Power consumption		1.6 A / 110 W

**HDMI (DTV) supported mode**

Resolution	Horizontal Frequency (kHz)	Vertical Frequency (Hz)
720 x 480p	31.47	59.94
	31.50	60.00
1280 x 720p	44.96	59.94
	45.00	60.00
1920 x 1080i	33.72	59.94
	33.75	60.00
1920 x 1080p	26.97	23.976
	27.00	24.00
	33.71	29.97
	33.75	30.00
	67.432	59.94
	67.50	60.00

**RGB (PC), HDMI (PC) supported mode**

Resolution	Horizontal Frequency (kHz)	Vertical Frequency (Hz)
720 x 400	31.46	70.08
640 x 480	31.46	59.94
800 x 600	37.87	60.31
1024 x 768	48.36	60.00
1360 x 768	47.71	60.01
1280 x 1024	63.98	60.02
1920 x 1080	67.50	60.00

## TROUBLESHOOTING

The software version can be updated for improvement in performance. Customer needs to ensure the compatibility of customer's equipment with LGE software. If needed, please consult with LGE and upload revised software version according to the guidance provided by LGE.

### General

Problem	Solution
Cannot control the TV with the remote control.	<ul style="list-style-type: none"> <li>• Check the remote control sensor on the product and try again.</li> <li>• Check if there is any obstacle between the product and the remote control.</li> <li>• Check if the batteries are still working and properly installed (⊕ to ⊕, ⊖ to ⊖).</li> </ul>
No image display and no sound is produced.	<ul style="list-style-type: none"> <li>• Check if the product is turned on.</li> <li>• Check if the power cord is connected to a wall outlet.</li> <li>• Check if there is a problem in the wall outlet by connecting other products.</li> </ul>
Image appears slowly when the TV turns on.	<ul style="list-style-type: none"> <li>• The image is muted during the product startup process. This is normal. If the image does not appear in a few minutes, unplug the TV for 30 seconds and try again. If the image still does not appear, contact the authorized service center in your local area.</li> </ul>
Cannot connect external devices.	<ul style="list-style-type: none"> <li>• Refer to the <b>Connection Overview</b> and connect an external device.</li> </ul>
The TV turns off suddenly.	<ul style="list-style-type: none"> <li>• Check the power control settings. The power supply may be interrupted.</li> <li>• Check if the Auto sleep feature is activated in the Time settings. Refer to the <b>Sleep Timer</b>.</li> </ul>

### Audio
















Problem	Solution
No sound is produced while images are displaying.	<ul style="list-style-type: none"> <li>• Press <b>VOL +</b> or <b>-</b> button.</li> <li>• Check if the sound is muted by pressing <b>MUTE</b>.</li> <li>• Scroll to other channels. There may a problem with the broadcast.</li> <li>• Check if the TV Speaker feature is activated in the menu option.</li> </ul>
No output from one of the speakers	<ul style="list-style-type: none"> <li>• Adjust Balance in the menu option.</li> </ul>
Unusual sound from inside the TV is produced.	<ul style="list-style-type: none"> <li>• A change in ambient humidity or temperature may result in an unusual noise when the product turns on or off. There is no problem with your product.</li> </ul>

## Video

Problem	Solution
An image displays in black and white or the color quality is poor.	<ul style="list-style-type: none"> <li>• Adjust the color setting in the menu option.</li> <li>• Keep a sufficient distance between this product and other electronic products.</li> <li>• Scroll to other channels. There may a problem with the broadcast.</li> </ul>
Horizontal or vertical bars appears or images blur	<ul style="list-style-type: none"> <li>• Check if there are local interferences such as an electrical appliance or power tool.</li> </ul>
Lines or streaks appear on images	<ul style="list-style-type: none"> <li>• Check the antenna or aim the antenna to the proper direction.</li> </ul>
Afterimages (ghosts) appear when the product turns off	<ul style="list-style-type: none"> <li>• Pixels may have been damaged from a fixed image displayed for a long time (image burn). Use a screen saver to prevent the pixel damage on the screen.</li> </ul>
The power is on but the screen appears extremely dark.	<ul style="list-style-type: none"> <li>• Adjust the brightness and contrast in the menu option.</li> </ul>
<b>No Signal</b> appears on the screen.	<ul style="list-style-type: none"> <li>• Check if the signal cable is connected between the TV and products properly.</li> <li>• Check the selected input source by pressing <b>INPUT</b>.</li> </ul>
Black spots appear on the screen.	<ul style="list-style-type: none"> <li>• Several pixels in red, green, white, or black may appear on the screen that can attribute to the characteristics of the panel.</li> <li>• This is normal.</li> </ul>
The display offset is wrong.	<ul style="list-style-type: none"> <li>• Adjust the position setting in the Picture menu.</li> <li>• Check if the video card resolution and frequency are supported by the product. If the frequency is out of range, set to the recommended resolution using the display settings on the external device.</li> </ul>
Thin lines appear in the background of the screen.	<ul style="list-style-type: none"> <li>• Check the video cable connections.</li> </ul>
The reception on some channels is poor	<ul style="list-style-type: none"> <li>• Scroll to other channels. There may a problem with the broadcast.</li> <li>• The station signal may be weak. Aim the antenna to the proper direction.</li> <li>• Check if there is local interferences such as an electrical appliance or power tool.</li> </ul>

## IR CODES

(Depending on model)

Function	Code (Hexa)	Note
 (POWER)	08	Remote control Button (Power On/Off)
AV MODE	30	Remote control Button
INPUT	0B	Remote control Button
TV	0F	Remote control Button
Number Key 0-9	10-19	Remote control Button
- (DASH) / LIST	4C	Remote control Button
FLASHBK	1A	Remote control Button
VOL +	02	Remote control Button
VOL -	03	Remote control Button
FAV	1E	Remote control Button
MUTE / DELETE	09	Remote control Button
CH  / PAGE 	00	Remote control Button
CH  / PAGE 	01	Remote control Button
SETTINGS / MENU	43	Remote control Button
Q.MENU	45	Remote control Button
 (BACK)	28	Remote control Button
INFO	AA	Remote control Button
EXIT	5B	Remote control Button
OK / ENTER	44	Remote control Button
	40	Remote control Button
	41	Remote control Button
	07	Remote control Button
	06	Remote control Button
RED	72	Remote control Button
GREEN	71	Remote control Button
YELLOW	63	Remote control Button
BLUE	61	Remote control Button
	B1	Remote control Button
	B0	Remote control Button
	BA	Remote control Button
	8E	Remote control Button
	8F	Remote control Button
RATIO	79	Remote control Button
SIMPLINK	7E	Remote control Button
AUDIO / SAP	0A	Remote control Button
PICTURE	4D	Remote control Button
SOUND	52	Remote control Button
SLEEP / TIMER	0E	Remote control Button
CAPTION / CC / CHAR/NUM	39	Remote control Button
MARK	1E	Remote control Button
PORTAL	0C	Remote control Button
GUIDE	AB	Remote control Button

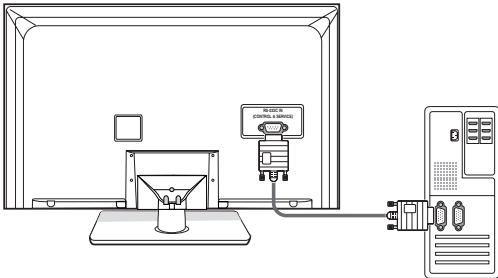


# EXTERNAL CONTROL DEVICE SETUP

## RS-232C Setup

Connect the RS-232C (serial port) input jack to an external control device (such as a computer or an A/V control system) to control the product's functions externally.

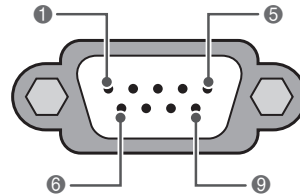
Connect the serial port of the control device to the RS-232C jack on the product back panel.



### ! NOTE

- RS-232C on this unit is intended to be used with third party RS-232C control hardware and software. The instructions below are provided to help with programming software or to test functionality using telenet software. RS-232C connection cables are not supplied with the product..

## Type of connector; D-Sub 9-Pin Male

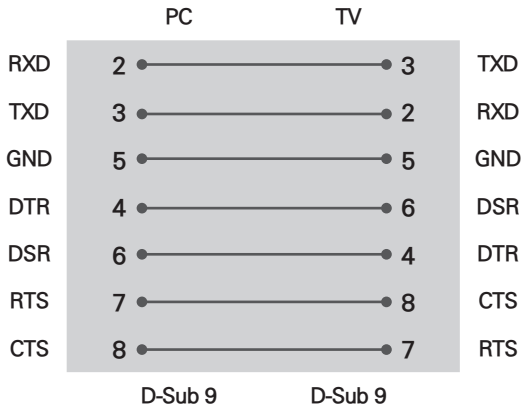


RS-232C IN  
(CONTROL & SERVICE)

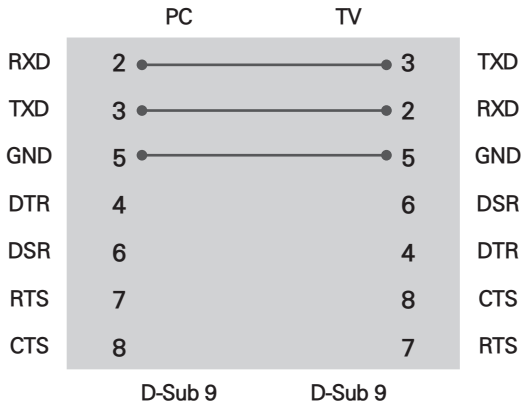
No.	Pin name
1	No connection
2	RXD (Receive data)
3	TXD (Transmit data)
4	DTR (DTE side ready)
5	GND
6	DSR (DCE side ready)
7	RTS (Ready to send)
8	CTS (Clear to send)
9	No Connection

## RS-232C configurations

7-Wire Configuration  
(Serial female-female NULL modem cable)

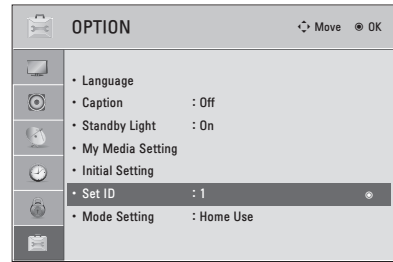


3-Wire Configurations(Not standard)



### Set ID

Set ID number.



- 1 Press **Home** or **MENU** to access the main menus.
- 2 Press the Navigation buttons to scroll to **OPTION** and press **OK/ENTER**.
- 3 Press the Navigation buttons to scroll to **Set ID** and press **OK/ENTER**.
- 4 Scroll left or right to select a set ID number and select **CLOSE**. The adjustment range is 1-99.
- 5 When you are finished, press **EXIT**.

```
*Real data mapping
0 : Step 0
  :
A : Step 10 (SET ID 10)
  :
F : Step 15 (SET ID 15)
10 : Step 16 (SET ID 16)
  :
63 : Step 99 (SET ID 99)
64 : Step 100
```

## Communication Parameters

- Baud rate: 9600 bps (UART)
- Data length: 8 bits
- Parity : None
- Stop bit: 1 bit
- Communication code: ASCII code
- Use a null modem cable.

## Command reference list

	COMMAND1	COMMAND2	DATA (Hexadecimal)		COMMAND1	COMMAND2	DATA (Hexadecimal)
01. Power	k	a	00 - 01	14. Treble	k	r	00 - 64
02. Input Select	x	b	(See p. 29)	15. Bass	k	s	00 - 64
03. Aspect Ratio	k	c	(See p. 29)	16. Balance	k	t	00 - 64
04. Screen Mute	k	d	00 - 01	17. 3D (For 3D TV)	x	t	(See p. 30)
05. Volume Mute	k	e	00 - 01	18. Color Temperature	x	u	00 - 64
06. Volume Control	k	f	00 - 64	19. Extended 3D (For 3D TV)	x	v	(See p. 30)
07. Contrast	k	g	00 - 64	20. Auto Configuration	j	u	(See p. 31)
08. Brightness	k	h	00 - 64	22. Channel Add/Del	m	b	00 - 01
09. Color	k	i	00 - 64	23. Key	m	c	(See p. 31)
10. Tint	k	j	00 - 64	24. Backlight	m	g	00 - 64
11. Sharpness	k	k	00 - 64				
12. OSD Select	k	l	00 - 01				
13. Remote Control Lock Mode	k	m	00 - 01				

	COMMAND1	COMMAND2	DATA00 (Hexadecimal)	DATA01 (Hexadecimal)	DATA02 (Hexadecimal)	DATA03 (Hexadecimal)	DATA04 (Hexadecimal)	DATA05 (Hexadecimal)
21. Channel Tuning	m	a	physical program high	major program low	major low	minor high	minor low	attribute

## Transmission / Receiving protocol

### Transmission

**[Command1][Command2][ ][Set ID][ ][Data][Cr]**

[Command 1] : First command to control the set.(j, k, m or x)

[Command 2] : Second command to control the set.

[Set ID] : You can adjust the set ID to choose desired set ID number in Option menu. Adjustment range is 1~ 99. When selecting Set ID **0**, every connected the set is controlled. Set ID is indicated as decimal (1~ 99) on menu and as Hexa decimal (0x0~ 0x63) on transmission /receiving protocol.

[DATA] : To transmit the command data.

Transmit the **FF** data to read status of command.

[Cr] : Carriage Return

ASCII code **0x0D**

[ ] : ASCII code **space (0x20)**

\* In this model, set will not send the status during the standby mode.

### OK Acknowledgement

**[Command2][ ][Set ID][ ][OK][Data][x]**

The set transmits ACK (acknowledgement) based on this format when receiving normal data. At this time, if the data is data read mode, it indicates present status data. If the data is data write mode, it returns the data of the PC computer.

\* In this model, set will not send the status during the standby mode.

\* Data Format

[Command 2] : Use as command.

[Set ID] : Use the small character, if set ID is 10, it will send the **0, a**.

[DATA] : Use the small character, if data is 0 x ab, it will send the **a, b**.

[OK] : Use the large character.

### Error Acknowledgement

**[Command2][ ][Set ID][ ][NG][Data][x]**

The set transmits ACK (acknowledgement) based on this format when receiving abnormal data from non-viable functions or communication errors.

Data01: Illegal Code

Data02: Not supported function

Data03: Wait more time

\* In this model, set will not send the status during the standby mode.

\* Data Format

[Command 2] : Use as command.

[Set ID] : Use the small character, if set ID is 10, it will send the **0, a**.

[DATA] : Use the small character, if data is 0 x ab, it will send the **a, b**.

[NG] : Use the large character

**01. Power (Command: k a)**

To control Power On/Off of the set.

Transmission [k][a][ ][Set ID][ ][Data][Cr]

Data 00: Power Off Data 01: Power On

Acknowledgement [a][ ][Set ID][ ][OK/NG][Data][x]

- \* In a like manner, if other functions transmit 'FF' data based on this format, Acknowledgement data feedback presents status about each function.
- \* Note: In this model, set will send the Acknowledge after power on processing completion.  
There might be a time delay between command and acknowledge.

**02. Input Select (Command: x b)**

To select input source for set.

Transmission [x][b][ ][Set ID][ ][Data][Cr]

Data 00: DTV (Antenna)      Data 01: DTV (Cable)  
Data 10: Analog (Antenna)      Data 11: Analog (Cable)  
Data 20: AV or AV1      Data 21: AV2  
Data 40: Component or Component1  
Data 41: Component2  
Data 60: RGB-PC      Data 90: HDMI1  
Data 91: HDMI2      Data 92: HDMI3

Acknowledgement [b][ ][Set ID][ ][OK/NG][Data][x]

- \* Use the feature depending upon your model.

**03. Aspect Ratio (Command: k c)**

To adjust the screen format.

Transmission [k][c][ ][Set ID][ ][Data][Cr]

Data 01: 4:3      Data: 09: Just scan  
Data 02: 16:9      Data: 10: Cinema Zoom 1  
Data 04: Zoom      :  
Data 06: Set by program      Data 1F: Cinema Zoom16

Acknowledgement [c][ ][Set ID][ ][OK/NG][Data][x]

**04. Screen Mute (Command: k d)**

To select screen mute on/off.

Transmission [k][d][ ][Set ID][ ][Data][Cr]

Data 00: Screen mute off (Picture on), Video-out Mute off  
Data 01: Screen mute on (Picture off)  
Data 10: Video-out Mute on

Acknowledgement [d][ ][Set ID][ ][OK/NG][Data][x]

- \* In case of Video-out Mute on only, TV will display On Screen Display (OSD). But, in case of screen mute on, TV will not display On Screen Display (OSD).

**05. Volume Mute (Command: k e)**

To control volume mute on/off.

You can also adjust mute using the MUTE button on remote control.

Transmission [k][e][ ][Set ID][ ][Data][Cr]

Data 00: Volume mute on (Volume off)  
Data 01: Volume mute off (Volume on)

Acknowledgement [e][ ][Set ID][ ][OK/NG][Data][x]

**06. Volume Control (Command: k f)**

To adjust volume.

You can also adjust volume with the volume buttons on remote control.

Transmission [k][f][ ][Set ID][ ][Data][Cr]

Data Min: 00 ~ Max: 64 (\*transmit by Hexadecimal code)  
\*Refer to **Real data mapping**.

Acknowledgement [f][ ][Set ID][ ][OK/NG][Data][x]

**07. Contrast (Command: k g)**

To adjust screen contrast.

You can also adjust contrast in the PICTURE menu.

Transmission [k][g][ ][Set ID][ ][Data][Cr]

Data Min: 00 ~ Max: 64 (\*transmit by Hexadecimal code)  
\*Refer to **Real data mapping**.

Acknowledgement [g][ ][Set ID][ ][OK/NG][Data][x]

**08. Brightness (Command: k h)**

To adjust screen brightness.

You can also adjust brightness in the PICTURE menu.

Transmission [k][h][ ][Set ID][ ][Data][Cr]

Data Min: 00 ~ Max: 64 (\*transmit by Hexadecimal code)  
\*Refer to **Real data mapping**.

Acknowledgement [h][ ][Set ID][ ][OK/NG][Data][x]

**09. Color (Command: k i)**

To adjust screen color.

You can also adjust color in the PICTURE menu.

Transmission [k][i][ ][Set ID][ ][Data][Cr]

Data Min: 00 ~ Max: 64 (\*transmit by Hexadecimal code)  
\*Refer to **Real data mapping**.

Acknowledgement [i][ ][Set ID][ ][OK/NG][Data][x]

**10. Tint (Command: k j)**

To adjust screen tint.

You can also adjust tint in the PICTURE menu.

Transmission [k][j][ ][Set ID][ ][Data][Cr]

Data Red: 00 ~ Green: 64 (\*transmit by Hexadecimal code)

\*Refer to **Real data mapping**.

Acknowledgement [ j ][ ][Set ID][ ][OK/NG][Data][x]

**11. Sharpness (Command: k k)**

To adjust screen sharpness.

You can also adjust sharpness in the PICTURE menu.

Transmission [k][k][ ][Set ID][ ][Data][Cr]

Data Min: 00 ~ Max: 64 (\*transmit by Hexadecimal code)  
\*Refer to **Real data mapping**.

Acknowledgement [k][ ][Set ID][ ][OK/NG][Data][x]

**12. OSD Select (Command: k l)**

To select OSD (On Screen Display) on/off.

Transmission [k][l][ ] [Set ID][ ][Data][Cr]

Data 00: OSD off    Data 01: OSD on

Acknowledgement [l][ ] [Set ID][ ][OK/NG][Data][x]

**13. Remote Control Lock Mode (Command: k m)**

To lock the remote control and the front panel controls on the set.

Transmission [k][m][ ] [Set ID][ ][Data][Cr]

Data 00: Lock off    Data 01: Lock on

Acknowledgement [m][ ] [Set ID][ ][OK/NG][Data][x]

If you're not using the remote control and front panel controls on the Monitor set, use this mode. When main power is on/off, remote control lock is released.

If Key Lock is on in the standby mode, TV will not turn on by POWER button of remote control and on the TV.

**14. Treble (Command: k r)**

To adjust treble.

You can also adjust treble in the AUDIO menu.

Transmission [k][r][ ] [Set ID][ ][Data][Cr]

Data Min: 00 ~ Max: 64 (\*transmit by Hexadecimal code)

\*Refer to **Real data mapping**.

Acknowledgement [r][ ] [Set ID][ ][OK/NG][Data][x]

**15. Bass (Command: k s)**

To adjust bass.

You can also adjust bass in the AUDIO menu.

Transmission [k][s][ ] [Set ID][ ][Data][Cr]

Data Min: 00 ~ Max: 64 (\*transmit by Hexadecimal code)

\*Refer to **Real data mapping**.

Acknowledgement [s][ ] [Set ID][ ][OK/NG][Data][x]

**16. Balance (Command: k t)**

To adjust balance.

You can also adjust balance in the AUDIO menu.

Transmission [k][t][ ] [Set ID][ ][Data][Cr]

Data Min: 00 ~ Max: 64 (\*transmit by Hexadecimal code)

\*Refer to **Real data mapping**.

Acknowledgement [t][ ] [Set ID][ ][OK/NG][Data][x]

**17. 3D (Command: x t) (For 3D TV)**

To change 3D mode for TV.

Transmission [x][t][ ] [Set ID][ ][Data01][ ][Data02][ ][Data03][ ][Data04][Cr]

Data01

00: 3D On                    01: 3D Off  
02: 3D to 2D                03: 2D to 3D

Data02

00: Top and Bottom    01: Side by Side  
02: Check Board        03: Frame Sequential

Data03

00: Right to Left  
01: Left to Right

Data04

3D Depth: Min : 00 ~ Max : 14  
(\*transmit by Hexadecimal code)

\*If data01 is 00(3D On), data04 has no meaning.

\*If data01 is 01(3D Off) or 02(3D to 2D), data02, data03 and data04 have no meaning.

\*If data1 is 03(2D to 3D), data2 has no meaning.

Data 01	Data 02	Data 03	Data 04
00	o	o	x
01	x	x	x
02	x	x	x
03	x	o	o

x : Don't care

Acknowledgement [t][ ] [OK][Data01][Data02][Data03][Data04][x][t][ ] [NG][Data01][x]

**18. Color Temperature (Command: x u)**

To adjust color temperature.

You can also adjust color temperature in the PICTURE menu.

Transmission [x][u][ ] [Set ID][ ][Data][Cr]

Data Min: 00 ~ Max: 64 (\*transmit by Hexadecimal code)

\*Refer to **Real data mapping**.

Acknowledgement [u][ ] [Set ID][ ][OK/NG][Data][x]

**19. Extended 3D (Command: x v) (For 3D TV)**

To change 3D option for TV.

Transmission [x][v][ ] [Set ID][ ][Data01][ ][Data02][Cr]

Data01: 3D option

00: 3D Picture Correction  
01: 3D Depth (2D to 3D Only)  
02: 3D Viewpoint  
03: 3D Picture Size  
04: 3D Picture Balance  
05: 3D Optimization

Data02: It has own range for each 3D option determined by Data1.

1) When Data1 is 00

00: Right to Left    01: Left to Right

2) When Data1 is 01, 02

Data Min: 00 ~ Max: 14 (\*transmit by Hexadecimal code)

3) When Data1 is 03

00: Just Scan    01: 16:9

4) When Data1 is 04

00: Off    01: On

5) When Data1 is 05

Data Min: 00 ~ Max: 02 (\*transmit by Hexadecimal code)

Acknowledgement [v][ ] [OK][Data01][Data02][x][v][ ] [NG][Data01][x]

\* Use the feature depending upon your model.

**20. Auto Configuration (Command: j u)**

To adjust picture position and minimize image shaking automatically. Auto configuration only works in RGB-PC mode.

Transmission [ j ][u][ ][Set ID][ ][Data][Cr]

Data 01: To set

Acknowledgement [u][ ][Set ID][ ][OK/NG][Data][x]

**21. Channel Tuning (Command: m a)**

To tune channel to following physical/major/minor number.

Transmission [m][a][ ][Set ID][ ][Data00][ ][Data01][ ][Data02][ ][Data03][ ][Data04][ ][Data05][Cr]

Digital channels have a Physical, Major, and Minor channel number. The Physical number is the actual digital channel number, the Major is the number that the channel should be mapped to, and the Minor is the sub-channel. Since the ATSC tuner automatically maps the channel to the Major number, the Physical number is not required when sending a command.

Data 00: Physical Channel Number  
NTSC air: 02~45, NTSC cable: 01, 0E~7D  
ATSC air: 01~45, ATSC cable: 01~87

Data 01 & 02: Major Channel Number

Data 01: High byte Data 02: Low byte

Two bytes are available for the Major and Minor, normally only the second byte is used.

Data 03 & 04: Minor Channel Number

Not needed for NTSC.

The table above lists the binary code which must be converted to Hexadecimal before sending. For example: The binary code to tune the sub source to an NTSC cable channel is **1000 0001**, which translates to **81** in Hex.

Data 05: Attribute

- \* 7th bit : For which source do you want to change the channel.
- \* 6th bit: Use a two part or one part channel. Most cases just use 0 since it's ignored when using NTSC.
- \* 5th bit: Use 0 with NTSC since it can only use the physical channel number. Normally use 1 for ATSC since most times it doesn't matter what the physical number is.
- \* 4th bit: Set to 0.
- \* 3-0 bits: Choose signal type.

\* Tune Command Examples:

1. Tune to the analog (NTSC) cable channel 35.

Data 00 = Physical of 35 = 23

Data 01 & 02 = No Major = 00 00

Data 03 & 04 = No Minor = 00 00

Data 05 = 0000 0001 in binary = 01

Total = ma 00 23 00 00 00 00 01

2. Tune to the digital (ATSC) local channel 30-3.

Data 00 = Don't know Physical = 00

Data 01 & 02 = Major is 30 = 00 1E

Data 03 & 04 = Minor is 3 = 00 03

Data 05 = 0010 0010 in binary = 22

Total = ma 00 00 00 1E 00 03 22

- \* Use the feature depending upon your model.

**22. Channel Add/Del (Command: m b)**

To add and delete the channels.

Transmission [m][b][ ][Set ID][ ][Data][Cr]

Data 00: Channel Delete Data 01: Channel Add

Acknowledgement [b][ ][Set ID][ ][OK/NG][Data][x]

**23. Key (Command: m c)**

To send IR remote key code.

Transmission [m][c][ ][Set ID][ ][Data][Cr]

See p. 24

Acknowledgement [c][ ][Set ID][ ][OK/NG][Data][x]

When TV is in the standby mode, TV will turn on by POWER button of remote control only.

**24. Backlight (Command: m g)**

To adjust screen backlight.

Transmission [m][g][ ][Set ID][ ][Data][Cr]

Data Min:00 ~ Max:64 (\*transmit by Hexadecimal code)

\*Refer to **Real data mapping**.

Acknowledgement [g][ ][Set ID][ ][OK/NG][Data][x]

\* Table List (Channel Tuning)

7	Main/Sub Picture	6	Two/One Part Channel	5	Using Physical Channel	4 Reserved	3	2	1	0	Step
0	Main	0	Two	0	Use	x	0	0	0	0	NTSC Air
1	Sub	1	One	1	No Use	x	0	0	0	1	NTSC Cable
						x	0	0	1	0	ATSC Air
						x	0	0	1	1	ATSC Cable_std
						x	0	1	0	0	ATSC Cable_hrc
						x	0	1	0	1	ATSC Cable_irc
						x	0	1	1	0	ATSC cable_auto
						x	0	1	1	1	Reserved
						x	x	x	x	x	...
						x	1	1	1	1	Reserved











The model and serial numbers of the TV are located on the back and one side of the TV. Record it below should you ever need service.

MODEL \_\_\_\_\_

SERIAL \_\_\_\_\_