



OWNER'S MANUAL

LED TV*

* LG LED TV applies LCD screen with LED backlights.

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


32LN5100


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.

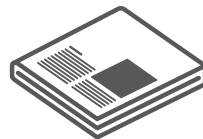
CAUTION

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 allow the television to become wet.



- 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.



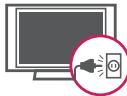
- Only use attachments/accessories specified by the manufacturer.



- 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, induce vomiting and go 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 to 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.



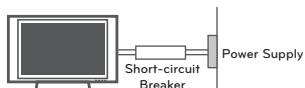
- Do not expose to dripping or splashing and do not place objects filled with liquids, such as vases, cups, etc. on or over the apparatus (e.g. on shelves above the unit).



• Grounding

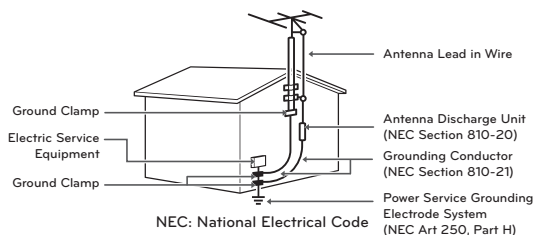
(Except for devices which are not grounded.)

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, lightning 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 benzene.

• 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 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, 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 uses 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 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**

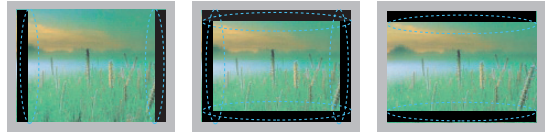
Cracking noise: A cracking noise that occurs when watching or turning off the TV is generated by plastic thermal contraction due to temperature and humidity. This noise is common for products where thermal deformation is required.

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 upon 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® 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 1080p, including premium content."

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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 local dealer where you purchased your product. The illustrations in this manual may differ from the actual product and item.



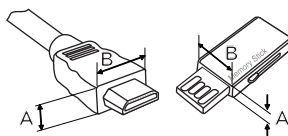
CAUTION

- 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.
- Some models appear to have a thin film on the screen. It is actually part of the screen; do not remove it.



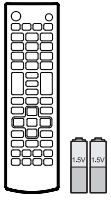
NOTE

- 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 thick and 18 mm 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

*B ≤ 18 mm



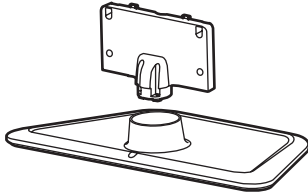
Remote Control, Batteries (AAA)
(See p. 16)



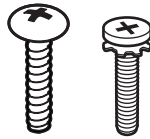
Owner's Manual



Power Cord



Stand Body, Stand Base
(See p. 12)



Stand Screws
3 EA, P5 x 25
4 EA, M4 x 14
(See p. 12)

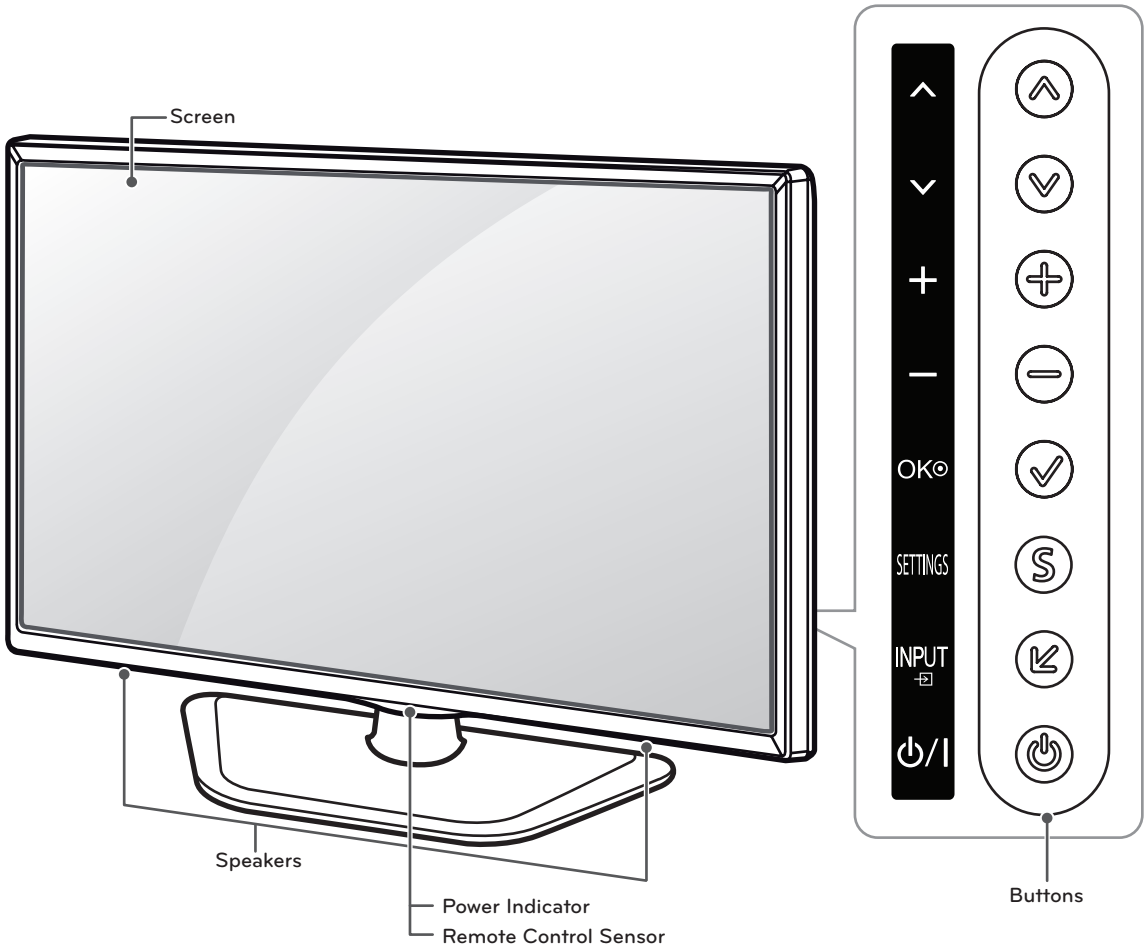


Desk-mount Screw
(See p. 13)



Cable Holder
(See p. 14)

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.
Ⓗ (SETTINGS)	Accesses the main menus, or saves your input and exits the menus.
Ⓘ (INPUT)	Changes the input source.
⏻ (P/I)	Turns the power on or off.

Lifting and moving the TV

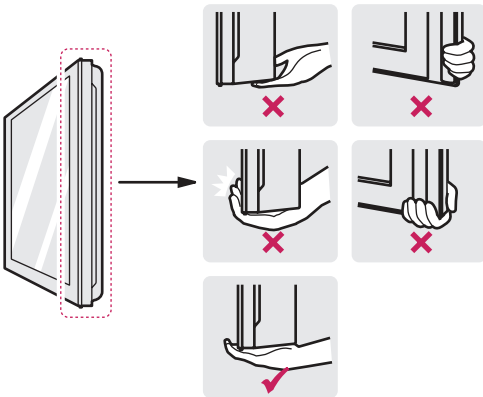
When moving or lifting the TV, read the following to prevent the TV from being scratched or damaged and for safe transportation regardless of its type and size.

⚠ CAUTION

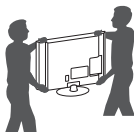
- Avoid touching the screen at all times, as this may result in damage to the screen.
- It is recommended to move the TV in the box or packing material that the TV originally came in.
- Before moving or lifting the TV, disconnect the power cord and all cables.
- When holding the TV, the screen should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

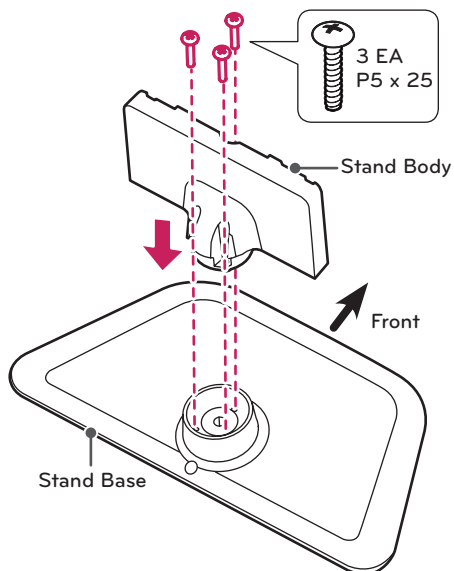
⚠ CAUTION

- 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.

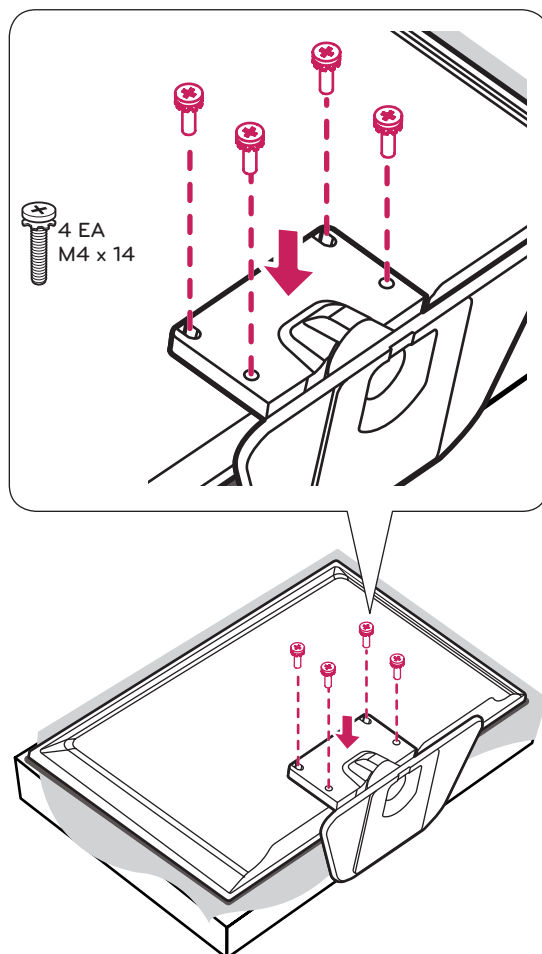
❗ NOTE

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

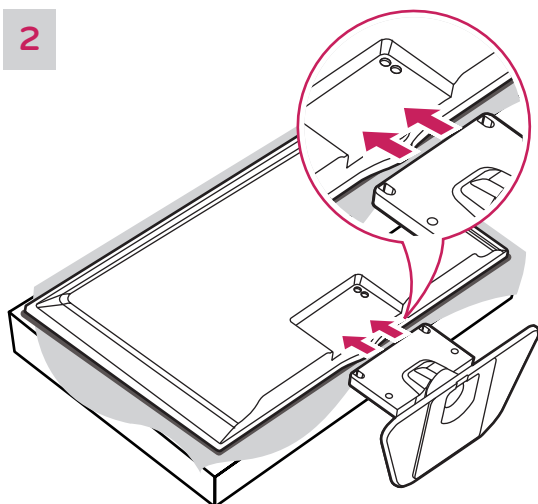
1



3

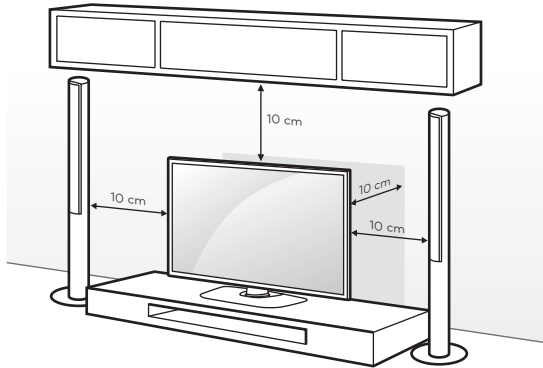


2



Mounting on a table

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



- 2 Connect the power cord to a wall outlet.

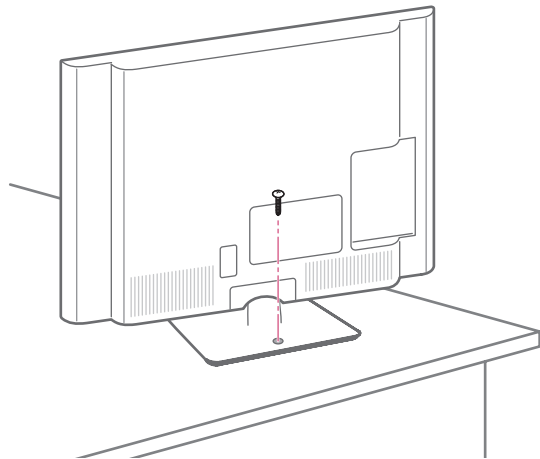
CAUTION

- 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

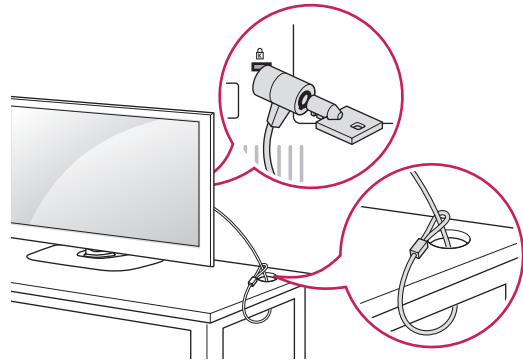
- To prevent TV from falling over, the TV should be securely attached to the floor/wall per installation instructions. Tipping, shaking, or rocking the TV may cause injury.

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.

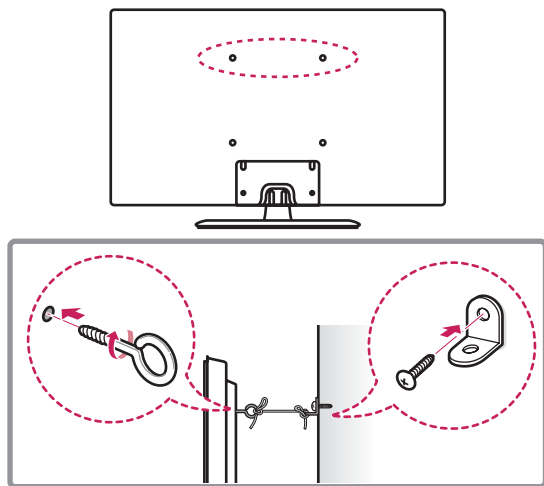


NOTE

- 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

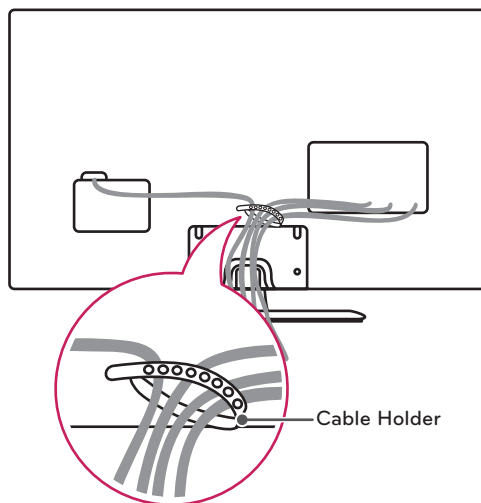
- Make sure that children do not climb on or hang on the TV.

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.

Tidying cables

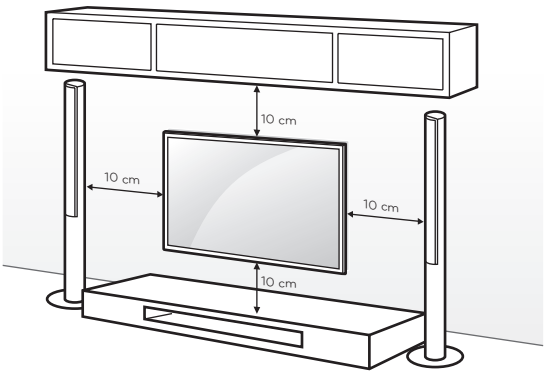
- 1 Gather and bind the cables with the cable holder.

**CAUTION**


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


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	32LN5100
VESA (A x B)	200 x 100
	
Standard screw	M4
Number of screws	4
Wall mount bracket (optional)	LSW130B

Wall mount bracket (optional)	
LSW130B	

CAUTION

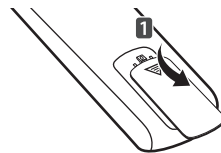
- Disconnect the power before moving or installing the TV. Otherwise electric shock may occur.
- If you install the TV on a ceiling or slanted wall, it may fall and result in severe injury. Use an authorized LG wall mount and contact the local dealer or qualified personnel.
- Do not over tighten the 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

- Use the screws that are listed in the VESA standard screw specifications.
- The wall mount kit includes an installation manual and necessary parts.
- The wall mount bracket is optional. You can obtain additional accessories from your local dealer.
- 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.

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 \oplus and \ominus 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.

ENGLISH



⏻ (POWER)

Turns the TV on or off.

TV

Returns to the last TV channel.

Q.MENU

Accesses the quick menu.

PICTURE

Changes the image mode.

SOUND

Changes the sound mode.

⏻ INPUT

Changes the input source. Turns the TV on if it is off.

Number button

Enters numbers.

LIST

Accesses the saved channel list.

Q.VIEW

Alternates between the two last channels selected (pressing repeatedly).

+ VOL -

Adjusts the volume level.

FAV

Accesses your favorite channel list.

SLEEP

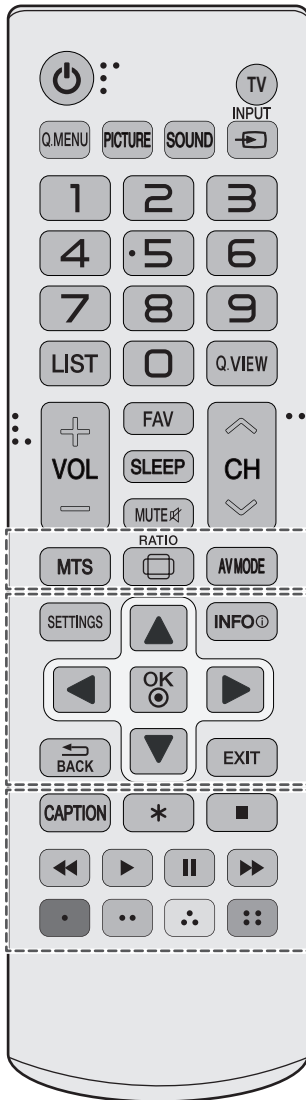
Sets the length of time until the TV to turns off.

MUTE

Mutes all sounds.

^ CH v

Scrolls through the saved channels.



MTS

Press repeatedly to select Mono, Stereo, SAP sound tone. But Stereo, SAP mode are available only if included on the broadcast signal.

RATIO

Resizes an image.

AV MODE

Selects an AV mode.

SETTINGS

Accesses the main menu.

INFO ⓘ

Shows information on the current program.

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.

CAPTION

Activates or deactivate the subtitles.

*

Not functional.

Control buttons (■, ►, II, ◀◀, ▶▶)

Controls the USB compatible devices.

Color buttons

These access special functions in some menus.

(■): Red, (■): Green, (■): Yellow, (■): Blue

WATCHING TV

Turning the TV on for the first time

When you turn the TV on for the first time, the Initial setting screen appears. Select a language and customize the basic settings.

- 1 Connect the power cord to a power outlet.
- 2 In standby mode, press the **⏻ (POWER)** button on the remote control to turn the TV on.
The Initial setting screen appears when you turn the TV on for the first time.

! NOTE

- You can also access **Initial Setting** by accessing **OPTION** in the main menu.

- 3 Follow the on-screen instructions to customize your TV settings according to your preferences.

Menu Language	Selects a language to display.
↓	
Mode Setting	Selects Home Use for the home environment.
↓	
Time Setting	Sets the time.
↓	
Auto Tuning	Scans and saves available channels automatically.

! NOTE

- To display images in the best quality for your home environment, select **Home Use**.
- **Store Demo** is suitable for the retail environment.
- If you select **Store Demo**, any customized settings will switch back to the default settings of **Store Demo** in 5 minutes.

- 4 When the basic settings are complete, press the **OK** button.

! NOTE

- If you do not complete the initial setting, it will appear whenever the TV turns on.
- Disconnect the power cord from the power outlet when you do not use the TV for a long period of time.

- 5 To turn the TV off, press the **⏻ (POWER)** button on the remote control.

Watching TV

- 1 In Standby mode, press the **⏻ (POWER)** button on the remote control to turn the TV on.
- 2 Press **INPUT** and select **TV**.
- 3 To turn the TV off, press the **⏻ (POWER)** button on the remote control.
The TV switches to Standby mode.

Managing channels

Setting up channels

Storing channels

To store channels automatically,

- 1 Press **SETTINGS** to access the main menus.
- 2 Press the Navigation buttons to scroll to **SETUP** and press **OK**.
- 3 Press the Navigation buttons to scroll to **Auto Tuning** and press **OK**.
- 4 Select **Start** to start automatic tuning.
The TV scans and saves available channels automatically.

! NOTE

- If the TV scans and saves channels, the previously saved channels will be overwritten.

- 5 When you are finished, press **EXIT**.
When you return to the previous menu, press **↶ BACK**.

To store channels manually,

- 1 Press **SETTINGS** to access the main menus.
- 2 Press the Navigation buttons to scroll **SETUP** and press **OK**.
- 3 Press the Navigation buttons to scroll to **Manual Tuning** and press **OK**.
- 4 Scroll through the channel types and channels, and then add or delete channels.
- 5 When you are finished, press **EXIT**.
When you return to the previous menu, press **BACK**.

! NOTE

- The channels are stored in the order of **TV** and **CATV**.

Editing your channel list

- 1 Press **SETTINGS** to access the main menus.
- 2 Press the Navigation buttons to scroll to **SETUP** and press **OK**.
- 3 Press the Navigation buttons to scroll to **Channel Edit** and press **OK**.
- 4 Edit channels using the following buttons.

Button	Description
OK	Selects the highlighted channel to view.
▲	Highlights the channel type.
▲, ▼, ◀, ▶	Scrolls through channel types or channels.
CH (◀, ▶)	Moves to the previous or next page.
Blue button	Adds or deletes a channel. The deleted channel displays in grey.

- 5 When you are finished, press **EXIT**.
When you return to the previous menu, press **BACK**.

Selecting a channel on the channel list

- 1 Press **LIST** to access the channel list.
- To move to the previous or next page, press **CH (◀, ▶)**.
- 2 Select a channel you want and press **OK**.

Using favorite channels

Add the channels that you watch frequently to the favorite list.

Setting up your favorite list

- 1 Select a channel to add to the favorite list.
- 2 Press **Q.MENU**.
- 3 Press the Navigation buttons to scroll to **CH Del/Add/Fav**.
- 4 Press the Navigation buttons to scroll to **Favorite**.
- 5 Press **OK** to add the selected channel to the favorite list.

Selecting a channel on the favorite list

- 1 Press **FAV** to access the favorite list.
- To move to the previous or next page, press **CH (◀, ▶)**.
- 2 Select a channel you want and press **OK**.

Using additional options

Adjusting aspect ratio

Resize an image to view at its optimal size by pressing **RATIO** while you are watching TV.

! NOTE

- You can also change the image size by pressing **Q.MENU** or accessing **Aspect Ratio** in the **PICTURE** menu.
- The available ratio varies depending on the input source.

- 16:9:** Resizes images to fit the screen width.



- Just Scan:** Displays video images in the original size without cutting off the edges. (This function works in Component/HDMI (720P/1080i/1080p) Mode.)



! NOTE

- If you select **Just Scan**, you may see image noises at the edge or edges of the screen.

- Set By Program:** Displays images in the same aspect ratio as the original image.

(4:3 → 4:3)



(16:9 → 16:9)



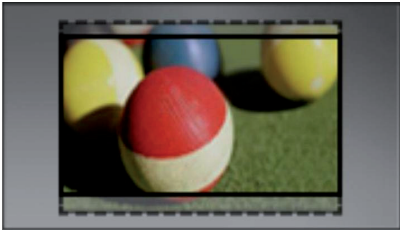
- 4:3:** Resizes images to the previous standard 4:3.



- 14:9:** You can view a picture format of 14:9 or a general TV program in the 14:9 mode. The 14:9 screen is viewed in the same way as in 4:3, but is moved to the up and down.



- **Zoom:** Formats an image to fit the screen width. The top and bottom of the image may not appear.



- **Cinema Zoom1:** Formats an image to the cinemascope ratio, 2.35:1. To change the ratio of the cinema zoom, press ◀ or ▶ and its range is from 1 to 16.



NOTE

- If you enlarge or reduce an image, the image may be distorted.

Changing AV modes

Each **AV mode** has optimized image and sound settings.

Press **AV MODE** repeatedly to select an appropriate mode.

Mode	Description
Off	Changes to the previously customized settings.
Cinema	Uses the optimized image and sound settings for a cinematic look.
Sport	Uses the optimized image and sound settings for dynamic action sports.
Game	Uses the optimized image and sound settings for fast gaming. When playing a video game using PlayStation or Xbox, it is recommended to use the Game mode. When in Game mode, functions related to picture quality will be optimized for playing games.

Using the input list

Selecting an input source

- 1 Press **INPUT** to access the input sources.
- 2 Press the Navigation buttons to scroll to one of the input sources and press **OK**.

Input source	Description
TV	Watch TV over the air and cable
AV	Watch the contents in a VCR or other external devices
Component	Watch video from a DVD or other external devices, or through a digital set-top box.
HDMI	Watch contents in a DVD or Digital settop box or other high definition devices

Adding an Input label









Add a label to an input source so that you can easily identify a device connected to each input source.

- 1 Press **INPUT** to access the input sources.
- 2 Press the Navigation buttons to scroll to one of the input sources.
- 3 Press the **Blue** button.
- 4 Press the Navigation buttons to scroll to one of the input labels and press **OK**.
- 5 When you are finished, press **EXIT**.
When you return to the previous menu, press **↩ BACK**.

Using the quick menu

Customize frequently used menus.

- 1 Press **Q.MENU** to access the quick menus.
- 2 Press the Navigation buttons to scroll through the following menus.

Menu	Description
 Aspect Ratio	Changes the image size.
 Picture Mode	Changes the image mode.
 Sound Mode	Changes the sound mode.
 Caption	Activates or deactivate the subtitles.
 SAP	Changes the sound setting.
 Sleep Timer	Sets the length of time until the TV to turns off.
 Del/Add/Fav	Edits the channels to add or delete the channel. Adds the channels to the favorite list.
 Eject	Eject a USB device. The menu is displayed only when the USB device is connected.

! NOTE

- The available menus and options may differ from the input source that you are using.

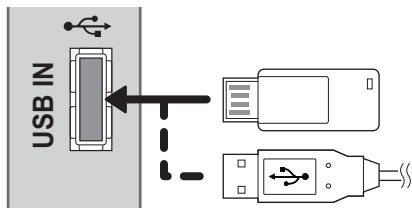
- 3 Press the Navigation buttons to scroll to the option you want.
- 4 When you are finished, press **Q.MENU**.

ENTERTAINMENT

Connecting USB storage devices

Connect USB storage devices such as a USB flash drive or external hard drive to the TV and use multimedia features. (See "Browsing files" on p. 24)

Connect a USB flash drive or USB memory card reader to the TV as shown in the following illustration.



To disconnect a USB storage device, make sure to end the connection properly to prevent damages to the TV or files.

- 1 Press **Q.MENU** to access the quick menus.
- 2 Press the Navigation buttons to scroll to **Eject** and press **OK**.
- 3 Disconnect the USB storage device only when the message says that it is safe to remove.

CAUTION

- Do not turn the TV off or remove a USB storage device while the USB storage device is connected to the TV, as this could result in loss of files or damage to the USB storage device.
- Back up your files saved on a USB storage device frequently, as you may lose or damage the files and this is not covered by the warranty.

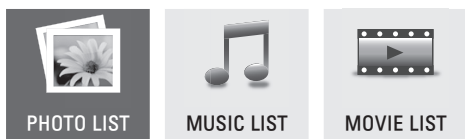
Tips for using USB storage devices

- The TV recognizes only a USB storage device.
- If you connect a USB storage device to the TV through a USB hub, your TV may not recognize the USB storage device.
- The TV may not recognize a USB storage device that requires a special driver.
- The recognition speed of a USB storage device may differ depending on the device.
- Only use a USB storage device which has normal music or image files.
- Use only USB storage devices that are formatted as a FAT 32 or NTFS file system.
- You may need to connect a USB storage device to an external power supply with a power adapter.
- If the TV does not recognize a connected USB storage device, replace the cable and try again. Do not use an excessively long cable.
- The TV does not support some USB storage devices properly.
- You can use a multi-partition (up to 4) USB storage device.
- The file alignment method of a USB storage device is similar to the one of Window XP.
- You cannot create or delete a folder saved in a USB storage device directly on the TV.
- The number of characters for a file name is up to 100 English characters.
- If there are too many folders and files in one folder, it may not operate properly.
- The recommended capacity for a USB external hard disk is 1 TB or less and for a USB storage device is 32 GB or less.
- If a USB external hard disk with the Energy Saving feature does not work, turn the USB external hard disk off and on again to make it work properly. For more information, refer to the user manual of the USB external hard disk.
- The electrostatic can cause USB device's malfunction. In this case, USB Device has to be plugged again.

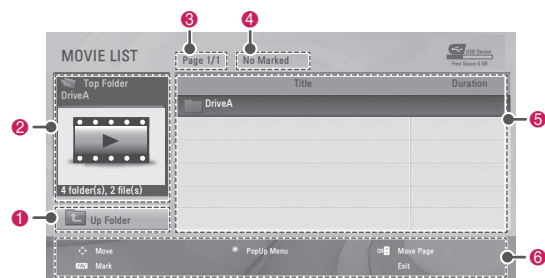
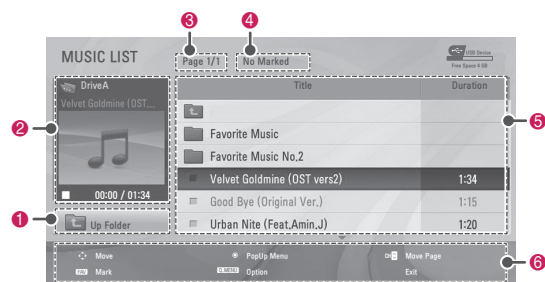
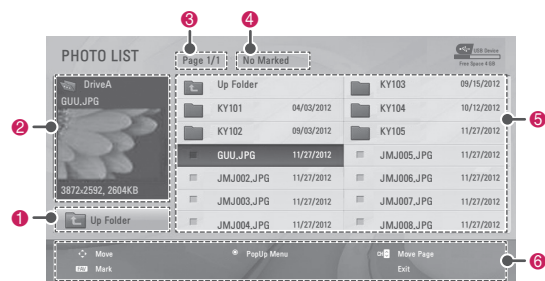
Browsing files

Access the photo, music, or movie lists to browse files.

- 1 Connect a USB storage device.
- 2 Press Navigation buttons to scroll to **PHOTO LIST**, **MUSIC LIST** or **MOVIE LIST** and press **OK**.



- 3 Select **DriveA** to access the connected USB storage device.
- 4 Press the Navigation buttons to Select a folder/file you want.



No.	Description
1	Moves to the upper level folder.
2	Preview
3	Current page/Total pages
4	Total number of marked files
5	Contents under the folder focused on 1
6	Available buttons on the remote control

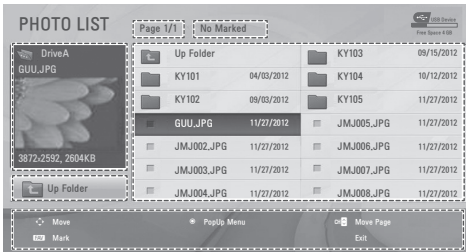
Tips for using USB storage devices

Type	Supported File Formats
Photo	<ul style="list-style-type: none"> JPG Available size Baseline: 64 pixel (W) x 64 pixel (H) - 15360 pixel (W) x 8640 pixel (H) Progressive: 64 pixel (W) x 64 pixel (H) - 1024 pixel (W) x 768 pixel (H) * Do not use the progressive option when saving JPG files on your PC. It may take some time to open high-resolution images in full screen.
Music	<ul style="list-style-type: none"> MP3 Bit rate range 32 Kbps - 320 Kbps Sampling rate (Sampling Frequency) MPEG1 layer 3: 32 kHz, 44.1 kHz, 48 kHz MPEG2 layer 3: 16 kHz, 22.05 kHz, 24 kHz MPEG2.5 layer 3: 8 kHz, 11.025 kHz, 12 kHz * A copy-protected file will not play.
Video	<ul style="list-style-type: none"> MPG, MPEG, DAT, TS, TRP, TP, VOB, MP4, MOV, MKV, DIVX, AVI, ASF, WMV, FLV Movie : *.mpg / *.mpeg / *.dat / *.ts / *.trp / *.tp / *.vob / *.mp4 / *.mov / *.mkv / *.divx / *.avi / *.asf / *.wmv / *.flv / *.avi(motion-jpeg) / *.mp4(motion-jpeg) / *.mkv(motion-jpeg) / *.mts / *.mt2s Video format : MPEG-1, MPEG-2, MPEG-4, H.264, AVS, VC1, DivX 3.11, DivX 4.x, DivX 5.x, DivX 6, Xvid 1.00, Xvid 1.01, Xvid 1.02, Xvid 1.03, Xvid1.10, beta-1, beta-2, JPEG, Sorenson H.263 Audio format : MP2, MP3, Dolby Digital, LPCM, ADPCM, WMA Internal Subtitle format : Only, XSUB is the subtitle format used in DivX files. External Subtitle format : *.smi / *.srt / *.sub (MicroDVD, Subviewer1.0/2.0) / *.ass / *.ssa / *.txt(TMPlayer) / *.psb(PowerDivX)

Viewing Photos


You can view image files saved on a USB storage device. The displays on the screen may differ based on the model.

- 1 Press **SETTINGS** to access the main menus.
- 2 Press the Navigation buttons to scroll to **USB** and press **OK**.
- 3 Press the Navigation buttons to scroll to **Photo List** and press **OK**.
- 4 Select **DriveA** to access the connected USB storage device.
- 5 Press the Navigation buttons to scroll to a folder/file you want and press **OK**.
- 6 View photos by using the following menus/buttons.



Button	Description
Navigation button	Scrolls through the files.
OK	Opens the pop-up menu.
CH (↶, ↷)	Moves to the previous or next page.
FAV	Enters the mark mode.
Exit	Returns to TV viewing.
Menu	Description
View	Views the selected photo.
Mark All	Selects all files
Unmark All	Clears all of your selections.
Close	Closes a pop-up.

! NOTE

- : Non-supported files are displayed using this graphic.

- 7 The following options are available while viewing photos.



Option	Description
Slide show	<ul style="list-style-type: none"> Starts or stops a slideshow with selected photos. If there are no selected photos, all photos saved in the current folder display during a slideshow. To set a slideshow speed, select Option.
BGM (Background Music)	<p>Turns the background music on or off. To set the background music folder, select Option.</p> <p>! NOTE</p> <ul style="list-style-type: none"> You can't change or set-up the BGM while viewing the *.mpo files (3D camera file).
Rotate	<p>Rotates photos clockwise. (90°, 180°, 270°, 360°)</p> <p>! NOTE</p> <ul style="list-style-type: none"> The supported photo size is limited. You cannot rotate a photo if the resolution of the rotated width is larger than the supported resolution size.
Hide	<p>Hides the option window.</p> <p>To display the options, press OK.</p>

! NOTE

- Option values changed in Photo List do not affect Movie List and Music List.
- Option values changed in Photo List or Music List are changed likewise in Photo List and Music List, but not Movie List.

Q.MENU options for photo list

- 1 Press **Q.MENU**.
A pop-up window will appear.
- 2 Press the Navigation buttons to scroll to **Set photo view.** and press **OK**.
- 3 Press the Navigation buttons to scroll to one of the following options and press **OK**.

Set photo view.

Option	Description
Slide Speed	Selects a slideshow speed (Fast, Normal, Slow).
Music Album	Selects a music folder for the background music. <div> <div>!</div> <div>NOTE</div> <ul style="list-style-type: none"> You can't change the music folder while the background music is playing. </div>

Set video.

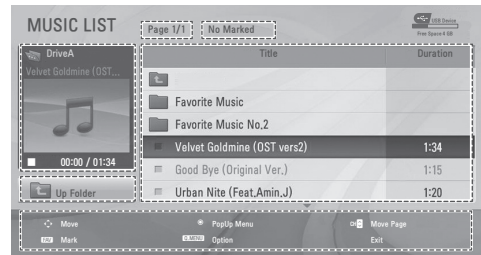
Allows you to change Video presets.
(See "PICTURE Settings" on p. 32)

Set audio.

Allows you to change Audio presets.
(See "AUDIO Settings" on p. 34)

Listening to music

- 1 Press **SETTINGS** to access the main menus.
- 2 Press the Navigation buttons to scroll to **USB** and press **OK**.
- 3 Press the Navigation buttons to scroll to **Music List** and press **OK**.
- 4 Select **DriveA** to access the connected USB storage device.
- 5 Press the Navigation buttons to scroll to a folder/file you want and press **OK**.
- 6 Play music by using the following menus/buttons.



Button	Description
Navigation button	Scrolls through the files.
OK	Opens the pop-up menu.
CH (⏮, ⏭)	Moves to the previous or next page.
FAV	Enters the mark mode.
Exit	Returns to TV viewing.
Menu	Description
Play or Play Marked	Plays the selected music file.
Play with Photo	Displays photos during playback.
Mark All	Selects all files.
Unmark All	Clears all of your selections.
Close	Closes a pop-up.



NOTE

- : Abnormal files are displayed using this graphic.
- : Non-supported files are displayed using this graphic.

7 Control playing by using the following buttons.

Button	Description
■	Stops playback.
▶	Plays a music file.
	Pauses or resumes playback.
◀◀	Skips to the previous file.
▶▶	Skips to the next file.

Q.MENU options for music list

- 1 Press **Q.MENU**.
A pop-up window will appear.

! NOTE

- Option value changed in Photo List and Music List are changed likewise in Photo List and Music List.

Set audio.

Allows you to change Audio presets.
(See "AUDIO Settings" on p. 34)

! NOTE

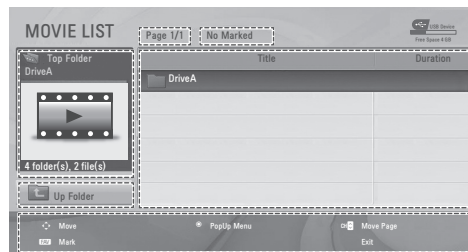
- The TV will not play copy protected files.
- If the TV is not in use for some time during playback, the information box as a screensaver will appear to prevent image burn.
To return to the Music list screen, press **OK** or **BACK**.



Viewing Videos

Your TV can display video files from a USB storage device.

- 1 Press **SETTINGS** to access the main menus.
- 2 Press the Navigation buttons to scroll to **USB** and press **OK**.
- 3 Press the Navigation buttons to scroll to **Movie List** and press **OK**.
- 4 Select **DriveA** to access the connected USB storage device.
- 5 Press the Navigation buttons to scroll to a folder/file you want and press **OK**.
- 6 Play movie by using the following menus/buttons.



Button	Description
Navigation button	Scrolls through the files.
OK	Opens the pop-up menu.
CH (↶, ↷)	Moves to the previous or next page.
FAV	Enters the mark mode.
Exit	Returns to TV viewing.
Menu	Description
Play or Play Marked	Plays the selected video file.
Mark All	Selects all files.
Unmark All	Clears all of your selections.
Close	Closes a pop-up.

7 Control playing by using the following buttons.



Button	Description
■	Stops playback.
▶	Plays a video.
	Pauses or resumes playback.
◀◀	Scans backward in a file.
▶▶	Scans forward in a file.
◀ or ▶	Skips to specific points in a file during playback. The time of a specific point will appear on the status bar. In some files, this function may not work properly.
Q.MENU	Shows the Option menu.
AV MODE	Select the desired source.
BACK	Hides the menu on screen. To see the menu again, press OK button to display.
EXIT	Returns to MOVIE LIST.

Tips for playing video files

- Some user-created subtitles may not work properly.
- Subtitles may not display some special characters or HTML tags.
- Subtitles in the non-supported languages are unavailable.
- The time information in an external subtitle file should be arranged in ascending order to play.
- The screen may suffer from temporary interruptions such as image stoppage or faster playback when you change the audio language.
- If you play a damaged video file, the video file may not be played correctly or some player functions may not be available.
- The TV may not properly play the video files produced with certain encoders.
- If the recorded file does not have video or audio, either video or audio is not outputted.
- If the TV plays the recorded file without video or audio, either video or audio is not outputted.
- The TV may not smoothly play the video files with a resolution higher than the supported resolution for each frame.
- The TV may not properly play the video files not included on the specified type and format.
- The TV may not play the files encoded with GMC (Global Motion Compensation) or quarter-pel motion estimation.
- The TV supports the only files saved in ASCII code in subtitles.
- The maximum number of characters displayed on each subtitle line is 250 (Korean), 500 (English), and 500 (Numbers).
- The TV supports the only 10,000 sync blocks within the subtitle file.
- The TV supports the H.264 codec up to the profile level 4.1.
- The TV does not support DTS audio codec.
- The TV cannot play a video file whose size is larger than 30 GB. The file size limit is dependent on the encoding environment.
- If you play a video file through the USB connection that does not support the high speed, the video player may not work properly.
- The TV supports a USB storage device whose version is lower than 2.0. However, the USB storage device may not work properly in the movie list.
- The video file and its subtitle should be in the same folder and the name of the video file and subtitle should be identical.
- You can adjust the image by using **AV MODE**. But you cannot customize image options of each mode.
- The TV may not play the video files in the supported file format depending on the encoded condition.
- The TV will not play the video files that has a damaged index or no index.

Q.MENU options for movie list

- 1 Press **Q.MENU**.
A pop-up window will appear.
- 2 Press the Navigation buttons to scroll to **Set video play.** and press **OK**.
- 3 Press the Navigation buttons to scroll to one of the following options and press **OK**.

Set video play.

Option	Description
Picture Size	Selects your desired picture format for videos. <ul style="list-style-type: none"> • Full Screen: Files are played in full screen mode according to the aspect ratio of video. • Original: Files are played in their native size.
Audio Language	Changes the Language Group of the audio for video files. Files with a single audio track cannot be selected.
Subtitle	The subtitles can be turned on or off.
Language	Activated for SMI subtitles and can select the language within the subtitle.
Code Page	Subtitle font selection. When set to default, contents are displayed in the language set in "Option - Language - Menu Language."
Sync	If the video is not synchronized with the captions, it can be adjusted by 0.5 second.

! NOTE

- When replaying a video file after stopping, select "Yes" to restart where it previously stopped.
- If continuous series files exist within the folder, the next file will automatically be played. But, this excludes cases when the Repeat function of Movie List Option is turned "On" or when set as **Play Marked**.

Set video.

Allows you to change Video presets.
(See "PICTURE Settings" on p. 32)

Set audio.

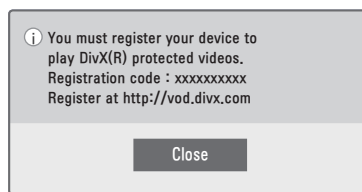
Allows you to change Audio presets.
(See "AUDIO Settings" on p. 34)

DivX® VOD Guide

DivX® VOD Registration

In order to play purchased or rented DivX® VOD contents, you should register your device with 10 digit DivX registration code from your device at www.divx.com/vod.

- 1 Press **SETTINGS** to access the main menus.
- 2 Press the Navigation buttons to scroll to **USB** and press **OK**.
- 3 Press the Navigation buttons to scroll to **DivX(R) VOD** and press **OK**.
- 4 Press the Navigation buttons to scroll to **Registration** and press **OK**.
- 5 View the registration code of your TV.



- 6 When you are finished, press **EXIT**.

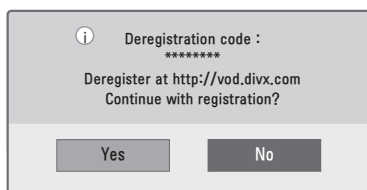
! NOTE

- While you are checking the registration code, some buttons may not work.
- If you use the DivX registration code of another device, you cannot play the rented or purchased DivX file. Make sure to use the DivX registration code assigned to your TV.
- The video or audio files that are not converted by the standard DivX codec may be corrupted or not be played.
- The DivX VOD code allows you to activate up to 6 devices under one account.

DivX® VOD Deregistration

You should deregister your device with 8 digit DivX deregistration code from your device at www.divx.com/vod. Once the deregistration is executed, you must register your device again to see DivX® VOD contents.

- 1 Press **SETTINGS** to access the main menus.
- 2 Press the Navigation buttons to scroll to **USB** and press **OK**.
- 3 Press the Navigation buttons to scroll to **DivX(R) VOD** and press **OK**.
- 4 Press the Navigation buttons to scroll to **Deregistration** and press **OK**.
- 5 Select **Yes** to confirm.

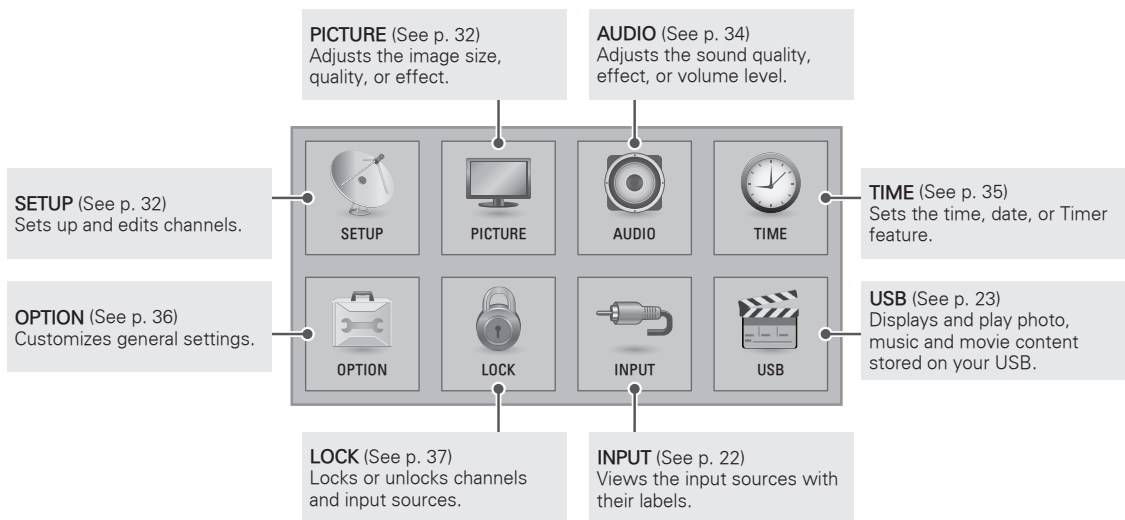


- 6 When you are finished, press **EXIT**.

CUSTOMIZING TV SETTINGS

The Main Menu

- 1 Press **SETTINGS** to access the main menus.
- 2 Press the Navigation buttons to scroll to one of the following menus and press **OK**.
- 3 Press the Navigation buttons to scroll to the setting or option you want and press **OK**.
- 4 When you are finished, press **EXIT**.

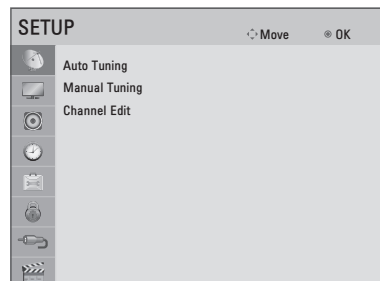


Customizing Settings

SETUP Settings

- 1 Press **SETTINGS** to access the main menus.
- 2 Press the Navigation buttons to scroll to **SETUP** and press **OK**.
- 3 Press the Navigation buttons to scroll to the setting or option you want and press **OK**.
 - To return to the previous level, press **⇐ BACK**.
- 4 When you are finished, press **EXIT**.

The available channel settings are described in the following.

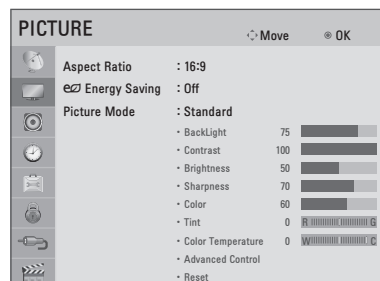


Setting	Description
Auto Tuning	Tunes and stores all available channels through antennas or cable inputs. (See p. 18)
Manual Tuning	Tunes and stores the channels you want manually. (See p. 19)
Channel Edit	Adds or deletes channels on the channel. (See p. 19)

PICTURE Settings

- 1 Press **SETTINGS** to access the main menus.
- 2 Press the Navigation buttons to scroll to **PICTURE** and press **OK**.
- 3 Press the Navigation buttons to scroll to the setting or option you want and press **OK**.
 - To return to the previous level, press **⇐ BACK**.
- 4 When you are finished, press **EXIT**.


The available picture settings are described in the following.



Setting	Description								
Aspect Ratio	Changes the image size to view images at its optimal size. (See p. 20)								
e Energy Saving	Reduces the power consumption by adjusting the screen brightness. <div> <p>NOTE</p> <ul style="list-style-type: none"> When selecting Maximum, Backlight will not work. </div> <table> <tr> <th colspan="2">Option</th></tr> <tr> <td>Off</td><td>Select if this feature is not necessary.</td></tr> <tr> <td>Minimum/ Medium/ Maximum</td><td>Selects the brightness level.</td></tr> <tr> <td>Screen off</td><td>The screen turns off in 3 seconds. Pressing any button of the remote control will turn on the screen again.</td></tr> </table>	Option		Off	Select if this feature is not necessary.	Minimum/ Medium/ Maximum	Selects the brightness level.	Screen off	The screen turns off in 3 seconds. Pressing any button of the remote control will turn on the screen again.
Option									
Off	Select if this feature is not necessary.								
Minimum/ Medium/ Maximum	Selects the brightness level.								
Screen off	The screen turns off in 3 seconds. Pressing any button of the remote control will turn on the screen again.								

Picture Mode	Selects one of the preset image or customizes options in each mode for the best TV screen performance. You are also able to customize advanced options of each mode. The available preset picture modes vary depending on the TV.	
	Mode	
	Vivid	Adjusts the video image for the retail environment by enhancing the contrast, brightness, color, and sharpness.
	Standard	Adjusts the image for a normal environment.
	Cinema	Optimizes the video image for a cinematic look to enjoy movies as if you are in a movie theater.
	Sport	Optimizes video images for high and dynamic actions by emphasizing primary colors such as white, grass, or sky blue.
	Game	Optimizes the video image for fast moving video such as PCs or games.

Basic Image Options

Setting	Description
Backlight	Adjusts the brightness of the screen by controlling the LCD backlight. If you decrease the brightness level, the screen becomes darker and the power consumption will be reduced without any video signal loss. <div>  NOTE <ul style="list-style-type: none"> If you use the "Energy saving - Off, Minimum, Medium", Backlight will be available. </div>
Contrast	Increases or decreases the amplitude of the video signal. You may use Contrast when the bright part of the picture is saturated.
Brightness	Adjusts the base level of the signal in the picture.
Sharpness	Adjusts the level of crispness in the edges between the light and dark areas of the picture. The lower the level, the softer the image.
Color	Adjusts intensity of all colors.
Tint	Adjusts the balance between red and green levels.
Color Temperature	Sets to warm to enhance hotter colors such as red, or set to cool to enhance cooler colors such as blue.
Advanced Control	Customizes the advanced options.
Reset	Restores the options of each mode to the factory default.

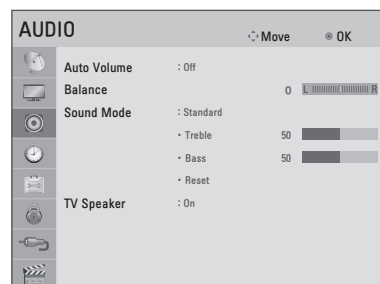
Advanced Image Options (Depending on model)

Setting	Description
Dynamic Contrast	Adjusts the contrast to keep it at the best level according to the brightness of the screen. The picture is improved by making bright parts brighter and dark parts darker.
Dynamic Color	Adjusts screen colors so that they look livelier, richer and clearer. This feature enhances hue, saturation and luminance so that red, blue and green white look more vivid.
Noise Reduction	Reduces screen noise without compromising video quality.
Gamma	You can adjust brightness of dark area and middle gray level area of the picture. <ul style="list-style-type: none"> Low: Make the dark and middle gray level areas brighter. Medium: Express the original picture level. High: Make the dark and middle gray level area darker.
Black Level	Sets black level of the screen to proper level. This function is available in the following modes: TV(NTSC-M/J, PAL-M, PAL-N), AV (NTSC-M/J, PAL-M, PAL-N), HDMI or Component.
Motion Eye Care	Adjusts the brightness of the screen to prevent the screen from being too bright. Dims extremely bright pictures.
Film Mode	You can watch a cinema-like video by eliminating judder effect. Use this function when you watch movies.
Color Gamut	Maximizes the utilization of color to increase color quality. <ul style="list-style-type: none"> Standard: Displays standard set of colors. Wide: Increase number of colors used.
Edge Enhancer	Shows clearer and distinctive yet natural edges of the video.

AUDIO Settings

- 1 Press **SETTINGS** to access the main menus.
- 2 Press the Navigation buttons to scroll to **AUDIO** and press **OK**.
- 3 Press the Navigation buttons to scroll to the setting or option you want and press **OK**.
 - To return to the previous level, press **↶ BACK**.
- 4 When you are finished, press **EXIT**.

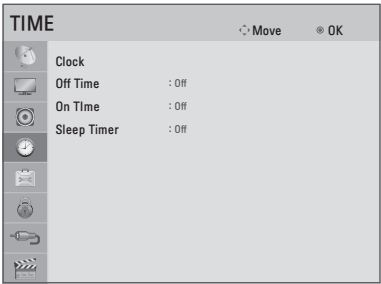
The available audio settings are described in the following.




Setting	Description	
Auto Volume	Activates the Auto Volume feature to keep the volume level consistent whenever you change channels. The volume level may not be consistent due to different signal conditions of broadcasting stations.	
Balance	Adjusts balance between the left and right speakers according to your room environment.	
Sound Mode	Selects one of the preset sound modes or customizes options in each mode.	
	Mode	
	Standard	Select when you want standard-quality sound.
	Music	Select when you listen to music.
	Cinema	Select when you watch movies.
	Sport	Select when you watch sports events.
	Game	Select when you play games.
	Option	
	Treble	Controls the dominant sounds in the output. When you turn up the treble, it will increase the output to the higher frequency range.
	Bass	Controls the softer sounds in the output. When you turn up the bass, it will increase the output to the lower frequency range.
	Reset	Resets the sound mode to the default setting.
TV Speaker	Turns off the internal speaker of the TV when using an external Hi-Fi system.	

TIME Settings

- 1 Press **SETTINGS** to access the main menus.
- 2 Press the Navigation buttons to scroll to **TIME** and press **OK**.
- 3 Press the Navigation buttons to scroll to the setting or option you want and press **OK**.
- To return to the previous level, press **↶ BACK**.
- 4 When you are finished, press **EXIT**.



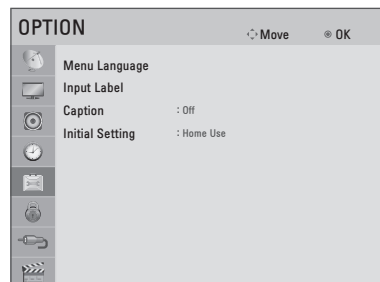
The available time settings are described in the following.


Setting	Description
Clock	You must set the time correctly before using on/off time function. If current time setting is erased by a power failure or the TV is unplugged, reset the clock.
Off Time / On Time	Sets the time to turn on or off the TV automatically. To use this function, you should set the current time and date in advance. <div> NOTE<ul style="list-style-type: none">• If you do not press any button within 2 hours after the TV turns on by the On Time feature, the TV enters the Standby mode automatically.• When power is turned on: The power is automatically turned off by the Off Time feature.• When power is turned off: The power is automatically turned on by the On Time feature.</div>
Sleep Timer	Sets the length of time until the TV to turns off. When you turn the TV off and turn it on again, the Sleep timer feature will be set to off.

OPTION Settings

- 1 Press **SETTINGS** to access the main menus.
- 2 Press the Navigation buttons to scroll to **OPTION** and press **OK**.
- 3 Press the Navigation buttons to scroll to the setting or option you want and press **OK**.
 - To return to the previous level, press **↩ BACK**.
- 4 When you are finished, press **EXIT**.

The available general settings are described in the following.



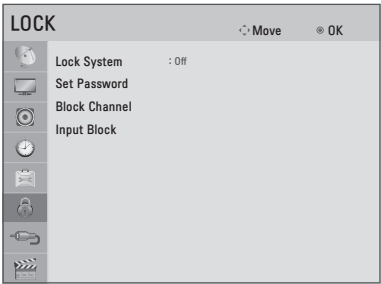
Setting	Description	
Menu Language	Selects a desired language.	
Input Label	Indicates which device is connected to which input port.	
Caption	Sets whether to display captions and customize your option in each mode.	
	Mode	
	CC1 - 4 (Closed Captioning)	Displays the audio portion of a TV program as text on the TV screen. CC1 is the most common mode in use.
	Text1 - 4	<ul style="list-style-type: none"> - Field 1 data channels: two Captions (CC1, CC2) and two Text (T1, T2). - Field 2 data channels: two Captions (CC3, CC4) and two Text (T3, T4).
Initial Setting	Resets the TV to factory default and erases all stored channels. Customizes the TV settings to suit your preference. The initial setup screen will appear when you turn on the TV for the first time.	
	<div>  NOTE </div> <ul style="list-style-type: none"> • When selecting "Lock System - On" in the LOCK menu, the message to enter the password appears. 	
	Setting	
	Menu Language	Selects a desired language.
	Mode Setting	Selects Home Use for the home environment. Selects Store Demo for the retail environment.
	Time Setting	Sets the time.
	Auto Tuning	Scans and saves available channels automatically.

LOCK Settings

- 1 Press **SETTINGS** to access the main menus.
- 2 Press the Navigation buttons to scroll to **LOCK** and press **OK**.
- 3 Press the Navigation buttons to scroll to the setting or option you want and press **OK**.
 - To return to the previous level, press **↩ BACK**.
- 4 When you are finished, press **EXIT**.

The available lock settings are described in the following.

Setting	Description
Lock System	Activates or deactivates the lock system.
Set Password	Changes the 4-digit password. The default PIN is "0 0 0 0".
Block Channel	Blocks the channels that contain inappropriate content for children by pressing the Blue button. The Lock icon appears in front of the blocked channels. The channels can be selected but the screen is blanked and the audio is muted.
Input Block	Blocks the input sources.



MAKING CONNECTIONS

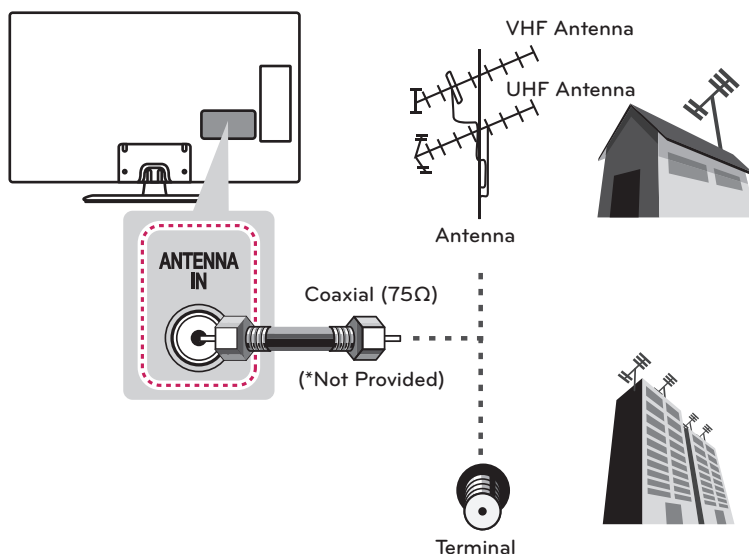
You can connect various external devices to the TV. Supported external devices are: HD receivers, DVD players, VCRs, audio systems, USB storage devices, gaming devices, and other external devices. For more information on external device's connection, refer to the manual provided with each device.

! NOTE

- If you record a TV program on a DVD recorder or VCR, make sure to connect the TV signal input cable to the TV through a DVD recorder or VCR. For more information about recording, refer to the manual provided with the connected device.
- The external device connections shown may differ slightly from illustrations in this manual.
- Connect external devices to the TV regardless about the order of the TV port.
- If you connect a gaming device to the TV, use the cable supplied with the gaming device.
- Refer to the external equipment's manual for operating instructions.

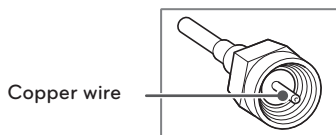
Connecting to an antenna or cable

Connect an antenna, cable, or cable box to watch TV while referring to the following. The illustrations may differ from the actual items and a RF cable is optional.



! CAUTION

- Make sure not to bend the copper wire of the RF cable.



- Complete all connections between devices, and then connect the power cord to the power outlet to prevent damage to your TV.

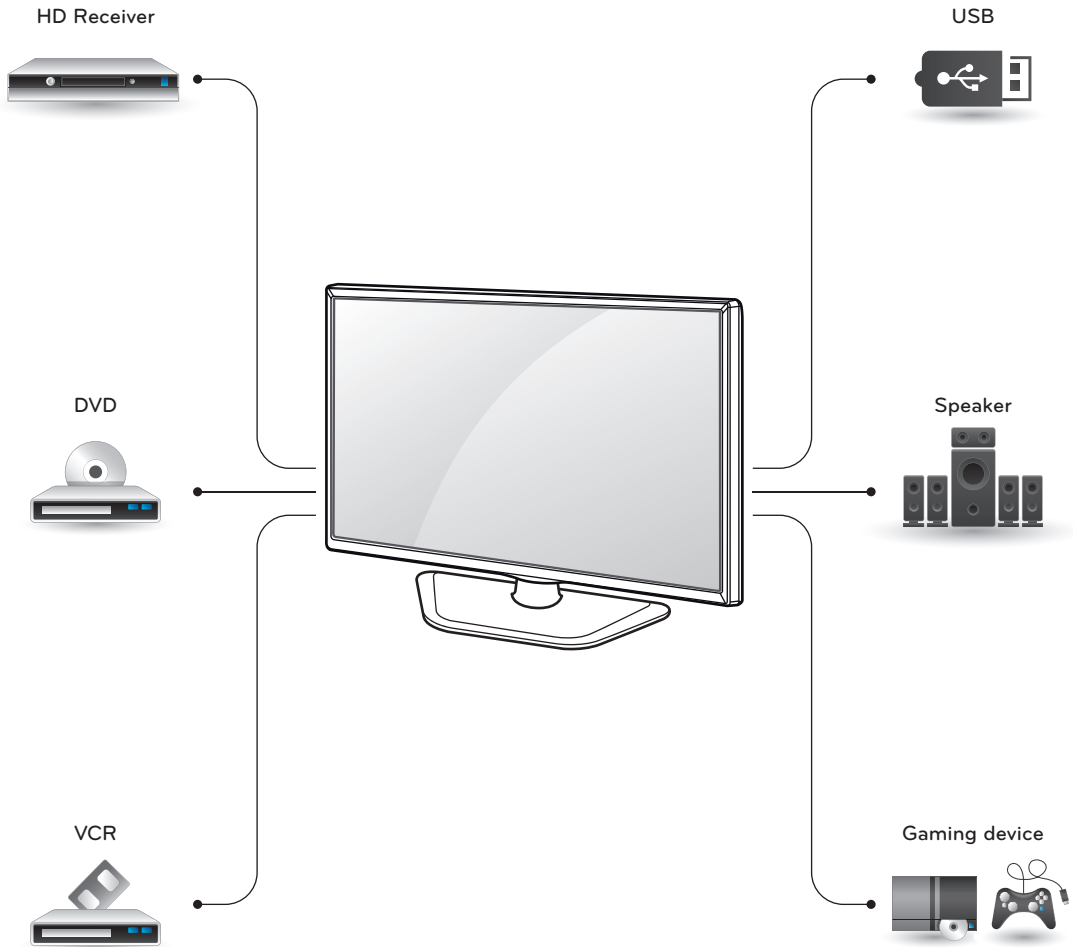
! NOTE

- To improve the picture quality in a poor signal area, purchase a signal amplifier.
- Use a signal splitter to use more than 2 TVs.
- If the antenna is not installed properly, contact your dealer for assistance.

Connection Overview

Connect various external devices to the ports on the TV back panel.

- 1 Find an external device you want to connect to your TV as shown on the following illustration.
- 2 Check the connection type of the external device.
- 3 Go to the appropriate illustration and check the connection details.



Connecting to a HD receiver, DVD Player, or VCR

Connect a HD receiver, DVD Player, or VCR to the TV and select an appropriate input mode.

HDMI Connection

HDMI is the best way to connect a device.

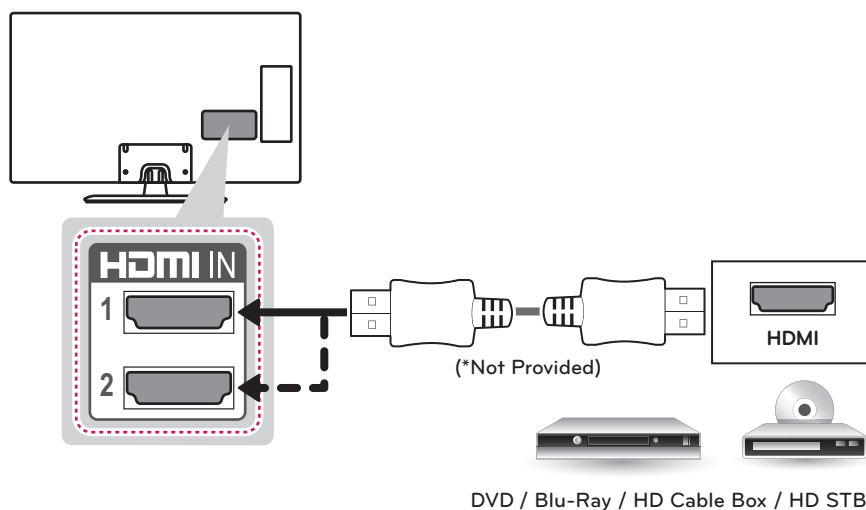
Transmits digital video and audio signals from an external device to the TV. Connect the external device and the TV with the HDMI cable as shown in the following illustration.



NOTE

- High Speed HDMI™ Cables are tested to carry an HD signal up to 1080p and higher.
- HDMI Audio Supported Format: Dolby Digital, PCM (Up to 192 kHz, 32 kHz / 44.1 kHz / 48 kHz / 96 kHz / 192 kHz)
-> DTS is not supported.

Choose any HDMI input port to connect.
It does not matter which port you use.

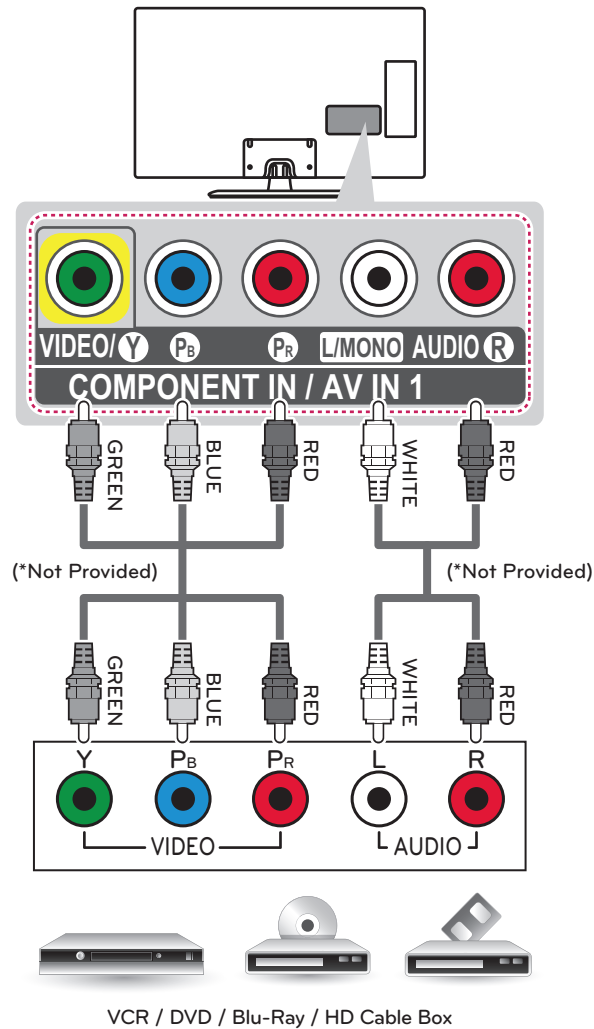


Component Connection

Transmits analog video and audio signals from an external device to the TV. Connect the external device and the TV with a component cable as shown in the following illustration.

! NOTE

- If cables are installed incorrectly, it could cause the image to display in black and white or with distorted color.
- Check to ensure the cables are matched with the corresponding color connection.

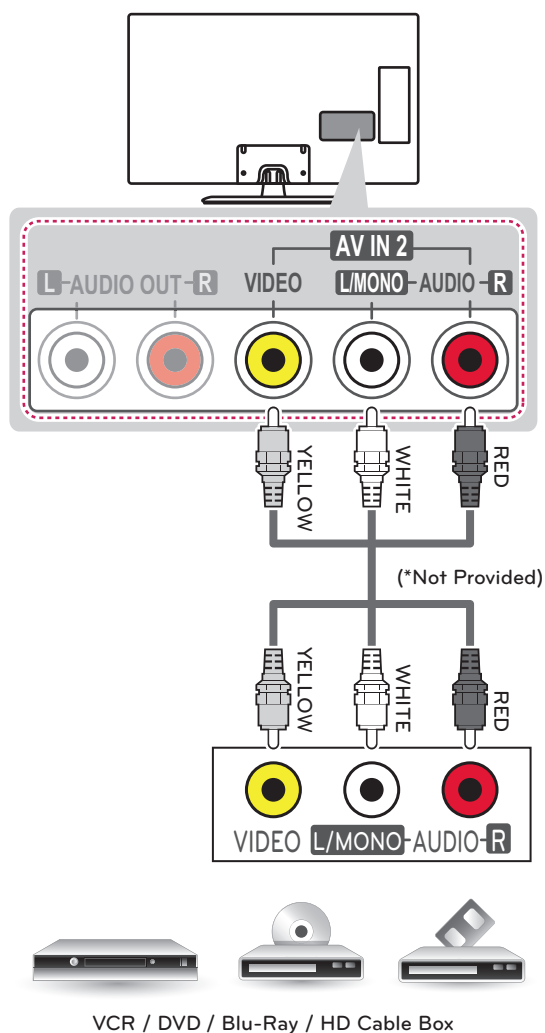


Composite Connection

Transmits analog video and audio signals from an external device to the TV. Connect the external device and the TV with the composite cable as shown in the following illustration.

! NOTE

- If you have a mono VCR, connect the audio cable from the VCR to the AUDIO L/MONO jack of the TV.
- **Check to ensure the cables are matched with the corresponding color connection.**



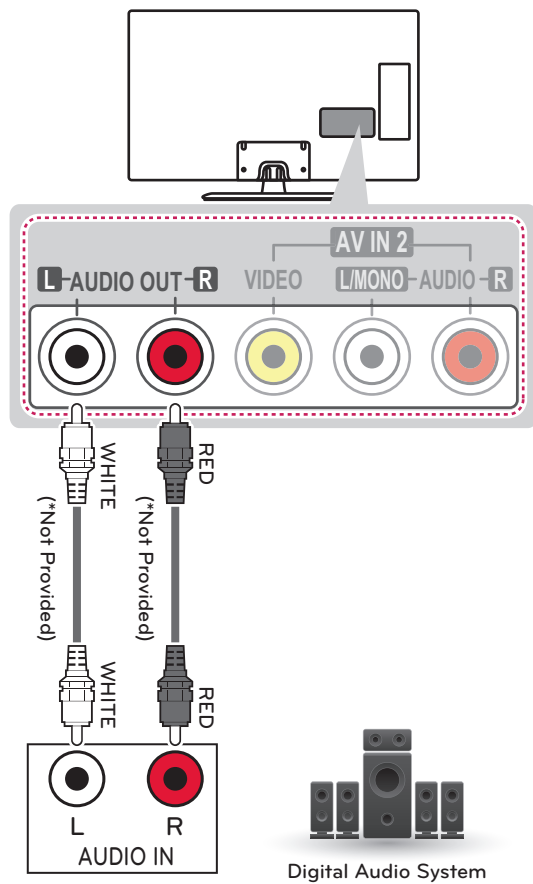
VCR / DVD / Blu-Ray / HD Cable Box

Connecting to an Audio System

You can use an optional external audio system instead of the built-in speaker.

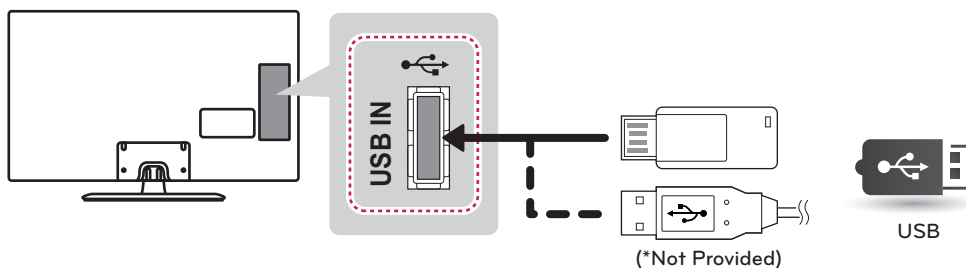
External stereo connection

Use to connected either an external amplifier or surround sound system.



Connecting a USB Device

Connect a USB storage device such as a USB flash memory, external hard drive, or a USB memory card reader to the TV.



MAINTENANCE

Cleaning Your TV

Clean your TV regularly to keep it at peak performance and to extend the product lifespan.



CAUTION

- Before cleaning, turn the power off and disconnect the power cord and all other cables.
- When the TV is left unattended or unused for a long time, disconnect the power cord from the wall outlet to prevent possible damage from lightning or power surges.

Screen, frame, cabinet, and stand

To remove dust or light dirt, wipe the surface with a dry, clean, and soft cloth.

To remove major dirt, wipe the surface with a soft cloth dampened in clean water or a diluted mild detergent. Then wipe immediately with a dry cloth.



CAUTION

- Do not push, rub, or hit the surface with your fingernail or a sharp object, as this may result in scratches on the screen and image distortions.
- Do not use any chemicals, such as waxes, benzene, alcohol, thinners, insecticides, air fresheners, or lubricants, as these may damage the screen's finish and cause discoloration.
- Do not spray liquid onto the surface. If water enters the TV, it may result in fire, electric shock, or malfunction.

Power cord

Remove the accumulated dust or dirt on the power cord regularly.

TROUBLESHOOTING

General

Problem	Solution
Cannot control the TV with the remote control.	<ul style="list-style-type: none"> • Check the remote control sensor on the product and try again. • Check if there is any obstacle between the product and the remote control. • Check if the batteries are still working and properly installed ((+) to (+), (-) to (-)).
No image display and no sound is produced.	<ul style="list-style-type: none"> • Check if the product is turned on. • Check if the power cord is connected to a wall outlet. • Check if there is a problem in the wall outlet by connecting other products.
Image appears slowly when the TV turns on.	<ul style="list-style-type: none"> • 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.
Cannot connect external devices.	<ul style="list-style-type: none"> • Refer to the Connection Overview and connect an external device.
The TV turns off suddenly.	<ul style="list-style-type: none"> • Check the power control settings. The power supply may be interrupted. • Check if the Auto sleep feature is activated in the Time settings. Refer to the Sleep Timer. • If there is no signal while the TV is on, the TV will turn off automatically after 15 minutes of inactivity. (Depending on model)

Audio

Problem	Solution
No sound is produced while images are displaying.	<ul style="list-style-type: none"> • Press VOL + or - button. • Check if the sound is muted by pressing MUTE. • Scroll to other channels. There may a problem with the broadcast. • Check if the TV Speaker feature is activated in the menu option.
No output from one of the speakers	<ul style="list-style-type: none"> • Adjust Balance in the menu option.
Unusual sound from inside the TV is produced.	<ul style="list-style-type: none"> • 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.

Video

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

SPECIFICATIONS

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

Power requirement		AC 100 - 240 V ~ 50 / 60 Hz
Television System		NTSC, PAL-M/N
Program Coverage		VHF 2 - 13, UHF 14 - 69, CATV 1 - 125
External Antenna Impedance		75 Ω
Environment condition	Operating Temperature	0 °C ~ 40 °C
	Operating Humidity	Less than 80 %
	Storage Temperature	-20 °C ~ 60 °C
	Storage Humidity	Less than 85 %

MODELS		32LN5100 (32LN5100-MB)
Dimensions (W x H x D)	With stand	738 x 497 x 207 (mm)
	Without stand	738 x 449 x 79 (mm)
Weight	With stand	7.0 kg
	Without stand	6.4 kg
Current Value / Power consumption		1.3 A / 80 W

HDMI (DTV) supported mode

Resolution	Horizontal Frequency (kHz)	Vertical Frequency (Hz)
720 x 480p	31.469	59.94
	31.50	60.00
720 x 576p	31.25	50.00
1280 x 720p	37.50	50.00
	44.96	59.94
	45.00	60.00
1920 x 1080i	28.125	50.00
	33.72	59.94
	33.75	60.00
1920 x 1080p	26.97	23.97
	27.00	24.00
	33.716	29.976
	33.75	30.00
	56.25	50.00
	67.43	59.94
	67.50	60.00

Component port connecting information

Component ports on the TV	Y	P _B	P _R
Video output ports on DVD player	Y	P _B	P _R
	Y	B-Y	R-Y
	Y	Cb	Cr
	Y	Pb	Pr

Component supported mode

Resolution	Horizontal Frequency (kHz)	Vertical Frequency (Hz)
720 x 480i	15.73	59.94
	15.75	60.00
720 x 480p	31.47	59.94
	31.50	60.00
720 x 576i	15.625	50.00
	31.25	50.00
1280 x 720p	37.50	50.00
	44.96	59.94
	45.00	60.00
1920 x 1080i	28.125	50.00
	33.72	59.94
	33.75	60.00
1920 x 1080p	56.25	50.00
	67.432	59.94
	67.50	60.00



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

MODEL _____

SERIAL _____



OWNER'S MANUAL

EXTERNAL CONTROL DEVICE SETUP

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

KEY CODES

- This feature is not available for all models.

Code (Hexa)	Function	Note	Code (Hexa)	Function	Note
00	CH +, PR +	R/C Button	45	Q.Menu	R/C Button
01	CH -, PR -	R/C Button	4C	List, - (ATSC Only)	R/C Button
02	Volume +	R/C Button	53	List	R/C Button
03	Volume -	R/C Button	5B	Exit	R/C Button
06	> (Arrow Key / Right Key)	R/C Button	61	Blue	R/C Button
07	< (Arrow Key / Left Key)	R/C Button	63	Yellow	R/C Button
08	Power	R/C Button	71	Green	R/C Button
09	Mute	R/C Button	72	Red	R/C Button
0B	Input	R/C Button	79	Ratio / Aspect Ratio	R/C Button
0E	SLEEP	R/C Button	91	AD (Audio Description)	R/C Button
0F	TV, TV/RAD	R/C Button	7A	User Guide	R/C Button
10 - 19	Number Key 0 - 9	R/C Button	7C	Smart / Home	R/C Button
1A	Q.View / Flashback	R/C Button	7E	SIMPLINK	R/C Button
1E	FAV (Favorite Channel)	R/C Button	8E	▶▶ (Forward)	R/C Button
20	Text (Teletext)	R/C Button	8F	◀◀ (Rewind)	R/C Button
21	T. Opt (Teletext Option)	R/C Button	AA	Info	R/C Button
28	Return (BACK)	R/C Button	AB	Program Guide	R/C Button
30	AV (Audio / Video) Mode	R/C Button	B0	▶ (Play)	R/C Button
39	Caption/Subtitle	R/C Button	B1	■ (Stop / Live TV)	R/C Button
40	Λ (Arrow Key / Cursor Up)	R/C Button	BA	(Freeze / Slow Play / Pause)	R/C Button
41	V (Arrow Key / Cursor Down)	R/C Button	BD	● (REC)	R/C Button
42	My Apps	R/C Button	DC	3D	R/C Button
43	Menu / Settings	R/C Button	9F	App / *	R/C Button
44	OK / Enter	R/C Button			

- * Key code 4C (0x4C) is available on ATSC/ISDB models which use major/minor channel.
(For South Korea, Japan, North America, Latin America except Colombia models)

EXTERNAL CONTROL DEVICE SETUP

- Image shown may differ from your TV.

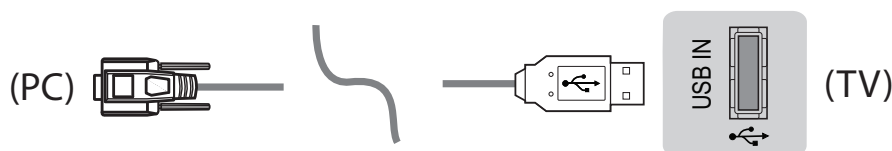
Connect the USB to Serial converter/RS-232C input jack to an external control device (such as a computer or an A/V control system) to control the product's functions externally.

Note: The type of control port on the TV can be different between model series.

- * Please be advised that not all models support this type of connectivity.
- * Cable is not provided.

USB to Serial converter with USB Cable

USB Type

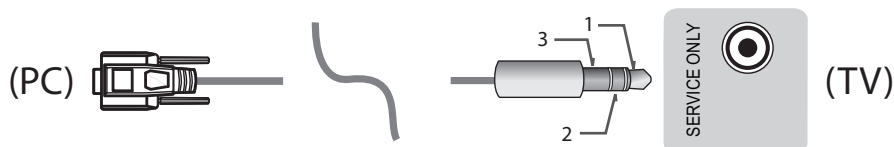


- LGTV supports PL2303 chip-based (Vendor ID : 0x0557, Product ID : 0x2008) USB to serial converter which is not made nor provided by LG.
- It can be purchased from computer stores that carry accessories for IT support professionals.

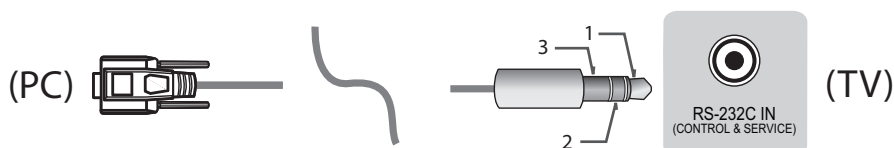
RS-232C with RS-232C Cable (Legacy)

Phone jack Type

- You need to purchase the phone-jack to RS-232 cable required for the connection between the PC and the TV, which is specified in the manual.
- For other models, connect to the USB port.

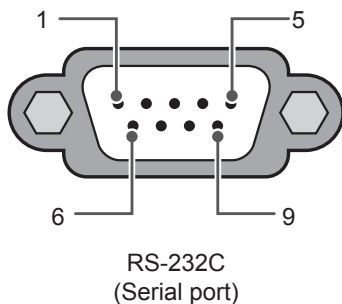


- This connection can only be used for the following models: 55/47/39LN5450-UA, 55/50/47/42LN5400-UA, 42/39/32LN5300-UA, and 37/32LN530B-UA.



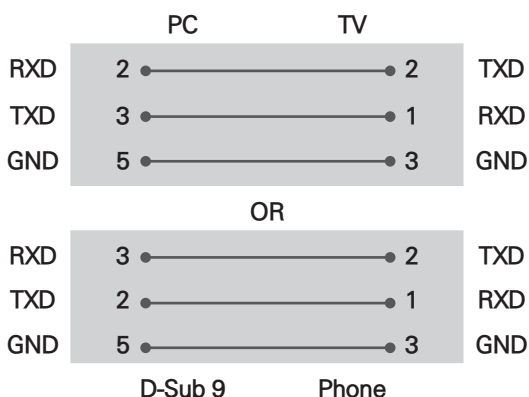
- This connection can only be used for the following models: 42/50PN4500-UA, 50/60PN5300-UF, 50/60PN6500-UA, and 60PN6550-UA.

Customer Computer



RS-232C configurations

3-Wire Configurations(Not standard)



Set ID

For Set ID number, see "Real Data Mapping" on p.6

- Press **SETTINGS** to access the main menus.
- Press the Navigation buttons to scroll to **OPTION** and press **OK**.
- Press the Navigation buttons to scroll to **SET ID** and press **OK**.
- Scroll left or right to select a set ID number and select **CLOSE**. The adjustment range is 1-99.
- When you are finished, press **EXIT**.

Communication Parameters

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

Command reference list

(Depending on model)

	COMMAND1	COMMAND2	DATA (Hexadecimal)		COMMAND1	COMMAND2	DATA (Hexadecimal)
01. Power off	k	a	00	13. Balance	k	t	00 to 64
02. Aspect Ratio	k	c	(p.7)	14. Color (Colour) Temperature	x	u	00 to 64
03. Screen Mute	k	d	(p.7)	15. ISM Method (Only Plasma TV)	j	p	(p.8)
04. Volume Mute	k	e	00 to 01	16. Energy Saving	j	q	00 to 05
05. Volume Control	k	f	00 to 64	17. Tune Command	m	a	(p.8)
06. Contrast	k	g	00 to 64	18. Channel (Programme) Add/Del(Skip)	m	b	00 to 01
07. Brightness	k	h	00 to 64	19. Key	m	c	Key Codes
08. Color/ Colour	k	i	00 to 64	20. Control Back Light, Control Panel Light	m	g	00 to 64
09. Tint	k	j	00 to 64	21. Input select (Main)	x	b	(p.10)
10. Sharpness	k	k	00 to 32	22. 3D (Only 3D models)	x	t	(p.11)
11. OSD Select	k	l	00 to 01	23. Extended 3D (Only 3D models)	x	v	(p.11)
12. Remote Control Lock Mode	k	m	00 to 01				

* Note: During USB operations such as DivX or EMF, all commands except Power(ka) and Key(mc) are not executed and treated as NG.

Transmission / Receiving Protocol

Transmission

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

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

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

[Set ID] : You can adjust the [Set ID] to choose desired monitor ID number in option menu.

Adjustment range in TV is 1 to 99. If [Set ID] value is selected to '0', every connected set can be controlled.

* [Set ID] is indicated as decimal (1 to 99) on menu and as Hexadecimal (0x00 to 0x63) on transmission/receiving protocol.

[DATA] : To transmit command data (hexadecimal). Transmit 'FF' data to read status of command.

[Cr] : Carriage Return - ASCII code '0x0D'

[] : Space - ASCII code '0x20'

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.

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.

Data 00: Illegal Code

Real data mapping (Hexadecimal → Decimal)

* When you enter the [data] in hexadecimal, refer to following conversion table.

* Channel Tune (ma) Command uses two-byte hexadecimal value([data]) to select channel number.

00 : Step 0	32 : Step 50 (Set ID 50)	FE : Step 254
01 : Step 1 (Set ID 1)	33 : Step 51 (Set ID 51)	FF : Step 255
...
0A : Step 10 (Set ID 10)	63 : Step 99 (Set ID 99)	01 00 : Step 256
...
0F : Step 15 (Set ID 15)	C7 : Step 199	27 0E : Step 9998
10 : Step 16 (Set ID 16)	C8 : Step 200	27 0F : Step 9999
...

* Commands may work differently depending on model and signal.

01. Power (Command: k a)

- To control Power Off of the set.

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

Data 00 : Power Off

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

- To Show Power On. (Works TV is On Only)

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

Ack [a][][Set ID][][OK][01][x]

* Similarly, if other functions transmit 'FF' data based on this format, Acknowledgement feedback presents status about each function.

02. Aspect Ratio (Command: k c)

(Main Picture Size)

- To adjust the screen format. (Main picture format)
You can also adjust the screen format using the Aspect Ratio in the Q.MENU. or PICTURE menu.

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

Data 01 : Normal screen (4:3)	07 : 14:9 (Europe, Colombia, Mid-East,
02 : Wide screen (16:9)	Asia except South Korea and Japan)
04 : Zoom	09 : * Just Scan
05 : Zoom 2	0B : Full Wide
(Latin America except Colombia Only)	(Europe, Colombia, Mid-East, Asia except South Korea and Japan)
06 : Set by Program/ 10 to 1F : Cinema Zoom 1 Original	to 16

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

- * Using the PC input, you select either 16:9 or 4:3 screen aspect ratio.
- * In DTV/HDMI/Component mode (high-definition), Just Scan is available.
- * Full wide mode may work differently based on model and is supported for DTV fully, and ATV, AV partially.

03. 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 mute off

01 : Screen mute on (Picture off)
10 : Video mute on

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

* In case of video mute on only, TV will display On Screen Display(OSD). But, in case of Screen mute on, TV will not display OSD.

04. 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)

01 : Volume mute off (Volume on)

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

05. 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 to Max : 64

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

06. 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 to Max : 64

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

07. 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 to Max : 64

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

08. Color/Colour (Command: k i)

- To adjust the screen Color(Colour).
You can also adjust colour in the PICTURE menu.

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

Data Min : 00 to Max : 64

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

09. Tint (Command: k j)

- To adjust the screen tint.
You can also adjust tint in the PICTURE menu.

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

Data Red : 00 to Green : 64

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

10. Sharpness (Command: k k)

- To adjust the screen sharpness.
You can also adjust sharpness in the PICTURE menu.

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

Data Min : 00 to Max : 32

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

11. OSD Select (Command: k l)

- To select OSD (On Screen Display) on/off when controlling remotely.

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

Data 00 : OSD off 01 : OSD on

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

12. Remote control lock mode (Command: k m)

- To lock the front panel controls on the monitor and remote control.

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

Data 00 : Lock off 01 : Lock on

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

- * If you are not using the remote control, use this mode.
When main power is off & on (plug-off and plug-in, after 20 - 30 seconds), external control lock is released.
- * In the standby mode (DC off by off timer or 'ka', 'mc' command), and if key lock is on, TV will not turn on by power on key of IR & Local Key.

13. 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 to Max : 64

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

14. Color(Colour) Temperature (Command: x u)

- To adjust colour temperature. You can also adjust Color(Colour) Temperature in the PICTURE menu.

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

Data Min : 00 to Max : 64

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

15. ISM Method (Command: j p) (Only Plasma TV)

- To control the ISM method. You can also adjust ISM Method in OPTION menu.

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

Data Min : 02: Orbiter

08: Normal

20: Color(Colour) Wash

Ack [p][][Set ID][][OK/NG][Data][x]

16. Energy Saving (Command: j q)

- To reduce the power consumption of the TV. You can also adjust Energy Saving in PICTURE menu.

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

Data

00 : Off

01 : Minimum

02 : Medium

03 : Maximum

04 : Auto

05 : Screen off

* (Depending on model)

Ack [q][][Set ID][][OK/NG][Data][x]

17. Tune Command (Command: m a)

- * This command may work differently depending on model and signal.
- For Europe, Mid-East, Colombia, Asia except South Korea and Japan Model
- Select channel to following physical number.

Transmission [m][a][][Set ID][][Data 00][][Data 01][][Data 02][Cr]

* Analogue Terrestrial/Cable

[Data 00][Data 01] Channel Data

Data 00 : High byte channel data

Data 01 : Low byte channel data

- 00 00 ~ 00 C7 (Decimal : 0 ~ 199)

Data 02 : Input Source (Analogue)

- 00 : Terrestrial TV (ATV)

- 80 : Cable TV (CATV)

* Digital Terrestrial/Cable/Satellite

[Data 00][Data 01]: Channel Data

Data 00 : High Channel data

Data 01 : Low Channel data

- 00 00 ~ 27 0F (Decimal: 0 ~ 9999)

Data 02 : Input Source (Digital)

- 10 : Terrestrial TV (DTV)
- 20 : Terrestrial Radio (Radio)
- 40 : Satellite TV (SDTV)
- 50 : Satellite Radio (S-Radio)
- 90 : Cable TV (CADTV)
- a0 : Cable Radio (CA-Radio)

* Tune Command Examples:

1. Tune to the analogue terrestrial (PAL) Channel 10.

Set ID = All = 00

Data 00 & 01 = Channel Data is 10 = 00 0a

Data 02 = Analogue Terrestrial TV = 00

Result = **ma 00 00 0a 00**

2. Tune to the digital terrestrial (DVB-T) Channel 01.

Set ID = All = 00

Data 00 & 01 = Channel Data is 1 = 00 01

Data 02 = Digital Terrestrial TV = 10

Result = **ma 00 00 01 10**

3. Tune to the satellite (DVB-S) Channel 1000.

Set ID = All = 00

Data 00 & 01 = Channel Data is 1000 = 03 E8

Data 02 = Digital Satellite TV = 40

Result = **ma 00 03 E8 40**

Ack [a][][Set ID][][OK][Data 00][Data 01]

[Data 02][x][a][][Set ID][][NG][Data 00][x]

- For South Korea, North/Latin America except Colombia Model

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

Transmission [m][a][][0][][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 from the Major / Minor number, the Physical number is not required when sending a command in Digital.

* Analogue Terrestrial/Cable

Data 00 : Physical Channel Number

- Terrestrial (ATV) : 02~45 (Decimal: 2 ~ 69)
- Cable (CATV) : 01, 0E~7D (Decimal : 1, 14~125)

[Data 01 ~ 04]: Major/Minor Channel Number

Data 01 & 02: xx (Don't care)

Data 03 & 04: xx (Don't care)

Data 05: Input Source (Analogue)

- 00 : Terrestrial TV (ATV)
- 01 : Cable TV (CATV)

* Digital Terrestrial/Cable

Data 00 : xx (Don't care)

[Data 01][Data 02]: Major Channel Number

Data 01 : High byte Channel Data

Data 02 : Low byte Channel Data

- 00 01 ~ 27 0F (Decimal: 1 ~ 9999)

[Data 03][Data 04]: Minor Channel Number

Data 03 : High byte Channel Data

Data 04 : Low byte Channel Data

Data 05 : Input Source (Digital)

- 02 : Terrestrial TV (DTV) – Use Physical Channel Number
- 06 : Cable TV (CADTV) – Use Physical Channel Number
- 22 : Terrestrial TV (DTV) – Don't Use Physical Channel Number
- 26 : Cable TV (CADTV) - Don't Use Physical Channel Number
- 46 : Cable TV (CADTV) – Use Major Channel Number Only (One Part Channel)

Two bytes are available for each major and minor channel data, but usually the low byte is used alone (high byte is 0).

* Tune Command Examples:

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

Set ID = All = 00

Data 00 = Channel Data is 35 = 23

Data 01 & 02 = No Major = 00 00

Data 03 & 04 = No Minor = 00 00

Data 05 = Analogue Cable TV = 01

Total = **ma 00 23 00 00 00 01**

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

Set ID = All = 00

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 = Digital Terrestrial TV = 22

Total = **ma 00 00 00 1E 00 03 22**

Ack [a][][Set ID][][OK][Data 00][Data 01]

[Data 02][Data 03][Data 04][Data 05]

[x][a][][Set ID][][NG][Data 00][x]

- For Japan Model

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

Transmission [m][a][][0][][Data00][][Data01]

[][Data02][][Data03][][Data04][][Data05][Cr]

* Digital Terrestrial/Satellite

Data 00: xx (Don't care)

[Data 01][Data 02]: Major Channel Number

Data 01: High byte Channel Data

Data 02: Low byte Channel Data

- 00 01 ~ 27 0F (Decimal: 1 ~ 9999)

[Data 03][Data 04]: Minor/Branch Channel Number

(Don't care in Satellite)

Data 03: High byte Channel Data

Data 04: Low byte Channel Data

Data 05 : Input Source (Digital/Satellite for Japan)

- 02 : Terrestrial TV (DTV)

- 07 : BS (Broadcasting Satellite)

- 08 : CS1 (Communication Satellite 1)

- 09 : CS2 (Communication Satellite 2)

* Tune Command Examples:

1 Tune to the digital terrestrial (ISDB-T) channel 17-1.

Set ID = All = 00

Data 00 = Don't know Physical = 00

Data 01 & 02 = Major is 17 = 00 11

Data 03 & 04 = Minor/Branch is 1 = 00 01

Data 05 = Digital Terrestrial TV = 02

Total = **ma 00 00 00 11 00 01 02**

2. Tune to the BS (ISDB-BS) channel 30.

Set ID = All = 00

Data 00 = Don't know Physical = 00

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

Data 03 & 04 = Don't Care = 00 00

Data 05 = Digital BS TV = 07

Total = **ma 00 00 00 1E 00 00 07**

* This feature is varied based on the model.

Ack [a][][Set ID][][OK][Data 00][Data 01]

[Data 02][Data 03][Data 04][Data 05]

[x][a][][Set ID][][NG][Data 00][x]

18. Channel(Programme) Add/Del(Skip)

(Command: m b)

► To skip current channel(programme) for next time.

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

Data 00 : Del(ATSC,ISDB)/Skip(DVB) 01 : Add

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

* Set the saved channel status to del(ATSC, ISDB)/skip(DVB) or add.

19. Key (Command: m c)

► To send IR remote key code.

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

Data Key code - p.2.

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

20. Control Back Light (Command: m g)

• For LCD TV / LED TV

► To control the back light.

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

Data Min : 00 to Max : 64

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

Control Panel Light (Command: m g)

• For Plasma TV

► To control the panel light.

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

Data Min : 00 to Max : 64

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

21. Input select (Command: x b)

(Main Picture Input)

► To select input source for main picture.

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

Data

00 : DTV 01 : CADTV

02 : Satellite DTV 10 : ATV

ISDB-BS (Japan)

03 : ISDB-CS1 (Japan)

04 : ISDB-CS2 (Japan)

11 : CATV

20 : AV or AV1

21 : AV2

40 : Component1

41 : Component2

90 : HDMI1

91 : HDMI2

92 : HDMI3

93 : HDMI4

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

* This function depends on model and signal.

22. 3D(Command: x t) (only 3D models) (Depending on model)

- To change 3D mode for TV.

Transmission [x][t][][Set ID][][Data 00][][Data 01]
[][Data 02][][Data 03][Cr]

Data Structure

[Data 00] 00 : 3D On
01 : 3D Off
02 : 3D to 2D
03 : 2D to 3D

[Data 01] 00 : Top and Bottom
01 : Side by Side
02 : Check Board
03 : Frame Sequential
04 : Column interleaving
05 : Row interleaving

[Data 02] 00 : Right to Left
01 : Left to Right

[Data 03] 3D Effect(3D Depth): Min : 00 - Max : 14
(*transmit by Hexadecimal code)

- * If [Data 00] is 00 (3D On), [Data 03] has no meaning.
- * If [Data 00] is 01 (3D off) or 02 (3D to 2D), [Data 01], [Data 02] and [Data 03] have no meaning.
- * If [Data 00] is 03(2D to 3D), [Data 01] and [Data 02] have no meaning.
- * If [Data 00] is 00 (3D On) or 03 (2D to 3D), [Data 03] works when 3D Mode (Genre) is manual only.
- * All 3D pattern options ([Data 01]) may not be available according to broadcasting/video signal.

[Data 00]	[Data 01]	[Data 02]	[Data 03]
00	O	O	O
01	X	X	X
02	X	X	X
03	X	X	O

X : don't care

Ack [t][][Set ID][][OK][Data00][Data01][Data02]
[Data03][x]
[t][][Set ID][][NG][Data00][x]

23. Extended 3D(Command: x v) (only 3D models) (Depending on model)

- To change 3D option for TV.

Transmission [x][v][][Set ID][][Data 00][][Data 01][Cr]

[Data 00] 3D option
00 : 3D Picture Correction
01 : 3D Depth (3D Mode is Manual Only)
02 : 3D Viewpoint
06 : 3D Color Correction
07 : 3D Sound Zooming
08 : Normal Image View
09 : 3D Mode (Genre)

[Data 01] It has own range for each 3D option determined by [Data 00].

- 1) When [Data 00] is 00
00 : Right to Left
01 : Left to Right
- 2) When [Data 00] is 01, 02
Data Min: 0 - Max: 14 (*transmit by Hexadecimal code)
Data value range(0 - 20) converts Viewpoint range (-10 - +10) automatically (Depending on model)
* This option works when 3D Mode (Genre) is manual only.
- 3) When [Data 00] is 06, 07
00 : Off
01 : On
- 4) When [Data 00] is 08
00 : Revert to 3D video from 3D-to-2D converted 3D video
01 : Change 3D video to 2D video, except 2D-to-3D video
* If conversion condition doesn't meet, command is treated as NG.

5) When [Data 00] is 09

00 : Standard 01 : Sport
02 : Cinema 03 : Extreme
04 : Manual

Ack [v][][Set ID][][OK][Data00][Data01][x]
[v][][Set ID][][NG][Data00][x]

