



OWNER'S MANUAL

Safety and Reference

LG OLED TV

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

OLED55GXPUA
OLED55GXAU A

OLED65GXPUA
OLED65GXAU A

OLED77GXPUA
OLED77GXAU A



* M F L 7 1 6 8 9 2 3 2 *

(2006-REV02)

www.lg.com

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Important Safety Instruction


- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water.
- Clean only with 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.
- 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 the 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.


By using this product, you agree that all disputes between you and LG arising out of or relating in any way to this product (including but not limited to warranty disputes) shall be resolved exclusively through binding arbitration on an individual basis. The terms of the arbitration agreement (including details on the procedure for resolving disputes) is available at www.lg.com/us/arbitration (USA) or www.lg.com/ca_en/arbitration (Canada).

Warning! Safety Instructions





CAUTION

**RISK OF ELECTRIC SHOCK
DO NOT OPEN**



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

 The symbol 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 symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the device.

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

- TO PREVENT THE SPREAD OF FIRE, KEEP CANDLES OR OTHER ITEMS WITH OPEN FLAMES AWAY FROM THIS PRODUCT AT ALL TIMES.
 - **Do not place the TV and/or remote control in the following environments:**
 - Keep the product away from direct sunlight.
 - An area with high humidity such as a bathroom
 - Near any heat source such as stoves and other devices that produce heat.
 - Near kitchen counters or humidifiers where they can easily be exposed to steam or oil.
 - An area exposed to rain or wind.
 - 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).
 - Near flammable objects such as gasoline or candles, or expose the TV to direct air conditioning.
 - Do not install in excessively dusty places.
- Otherwise, this may result in fire, electric shock, combustion/explosion, malfunction or product deformation.

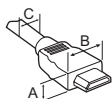
• Ventilation

- Install your TV where there is proper ventilation. Do not install in a confined space such as a bookcase.
- Do not install the product on a carpet or cushion.
- Do not block or cover the product with cloth or other materials while unit is plugged in.
- Take care not to touch the ventilation openings. When watching the TV for a long period, the ventilation openings may become hot.
- 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 device.
- Do not move the TV whilst the Power cord is plugged in.
- Do not use a damaged or loosely fitting power cord.
- Be sure to grasp the plug when unplugging the power cord. Do not pull on the power cord to unplug the TV.
- Do not connect too many devices to the same AC power outlet as this could result in fire or electric shock.
- **Disconnecting the Device from the Main Power**
 - The power plug is the disconnecting device. In case of an emergency, the power plug must remain readily accessible.
- Do not let your children climb or cling onto the TV. Otherwise, the TV may fall over, which may cause serious injury.
- **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 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

- **Grounding** (Except for devices which are not grounded.)
 - TV with a three-prong grounded AC plug must be connected to a three-prong grounded AC outlet. Ensure that you connect the earth ground wire to prevent possible electric shock.
 - Never touch this apparatus or antenna during a lightning storm. You may be electrocuted.
 - Make sure the power cord is connected securely to the TV and wall socket if not secured damage to the Plug and socket may occur and in extreme cases a fire may break out.
 - Do not insert metallic or inflammable objects into the product. If a foreign object is dropped into the product, unplug the power cord and contact the customer service.
 - Do not touch the end of the power cord while it is plugged in. You may be electrocuted.
 - **If any of the following occur, unplug the product immediately and contact your local customer service.**
 - The product has been damaged.
 - If water or another substance enters the product (like an AC adapter, power cord, or TV).
 - If you smell smoke or other odors coming from the TV
 - When lightning storms or when unused for long periods of time.Even the TV is turned off by remote control or button, AC power source is connected to the unit if not unplugged in.
 - Do not use high voltage electrical equipment near the TV (e.g., a bug zapper). This may result in product malfunction.
 - Do not attempt to modify this product in any way without written authorization from LG Electronics. Accidental fire or electric shock can occur. Contact your local customer service for service or repair. Unauthorized modification could void the user's authority to operate this product.
 - Use only an authorized attachments / accessories approved by LG Electronics. Otherwise, this may result in fire, electric shock, malfunction, or product damage.
 - Never disassemble the AC adapter or power cord. This may result in fire or electric shock.
 - Handle the adapter carefully to avoid dropping or striking it. An impact could damage the adapter.
 - To reduce the risk of fire or electrical shock, do not touch the TV with wet hands. If the power cord prongs are wet or covered with dust, dry the power plug completely or wipe dust off.
- **Batteries**
 - Store the accessories (battery, etc.) in a safe location out of the reach of children.
 - Do not short circuit, disassemble, or allow the batteries to overheat. Do not dispose of batteries in a fire. Batteries should not be exposed to excessive heat.
 - Caution: Risk of fire or explosion if the battery is replaced by an incorrect type.
 - **Moving**
 - When 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. Otherwise, this may result in product damage, fire hazard or injury.
 - Keep the packing anti-moisture material or vinyl packing out of the reach of children.
 - Do not allow an impact shock, any objects to fall into the product, and do not drop anything onto the screen.
 - 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. It may cause damage to screen.
 - **Cleaning**
 - When cleaning, unplug the power cord and wipe gently with a soft/dry cloth. Do not spray water or other liquids directly on the TV. Do not clean your TV with chemicals including glass cleaner, any type of air freshener, insecticide, lubricants, wax (car, industrial), abrasive, thinner, benzene, alcohol etc., which can damage the product and/or its panel. Otherwise, this may result in electric shock or product damage.

Preparing

- When the TV is turned on for the first time after being shipped from the factory, initialization of the TV may take approximately one minute.
- 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.
- The device must be easily accessed to a location outlet near the access. Some devices are not made by turning on / off button, turning off the device and unplugging the power cord.
- The items supplied with your product may vary depending upon 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 8 mm (0.31 inches) thick, 18 mm (0.7 inches) width and 8 mm (0.31 inches) a wire diameter.
- Use an extension cable that supports USB 2.0 or higher if the USB cable or USB flash drive does not fit into your TV's USB port.



* A ≤ 8 mm (0.31 inches)

* B ≤ 18 mm (0.7 inches)

* C ≤ 8 mm (0.31 inches)

- Use a certified cable with the HDMI logo attached. If you do not use a certified HDMI cable, the screen may not display or a connection error may occur.
- Recommended HDMI cable types (3 m (9.84 ft) or less)
 - Ultra High Speed HDMI®/™ cable

- 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 to wring any excess water or cleaner from the cloth.
- Do not spray water or cleaner directly onto the TV screen.
- Make sure to spray just enough of water or cleaner onto a dry cloth to wipe the screen.

Optional Extras

Optional extras can be changed or modified for quality improvement without any notification. Contact your dealer for buying these items. These devices work only with certain models. The model name or design may be changed due to the manufacturer's circumstances or policies.

Magic Remote Control

MR20GA

Check whether your TV model supports Bluetooth in the Wireless Module Specification to verify whether it can be used with the Magic Remote.

Stand

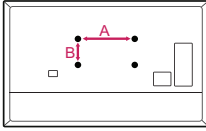
(Depending upon model)

Stand	Model
AN-GXDV55	OLED55GX*
AN-GXDV65	OLED65GX*
AN-GXDV77	OLED77GX*

Wall Mounting Bracket

(Depending upon model)

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



Model	OLED55/65/77GX*
VESA (A x B) (mm)	300 x 300
Standard screw	M6
Number of screws	4
Wall mount bracket	OLW480B

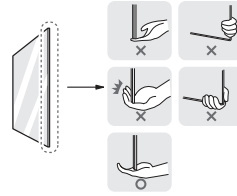
Lifting and moving the TV

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.

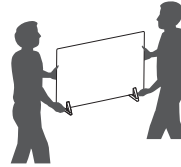
- It is recommended to move the TV in the box or packing material that the TV originally came in.
- Before moving or lifting the TV, disconnect the power cord and all cables.
- When holding the TV, the screen should face away from you to avoid damage.



- Hold the side 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.



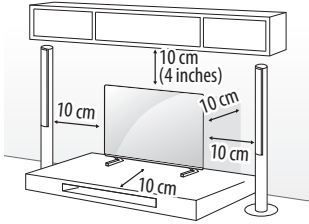
- When transporting the TV, do not expose the TV to jolts or excessive vibration.
- When transporting the TV, keep the TV upright; never turn the TV on its side or tilt towards the left or right.
- When handling the TV, be careful not to damage the protruding buttons.



- Avoid touching the screen at all times, as this may result in damage to the screen.
- Do not place the product on the floor with its front facing down without padding. Failure to do so may result in damage to the screen.
- 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.

Mounting on the Table

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



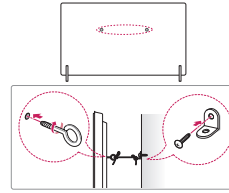
(Depending upon model)

- 2 Connect the power cord to a wall outlet.



- Do not apply foreign substances (oils, lubricants, etc.) to the screw parts when assembling the product. (Doing so may damage the product.)
- If you install the TV on a stand, you need to take actions to prevent the product from overturning. Otherwise, the product may fall over, which may cause injury.
- Do not use any unapproved items to ensure the safety and lifespan of the product.
- Any damages or injuries by using unapproved items are not covered by the warranty.
- Make sure that the screws are fastened tightly. (If they are not fastened securely enough, the TV may tilt forward after being installed.)
- When installing on a cabinet or a shelf using a stand, make sure its width is greater than that of the TV.
- Do not fasten the screws with excessive force otherwise they may strip and become loose.

Securing TV to the Wall

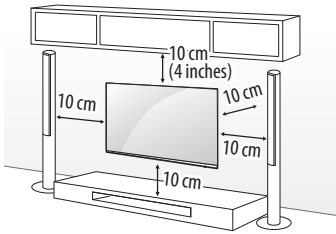


(Depending upon model)

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

Mounting to the 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. The LG wall mount is easy to adjust or to connect the cables. When you do not use LG's wall mount bracket, use a wall mount bracket where the device is adequately secured to the wall with enough space to allow connectivity to external devices. If you are using a non-adjustable mount, attach the mount to the wall. Attach the cables to the TV first, then attach the TV to the mount.



(Depending upon model)



- Remove the stand before installing the TV on a wall mount by performing the stand attachment in reverse.
- For more information of screws and wall mount bracket, refer to the Separate purchase.
- If you intend to mount the product to a wall, attach VESA standard mounting interface (optional parts) to the back of the product. When you install the set to use the wall mounting bracket (optional parts), fix it carefully so as not to drop.
- 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 install this product on a wall if it could be exposed to oil or oil mist. This may damage the product and cause it to fall.
- When installing the Full Contact Wall Mount, the TV may not be contacted firmly against the wall due to some wall conditions.



For more information, watch the installation video on your smart device.

Precautions for Safety

(Except for 0LW480B)

- Professional installers should read this manual carefully to ensure proper installation.
- Professional installers should forward this manual to customers after installation and encourage them to read and store it in a convenient place for future reference.
After reading the installation manual, keep it in a convenient place for future reference.



- Ask a professional installer appointed by the store for installation of the product. Installation by someone other than a professional installer is extremely dangerous and may result in personal injury.
- Do not install the product in an unstable site that cannot withstand its weight. If the installation site lacks sufficient rigidity, the product may fall and cause personal injury.
- Contact a professional installer appointed by the store prior to moving or replacing the product after installation. Installation is a technical task and safety issues may arise if an individual attempts to install or move the product personally.
- Do not hang on the product or subject it to severe impact after installation. Doing so may cause the product to fall and cause personal injury.
- When installing the product on a wall, do not hang the power line or signal cables from the back of the TV. This can damage the cords, resulting in a fire, electrical shock or malfunction of the product.
- Be sure to wear work gloves when installing the product.
 - Installing with unprotected hands may result in injury.



- Install the product according to the instructions in the installation manual.
Failure to install the product according to the instructions in the installation manual can result in serious personal injury or product damage.
- Be sure to have at least two people when installing the product or adjusting the product's height.
Attempting to perform installation or adjustments personally may result in personal injury or damage to the product.
- Make sure a wall is available prior to proceeding with installation. Make use of the anchors and screws provided with the product.
Use of any unauthorized anchors or screws may not support the product's weight, which poses safety risks.
- When drilling in the wall for installation, be sure to use drill bits and drills of the specified diameter. Follow the instructions for the hole depth.
Drilling and installing the product in ways other than specified in the installation manual may result in an unstable installation and potential safety issues.
- Do not wipe the product with a wet towel or use any heating equipment or humidifier under the place where the product is installed.
Liquid water or vapor may enter the product and excessive heat may cause fire, electric shock, or malfunction.
- Do not install the product near a fire sprinkler or detector, a place where vibration or shock may occur or near a high-voltage wire or power source.
- Unplug the product's power cord from the wall outlet before installing.
Installing the product while the power cord is plugged in may result in electric shock or fire.
- Do not install the product with bare hands. Be sure to wear work gloves.
Attempting installation without work gloves may cause personal injury.
- Connect the product with the supplied cable. Use of an unauthorized cable may result in damage by friction with the wall. Make sure to use the supplied cable gender. (This may vary by model.)

Before Installation

(Except for OLW480B)

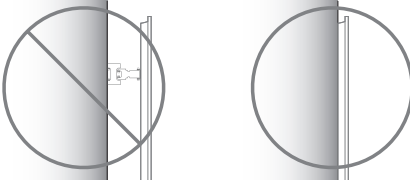
- Do not use the product for any purpose other than installing the TV on a wall.
- Avoid product damage and safety accidents caused by careless installing or use of improper or unauthorized wall mount.
- Follow the instructions in the installation manual for a convenient installation of the wall mount.
- Immediately discontinue installation and contact the service center if you cannot fully understand the installation process.
Use a professional installer if any installation issues remain after the inquiry.
- Installation of this product on a concrete wall or wood stud is recommended. Installation of this product on other surfaces (Dry wall, plywood, bricks, etc.) is not recommended. Improper installation may result in the product falling.
- Install the product only on a vertical wall.
Do not install on a tilted wall that exceeds building standards or on the heavily tilted wall or ceiling.
LG is not responsible for problems caused by improper installation of the product, e.g., heavily tilted walls and ceilings.
- Check the enclosed accessories before installation. We are not responsible for any lost or damaged accessories after the inner packaging is opened.
- When an infant or small child swallows the enclosed accessories, various safety accidents such as choking may occur. Keep the enclosed accessories out of the reach of infants and children.
- When tightening screws, tighten until fully snug.
Avoid using excessive force when tightening the screws. Doing so may damage the wall and product or reduce the rigidity or performance of the product.
- Avoid installing a TV that exceeds the specified tensile load, and do not allow any external force to be applied to the product.
- Avoid accidents by using work tools with care during installation.

Tools for Installation

- "+" shaped screwdriver (manual or electric) / level / drill / Ø 8 mm drill bit for concrete or Ø 4 mm drill bit for steel

Securing TV to the Wall

(Except for 0LW480B)



- Please use the TV close to the wall after installation.

How to fix anchors and screws

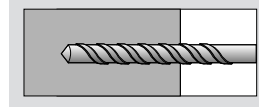
(Except for 0LW480B)

Please make sure that:

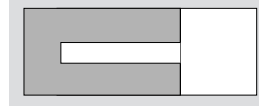
- Check that the material and thickness of the wall and finishing material comply with the installation manual. Before beginning the mounting process, you must be sure the wall is able to support the weight of the TV.
- Should use the enclosed anchors and screws on crack-free concrete walls.
- Never install the product on a plasterboard or wall made of paper or medium-density fiberboard (MDF). When it is necessary to install the product on such wall, anchor screws must be fastened to retaining walls (concrete) or wood Stud inside the finishing material.
- The wall mount should be attached to a stud. This usually will not be a problem, but depending on individual circumstances, there may be cases when the ability to mount into a stud is not possible. In this case, there are a variety of drywall anchors, such as toggle bolts, which may provide a solution. If using drywall anchors, please be sure the anchors and the wall have the ability to support the weight of your TV. Please note that the supplied anchors may not be the correct ones for your individual situation, so you should check with a local professional.
- Other unspecified walls must be capable of supporting pullout loads of over 70 kgf (154 lbf) (686 N) and shear loads of over 100 kgf (220 lbf) (980 N) per fastener.
- Use an \varnothing 8 mm drill bit for concrete and a hammer (impact) drill or \varnothing 4 mm drill bit for wood stud to drill holes.

(For installation on concrete wall)

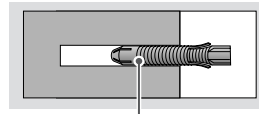
- 1 Drill holes in anchor locations with a drill bit of \varnothing 8 mm to a depth of 80 mm (3.15 inches) to 100 mm (3.94 inches).



- 2 Clean the drilled holes.

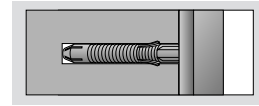


- 3 Insert the enclosed anchors for fixing the wall mount into the holes. (Use a hammer when inserting anchors.)

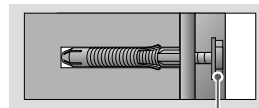


Wall mounting anchor

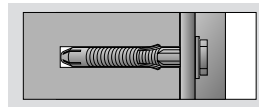
- 4 Push the wall mount support closely toward the wall to match the hole locations.



- 5 Tighten screws for fixing the wall mount to the holes. At this time, tighten the screws to a torque of between 45 kgf/cm (39.06 lbf/in) to 60 kgf/cm (52.08 lbf/in).

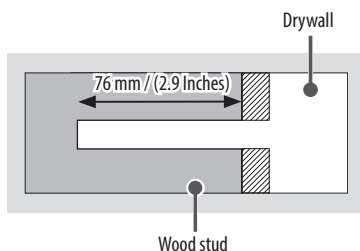


Wall mounting screw



(For installation on wood stud)

Use the $\varnothing 4$ mm drill bit for wood to drill holes with the depth of 76 mm (2.9 Inches). (Clean the drilled hole.)

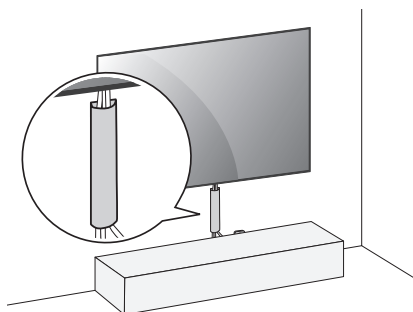


Without using the wall mounting anchor, fasten the wall mounting screw directly to the wood stud.

After Installation



- When connecting additional cables from the sides, we recommend holding the centre of the TV horizontally or vertically and pulling the product to make sure there is sufficient distance from the wall before connecting.
- When connecting additional cables from the bottom, we recommend releasing the TV from the wall mount before connecting.
- Use cable management systems to arrange the cables at the bottom of the TV as shown below. Cable managements are not provided with the product, so purchase them separately. (For example)



- After installing the product, be sure to use it adhered to the wall.
 - Using the product while it is not adhered to the wall may damage or shake the product.

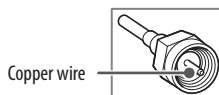
Connections

You can connect various external devices to the TV. For more information on external device's connection, refer to the manual provided with each device.

Antenna/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 an RF cable is optional.

- 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.
- Use a signal splitter to use 2 TVs or more.
- DTV Audio Supported Codec: MPEG, Dolby Digital
- This TV cannot receive Ultra HD (3840 x 2160 pixels) broadcasts directly because the related standards have not been confirmed.

Other connections



Connect your TV to external devices. For the best picture and audio quality, connect the external device and the TV with the HDMI cable.

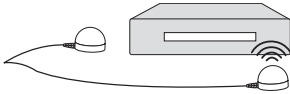
HDMI

- When connecting the HDMI cable, the product and external devices should be turned off and unplugged.
- Supported HDMI Audio format (Depending upon model):
True HD (48 kHz),
Dolby Digital / Dolby Digital Plus (32 kHz, 44.1 kHz, 48 kHz),
PCM (32 kHz, 44.1 kHz, 48 kHz, 96 kHz, 192 kHz)
-  →  → [Picture] → [Additional Settings] → [HDMI Ultra HD Deep Color]
 - On: Support 4K @ 50/60 Hz (4:4:4, 4:2:2, 4:2:0), 4K @ 100/120 Hz (4:4:4, 4:2:2, 4:2:0)
 - Off: Support 4K @ 50/60 Hz (4:2:0)

If the device connected to Input Port also supports Ultra HD Deep Color, your picture may be clearer. However, if the device doesn't support it, it may not work properly. In that case, change the TV's [HDMI Ultra HD Deep Color] setting to off.

IR Blaster

- Control the set-top box (cable/satellite/IP/OTT), Blu-ray/DVD player, soundbar, game consoles, etc., using the IR Blaster. (Depending upon country)
 - Connect the IR Blaster cable to the TV's IR Blaster port.
 - Place both ends (one or two) of the IR Blaster in front of the external device as shown in the picture below.
 - Use universal control settings to control the device.
Go to  →  → [Connection] → [Device Connection Settings] → [Universal Control Settings].
 - Secure the IR Blaster with the 3M tape provided.



External Devices

Supported external devices are: Blu-ray player, HD receivers, DVD players, VCRs, audio systems, USB storage devices, PC, gaming devices, and other external devices.

- If you record a TV program on a Blu-ray/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 a 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.
- In PC mode, there may be noise associated with the resolution, vertical pattern, contrast or brightness. If noise is present, change the PC output to another resolution, change the refresh rate to another rate or adjust the brightness and contrast on the [Picture] menu until the picture is clear. Depending upon the graphics card, some resolution settings may not allow the image to be positioned on the screen properly.
- Some USB Hubs may not work. If a USB device connected through a USB Hub is not detected, connect it directly to the USB port on the TV.
- When connecting via a wired LAN, it is recommended to use a CAT 7 cable.
- The TV may be capable of operating without a set-top-box from a multichannel video programming distributor (MVPD).

Remote RS-232C setup

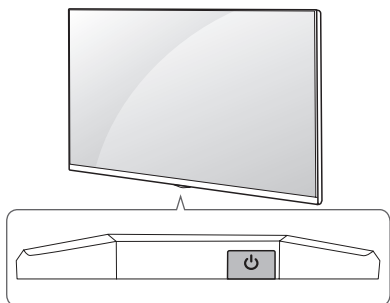
To obtain the RS-232C external control setup information, please visit www.lg.com. Download and read the manual, (Depending upon model).




- Do not drop the product or let it fall over when connecting external devices. Otherwise, this may result in injury or damage to the product.
- When connecting external devices such as video game consoles, make sure the connecting cables are long enough. Otherwise, the product may fall over, which may cause injury or damage the product.

Using Button

You can simply operate the TV functions, using the button.








Basic functions

	Power On (Press)
	Power Off (Press and Hold)
	Menu Control (Press ²)
	Menu Selection (Press and Hold ³)

- 1 All running apps will close.
- 2 You can access and adjust the menu by pressing the button when TV is on.
- 3 You can use the function when you access menu control.

Adjusting the menu

When the TV is turned on, press the  button one time. You can adjust the Menu items using the button.

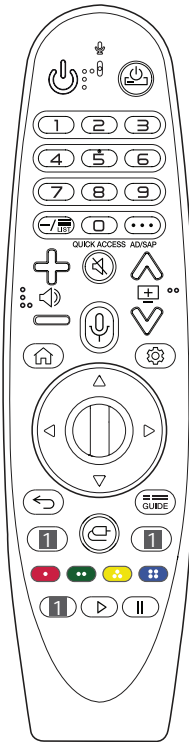
	Turns the power off.
	Changes the input source.
	Adjusts the volume level.
	Scrolls through the saved channels.

Using Magic 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.

When the message [Magic Remote battery is low. Please change the battery.] is displayed, replace the batteries.

To install batteries, open the battery cover, replace batteries (1.5 V AA) matching the (+) and (-) ends to the label inside the compartment, and close the battery cover. Be sure to point the magic remote toward the remote control sensor on the TV. To remove the batteries, perform the installation actions in reverse. This remote uses infrared light. When in use, it should be pointed in the direction of the TV's remote sensor.



(Some buttons and services may not be provided depending upon models or regions.)

**** To use the button, press and hold for more than 1 second.**

⏻ (POWER) Turns the TV on or off.

⏻ (STB POWER) You can turn your set-top box on or off by adding the settop box to the universal remote control for your TV.

Number buttons Enters numbers.

9 Accesses the [Quick Help].

— (DASH) Inserts a — between numbers such as 2-1 and 2-2.

LIST Accesses the saved channel list.

... (MORE ACTIONS) Displays more remote control functions.

QUICK ACCESS** Edits QUICK ACCESS

- QUICK ACCESS is a feature that allows you to enter a specified app or Live TV directly by pressing and holding the number buttons.

AD/SAP** SAP (Secondary Audio Program) feature can also be enabled by pressing the ... button.

+ - Adjusts the volume level.

MUTE Mutes all sounds.

MUTE** Accesses the [Accessibility] menu.

▲ ▢ ▼ Scrolls through the saved channels.

🗣️ (Voice recognition) Network connection is required to use the voice recognition function.

Check for recommended content. (Some recommended services may not be available in some countries.)

🗣️ (Voice recognition)** Speak while pressing and holding the button to use the voice recognition feature.

🏠 (HOME) Accesses the Home menu.

🏠 (HOME)** Shows the previous history.

⚙️ (Q. Settings) Accesses the Quick Settings.

⚙️ (Q. Settings)** Displays the [All Settings] menu.

⊙ (Wheel OK) Press the center of ⊙ button to select a menu. You can change channels by using ⊙ button.

△ ▽ ◀ ▶ (up/down/left/right) Press the up, down, left or right button to scroll the menu. If you press △ ▽ ◀ ▶ buttons while the pointer is in use, the pointer will disappear from the screen and Magic Remote will operate like a general remote control. To display the pointer on the screen again, shake Magic Remote to the left and right.

↶ (BACK) Returns to the previous level.

↶ (BACK)** Clears on-screen displays and returns to last input viewing.

GUIDE Displays the program event according to time scheduler.

Streaming Service buttons Connects to the Video Streaming Service.

📺 (INPUT) Changes the input source.

📺 (INPUT)** Accesses the [Home Dashboard].


🔴 🟢 🟡 🔵 These access special functions in some menus.

▶, || (Control buttons) Controls media contents.

Registering Magic Remote Control

How to register the Magic Remote Control


To use the Magic Remote, first pair it with your TV.

- 1 Put batteries into the Magic Remote and turn the TV on.
- 2 Point the Magic Remote at your TV and press the  **Wheel (OK)** on the remote control.

* If the TV fails to register the Magic Remote, try again after turning the TV off and back on.

How to deregister the Magic Remote Control

Press the  (**BACK**) and  (**HOME**) buttons at the same time, for five seconds, to unpair the Magic Remote with your TV.

* Press and hold the  button for more than 5 seconds to disconnect and re-register the Magic Remote at the same time.



- It is recommended that an Access Point (AP) be located more than 0.2 m (0.65 ft) away from the TV. If the AP is installed closer than 0.2 m (0.65 ft), the Magic remote control may not perform as expected due to frequency interference.
- Do not mix new batteries with old batteries. This may cause the batteries to overheat and leak.
- Failure to match the correct polarities of the battery may cause the battery to burst or leak, resulting in fire, personal injury, or ambient pollution.
- 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.
- Batteries inside or inside the product shall not be exposed to excessive heat such as sunshine, fire or the like.

User Guide

For more information about this TV, read the USER GUIDE embedded in the product.

- To open the USER GUIDE  →  → [Support] → [User Guide]

Troubleshooting

Cannot control the TV with the remote control.

- Check if anything such as tape has been placed over the receiver.
- Check if there is any obstacle between the product and the remote control.
- Replace the batteries with new fresh ones.

No image display and no sound is produced.

- 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.

The TV turns off suddenly.

- Check the power control settings. The power supply may be interrupted.
- Check if the auto-off function is activated in the settings menu.
- If there is no signal while the TV is on, the TV will turn off automatically after 15 minutes of inactivity.

Abnormal Display

- 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 screen or holding your finger(s) against it for long periods of time. Doing so may produce some temporary distortion effects on the screen.
- This panel is an advanced product that contains millions of 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.



- Make sure to wring any excess water or cleaner from the cloth.
- Do not spray water or cleaner directly onto the TV screen.
- Make sure to spray just enough of water or cleaner onto a dry cloth to wipe the screen.

Specifications

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

Estimated yearly energy consumption indicated on the FTC label is measured in accordance with the Test Procedures for Television Sets (USA only).

The actual energy consumption depends on the usage environment (The content watched, TV settings, etc.).

- For information of the power supply and power consumption, refer to the label attached to the product.
 - The typical power consumption is measured in accordance with IEC 62087 or each country's energy regulations.
 - * On some models, the label is inside the external device connection terminal cover.
 - * Depending upon the model or country, the typical power consumption may not be on label.

Broadcasting Specifications	
Television system	ATSC / NTSC-M, 64 & 256 QAM
Program coverage	VHF 2-13, UHF 14-69, DTV 2-69, CATV 1-135, CADTV 1-135
External antenna impedance	75 Ω

Wireless module (LGSBWAC94) Specifications	
Wireless LAN (IEEE 802.11a/b/g/n/ac)	
Frequency Range	Output Power (Max.)
2,400 to 2,483.5 MHz	17.5 dBm
5,150 to 5,725 MHz	18 dBm
5,725 to 5,850 MHz	18 dBm
Bluetooth	
Frequency Range	Output Power (Max.)
2,400 to 2,483.5 MHz	9 dBm
<p>As band channels can vary per country, the user cannot change or adjust the operating frequency. This product is configured for the regional frequency table.</p> <p>For consideration of the user, this device should be installed and operated with a minimum distance of 20 cm (7.8 inches) between the device and the body.</p> <p>FCC ID: BEJLGSBWAC94 / IC: 2703H-LGSBWAC94</p>	

Environment condition	
Operating Temperature	0 °C to 40 °C (32 °F to 104 °F)
Operating Humidity	Less than 80 %
Storage Temperature	-20 °C to 60 °C (-4 °F to 140 °F)
Storage Humidity	Less than 85 %

Open Source Software Notice Information

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

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

LG Electronics will also provide open source code to you on CD-ROM for a charge covering the cost of performing such distribution (such as the cost of media, shipping, and handling) upon email request to opensource@lge.com.

This offer is valid for a period of three years after our last shipment of this product. This offer is valid to anyone in receipt of this information.

Licenses

HDMITM
HIGH-DEFINITION MULTIMEDIA INTERFACE

HEVC AdvanceTM
Covered by Patents at patentlist.hevcadvance.com

POWERED BY

QUICKSET

(Magic Remote supported models only)

Important Information for Preventing Image Retention









OLED is a self-emissive technology, which brings many significant benefits to image quality and performance. As with any self-emitting display, it is possible for users of OLED TVs to experience temporary image retention under certain conditions, such as when displaying a static image on the screen for a long time. LG OLED TVs incorporate dedicated functions that protect the screen from possible image retention.

If a static image persists on screen, screen brightness is automatically reduced in specific areas of, or across the entire screen. Once the static image disappears, screen brightness will automatically return to its prior setting. This is not a product malfunction.



Examples of Images that may Cause Image Retention

- Still images or fixed images containing certain information that are displayed uninterrupted on the screen, such as channel numbers, station logos, program titles, news or movie subtitles, and headlines.
- Fixed menu or icons for video game consoles or broadcasting set-top boxes.
- Black bars shown on the left, right, top, or bottom of the screen, such as in images with a 4:3 or 21:9 ratio.

Recommended Measures for Preventing Image Retention

- Avoid watching a video displaying an image as listed above for extended periods of time.
- Adjust your TV settings as below when turning on a video exhibiting an image as listed above for extended periods of time.
 -  →  → [Picture] → [Picture Mode Settings] → [Picture Mode] → [APS]
 -  →  → [Picture] → [Picture Mode Settings] → [OLED LIGHT] → Adjust to lower value
 -  →  → [Picture] → [OLED Screen Saver] → [Logo Luminance Adjustment] → [High]
- Turn off the menu bar of an external device, such as a set-top box, to prevent long-term display of the menu bar of such device. (Please refer to the manual of the applicable external device for instructions.)
- Adjust the settings as below when watching a video constantly showing black bars on the left, right, top or bottom, in order to remove the black bars.
 -  →  → [Picture] → [Aspect Ratio Settings] → [Aspect Ratio] → [Vertical Zoom] or [4-Way Zoom]

Information on Functions Supporting Image Quality in Relation to Temporary Image Retention

- LG OLED TVs provide a feature called Pixel Refresher, which helps to prevent temporary image retention.
- When the accumulated television viewing time reaches 2,000 hours or more (this is equivalent to watching TV for five hours a day over the course of a year), Pixel Refresher will be automatically activated once your TV is turned off. When turning off your TV, a notice will appear on the screen informing the activation of Pixel Refresher. This feature will run for an hour while your TV is turned off. A horizontal line may appear at the top or bottom of the screen when the process is almost finished.
- You may also manually activate Pixel Refresher via the TV menu:
 -  →  → [Picture] → [OLED Screen Saver] → [Pixel Refresher].
- Whenever you watch your TV for more than four cumulative hours, Pixel Refresher will be automatically activated for a few minutes once your TV is turned off. (Note: Pixel Refresher will not be activated if the power cord of your TV is not plugged in or the main power is off.)

Regulatory

FCC NOTICE

(For USA)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation. Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC Radio Frequency Interference Requirements (for UNII devices)

(For USA)

High power radars are allocated as primary users of the 5.25 to 5.35 GHz and 5.65 to 5.85 GHz bands. These radar stations can cause interference with and/or damage this device. This device cannot be co-located with any other transmitter.

FCC RF Radiation Exposure Statement

(For USA)

(For having wireless function (WLAN, Bluetooth,...))

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This equipment should be installed and operated with minimum distance 20 cm (7.8 inches) between the antenna and your body. Users must follow the specific operating instructions for satisfying RF exposure compliance.

Industry Canada Statement

(For Canada)

(For having wireless function (WLAN, Bluetooth,...))

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

- (1) This device may not cause interference.
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

IC Radiation Exposure Statement

(For Canada)

(For having wireless function (WLAN, Bluetooth,...))

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm (7.8 inches) between the antenna & your body.

NOTE THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS TO THIS EQUIPMENT. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

RSS-247 Requirement

(For Canada)

(For product having the wireless function using 5 GHz frequency bands)

- (1) The device for operation in the band 5150–5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems;
- (2) For devices with detachable antenna(s), the maximum antenna gain permitted for devices in the bands 5250-5350 MHz and 5470-5725 MHz shall be such that the equipment still complies with the e.i.r.p. limit;
- (3) For devices with detachable antenna(s), the maximum antenna gain permitted for devices in the band 5725-5850 MHz shall be such that the equipment still complies with the e.i.r.p. limits as appropriate; and
- (4) (For devices operating in the band 5250-5350 MHz having an e.i.r.p. greater than 200 mW) Antenna type(s), antenna models(s), and worst-case tilt angle(s) necessary to remain compliant with the e.i.r.p. elevation mask requirement set forth in section 6.2.2.3 of RSS-247 shall be clearly indicated.

Users should also be advised that high-power radars are allocated as primary users (i.e. priority users) of the bands 5250-5350 MHz and 5650-5850 MHz and that these radars could cause interference and/or damage to LE-LAN devices.

NOTE TO CABLE/TV INSTALLER

(For USA and Canada)

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the National Electric Code (U.S.A.). The code provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of the cable entry as practical.







WARNING!

Never place a television set in an unstable location. A television set may fall, causing serious personal injury or death. Many injuries, particularly to children, can be avoided by taking simple precautions such as:

- Using cabinets or stands recommended by the manufacturer of the television set.
- Only using furniture that can safely support the television set.
- Ensuring the television set is not overhanging the edge of the supporting furniture.
- Not placing the television set on tall furniture (for example, cupboards or bookcases) without anchoring both the furniture and the television set to a suitable support.
- Not placing the television set on cloth or other materials that may be located between the television set and supporting furniture.
- Educating children about the dangers of climbing on furniture to reach the television set or its controls.

If your existing television set is being retained and relocated, the same considerations as above should be applied.

Symbols

	Refers to alternating current (AC).
	Refers to direct current (DC).
	Refers to class II equipment.
	Refers to stand-by.
	Refers to "ON" (power).
	Refers to dangerous voltage.

LG Take-back & Recycling Policy

(For USA)

LG Electronics offers a customized e-waste take-back & recycling service that meets local needs and requirements in the countries where e-waste regulations are in place, and also provides product take-back & recycling service voluntarily in some regions. LG Electronics evaluates products' recyclability at the design step selectively, with the goal of improving recyclability where practicable. Through these activities, LG Electronics seeks to contribute to conserving natural resources and protecting the environment. For more information, please visit our global site at <https://www.lg.com/recycling>

CHILD SAFETY:

PROPER TELEVISION PLACEMENT MATTERS



THE CONSUMER ELECTRONICS INDUSTRY CARES

- Manufacturers, retailers and the rest of the consumer electronics industry are committed to making home entertainment safe and enjoyable.
- As you enjoy your television, please note that all televisions – new and old- must be supported on proper stands or installed according to the manufacturer's recommendations. Televisions that are inappropriately situated on dressers, bookcases, shelves, desks, speakers, chests, carts, etc., may fall over, resulting in injury.



TUNE IN TO SAFETY

- **ALWAYS** follow the manufacturer's recommendations for the safe installation of your television.
- **ALWAYS** read and follow all instructions for proper use of your television.
- **NEVER** allow children to climb on or play on the television or the furniture on which the television is placed.
- **NEVER** place the television on furniture that can easily be used as steps, such as a chest of drawers.
- **ALWAYS** install the television where it cannot be pushed, pulled over or knocked down.
- **ALWAYS** route cords and cables connected to the television so that they cannot be tripped over, pulled or grabbed.



WALL OR CEILING MOUNT YOUR TELEVISION

- **ALWAYS** contact your retailer about professional installation if you have any doubts about your ability to safely mount your television.
- **ALWAYS** use a mount that has been recommended by the television manufacturer and has a safety certification by an independent laboratory (such as UL, CSA, ETL).
- **ALWAYS** follow all instructions supplied by the television and mount manufacturers.
- **ALWAYS** make sure that the wall or ceiling where you are mounting the television is appropriate. Some mounts are not designed to be mounted to walls and ceilings with steel studs or cinder block construction. If you are unsure, contact a professional installer.
- Televisions can be heavy. A minimum of two people is required for a wall or ceiling mount installation.



MOVING AN OLDER TELEVISION TO A NEW PLACE IN YOUR HOME

- Many new television buyers move their older CRT televisions into a secondary room after the purchase of a flat-panel television. Special care should be made in the placement of older CRT televisions.
- **ALWAYS** place your older CRT television on furniture that is sturdy and appropriate for its size and weight.
- **NEVER** place your older CRT television on a dresser where children may be tempted to use the drawers to climb.
- **ALWAYS** make sure your older CRT television does not hang over the edge of your furniture.



Supplier's Declaration of Conformity

Trade Name LG
Responsible Party LG Electronics USA, Inc.
Address 1000 Sylvan Ave Englewood
 Cliffs, NJ 07632
Telephone (201)266-2215

The model and serial number of the product are located on the back and on one side of the product. Record them below in case you ever need service.

Model _____

Serial No. _____

LG Customer Information Center

For inquiries or comments, visit www.lg.com or call;

1-800-243-0000 USA, Consumer User
1-888-865-3026 USA, Commercial User
1-888-542-2623 CANADA

Register your product Online!

www.lg.com



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	53	List	R/C Button
01	CH -, PR -	R/C Button	5B	Exit	R/C Button
02	Volume +	R/C Button	60	PIP(AD)	R/C Button
03	Volume -	R/C Button	61	Blue	R/C Button
06	> (Arrow Key / Right Key)	R/C Button	63	Yellow	R/C Button
07	< (Arrow Key / Left Key)	R/C Button	71	Green	R/C Button
08	Power	R/C Button	72	Red	R/C Button
09	Mute	R/C Button	79	Ratio / Aspect Ratio	R/C Button
0B	Input	R/C Button	91	AD (Audio Description)	R/C Button
0E	SLEEP	R/C Button	9E	LIVE MENU	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 / File List)	R/C Button
40	∧ (Arrow Key / Cursor Up)	R/C Button	B5	RECENT	R/C Button
41	∨ (Arrow Key / Cursor Down)	R/C Button	BA	|| (Freeze / Slow Play / Pause)	R/C Button
42	My Apps	R/C Button	BB	Soccer	R/C Button
43	Menu / Settings	R/C Button	BD	● (REC)	R/C Button
44	OK / Enter	R/C Button	DC	3D	R/C Button
45	Q.Menu	R/C Button	99	AutoConfig	R/C Button
4C	List, -	R/C Button	9F	App / *	R/C Button
4D	PICTURE	R/C Button	9B	TV / PC	R/C Button
52	SOUND	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.

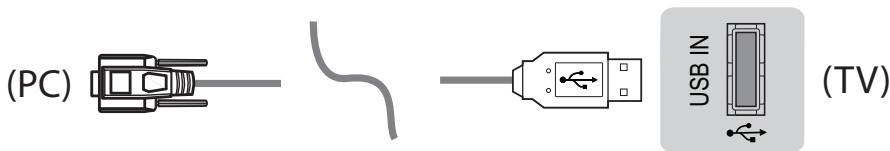
Connect the USB to Serial(RS-232C) converter/RS-232C(Serial) input jack to an external control device (such as a computer or an A/V control system) to control the product's functions externally.

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(RS-232C) converter with USB Cable

USB Type



- LGTV supports PL2303 chip-based (Vendor ID : 0x0557, Product ID : 0x2008) USB to serial(RS-232C) 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(Serial) With RS-232C(Serial) Cable

DE9 (D-Sub 9pin) Type

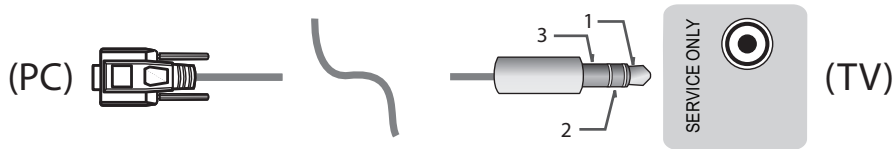
- You need to purchase the RS-232C (DE9, D-Sub 9pin female-to-female type) to RS-232C(Serial) cable required for the connection between the PC and the TV, which is specified in the manual.



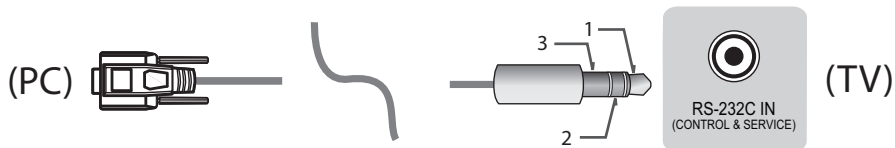
The connection interface may differ from your TV.

Phone jack Type

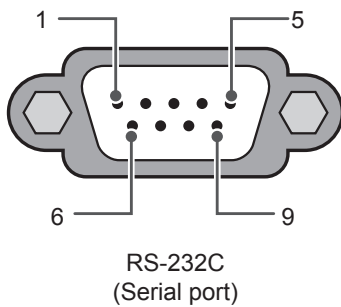
- You need to purchase the phone-jack to RS-232 cable required for the connection between the PC and the TV, which is specified in the manual.
- * For other models, connect to the USB port.
- * The connection interface may differ from your TV.



- or -

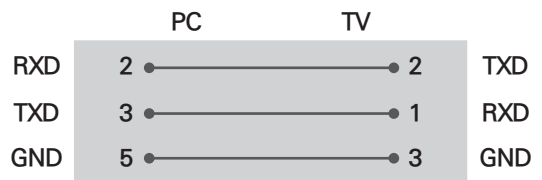


Customer Computer



RS-232C configurations

3-Wire Configurations(Not standard)



OR



D-Sub 9

Phone

Set ID

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

1. Press **SETTINGS** to access the main menus.
2. Press the Navigation buttons to scroll to (***General** → **About this TV or OPTION**) and press **OK**.
3. Press the Navigation buttons to scroll to **SET ID** and press **OK**.
4. Scroll left or right to select a set ID number and select **CLOSE**. The adjustment range is 1-99.
5. When you are finished, press **EXIT**.
* (Depending on model)

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*	k	a	00 to 01	15. Balance	k	t	00 to 64
02. Aspect Ratio	k	c	(p.7)	16. Color (Colour) Temperature	x	u	00 to 64
03. Screen Mute	k	d	(p.7)	17. ISM Method (Only Plasma TV)	j	p	(p.8)
04. Volume Mute	k	e	00 to 01	18. Equalizer	j	v	(p.9)
05. Volume Control	k	f	00 to 64	19. Energy Saving	j	q	00 to 05
06. Contrast	k	g	00 to 64	20. Tune Command	m	a	(p.9)
07. Brightness	k	h	00 to 64	21. Channel (Programme) Add/Del(Skip)	m	b	00 to 01
08. Color/ Colour	k	i	00 to 64	22. Key	m	c	Key Codes
09. Tint	k	j	00 to 64	23. Control Backlight, Control Panel Light	m	g	00 to 64
10. Sharpness	k	k	00 to 32	24. Input select (Main)	x	b	(p.11)
11. OSD Select	k	l	00 to 01	25. 3D (Only 3D models)	x	t	(p.11)
12. Remote Control Lock Mode	k	m	00 to 01	26. Extended 3D (Only 3D models)	x	v	(p.12)
13. Treble	k	r	00 to 64	27. Auto Configure	j	u	(p.12)
14. Bass	k	s	00 to 64				

* Note: During playing or recording media, all commands except Power (ka) and Key (mc) are not executed and treated as NG.

With RS232C cable, TV can communicate "ka command" in power-on or power-off status. but with USB-to-Serial converter cable, the command works only if TV is on.

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 to 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 *On or Off of the set.

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

Data 00 : Power Off 01 : *Power On

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

- ▶ To Show TV is Power On or *Off

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

Ack [a][][Set ID][][OK][Data][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 (Latin America except Colombia Only)	0B : Full Wide (Europe, Colombia, Mid- East, Asia except South Korea and Japan)
06 : Set by Program/ Original	10 to 1F : Cinema Zoom 1 to 16 0c : 21:9 (Depending on model)

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. Treble (Command: k r)

- ▶ To adjust treble.
You can also adjust in the AUDIO menu.

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

Data Min : 00 to Max : 64

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

* (Depending on model)

14. Bass (Command: k s)

- ▶ To adjust Bass.
You can also adjust in the AUDIO menu.

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

Data Min : 00 to Max : 64

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

* (Depending on model)

15. 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]

16. 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]

17. 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

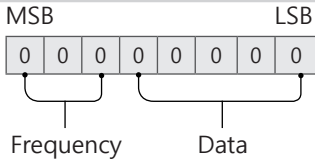
20: Color(Colour) Wash

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

18. Equalizer (Command : j v)

- ▶ Adjust EQ of the set.

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



7	6	5	Frequency	4	3	2	1	0	Step
0	0	0	1st Band	0	0	0	0	0	0(decimal)
0	0	1	2nd Band	0	0	0	0	1	1(decimal)
0	1	0	3rd Band	...	...	...	...	...	...
0	1	1	4th Band	1	0	0	1	1	19(decimal)
1	0	0	5th Band	1	0	1	0	1	20(decimal)

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

- * It depends on model, and can adjust when sound mode is EQ adjustable value.

19. 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 (For LCD TV / LED TV) / Intelligent sensor (For PDP TV)
- 05 : Screen off

- * (Depending on model)

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

20. 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]

- * Analog Antenna/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 (Analog)

- 00 : Antenna TV (ATV)

- 80 : Cable TV (CATV)

- * Digital Antenna/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 : Antenna TV (DTV)

- 20 : Antenna 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 Analog antenna (PAL) Channel 10.

Set ID = All = 00

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

Data 02 = Analog Antenna TV = 00

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

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

Set ID = All = 00

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

Data 02 = Digital Antenna 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.

* Analog Antenna/Cable

Data 00 : Physical Channel Number

- Antenna (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 (Analog)

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

* Digital Antenna/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 : Antenna TV (DTV) – Use Physical Channel Number
- 06 : Cable TV (CADTV) – Use Physical Channel Number
- 22 : Antenna TV (DTV) – Don't Use Physical Channel Number
- 26 : Cable TV (CADTV) - Don't Use Physical Channel Number
- 46 : Cable TV (CADTV) – Use Physical/Major Channel Number Only (One Part Channel)
- 66 : Cable TV (CADTV) – Use Major Channel Number Only (One Part Channel)
- 0b : Cable DTV Plus – Use Physical Channel Number
- 2b : Cable DTV Plus – Don't Use Physical Channel Number
- 4b : Cable DTV Plus – Use Physical/Major Channel Number Only (One Part Channel)
- 6b : Cable DTV Plus – 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 Analog 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 = Analog Cable TV = 01
 Total = **ma 00 23 00 00 00 00 01**

2. Tune to the digital antenna (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 Antenna 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 Antenna/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 : Antenna TV (DTV)
- 42 : Antenna TV (DTV) – Use Physical/Major Channel Number Only (One Part Channel)
- 62 : Antenna TV (DTV) – Use Major Channel Number Only (One Part Channel)
- 07 : BS (Broadcasting Satellite)
- 08 : CS1 (Communication Satellite 1)
- 09 : CS2 (Communication Satellite 2)

* Tune Command Examples:

1. Tune to the digital antenna (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 Antenna 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]

21. 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.

22. 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]

23. Control Backlight (Command: m g)

• For LCD TV / LED TV

► To control the backlight.

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]

24. 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
60 : RGB	
90 : HDMI1	91 : HDMI2
92 : HDMI3	93 : HDMI4

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

* This function depends on model and signal.

25. 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]

* (Depending on model)

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)

- * [Data 02], [Data 03] functions depend on model and signal.
- * 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	O	O

X : don't care

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

26. 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 2D 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
 - 05 : Auto

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

27. Auto Configure (Command: j u) (Depending on model)

- ▶ To adjust picture position and minimize image shaking automatically. It works only in RGB (PC) mode.

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

Data 01 : To set Auto Configure

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





MANUAL DEL USUARIO

CONFIGURACIÓN DE DISPOSITIVOS DE CONTROL EXTERNOS

Lea atentamente este manual antes de poner en funcionamiento el equipo y consérvelo para futuras consultas.

CÓDIGOS DE TECLA

- Esta función no está disponible en todos los modelos.

Código (Hexa)	Función	Nota	Código (Hexa)	Función	Nota
00	CH +, PR +	Botón RC	53	Lista	Botón RC
01	CH -, PR -	Botón RC	5B	Salir	Botón RC
02	Volumen +	Botón RC	60	PIP(AD)	Botón RC
03	Volumen -	Botón RC	61	Azul	Botón RC
06	> (Tecla de flecha / Tecla derecha)	Botón RC	63	Amarillo	Botón RC
07	< (Tecla de flecha / Tecla izquierda)	Botón RC	71	Verde	Botón RC
08	Encendido	Botón RC	72	Rojo	Botón RC
09	Silencio	Botón RC	79	Relación/Relación de Aspecto	Botón RC
0B	Entrada	Botón RC	91	AD (Descripción audio)	Botón RC
0E	SLEEP	Botón RC	9E	LIVE MENU	Botón RC
0F	TV, TV/RAD	Botón RC	7A	Guía del usuario	Botón RC
10 - 19	* Tecla Número 0 - 9	Botón RC	7C	Smart / Inicio	Botón RC
1A	Q.View/Flashback	Botón RC	7E	SIMPLINK	Botón RC
1E	FAV (Canal favorito)	Botón RC	8E	▶▶ (Adelantar)	Botón RC
20	Texto (Teletexto)	Botón RC	8F	◀◀ (Retroceder)	Botón RC
21	T. Opt (Opción teletexto)	Botón RC	AA	Info	Botón RC
28	Regresar (ATRÁS)	Botón RC	AB	Guía de Programación	Botón RC
30	Modo AV (Audio/Video)	Botón RC	B0	▶ (Reproducir)	Botón RC
39	Subtítulo	Botón RC	B1	■ (Detener / Lista Archivo)	Botón RC
40	∧ (Tecla de flecha/Cursor arriba)	Botón RC	B5	RECENT	Botón RC
41	V (Tecla de flecha/Cursor arriba)	Botón RC	BA	|| (Congelar / Reproducción lenta / Pausa)	Botón RC
42	Mis Apl.	Botón RC	BB	Fútbol	Botón RC
43	Menú / Configuración	Botón RC	BD	● (GRABAR)	Botón RC
44	OK / Aceptar	Botón RC	DC	3D	Botón RC
45	Q.Menu (menú rápido)	Botón RC	99	Configuración automática	Botón RC
4C	Lista, -	Botón RC	9F	App / *	Botón RC
4D	IMAGEN	Botón RC	9B	TV, PC	Botón RC
52	SONIDO	Botón RC			

* El código de tecla 4C (0x4C) está disponible en los modelos ATSC/ISDB que utilizan un canal mayor/ menor. (Para Corea del Sur, Japón, Norte América, Latinoamérica, excepto para modelos de Colombia)

CONFIGURACIÓN DE DISPOSITIVOS DE CONTROL EXTERNOS

- Es posible que la imagen que se muestra no sea exactamente igual a la de su TV.

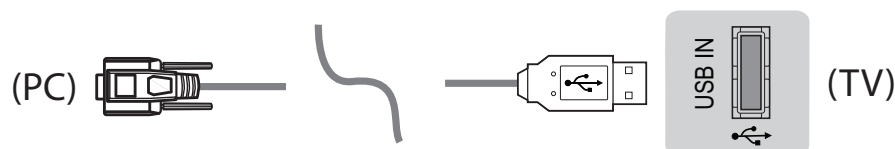
Conecte el conector de entrada USB a Serial (RS-232C) / RS-232C (Serial) a un dispositivo de control externo (como una computadora o un sistema de control A / V) para controlar externamente las funciones del producto.

Nota: El tipo de puerto de control de la TV puede variar según la serie de los modelos.

- * Tenga en cuenta que no todos los modelos admiten este tipo de conectividad.
- * Cable no proporcionado.

Convertidor de USB a Serial (RS-232C) con cable USB

Tipo de USB



- LGTV es compatible con el chip PL2303 (ID del proveedor: 0x0557, ID del producto: 0x2008) Convertidor de USB a serial (RS-232C) que LG no realiza ni proporciona.
- Puede adquirirse en tiendas de computadoras que venden accesorios para profesionales de soporte de TI.

RS-232C (Serial) con cable (Serial) RS-232C

Tipo DE9 (D-Sub 9pin)

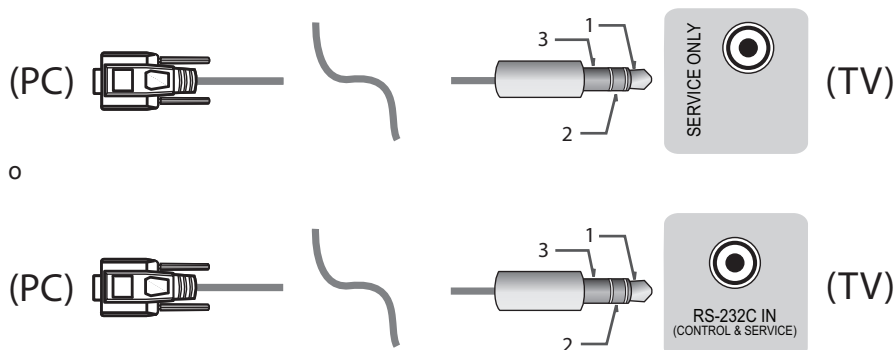
- Necesita comprar el cable RS-232C (DE9, D-Sub 9pin tipo hembra-hembra) a RS-232C (Serial) necesario para la conexión entre la PC y la TV, el cual se especifica en el manual.



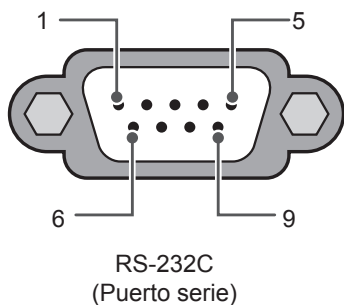
Es posible que la interfaz de conexión no sea exactamente igual a la de su TV.

Tipo de adaptador telefónico

- Para realizar la conexión entre la PC y la TV, que se especifica en el manual, debe comprar el cable de conector telefónico a RS-232.
- * Para otros modelos, conecte al puerto USB.
- * Es posible que la interfaz de conexión no sea exactamente igual a la de su TV.

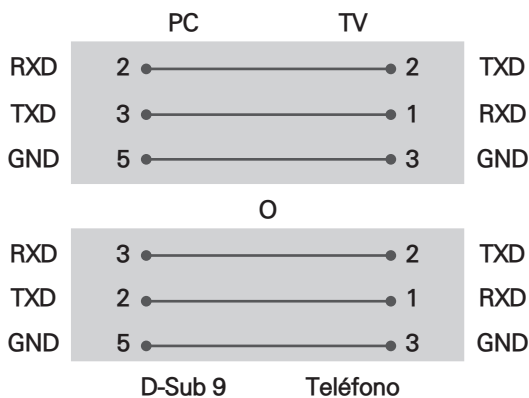


Computadora del cliente



Configuraciones de RS-232C

Configuraciones de 3 cables (no estándar)



ID del televisor

Para establecer el número de ID, consulte "Asignación de datos reales" en la página 6

1. Presione **SETTINGS** para acceder a los menús principales.
2. Presione los botones de navegación para desplazarse hasta (**General** → **Acerca de este TV o OPCIÓN**) y luego presione **OK**.
3. Presione los botones de navegación para desplazarse hasta **ID del televisor** y luego presione **OK**.
4. Desplácese hacia la izquierda o hacia la derecha para establecer un número de ID y seleccione **CERRAR**. El rango de ajuste es de 1 a 99.
5. Al finalizar, presione **EXIT**.
*(según el modelo)

Parámetros de comunicación

- Velocidad en baudios : 9600 bps (UART)
- Longitud de datos: 8 bits
- Paridad: Ninguna
- Bit de parada: 1 bit
- Código de comunicación: código ASCII
- Use un cable cruzado (reversa).

Lista de referencia de comandos

(según el modelo)

	COMANDO 1	COMANDO 2	Datos (Hexadecimal)		COMANDO 1	COMANDO 2	Datos (Hexadecimal)
01. Encendido*	k	a	00 a 01	15. Balance	k	t	00 a 64
02. Relación de Aspecto	k	c	(página 7)	16. Temperatura del color	x	u	00 a 64
03. Silencio de pantalla	k	d	(página 7)	17. Método de ISM (Solo TV Plasma)	j	p	(página 9)
04. Silencio de volumen	k	e	00 a 01	18. Ecuador	j	v	(página 9)
05. Control de Volumen	k	f	00 a 64	19. Ahorro de energía	j	q	00 a 05
06. Contraste	k	g	00 a 64	20. Comando Sintonizar	m	a	(página 9)
07. Brillo	k	h	00 a 64	21. Canal (Programa) Agregar/Borrar (Saltar)	m	b	00 a 01
08. Color	k	i	00 a 64	22. Tecla	m	c	CÓDIGOS de tecla
09. Tinte	k	j	00 a 64	23. Controlar Luz de fondo, Luz del panel de control	m	g	00 a 64
10. Nitidez	k	k	00 a 32	24. Selección de entrada (Ppal.)	x	b	(página 11)
11. Seleccionar OSD	k	l	00 a 01	25. 3D (Solo modelos 3D)	x	t	(página 11)
12. Modo de bloqueo de control remoto	k	m	00 a 01	26. 3D Extendido (Solo modelos 3D)	x	v	(página 12)
13. Agudos	k	r	00 a 64	27. Configuración automática	j	u	(página 12)
14. Graves	k	s	00 a 64				

* Nota: Durante la reproducción o grabación de medios, todos los comandos, excepto Power (Alimentación) (ka) y Key (Tecla) (mc), no se ejecutan y se reconocen como NG. Con el cable RS232C, la TV puede comunicar el "comando ka" en estado encendido u apagado. pero con el cable conversor de USB a serie, el comando funciona solo si la TV está encendida.

Protocolo de Transmisión/Recepción

Transmisión

[Comando1][Comando2][ID del televisor][Dato][Cr]

[Comando 1] : Primer comando para controlar la TV. (j, k, m o x)

[Comando 2] : Segundo comando para controlar la TV.

[ID del televisor]: Puede ajustar [ID del televisor] para elegir el número de ID del monitor que desea en el menú de opciones.

El rango de ajuste en la TV es de 1 a 99. Si el valor [ID del televisor] se selecciona en "0", se puede controlar cada conjunto conectado.

* [ID del televisor] se indica como decimal (1 a 99) en el menú y como hexadecimal (0x00 a 0x63) en el protocolo de transmisión/recepción.

[DATO] : Para transmitir los datos de comando (hexadecimal). Transmite datos "FF" para leer el estado del comando.

[Cr] : Retorno de carro: código ASCII "0x0D"

[] : Espacio: código ASCII "0x20"

Reconocimiento de aceptación

[Comando2][ID del televisor][OK][Dato][x]

* El televisor transmite mensajes de ACK (reconocimiento) sobre la base de este formato cuando recibe datos normales. En este momento, si los datos se encuentran en modo de lectura, indica los datos de estado actuales. Si los datos se encuentran en modo de escritura, devuelve los datos de la PC.

Reconocimiento de error

[Comando2][ID del televisor][NG][Dato][x]

* El conjunto transmite mensajes de ACK (reconocimiento) sobre la base de este formato cuando recibe datos anormales de uniones no viables o errores de comunicación.

Datos 00: código ilegal

Asignación de datos reales (Hexadecimal → Decimal)

* Cuando ingresa los [Dato] en hexadecimal, consulte la tabla de conversión a continuación.

* El Comando de sintonización de canales (ma) utiliza un valor hexadecimal de dos bytes ([Dato]) para seleccionar el número de canal.

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

* Según el modelo y la señal, los comandos podrán funcionar de un modo diferente.

01. Potencia (Comando: k a)

- ▶ Para controlar el encendido o apagado del dispositivo.

Transmisión [k][a][][ID del televisor][][Dato]
[Cr]

Dato 00: Apagado 01: *Encendido

Ack [a][][ID del televisor][][OK/NG][Dato][x]

- ▶ Para mostrar que la TV está encendida o *apagada

Transmisión [k][a][][ID del televisor][][Dato]
[Cr]

Ack [a][][ID del televisor][][OK][Dato][x]

* De igual manera, si otras funciones transmiten datos "FF" de acuerdo con este formato, la retroalimentación de reconocimiento presenta el estado de cada función.

02. Relación de aspecto (Comando: k c) (Tamaño de la imagen principal)

- ▶ Para ajustar el formato de la pantalla. (Formato de imagen principal)
También puede ajustar el formato de pantalla mediante la opción Relación de aspecto en el Q.MENU. o en el menú IMAGEN.

Transmisión [k][c][][ID del televisor][][Dato]
[Cr]

Dato 01: Pantalla normal (4:3)	07: 14:9 (Europa, Colombia, Oriente Medio, Asia, excepto Corea del Sur y Japón)
02: Pantalla amplia (16:9)	
04: Zoom	09: * Original
05: Zoom 2 (Solo Latinoamérica, excepto Colombia)	0B: Ancho total Oriente Medio, Asia, excepto Corea del Sur y Japón)
06: Por Programa	10 a 1F: Zoom cine 1 a 16

Ack [c][][ID del televisor][][OK/NG][Dato][x]

* Usando la entrada de PC, seleccione la relación de aspecto de la pantalla de 16:9 o 4:3.

* En el modo DTV/HDMI/Componente (alta definición), Sólo búsqueda está disponible.

* El modo ancho completo puede funcionar de modo diferente según el modelo y es totalmente compatible con DTV y parcialmente compatible con ATV y AV.

03. Screen Mute (Silencio de pantalla) (Comando: k d)

- ▶ Para seleccionar el silenciador de la pantalla en Encendido o Apagado.

Transmisión [k][d][][ID del televisor][][Dato][Cr]

Datos 00: Silenciador de pantalla apagado
(imagen encendida)
Silenciador de video apagado.
01: Silenciador de pantalla encendido
(imagen apagada)
10: Silenciador de video encendido

Ack [d][][ID del televisor][][OK/NG][Dato][x]

* Solo en caso el caso del silenciador de video activado, la TV mostrará la visualización en pantalla (OSD). Pero si está activado el silencio de la pantalla, el televisor no mostrará dicha visualización (OSD).

04. Silenciador de volumen (Comando: k e)

- ▶ Para activar o desactivar el silencio del volumen.
También es posible ajustar el silenciador a través del botón MUTE del control remoto.

Transmisión [k][e][][ID del televisor][][Dato]
[Cr]

Datos 00: Silenciador de volumen encendido
(Volumen apagado)
01: Silenciador de volumen apagado
(Volumen encendido)

Ack [e][][ID del televisor][][OK/NG][Dato][x]

05. Volume Control (Control de volumen) (Comando: k f)

- ▶ Para ajustar el volumen.
También puede ajustar el volumen con los botones de volumen en el control remoto.

Transmisión [k][f][][ID del televisor][][Dato]
[Cr]

Datos Mín. : 00 a Máx.: 64

Ack [f][][ID del televisor][][OK/NG][Dato][x]

06. Contraste (Comando: k g)

- ▶ Para ajustar el contraste de la pantalla.
También puede ajustar el contraste en el menú IMAGEN.

Transmisión [k][g][][ID del televisor][][Dato]
[Cr]

Datos Mín. : 00 a Máx.: 64

Ack [g][][ID del televisor][][OK/NG][Dato][x]

07. Brillo (Comando: k h)

- ▶ Para ajustar el brillo de la pantalla. También puede ajustar el brillo en el menú IMAGEN.

Transmisión [k][h][][ID del televisor][][Dato]
[Cr]

Datos Mín. : 00 a Máx.: 64

Ack [h][][ID del televisor][][OK/NG][Dato][x]

08. Color (Comando: k i)

- ▶ Para ajustar el Color de la pantalla. También puede ajustar el color en el menú IMAGEN.

Transmisión [k][i][][ID del televisor][][Dato]
[Cr]

Datos Mín. : 00 a Máx.: 64

Ack [i][][ID del televisor][][OK/NG][Dato][x]

09. Tinte (Comando: k j)

- ▶ Para ajustar el tinte de la pantalla. También puede ajustar el tinte en el menú IMAGEN.

Transmisión [k][j][][ID del televisor][][Dato]
[Cr]

Datos Rojo: 00 a Verde: 64

Ack [j][][ID del televisor][][OK/NG][Dato][x]

10. Nitidez (Comando: k k)

- ▶ Para ajustar la nitidez de la pantalla. También puede ajustar la nitidez en el menú IMAGEN.

Transmisión [k][k][][ID del televisor][][Dato]
[Cr]

Datos Mín. : 00 a Máx.: 32

Ack [k][][ID del televisor][][OK/NG][Dato][x]

11. OSD Select (Selección de OSD) (Comando: k l)

- ▶ Para seleccionar el encendido o apagado del modo de visualización en pantalla (OSD) durante el control remoto.

Transmisión [k][l][][ID del televisor][][Dato]
[Cr]

Dato 00: OSD apagado 01: OSD encendido

Ack [l][][ID del televisor][][OK/NG][Dato][x]

12. Remote control lock mode (Modo de bloqueo del control remoto) (Comando: k m)

- ▶ Para bloquear el control remoto y los controles del panel frontal del televisor.

Transmisión [k][m][][ID del televisor][][Dato]
[Cr]

Dato 00: Bloqueo desactivado 01: Bloqueo activado

Ack [m][][ID del televisor][][OK/NG][Dato][x]

- * Si no está utilizando el control remoto, use este modo.

Cuando la potencia principal se apaga y enciende (se desconecta y conecta, después de 20 a 30 segundos), se lanza el bloqueo del control externo.

- * En modo de espera (CC apagada mediante la hora de apagado o el comando "ka", "mc") si está activado el bloqueo de teclas, la TV no se encenderá al presionar la tecla de encendido de IR o la tecla local.

13. Treble (Agudos) (Comando: k r)

- ▶ Para ajustar los agudos. También puede ajustarlos en el menú AUDIO.

Transmisión [k][r][][ID del televisor][][Dato]
[Cr]

Datos Mín. : 00 a Máx.: 64

Ack [r][][ID del televisor][][OK/NG][Dato][x]

- * (según el modelo)

14. Graves (Comando: k s)

- ▶ Para ajustar los bajos. También puede ajustarlos en el menú AUDIO.

Transmisión [k][s][][ID del televisor][][Dato]
[Cr]

Datos Mín. : 00 a Máx.: 64

Ack [s][][ID del televisor][][OK/NG][Dato][x]

- * (según el modelo)

15. Balance (Comando: k t)

- ▶ Para ajustar el balance. También puede ajustar el balance en el menú AUDIO.

Transmisión [k][t][][ID del televisor][][Dato]
[Cr]

Datos Mín. : 00 a Máx.: 64

Ack [t][][ID del televisor][][OK/NG][Dato][x]

16. Color Temperature (Temperatura de color)
(Comando: x u)

- Para ajustar la temperatura de color. También puede ajustar Color Temperature (Temperatura de color) en el menú IMAGEN.

Transmisión [x][u][][ID del televisor][][Dato][Cr]

Datos Mín.: 00 a Máx.: 64

Ack [u][][ID del televisor][][OK/NG][Dato][x]

17. ISM Method (Método de ISM) (Comando: j p)
(solo en televisores plasma)

- Para controlar el método de ISM. También puede ajustar el Método de ISM en el menú OPTION.

Transmisión [j][p][][ID del televisor][][Dato][Cr]

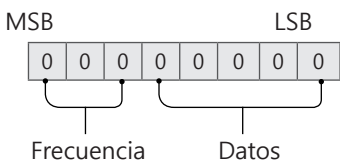
Datos Mín.: 02: Orbiter (Orbitador)
08: Normal
20: Color Wash (Decolorado)

Ack [p][][ID del televisor][][OK/NG][Dato][x]

18. Ecuador (Comando : j v)

- Ajustar el EQ (ecualizador) del conjunto.

Transmisión [j][v][][ID del televisor][][Dato][Cr]



7	6	5	Frecuencia	4	3	2	1	0	Paso
0	0	0	1st. Banda	0	0	0	0	0	0 (decimal)
0	0	1	2nd. Banda	0	0	0	0	1	1 (decimal)
0	1	0	3rd. Banda	...	...	...	...	...	...
0	1	1	4th. Banda	1	0	0	1	1	19 (decimal)
1	0	0	5th. Banda	1	0	1	0	1	20 (decimal)

Acknowledgement [v][][ID del televisor][][OK/NG][Dato][x]

* Depende del modelo, y puede ajustarse cuando el modo de sonido es un valor de EQ ajustable.

19. Ahorro de energía (Comando: j q)

- Para reducir el consumo de energía de la TV. También puede ajustar el Ahorro de energía en el menú IMAGEN.

Transmisión [j][q][][ID del televisor][][Dato][Cr]

Datos

- 00: apagado
- 01: mínimo
- 02: medio
- 03: máximo
- 04: Automático (para TV LCD/TV LED)/Intelligent sensor (Sensor inteligente) (para PDP TV)
- 05: apagado de Pantalla

* (según el modelo)

Ack [q][][ID del televisor][][OK/NG][Dato][x]

20. Tune Command (Comando de sintonización)
(Comando: m a)

* Este comando puede funcionar de un modo diferente según el modelo y de la señal.

- Para los modelos de Europa, Oriente Medio, Colombia, Asia, excepto Corea del Sur y Japón
- Seleccione el canal de los siguientes números físicos.

Transmisión [m][a][][ID del televisor][][Dato 00][][Dato 01][][Dato 02][Cr]

* Analógica Antena/Cable

[Dato 00][Dato 01] Datos de canales
Datos 00: datos de canal de bytes altos
Datos 01: datos de canal de bytes bajos
- 00 00 ~ 00 C7 (decimal: 0 ~ 199)

Datos 02: fuente de entrada (análogica)
- 00: TV Antena (ATV)
- 80: TV por cable (CATV)

* Digital Antena/Cable/Satélite

[Dato 00][Dato 01]: datos de canales
Datos 00: datos de canal de bytes altos
Datos 01: datos de canal de bytes bajos
- 00 00 ~ 27 0F (decimal: 0 ~ 9999)

Datos 02: fuente de entrada (digital)
- 10: TV Antena (DTV)
- 20: Radio Antena (Radio)
- 40: TV satelital (SDTV)
- 50: Radio satelital (S-Radio)
- 90: TV por cable (CADTV)
- a0: Radio por cable (CA-Radio)

* Ejemplos de comandos de sintonización:

1. Sintonizar el canal Antena analógica (PAL) 10.
ID del televisor = Todo = 00
Datos 00 & 01 = Datos de canal es 10 = 00 0a
Datos 02 = TV Antena analógica = 00
Resultado = **ma 00 00 0a 00**

2. Sintonizar el canal Antena digital (DVB-T) 01.
ID del televisor = Todo = 00
Datos 00 & 01 = Datos de canal es 1 = 00 01
Datos 02 = TV Antena digital = 10
Resultado = **ma 00 00 01 10**

3. Sintonizar el canal satelital (DVB-S) 1000.

ID del televisor = Todo = 00
 Datos 00 & 01 = Datos de canal es 1000 = 03 E8
 Datos 02 = Satélite de TV digital = 40
 Resultado = **ma 00 03 E8 40**

```
Ack [a][ ][ID del televisor][ ][OK][Dato 00]
[Dato 01][Dato 02][x][a][ ][ID del televisor][ ]
[NG][Dato 00][x]
```

- Para los modelos de Corea del Sur, América del Norte, América Latina, excepto Colombia.
- ▶ Para sintonizar los canales en el siguiente número físico/mayor/menor.

```
Transmisión [m][a][ ][0][ ][Dato00][ ][Dato01]
[ ][Dato02][ ][Dato03][ ][Dato04][ ][Dato05][Cr]
```

Los canales digitales poseen un número de canal físico, mayor y menor. El número físico es el número de canal digital real, el mayor es el número al cual el canal se debe asignar y el menor es el subcanal. Como el sintonizador ATSC asigna automáticamente el canal al número mayor/menor, cuando se envía un comando en modo Digital, no es necesario especificar el número físico.

* Analógica Antena/Cable

Datos 00 : número de canal físico
 - Antena (ATV): 02~45 (decimal: 2 ~ 69)
 - cable (CATV): 01, 0E~7D (decimal: 1, 14~125)

Datos 01 y 04: número de canal mayor/menor
 Datos 01 y 02: xx (no importa)
 Datos 03 y 04: xx (no importa)
 Datos 05: fuente de entrada (analógica)
 - 00: TV Antena (ATV)
 - 01: TV por cable (CATV)

* Antena digital/Cable

Datos 00: xx (no importa)

[Dato 01][Dato 02]: número de canal mayor
 Datos 01: datos de canal de bytes altos
 Datos 02: datos de canal de bytes bajos
 - 00 01 ~ 27 0F (decimal: 1 ~ 9999)
 [Dato 03][Dato 04]: número de canal menor
 Datos 03: datos de canal de bytes altos
 Datos 04: datos de canal de bytes bajos

Datos 05: fuente de entrada (digital)
 - 02: TV Antena (DTV): usar número de canal físico
 - 06: Cable de TV (CADTV): usar número de canal físico
 - 22: TV Antena (DTV): no usar número de canal físico
 - 26: Cable de TV (CADTV): no usar un número de canal físico
 - 46: Cable de TV (CADTV): usar solo un Physical/número de canal mayor (canal de una parte)
 - 66: Cable de TV (CADTV): usar solo un número de canal mayor (canal de una parte)

- 0b : Cable DTV Plus – usar número de canal físico
- 2b : Cable DTV Plus – no usar número de canal físico
- 4b : Cable DTV Plus – usar solo un número de Canal Físico/Mayor (Canal de una parte)
- 6b : Cable DTV Plus – usar solo un número de canal mayor (canal de una parte)

Hay dos bytes disponibles para cada dato de canal mayor y menor, pero generalmente, solo se usa el byte más bajo (los bytes altos son de 0).

* Ejemplos de comandos de sintonización:

1. Sintonice el canal de cable analógico (NTSC) 35.

ID del televisor = Todo = 00
 Datos 00 = Datos de canal es 35 = 23
 Datos 01 & 02 = No Mayor = 00 00
 Datos 03 & 04 = No Menor = 00 00
 Datos 05 = Cable de TV analógico = 01
 Total = **ma 00 23 00 00 00 01**

2. Sintonice el canal Antena digital (ATSC) 30-3.

ID del televisor = Todo = 00
 Datos 00 = No conoce Físico = 00
 Datos 01 & 02 = Mayor es 30 = 00 1E
 Datos 03 & 04 = Menor es 3 = 00 03
 Datos 05 = TV Antena digital = 22
 Total = **ma 00 00 00 1E 00 03 22**

```
Ack [a][ ][ID del televisor][ ][OK][Dato 00]
[Dato 01][Dato 02][Dato 03][Dato 04][Dato 05]
[x][a][ ][ID del televisor][ ][NG][Dato 00][x]
```

- Para modelos de Japón
- ▶ Para sintonizar los canales en el siguiente número físico/mayor/menor.

```
Transmisión [m][a][ ][0][ ][Dato00][ ][Dato01]
[ ][Dato02][ ][Dato03][ ][Dato04][ ][Dato05][Cr]
```

* Antena digital/Satélite
 Datos 00: xx (no importa)

[Dato 01][Dato 02]: número de canal mayor
 Datos 01: datos de canal de bytes altos
 Datos 02: datos de canal de byte bajos
 - 00 01 ~ 27 0F (decimal: 1 ~ 9999)

[Dato 03][Dato 04]: Número de canal menor/
 sucursal
 (No importa en satélite)

Datos 03: datos de canal de bytes altos
 Datos 04: datos de canal de byte bajos

Datos 05: fuente de entrada (digital/satelital para Japón)

- 02 : TV Antena (DTV)
- 42 : TV Antena (DTV) – usar solo un número de Canal Físico/Mayor (Canal de una parte)
- 62 : TV Antena (DTV) – usar solo un número de canal mayor (canal de una parte)
- 07: BS (satélite de transmisión)
- 08: CS1 (satélite de comunicación 1)

- 09: CS2 (satélite de comunicación 2)
 * Ejemplos de comandos de sintonización:
 1 Sintonizar el canal Antena digital (ISDB-T) 17-1.
 ID del televisor = Todo = 00
 Datos 00 = No conoce Físico = 00
 Datos 01 & 02 = Mayor es 17 = 00 11
 Datos 03 & 04 = Menor/Sucursal es 1 = 00 01
 Datos 05 = TV Antena digital = 02
 Total = **ma 00 00 00 11 00 01 02**

2. Sintonizar el canal BC (ISDB-BS) 30.
 ID del televisor = Todo = 00
 Datos 00 = No conoce Físico = 00
 Datos 01 & 02 = Mayor es 30 = 00 1E
 Datos 03 & 04 = No importa = 00 00
 Datos 05 = TV BC Digital = 07
 Total = **ma 00 00 00 1E 00 00 07**

* Esta función varía según el modelo.
 Ack [a][][ID del televisor][][OK][Dato 00]
 [Dato 01][Dato 02][Dato 03][Dato 04][Dato 05]
 [x][a][][ID del televisor][][NG][Dato 00][x]

21. Canal (Programa) Agregar/Borrar (Saltar)
 (Comando: m b)
 ► Para saltar el canal actual (programa) para otra ocasión.
 Transmisión [m][b][][ID del televisor][][Dato]
 [Cr]
 Dato 00: Borrar(ATSC, ISDB)/Saltar 01: Agregar (DVB)

Ack [b][][ID del televisor][][OK/NG][Dato][x]
 * Establecer el estado del canal guardado en borrar (ATSC, ISDB)/saltar (DVB) o agregar.
 22. Key (Tecla) (Comando: m c)
 ► Para enviar el código de tecla del control remoto IR.

Transmisión [m][c][][ID del televisor][][Dato]
 [Cr]
 Datos Código de tecla - página 2.

Ack [c][][ID del televisor][][OK/NG][Dato][x]

23. Control BackLight (Control de la luz de fondo)
 (Comando: m g)

- Para TV LCD/TV LED
- Para controlar luz de pantalla.

Transmisión [m][g][][ID del televisor][][Dato]
 [Cr]

Datos Mín. : 00 a Máx.: 64

Ack [g][][ID del televisor][][OK/NG][Dato][x]

- Para TV plasma
- Para controlar la luz del panel

Transmisión [m][g][][ID del televisor][][Dato]
 [Cr]

Datos Mín. : 00 a Máx.: 64

Ack [g][][ID del televisor][][OK/NG][Dato][x]

24. Input select (Selección de entrada) (Comando: x b)
 (Entrada de la imagen principal)

► Para seleccionar la fuente de entrada para la imagen principal.

Transmisión [x][b][][ID del televisor][][Dato]
 [Cr]

Datos

00: DTV	01: CADTV
02 : Satelital DTV	10: ATV
ISDB-BS (Japón)	
03: ISDB-CS1 (Japón)	
04: ISDB-CS2 (Japón)	
11: CATV	
20: AV o AV1	21: AV2
40: Componente1	41: Componente 2
60: RGB	
90: HDMI1	91: HDMI2
92: HDMI3	93: HDMI4

Ack [b][][ID del televisor][][OK/NG][Dato][x]

* Esta función varía según el modelo y la señal.
 25. 3D (Comando: x t) (solo modelos 3D)
 (Depende del modelo)

► Para cambiar el modo 3D del TV.

Transmisión [x][t][][ID del televisor][][Dato 00][][Dato 01][][Dato 02][][Dato 03][Cr]

* (según el modelo)
 Datos estructura
 [Dato 00] 00: 3D encendido
 01: 3D apagado
 02: 3D a 2D
 03: 2D a 3D
 [Dato 01] 00: Top and Bottom (Superior e Inferior)
 01: Side by Side (Lado a lado)
 02: Check Board (Comprobar panel)
 03: Frame Sequential (Fotogramas secuenciales)
 04: Column interleaving (Intercalado en columna)
 05: Row interleaving (Intercalado en fila)
 [Dato 02] 00: Derecha a Izquierda
 01: Izquierda a Derecha
 [Dato 03] Efecto 3D (profundidad 3D): Mín.: 00 - Máx.: 14
 (*transmite por código hexadecimal)

* Si [Dato 00] es 00 (3D encendido), [Dato 03] no es relevante.

- * Si [Dato 00] es 01 (3D apagado) o 02 (3D a 2D), [Dato 01], [Dato 02] y [Dato 03] no son relevantes.
- * Si [Dato 00] es 03 (2D a 3D), [Dato 01] y [Dato 02] no son relevantes.
- * Si [Dato 00] es 00 (3D encendido) o 03 (2D a 3D), [Dato 03] funciona solo cuando el modo 3D (género) es manual.
- * Es posible que todas las opciones del patrón de 3D ([Datos 01]) no estén disponibles según la transmisión/señal de video.

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

X: no importa

```
Ack [t][ ][ID del televisor][ ][OK][Dato00]
[Dato01][Dato02][Dato03][x][t][ ]
[ID del televisor][ ][NG][Dato00][x]
```

26. 3D extendido (Comando: x v) (solo modelos 3D) (Depende del modelo)

- Para cambiar la opción 3D del televisor.

```
Transmisión [x][v][ ][ID del televisor][ ][Dato 00]
[ ][Dato 01][Cr]
```

- [Dato 00] Opción 3D
- 00: Corrección de imagen 3D
 - 01: Profundidad 3D (Modo 3D es Solo manual)
 - 02: Punto de vista 3D
 - 06 : Corrección de Color 3D
 - 07 : Ampliación de Sonido 3D
 - 08 : Vista de imagen normal
 - 09 : Modo 3D (Tipo)

[Dato 01] Cuenta con su propio rango para cada opción 3D determinada por [Dato 00].

- 1) Cuando [Dato 00] es 00
- 00: Derecha a Izquierda
 - 01: Izquierda a Derecha

- 2) Cuando [Dato 00] es 01, 02
- Dato Mín.: 0 - Máx.: 14 (*transmite por código hexadecimal)

El rango de valores de datos (0 - 20) convierte el rango de visión (-10 - +10) de forma automática (según el modelo)

* Esta función funciona cuando el modo 3D (género) es solo manual.

- 3) Cuando [Dato 00] es 06, 07
- 00: encendido
 - 01: apagado

- 4) Cuando [Dato 00] es 08
- 00: revertir a video 3D de video 2D convertido de 3D a 2D
 - 01: cambiar video 3D a video 2D, excepto video 2D a 3D

- * Si la condición de la conversión no se cumple, el comando se trata como NG.
- 5) Cuando [Dato 00] es 09

- 00: Estándar
- 01: Deportes
- 02: Cine
- 03: Extremo
- 04: Manual
- 05: Automático

```
Ack [u][ ][ID del televisor][ ][OK/NG][Dato][x]
```

```
Ack [v][ ][ID del televisor][ ][OK][Dato00]
[Dato01][x][v][ ][ID del televisor][ ][NG][Dato00]
[x]
```

27. Configuración automática (Comando: j u) (Depende del modelo)

- Para ajustar la ubicación de la imagen y reducir su temblor de manera automática. La configuración automática solo funciona en el modo RGB-PC.

```
Transmisión [j][u][ ][ID del televisor][ ][Dato][Cr]
```

Dato 01: Para ajustar la Configuración automática

```
Ack [u][ ][ID del televisor][ ][OK/NG][Dato][x]
```

