OWNER’S MANUAL
Safety and Reference

LED TV*

* LG LED TV applies LCD screen with LED backlights.

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

43UN7300PUF  50UN7300PUF  60UN7300PUA  70UN7300PUF  82UN8570PUF
43UN7300PUC  50UN7300PUC  60UN7310PUA  70UN7370AUD  82UN8570PUB
43UN7300AUD  50UN7300AUD  60UN7000PUB  70UN7370PUB  82UN8570AUD
43UN7100PUA  50UN7000PUB  60UN6950ZUA  70UN7700PUB  82UN8070PUD
43UN7000PUB  50UN6950ZUF  65UN8500PUF  75UN8570PUC  86UN8570PUC
43UN6950ZUA  50UN6951ZUF  65UN8500AUJ  75UN8570PUE  86UN8570PUB
43UN6951ZUA  50UN6951ZUF  65UN8050PUD  75UN8000PUB  86UN8570AUD
49UN7300PUF  50UN7300PUF  60UN7300PUA  70UN7300PUC  82UN8570PUC
49UN7300PUC  50UN7300PUC  60UN7310PUA  70UN7370AUD  82UN8570PUB
49UN7300AUD  50UN7300AUD  60UN7000PUB  70UN7370PUB  82UN8570AUD
49UN7100PUA  50UN7100PUA  60UN6950ZUA  70UN7700PUB  82UN8070PUD
49UN7000PUB  50UN7000PUB  65UN8500PUF  75UN8570PUC  86UN8570PUC
50UN8050PUD  55UN8050PUD  65UN8000PUB  75UN8000PUB  86UN8570AUD
50UN8000PUB  55UN8000PUB  65UN7300PUF  75UN7300PUC  86UN8070PUD
50UN7100PUC  55UN7100PUC  65UN7100PUA  75UN7300AUD  86UN8070PUD
50UN6950ZUA  55UN6950ZUA  65UN6950ZUA  75UN6950ZUD  86UN8070PUD
50UN6951ZUA  55UN6951ZUA  65UN6951ZUA  75UN6951ZUD  86UN8070PUD

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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

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

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• **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 10 mm (0.39 inches) thick and 18 mm (0.7 inches) width.
- Use an extension cable that supports USB 2.0 if the USB cable or USB flash drive does not fit into your TV’s USB port.
- 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 feet) or less)
  - Ultra High Speed HDMI cable®/™
  - \*A \(\leq\) 10 mm (0.39 inches)
  - \*B \(\leq\) 18 mm (0.7 inches)

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

(Depending upon model)

MR20GA

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

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.

<table>
<thead>
<tr>
<th>Model</th>
<th>43/50UN69*</th>
<th>43/50UN70*</th>
<th>43UN71*</th>
<th>43/50UN73*</th>
<th>50UN80*</th>
<th>55UN69*</th>
<th>49/55UN70*</th>
<th>49/55UN71*</th>
<th>49/55UN73*</th>
<th>55UN80*</th>
</tr>
</thead>
<tbody>
<tr>
<td>VESA (A x B) (mm)</td>
<td>200 x 200</td>
<td>300 x 300</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard screw</td>
<td>M6</td>
<td>M6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of screws</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wall mount bracket (optional)</td>
<td>LSW240B</td>
<td>MSW240</td>
<td>OLW480B</td>
<td>MSW240</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
### 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.

- 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.

2. Connect the power cord to a wall outlet.

### Table: Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>VESA (A x B) (mm)</th>
<th>Standard screw</th>
<th>Number of screws</th>
<th>Wall mount bracket (optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td>60/65UN69*</td>
<td>300 x 300</td>
<td>M6</td>
<td>4</td>
<td>OLW480B</td>
</tr>
<tr>
<td>60UN70*</td>
<td>600 x 400</td>
<td>M8</td>
<td>4</td>
<td>LSW640B</td>
</tr>
<tr>
<td>65UN71*</td>
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<tr>
<td>60/65UN73*</td>
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<tr>
<td>65UN80*</td>
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<tr>
<td>65UN85*</td>
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<tr>
<td>75UN69*</td>
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<tr>
<td>70/75UN70*</td>
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<tr>
<td>70/75UN71*</td>
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<tr>
<td>70/75UN73*</td>
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<tr>
<td>75/82UN80*</td>
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<tr>
<td>75/82/86UN85*</td>
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</tr>
</tbody>
</table>

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

Securing TV to the Wall

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. Make sure to keep the rope horizontal with the flat surface.
   - Use a platform or cabinet that is strong and large enough to support the TV securely.
   - Brackets, bolts and ropes are not provided. You can obtain additional accessories from your local dealer.

! 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 product life span.

! Any damage or injuries caused 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.)

! Do not fasten the screws with excessive force otherwise they may strip and become loose.

! 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.
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.
- HDMI Audio Supported 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)
- \[ \text{[Picture]} \rightarrow \text{[Additional Settings]} \rightarrow \text{[HDMI Ultra HD Deep Color]} \]
  (Except for UN85*, 82UN80*)
  - On: Support 4K @ 50 / 60 Hz (4:4:4, 4:2:2, 4:2:0)
  - Off: Support 4K @ 50 / 60 Hz (4:2:0)
  (Only UN85*, 82UN80*)
  - On: Support 4K @ 50 / 60 Hz (4:4:4, 4:2:2, 4:2:0),<3,4 port Only> 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.
  - This feature is available only on certain models which support HDMI Ultra HD Deep Color.

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. For more information on external device’s connection, refer to the manual provided with each device.

- 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 on 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

<table>
<thead>
<tr>
<th>Button</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power On (Press)</td>
<td>Turns the power off.</td>
</tr>
<tr>
<td>Power Off 1 (Press and Hold)</td>
<td>Changes the input source.</td>
</tr>
<tr>
<td>Menu Control (Press 2)</td>
<td>Adjusts the volume level.</td>
</tr>
<tr>
<td>Menu Selection (Press and Hold 3)</td>
<td>Scrolls through the saved channels.</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Button</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power On (Press)</td>
<td>Turns the power off.</td>
</tr>
<tr>
<td>Power Off 1 (Press and Hold)</td>
<td>Changes the input source.</td>
</tr>
<tr>
<td>Menu Control (Press 2)</td>
<td>Adjusts the volume level.</td>
</tr>
<tr>
<td>Menu Selection (Press and Hold 3)</td>
<td>Scrolls through the saved channels.</td>
</tr>
</tbody>
</table>
Using Remote Control

(Depending upon model)

The descriptions in this manual are based on the buttons on the remote control. Please read this manual carefully and use the TV correctly.

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

Make sure to point the remote control toward the remote control sensor on the TV.

![Remote Control Diagram]

(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.
- **TV** Returns to the last TV channel.
- **(SEARCH)** Check for recommended content. (Some recommended services may not be available in some countries.) Shows the search mode.
- **SUB** Activates or deactivates the subtitles.
- **(Q. Settings)** Accesses the Quick Settings.
- **(INPUT)** Changes the input source.
- **Number button** Enters numbers.
- **(Dash)** Inserts a — between numbers such as 2-1 and 2-2.
- **LIST** Accesses the saved channels 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.
  - **VOL** Adjusts the volume level.
  - **FAV** Accesses your favorite channel list.
  - **GUIDE** Displays the program event according to time scheduler.
  - **(MUTE)** Mutes all sounds.
  - **(MUTE)** Accesses the [Accessibility] menu.
  - **CH** Scrolls through the saved channels.
  - **PAGE** Moves to the previous or next screen.

**Streaming Service buttons** Connects to the Video Streaming Service.

- **(HOME)** Accesses the Home menu.
- **(HOME)** Shows the previous history.
- **BACK** Returns to the previous screen.
- **EXIT** Clears on-screen displays and returns to last input viewing.

**Navigation button** (up / down / left / right) Scrolls through menus or options.

- **(OK)** Selects menus or options and confirms your input.
- **INFO** Shows information on the current program.
- **SAP** Enables SAP (Secondary Audio Program) Feature.
- **REC** Starts to record. (Only Time Machine + supported model)
- **(Control buttons)** Control buttons for media contents.

These access special functions in some menus.
Using Magic Remote Control

(Depending upon model)

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 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.

**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 set-top box to the universal remote control for your TV.
- **Number buttons** Enters numbers.
- **(DASH)** Inserts a — between numbers such as 2-1 and 2-2.
- **(MORE ACTIONS)** Displays more remote control functions.
- **QUICK ACCESS** Edits QUICK ACCESS.
- **Magic remote battery is low. Please change the battery.** Displays the [Quick Help].
- **(Voice recognition)** Network connection is required to use the voice recognition function.
- **(Voice recognition)** Speak while pressing and holding the button to use the voice recognition feature.
- **(HOME)** Shows the previous history.
- **(Q. Settings)** Displays the [All Settings] menu.
- **Wheel (OK)** Press the center of the Wheel button to select a menu. You can change channels by using the wheel 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 screen.
- **(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.

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 sound while the TV is on, the TV will turn off automatically after 15 minutes of inactivity.

• 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.
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 LCD screen or holding your finger(s) against it for long periods of time. Doing so may produce some temporary distortion effects on the screen.
- 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.
- Displaying a still image for a prolonged period of time may cause an image sticking. Avoid displaying a fixed image on the TV screen for a extended length of time.

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.

- When cleaning the product, be careful not to allow any liquid or foreign objects to enter the gap between the upper, left or right side of the panel and the guide panel, (Depending upon model).
- 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.

• When cleaning the product, be careful not to allow any liquid or foreign objects to enter the gap between the upper, left or right side of the panel and the guide panel, (Depending upon model).
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.

(Depending upon country)

<table>
<thead>
<tr>
<th>Broadcasting Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Television system</strong></td>
</tr>
<tr>
<td>ATSC / NTSC-M, 64 &amp; 256 QAM</td>
</tr>
<tr>
<td><strong>Program coverage (Band)</strong></td>
</tr>
<tr>
<td>VHF 2-13, UHF 14-69, DTV 2-69, CATV 1-135, CADTV 1-135</td>
</tr>
<tr>
<td><strong>External antenna impedance</strong></td>
</tr>
<tr>
<td>75 Ω</td>
</tr>
</tbody>
</table>

(Only 82UN80*, UN85*)

<table>
<thead>
<tr>
<th>Wireless module (LGSBWAC92) Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wireless LAN (IEEE 802.11a/b/g/n/ac)</strong></td>
</tr>
<tr>
<td><strong>Frequency Range</strong></td>
</tr>
<tr>
<td>Output Power (Max.)</td>
</tr>
<tr>
<td>2,400 to 2,483.5 MHz</td>
</tr>
<tr>
<td>18 dBm</td>
</tr>
<tr>
<td>5,150 to 5,725 MHz</td>
</tr>
<tr>
<td>18 dBm</td>
</tr>
<tr>
<td>5,725 to 5,850 MHz</td>
</tr>
<tr>
<td>18 dBm</td>
</tr>
</tbody>
</table>

| **Bluetooth**                                |
| **Frequency Range**                         |
| **Output Power (Max.)**                     |
| 2,400 to 2,483.5 MHz                        |
| 8 dBm                                       |

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.

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.

FCC ID: BEJLGSBWAC92
IC: 2703H-LGSBWAC92
(Except for UN69*, UN70*, 82UN80*, UN85*)

### Wireless module (LGSBWAC02) Specifications

<table>
<thead>
<tr>
<th>Frequency Range</th>
<th>Output Power (Max.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,400 to 2,483.5 MHz</td>
<td>18.5 dBm</td>
</tr>
<tr>
<td>5,150 to 5,725 MHz</td>
<td>17 dBm</td>
</tr>
<tr>
<td>5,725 to 5,850 MHz</td>
<td>18.5 dBm</td>
</tr>
</tbody>
</table>

**Bluetooth**

<table>
<thead>
<tr>
<th>Frequency Range</th>
<th>Output Power (Max.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,400 to 2,483.5 MHz</td>
<td>8.5 dBm</td>
</tr>
</tbody>
</table>

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.

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.

FCC ID: BEJLGSBWAC02  
IC: 2703H-LGSBWAC02

(Only UN69*, UN70*)

### Wireless module (LGSWFAC81) Specifications

<table>
<thead>
<tr>
<th>Frequency Range</th>
<th>Output Power (Max.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,400 to 2,483.5 MHz</td>
<td>20 dBm</td>
</tr>
<tr>
<td>5,150 to 5,725 MHz</td>
<td>15 dBm</td>
</tr>
<tr>
<td>5,725 to 5,850 MHz</td>
<td>14.5 dBm</td>
</tr>
</tbody>
</table>

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.

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.

FCC ID: BEJLGSWFAC81  
IC: 2703H-LGSWFAC81

### Environment condition

<table>
<thead>
<tr>
<th>Condition</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operating Temperature</strong></td>
<td>0 °C to 40 °C (32 °F to 104 °F)</td>
</tr>
<tr>
<td><strong>Operating Humidity</strong></td>
<td>Less than 80 %</td>
</tr>
<tr>
<td><strong>Storage Temperature</strong></td>
<td>-20 °C to 60 °C (-4 °F to 140 °F)</td>
</tr>
<tr>
<td><strong>Storage Humidity</strong></td>
<td>Less than 85 %</td>
</tr>
</tbody>
</table>
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

Powered by QuickSet
(Magic Remote supported models only)

HevcAdvance™
Covered by Patents at patentlist.hevcadvance.com

HDMI™
HIGH-DEFINITION MULTIMEDIA INTERFACE

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.
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.

NOTE TO CABLE/TV INSTALLER

(For 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**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>~</td>
<td>Refers to alternating current (AC).</td>
</tr>
<tr>
<td>---</td>
<td>Refers to direct current (DC).</td>
</tr>
<tr>
<td>❝</td>
<td>Refers to class II equipment.</td>
</tr>
<tr>
<td>🔐</td>
<td>Refers to stand-by.</td>
</tr>
<tr>
<td>🌟</td>
<td>Refers to “ON” (power).</td>
</tr>
<tr>
<td>⚡</td>
<td>Refers to dangerous voltage.</td>
</tr>
</tbody>
</table>

**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.

CE.org/safety
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.

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

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
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.

<table>
<thead>
<tr>
<th>Code (Hexa)</th>
<th>Function</th>
<th>Note</th>
<th>Code (Hexa)</th>
<th>Function</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>CH +, PR +</td>
<td>R/C Button</td>
<td>53</td>
<td>List</td>
<td>R/C Button</td>
</tr>
<tr>
<td>01</td>
<td>CH -, PR -</td>
<td>R/C Button</td>
<td>5B</td>
<td>Exit</td>
<td>R/C Button</td>
</tr>
<tr>
<td>02</td>
<td>Volume +</td>
<td>R/C Button</td>
<td>60</td>
<td>PIP(AD)</td>
<td>R/C Button</td>
</tr>
<tr>
<td>03</td>
<td>Volume -</td>
<td>R/C Button</td>
<td>61</td>
<td>Blue</td>
<td>R/C Button</td>
</tr>
<tr>
<td>06</td>
<td>&gt; (Arrow Key / Right Key)</td>
<td>R/C Button</td>
<td>63</td>
<td>Yellow</td>
<td>R/C Button</td>
</tr>
<tr>
<td>07</td>
<td>&lt; (Arrow Key / Left Key)</td>
<td>R/C Button</td>
<td>71</td>
<td>Green</td>
<td>R/C Button</td>
</tr>
<tr>
<td>08</td>
<td>Power</td>
<td>R/C Button</td>
<td>72</td>
<td>Red</td>
<td>R/C Button</td>
</tr>
<tr>
<td>09</td>
<td>Mute</td>
<td>R/C Button</td>
<td>79</td>
<td>Ratio / Aspect Ratio</td>
<td>R/C Button</td>
</tr>
<tr>
<td>0B</td>
<td>Input</td>
<td>R/C Button</td>
<td>91</td>
<td>AD (Audio Description)</td>
<td>R/C Button</td>
</tr>
<tr>
<td>0E</td>
<td>SLEEP</td>
<td>R/C Button</td>
<td>9E</td>
<td>LIVE MENU</td>
<td>R/C Button</td>
</tr>
<tr>
<td>0F</td>
<td>TV, TV/RAD</td>
<td>R/C Button</td>
<td>7A</td>
<td>User Guide</td>
<td>R/C Button</td>
</tr>
<tr>
<td>10 - 19</td>
<td>* Number Key 0 - 9</td>
<td>R/C Button</td>
<td>7C</td>
<td>Smart / Home</td>
<td>R/C Button</td>
</tr>
<tr>
<td>1A</td>
<td>Q.View / Flashback</td>
<td>R/C Button</td>
<td>7E</td>
<td>SIMPLINK</td>
<td>R/C Button</td>
</tr>
<tr>
<td>1E</td>
<td>FAV (Favorite Channel)</td>
<td>R/C Button</td>
<td>8E</td>
<td>►► (Forward)</td>
<td>R/C Button</td>
</tr>
<tr>
<td>20</td>
<td>Text (Teletext)</td>
<td>R/C Button</td>
<td>8F</td>
<td>◀◀ (Rewind)</td>
<td>R/C Button</td>
</tr>
<tr>
<td>21</td>
<td>T. Opt (Teletext Option)</td>
<td>R/C Button</td>
<td>AA</td>
<td>Info</td>
<td>R/C Button</td>
</tr>
<tr>
<td>28</td>
<td>Return (BACK)</td>
<td>R/C Button</td>
<td>AB</td>
<td>Program Guide</td>
<td>R/C Button</td>
</tr>
<tr>
<td>30</td>
<td>AV (Audio / Video) Mode</td>
<td>R/C Button</td>
<td>B0</td>
<td>► (Play)</td>
<td>R/C Button</td>
</tr>
<tr>
<td>39</td>
<td>Caption/Subtitle</td>
<td>R/C Button</td>
<td>B1</td>
<td>■ (Stop / File List)</td>
<td>R/C Button</td>
</tr>
<tr>
<td>40</td>
<td>Λ (Arrow Key / Cursor Up)</td>
<td>R/C Button</td>
<td>B5</td>
<td>RECENT</td>
<td>R/C Button</td>
</tr>
<tr>
<td>41</td>
<td>V (Arrow Key / Cursor Down)</td>
<td>R/C Button</td>
<td>BA</td>
<td>II (Freeze / Slow Play / Pause)</td>
<td>R/C Button</td>
</tr>
<tr>
<td>42</td>
<td>My Apps</td>
<td>R/C Button</td>
<td>BB</td>
<td>Soccer</td>
<td>R/C Button</td>
</tr>
<tr>
<td>43</td>
<td>Menu / Settings</td>
<td>R/C Button</td>
<td>BD</td>
<td>(REC)</td>
<td>R/C Button</td>
</tr>
<tr>
<td>44</td>
<td>OK / Enter</td>
<td>R/C Button</td>
<td>DC</td>
<td>3D</td>
<td>R/C Button</td>
</tr>
<tr>
<td>45</td>
<td>Q.Menu</td>
<td>R/C Button</td>
<td>99</td>
<td>AutoConfig</td>
<td>R/C Button</td>
</tr>
<tr>
<td>4C</td>
<td>List, -</td>
<td>R/C Button</td>
<td>9F</td>
<td>App / *</td>
<td>R/C Button</td>
</tr>
<tr>
<td>4D</td>
<td>PICTURE</td>
<td>R/C Button</td>
<td>9B</td>
<td>TV / PC</td>
<td>R/C Button</td>
</tr>
<tr>
<td>52</td>
<td>SOUND</td>
<td>R/C Button</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* 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

(PC) \--\ USB to Serial(RS-232C) \--\ (TV)

• 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.

(PC) \--\ RS-232C(Serial) \--\ (TV)

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.

Customer Computer

RS-232C configurations

3-Wire Configurations (Not standard)

<table>
<thead>
<tr>
<th></th>
<th>PC</th>
<th>TV</th>
</tr>
</thead>
<tbody>
<tr>
<td>RXD</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>TXD</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>GND</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>RXD</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>TXD</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>GND</td>
<td>5</td>
<td>3</td>
</tr>
</tbody>
</table>

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)

<table>
<thead>
<tr>
<th>COMMAND1</th>
<th>COMMAND2</th>
<th>DATA (Hexadecimal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>01. Power*</td>
<td>k</td>
<td>a</td>
</tr>
<tr>
<td>02. Aspect Ratio</td>
<td>k</td>
<td>c</td>
</tr>
<tr>
<td>03. Screen Mute</td>
<td>k</td>
<td>d</td>
</tr>
<tr>
<td>04. Volume Mute</td>
<td>k</td>
<td>e</td>
</tr>
<tr>
<td>05. Volume Control</td>
<td>k</td>
<td>f</td>
</tr>
<tr>
<td>06. Contrast</td>
<td>k</td>
<td>g</td>
</tr>
<tr>
<td>07. Brightness</td>
<td>k</td>
<td>h</td>
</tr>
<tr>
<td>08. Color/Colour</td>
<td>k</td>
<td>i</td>
</tr>
<tr>
<td>09. Tint</td>
<td>k</td>
<td>j</td>
</tr>
<tr>
<td>10. Sharpness</td>
<td>k</td>
<td>k</td>
</tr>
<tr>
<td>11. OSD Select</td>
<td>k</td>
<td>l</td>
</tr>
<tr>
<td>12. Remote Control Lock Mode</td>
<td>k</td>
<td>m</td>
</tr>
<tr>
<td>13. Treble</td>
<td>k</td>
<td>r</td>
</tr>
<tr>
<td>14. Bass</td>
<td>k</td>
<td>s</td>
</tr>
<tr>
<td>15. Balance</td>
<td>k</td>
<td>t</td>
</tr>
<tr>
<td>16. Color (Colour) Temperature</td>
<td>x</td>
<td>u</td>
</tr>
<tr>
<td>17. ISM Method (Only Plasma TV)</td>
<td>j</td>
<td>p</td>
</tr>
<tr>
<td>18. Equalizer</td>
<td>j</td>
<td>v</td>
</tr>
<tr>
<td>19. Energy Saving</td>
<td>j</td>
<td>q</td>
</tr>
<tr>
<td>20. Tune Command</td>
<td>m</td>
<td>a</td>
</tr>
<tr>
<td>21. Channel (Programme) Add/Del(Skip)</td>
<td>m</td>
<td>b</td>
</tr>
<tr>
<td>22. Key</td>
<td>m</td>
<td>c</td>
</tr>
<tr>
<td>23. Control Backlight, Control Panel Light</td>
<td>m</td>
<td>g</td>
</tr>
<tr>
<td>24. Input select (Main)</td>
<td>x</td>
<td>b</td>
</tr>
<tr>
<td>25. 3D (Only 3D models)</td>
<td>x</td>
<td>t</td>
</tr>
<tr>
<td>26. Extended 3D (Only 3D models)</td>
<td>x</td>
<td>v</td>
</tr>
<tr>
<td>27. Auto Configure</td>
<td>j</td>
<td>u</td>
</tr>
</tbody>
</table>

* 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 -> 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.

<table>
<thead>
<tr>
<th>Hexadecimal</th>
<th>Decimal</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>Step 0</td>
</tr>
<tr>
<td>01</td>
<td>Step 1</td>
</tr>
<tr>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>0A</td>
<td>Step 10</td>
</tr>
<tr>
<td>0F</td>
<td>Step 15</td>
</tr>
<tr>
<td>10</td>
<td>Step 16</td>
</tr>
<tr>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>32</td>
<td>Step 50</td>
</tr>
<tr>
<td>33</td>
<td>Step 51</td>
</tr>
<tr>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>63</td>
<td>Step 99</td>
</tr>
<tr>
<td>64</td>
<td>Step 100</td>
</tr>
<tr>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>FF</td>
<td>Step 255</td>
</tr>
<tr>
<td>01 00</td>
<td>Step 256</td>
</tr>
<tr>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>C7</td>
<td>Step 199</td>
</tr>
<tr>
<td>27 0E</td>
<td>Step 9998</td>
</tr>
<tr>
<td>27 0F</td>
<td>Step 9999</td>
</tr>
<tr>
<td>...</td>
<td>...</td>
</tr>
</tbody>
</table>
* 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]

* 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.

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.

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.

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.

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. Colour (Command: x u)
► To adjust colour temperature. You can also adjust Colour 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: Colour (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]

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 0 0</td>
<td>0</td>
</tr>
<tr>
<td>0 0 1</td>
<td>0</td>
</tr>
<tr>
<td>0 1 0</td>
<td>0</td>
</tr>
<tr>
<td>0 1 1</td>
<td>0</td>
</tr>
<tr>
<td>1 0 0</td>
<td>0</td>
</tr>
</tbody>
</table>

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

Data 02: Input Source (Analog)
- 00: Antenna TV (ATV)
- 80: Cable TV (CATV)

* Digital Antenna/Cable/Satellite

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

Data
00: Off
01: Minimum
02: Medium
03: Maximum
04: Auto (For LCD TV / LED TV)
05: Screen off

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 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

* Analog Antenna/Cable

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

Data 00 & 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)

* 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)
05: Screen off

* Digital Antenna/Cable/Satellite

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

Data
00: Off
01: Minimum
02: Medium
03: Maximum
04: Auto (For LCD TV / LED TV)
05: Screen off

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][Cr]

* Analog Antenna/Cable

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

Data 00 & 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

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

Data 00 & 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 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

* Analog Antenna/Cable

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

Data 00 & 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

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

Data 00 & 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)
**EXTERNAL CONTROL DEVICE SETUP**

* 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 = \textit{ma} 00 00 00 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 = \textit{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 \textit{ma} [m][a][ ][0][ ][Data00][ ][Data01][ ][Data02][ ][Data03][ ][Data04][ ][Data05][\textit{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 = \textit{ma} 00 00 00 11 00 01 02
EXTERNAL CONTROL DEVICE SETUP

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

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
  02 : Satellite DTV
  03 : ISDB-BS (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)
(Changing 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 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.

<table>
<thead>
<tr>
<th>[Data 00]</th>
<th>[Data 01]</th>
<th>[Data 02]</th>
<th>[Data 03]</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>01</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>02</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>03</td>
<td>X</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

X : don't care

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
   02 : Cinema
   03 : Extreme
   04 : Manual
   05 : Auto

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]