



OWNER'S MANUAL

LED TV*

* LG LED TV applies LCD screen with LED backlights.

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

32LB550B	32LB560B	32LB561B
42LB5500	32LB5600	39LB5610
49LB5500	39LB5600	42LB5610
	42LB5600	47LB5610
	47LB5600	50LB5610
	50LB5600	55LB5610
	55LB5600	60LB5610



IMPORTANT SAFETY INSTRUCTIONS

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



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

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

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

WARNING/CAUTION

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

WARNING

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

CAUTION

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

NOTE

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

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



- Do not allow the television to become wet.



- Clean only with a dry cloth.



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



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



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



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



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



- Only use attachments/accessories specified by the manufacturer.



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



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



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



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

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



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

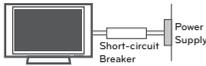


- Do not expose to dripping or splashing and do not place objects filled with liquids, such as vases, cups, etc. on or over the apparatus (e.g. on shelves above the unit).



• **Grounding**

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



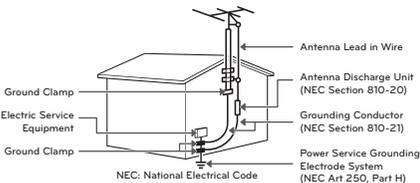
- As long as this unit is connected to the AC wall outlet, it is not disconnected from the AC power source even if the unit is turned off.
- Do not attempt to modify this product in any way without written authorization from LG Electronics. Unauthorized modification could void the user's authority to operate this product.

• **Outdoor Antenna Grounding**

(Can differ by country):

If an outdoor antenna is installed, follow the precautions below. An outdoor antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can come in contact with such power lines or circuits as death or serious injury can occur. Be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges. Section 810 of the National Electrical Code (NEC) in the U.S.A. provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes and requirements for the grounding electrode.

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



• **Cleaning**

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

• **Moving**

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

• **Ventilation**

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

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

- **Dot Defect**

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

- **Generated Sound**

Cracking noise: A cracking noise that occurs when watching or turning off the TV is generated by plastic thermal contraction due to temperature and humidity. This noise is common for products where thermal deformation is required. **Electrical circuit humming/panel buzzing:** A low level noise is generated from a high-speed switching circuit, which supplies a large amount of current to operate a product. It varies depending upon the product. This generated sound does not affect the performance and reliability of the product.

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

Preventing image burn or burn-in on your TV screen



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

LICENSES

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7,295,673; 7,460,668; 7,515,710; 7,519,274

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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 three (3) years from the date on which you purchased the product.

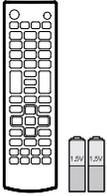
NOTE

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

ASSEMBLING AND PREPARING

Unpacking

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



Remote Control, Batteries
(AAA)

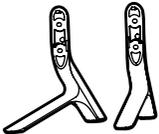


Owner's Manual



Power Cord

(For 42/49LB5500,
39/42/47/50/55LB5600,
32LB5600, 32LB5610)



Stand Base



Stand Screws
4 EA, M4 x L20

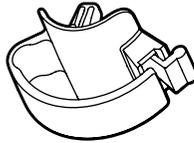


Stand Screws
4 EA, M4 x L14

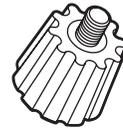
(For 42LB5500, 42LB5600,
42LB5610)



Cable Holder



Stand Holder
2 EA



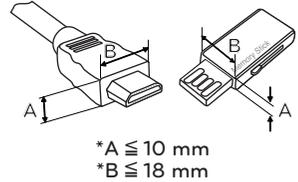
Wall Mount Inner Spacers
2 EA

⚠ CAUTION

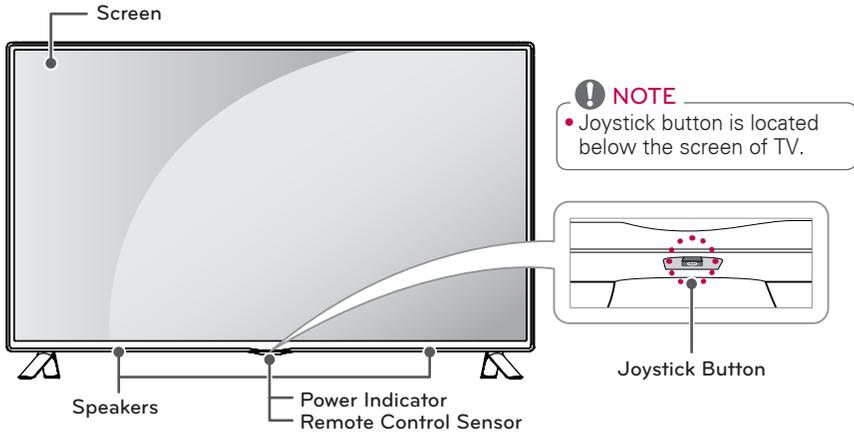
- Do not use any unapproved items to ensure the safety and product's lifespan.
- Any damages or injuries by using unapproved items are not covered by the warranty.
- Some models appear to have a thin film on the screen. It is actually part of the screen; do not remove it.

! NOTE

- The items supplied with your product may vary depending 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 thick and 18 mm 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.



Parts and buttons



Using the joystick button

You can operate the TV by pressing the button or moving the joystick left, right, up, or down.

Basic functions

	Power On	When the TV is turned off, place your finger on the joystick button, press it once and release it.
	Power Off	When the TV is turned on, place your finger on the joystick button, press it once for a few seconds and release it.
	Volume Control	If you place your finger over the joystick button, move it left or right, you can adjust the volume level you want.
	Channels Control	If you place your finger over the joystick button, move it up or down, you can scroll through the saved channels you want.

NOTE

- With your finger over the joystick button, move it up, down, left, or right, be careful not to press the joystick button. If you press the joystick button first, you can not adjust the volume level and/or scroll through saved channels.

Adjusting the menu

When the TV is turned on, press the joystick button one time.

You can adjust the menu items (⏻, ⚙️, ↵, ✖) moving the joystick button up, down, left, or right.

		TV Off	Turns the power off.
		Settings	Accesses the main menu.
		Input List	Changes the input source.
		Close	Clears on-screen displays and returns to TV viewing.

Lifting and moving the TV

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

CAUTION

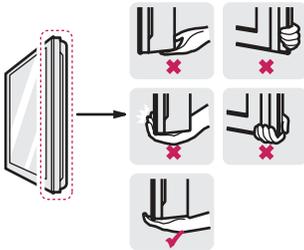
- Avoid touching the screen at all times, as this may result in damage to the screen.
- Do not place the product on the floor with its front facing down without padding. Failure to do so may result in damage to the screen.

- It is recommended to move the TV in the box or packing material that the TV originally came in.
- Before moving or lifting the TV, disconnect the power cord and all cables.

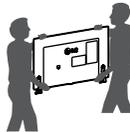
- When holding the TV, the screen should face away from you to avoid damage.



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



- Use at least two people to move a large TV.
- When transporting the TV by hand, hold the TV as shown in the following illustration.
- When transporting the TV, do not expose the TV to jolts or excessive vibration.
- When transporting the TV, keep the TV upright; never turn the TV on its side or tilt towards the left or right.



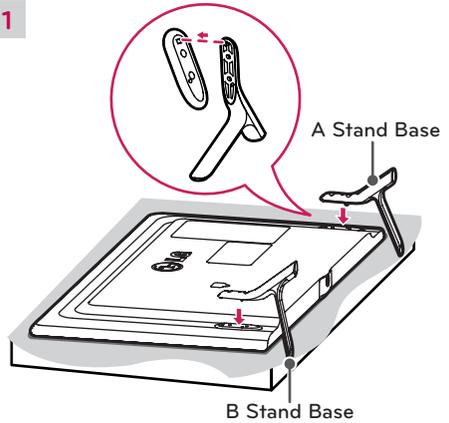
Setting up the TV

Attaching the stand

CAUTION

- When attaching the stand to the TV set, place the screen facing down on a cushioned table or flat surface to protect the screen from scratches.

1



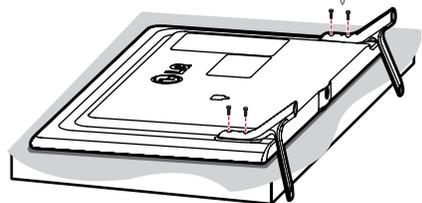
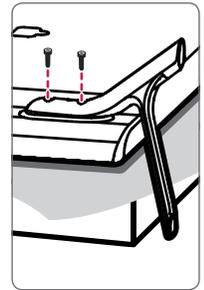
2

(For 32LB550B, 32LB560B, 32LB5600, 32LB561B)

4 EA
M4 x L20

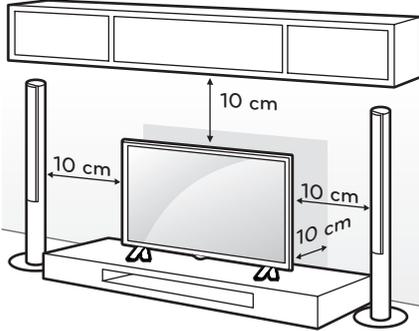
(For 42/49LB5500, 39/42/47/50/55LB5600, 39/42/47/50/55/60LB5610)

4 EA
M4 x L14



Mounting on a table

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



- 2 Connect the power cord to a wall outlet.

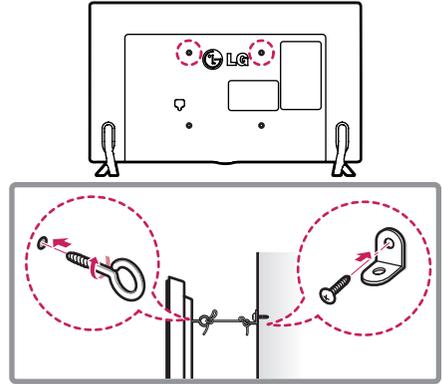


CAUTION

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

Securing the TV to a wall (optional)

(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.



CAUTION

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

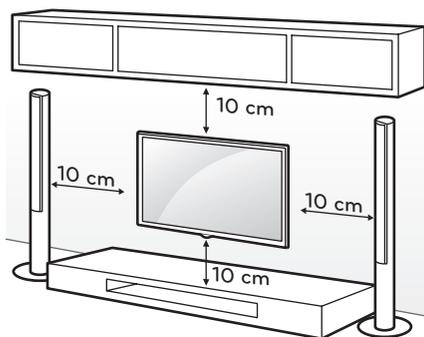


NOTE

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

Mounting on a wall

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



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

Model	32LB550B 32LB560B 32LB5600 39LB5600 32LB561B 39LB5610	42LB5500 49LB5500 42LB5600 47LB5600 50LB5600 55LB5600 42LB5610 47LB5610 50LB5610 55LB5610
VESA (A x B) 	200 x 200	400 x 400
Standard screw	M6	M6
Number of screws	4	4
Wall mount bracket (optional)	LSW240B MSW240	LSW440B MSW240

Model	60LB5610
VESA (A x B) 	400 x 400
Standard screw	M6
Number of screws	4
Wall mount bracket (optional)	LSW440B

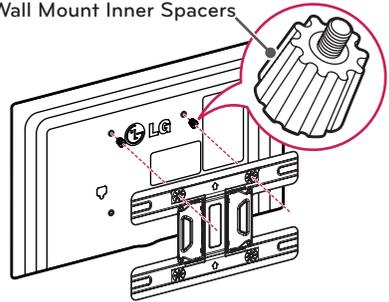
⚠ CAUTION

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

! NOTE

- Use the screws that are listed in the VESA standard screw specifications.
- The wall mount kit includes an installation manual and necessary parts.
- The wall mount bracket is optional. You can obtain additional accessories from your local dealer.
- The length of screws may differ depending upon the wall mount. Make sure to use the proper length.
- For more information, refer to the manual supplied with the wall mount.
- (For 42LB5500, 42LB5600, 42LB5610) When attaching a third-party wall mounting bracket to the TV, insert the wall mount inner spacers to move your TV in vertical angle. Please make sure not to use the spacers for LG wall mounting bracket.

Wall Mount Inner Spacers



MAKING CONNECTIONS

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

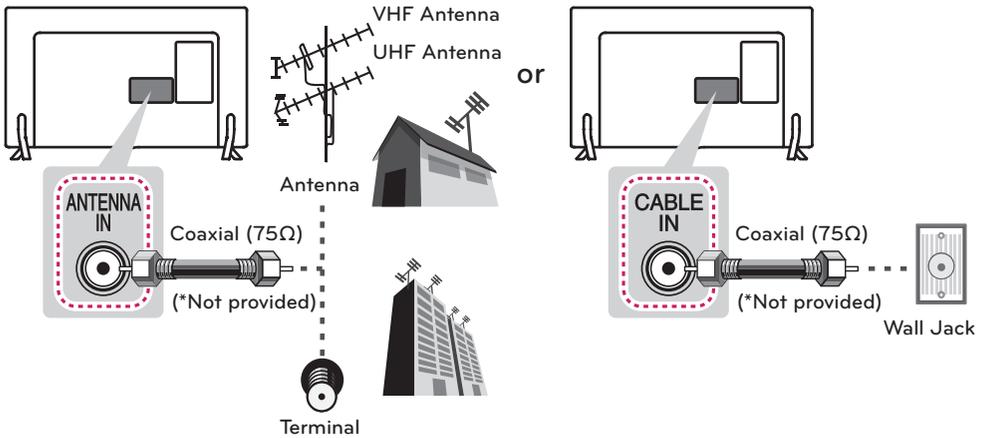
NOTE

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

Connecting to an antenna or cable

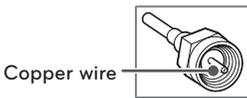
Connect an antenna, cable, or cable box to watch TV. The illustrations may differ from the actual items and an RF cable is optional.

ENGLISH



CAUTION

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



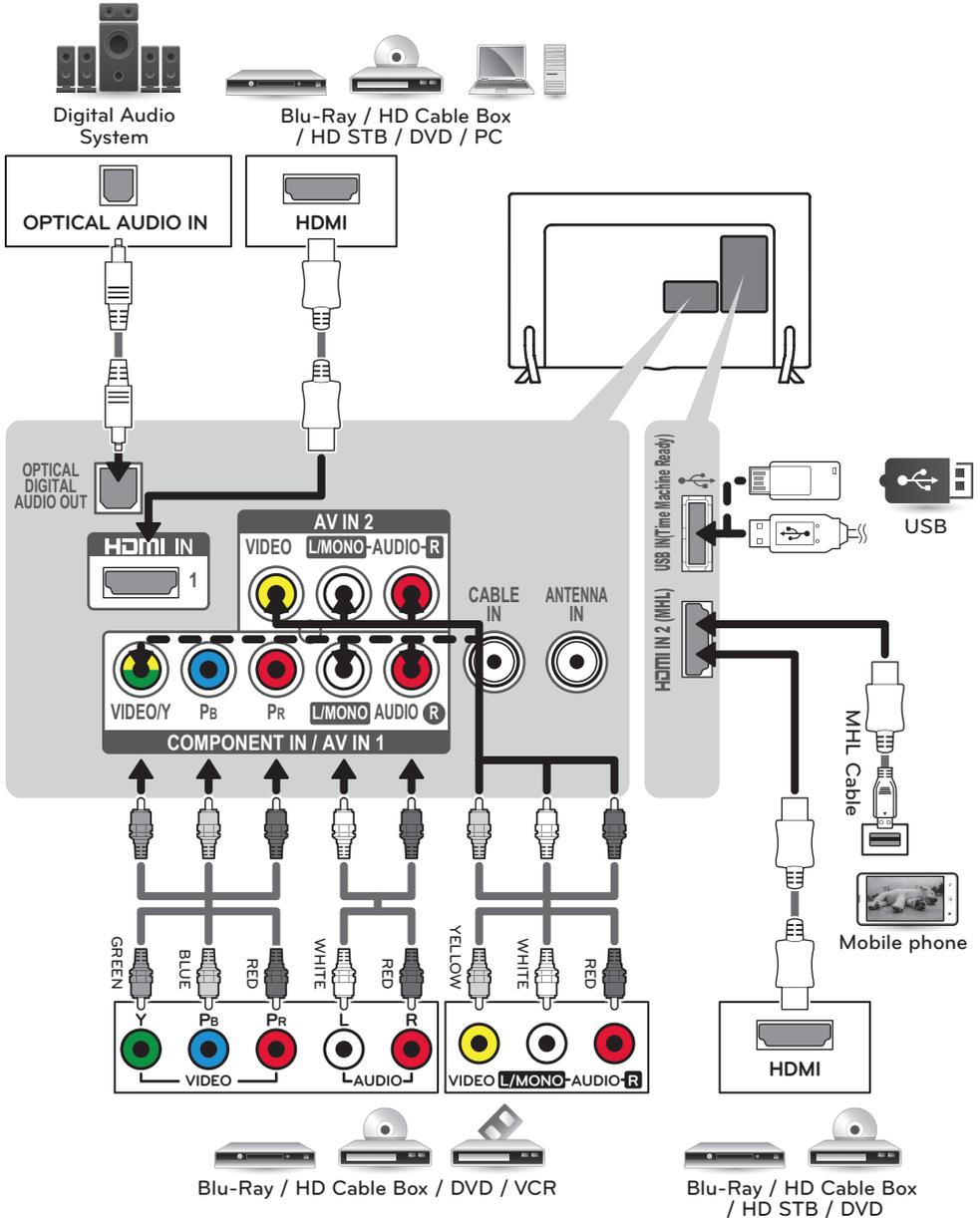
- Complete all connections between devices, and then connect the power cord to the power outlet to prevent damage to your TV.

NOTE

- To improve the picture quality in a poor signal area, purchase a signal amplifier.
- Use a signal splitter to use 2 TVs or more.
- If the antenna is not installed properly, contact your dealer for assistance.
- DTV Audio Supported Codec: MPEG, AAC, HE-AAC

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 as shown. Depending upon the model, a cable may be provided.



ENGLISH

REMOTE CONTROL



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

CAUTION

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

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

ENGLISH

<p>POWER Turns the TV on or off.</p> <p>TV Returns to the last TV channel.</p> <p>CAPTION Activates or deactivates the subtitles.</p> <p>SLEEP Sets the length of time until the TV to turns off.</p> <p>RATIO Resizes an image.</p> <p>INPUT Changes the input source. Turns the TV on if it is off.</p>
<p>Number button Enters numbers.</p> <p>- (Dash) Inserts a dash between numbers such as 2-1 and 2-2.</p> <p>LIST Accesses the saved channel list.</p> <p>Q.VIEW Alternates between the two last channels selected (pressing repeatedly).</p> <p>+ VOL - Adjusts the volume level.</p> <p>FAV Accesses your favorite channel list.</p> <p>GUIDE Displays the program event according to time scheduler.</p> <p>MUTE Mutes all sounds.</p> <p>^ CH v Scrolls through the saved channels.</p> <p>^ PAGE v Moves to the previous or next screen.</p>
<p>PICTURE Changes the image mode.</p> <p>INFO Shows information on the current program.</p> <p>SOUND Changes the sound mode.</p> <p>SETTINGS Accesses the main menu.</p> <p>Q.MENU Accesses the quick menu.</p> <p>Navigation buttons (up/down/left/right) Scrolls through menus or options.</p> <p>OK Selects menus or options and confirms your input.</p> <p>BACK Returns to the previous screen.</p> <p>EXIT Clears all on-screen displays and returns to TV viewing.</p> <p>Soccer icon Optimizes picture and audio settings for soccer.</p> <p>REC Starts to record. (only Time Machine supported model)</p> <p>LIVE TV Returns to the LIVE TV.</p>
<p>Control buttons (■, ▶, , ◀, ▶▶) Controls the MY MEDIA menus, Time Machine or the SIMPLINK compatible devices (USB, SIMPLINK or Time Machine).</p> <p>Color buttons (■ : Red, ■ : Green, ■ : Yellow, ■ : Blue) These access special functions in some menus.</p>

SETTINGS

To set up the channels automatically

SETTINGS ⇒ CHANNEL → Auto Tuning

Memorizes automatically the channels being broadcast.

- The channels will not be memorized properly if the antenna/cable is not installed correctly.
- **Auto Tuning** memorizes the channels that are currently being broadcast.
- If **Lock System** is turned on, a pop-up window will appear asking for password.

About Interactivity (DTVi)

(Depending upon country)

This TV has the interactivity feature of Digital TV (DTVi) that allows using applications, also known as Ginga®.

- By selecting a digital channel that has interactivity, it will be possible to visualize and interact with applications transmitted by broadcasters. The contents can vary and some examples are: weather forecast, real time news, traffic situation, soap operas and program descriptions, interactive games, access to bank accounts, government services, soccer information and other sports.
- The interactivity return channel is available only on those TV models that have an Ethernet port and that are set correctly.

To adjust pictures with Picture Wizard

SETTINGS ⇒ PICTURE → Picture Wizard III

This function calibrates and adjusts for optimum picture quality with the remote control and the Picture Wizard without expensive pattern devices or help from a specialist. Follow the instructions on the screen to obtain the optimum picture quality.

To select Picture Mode

SETTINGS ⇒ PICTURE → Picture Mode

Select the picture mode optimized for the viewing environment or the program.

- **Eco**: The Energy Saver feature changes settings on the TV to reduce power consumption.
- **Soccer**: Optimised picture mode for football matches. The pitch and kits are presented in vibrant colours, with crystal-clear images even for fast movements.
- **Expert**: Menu for adjusting picture quality that allows experts and amateurs to enjoy the best TV viewing. This menu for adjustment is provided for ISF-certified picture tuning professionals. (ISF logo can only be used on ISF-certified TVs.) ISFccc: Imaging Science Foundation Certified Calibration Control
- Depending upon input signal, available range of picture modes may differ.
- **Expert** mode is for picture tuning professionals to control and fine-tune using a specific image. For normal images, the effects may not be drastic.

To set advanced control

SETTINGS ⇒ PICTURE → Picture Mode → Advanced Control / Expert Control

For each picture mode, screen can be calibrated; or for a special screen, picture settings can be adjusted. Select the desired **Picture Mode**.

- **Dynamic Contrast:** Adjusts the contrast to the optimal level according to the image's brightness.
- **Dynamic Color:** Adjusts colors to make the image appear in more natural colors.
- **Skin Color:** Skin color spectrum can be separately set to implement the skin color as defined by the user.
- **Sky Color:** Sky color is set separately.
- **Grass Color:** Natural color spectrum (meadows, hills, etc.) can be separately set.
- **Gamma:** Sets the gradation curve according to the output of picture signal in relation to the input signal.
- **Color Gamut:** Selects the range of colors that can be expressed.
- **Edge Enhancer:** Shows clearer and distinctive yet natural edges of the video.
- **Expert Pattern:** Patterns used for expert adjustment.
- **Color Filter:** Filters a specific color spectrum in RGB colors to fine-tune color saturation and hue accurately.
- **Color Temperature:** Adjusts the overall tone of the screen as desired. In Expert mode, detailed fine-tuning can be set via Gamma method, etc.
- **Color Management System:** This system is used by experts to adjust color with a test pattern. They can select from six color areas (Red/ Green/Blue/ Cyan/Magenta/ Yellow) without affecting other colors. For normal images, adjustments may not result in noticeable color changes.
- Depending upon input signal or other picture settings, the range of detailed items for adjustment may differ.

To set additional picture options

SETTINGS ⇒ PICTURE → Picture Mode → Picture Option

Adjusts detailed setting for images.

- **Noise Reduction:** Eliminates noise in the picture.
- **MPEG Noise Reduction:** Eliminates noise generated while creating digital picture signals.
- **Black Level:** Adjusts the brightness and contrast of the screen to suit the black level.
- **Real Cinema:** Helps keep the screen in optimal condition.
- **Motion Eye Care:** [Depending upon model] Saves power consumption by adjusting the brightness corresponding to the movement of the image on the screen.
- Depending upon input signal or other picture settings, the range of detailed items for adjustment may differ.

To use Energy Saving feature

SETTINGS ⇒ PICTURE → Energy Saving

Saves electric power by adjusting screen brightness.

- **Off:** Turns off the Energy Saving.
- **Minimum / Medium / Maximum:** Applies the pre-set Energy Saving.
- **Screen Off:** Screen is turned off and only sound is played. Press any button on the remote control to turn the screen back on.

To use TV speaker

SETTINGS ⇒ AUDIO → Sound Out → TV Speaker

Sound is output through the TV speaker.

To use External Speaker

SETTINGS ⇒ AUDIO → Sound Out → External Speaker (Optical)

[Only available for models with an optical port]
Sound is output through the speaker connected to the optical port.

- SIMPLINK is supported.

To use Digital Sound Out

SETTINGS ⇒ AUDIO → Sound Out → External Speaker (Optical) → Digital Sound Out

[Depending upon model]

Sets up Digital Sound Out.

Item	Audio Input	Digital Audio output
Auto	MPEG Dolby Digital Dolby Digital Plus HE-AAC	PCM Dolby Digital Dolby Digital Dolby Digital
PCM	All	PCM

To connect and use LG audio device

SETTINGS ⇒ AUDIO → Sound Out → LG Sound Sync (Optical)

[Only available for models with an optical port]
Connect LG audio device with the  logo to the optical digital audio output port. LG audio device allows you to enjoy rich powerful sound easily.

To set AV Sync. Adjust

SETTINGS ⇒ AUDIO → AV Sync. Adjust

Synchronizes unmatched video and audio. Select **AV Sync. Adjust** to **On** to synchronize audio output (TV speaker or SPDIF) with the video.

To use SIMPLINK

SIMPLINK controls and manages multimedia devices conveniently with the TV remote control through the SIMPLINK menu.

- 1 Connect the **HDMI IN** terminal and SIMPLINK device's HDMI output terminal using an HDMI cable.
- [Depending upon model] For home theater units with SIMPLINK function, connect HDMI terminals as above, and use an optical cable to connect Optical Digital Audio Out from the TV to Optical Digital Audio In of the SIMPLINK device.
- 2 Select **INPUT** ⇒ **SIMPLINK**. SIMPLINK menu window appears.
- 3 In SIMPLINK Setting window, set SIMPLINK function to **ON**.
- 4 In SIMPLINK menu window, select the device to control.
 - This function is only compatible with devices having the SIMPLINK logo.
 - To use SIMPLINK function, use high-speed HDMI® cable (with CEC (Consumer Electronics Control) feature added). High-speed HDMI® cable has No. 13 pin connected for information exchange between devices.
 - When changing to another input, the SIMPLINK device stops.
 - If a third-party device with HDMI-CEC support is added, the SIMPLINK device may not work normally.
 - [Depending upon model] When selecting or playing the media of the device with home theater function, **HT Speaker** is automatically connected. Be sure to connect with Optical cable (sold separately) to use **HT Speaker** function.

SIMPLINK function description

- **Direct Play:** Plays the multimedia device on the TV instantly.
- **Select multimedia device:** Selects the desired device through SIMPLINK menu and control the device from the TV screen instantly.
- **Disc playback:** Manages the multimedia device with the TV remote control.
- **Power off all devices:** When you power off the TV, all connected devices are turned off.
- **Sync Power on:** When the equipment with SIMPLINK function connected HDMI terminal starts to play, the TV will automatically turn on.
- **Speaker:** [Depending upon model] Selects either home theater unit or TV speaker.

To set the password**SETTINGS ⇒ LOCK → Set Password**

Set or change the TV password.

- The initial password is set to 0000.

To set the caption**SETTINGS ⇒ OPTION → Caption**

View captions when the TV station provides captioned programming. Program captions work only on digital/analog broadcasts or external input.

Change **Caption** to **On** and select caption settings.

- **Mode**
 - **CC 1-2 (Closed Captioning) / Text 1-2:** Displays the audio portion of a TV program as text on the TV screen. CC1 is the most common mode in use.
 - **Digital:** This is only available for the digital broadcasting system.

To return to initial settings**SETTINGS ⇒ OPTION → Initial Setting**

Returns to initial default mode by deleting all optional setup. Once initialization is completed, the TV will turn off and on by itself.

- When **Lock System** is in place, a pop-up window appears and asks for password.
- Do not turn off the power during initialization.

To remove the USB device

Q.MENU ⇒ USB Device → Eject

Select a USB storage device and remove it. Once the message that the USB device was removed is displayed, remove the device from the TV.

- After selecting to remove USB device, the USB storage device cannot be read. Remove the USB storage device and then reconnect it.

Warning when using USB storage devices

- USB storage devices with a built-in auto recognition program or its own driver may not work.
- Some USB storage devices may not work or may work improperly.
- Use only those USB storage devices formatted with FAT32 or NTFS File System provided by Windows.
- For external USB HDD, use devices with less than 5V-rated voltages and 500 mA-rated current.
- It is recommended to use USB flash drive with 32 GB or less and USB HDD with 1 TB or less.
- If a USB HDD with power-saving function does not work properly, turn the power off and on. For more information, refer to the user manual of USB HDD.
- Data in the USB storage device can be damaged so back up important files in other devices. Data maintenance is the user's responsibility. The manufacturer is not responsible for data loss.

My Media Supported Files

- Maximum data transfer rate: 20 Mbps (Mega bit per second)
- External supported subtitle formats: *.srt (SubRip), *.smi (SAMI), *.sub (SubViewer, MicroDVD, DVDsubtitleSystem, SubIdx(Vobsub)), *.ass/* .ssa (SubStation Alpha), *.txt (TMplayer), *.psb (PowerDivX)
- Internal supported subtitle formats: XSUB (Supports internal subtitles generated from DivX6)

Supported Photo Formats

- Category: 2D (jpeg, jpg, jpe)
[Available file type] SOF0: Baseline, SOF1: Extend Sequential, SOF2: Progressive
[Photo size] Minimum: 64 x 64, Maximum: Normal Type: 15,360 (W) x 8,640 (H), Progressive Type: 1,920 (W) x 1,440 (H)
- Category: BMP
[Photo size] Minimum: 64 x 64, Maximum: 9,600 x 6,400
- Category: PNG
[Available file type] Interlace, Non-Interlace
[Photo size] Minimum: 64 x 64, Maximum: Interlace: 1,200 x 800, Non-Interlace: 9,600 x 6,400
- BMP and PNG format files may be slower to display than JPEG.

Supported Audio Formats

- File type: mp3
[Bit rate] 32 Kbps - 320 Kbps
[Sample freq.] 16 kHz - 48 kHz
[Support] MPEG-1, MPEG-2, Layer2, Layer3
- File Type: AAC
[Bit rate] Free Format
[Sample freq.] 8 kHz ~ 48 kHz
[Support] ADIF, ADTS
- File Type: M4A
[Bit rate] Free Format
[Sample freq.] 8 kHz ~ 48 kHz
[Support] MPEG-4
- File Type: WMA
[Bit rate] 128 Kbps ~ 320 Kbps
[Sample freq.] 8 kHz ~ 48 kHz
[Support] WMA7, WMA8, WMA9 Standard
- File Type: WMA
[Bit rate] ~ 768 Kbps
[Channel / Sample freq.]
M0: up to 2 Channel @ 48 kHz (Except LBR mode),
M1: up to 5.1 Channel @ 48 kHz,
M2: up to 5.1 Channel @ 96 kHz
[Support] WMA 10 Pro
- File Type: OGG
[Bit rate] Free Format
[Sample freq.] ~ 48 kHz
[Support] OGG Vorbis

Supported Video Formats

- Maximum: 1,920 x 1,080 @ 30p (only Motion JPEG 640 x 480 @ 30p)
- .asf, .wmv
[Video] MPEG-2, MPEG-4 Part2, DivX3.11, DivX4, DivX5, DivX6, XViD, H.264/AVC, VC1(WMV3, WVC1), MP43
[Audio] WMA Standard, WMA9(Pro), MP3, AAC, AC3, MP3, 3D WMV Single Stream
- .divx, .avi
[Video] MPEG-2, MPEG-4 Part2, DivX3.11, DivX4, DivX5, DivX6, XViD, H.264/AVC
[Audio] HE-AAC, LPCM, ADPCM, MPEG-1 Layer I, MPEG-1 Layer II, Dolby Digital, MPEG-1 Layer III (MP3)
- .ts, .trp, .tp, .mts, .m2ts
[Video] H.264/AVC, MPEG-2, AVS, VC1
[Audio] MPEG-1 Layer I, MPEG-1 Layer II, MPEG-1 Layer III (MP3), Dolby Digital, Dolby Digital Plus, AAC, HE-AAC
- .vob
[Video] MPEG-1, MPEG-2
[Audio] Dolby Digital, MPEG-1 Layer I, MPEG-1 Layer II, DVD-LPCM
- .mp4, .m4v, .mov
[Video] MPEG-2, MPEG-4 Part2, DivX3.11, DivX4, DivX5, DivX6, XViD, H.264/AVC
[Audio] AAC, MPEG-1 Layer III (MP3)
- .mkv
[Video] MPEG-2, MPEG-4 Part2, DivX3.11, DivX4, DivX5, DivX6, XViD, H.264/AVC
[Audio] HE-AAC, Dolby Digital, MPEG-1 Layer III (MP3), LPCM
- motion JPEG
[Video] MJPEG
[Audio] LPCM, ADPCM
- .mpg, .mpeg, .mpe
[Video] MPEG-1, MPEG-2
[Audio] MPEG-1 Layer I, MPEG-1 Layer II, Dolby Digital, LPCM
- .dat
[Video] MPEG-1, MPEG-2
[Audio] MP2
- .flv
[Video] Sorenson H.263, H.264/AVC
[Audio] MP3, AAC, HE-AAC
- .3gp, .3gp2
[Video] H.264/AVC, MPEG-4 Part2
[Audio] AAC, AMR(NB/WB)

TO SEE THE WEB MANUAL

Web manual allows you to easily access detailed TV information.

Go to <http://www.lge.com>.

SPECIFICATIONS

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

Power requirement		AC 100 - 240 V ~ 50 / 60 Hz
Television System		NTSC, PAL-M/N, SBTVD
Program Coverage		VHF 2-13, UHF 14-69, CATV 1-135
External Antenna Impedance		75 Ω
Environment condition	Operating Temperature	0 °C ~ 40 °C
	Operating Humidity	Less than 80 %
	Storage Temperature	-20 °C ~ 60 °C
	Storage Humidity	Less than 85 %

MODELS		32LB550B (32LB550B-SD)	42LB5500 (42LB5500-SD)
Dimensions (W x H x D)	With stand	731 x 480 x 208 (mm)	959 x 611 x 218 (mm)
	Without stand	731 x 437 x 56.5 (mm)	959 x 570 x 56.2 (mm)
Weight	With stand	5.9 kg	9.5 kg
	Without stand	5.7 kg	9.2 kg
Current Value / Power consumption		1.1 A / 65 W	1.0 A / 100 W

MODELS		49LB5500 (49LB5500-SD)
Dimensions (W x H x D)	With stand	1,105 x 694 x 247 (mm)
	Without stand	1,105 x 652 x 56.5 (mm)
Weight	With stand	13.6 kg
	Without stand	13.2 kg
Current Value / Power consumption		1.1 A / 110 W

MODELS		32LB560B (32LB560B-SA)	39LB5600 (39LB5600-SB)
		32LB5600 (32LB5600-SB)	39LB5610 (39LB5610-SC)
		32LB561B (32LB561B-SC)	
Dimensions (W x H x D)	With stand	732 x 481 x 207 (mm)	885 x 567 x 218 (mm)
	Without stand	732 x 431 x 55.5 (mm)	885 x 524 x 55.5 (mm)
Weight	With stand	6.2 kg	8.3 kg
	Without stand	6.0 kg	8 kg
Current Value / Power consumption		1.1 A / 65 W	0.9 A / 90 W

MODELS		42LB5600 (42LB5600-SB)	47LB5600 (47LB5600-SB)
		42LB5610 (42LB5610-SC)	47LB5610 (47LB5610-SC)
Dimensions (W x H x D)	With stand	961 x 610 x 218 (mm)	1,073 x 676 x 255 (mm)
	Without stand	961 x 567 x 55.5 (mm)	1,073 x 629 x 55.8 (mm)
Weight	With stand	9.5 kg	12.7 kg
	Without stand	9.2 kg	12.3 kg
Current Value / Power consumption		1.0 A / 100 W	1.1 A / 110 W

MODELS		50LB5600 (50LB5600-SB)	55LB5600 (55LB5600-SB)
		50LB5610 (50LB5610-SC)	55LB5610 (55LB5610-SC)
Dimensions (W x H x D)	With stand	1,128 x 708 x 255 (mm)	1,243 x 772 x 255 (mm)
	Without stand	1,128 x 660 x 55.8 (mm)	1,243 x 725 x 56.8 (mm)
Weight	With stand	14.2 kg	18.4 kg
	Without stand	13.8 kg	18 kg
Current Value / Power consumption		1.2 A / 120 W	1.3 A / 130 W

MODELS		60LB5610 (60LB5610-SC)
Dimensions (W x H x D)	With stand	1,373 x 848 x 271 (mm)
	Without stand	1,373 x 801 x 58.8 (mm)
Weight	With stand	23.5 kg
	Without stand	23.0 kg
Current Value / Power consumption		1.3 A / 130 W

HDMI (PC) supported mode

Resolution	Horizontal Frequency (kHz)	Vertical Frequency (Hz)
640 x 350	31.468	70.09
720 x 400	31.469	70.08
640 x 480	31.469	59.94
800 x 600	37.879	60.31
1024 x 768	48.363	60.00
1360 x 768	47.712	60.015
1152 x 864	54.348	60.053
1280 x 1024	63.981	60.02
1920 x 1080	67.50	60.00

For 42/49LB5500, 32/39/42/47/50/55LB5600, 39/42/47/50/55/60LB5610

HDMI (DTV) supported mode

Resolution	Horizontal Frequency (kHz)	Vertical Frequency (Hz)
720 x 480p	31.469	59.94
	31.50	60.00
720 x 576p	31.25	50.00
1280 x 720p	37.50	50.00
	44.96	59.94
1920 x 1080i	45.00	60.00
	28.125	50.00
	33.72	59.94
1920 x 1080p	33.75	60.00
	26.97	23.976
	27.00	24.00
	33.71	29.97
	33.75	30.00
	56.25	50.00
	67.432	59.94
67.50	60.00	

Component supported mode

Resolution	Horizontal Frequency (kHz)	Vertical Frequency (Hz)
720 x 480i	15.73	59.94
	15.73	60.00
720 x 480p	31.47	59.94
	31.50	60.00
720 x 576i	15.625	50.00
720 x 576p	31.25	50.00
1280 x 720p	37.50	50.00
	44.96	59.94
	45.00	60.00
1920 x 1080i	28.125	50.00
	33.72	59.94
	33.75	60.00
1920 x 1080p	26.97	23.976
	27.00	24.00
	33.71	29.97
	33.75	30.00
	56.25	50.00
	67.432	59.939
	67.50	60.00

Component port connecting information

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

MAINTENANCE

Cleaning your TV

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

 **CAUTION**

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

Screen, frame, cabinet, and stand

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

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

 **CAUTION**

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

Power cord

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

TROUBLESHOOTING

Problem	Solution
Cannot control the TV with the remote control.	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • Check if the product is turned on. • Check if the power cord is connected to a wall outlet. • Check if there is a problem in the wall outlet by connecting other products.
The TV turns off suddenly.	<ul style="list-style-type: none"> • Check the power control settings. The power supply may be interrupted. • Check if the Off Time / Sleep Timer feature is activated in the TIME settings. • If there is no signal while the TV is on, the TV will turn off automatically after 15 minutes of inactivity.

EXTERNAL CONTROL DEVICE SETUP

To obtain the external control device setup information, please visit www.lge.com.



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

MODEL _____

SERIAL _____



OWNER'S MANUAL

EXTERNAL CONTROL DEVICE SETUP

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

KEY CODES

- This feature is not available for all models.

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

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

EXTERNAL CONTROL DEVICE SETUP

- Image shown may differ from your TV.

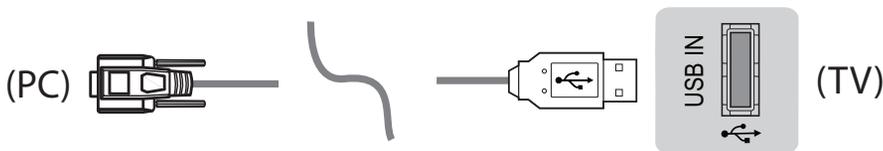
Connect the USB to Serial converter/RS-232C input jack to an external control device (such as a computer or an A/V control system) to control the product's functions externally.

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

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

USB to Serial converter with USB Cable

USB Type



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

RS-232C With RS232C Cable

DE9 (D-Sub 9pin) Type

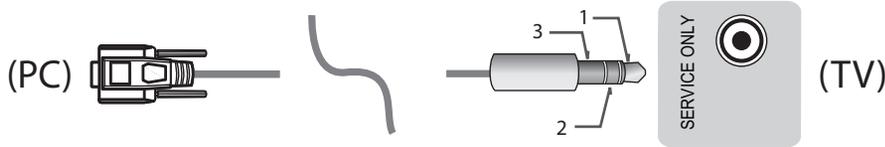
- You need to purchase the RS-232C (DE9, D-Sub 9pin female-to-female type) to RS-232C cable required for the connection between the PC and the TV, which is specified in the manual.



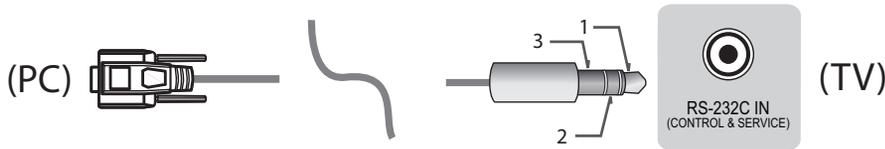
- This connection can only be used for the following models: 55/65/LA97**, 84LA98**

Phone jack Type

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



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

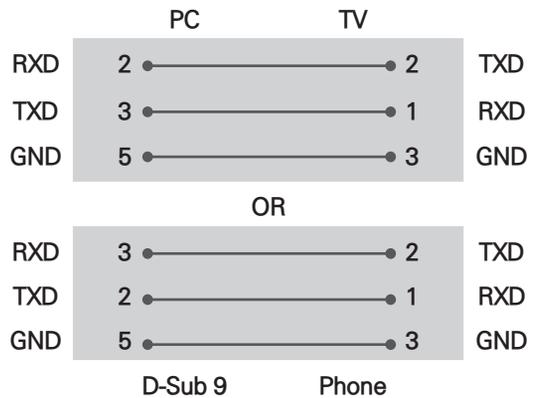
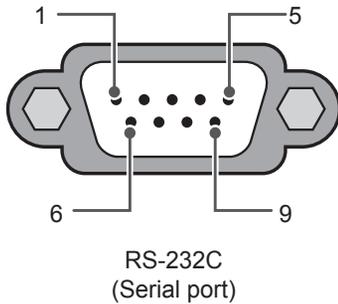


- This connection can only be used for the following models: 42/50PN4500-UA, 50/60PN5300-UF, 50/60PN6500-UA, 60PN6550-UA, 50PB560B-UA, and 50/60PB5600-UA.

Customer Computer

RS-232C configurations

3-Wire Configurations(Not standard)



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 **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**.

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

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

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.

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

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

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

03. Screen Mute (Command: k d)

- ▶ To select screen mute on/off.

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

Data 00 : Screen mute off (Picture on)
Video mute off
01 : Screen mute on (Picture off)
10 : Video mute on

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

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

04. Volume Mute (Command: k e)

- ▶ To control volume mute on/off.
You can also adjust mute using the MUTE button on remote control.

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

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

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

05. Volume Control (Command: k f)

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

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

Data Min : 00 to Max : 64

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

06. Contrast (Command: k g)

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

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

Data Min : 00 to Max : 64

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

07. Brightness (Command: k h)

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

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

Data Min : 00 to Max : 64

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

08. Color/Colour (Command: k i)

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

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

Data Min : 00 to Max : 64

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

09. Tint (Command: k j)

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

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

Data Red : 00 to Green : 64

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

10. Sharpness (Command: k k)

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

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

Data Min : 00 to Max : 32

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

11. OSD Select (Command: k l)

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

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

Data 00 : OSD off 01 : OSD on

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

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

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

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

Data 00 : Lock off 01 : Lock on

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

- * If you are not using the remote control, use this mode.
When main power is off & on (plug-off and plug-in, after 20 - 30 seconds), external control lock is released.

- * In the standby mode (DC off by off timer or 'ka', 'mc' command), and if key lock is on, TV will not turn on by power on key of IR & Local Key.

13. Balance (Command: k t)

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

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

Data Min : 00 to Max : 64

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

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

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

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

Data Min : 00 to Max : 64

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

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

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

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

Data Min : 02: Orbiter

08: Normal

20: Color(Colour) Wash

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

16. Energy Saving (Command: j q)

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

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

Data

00 : Off

01 : Minimum

02 : Medium

03 : Maximum

04 : Auto (For LCD TV / LED TV) /
Intelligent sensor (For PDP TV)

05 : Screen off

- * (Depending on model)

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

17. Tune Command (Command: m a)

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

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

- * Analogue Terrestrial/Cable

[Data 00][Data 01] Channel Data

Data 00 : High byte channel data

Data 01 : Low byte channel data

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

Data 02 : Input Source (Analogue)
 - 00 : Terrestrial TV (ATV)
 - 80 : Cable TV (CATV)

* Digital Terrestrial/Cable/Satellite

[Data 00][Data 01]: Channel Data
 Data 00 : High Channel data
 Data 01 : Low Channel data
 - 00 00 ~ 27 0F (Decimal: 0 ~ 9999)

Data 02 : Input Source (Digital)
 - 10 : Terrestrial TV (DTV)
 - 20 : Terrestrial Radio (Radio)
 - 40 : Satellite TV (SDTV)
 - 50 : Satellite Radio (S-Radio)
 - 90 : Cable TV (CADTV)
 - a0 : Cable Radio (CA-Radio)

* Tune Command Examples:

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

Set ID = All = 00
 Data 00 & 01 = Channel Data is 10 = 00 0a
 Data 02 = Analogue Terrestrial TV = 00
 Result = **ma 00 00 0a 00**

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

Set ID = All = 00
 Data 00 & 01 = Channel Data is 1 = 00 01
 Data 02 = Digital Terrestrial TV = 10
 Result = **ma 00 00 01 10**

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

Set ID = All = 00
 Data 00 & 01 = Channel Data is 1000 = 03 E8
 Data 02 = Digital Satellite TV = 40
 Result = **ma 00 03 E8 40**

```
Ack [a][ ][Set ID][ ][OK][Data 00][Data 01]
[Data 02][x][a][ ][Set ID][ ][NG][Data 00][x]
```

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

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

```
Transmission [m][a][ ][0][ ][Data00][ ][Data01]
[ ][Data02][ ][Data03][ ][Data04][ ][Data05][Cr]
```

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

* Analogue Terrestrial/Cable

Data 00 : Physical Channel Number
 - Terrestrial (ATV) : 02~45 (Decimal: 2 ~ 69)
 - Cable (CATV) : 01, 0E~7D (Decimal : 1, 14~125)

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

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

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

Data 05: Input Source (Analogue)

- 00 : Terrestrial TV (ATV)

- 01 : Cable TV (CATV)

* Digital Terrestrial/Cable

Data 00 : xx (Don't care)

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

Data 01 : High byte Channel Data

Data 02 : Low byte Channel Data

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

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

Data 03 : High byte Channel Data

Data 04 : Low byte Channel Data

Data 05 : Input Source (Digital)

- 02 : Terrestrial TV (DTV) – Use Physical Channel Number

- 06 : Cable TV (CADTV) – Use Physical Channel Number

- 22 : Terrestrial TV (DTV) – Don't Use Physical Channel Number

- 26 : Cable TV (CADTV) - Don't Use Physical Channel Number

- 46 : Cable TV (CADTV) – Use Major Channel Number Only (One Part Channel)

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

* Tune Command Examples:

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

Set ID = All = 00
 Data 00 = Channel Data is 35 = 23
 Data 01 & 02 = No Major = 00 00
 Data 03 & 04 = No Minor = 00 00
 Data 05 = Analogue Cable TV = 01
 Total = **ma 00 23 00 00 00 01**

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

Set ID = All = 00
 Data 00 = Don't know Physical = 00
 Data 01 & 02 = Major is 30 = 00 1E
 Data 03 & 04 = Minor is 3 = 00 03
 Data 05 = Digital Terrestrial TV = 22
 Total = **ma 00 00 00 1E 00 03 22**

```
Ack [a][ ][Set ID][ ][OK][Data 00][Data 01]
[Data 02][Data 03][Data 04][Data 05]
[x][a][ ][Set ID][ ][NG][Data 00][x]
```

• For Japan Model

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

```
Transmission [m][a][ ][0][ ][Data00][ ][Data01]
[ ][Data02][ ][Data03][ ][Data04][ ][Data05][Cr]
```

* Digital Terrestrial/Satellite

Data 00: xx (Don't care)

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

Data 01: High byte Channel Data

Data 02: Low byte Channel Data
- 00 01 ~ 27 0F (Decimal: 1 ~ 9999)

[Data 03][Data 04]: Minor/Branch Channel Number
(Don't care in Satellite)

Data 03: High byte Channel Data

Data 04: Low byte Channel Data

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

- 02 : Terrestrial TV (DTV)
- 07 : BS (Broadcasting Satellite)
- 08 : CS1 (Communication Satellite 1)
- 09 : CS2 (Communication Satellite 2)

* Tune Command Examples:

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

Set ID = All = 00
Data 00 = Don't know Physical = 00
Data 01 & 02 = Major is 17 = 00 11
Data 03 & 04 = Minor/Branch is 1 = 00 01
Data 05 = Digital Terrestrial TV = 02
Total = **ma 00 00 00 11 00 01 02**

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

Set ID = All = 00
Data 00 = Don't know Physical = 00
Data 01 & 02 = Major is 30 = 00 1E
Data 03 & 04 = Don't Care = 00 00
Data 05 = Digital BS TV = 07
Total = **ma 00 00 00 1E 00 00 07**

* This feature is varied based on the model.

Ack [a][][Set ID][][OK][Data 00][Data 01]
[Data 02][Data 03][Data 04][Data 05]
[x][a][][Set ID][][NG][Data 00][x]

18. Channel(Programme) Add/Del(Skip)
(Command: m b)

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

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

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

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

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

19. Key (Command: m c)

▶ To send IR remote key code.

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

Data Key code - p.2.

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

20. Control Back Light (Command: m g)

- For LCD TV / LED TV
- ▶ To control the back light.

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

Data Min : 00 to Max : 64

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

Control Panel Light (Command: m g)

- For Plasma TV
- ▶ To control the panel light.

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

Data Min : 00 to Max : 64

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

21. Input select (Command: x b)
(Main Picture Input)

▶ To select input source for main picture.

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

Data

00 : DTV	01 : CADTV
02 : Satellite DTV	10 : ATV
	ISDB-BS (Japan)
03 : ISDB-CS1 (Japan)	
04 : ISDB-CS2 (Japan)	
11 : CATV	

20 : AV or AV1 21 : AV2

40 : Component1 41 : Component2

90 : HDMI1 91 : HDMI2
92 : HDMI3 93 : HDMI4

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

* This function depends on model and signal.

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

(Depending on model)

- ▶ To change 3D mode for TV.

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

Data Structure

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

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

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

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

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

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

X : don't care

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

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

- ▶ To change 3D option for TV.

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

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

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

- 1) When [Data 00] is 00

00 : Right to Left
01 : Left to Right

- 2) When [Data 00] is 01, 02

Data Min: 0 - Max: 14 (*transmit by Hexadecimal code)

Data value range(0 - 20) converts Viewpoint range (-10 - +10) automatically (Depending on model)

- * This option works when 3D Mode (Genre) is manual only.

- 3) When [Data 00] is 06, 07

00 : Off
01 : On

- 4) When [Data 00] is 08

00 : Revert to 3D video from 3D-to-2D converted 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

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

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

