



OWNER'S MANUAL

LED TV

* LG LED TV refers to an LCD screen with LED backlights.

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

42LA6900 42LA7400
47LA6900 47LA7400

SAFETY INSTRUCTIONS

Please read these safety precautions carefully before using the product.

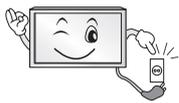
! WARNING



- Do not place the TV and remote control in the following environments:
 - A location exposed to 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
 - Near containers of water such as vases
- Otherwise, this may result in fire, electric shock, malfunction or product deformation.



- Do not place the product where it might be exposed to dust. This may cause a fire hazard.



- Mains plug is the disconnecting device. The plug must remain readily operable.



- Do not touch the power plug with wet hands. Additionally, if the cord pin is wet or covered with dust, dry the power plug completely or wipe dust off. You may be electrocuted due to excess moisture.



- Make sure to connect the power cable to the grounded current. (Except for devices which are not grounded.) You may be electrocuted or injured.



- Fix the power cable completely. If the power cable is not fixed completely, a fire can break out.



- Ensure the power cord does not come into contact with hot objects such as a heater. This may cause a fire or an electric shock hazard.



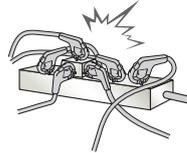
- Do not place a heavy object, or the product itself, on power cables. Otherwise, this may result in fire or electric shock.



- Bend antenna cable between inside and outside building to prevent rain from flowing in. This may cause water damaged inside the Product and could give an electric shock.



- When mounting a TV it on the wall, make sure not to install TV by hanging power and signal cables on the back of the TV. It may cause fire, electric shock.



- Do not plug too many electrical devices into a single multiple electrical outlet. Otherwise, this may result in fire due to over-heating.



- 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.



- Keep the packing anti-moisture material or vinyl packing out of the reach of children. Anti-moisture material is harmful if swallowed. If swallowed by mistake, force the patient to vomit and visit the nearest hospital. Additionally, vinyl packing can cause suffocation. Keep it out of the reach of children.



- Do not let your children climb or cling onto the TV. Otherwise, the TV may fall over, which may cause serious injury.



- Dispose of used batteries carefully to protect a child from eating them. Please seek Doctor- Medical Attention immediately if child consumes batteries.



- Do not insert any metal objects/ conductors (like a metal chopstick/ cutlery/ screwdriver) between power cable plug and input Wall Socket while it is connected to the input terminal on the wall. Additionally, do not touch the power cable right after plugging into the wall input terminal. You may be electrocuted. (Depending on model)



- Do not put or store flammable substances near the product. There is a danger of combustion/explosion or fire due to careless handling of the flammable substances.



- Do not drop metallic objects such as coins, hair pins, chopsticks or wire into the product, or flammable objects such as paper and matches. Children must pay particular attention. Electrical shock, fire or injury can occur. If a foreign object is dropped into the product, unplug the power cord and contact the service centre.



- Do not spray water on the product or scrub with an inflammable substance (thinner or benzene). Fire or electric shock accident can occur.



- Do not allow an impact shock or any objects to fall into the product, and do not drop onto the screen with something. You may be injured or the product can be damaged.



- Never touch this product or antenna during a thunder or lightning storm. You may be electrocuted.



- Never touch the wall outlet when there is leakage of gas, open the windows and ventilate. It may cause a fire or a burn by a spark.



- Do not disassemble, repair or modify the product at your own discretion. Fire or electric shock accident can occur. Contact the service center for check, calibration or repair.



- If any of the following occur, unplug the product immediately and contact your local service centre.
 - The product has been impacted by shock
 - The product has been damaged
 - Foreign objects have entered the product
 - The product produced smoke or a strange smell
 This may result in fire or electric shock.



- If you don't intend to use the product for a long time, unplug the power cable from the product. Covering dust can cause a fire, or insulation deterioration can cause electric leakage, electric shock or fire.



- Apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.

CAUTION



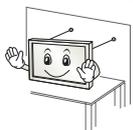
- Install the product where no radio wave occurs.



- There should be enough distance between an outside antenna and power lines to keep the former from touching the latter even when the antenna falls. This may cause an electric shock.



- Do not install the product on places such as unstable shelves or inclined surfaces. Also avoid places where there is vibration or where the product cannot be fully supported. Otherwise, the product may fall or flip over, which may cause injury or damage to the product.



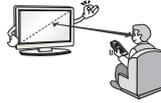
- If you install the TV on a stand, you need to take actions to prevent the product from overturning. Otherwise, the product may fall over, which may cause injury.

- 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.

- Only use the attachments / accessories specified by the manufacturer.



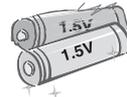
- When installing the antenna, consult a qualified service man. This may create a fire hazard or an electric shock hazard.



- We recommend that you maintain a distance of at least 2 to 7 times the diagonal screen size when watching TV. If you watch TV for a long period of time, this may cause blurred vision.



- Only use the specified type of battery. This could cause damage to the remote control.



- Do not mix new batteries with old batteries. This may cause the batteries to overheat and leak.



- Make sure there are no objects between the remote control and its sensor.



- Signal from the remote control may be disturbed by sun light or other strong light. In this case, darken the room.



- 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.



- Do not turn the product On/Off by plugging-in or unplugging the power plug to the wall outlet. (Do not use the power plug for switch.) It may cause mechanical failure or could give an electric shock.



- Please follow the installation instructions below to prevent the product from overheating.
 - The distance between the product and the wall should be more than 10 cm.
 - Do not install the product in a place with no ventilation (e.g., on a bookshelf or in a cupboard).
 - Do not install the product on a carpet or cushion.
 - Make sure the air vent is not blocked by a tablecloth or curtain. Otherwise, this may result in fire.



- Take care not to touch the ventilation openings when watching the TV for long periods as the ventilation openings may become hot. This does not affect the operation or performance of the product.

- 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 servicer.



- Prevent dust collecting on the power plug pins or outlet. This may cause a fire hazard.



- 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 press strongly upon the panel with a hand or sharp object such as nail, pencil or pen, or make a scratch on it.



- Avoid touching the screen or holding your finger(s) against it for long periods of time. Doing so may produce some temporary distortion effects on the screen.



- When cleaning the product and its components, unplug the power first and wipe it with a soft cloth. Applying excessive force may cause scratches or discoloration. Do not spray with water or wipe with a wet cloth. Never use glass cleaner, car or industrial shiner, abrasives or wax, benzene, alcohol etc., which can damage the product and its panel. Otherwise, this may result in fire, electric shock or product damage (deformation, corrosion or breakage).

- As long as this unit is connected to the AC wall outlet, it is not disconnected from the AC power source even if you turn off this unit by SWITCH.



- When unplugging the cable, grab the plug and unplug it. If the wires inside the power cable are disconnected, this may cause fire.



- When moving the product, make sure you turn the power off first. Then, unplug the power cables, antenna cables and all connecting cables. The TV set or power cord may be damaged, which may create a fire hazard or cause electric shock.



- When moving or unpacking the product, work in pairs because the product is heavy. Otherwise, this may result in injury.



- Contact the service center once a year to clean the internal parts of the product. Accumulated dust can cause mechanical failure.



- 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.



- If the product feels cold to the touch, there may be a small "flicker" when it is turned on. This is normal, there is nothing wrong with product.



- The panel is a high technology display product with resolution of two million to six million pixels. You may see tiny black dots and/or brightly coloured dots (red, blue or green) at a size of 1 ppm on the panel. This does not indicate a malfunction and does not affect the performance and reliability of the product. This phenomenon also occurs in third-party products and is not subject to exchange or refund.



- You may find different brightness and colour of the panel depending on your viewing position (left/right/top/down). This phenomenon occurs due to the characteristic of the panel. It is not related with the product performance, and it is not malfunction.



- Displaying a still image (e.g., broadcasting channel logo, on-screen menu, scene from a video game) for a prolonged time may cause damage to the screen, resulting in retention of the image, which is known as image sticking. The warranty does not cover the product for image sticking. Avoid displaying a fixed image on your television's screen for a prolonged period (2 or more hours for LCD, 1 or more hours for Plasma). Also, if you watch the TV at a ratio of 4:3 for a long time, image sticking may occur on the borders of the panel. This phenomenon also occurs in third-party products and is not subject to exchange or refund.

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

Viewing 3D Imaging

WARNING

Viewing Environment

- Viewing Time
 - When watching 3D content, take 5 - 15 minute breaks every hour. Viewing 3D content for a long period of time may cause headache, dizziness, fatigue or eye strain.

Those that have a photosensitive seizure or chronic illness

- Some users may experience a seizure or other abnormal symptoms when they are exposed to a flashing light or particular pattern from 3D content.
- Do not watch 3D videos if you feel nauseous, are pregnant and/ or have a chronic illness such as epilepsy, cardiac disorder, or blood pressure disease, etc.
- 3D Content are not recommended for those who suffer from stereo blindness or stereo anomaly. Double images or discomfort in viewing may be experienced.
- If you have strabismus (cross-eyed), amblyopia (weak eyesight) or astigmatism, you may have trouble sensing depth and easily feel fatigue due to double images. It is advised to take frequent breaks than the average adult.
- If your eyesight varies between your right and left eye, revise your eyesight prior to watching 3D content.

Symptoms which require discontinuation or refraining from watching 3D content

- Do not watch 3D content when you feel fatigue from lack of sleep, overwork or intoxication .
- When these symptoms are experienced, stop using/ watching 3D content and get enough rest until the symptom subsides.
 - Consult your doctor when the symptoms persist. Symptoms may include headache, eyeball pain, dizziness, nausea, palpitation, blurriness, discomfort, double image, visual inconvenience or fatigue.

CAUTION

Viewing Environment

- Viewing Distance
 - Maintain a distance of at least twice the screen diagonal length when watching 3D content. If you feel discomfort in viewing 3D content, move further away from the TV.

Viewing Age

- Infants / Children
 - Usage/ Viewing 3D content for children under the age of 5 is prohibited.
 - Children under the age of 10 may overreact and become overly excited because their vision is in development. For example: trying to touch the screen or trying to jump into it. Special monitoring and extra attention is required for children watching 3D content.
 - Children have greater binocular disparity of 3D presentations than adults because the distance between the eyes is shorter than one of adults. Therefore they will perceive more stereoscopic depth compared to adults for the same 3D image.
- Teenagers
 - Advise teenagers under the age of 19 not to watch 3D videos for a long time when they are tired.
- Elderly
 - The elderly may perceive less of a 3D effect than the youth. Do not sit closer to the TV than the recommended distance.

Cautions when using the 3D glasses

- Make sure to use LG 3D glasses. Otherwise, you may not be able to view 3D videos properly.
- Do not use 3D glasses instead of your normal glasses, sunglasses or protective goggles.
- Using modified 3D glasses may cause eye strain or image distortion.
- Do not keep your 3D glasses in extremely high or low temperatures. It will cause deformation.
- The 3D glasses are fragile and are easy to scratched. Use a soft, clean piece of cloth when wiping the lenses. Do not scratch the lenses of the 3D glasses with sharp objects or clean/wipe them with chemicals.

LICENSES

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ENGLISH

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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.

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! NOTE

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

INSTALLATION PROCEDURE

- 1 Open the package and make sure all the accessories are included.
- 2 Attach the stand to the TV set.
- 3 Connect an external device to the TV set.
- 4 Make sure the network connection is available.
You can use the TV network functions only when the network connection is made.

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.

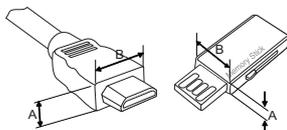
ENGLISH

CAUTION

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

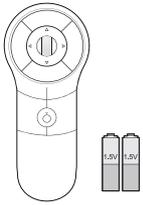
NOTE

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

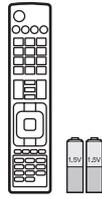


* A ≤ 10 mm

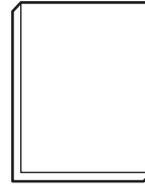
* B ≤ 18 mm



**Magic Remote Control,
Batteries (AA)**
(See p. 29)



Remote control, Batteries (AAA)
(See p. 27)



Owner's Manual



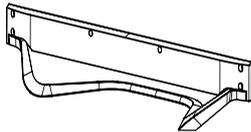
Cinema 3D Glasses
The number of 3D glasses may differ depending on the model or country.



Stand Screws
4 EA, M4 x 20
(See p. 13)



Cable Holder
(See p. 15)



Stand Base
(See p. 13)



Tag On



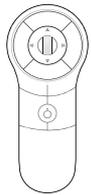
Power Cord

Optional Extras

Optional extras can be changed or modified for quality improvement without any notification. Contact your dealer to buy these items.

These devices only work with certain models.

The model name or design may be changed manufacturer's circumstances or policies.



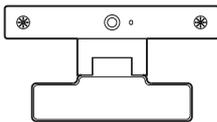
AN-MR400
Magic Remote



AG-F***
Cinema 3D Glasses.



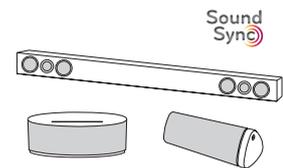
AG-F*DP**
Dual Play Glasses.



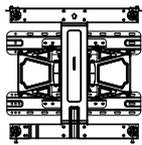
AN-VC4**
Video Call Camera



Tag On

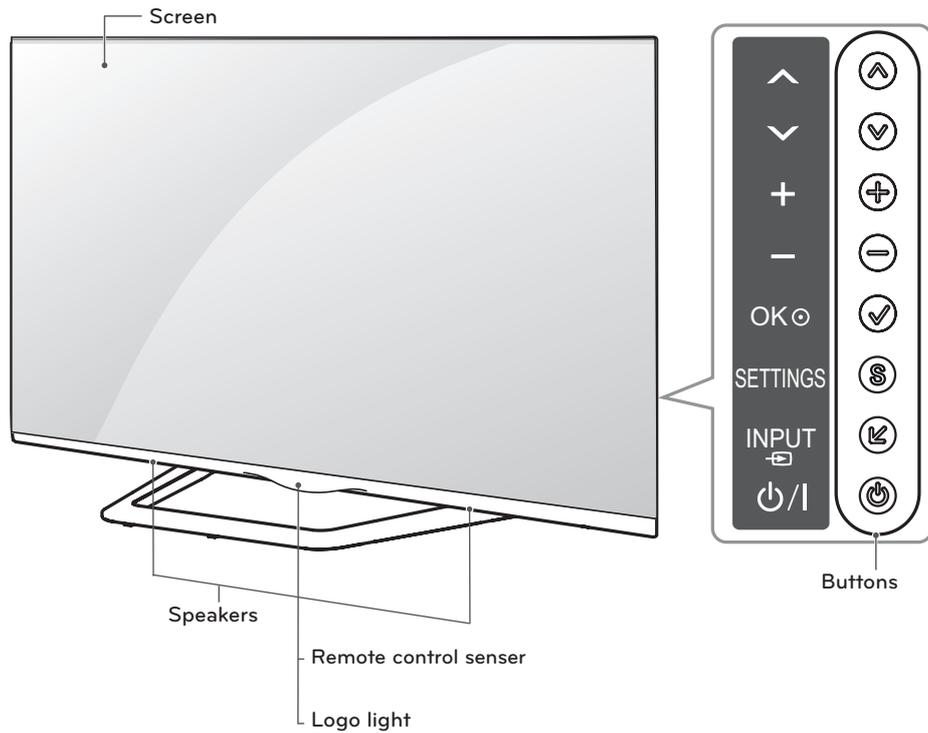


LG Audio device



Wall mount bracket
LSW430B

Parts and Buttons



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

Lifting and moving the TV

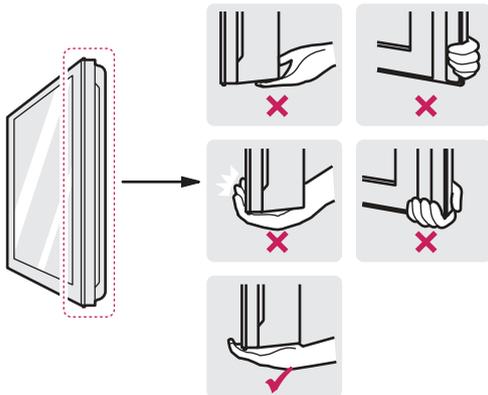
When moving or lifting the TV, read the following to prevent the TV from being scratched or damaged and for safe transportation regardless of its type and size.

CAUTION

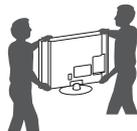
- Avoid touching the screen at all times, as this may result in damage to the screen.
- It is recommended to move the TV in the box or packing material that the TV originally came in.
- Before moving or lifting the TV, disconnect the power cord and all cables.
- When holding the TV, the screen should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



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



- When transporting a large TV, there should be at least 2 people.
- When transporting the TV by hand, hold the TV as shown in the following illustration.



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

Setting up the TV

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

Attaching the stand

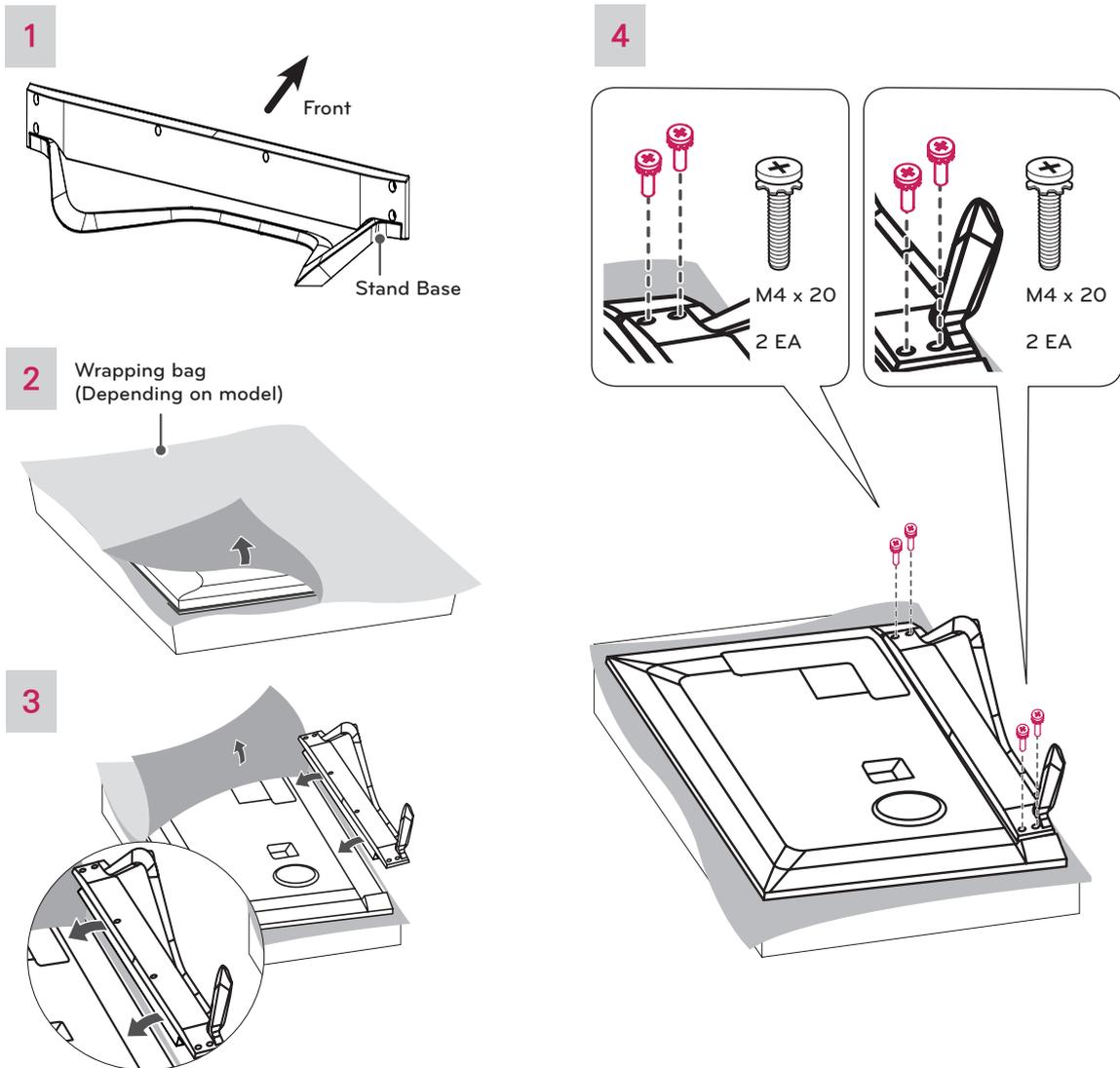
If you are not mounting the TV to a wall, use the following instructions to attach the stand.

! CAUTION

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

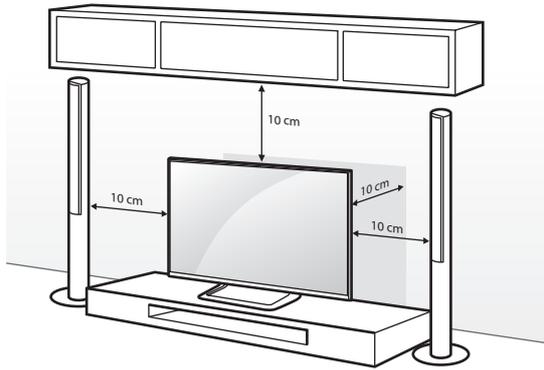
! NOTE

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



Mounting on a table

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



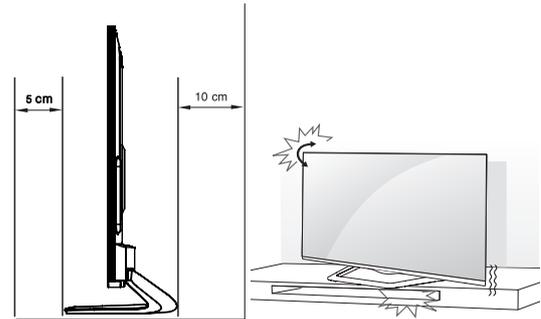
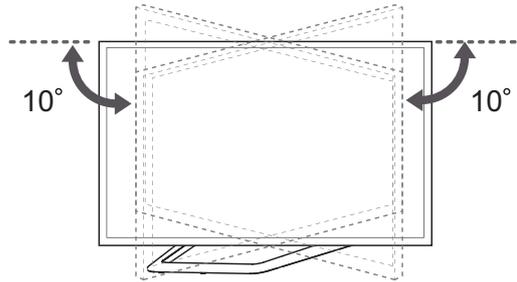
- 2 Connect the power cord to a wall outlet.

CAUTION

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

Adjusting the angle of the TV to suit view

Swivel 10 degrees to the left or right and adjust the angle of the TV to suit your view.

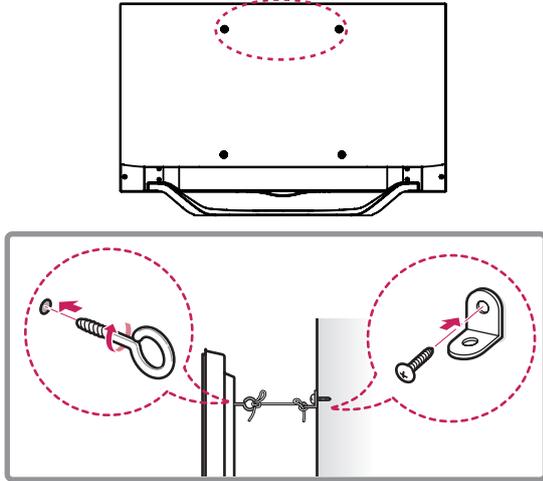


CAUTION

- Install the product on a flat surface for easy swivel. Make sure to use the TV cabinet or stand that can properly support the TV.
- After installing the TV, the angle of the screen can be adjusted to the left or right.
- When adjusting the angle, make sure there are no objects near the TV and the TV has enough distance from the wall. A space of at least 5 cm on the front and 10 cm on the back should be available. Otherwise, the product could fall due to balance problems, which may cause personal injury or damage to the product.

Securing the TV to a wall (optional)

(Depending on model)



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

CAUTION

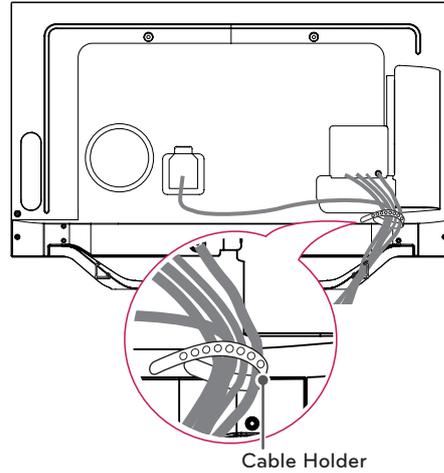
- Make sure that children do not climb on or hang on the TV.

NOTE

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

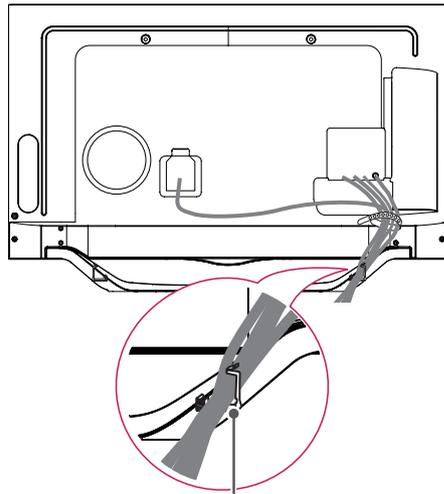
Tidying cables

- 1 Gather and bind the cables with the cable holder on the back of the TV.



Cable Holder

- 2 Gather and bind the cables with the cable management clip.



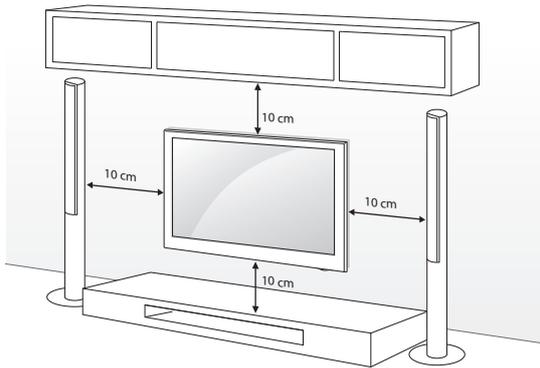
Cable Management Clip

CAUTION

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

Mounting on a wall

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



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

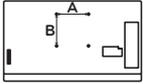
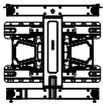
⚠ CAUTION

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

! NOTE

- Use the screws that are listed on 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 on the wall mount. Make sure to use the proper length.
- For more information, refer to the manual supplied with the wall mount.

ENGLISH

Model	42/47LA6900 42/47LA7400
VESA (A x B)	400 x 400
	
Standard screw	M6
Number of screws	4
Wall mount bracket (optional)	LSW430B 

MAKING CONNECTIONS

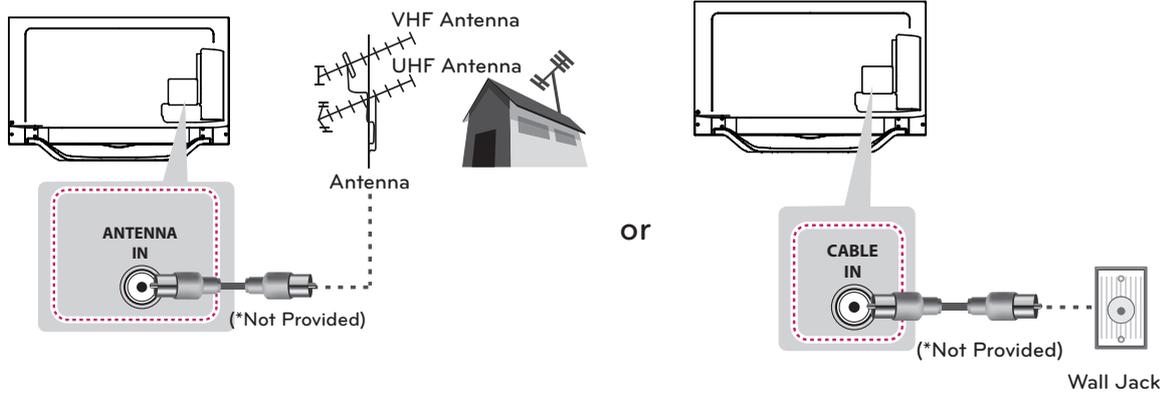
You can connect various external devices to the TV. Supported external devices are: HD receivers, DVD players, VCRs, audio systems, USB storage devices, PC, gaming devices, and other external devices. For more information on external device's connection, refer to the manual provided with each device.

! 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 of 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 of the order of the TV port.
- If you connect a gaming device to the TV, use the cable supplied with the gaming device.
- Refer to the external equipment's manual for operating instructions.

Connecting to an antenna or cable

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



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! NOTE

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

Connecting to a HD receiver, DVD Player, or VCR

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

HDMI Connection

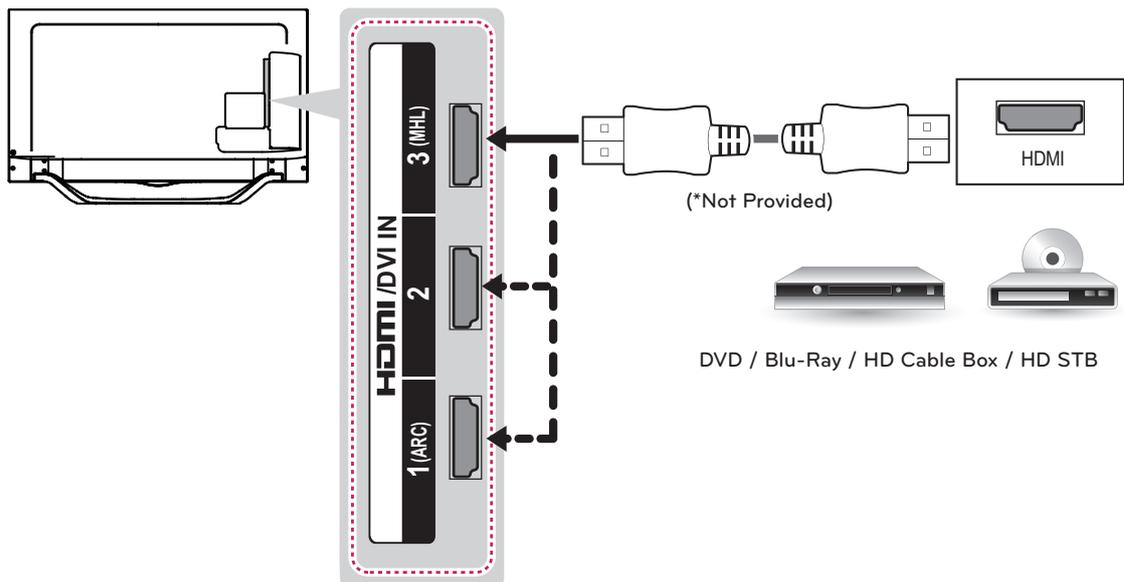
HDMI is the best way to connect a device.

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

! NOTE

- Use the latest High Speed HDMI™ Cable with CEC (Customer Electronics Control) function.
- High Speed HDMI™ Cables are tested to carry an HD signal up to 1080p and higher.
- Supported HDMI Audio format : Dolby Digital, DTS, PCM(Up to 192 kHz, 32k / 44.1k / 48k / 88k / 96k / 176k / 192k)

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



ARC (Audio Return Channel)

- When connected with a high-speed HDMI cable, digital audio can be sent to a compatible device without an additional optical audio cable.
- ARC is only supported on the HDMI input 1 (ARC) port. An external audio device that supports ARC should be connected to HDMI 1 if you wish to use ARC

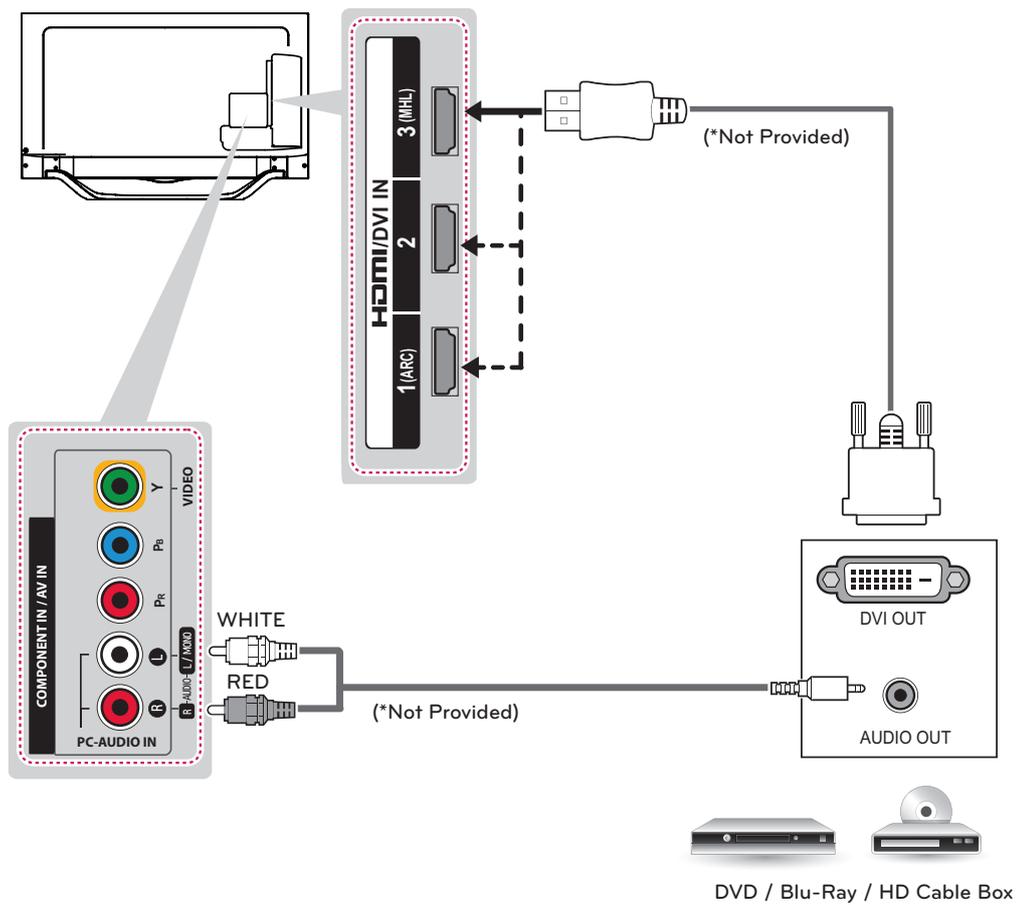
DVI to HDMI Connection

Transmits the digital video signal from an external device to the TV. Connect the external device and the TV with the DVI-HDMI cable as shown in the following illustration. To transmit an audio signal, connect an audio cable.

NOTE

- When using the HDMI/DVI cable, Single link is only supported.

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



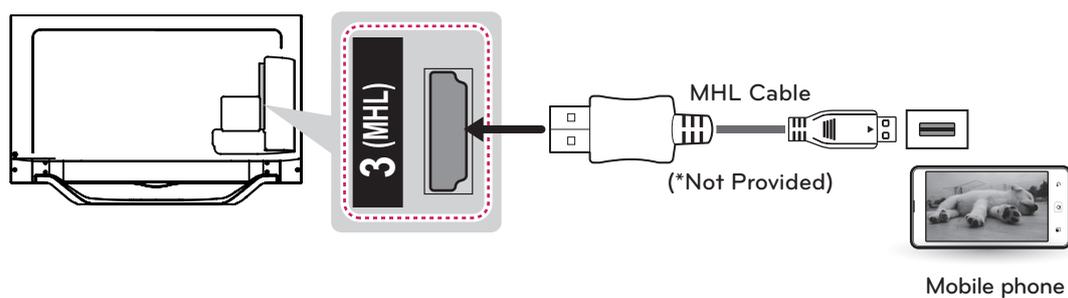
ENGLISH

Connecting to a mobile phone

Mobile High-definition Link (MHL) is an interface for transmitting digital audiovisual signals from mobile phones to television sets.

! NOTE

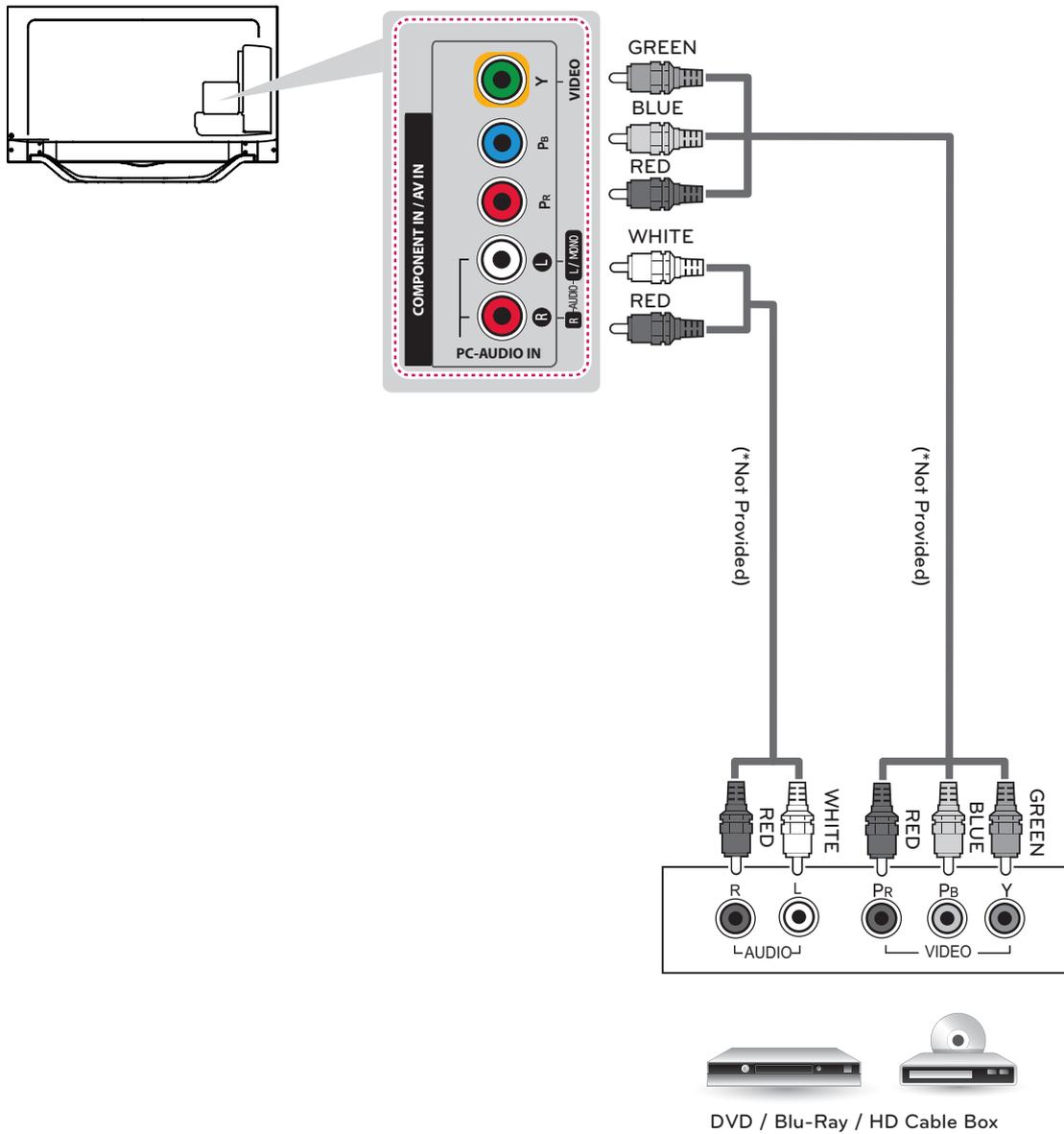
- Connect the mobile phone to the HDMI IN 3 (MHL) port to view the phone screen on the TV.
- This only works for the MHL-enabled phone.
- With some MHL supporting mobile phones, you can use the TV remote to control the phone.
- An MHL passive cable is needed to connect the TV and a mobile phone.
 - the MHL function is disabled.
 - your mobile device is fully charged in standby mode.



Component Connection

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

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



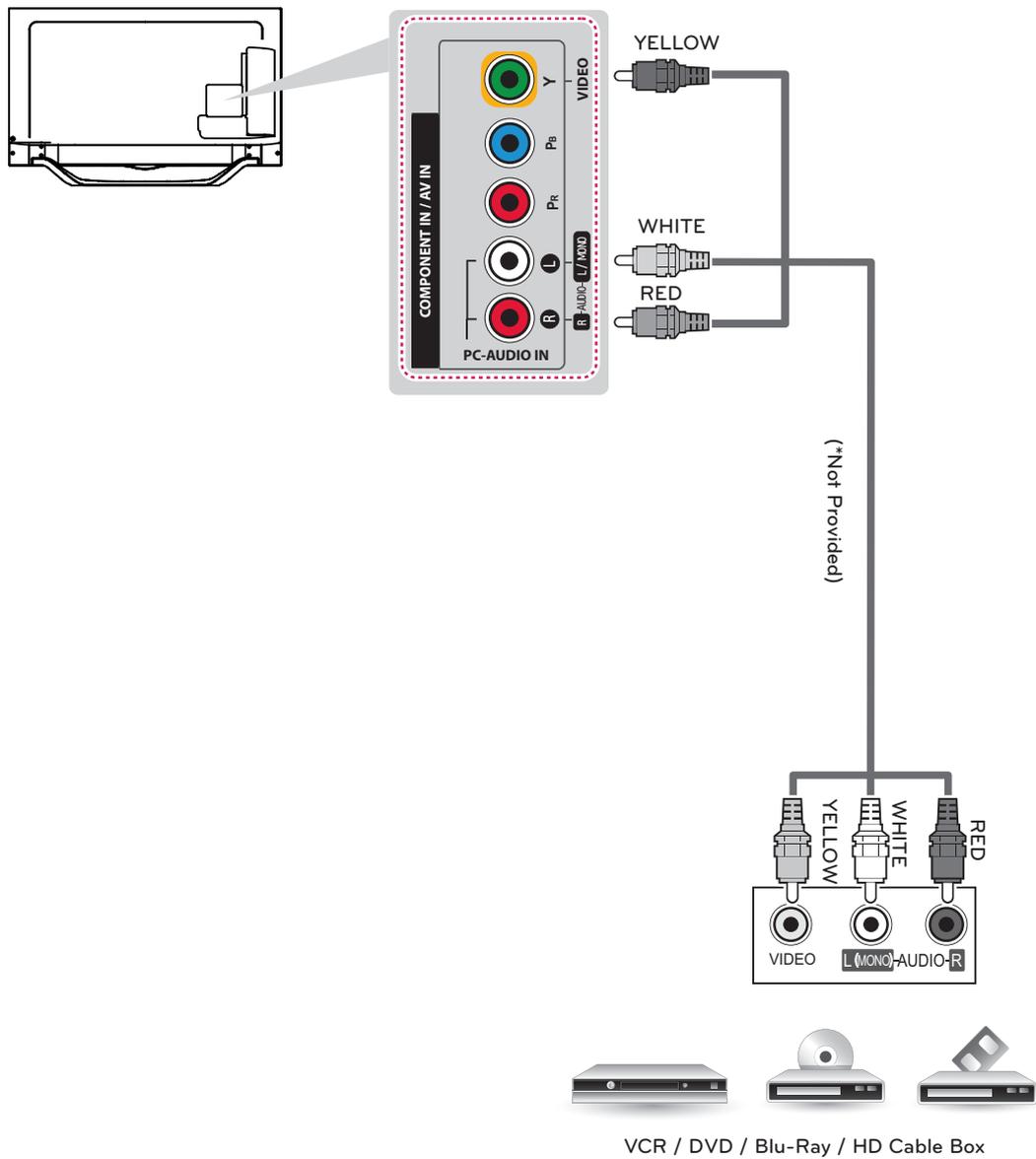
Composite Connection

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



NOTE

- Check to ensure the cables are matched with the corresponding color connection.



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Connecting to a PC

! NOTE

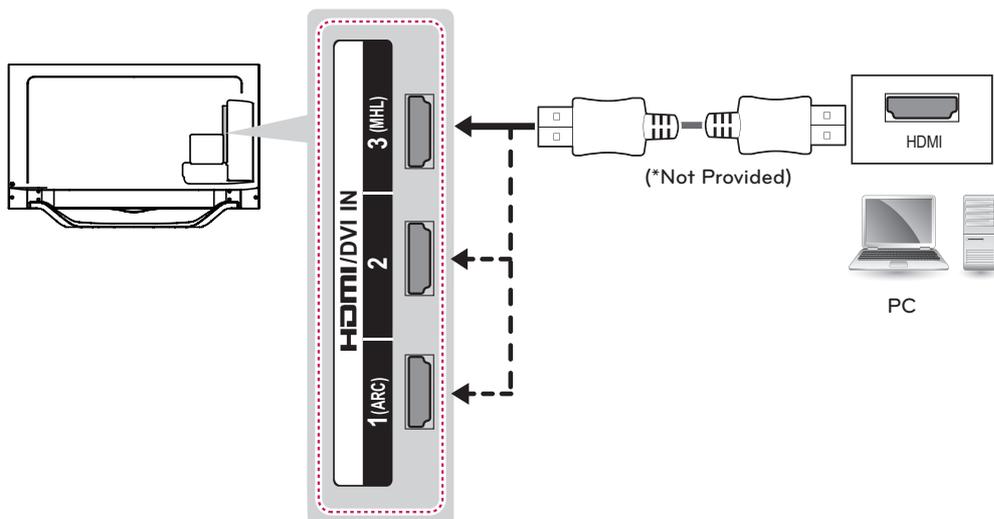
- It is recommended to use an HDMI connection for the best image quality.
- Depending on the graphics card, DOS mode video may not work if a HDMI to DVI Cable is in use.
- In PC mode, there may be noise associated with the resolution, vertical pattern, contrast or brightness. If noise is present, change 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.
- The synchronization input form for Horizontal and Vertical frequencies is separate.
- Depending on the graphics card, some resolution settings may not allow the image to be positioned on the screen properly.
- If you are using DVI out from a PC, you have to connect analog audio separately. Refer to the instructions on the next page.
- When using the HDMI/DVI cable, Single link is only supported.

HDMI Connection DVI or HDMI Connection

Choose method A or B to make connection.

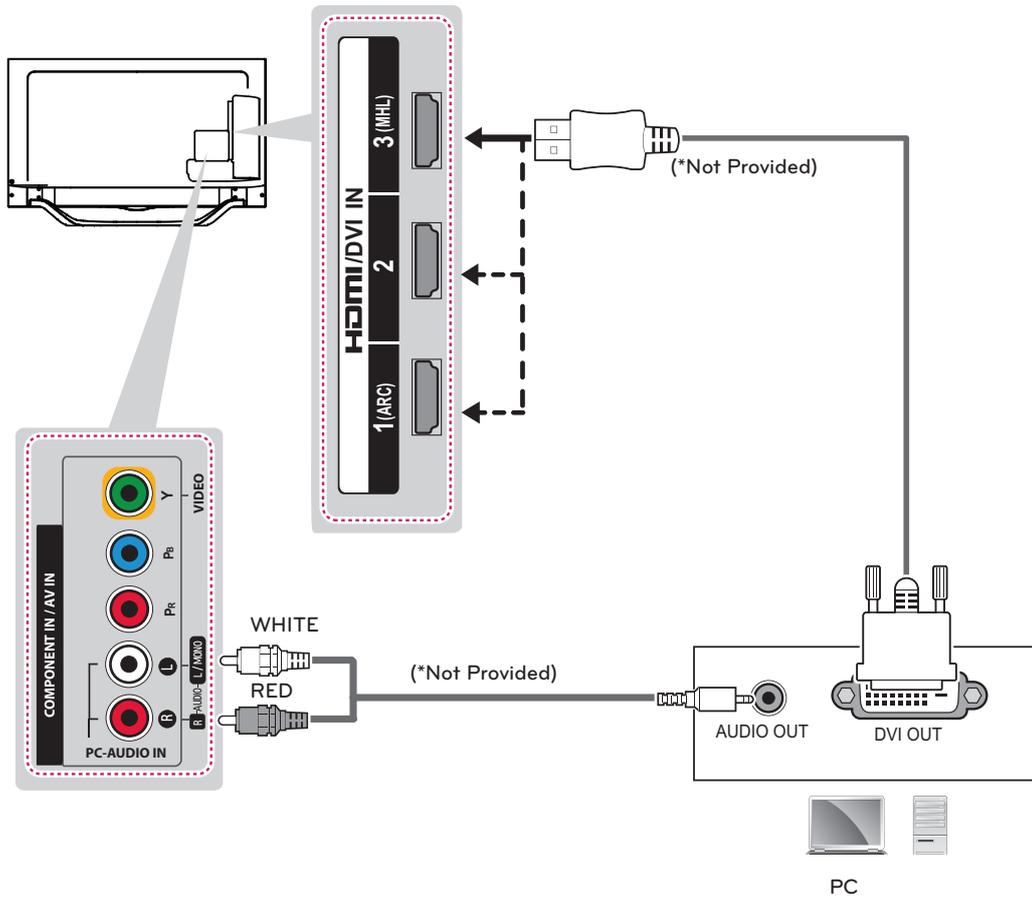
Method A: HDMI Connection

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



Method B: DVI to HDMI Connection

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



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Connecting to an Audio System

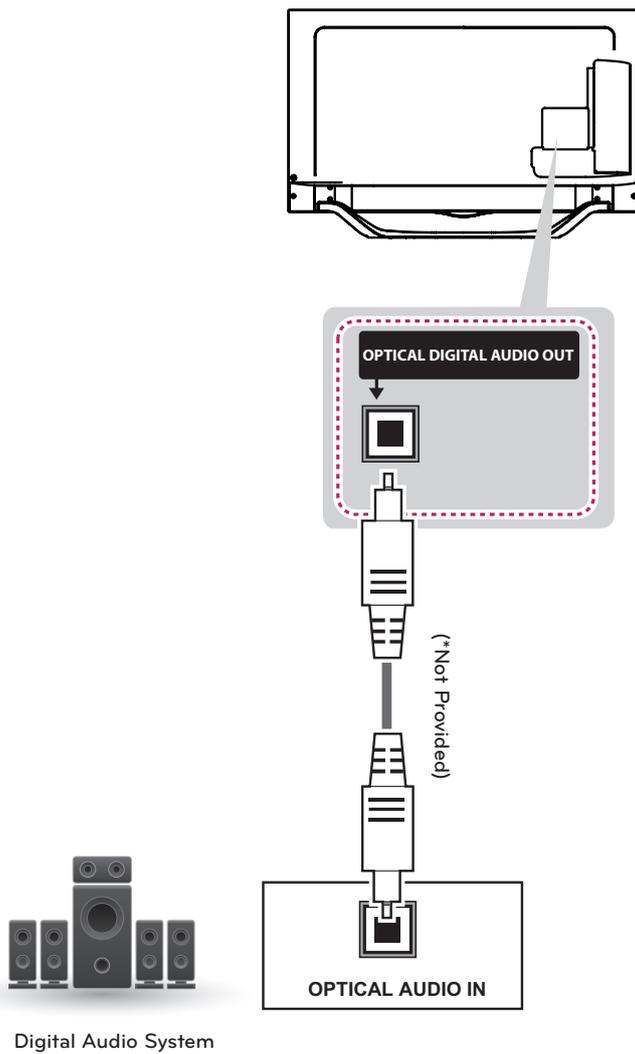
You can use an optional external audio system instead of the built-in speaker.

Digital Optical Audio Connection

Transmits a digital audio signal from the TV to an external device. Connect the external device and the TV with the optical audio cable as shown in the following illustration.

! **NOTE**

- Do not look into the optical output port. Looking at the laser beam may damage your vision.
- Audio with ACP (Audio Copy Protection) function may block digital audio output.

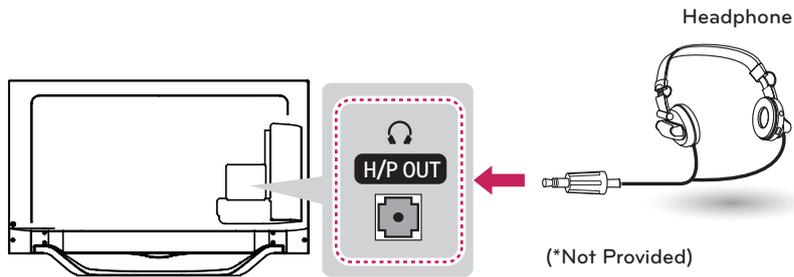


Connecting Headphones

You listen to the sound using headphones.

! NOTE

- AUDIO menu options are disabled when headphones are connected.
- When changing AV MODE with headphones connected, the change is applied to video but not to audio.
- Optical Digital Audio Out is not available when headphones are connected.
- Headphone impedance: 16 Ω
- Max audio output: 10 mW to 15 mW
- Headphone jack size: 0.35 cm (0.13 inches)



Connecting a USB Drive

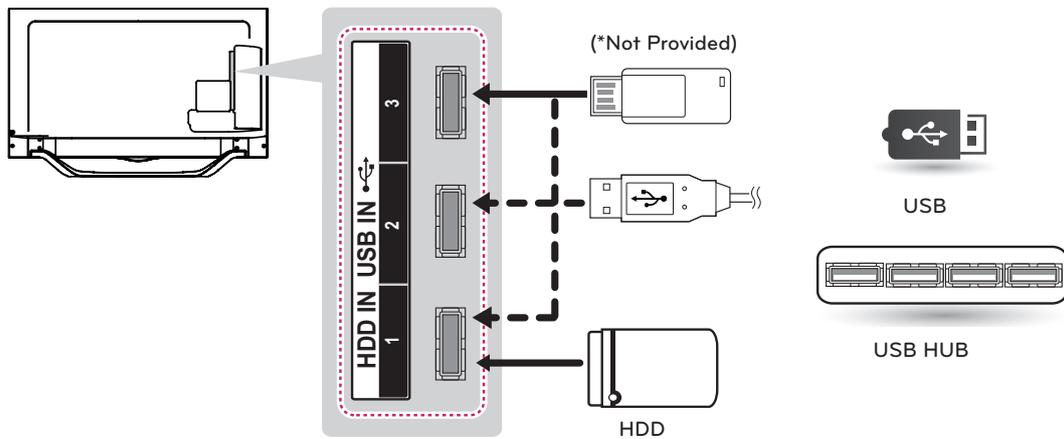
Connect a USB storage device such as a USB flash thumbdrive, external hard drive, or a USB memory card reader to the TV and access the Smart Share menu to use various multimedia files.

ENGLISH

! NOTE

- Some USB Hubs may not work. If a USB device connected using a USB Hub is not detected, connect it to the USB port on the TV directly.

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



REMOTE CONTROL

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



CAUTION

- Do not mix old and new batteries, as this may damage the remote control.
- In Analogue TV and some countries, some remote control buttons may not work.

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



⏻ (POWER)
Turns the TV on or off.

? (User Guide)
Sees user-guide.

⏏ **RATIO**
Resizes an image.

↺ **INPUT**
Rotates through inputs.
Also switches the TV on from standby.

TV/RAD **⏏**
Toggles between Radio, TV, CATV and DTV.

Number button
Enters numbers.

LIST
Accesses the saved channel list.

Q.VIEW
Tunes to the last channel viewed.

+ ▸ -
Adjusts the volume level.

FAV
Accesses your favorite channel list.

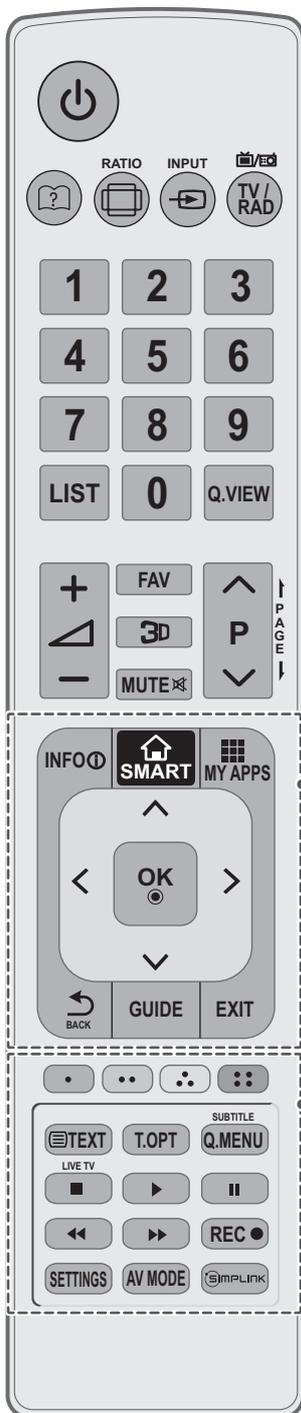
3D
Used for viewing 3D video.

MUTE **⊗**
Mutes all sounds.

^ P v
Scrolls through the saved channels.

↑ PAGE ↓
Moves to the previous or next screen.

ENGLISH

**INFO** ⓘ

Views the information of the current program and screen.

SMART 🏠

Accesses the Smart Home menu.

MY APPS 📺

Shows the list of Apps.

Navigation buttons (up/down/left/right)

Scrolls through menus or options.

OK Ⓞ

Selects menus or options and confirms your input.

BACK ↶

Returns to the previous level.

GUIDE

Displays the program event according to time scheduler.

EXIT

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

Color buttons

These access special functions in some menus.

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

TELETEXT BUTTONS

These buttons are used for teletext.

Q. MENU

Accesses the quick menu.

SUBTITLE

Recalls your preferred subtitle in digital mode.

Control buttons (■, ▶, ⏸, ◀, ▶▶)

Controls the SIMPLINK compatible devices (USB, SIMPLINK).

LIVE TV

Return to LIVE TV.

REC ●

Start to record and display record menu.

SETTINGS

Accesses the main menu.

AV MODE

Selects an AV mode.

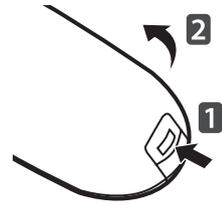
SIMPLINK 📶

Accesses the AV devices connected to the TV;

Opens the SIMPLINK menu.

MAGIC REMOTE CONTROL FUNCTIONS

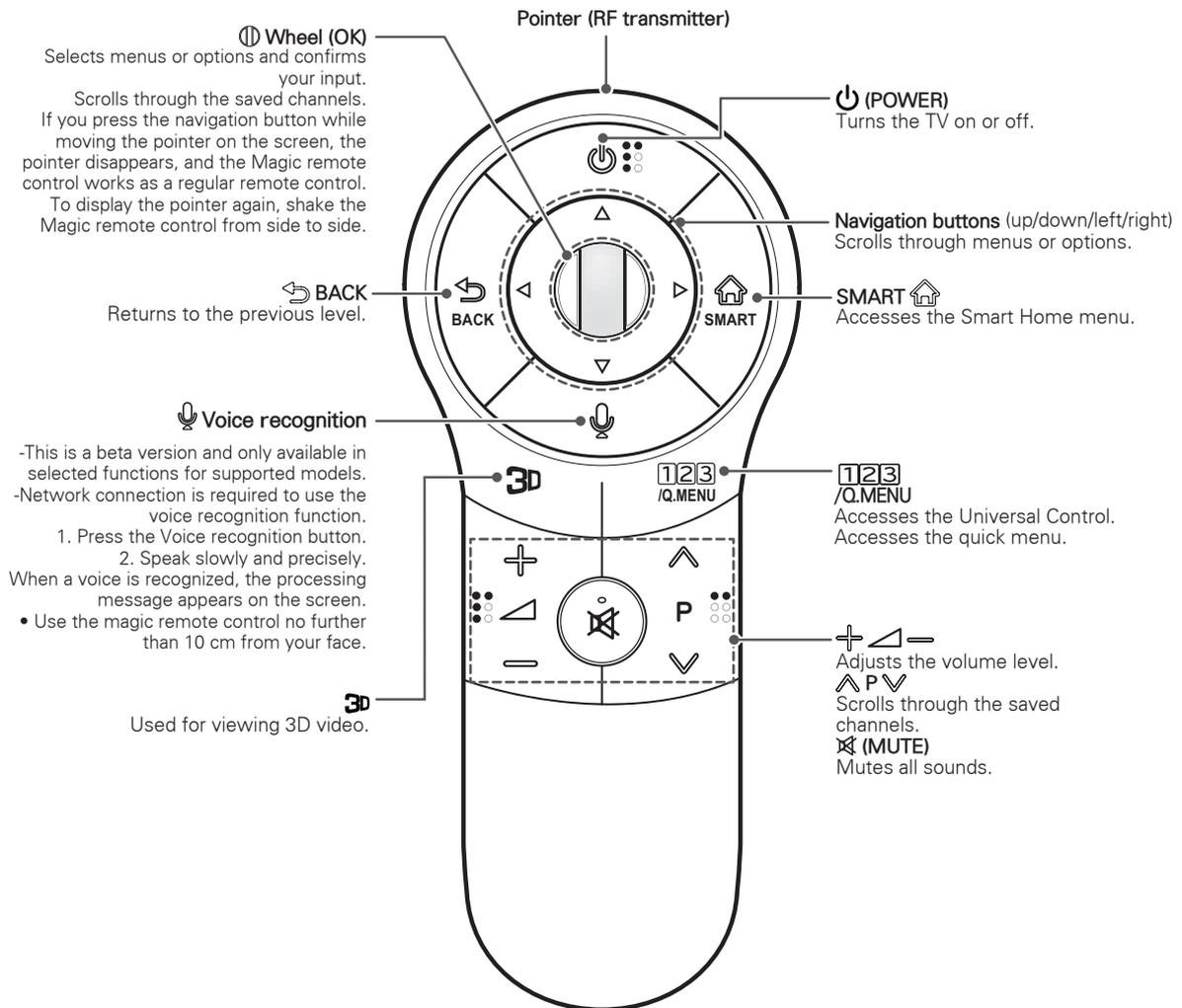
When the message "Magic remote control battery is low. Change the battery." is displayed, replace the battery. To install batteries, open the battery cover, replace batteries (1.5 V AA) matching ⊕ and ⊖ ends to the label inside the compartment, and close the battery cover. Be sure to point the remote control at the remote control sensor on the TV. 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.
- In Analogue TV and some countries, some remote control buttons may not work.

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



Registering Magic Remote Control

The Magic Remote Control operates by pairing with your TV. Once you purchased the TV, please register the Magic remote control as follows;

How to register the Magic Remote Control

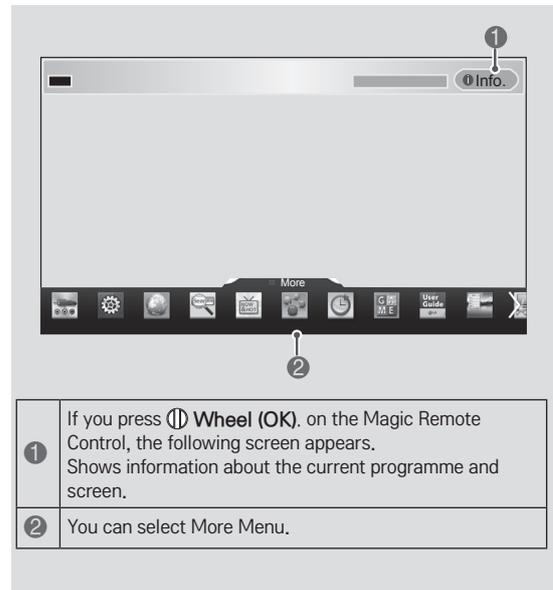
 (Wheel)	<p>To register automatically, turn the TV on and press the Wheel (OK). When registration is completed, the completion message appears on the screen.</p> <p>If registration fails, turn the TV off and back on, then press the Wheel (OK) to complete registration.</p>
--	---

How to Re-register the Magic Remote Control

 BACK	<p>1 Press and hold the BACK and SMART buttons together for 5 seconds to reset, then register it by following "How to register the Magic remote control" above.</p>
 SMART	<p>2 To re-register the Magic remote control, press and hold the BACK button for 5 seconds toward the TV.</p>

How to use Magic Remote Control

	<p>1 You can move the pointer by moving the remote up and down or left and right.</p> <ul style="list-style-type: none"> » If the pointer does not work properly, wait 10 seconds and then try again. <p>2 If the pointer disappears, move the remote control slightly to left or right. It will then automatically appear on the screen.</p> <ul style="list-style-type: none"> » If the pointer has not been used for a certain period of time, it will disappear.
---	--



- | | |
|---|---|
| 1 | If you press Wheel (OK) , on the Magic Remote Control, the following screen appears. Shows information about the current programme and screen. |
| 2 | You can select More Menu. |

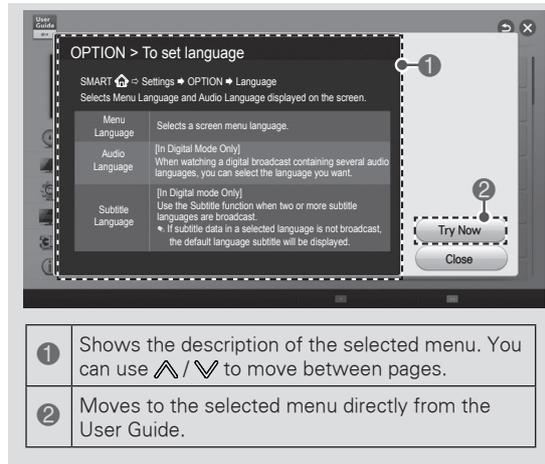
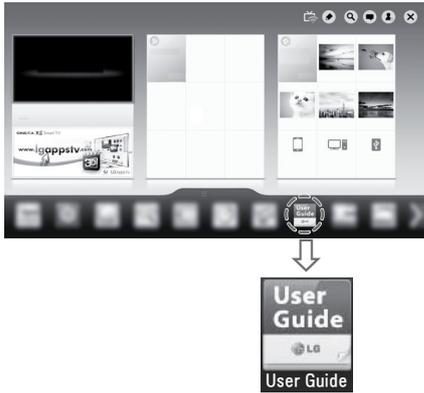
Precautions to Take when Using the Magic Remote Control

- Use the Magic remote control within the maximum communication distance (10 m, 32.8ft). Using the remote control beyond this distance, or with an object obstructing it, may cause a communication failure.
- A communication failure may occur due to nearby devices. Electrical devices such as a microwave oven or wireless LAN product may cause interference, as these use the same bandwidth (2.4 GHz) as the Magic remote control.
- The Magic remote control may be damaged or may malfunction if it is dropped or receives a heavy impact.
- Take care not to bump into nearby furniture or other people when using the Magic remote control.
- Manufacturer and installer cannot provide service related to human safety as the applicable wireless device has possibility of electric wave interference.
- It is recommended that an Access Point (AP) be located more than 1 m (3.28 ft) away from the TV. If the AP is installed closer than 1 m (3.28 ft), the Magic remote control may not perform as expected due to frequency interference.

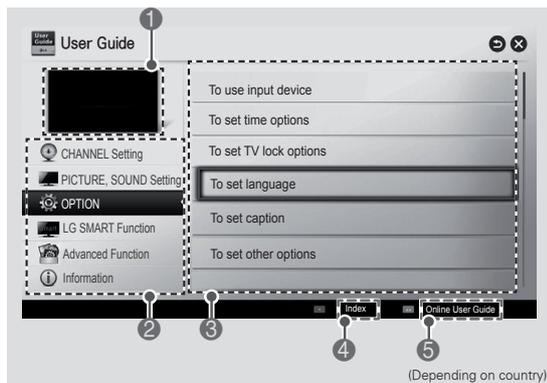
USING THE USER GUIDE

User Guide allows you to easily access detailed TV information.

- 1 Press **SMART**  button to access the Smart Home menu.
- 2 Select **User Guide** and press the **OK** button.



- | | |
|---|--|
| 1 | Shows the description of the selected menu. You can use  /  to move between pages. |
| 2 | Moves to the selected menu directly from the User Guide. |



- | | |
|---|---|
| 1 | Shows the video you were watching. |
| 2 | Guide categories. |
| 3 | List of topics in the current category. You can use  /  button to move between pages. |
| 4 | An index of key words present in the User Guide. |
| 5 | Provides the detailed information on the functions of LG Smart TV when the Internet is connected. (It may not be available depending on the country/ language.) |

SPECIFICATIONS

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

		Digital TV	Analogue TV
Hong-Kong	Television System	DTMB	PAL D/K, PAL I, NTSC M
	Program Coverage	DTMB : 21 to 69	PAL D/K : VHF/UHF 1 to 69, Cable 1 to 47 PAL I : VHF/UHF 1 to 69, Cable 1 to 47 NTSC M : VHF/UHF 2 to 78, Cable 1 to 71
	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		42LA6900 (42LA6900-CB)
Dimensions (Width x Height x Depth)	With stand	951 x 634 x 269 (mm)
	Without stand	951 x 564 x 56.2 (mm)
Weight	With stand	14.3 Kg
	Without stand	12.2 Kg
Power requirement		AC 100-240 V~ 50 / 60 Hz

MODELS		47LA6900 (47LA6900-CB)
Dimensions (Width x Height x Depth)	With stand	1063 x 697 x 269 (mm)
	Without stand	1063 x 627 x 56.2 (mm)
Weight	With stand	16.7 Kg
	Without stand	14.6 Kg
Power requirement		AC 100-240 V~ 50 / 60 Hz

MODELS		42LA7400 (42LA7400-CB)
Dimensions (Width x Height x Depth)	With stand	951 x 634 x 269 (mm)
	Without stand	951 x 564 x 56.2 (mm)
Weight	With stand	14.3 Kg
	Without stand	12.2 Kg
Power requirement		AC 100-240 V~ 50 / 60 Hz

MODELS		47LA7400 (47LA7400-CB)
Dimensions (Width x Height x Depth)	With stand	1063 x 697 x 269 (mm)
	Without stand	1063 x 627 x 56.2 (mm)
Weight	With stand	16.7 Kg
	Without stand	14.6 Kg
Power requirement		AC 100-240 V~ 50 / 60 Hz

HDMI (DTV) supported mode

Resolution	Horizontal Frequency (kHz)	Vertical Frequency (Hz)
640 x 480	31.469 / 31.5	59.94 / 60
720 x 480	31.469 / 31.5	59.94 / 60
720 x 576	31.25 15.625	50 50
1280 x 720	37.500 44.96 / 45	50 59.94 / 60
1920 x 1080	33.72 / 33.75 28.125 26.97 / 27 33.716 / 33.75 56.250 67.43 / 67.5	59.94 / 60 25 / 50.00 23.97 / 24 29.976 / 30.00 50 59.94 / 60

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
1152 x 864	54.348	60.053
1360 x 768	47.712	60.015
1280 x 1024	63.981	60.020
1920 x 1080	67.5	60.00

Component port connecting information

Component ports on the TV	Y	P _B	P _R
---------------------------	---	----------------	----------------

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

Signal	Component
480i/576i	O
480p/576p	O
720p/1080i	O
1080p	O (50 Hz / 60 Hz Only)

Wireless LAN module (WN8122E1) specification

Standard	IEEE802.11a/b/g/n
Frequency Range	2400 to 2483.5 MHz 5150 to 5250 MHz 5725 to 5850 MHz
Output Power (Max.)	802.11a: 16.5 dBm 802.11b: 16 dBm 802.11g: 15.5 dBm 802.11n - 2.4GHz: 15.5 dBm 802.11n - 5GHz: 16.5 dBm

Bluetooth module (BM-LDS401) specification

Standard	Bluetooth Version 3.0
Frequency Range	2400 ~ 2483.5 MHz
Output Power (Max.)	10 dBm or lower

3D supported mode

- Video, which is input as below media contents is switched into the 3D screen automatically.
- The method for 3D digital broadcast may differ depending on the signal environment. If video is not switched automatically into 3D, manually convert the settings to view 3D images.

3D supported mode automatically				
Input	Signal	Horizontal Frequency (kHz)	Vertical Frequency (Hz)	Playable 3D video format
HDMI	640 x 480	31.469 / 31.5	59.94 / 60	Top & Bottom, Side by Side(Half), Side by Side(Full)
		62.938 / 63		Frame Packing, Line Alternative
	480p	31.469 / 31.5		Top & Bottom, Side by Side(Half), Side by Side(Full)
		62.938 / 63		Frame Packing, Line Alternative
	576p	31.25	50	Top & Bottom, Side by Side(Half), Side by Side(Full)
		62.5		Frame Packing, Line Alternative
	720p	37.5	50	Top & Bottom, Side by Side(Half), Side by Side(Full)
		44.96 / 45	59.94 / 60	
		75	50	Frame Packing, Line Alternative
		89.91 / 90	59.94 / 60	
	1080i	28.125	50	Top & Bottom, Side by Side(Half), Side by Side(Full)
		33.72 / 33.75	59.94 / 60	
		56.25	50	Frame Packing, Field Alternative
		67.432 / 67.5	59.94 / 60	
	1080p	26.97 / 27	23.97 / 24	Top & Bottom, Side by Side(Half), Side by Side(Full)
		28.125	25	
		33.716 / 33.75	29.976 / 30.00	
		43.94 / 54	23.97 / 24	Frame Packing, Line Alternative
		56.25	25	
		67.432 / 67.5	29.976 / 30	
56.25		50		
67.432 / 67.5		59.94 / 60	Top & Bottom, Side by Side(Half)	
USB	1080p	33.75	30.000	Side by Side(Half), Top & Bottom, Checker Board, MPO(Photo), JPS(Photo)
DLNA	1080p	33.75	30.000	
	Signal			Playable 3D video format
DTV	Frame Compatible			Side by Side(Half), Top & Bottom

3D supported mode manually				
Input	Signal			Playable 3D video format
	Resolution	Horizontal Frequency (kHz)	Vertical Frequency (Hz)	
DTV	HD / SD	-	-	2D to 3D, Side by Side(Half), Top & Bottom
ATV(CVBS)	SD	-	-	
Component	HD / SD	-	-	
HDMI-PC	1024 x 768	48.36	60	2D to 3D, Side by Side(Half), Top & Bottom, Checker Board, Single Frame Sequential, Row Interleaving, Column Interleaving
	1360 x 768	47.71		
	1920 x 1080	67.500		
	Others	-	-	2D to 3D
HDMI-DTV	480P	31.5	60	2D to 3D, Side by Side(Half), Top & Bottom, Checker Board, Frame Sequential, Row Interleaving, Column Interleaving
	576P	31.25	50	
	720p	37.5 45	50 60	
	1080i	28.12 33.75	50 60	2D to 3D, Side by Side(Half), Top & Bottom
	1080p	27 28.12 33.75	24 25 30	2D to 3D, Side by Side(Half), Top & Bottom, Checker Board, Row Interleaving, Column Interleaving
50 60			2D to 3D, Side by Side(Half), Top & Bottom, Checker Board, Frame Sequential, Row Interleaving, Column Interleaving	
USB ,DLNA (Movie)	Under 704 x 480	-	-	2D to 3D
	Over 704 x 480 interlaced	-	-	2D to 3D, Side by Side(Half), Top & Bottom
	Over 704 x 480 progressive	-	50 / 60	2D to 3D, Side by Side(Half), Top & Bottom, Checker Board, Row Interleaving, Column Interleaving, Frame Sequential
	Over 704 x 480 progressive	-	others	2D to 3D, Side by Side(Half), Top & Bottom, Checker Board, Row Interleaving, Column Interleaving
USB, DLNA (Photo)	Under 320 x 240	-	-	2D to 3D
	Over 320 x 240	-	-	2D to 3D, Side by Side(Half), Top & Bottom
Miracast™ / WiDi	1024 x 768p	-	30 / 60	2D to 3D, Side by Side(Half), Top & Bottom
	1280 x 720p	-	30 / 60	
	1920 x 1080p	-	30 / 60	
	Others	-	-	2D to 3D

EXTERNAL CONTROL DEVICE SETUP

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

MAINTENANCE

Cleaning Your TV

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



CAUTION

- Make sure to turn the power off and disconnect the power cord and all other cables first.
- 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, 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 the remote control sensor on the product and try again. • Check if there is any obstacle between the product and the remote control. • Check if the batteries are still working and properly installed (⊕ to ⊕, ⊖ to ⊖).
No image display and no sound is produced.	<ul style="list-style-type: none"> • Check if the product is turned on. • Check if the power cord is connected to a wall outlet. • Check if there is a problem in the wall outlet by connecting other products.
The TV turns off suddenly.	<ul style="list-style-type: none"> • Check the power control settings. The power supply may be interrupted. • Check if the Auto sleep feature is activated in the Time settings. • If there is no signal while the TV is on, the TV will turn off automatically after 15 minutes of inactivity.



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

MODEL _____

SERIAL _____



LG

Life's Good

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.

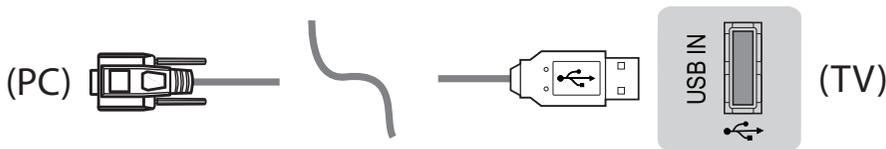
Connect the USB to Serial converter/RS-232C input jack to an external control device (such as a computer or an A/V control system) to control the product's functions externally.

Note: There are several ways to connect TV based on model's support port.

- * Please be advised that not all models support these connectivity.
- * Cable is not provided.

USB to Serial converter with USB Cable

USB Type

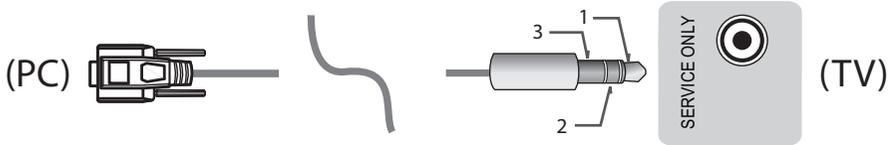


- LGTV supports PL2303 chip-based (Vendor ID : 0x0557, Product ID : 0x2008) USB to serial converter which is not made nor provided by LG.
- It can be purchased from computer stores that carry accessories for IT support professionals.

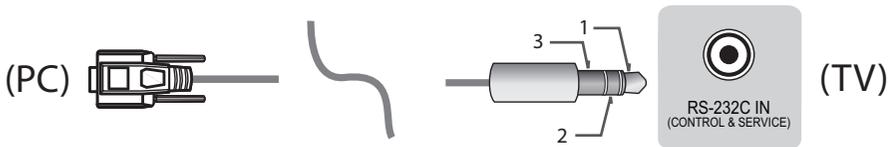
RS-232C with RS-232C Cable (Legacy)

Phone jack Type

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

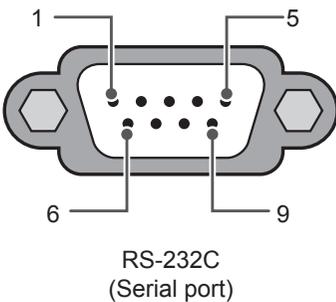


- This connection can only be used for the following models: 55/47/39LN5450-UA, 55/50/47/42LN5400-UA, 42/39/32LN5300-UA, and 37/32LN530B-UA.



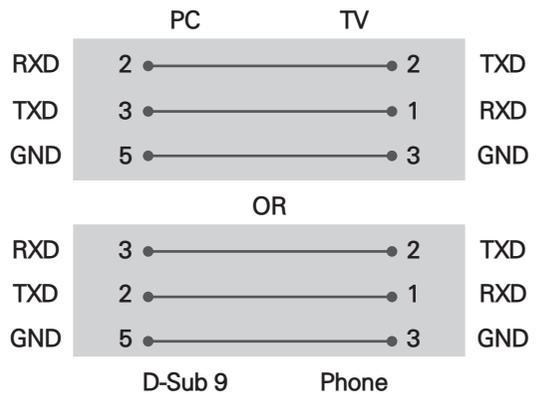
- This connection can only be used for the following models: 60PN6550-UA, 50/60PN6500-UA, 50/60PN5300-UF, and 42/50PN4500-UA.

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 off	k	a	00	13. Balance	k	t	00 to 64
02. Aspect Ratio	k	c	(See p.7)	14. Color (Colour) Temperature	x	u	00 to 64
03. Screen Mute	k	d	(See p.7)	15. ISM Method (Only Plasma TV)	j	p	(See p.9)
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	(See p.9)
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	(See p.11)
10. Sharpness	k	k	00 to 32	22. 3D (Only 3D models)	x	t	(See p.12)
11. OSD Select	k	l	00 to 01	23. Extended 3D (Only 3D models)	x	v	(See p.12)
12. Remote Control Lock Mode	k	m	00 to 01				

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

Transmission / Receiving Protocol

Transmission

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

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

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

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

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

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

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

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

[] : Space – ASCII code '0x20'

OK Acknowledgement

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

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

Error Acknowledgement

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

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

Data 00: Illegal Code

Real data mapping (Hexadecimal → Decimal)

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

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

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

* Commands may work differently depending on model and signal.

01. Power (Command: k a)

- ▶ To control Power Off of the set.

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

Data 00 : Power Off

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

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

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

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

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

02. Aspect Ratio (Command: k c) (Main Picture Size)

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

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

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

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 01 : 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 01 : Lock off 01 : Lock on

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

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

13. Balance (Command: k t)

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

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

Data Min : 00 to Max : 64

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

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

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

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

Data Min : 00 to Max : 64

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

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

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

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

Data Min : 02: Orbiter

08: Normal

20: Color(Colour) Wash

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

16. Energy Saving (Command: j q)

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

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

Data

00 : Off

01 : Minimum

02 : Medium

03 : Maximum

04 : Auto

05 : Screen off

- * (Depending on model)

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

17. Tune Command (Command: m a)

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

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

- * Analogue Terrestrial/Cable

[Data 00][Data 01] Channel Data

Data 00 : High byte channel data

Data 01 : Low byte channel data
- 00 00 ~ 00 C7 (Decimal : 0 ~ 199)

Data 02 : Input Source (Analogue)

- 00 : Terrestrial TV (ATV)

- 80 : Cable TV (CATV)

* Digital Terrestrial/Cable/Satellite

[Data 00][Data 01]: Channel Data

Data 00 : High Channel data

Data 01 : Low Channel data

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

Data 02 : Input Source (Digital)

- 10 : Terrestrial TV (DTV)

- 20 : Terrestrial Radio (Radio)

- 40 : Satellite TV (SDTV)

- 50 : Satellite Radio (S-Radio)

- 90 : Cable TV (CADTV)

- a0 : Cable Radio (CA-Radio)

* Tune Command Examples:

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

Set ID = All = 00

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

Data 02 = Analogue Terrestrial TV = 00

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

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

Set ID = All = 00

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

Data 02 = Digital Terrestrial TV = 10

Result = **ma 00 00 01 10**

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

Set ID = All = 00

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

Data 02 = Digital Satellite TV = 40

Result = **ma 00 03 E8 40**

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

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

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

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

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

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

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

* Analogue Terrestrial/Cable

Data 00 : Physical Channel Number

- Terrestrial (ATV) : 02~45 (Decimal: 2 ~ 69)

- Cable (CATV) : 01, 0E~7D (Decimal : 1, 14~125)

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

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

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

Data 05: Input Source (Analogue)

- 00 : Terrestrial TV (ATV)

- 01 : Cable TV (CATV)

* Digital Terrestrial/Cable

Data 00 : xx (Don't care)

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

Data 01 : High byte Channel Data

Data 02 : Low byte Channel Data

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

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

Data 03 : High byte Channel Data

Data 04 : Low byte Channel Data

Data 05 : Input Source (Digital)

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

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

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

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

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

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

* Tune Command Examples:

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

Set ID = All = 00

Data 00 = Channel Data is 35 = 23

Data 01 & 02 = No Major = 00 00

Data 03 & 04 = No Minor = 00 00

Data 05 = Analogue Cable TV = 01

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

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

Set ID = All = 00

Data 00 = Don't know Physical = 00

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

Data 03 & 04 = Minor is 3 = 00 03

Data 05 = Digital Terrestrial TV = 22

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

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

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

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

- For Japan Model

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

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

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

* Digital Terrestrial/Satellite

Data 00: xx (Don't care)

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

Data 01: High byte Channel Data

Data 02: Low byte Channel Data

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

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

(Don't care in Satellite)

Data 03: High byte Channel Data

Data 04: Low byte Channel Data

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

- 02 : Terrestrial TV (DTV)

- 07 : BS (Broadcasting Satellite)

- 08 : CS1 (Communication Satellite 1)

- 09 : CS2 (Communication Satellite 2)

* Tune Command Examples:

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

Set ID = All = 00

Data 00 = Don't know Physical = 00

Data 01 & 02 = Major is 17 = 00 11

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

Data 05 = Digital Terrestrial TV = 02

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

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

Set ID = All = 00

Data 00 = Don't know Physical = 00

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

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

Data 05 = Digital BS TV = 07

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

* This feature is varied based on the model.

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

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

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

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

(Command: m b)

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

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

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

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

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

19. Key (Command: m c)

► To send IR remote key code.

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

Data Key code - See 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 : Checker 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 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	X
01	X	X	X
02	X	X	X
03	X	X	O

X : don't care

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

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

(Depending on model)

- To change 3D option for TV.

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

[Data 00] 3D option

00 : 3D Picture Correction
01 : 3D Depth (3D Mode is Manual Only)
02 : 3D Viewpoint
06 : 3D Color Correction

07 : 3D Sound Zooming

08 : Normal Image View

09 : 3D Mode (Genre)

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

1) When [Data 00] is 00

00 : Right to Left

01 : Left to Right

2) When [Data 00] is 01, 02

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

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

3) When [Data 00] is 06, 07

00 : Off

01 : On

4) When [Data 00] is 08

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

01 : Change 3D video to 2D video, except 2D-to-3D video

* If conversion condition doesn't meet, command is treated as NG.

5) When [Data 00] is 09

00 : Standard

01 : Sport

02 : Cinema

03 : Extreme

04 : Manual

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

