LG
Life's Good

OWNER'S MANUAL
PLASMA TV

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

50PH470H 60PH670H

P/NO : MFL67705305 (1308-REV01)

www.lg.com

IMPORTANT SAFETY INSTRUCTIONS

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



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

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

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

WARNING/CAUTION

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

WARNING

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

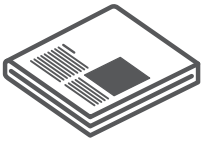
CAUTION

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

NOTE

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

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



- Do not use this apparatus near water.



- Clean only with a dry cloth.



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



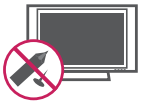
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.



- 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



ENGLISH

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



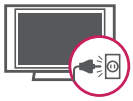
- Only use attachments/accessories specified by the manufacturer.



- 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, force the patient to vomit and visit 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.



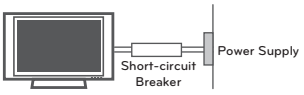
- **Warning** - To reduce the risk of fire or electrical shock, do not expose this product to rain, moisture or other liquids. Do not touch the TV with wet hands. Do not install this product near flammable objects such as gasoline or candles, or expose the TV to direct air conditioning.



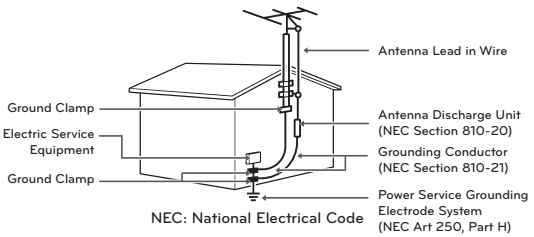
- Do not expose to dripping or splashing and do not place objects filled with liquids, such as vases, cups, etc. on or over the apparatus (e.g. on shelves above the unit).



- **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, lightening rods, or gas pipes.



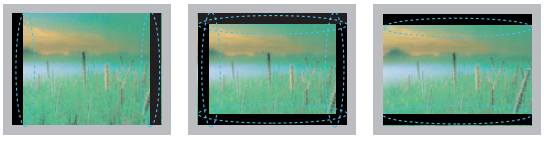
- As long as this unit is connected to the AC wall outlet, it is not disconnected from the AC power source even if the unit is turned off.
- Do not attempt to modify this product in any way without written authorization from LG Electronics. Unauthorized modification could void the user's authority to 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 thunder or 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 or any objects to fall into the product, and do not drop anything onto the screen.
- **Disconnecting the Main Power**
  The power outlet used with this device must remain easily accessible.
- Store the accessories (battery, etc.) in a safe location out of the reach of children.
- This apparatus use 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 Plasma or LCD 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 on 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.

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.

Viewing 3D Imaging (For 3D models)

⚠ 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 is 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.
- If your eyesight varies between your right and left eye, you may experience eye strain.

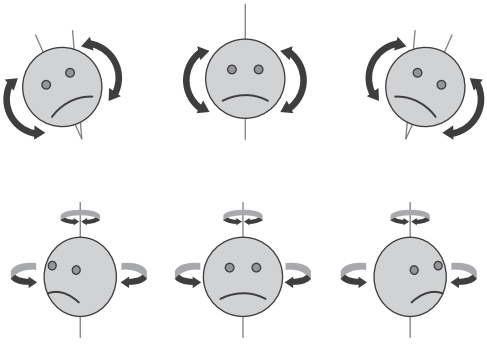
Symptoms which require discontinuation or refraining from watching 3D contents

- 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

- Only 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 scratch. 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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TABLE OF CONTENTS

2 IMPORTANT SAFETY INSTRUCTIONS

6 Viewing 3D Imaging (For 3D models)

8 LICENSES

8 OPEN SOURCE SOFTWARE NOTICE

9 TABLE OF CONTENTS

10 INSTALLATION PROCEDURE

10 ASSEMBLING AND PREPARING

10 Unpacking
12 Optional Extras
13 Parts and Buttons
14 Lifting and Moving the TV
15 Setting up the TV
15 - Attaching the Stand
17 - Mounting on a Table
17 - Mounting on a Wall
19 - Tidying Cables

20 MAKING CONNECTIONS

20 Connecting to an Antenna or Cable
21 Connecting to a HD Receiver, DVD Player or VCR
21 - HDMI Connection
22 - DVI to HDMI Connection
23 - Connecting to a Mobile Phone
24 - Component Connection
25 - Composite Connection
26 Connecting to a PC
26 - HDMI Connection or DVI to HDMI Connection
28 Connecting to an Audio System
28 - Digital Optical Audio Connection
29 Connecting a USB Device

30 REMOTE CONTROL

34 WATCHING TV

34 Turning the TV on for the first time

35 PENTOUCH

35 Before Using
36 Using the Touch Pen with a TV
38 Using the Touch Pen with a PC
38 - Recommended Computer Specifications
38 - Installing the Pentouch Program
40 Using the Touch Pen
40 - Things to Know Before Pairing
40 - Removing a Touch Pen in Use (How to reset a Touch Pen)
40 - Touch Pen Functions (If the dongle is connected to the PC)
40 - Replacing Tips
40 - To Charge the Touch Pen
41 Cautions When Using a PC

42 SPECIFICATIONS

46 MAINTENANCE

46 Cleaning Your TV
46 - Screen, Frame, Cabinet and Stand
46 - Power Cord

47 TROUBLESHOOTING

48 IR CODES

49 EXTERNAL CONTROL DEVICE SETUP

49 RS-232C Setup
50 Communication Parameters
50 Command Reference List
51 Transmission / Receiving Protocol

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.

ENGLISH

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

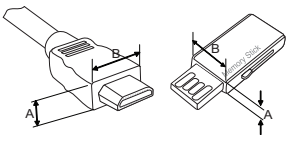
Check your product box for the following items. If there are any missing accessories, contact the local dealer where you purchased your product. The illustrations in this manual may differ from the actual product and item.

CAUTION

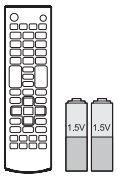
- Do not use any unapproved items to ensure the safety and product life span.
- Any damages or injuries by using unapproved items are not covered by the warranty.
- Some models appear to have a thin film on the screen. It is actually part of the screen, do not remove it.

NOTE

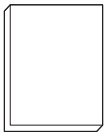
- The items supplied with your product may vary depending on the model.
- Product specifications or contents of this manual may be changed without prior notice due to upgrade of product functions.
- For an optimal connection, HDMI cables and USB devices should have bezels less than 10 mm (0.39 inches) thick and 18 mm (0.7 inches) width.
- Use an extension cable that supports USB 2.0 if the USB cable or USB memory stick does not fit into your TV's USB port.



*A ≦ 10 mm
*B ≦ 18 mm



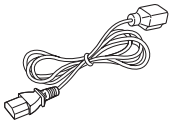
Remote Control, Batteries (AAA)
(Depending on model)
(See p.30)



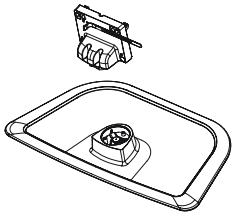
Owner's Manual



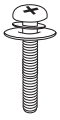
CD Manual (Included Pentouch Software and Functions)



Power Cord



Stand Body, Stand Base
(See p.15)



Stand Screws
7 EA, M5 x 16
(See p.15)

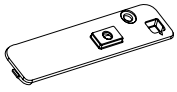


Power Cord Holder
(Depending on model)
(See p.19)



Eye-bolt & Wall bracket
2 EA
(See p.18)

(For 50PH470H)



Protection Cover
(See p.16)



CD (Specifications and Precautions for Using Pentouch)



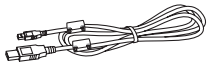
Touch Pen, Cradle
(See p.35)



New Tip
(See p.40)



Touch Pen Dongle
(See p.35)



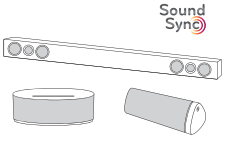
Charging Cable
(See p.40)

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.



AG-S3**
3D Glasses



LG Audio Device

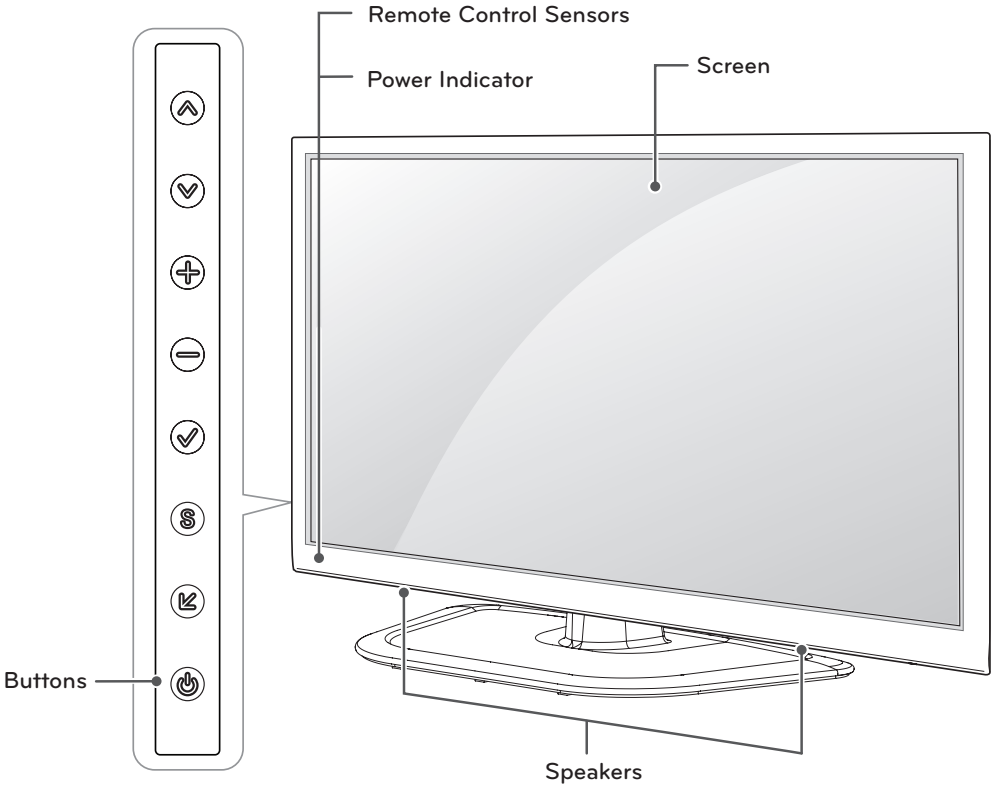


AN-TP300
Touch Pen, Cradle



AN-TD200
Touch Pen Dongle

Parts and Buttons



Button	Description
∧ / ∨	Scrolls through the saved channels.
+ / −	Adjusts the volume level.
✓	Selects the highlighted menu option or confirms an input.
S	Accesses the main menus, or saves your input and exits the menus.
↙	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.

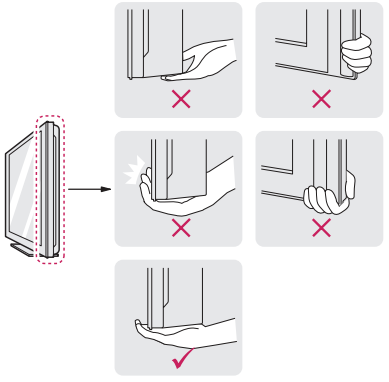
CAUTION

- Avoid touching the screen at all times, as this may result in damage to the screen.

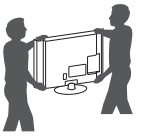
- It is recommended to move the TV in the box or packing material that the TV originally came in.
- Before moving or lifting the TV, disconnect the power cord and all cables.
- When holding the TV, the screen should face away from you to avoid damage.



- 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.

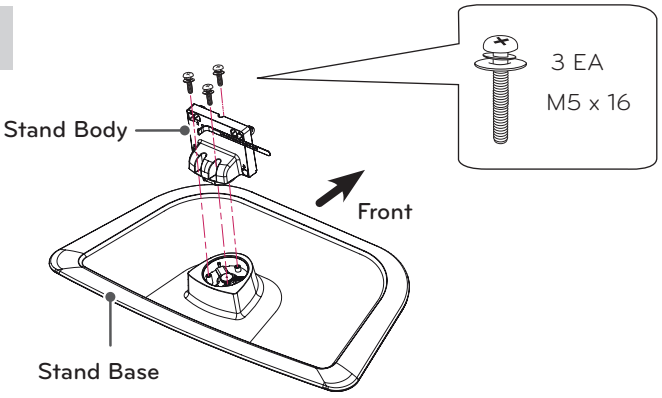
Attaching the Stand

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

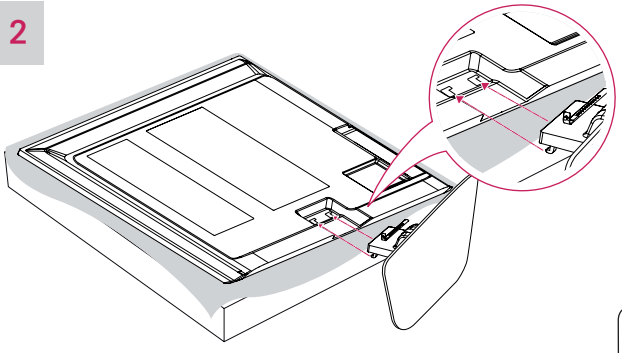
CAUTION

- 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.

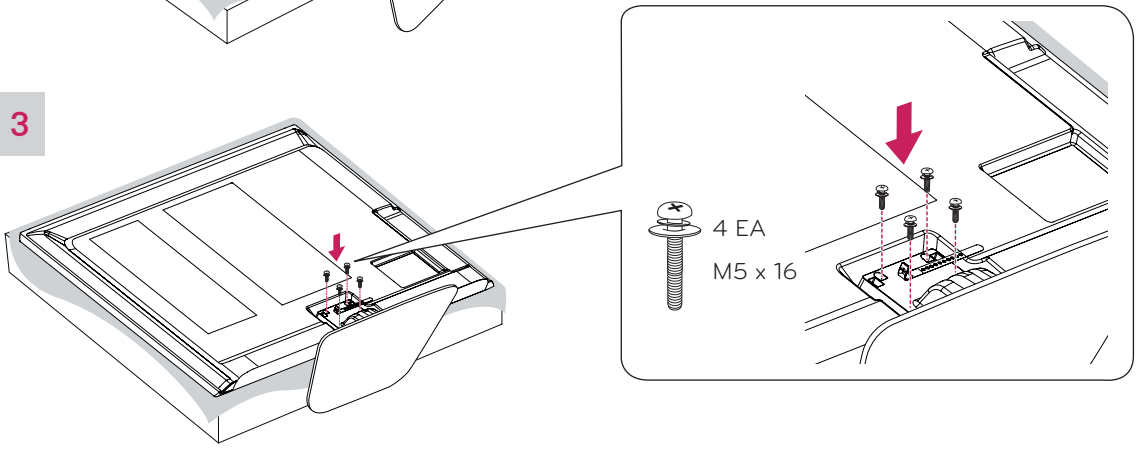
1



2



3



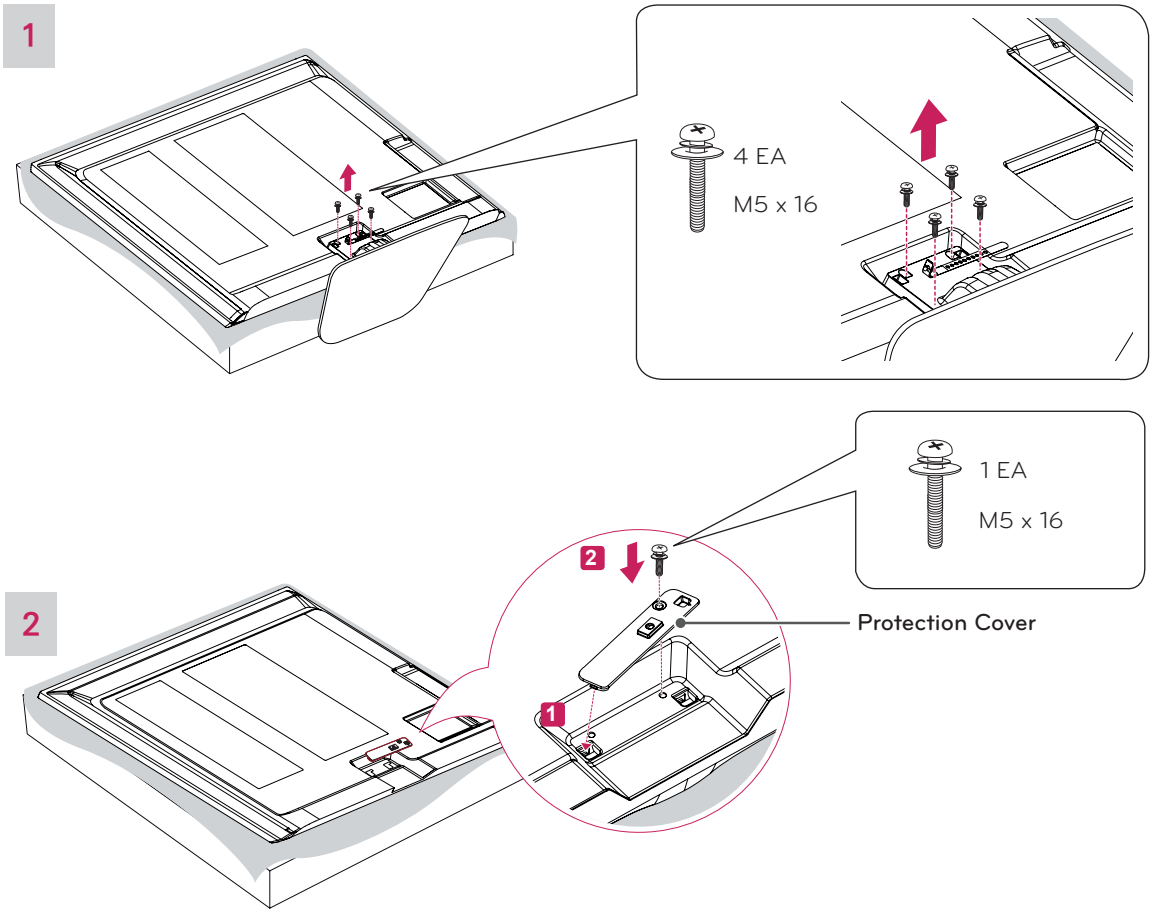
ENGLISH

To detach the stand,

For 50PH470H

NOTE

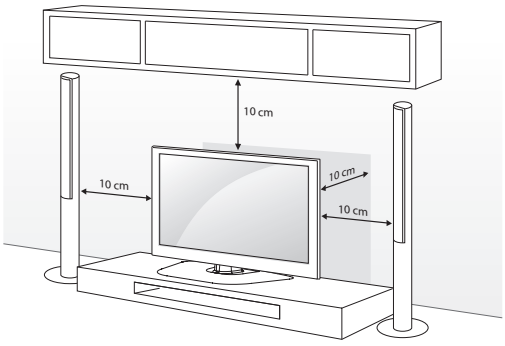
- Remove the stand before installing the TV on a wall mount by performing the stand attachment in reverse.
- When installing the wall mounting bracket, use the Protection cover. This will protect the opening from accumulating dust and dirt.



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.



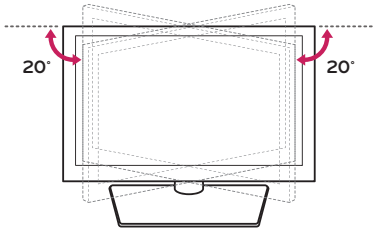
2 Connect the power cord to a wall outlet.

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

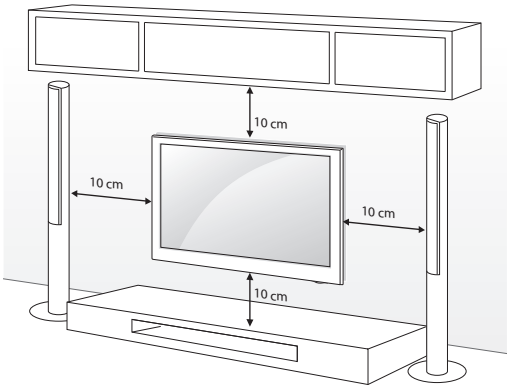


CAUTION

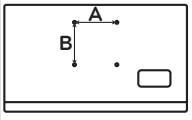
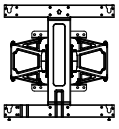
- When adjusting the angle of the TV, watch out for your fingers.
  - Personal injury may occur if hands or fingers are pinched. If the product is tilted too much, it may fall, causing damage or injury.

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	50PH470H 60PH670H
VESA (A x B) 	400 x 400
Standard screw	M6
Number of screws	4
Wall mount bracket (optional)	PSW420BX 

ENGLISH

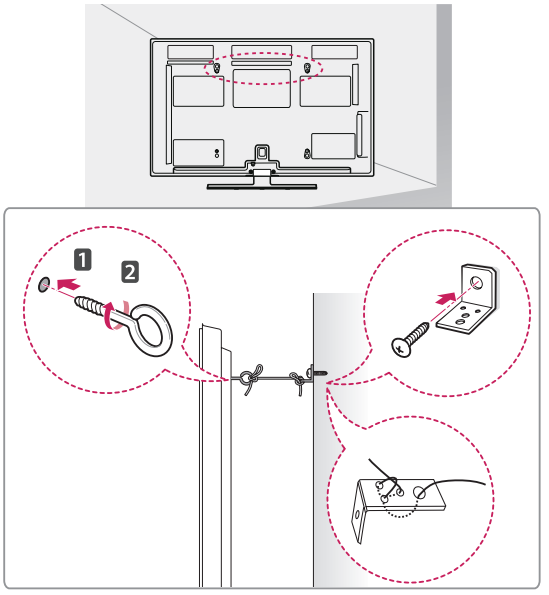
CAUTION

- Disconnect the power before moving or installing the TV.
- 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 only 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

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

Securing the TV to a wall



1 Insert and tighten the eye-bolts, or TV brackets and bolts on the back of the TV.
   - If there are bolts inserted at the eye-bolts position, remove the bolts first.

2 Mount the wall brackets with the bolts to the wall.
   Match the location of the wall bracket and the eye-bolts on the rear of the TV.

3 Connect the eye-bolts and wall brackets tightly with a sturdy rope.
   Make sure to keep the rope horizontal with the flat surface.

CAUTION

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

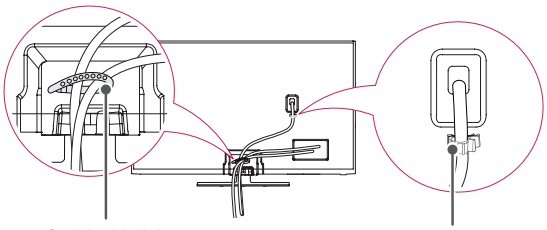
NOTE

- Use a platform or cabinet that is strong and large enough to support the TV securely.

Tidying Cables

1 Install the power cord holder and power cord. It will help prevent the power cable from being removed by accident.

2 Gather and bind the cables with the cable holder.



Cable Holder

Power Cord Holder
(Depending on model)

CAUTION

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

NOTE

- If you install the TV on a wall, please detach the cable holder from stand body and attach it to the protection cover or to the back cover to help keep the cables organize.

MAKING CONNECTIONS

- This section uses illustrations of the **60PH670H**.

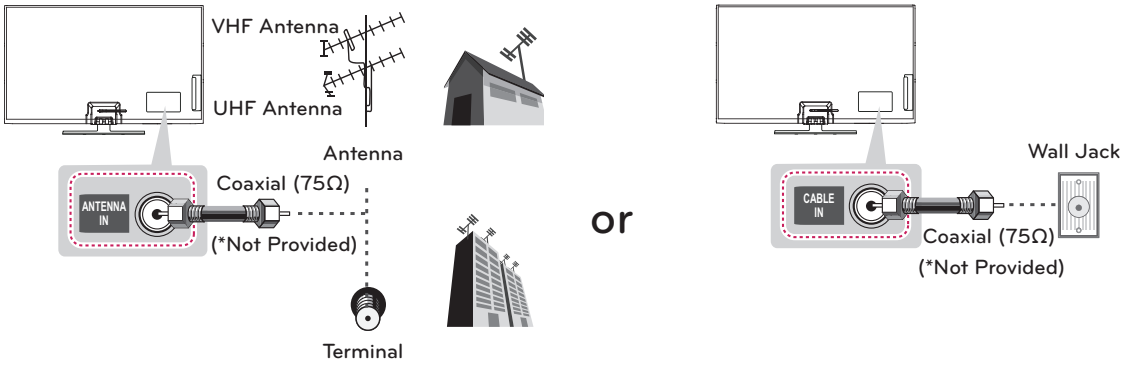
You can connect various external devices to the TV. Supported external devices are: HD receivers, DVD players, VCRs, audio systems, USB storage devices, PC, gaming devices, and other external devices. For more information on external device's connection, refer to the manual provided with each device.

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 on 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.

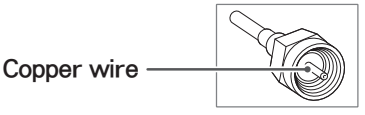
Connecting to an Antenna or Cable

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.



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, please purchase a signal amplifier and install 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, AAC, HE-AAC

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Connecting to a HD Receiver, DVD Player or VCR

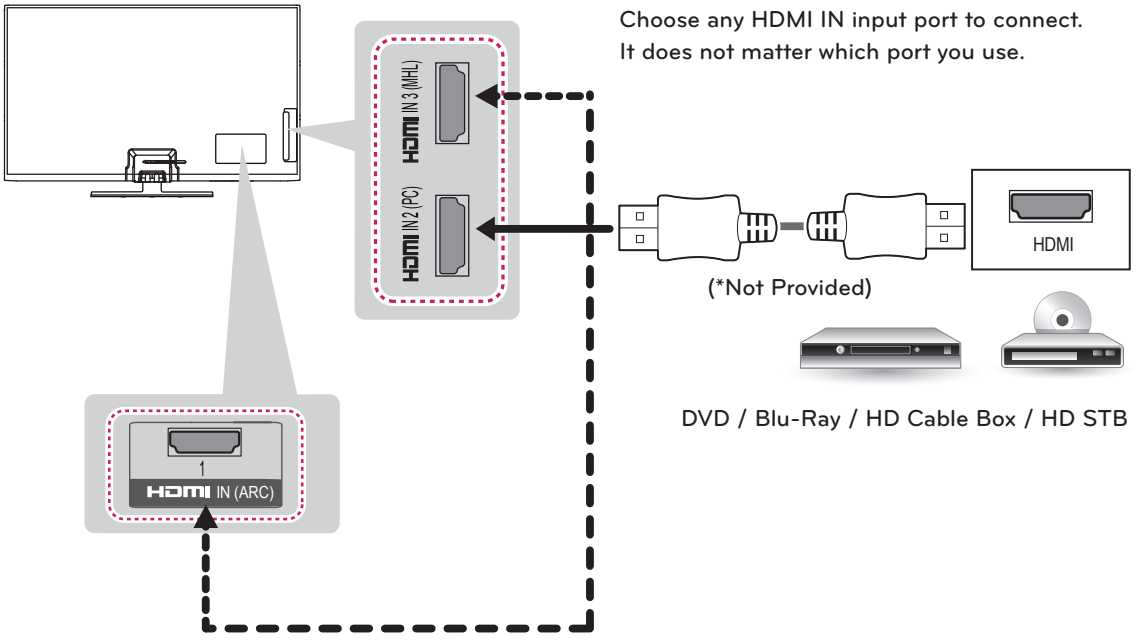
Connect a HD receiver, DVD Player or VCR to the TV and select an appropriate input mode.

HDMI Connection

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

NOTE

- Use the latest High Speed HDMI™ Cable that supports CEC (Customer Electronics Control) function.
- High Speed HDMI™ Cables are tested to carry an HD signal up to 1080p and higher.
- HDMI Audio Supported Format: DTS (44.1 kHz/ 48 kHz), AC3 (32 kHz/ 44.1 kHz/ 48 kHz), L-PCM (32 kHz/ 44.1 kHz/ 48 kHz/ 96 kHz/ 192 kHz)



ARC (Audio Return Channel)

- When connected with a high-speed HDMI cable, digital audio can be sent to a compactible 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.

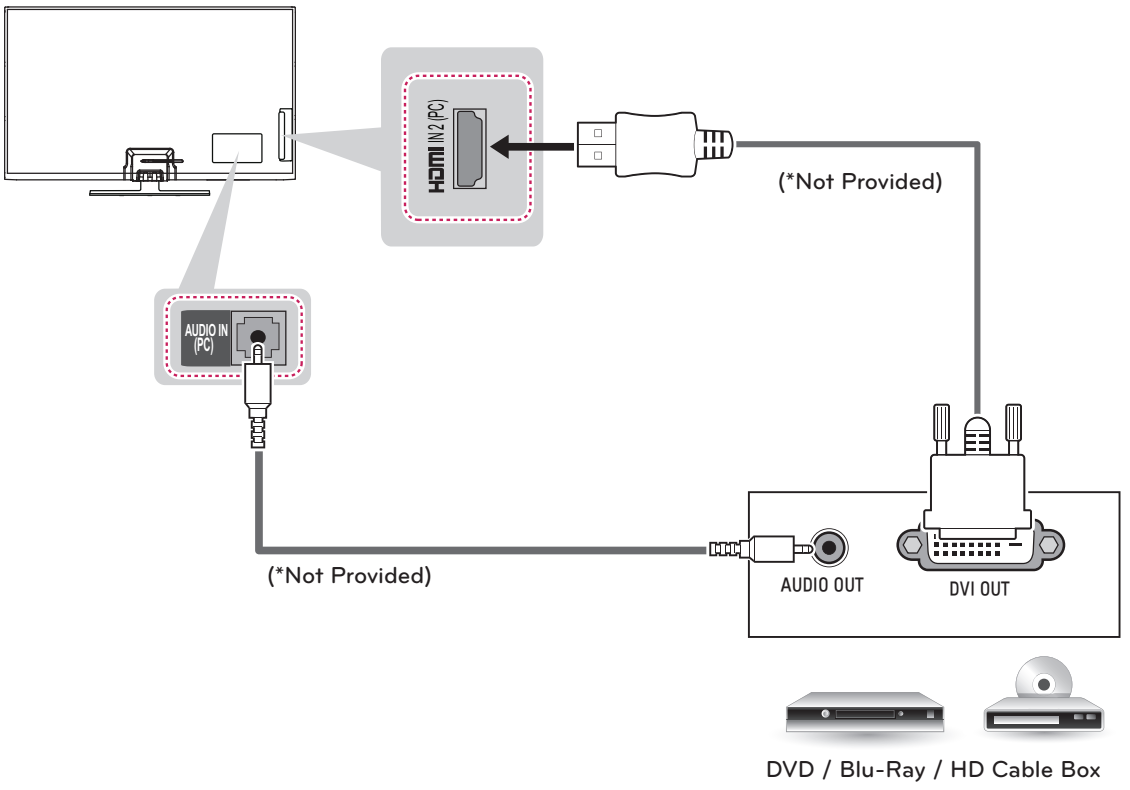
ENGLISH

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.

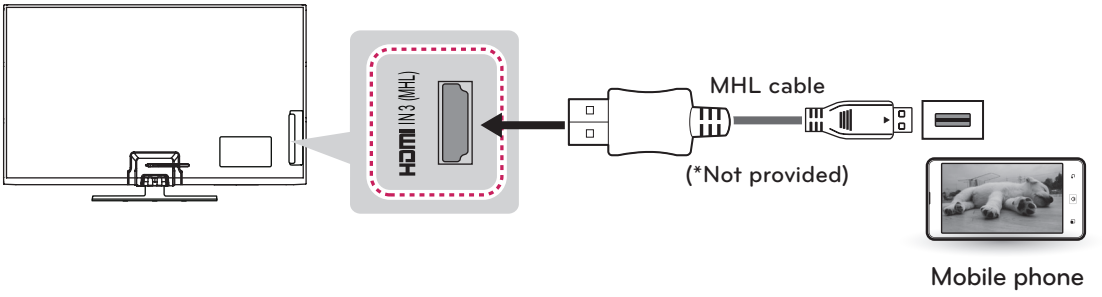


Connecting to a Mobile Phone

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.
- The MHL passive cable is needed to connect the TV and a mobile phone.

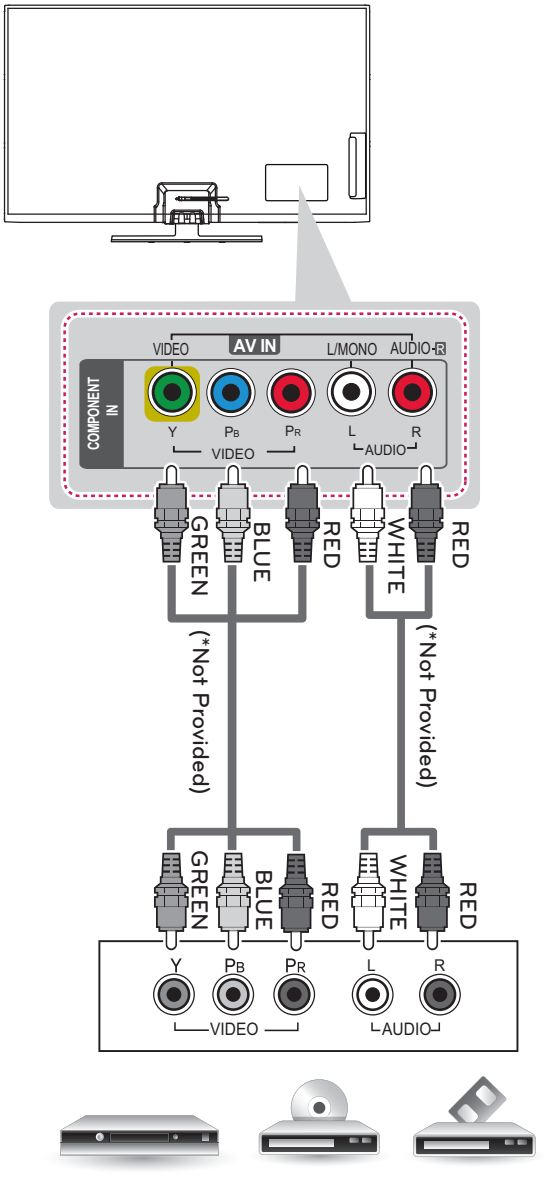


Component Connection

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 case the image to display in black and white or with distorted color.
- **Check to ensure each cable is matched with the corresponding color connection.**



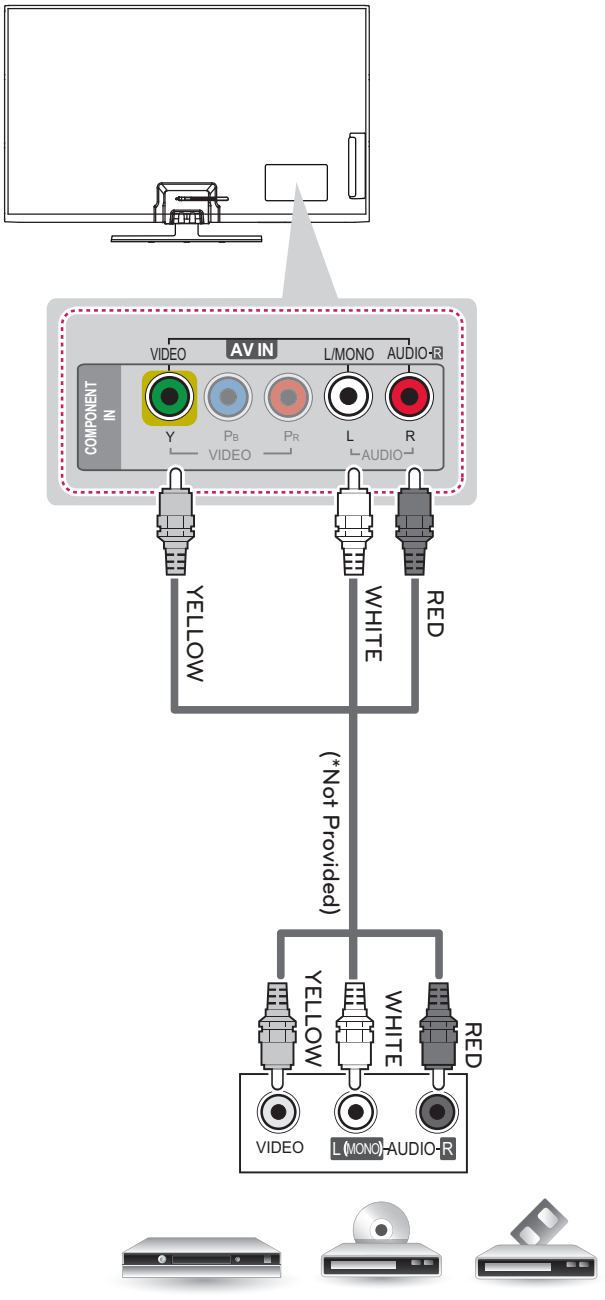
DVD / Blu-Ray / HD Cable Box / VCR

Composite Connection

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

NOTE

- If you have a mono VCR, connect the audio cable from the VCR to the AUDIO L/MONO jack of the TV.



VCR / DVD / Blu-Ray / HD Cable Box / VCR

Connecting to a PC

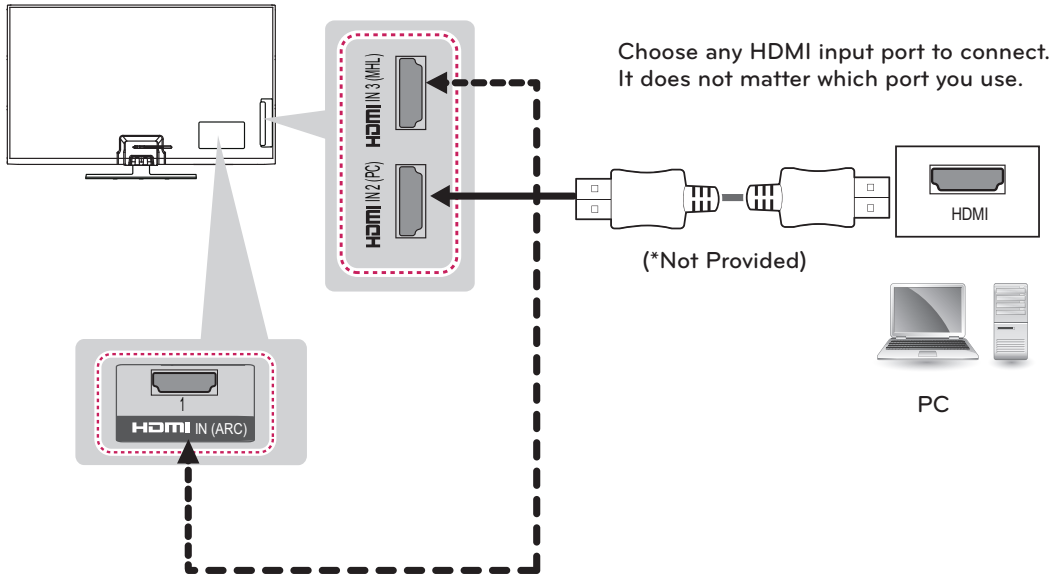
NOTE

- It is recommended to use the 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.
- When using the HDMI/DVI cable, Single link is only supported.

HDMI Connection or DVI to HDMI Connection

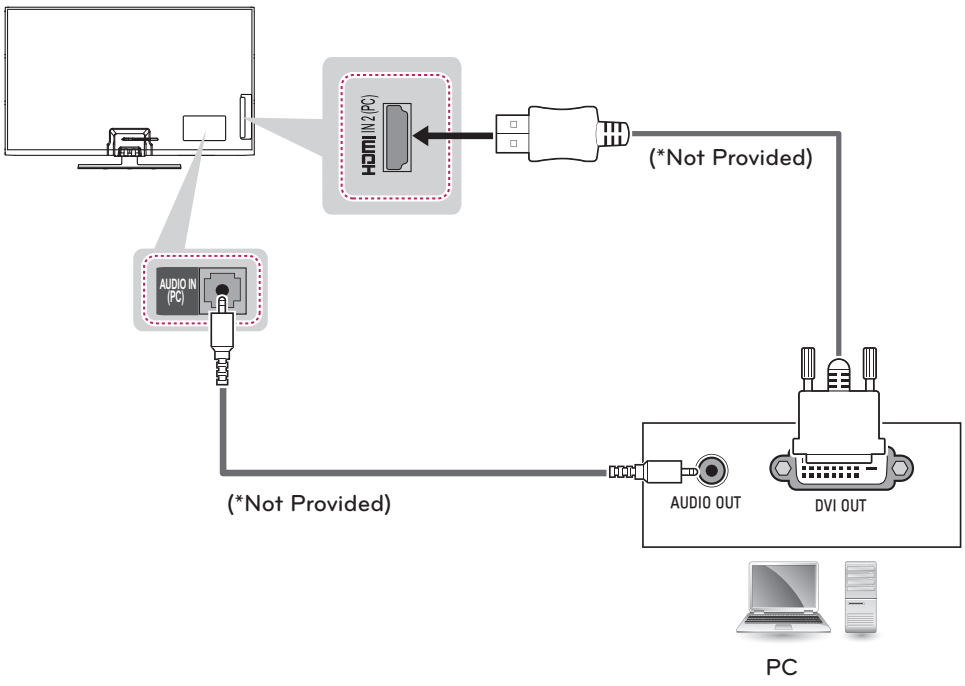
Choose method A, B or C to make connection

Method A: HDMI Connection

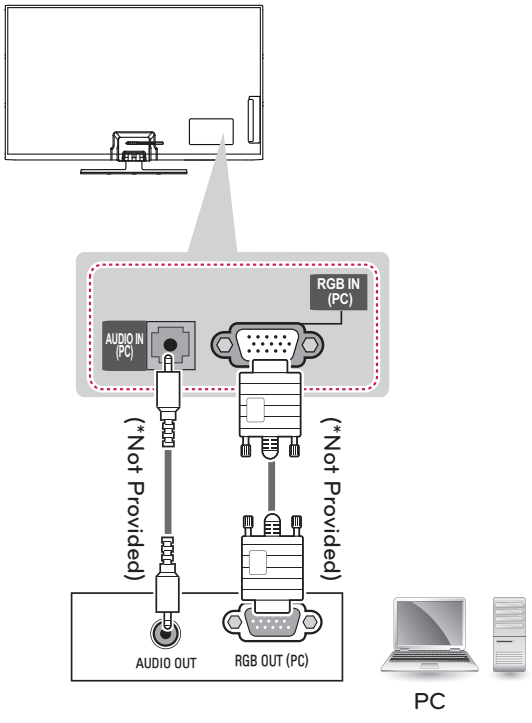


ENGLISH

Method B: DVI to HDMI Connection



Method C: RGB Connection



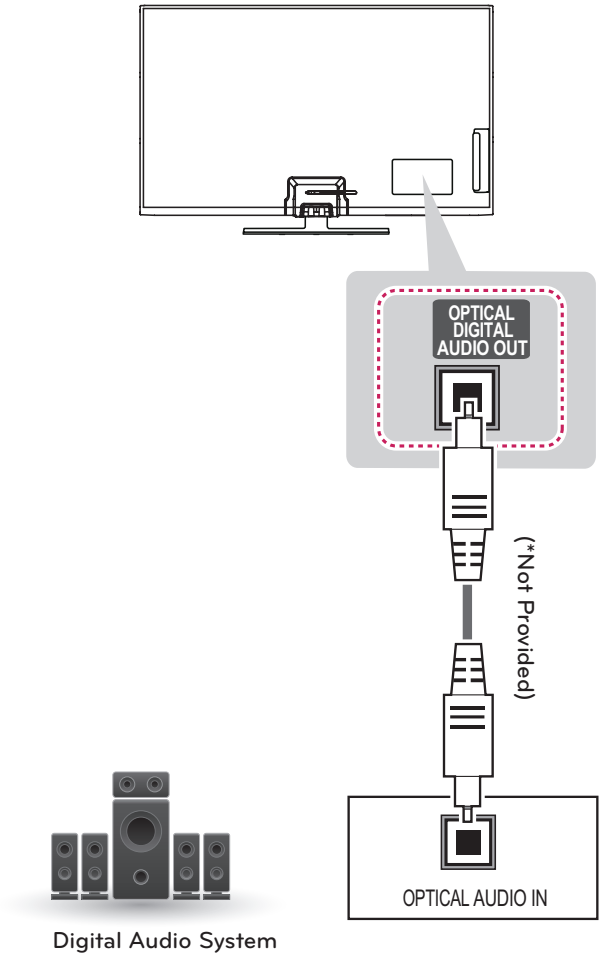
ENGLISH

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.



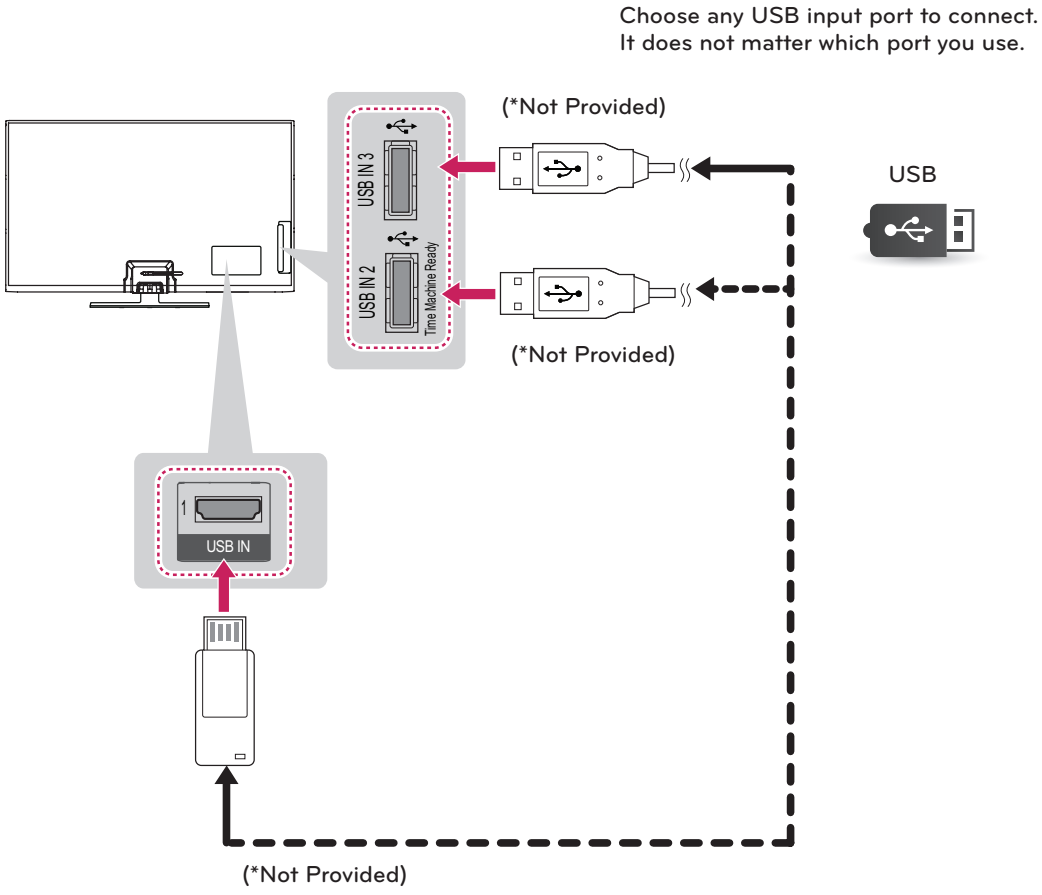
Connecting a USB Device

- This section uses illustrations of the **60PH670H**.

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

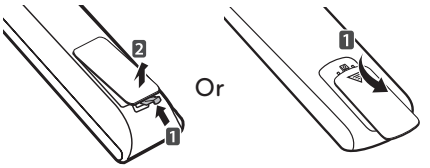
NOTE

- To use the Time Machine II function, make sure that your USB storage device is connected to the USB IN port labeled 'Time Machine Ready'.



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, insert 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.

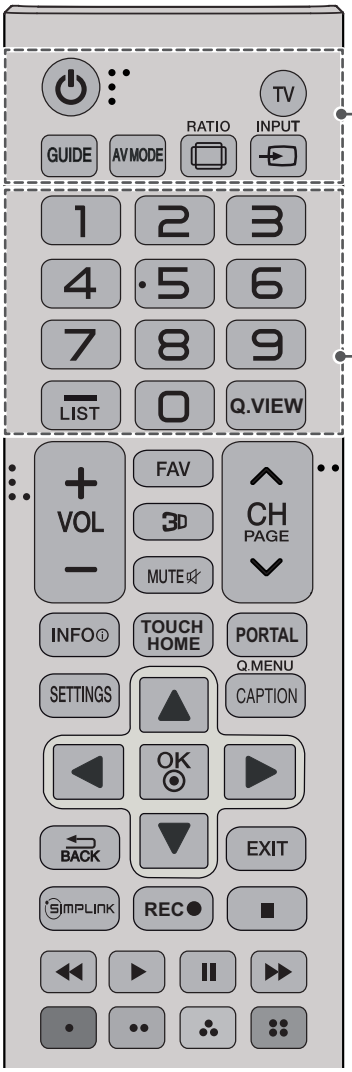


CAUTION

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

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

(Depending on model)



(POWER)
Turns the TV on or off.

TV
Returns to the last TV channel.

GUIDE
Displays the program event according to time scheduler.

AV MODE
Selects an AV mode.

RATIO
Resizes an image.

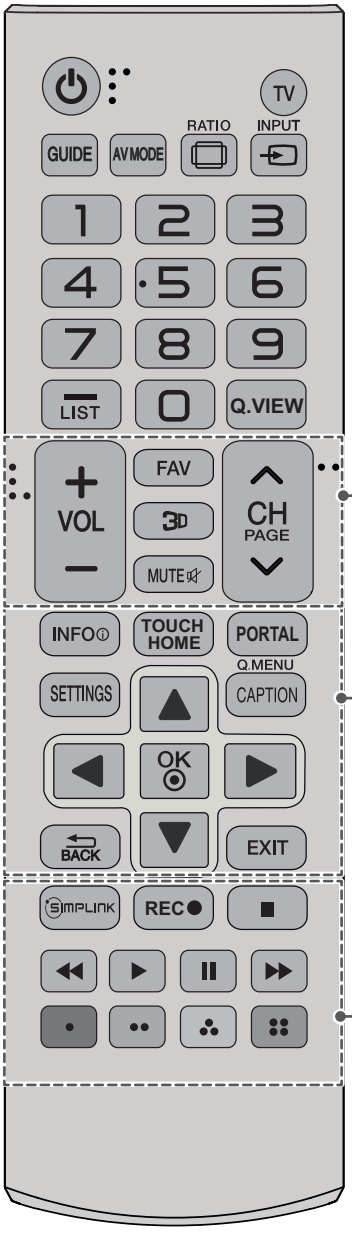
INPUT
Changes the input source. Turns the TV on.

Number button
Enters numbers.

LIST
Accesses the saved channel list.

- (Dash)
Inserts a dash between numbers such as 2-1 and 2-2.

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



+ VOL −
Adjusts the volume level.

FAV
Accesses your favorite channel list.

3D
Used for viewing 3D video.

MUTE
Mutes all sounds.

∧ CH ∨
Scrolls through the saved channels.
∧ PAGE ∨
Moves to the previous or next screen.

INFO ⓘ
Shows information on the current program.

TOUCH HOME
Enters Touch Home when the dongle is connected to TV.
If you connect the dongle to PC, you can use Pentouch PC functions.

PORTAL
Shows the list of Apps.

Q. MENU
Accesses the quick menu.

SETTINGS
Accesses the main menu.

CAPTION
Activates or deactivates the subtitles.

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.

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

SIMPLINK
Accesses the AV devices connected to the TV;
Opens the SIMPLINK menu.

REC ●
Adjusts Time Machine II mode.

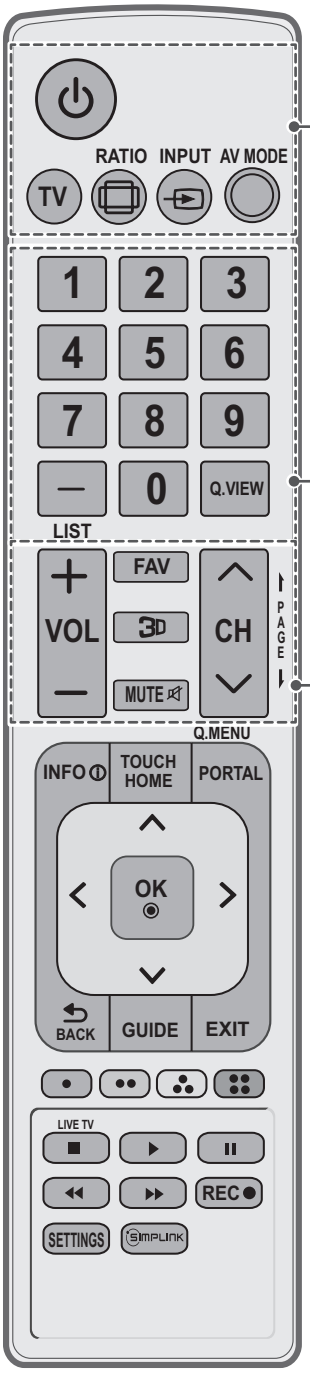
Control buttons (■, ▶, ❚❚, ◀◀, ▶▶)
Controls the Premium contents, Smart Share menus, or the SIMPLINK compatible devices (USB,SIMPLINK).

❚❚ (Freeze)
Freezes the current frame.
(Not supported when using USB Mode and Simplink).

Color buttons (: Red, : Green, : Yellow, : Blue)
These access special functions in some menus.

ENGLISH

(Depending on model)



(POWER)
Turns the TV on or off.

TV
Returns to the last TV channel.

RATIO
Resizes an image.

INPUT
Changes the input source. Turns the TV on.

AV MODE
Selects an AV mode.

Number button
Enters numbers.

LIST
Accesses the saved channel list.

- (Dash)
Inserts a dash between numbers such as 2-1 and 2-2.

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

+ VOL –
Adjusts the volume level.

FAV
Accesses your favorite channel list.

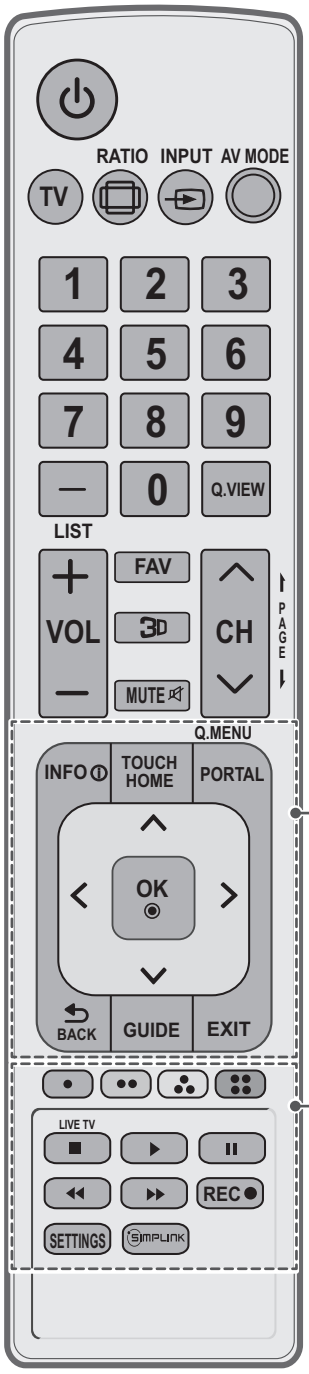
3D
Used for viewing 3D video.

MUTE
Mutes all sounds.

∧ CH ∨
Scrolls through the saved channels.

PAGE
Moves to the previous or next screen.

ENGLISH



INFO ⓘ
Shows information on the current program.

TOUCH HOME
Enters Touch Home when the dongle is connected to TV.
If you connect the dongle to PC, you can use Pentouch PC functions.

PORTAL
Shows the list of Apps.

Q. MENU
Accesses the quick menu.

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 (■: Red, ■: Green, ■: Yellow, ■: Blue)
These access special functions in some menus.

Control buttons (■, ▶, ❚❚, ◀◀, ▶▶)
Controls the Premium contents, Smart Share menus, or the SIMPLINK compatible devices (USB,SIMPLINK).

❚❚ (Freeze)
Freezes the current frame.
(Not supported when using USB Mode and Simplink).

LIVE TV
Returns to the LIVE TV.

REC ●
Adjusts Time Machine II mode.

SETTINGS
Accesses the main menu.

SIMPLINK
Accesses the AV devices connected to the TV;
Opens the SIMPLINK menu.

ENGLISH

WATCHING TV

Turning the TV on for the first time

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

1 Connect the power cord to a power outlet.

2 In Standby mode, press the power button on the remote control to turn the TV on.

The Initial setting screen appears when you turn the TV on for the first time.

NOTE

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

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

Language Selection	Select a language to display.
⇩	
Environment Selection	Select **Home** for the home environment.
⇩	
Time Zone Setting	Select the time zone and daylight saving options. (Depending on country.)
⇩	
Network Connection	Set your network to enable network-related features on the TV.
⇩	
Wireless touch pen setting	Connect wireless touch pen dongle to the USB port of the TV.
⇩	
Auto Tuning	Scans and saves available channels automatically.
⇩	
Setting is complete	Confirms the setting options.

NOTE

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

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

NOTE

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

5 To turn the TV off, press the power button on the remote control.

ENGLISH

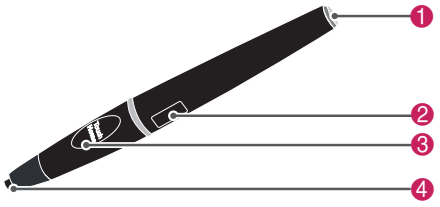
PENTOUCH

Before Using

NOTE

- This product can be connected to a TV or PC. You cannot connect this product to both the TV and PC simultaneously, so please remove either of their wireless dongles.
- In order to use this product on a PC, you must install the Pentouch program as described in this manual. (If using a TV, the Pentouch program is not applicable.)
- Pairing is connecting the Touch Pen and a dongle. After pairing, insert the dongle into the USB port of a TV or PC to use the Touch Pen.
- To use the Touch Pen with your PC, connect the dongle to your PC and connect the PC to the TV with an RGB or HDMI cable.
- To use the Touch Pen in WiDi mode, connect the dongle to your TV.

Touch Pen



No.	Description
1	Power button / LED indicator
2	USB charging port
3	Touch Home button
4	Touch pen tip switch

1 Powering on

→ Press the Power button once.
The indicator LED of the pen will turn green.

2 Powering off

→ Press and hold the Power button for over 3 seconds and release it.
The indicator LED will turn off.

3 Power-saving

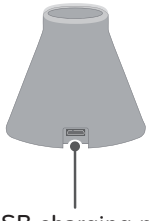
→ Idle for one minute (LED: green), after idle period (LED: turned off)

4 Charging Mode

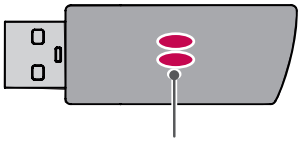
→ Charging (LED: red), charging completed (LED: green)
If the Touch Pen needs charging, the red light will blinks.

5 After the Touch Pen has been charged for 1.5 hours, you can use it for approximately two hours.

Cradle



Dongle



NOTE

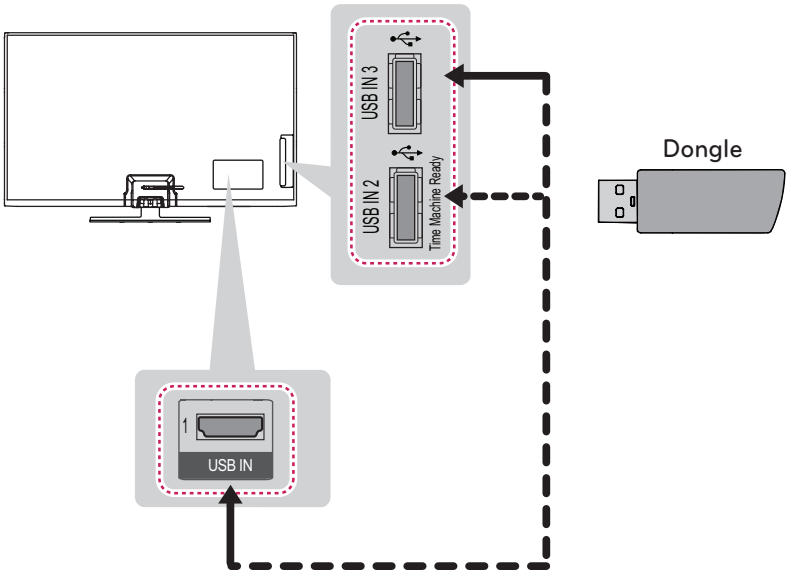
- For more information, please refer to the CD manual.
- When you leave your touch pen unused for a certain period of time (10 minutes), the pen automatically powers off.

ENGLISH

Using the Touch Pen with a TV

- This section uses illustrations of the **60PH670H**.

1. Connect the dongle to the USB port of the TV.



2. If the dongle is connected correctly, the dongle's indicator LED will turn on and a message will appear on the TV to indicate that the dongle is connected.

3. Follow the steps below to pair the dongle with the Touch Pen.

1 Check whether the red LED of the paired dongle is turned on.

2 Place the Touch Pen within 10 cm of the dongle.

3 Press the Power button of the Touch Pen once.

4 The indicator LED of the Touch Pen will turn green when pairing is complete.

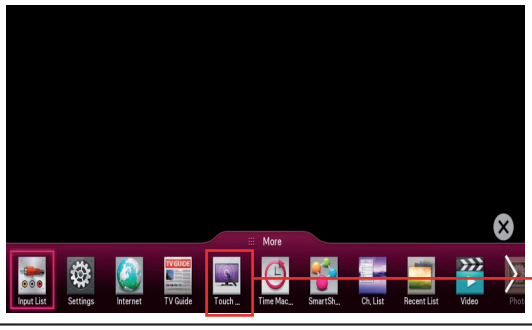
NOTE

- For a newly purchased or replaced Touch Pen, you need to pair it with the dongle again.
- If the indicator LED is turned off, pairing has not been successful. Please try pairing again.
- Once paired, the indicator LED will turn green when you press the power button.
- Pairing is not possible when the battery is low.
- If the Touch Pen does not work, reset the Touch Pen (See p.40) and try pairing again.

ENGLISH

4. Run the TV Touch program as shown below.

1 Select one of the three ways below or press the TOUCH HOME button on the remote control to start to use the touch function.



Touch Home

Touch the TV screen with the Touch Pen once, and select Touch Home when the picture below appears.

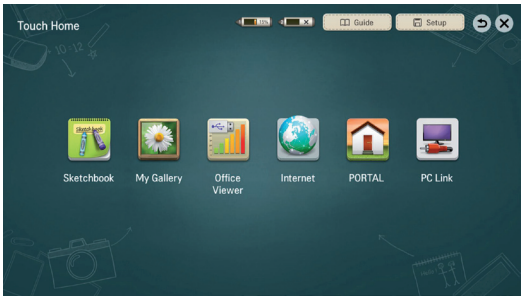


Touch Home

Press the Touch Home button on the Touch Pen.



2 The Pentouch program will start as below.



NOTE

- For details of the Pentouch functions, see the CD manual.
- Connect a wired/wireless HID-compliant mouse (sold separately) or keyboard (sold separately) to the USB port to make Internet use easier.

ENGLISH

Using the Touch Pen with a PC

The Touch Pen acts as a mouse when using Microsoft Windows.
The Touch Home button on the Touch Pen works in the same way as the right-click function on a mouse.

Recommended Computer Specifications

CPU: Dual-Core 2 GHz or better

Memory: 1 GB or more (2 GB or more is recommended.)

HDD: 500 MB or more

Display: Graphics card with 1024 x 768 for 50PH470H,
1920 x 1080 for 60PH670H models via an RGB or HDMI output port.

* A Windows 7 OS that supports multi touch function is recommended.

Supported Operating System	
Windows XP	32 bit
Windows Vista Windows 7	32 bit
	64 bit

Windows 7 Starter Edition and Home Basic Edition are not supported.

NOTE

- You must log in as an administrator to install or remove the program.
- Ensure no applications are running before installing the Pentouch program.
- Ensure the existing installation program is removed before installing the updated version.

Installing the Pentouch Program

1 Insert the enclosed installation CD into the PC and install the program.

2 Check the Language settings and its progress during the installation process.

Restart your computer after the installation.

3 Insert the dongle into the USB port of the PC.
The dongle detects the device driver and automatically installs the driver.

4 Check if the indicator LED on the dongle turns red, and then power on the Touch Pen within 10 cm from the dongle. If the indicator LED on the Touch Pen turns green, it means that the Touch Pen is ready for use.

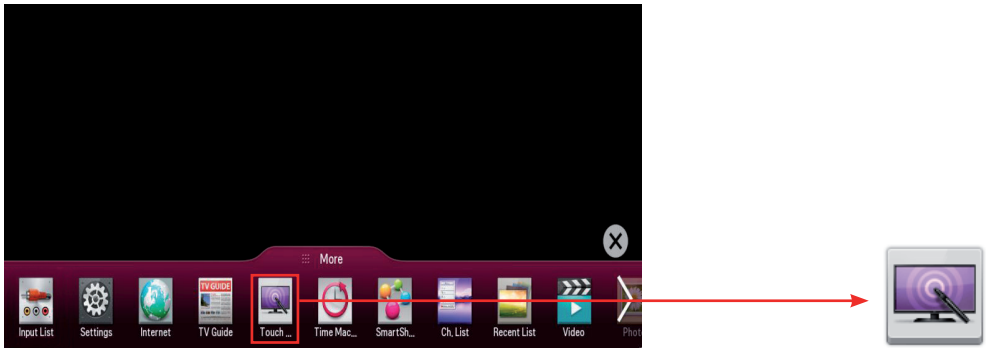
5 Connect PC and TV with RGB or HDMI cable.

NOTE

- The dongle will not be detected if the Pentouch program is not installed.
- If the device pairing fails, insert the dongle into another USB port and check whether it is recognized.

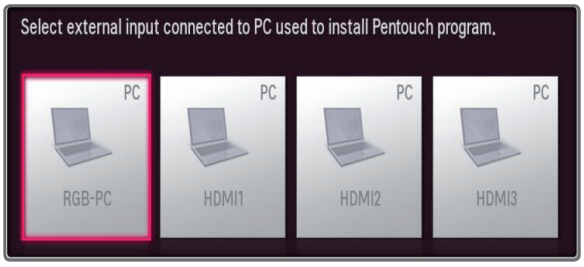
6 Run the touch monitor function on the TV as shown below.

Select Touch Home in the portal menu as shown below or press the TOUCH HOME button on the remote control.



Touch Home

Select the input connected to the PC.



For laptops, see the Laptop Owner's Manual and set the laptop to display its screen on the TV screen.

Method 1 :
On your laptop, press the "Fn" + "switch screen" key on the keyboard to display the computer screen on your TV screen,
then set the display resolution to 1024 x 768 for 50PH470H and 1920 x 1080 for 60PH670H models.
* The switch screen key of the laptop may be subject to change by the manufacturer.

LG	SAMSUNG	TG	HP	TOSHIBA	Sony
Fn+F7	Fn+F4	Fn+F7	Fn+F5	Fn+F5	Fn+F7

Method 2 :
Open the control panel of the graphics card on your computer.
Set [Display Mode] to the [Single Display] mode, then select [LG TV] for the display to use.
* Set the display resolution to1024 x 768 for 50PH470H and 1920 x 1080 for 60PH670H models.

NOTE

- The Pentouch function is not supported in [Extend these displays] mode. Display the same screen on both the laptop and the TV screen, or display it only on the TV.

ENGLISH

Using the Touch Pen

Things to Know Before Pairing

- This program allows pairing of up to two pens and one dongle.
- If you want to use two pens simultaneously, they must be paired with your PC one at a time.
- Pairing is not possible if a paired pen is currently in use.
- If you pair a new Touch Pen when two pens have already been paired with your PC, all the previous pairing data will be deleted.
- You cannot use a Touch Pen when it is charging.
- If the Touch Pen does not work, reset the Touch Pen. Then, turn it on and try pairing again within 10 cm from the dongle.

Removing a Touch Pen in Use (How to reset a Touch Pen)

1. Press the Touch Home button on the Touch Pen and check that the red LED blinks once.
2. Press and hold the Touch Home and Power buttons on the Touch Pen simultaneously for 10 seconds.
3. Release them after 10 seconds, the red light will blink three times and the reset is completed.

Touch Pen Functions (If the dongle is connected to the PC)

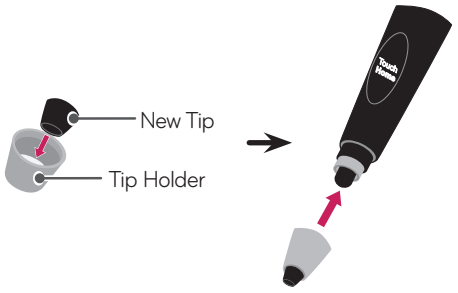
Once paired, you can use the Touch Pen in the following ways.

1. Pressing the Touch Home button while using the Touch Pen
→ In the Pentouch program: Shows or hides the toolbar of the Sketchbook feature.
→ In Windows: Works in the same way as the right-click function.
Point the Touch Pen toward what you want to right-click and press the button.
2. The double-click function may not work as intended in Windows XP or Windows Vista.
Use the Touch Home function (right-click).
3. The Touch Pen works in the same way as the mouse works in Windows.

ENGLISH

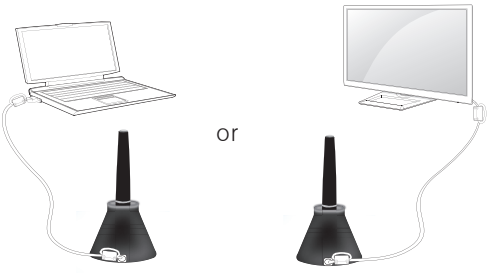
Replacing Tips

Insert a new tip to the separated tip holder and assemble the Touch Pen.

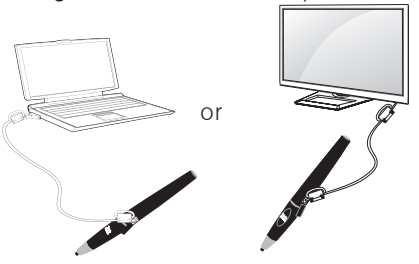


To Charge the Touch Pen

1. To charge the Touch Pen on the cradle



2. To charge the Touch Pen directly



NOTE

- With the TV, charging begins when the TV power is switched on. Charging is not possible in standby mode.

Cautions When Using a PC

- The double-click function may not work as intended in Windows XP and Vista because these operating systems do not use touch drivers.
- The Pentouch operation may become slow depending on the computer's performance.
- The screen size may change if you disconnect the computer's output port and connect it again. If this happens, set the computer resolution again.
- If nothing is shown on the TV and the laptop screen when you press the switch screen key (Fn + manufacturer-specified key), try pressing the key again.
- The TV screen size may become smaller when you press the switch screen key (Fn + manufacturer-specified key). If this happens, adjust the resolution again.
- Changing the desktop icon properties in Windows 7 may affect the Pentouch program.
- It is recommended not to run other applications while using the Pentouch program.
- If the point you touch on the TV screen using the touch pen and the point indicated as touched on the computer screen do not match when the computer and TV are connected by a PC signal (RGB) cable, use the TV remote control to select [SETTINGS] → [Picture] → [Screen] (RGB-PC), then select [Auto Config.] to adjust the screen.
- If the PC and TV are only connected by a PC (RGB) signal cable, there will be no sound from the TV. Please connect the PC and the TV with a PC audio cable as well.
- The Play Video function in Photo Editor may not work as intended, depending on the codecs installed on your computer.
- Eraser function could be slower if drawing objects are overlapped exceed program performance depends on PC environment.
- If you want to open programs with a single click in Window XP or Vista, on your PC, go to Start → Control Panel → Folder Options and select "Single-click to open an item (point to select)".
- If your PC is running Windows XP, the virtual keyboard will only support English.
- When changing to the Pentouch mode, or when changing the resolution in Pentouch mode for RGB input signals, images may not be displayed properly for a while due to auto adjustment.
- Make sure that there are not many metal obstacles between a pen and dongle. Otherwise, the function may not work properly.
- The Pentouch function may not work normally where the TV screen is too bright due to light from another light source.
- For Windows 7, if the multi-touch gesture option is disabled, the second pen may not work properly.

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 - 40 °C
	Operating Humidity	Less than 80 %
	Storage Temperature	-20 - 60 °C
	Storage Humidity	Less than 85 %

MODELS		50PH470H (50PH470H-SA)
Dimensions (Width x Height x Depth)	With stand	1,168 mm x 755.4 mm x 292.7 mm
	Without stand	1,168 mm x 698.6 mm x 57 mm
Weight	With stand	25.4 Kg
	Without stand	24.0 Kg
Current Value / Power Consumption		2.75 A / 275 W

MODELS		60PH670H (60PH670H-SA)
Dimensions (Width x Height x Depth)	With stand	1,386.8 mm x 874 mm x 340 mm
	Without stand	1,386.8 mm x 821.7 mm x 57 mm
Weight	With stand	37.7 Kg
	Without stand	34.5 Kg
Current Value / Power Consumption		3.9 A / 390 W

HDMI (DTV) supported mode

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

Component supported mode

Resolution	Horizontal Frequency (kHz)	Vertical Frequency (Hz)
720 x 480i	15.73 15.73	59.94 60.00
720 x 480p	31.47 31.50	59.94 60.00
720 x 576i	15.625	50.00
720 x 576p	31.25	50.00
1280 x 720p	37.50 44.96 45.00	50.00 59.94 60.00
1920 x 1080i	28.125 33.72 33.75	50.00 59.94 60.00
1920 x 1080p	26.97 27.000 33.71 33.75 56.25 67.432 67.500	23.976 24.000 29.97 30.000 50.00 59.94 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

RGB(PC), HDMI (PC) supported mode

Resolution	Horizontal Frequency (kHz)	Vertical Frequency (Hz)
640 x 350	31.468	70.09
720 x 400	31.469	70.09
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
1280 x 1024	63.981	60.020
1920 x 1080	67.5	60.00

For 60PH670H

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

- Because band channel used by the country could be different, the user can not change or adjust the operating frequency and this product is set for the regional frequency table.
- Contains FCC ID: BEJWN8122E1
- Contains IC: 2703H-WN8122E1

Bluetooth module (BM-LDS401) specification

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

- Contains FCC ID: BEJLDS401
- Contains IC: 2703H-LDS401

ENGLISH

3D supported mode

- Video, which is input as HDMI,USB,DLNA, is switched into the 3D screen automatically. (This function does not support all of the 3D video format. The specific 3D video format is not switched into the 3D screen automatically.)

3D supported mode automatically				
Input	Signal	Horizontal Frequency (kHz)	Vertical Frequency (Hz)	Playable 3D video format
HDMI	1080p	54.00	24	F/P, L/A
		67.50	30	
		27.00	24	T/B, S/S
		33.75	30	
		67.50	60	
	1080i	67.50	60	F/P, F/A
		33.75		S/S, T/B, S/S Full
	720p	90.00		F/P, L/A
		45.00		S/S, T/B, S/S Full
	480p	63.00		F/P, L/A
		31.50		T/B, S/S, S/S Full
USB	1080p	33.75	30	S/S, T/B, C/B, MPO(Photo)
DLNA				

S/S : Side by Side , T/B : Top & Bottom, F/P : Frame Packing, F/A : Field Alternative,
L/A : Line Alternative, S/S Full :Side by Side Full, C/B : Checker Board,
R/I : Row Interleaving, C/I: Column Interleaving, F/S : Single Frame Sequential

3D supported mode manually		
Input	Signal	Playable 3D video format
TV	-	2D to 3D, S/S, T/B
ATV(CVBS)	-	
Component	-	
HDMI-PC	1080p	2D to 3D, S/S, T/B, C/B, R/I, C/I (60Hz : F/S) — For 60PH670H
	Others	2D to 3D, S/S, T/B
HDMI-DTV	Interlace	2D to 3D, S/S, T/B
	Progressive	2D to 3D, S/S, T/B, C/B, R/I, C/I (60Hz : F/S)
USB / DLNA (Movie)	704 x 480p (Over)	2D to 3D, S/S, T/B, C/B, R/I, C/I (60Hz : F/S)
	704 x 480i (Over)	2D to 3D, S/S, T/B
	704 x 480 (Under)	2D to 3D
USB / DLNA (Photo)	320 x 240 (Over)	2D to 3D, S/S, T/B
	320 x 240 (Under)	2D to 3D
Miracast™ / WiDi	1024 x 768p	2D to 3D, S/S, T/B
	1280 x 720p	
	1920 x 1080p	
	Others	2D to 3D
RGB-PC	1024 x 768	
	1360 x 768	2D to 3D, S/S, T/B — For 60PH670H
	1920 x 1080	
	Others	2D to 3D

S/S : Side by Side , T/B : Top & Bottom, F/P : Frame Packing, F/A : Field Alternative,
L/A : Line Alternative, S/S Full :Side by Side Full, C/B : Checker Board,
R/I : Row Interleaving, C/I: Column Interleaving, F/S : Single Frame Sequential

MAINTENANCE

Cleaning Your TV

Clean your TV regularly to keep the best performance and to extend the product lifespan.

CAUTION

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

Screen, Frame, Cabinet and Stand

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

CAUTION

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

Power Cord

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

TROUBLESHOOTING

General

Problem	Solution
Cannot control the TV with the remote control.	• 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.	• Check if the product is turned on. • Check if the power cord is connected to a wall outlet. • Check if there is a problem in the wall outlet by connecting other products.
The TV turns off suddenly.	• Check the power control settings. The power supply may be interrupted. • Check if the Auto 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.
When connecting to the PC, 'No Signal' or 'Invalid Format' is displayed.	• Turn the TV off/on. • Reconnect the RGB/HDMI cable. • Restart the PC with the TV on.

Pentouch_When the dongle is connected to PC

Problem	Solution
The touch pen does not work.	• Check that you used the remote control to enter Pentouch mode. • Check that the Pentouch dongle is connected to the computer and the red LED is on. • Press the ⏻ **(POWER)** button on the touch pen to check that it is powered on. • Set the computer screen to display only on the TV.
The touch pen does not work from time to time.	• Connect the touch pen dongle to another USB port on your computer and try using the Touch Pen again.
The TV screen doesn't look normal when using Pentouch.	• Check that the computer is correctly connected to the TV. • Check that you are using the optimal resolution. (FHD: 1920 x 1080, HD: 1024 x 768)
The touch pen is touched on wrong positions.	• Set the computer screen to display only on the TV. • If the point you touch on the TV screen using the touch pen and the point indicated as touched on the computer screen do not match when the computer and the TV are connected by a PC signal (RGB) cable, use the TV remote control to select [SETTINGS] → [Picture] → [Screen] (RGB-PC), then select [Auto Config.] to adjust the screen.
The touch pen movement is not smooth.	• Check whether the computer and the TV are too far from each other. Check whether there are too many obstructions between the computer and the TV. • Check whether many other applications are running on the computer. (Please avoid running other applications while using the Pentouch program.)

Pentouch_When the dongle is connected to TV

Problem	Solution
The touch pen does not work.	• Press the ⏻ **(POWER)** button on the touch pen to check that it is powered on.
The touch pen works by fits and starts.	• Check if the Touch Pen is charged. (The red LED blinks every second when the touch pen is discharged.) • Reset the Touch Pen and try pairing again.

IR CODES

- This feature is not available for all models.

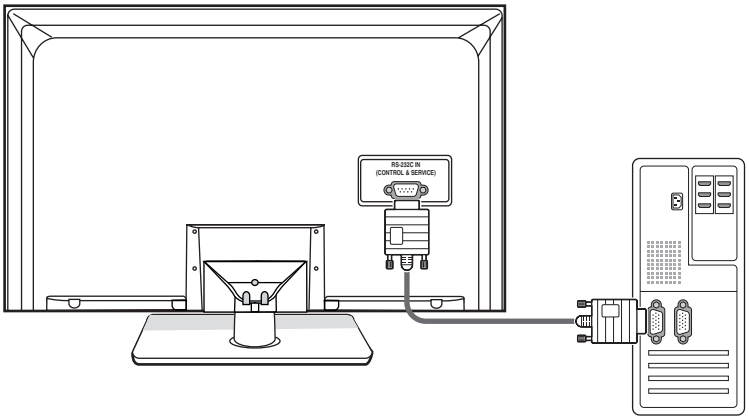
Code (Hexa)	Function	Note	Code (Hexa)	Function	Note
00	CH ^, PAGE ⁞	R/C Button	42	PORTAL	R/C Button
01	CH v, PAGE ⁞	R/C Button	4C	- LIST	R/C Button
02	VOL +	R/C Button	5B	EXIT	R/C Button
03	VOL -	R/C Button	61	Blue	R/C Button
06	> (Arrow Key / Right Key)	R/C Button	63	Yellow	R/C Button
07	< (Arrow Key / Left Key)	R/C Button	71	Green	R/C Button
08	Power	R/C Button	72	Red	R/C Button
09	MUTE	R/C Button	79	RATIO	R/C Button
0B	INPUT	R/C Button	7E	Simplink	R/C Button
0F	TV	R/C Button	8E	►► (Forward)	R/C Button
10 - 19	* Number Key 0 - 9	R/C Button	8F	◄◄(Rewind)	R/C Button
1A	Q.VIEW	R/C Button	AA	INFO	R/C Button
1E	FAV	R/C Button	B0	► (Play)	R/C Button
28	BACK	R/C Button	B1	■ (Stop/ Live TV)	R/C Button
30	AV Mode	R/C Button	BA	⏸ (Freeze/Slow Play/Pause)	R/C Button
40	Λ (Arrow Key/ Cursor Up)	R/C Button	BD	REC ●	R/C Button
41	V (Arrow Key/ Cursor Down)	R/C Button	DC	3D	R/C Button
AB	GUIDE	R/C Button	6B	TOUCH HOME	R/C Button
43	SETTINGS	R/C Button	45	Q.MENU	R/C Button
44	OK	R/C Button			

EXTERNAL CONTROL DEVICE SETUP

RS-232C Setup

- Image shown may differ from your TV.

Connect the RS-232C (serial port) input jack to an external control device (such as a computer or an A/V control system) to control the product's functions externally.
Connect the serial port of the control device to the RS-232C jack on the product back panel.



NOTE

- RS-232C on this unit is intended to be used with third party RS-232C control hardware and software. The instructions below are provided to help with programming software or to test functionality using telenet software. RS-232C connection cables are not supplied with the product.

Set ID

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	(See p.52)	14. Color (Colour) Temperature	x	u	00 to 64
03. Screen Mute	k	d	(See p.52)	15. ISM Method (Only Plasma TV)	j	p	(See p.53)
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.53)
06. Contrast	k	g	00 to 64	18. Channel (Programme) Add/Del(Skip)	m	b	00 to 01
07. Bright-ness	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	x	b	(See p.55)
10. Sharp-ness	k	k	00 to 32	22. Auto Configuration	j	u	(See p.55)
11. OSD Select	k	l	00 to 01	23. 3D (Only 3D models)	x	t	(See p.56)
12. Remote Control Lock Mode	k	m	00 to 01	24. Extended 3D (Only 3D models)	x	v	(See p.56)

* 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
...	...	...

ENGLISH

* Commands may work differently depending on model and signal.

01. Power (Command: k a)

► To control Power Off/On of the set.

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

Data 00 : Power Off
Data 01 : Power On

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

ENGLISH

* 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 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.50

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

60 : RGB-PC

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

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

* This function depends on model and signal.

22. Auto Configuration (Command: j u)

► To adjust picture position and minimize image shaking automatically. Auto configuration only works in RGB-PC mode.

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

Data 01: To set

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

ENGLISH

23. 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.
* 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]

24. 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, 08
00 : Off
01 : On

4) 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]



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

MODEL _____

SERIAL _____