



**LG**

Life's Good

# OWNER'S MANUAL

# LED TV \*

\*Disclaimer

LG LED TV applies LCD screen with LED backlights.

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

LY33\*\*

LY34\*\*

LY54\*\*

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### 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.

## LICENSES

Supported licenses may differ by model. For more information about licenses, visit [www.lg.com](http://www.lg.com).



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ABOUT DIVX VIDEO-ON-DEMAND: This DivX Certified<sup>®</sup> device must be registered in order to play purchased DivX Video-on-Demand (VOD) movies. To obtain your registration code, locate the DivX VOD section in your device setup menu. Go to [vod.divx.com](http://vod.divx.com) for more information on how to complete your registration.

"DivX Certified<sup>®</sup> to play DivX<sup>®</sup> video up to HD 1080p, including premium content."

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## OPEN SOURCE SOFTWARE NOTICE

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

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

LG Electronics will also provide open source code to you on CD-ROM for a charge covering the cost of performing such distribution (such as the cost of media, shipping and handling) upon email request to [opensource@lge.com](mailto:opensource@lge.com). This offer is valid for three (3) years from the date on which you purchased the product.

**NOTE**

- Image shown may differ from your TV.
- Your TV's OSD (On Screen Display) may differ slightly from that shown in this manual.
- The available menus and options may differ from the input source or product model that you are using.
- New features may be added to this TV in the future.
- The TV can be placed in standby mode in order to reduce the power consumption. And the TV should be turned off if it will not be watched for some time, as this will reduce energy consumption.
- The energy consumed during use can be significantly reduced if the level of brightness of the picture is reduced, and this will reduce the overall running cost.

## ASSEMBLING AND PREPARING

### Unpacking

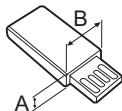
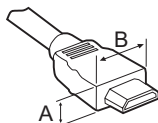
Check your product box for the following items. If there are any missing accessories, contact the local dealer where you purchased your product. The illustrations in this manual may differ from the actual product and item.

**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 manufacturer's warranty.
- Some models have a thin film attached on to the screen and this must not be removed.

**NOTE**

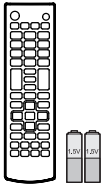
- The items supplied with your product may vary depending on the model.
- Product specifications or contents of this manual may be changed without prior notice due to upgrade of product functions.
- For an optimal connection, HDMI cables and USB devices should have bezels less than 10 mm thick and 18 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.



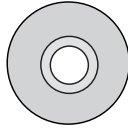
\*A ≦ 10 mm

\*B ≦ 18 mm

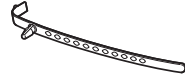




**Remote control,  
batteries (AAA)**  
(See p.22, 23, 24)



**Owner's manual**



**Cable Holder**  
(Depending on model)



**Power cord**  
(Depending on model)



**Stand Screws**  
4EA, M4 x L14  
(Only 42/47/55/60LY34\*\*,  
39/42/47/55/60LY54\*\*)  
(See p.10)



**Stand Screws**  
4EA, M4 x L20  
(Only 32LY34\*\*, 32LY54\*\*)  
(See p.10)



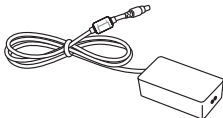
**Cable Managements**  
2EA  
(Only  
32/42/47/55/60LY34\*\*,  
32/39/42/47/55/60LY54\*\*)



**Wall Mount Spacers**  
2EA  
(Only 42LY34\*\*, 42LY54\*\*)  
(See p.13)



**Stand Bases**  
(Only 32/42/47/55/60LY34\*\*,  
32/39/42/47/55/60LY54\*\*)  
(See p.10)



**AC-DC Adaptor**  
(Only 22/28LY33\*\*)  
(Depending on model &  
country)  
(See p.15)



or



**Stand Base**  
(Only 22/28LY33\*\*)  
(Depending on model & country)  
(See p.10)

## Separate Purchase

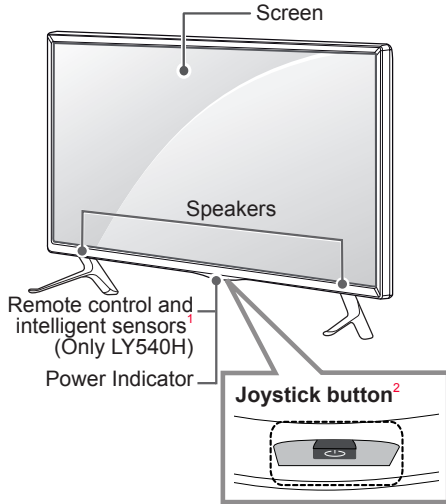
Separate purchase items can be changed or modified for quality improvement without any notification. Contact your dealer to buy these items. These devices only work with certain models. The model name or design may be changed depending on the upgrade of product functions, manufacturer's circumstances or policies.

### **LG Audio Device**

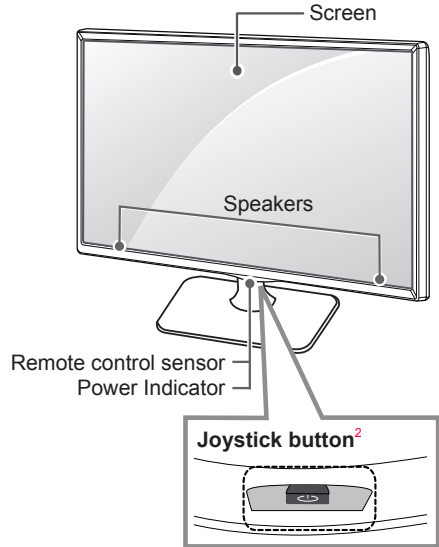
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## Parts and Button

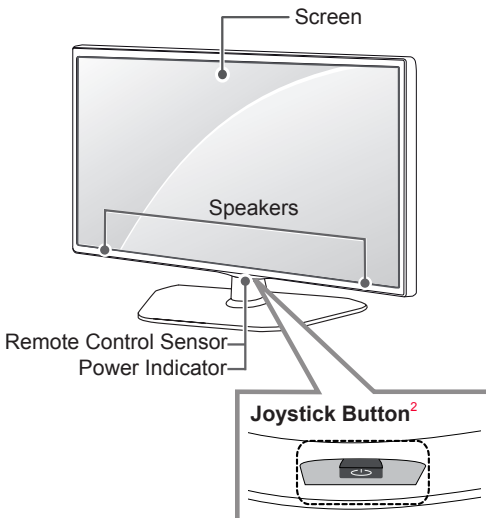
**A type** : 32/42/47/55/60LY34\*\*,  
32/39/42/47/55/60LY54\*\*



**B type** : 22/28LY33\*\* (Except for India)



**C type** : 22/28LY33\*\* (Only India)



- 1 Intelligent sensor - Adjusts the image quality and brightness based on the surrounding environment. (Only LY540H)
- 2 Joystick Button - This button is located below the TV screen.



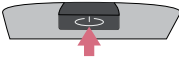
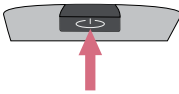

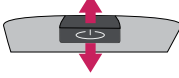
### NOTE

- You can set the power indicator light to on or off by selecting **OPTION** in the main menus.

## Using the Joystick button

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

### Basic Functions

|  |                    |   |
|--|--------------------|---|
|  | Power On           | When the TV is turned off, place your finger on the joystick button and press it once and release it.   |
|  | Power Off          | When the TV is turned on, place your finger on the joystick button and press it once for a few seconds and release it. (However, if the Menu button is on the screen, pressing and holding the joystick button will let you exit the Menu.) |
|  | Volume Control     | If you place your finger over the joystick button and move it left or right, you can adjust the volume level you want.  |
|  | Programmes Control | If you place your finger over the joystick button and move it up or down, you can scrolls through the saved programmes you want.  |



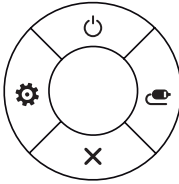




### NOTE

- When your finger over the joystick button and push it to the up, down, left or right, be careful not to press the joystick button. If you press the joystick button first, you can not adjust the volume level and saved programmes.

### Adjusting the Menu

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

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

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

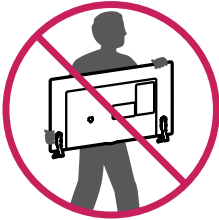
## Lifting and Moving the TV

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.

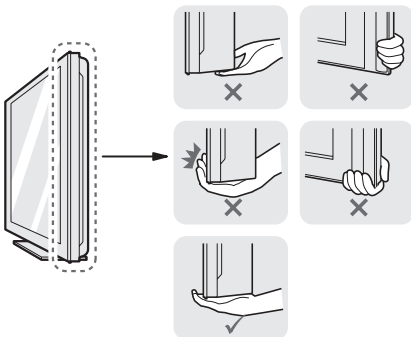


### CAUTION

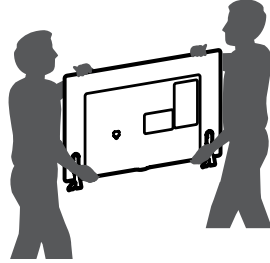
- Avoid touching the screen at all times, as this may result in damage to the screen.
- It is recommended to move the TV in the box or packing material that the TV originally came in.
- Before moving or lifting the TV, disconnect the power cord and all cables.
- When holding the TV, the screen should 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.
- Do not apply excessive pressure to cause flexing /bending of frame chassis as it may damage screen.



### CAUTION

- When handling the TV, be careful not to damage the protruding joystick button. (Depending on model)



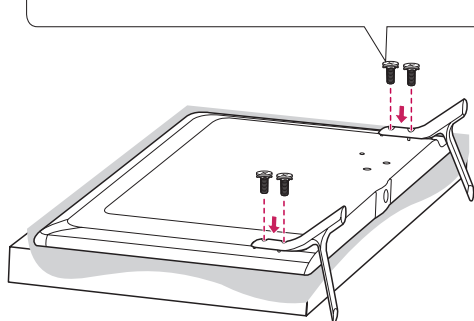
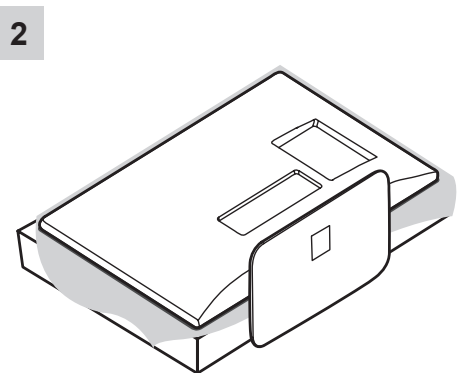
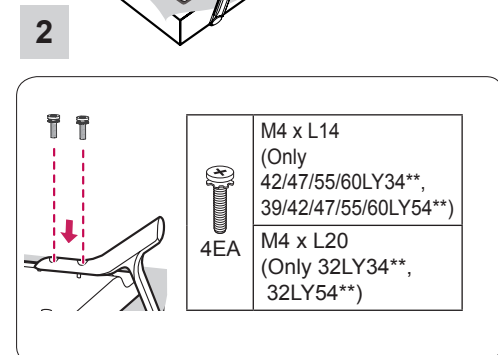
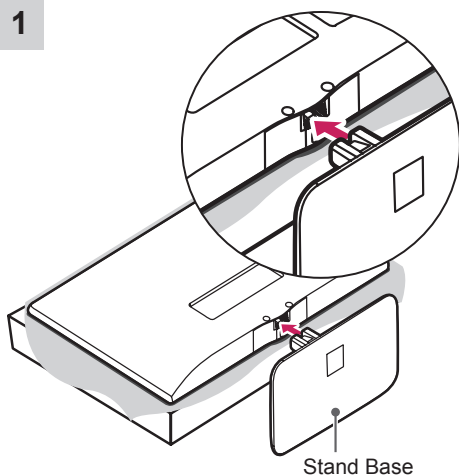
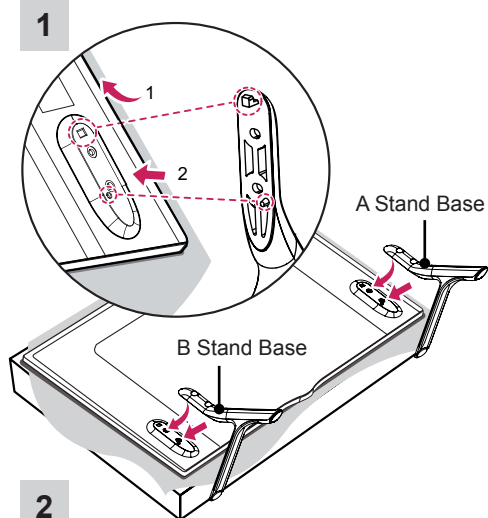
## Setting up the TV

Image shown may differ from your TV.

### Attaching the stand

(Only 32/42/47/55/60LY34\*\*,  
32/39/42/47/55/60LY54\*\*)

(Only 22/28LY33\*\*)

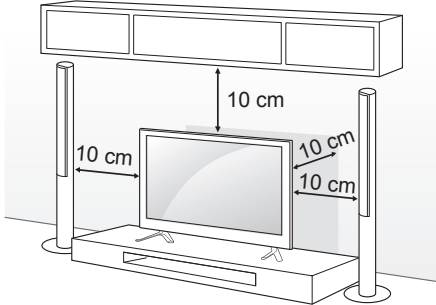


### CAUTION

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

## Mounting on a table

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



- 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.

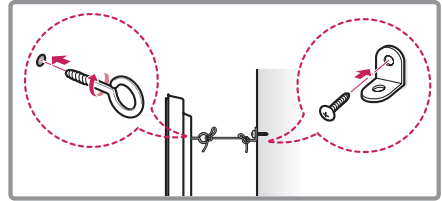
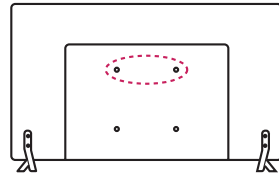


### WARNING

- If a television is not positioned in a sufficiently stable location, it can be potentially hazardous due to falling. Many injuries, particularly to children, can be avoided by taking simple precautions such as:
  - Using cabinets or stands recommended by the manufacturer of the television.
  - Only using furniture that can safely support the television.
  - Ensuring the television is not overhanging the edge of the supporting furniture.
  - Not placing the television on tall furniture (for example, cupboards or bookcases) without anchoring both the furniture and the television to a suitable support.
  - Not standing the televisions on cloth or other materials placed between the television and supporting furniture.
  - Educating children about the dangers of climbing on furniture to reach the television or its controls.

## Securing the TV to a wall

(This feature is not available for all models.)



- 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.
- 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.
- 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.



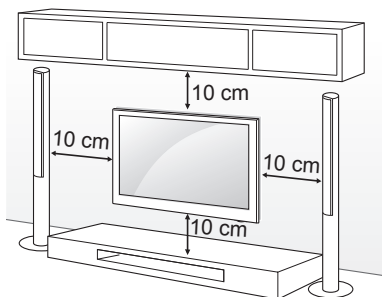
### NOTE

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

## Mounting on a wall

Attach an optional wall mount bracket at the rear of the TV carefully and install the wall mount bracket on a solid wall perpendicular to the floor. When you attach the TV to other building materials, please contact qualified personnel. LG recommends that wall mounting be performed by a qualified professional installer. We recommend the use of LG's wall mount bracket.

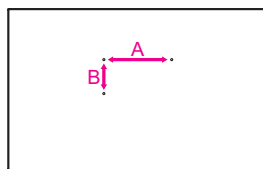
When you do not use LG's wall mount bracket, please use a wall mount bracket where the device is adequately secured to the wall with enough space to allow connectivity to external devices.



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

### Separate purchase(Wall Mounting Bracket)

|                           |                         |                                  |
|---------------------------|-------------------------|----------------------------------|
| <b>Model</b>              | 22LY33**                | 28LY33**                         |
| <b>VESA (A x B)</b>       | 75 x 75                 | 100 x 100                        |
| <b>Standard screw</b>     | M4 X L10                | M4 X L10                         |
| <b>Number of screws</b>   | 4                       | 4                                |
| <b>Wall mount bracket</b> | LSW140B                 | LSW140B                          |
| <b>Model</b>              | 32LY34**<br>32/39LY54** | 42/47/55LY34**<br>42/47/55LY54** |
| <b>VESA (A x B)</b>       | 200 x 200               | 400 x 400                        |
| <b>Standard screw</b>     | M6                      | M6                               |
| <b>Number of screws</b>   | 4                       | 4                                |
| <b>Wall mount bracket</b> | LSW240B<br>MSW240       | LSW440B<br>MSW240                |
| <b>Model</b>              | 60LY34**<br>60LY54**    |                                  |
| <b>VESA (A x B)</b>       | 400 x 400               |                                  |
| <b>Standard screw</b>     | M6                      |                                  |
| <b>Number of screws</b>   | 4                       |                                  |
| <b>Wall mount bracket</b> | LSW440B                 |                                  |

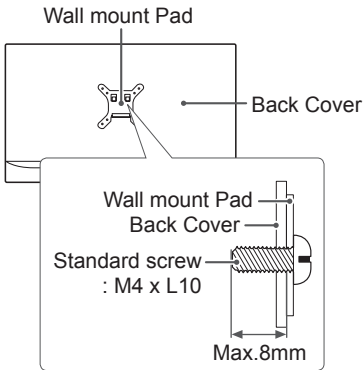






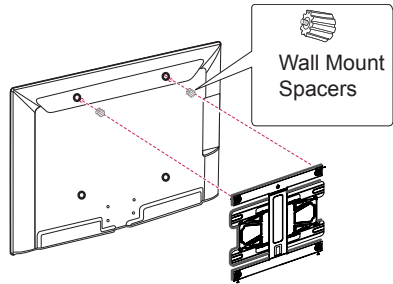
**CAUTION**

- 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 manufacturer's warranty.
- Screw length from outer surface of back cover should be under 8mm. (Only 22/28LY33\*\*)



**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 not provided. 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.
- When attaching a wall mounting bracket to the TV, insert the wall mount spacers into the TV wall mount holes to adjust the vertical angle of the TV. (Only 42LY34\*\*, 42LY54\*\*)



## MAKING CONNECTIONS

- Image shown may differ from your TV.
- Any separate cable is not provided.

This section on **MAKING CONNECTIONS** mainly uses diagrams for the 47LY34\*\* models. Connect various external devices to the TV and switch input modes to select an external device. For more information of external device's connection, refer to the manual provided with each device.

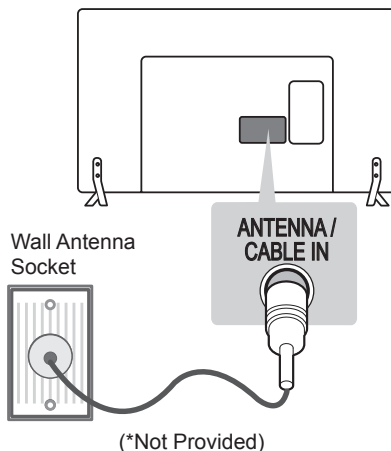
Available external devices are: HD receivers, DVD players, VCRs, audio systems, USB storage devices, PC, gaming devices, and other external devices.

### NOTE

- The external device connection may differ from the model.
- Connect external devices to the TV regardless of the order of the TV port.
- 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.
- Refer to the external equipment's manual for operating instructions.
- If you connect a gaming device to the TV, use the cable supplied with the gaming device.
- 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.
- In PC mode, some resolution settings may not work properly depending on the graphics card.
- Only a USB storage device is recognizable.

## Antenna Connection

Connect the TV to a wall antenna socket with an RF cable (75  $\Omega$ ).

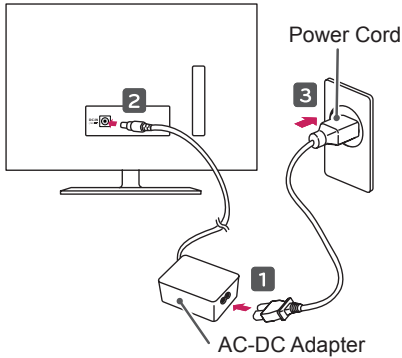


### NOTE

- Use a signal splitter to use more than 2 TVs.
- If the image quality is poor, install a signal amplifier properly to improve the image quality.
- If the image quality is poor with an antenna connected, try to realign the antenna in the correct direction.
- An antenna cable and converter are not supplied.
- Supported DTV Audio: MPEG, Dolby Digital, Dolby Digital Plus, HE-AAC

## Adapter Connection

(Only 22/28LY33\*\*)  
 (Depending on model & country)



### CAUTION

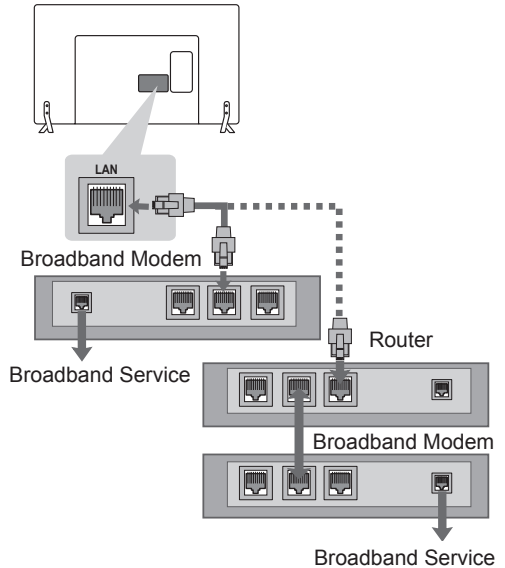
- Please be sure to connect the TV to the AC-DC power adapter before connecting the TV's power plug to a wall power outlet.

## Network Setup

### Wired network connection

This TV can be connected to a Pro:Centric server via the **LAN** port. After making the physical connection, the TV needs to be set up for network communication. Connect the **LAN** port of the Modem or Router from Pro:Centric server to the **LAN** port on the TV.

(Only LY54\*\*)



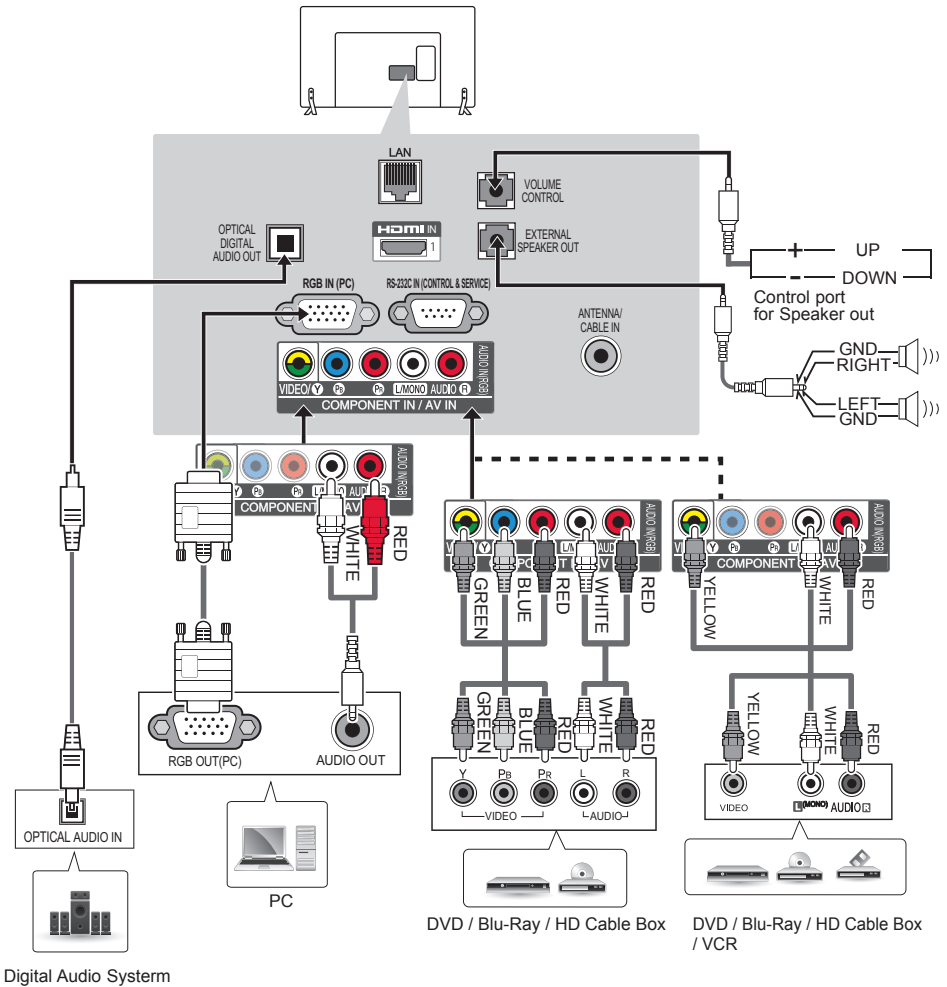
### CAUTION

- Do not connect a modular phone cable to the **LAN** port.
- Since there are various connection methods, please follow the specifications of your telecommunication carrier or internet service provider.

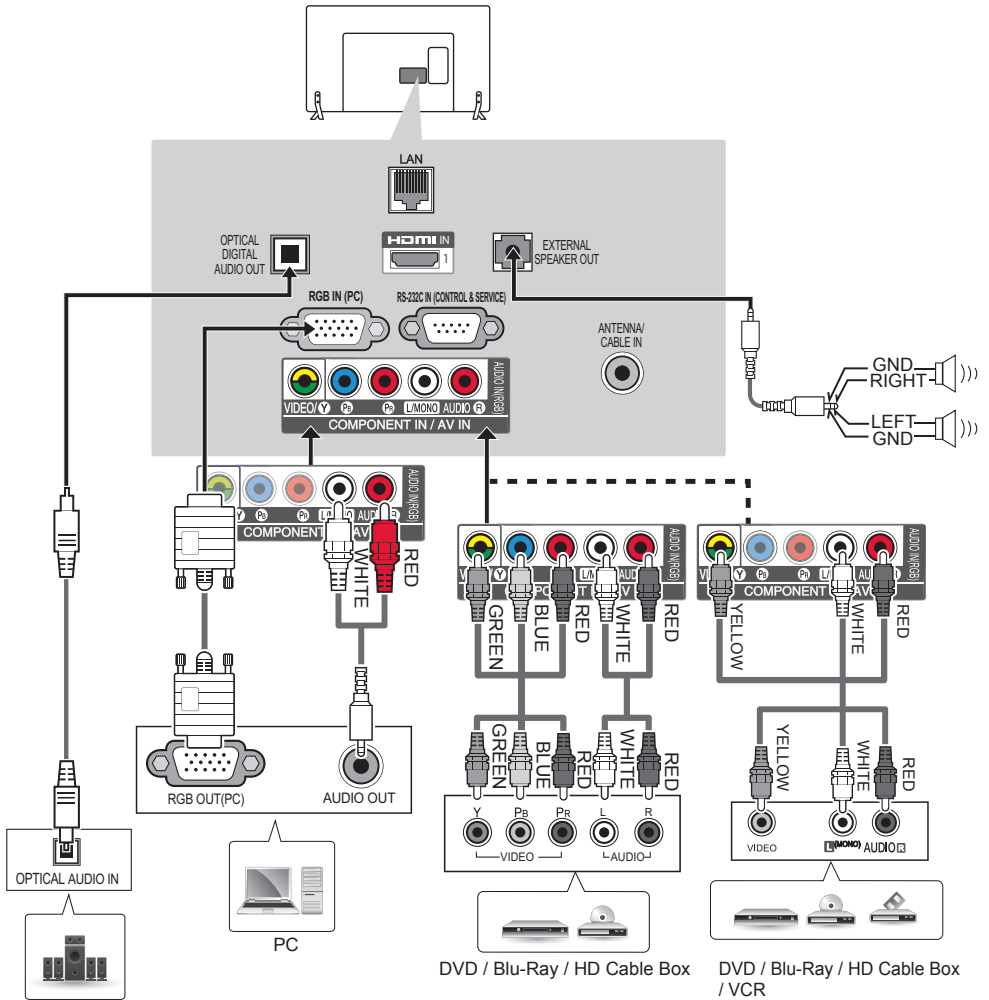
## Other Connections

Connect your TV to external devices. For the best picture and audio quality, connect the external device and the TV with the HDMI cable as shown. Some separate cable is not provided.

(Only 32/39/42/47/55/60LY540H)



(Only 32/39/42/47/55/60LY540S)

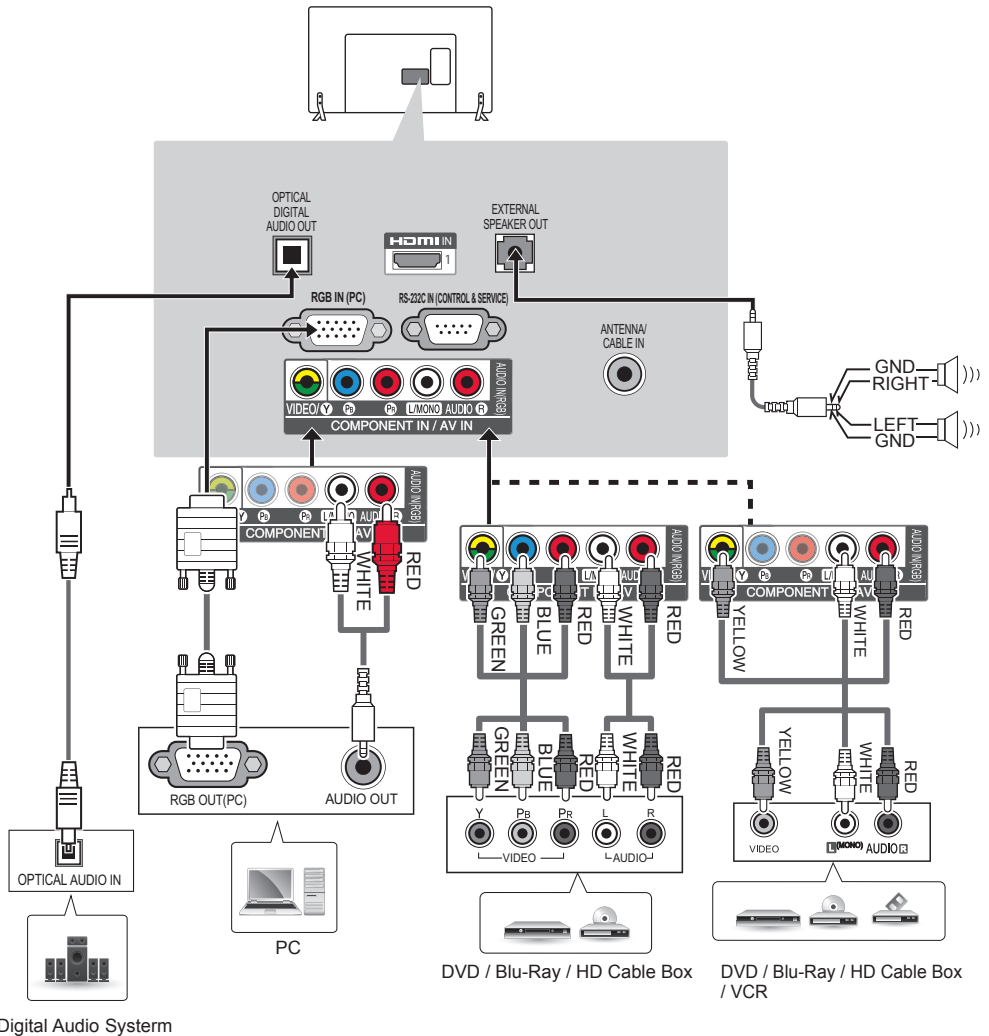


Digital Audio System

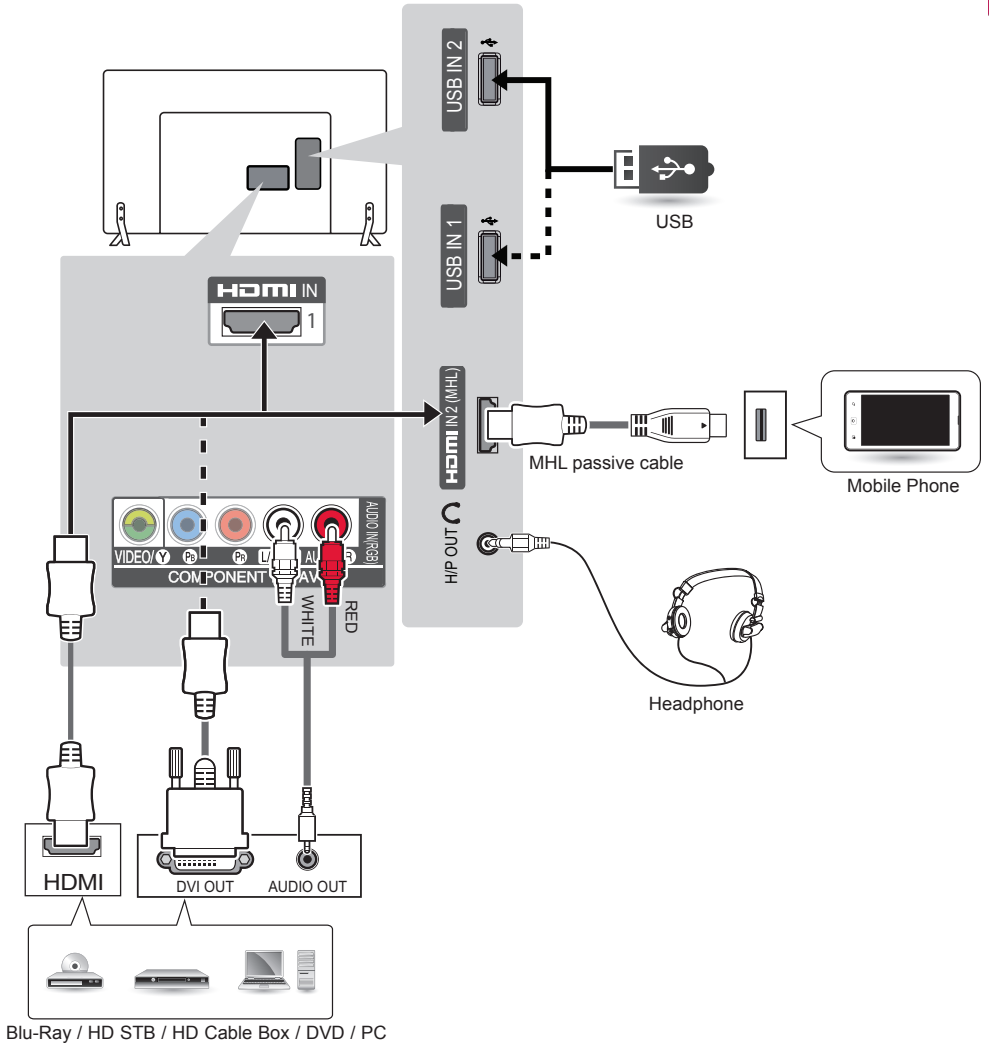
DVD / Blu-Ray / HD Cable Box

DVD / Blu-Ray / HD Cable Box / VCR

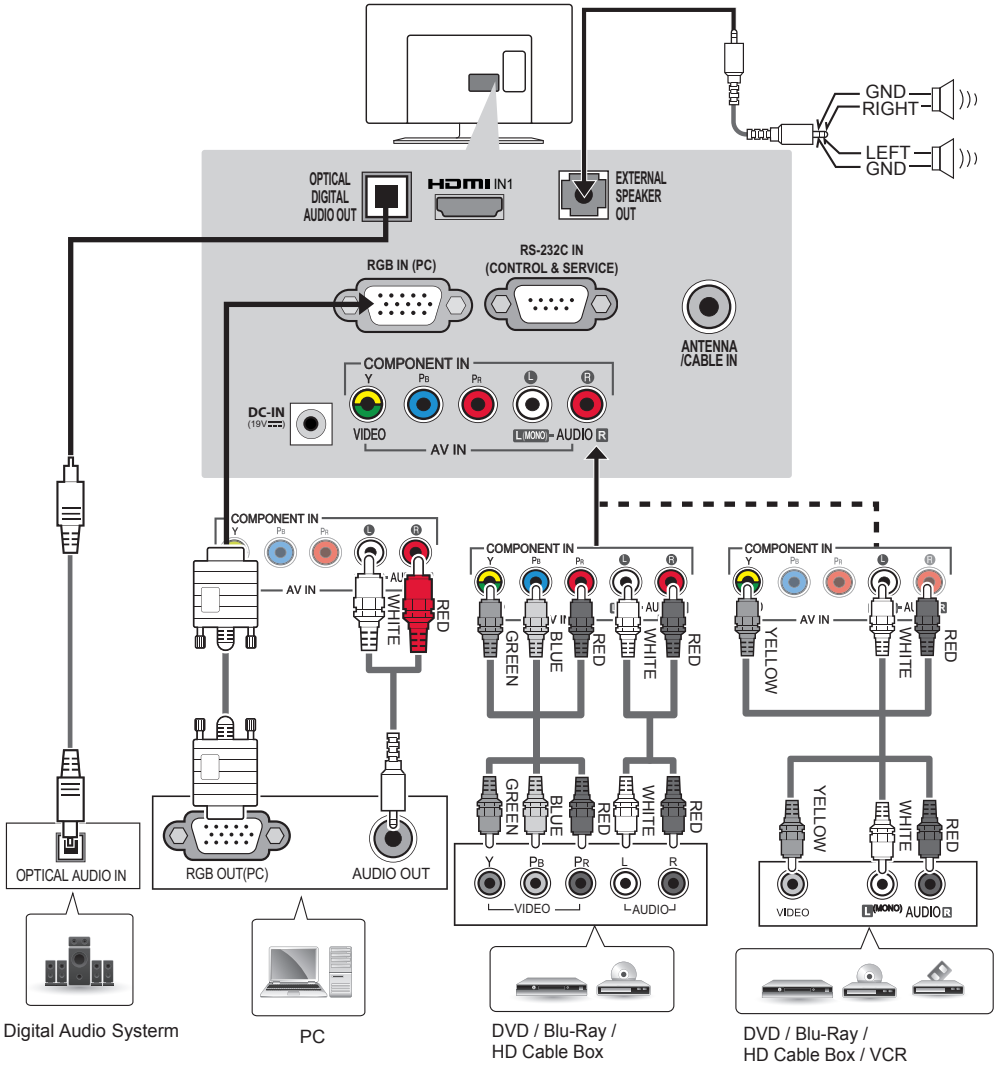
(Only 32/42/47/55/60LY34\*\*)



(Only 32/42/47/55/60LY34\*\*, 32/39/42/47/55/60LY54\*\*)

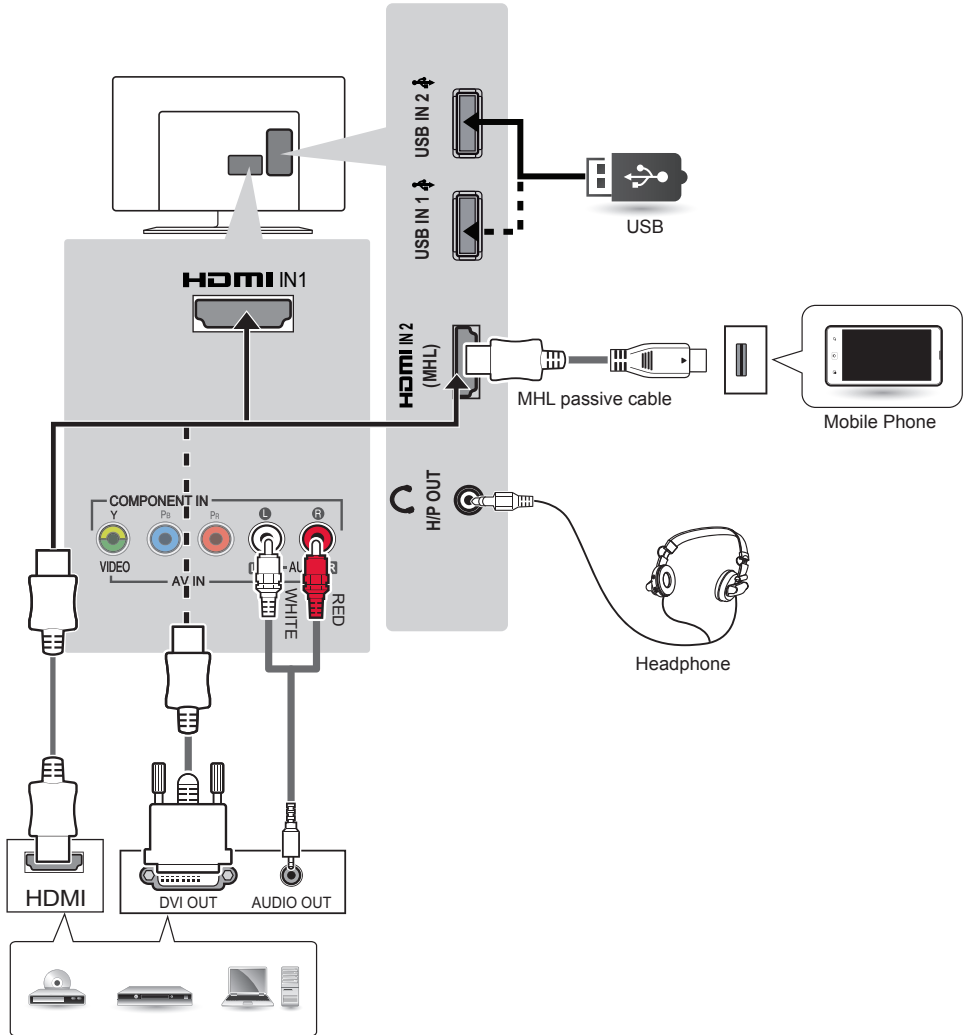


(Only 22/28LY33\*\*)





(Only 22/28LY33\*\*)



Blu-Ray / HD STB / HD Cable Box / DVD / PC

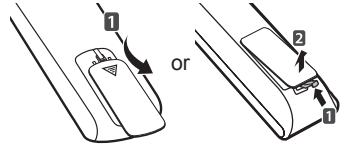
## REMOTE CONTROL

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 replace batteries, open the battery cover, replace batteries (1.5 V AAA) matching the  $\oplus$  and  $\ominus$  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.

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

(Depending on model)

**POWER** Turns the TV on or off.

**TV/RAD** Selects Radio, TV and DTV programme.

**SUBTITLE** Recalls your preferred subtitle in digital mode.

**AV MODE** Selects an AV mode.

**RATIO** Resizes an image.

**INPUT** Changes the input source.

**Number buttons** Enters numbers.

**LIST** Accesses the saved programme list.

**Q.VIEW** Returns to the previously viewed programme.

**+ / -** Adjusts the volume level.

**FAV** Accesses your favourite programme list.

**GUIDE** Shows programme guide.

**MUTE** Mutes all sounds.

**^ P v** Scrolls through the saved programmes.

**^ PAGE v** Moves to the previous or next screen.

**Teletext buttons (TEXT/T.OPT)** These buttons are used for teletext.

**INFO** Views the information of the current programme and screen.

**SETTINGS** Accesses the main menus.

**Q.MENU** Accesses the quick menus.

**OK** Selects menus or options and confirms your input.

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

**BACK** Returns to the previous level.

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

**SIMPLINK** Accesses the AV devices connected with the HDMI cable through HDMI-CEC. Opens the SIMPLINK menu.

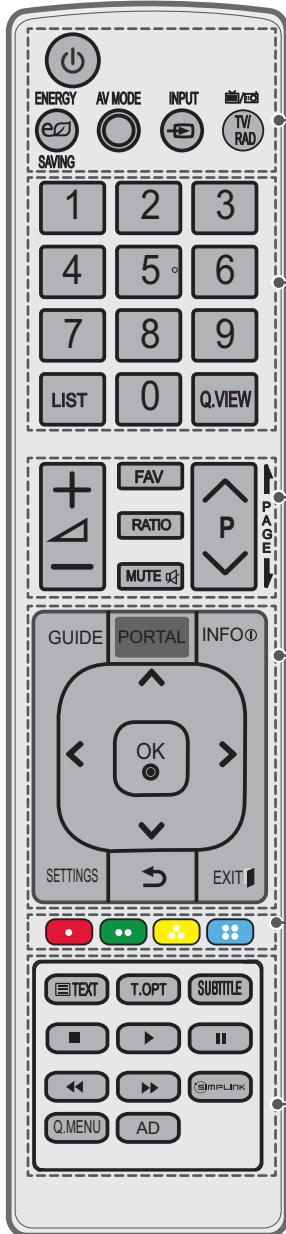
**1 SLEEP** Sets the sleep timer. (Depending on model)

**1 AD** By pressing the AD button, audio descriptions function will be enabled. (Depending on model)

**Control buttons (stop, play, pause, fast back, fast forward)** Controls the MY MEDIA menus, or the SIMPLINK compatible devices (USB, SIMPLINK).

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

(Depending on model)



**⏻ (POWER)** Turns the TV on or off.  
**⏻ ENERGY SAVING** Adjusts the brightness of the screen to reduce energy consumption.  
**AV MODE** Selects an AV mode.  
**INPUT** Changes the input source.  
**TV/RAD** Selects Radio, TV and DTV programme.

**Number buttons** Enters numbers.  
**LIST** Accesses the saved programme list.  
**Q.VIEW** Returns to the previously viewed programme.

**+ / -** Adjusts the volume level.  
**FAV** Accesses your favourite programme list.  
**RATIO** Resizes an image.  
**MUTE** Mutes all sounds.  
**^ P v** Scrolls through the saved programmes.  
**↑ PAGE ↓** Moves to the previous or next screen.

**GUIDE** Shows programme guide.  
**PORTAL** Displays and removes hotel interactive menu.  
**INFO** Views the information of the current programme and screen.  
**Navigation buttons (up/down/left/right)** Scrolls through menus or options.  
**OK** Selects menus or options and confirms your input.  
**SETTINGS** Selects a menu. Clears all on-screen displays and returns to TV viewing from any menu.  
**↶ (BACK)** Returns to the previous level.  
**EXIT** Clears on-screen displays and return to TV viewing.

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

**Teletext buttons (≡ TEXT/T.OPT)** These buttons are used for teletext.

**SUBTITLE** Recalls your preferred subtitle in digital mode.

**Control buttons** (■, ▶, II, ◀, ▶▶)  
 Controls the MY MEDIA menus, or the SIMPLINK compatible devices (USB, SIMPLINK).

**SIMPLINK** Accesses the AV devices connected with the HDMI cable through HDMI-CEC. Opens the SIMPLINK menu.

**Q.MENU** Accesses the Quick menus.

**AD** By pressing the AD button, audio descriptions function will be enabled. (Depending on model)

# MAINTENANCE

## Cleaning your TV

Clean your TV regularly to keep the best 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 and 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

- Avoid touching the screen at all times, as this may result in damage to the screen.
- Do not push, rub, or hit the screen surface with your fingernail or a sharp object, as this may result in scratches and image distortions.
- Do not use any chemicals as this may damage the product.
- 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

The software version can be updated for improvement in performance. Customer needs to ensure the compatibility of customer's equipment with LGE software. If needed, please consult with LGE and upload revised software version according to the guidance provided by LGE.

| Problem   | Solution  |
|---|---|
| Cannot control the TV with the remote control.  | <ul style="list-style-type: none"> <li>• Check the remote control sensor on the product and try again.</li> <li>• Check if there is any obstacle between the product and the remote control.</li> <li>• Check if the batteries are still working and properly installed ( ⊕ to ⊕, ⊖ to ⊖).</li> </ul> |
| No image display and no sound is produced.  | <ul style="list-style-type: none"> <li>• Check if the product is turned on.</li> <li>• Check if the power cord is connected to a wall outlet.</li> <li>• Check if there is a problem in the wall outlet by connecting other products.</li> </ul>  |
| The TV turns off suddenly.  | <ul style="list-style-type: none"> <li>• Check the power control settings. The power supply may be interrupted.</li> <li>• Check if the <b>Sleep Timer</b> or <b>Off Time</b> feature is activated in the <b>TIME</b> settings.</li> </ul>  |
| When connecting to the PC (RGB/HDMI/DVI), 'No signal' or 'Invalid Format' is displayed. | <ul style="list-style-type: none"> <li>• Turn the TV off/on using the remote control.</li> <li>• Reconnect the RGB/HDMI cable.</li> <li>• Restart the PC with the TV on.</li> </ul>   |

## SPECIFICATIONS

Product specifications may be changed without prior notice due to upgrade of product functions.  
For the power supply and power consumption, refer to the label attached to the product.

| MODELS                    |                    | 22LY33**                           |                                    |
|---------------------------|--------------------|------------------------------------|------------------------------------|
|                           |                    | 22LY330C-TA<br>(Only India)        | 22LY330C-TA<br>(Except for India)  |
| Dimensions<br>(W x H x D) | With stand (mm)    | 507.6 x 355.9 x 140.6              | 507.6 x 355.9 x 135.8              |
|                           | Without stand (mm) | 507.6 x 315.7 x 53.1               | 507.6 x 315.7 x 53.1               |
| Weight                    | With stand (kg)    | 3.1                                | 3.1                                |
|                           | Without stand (kg) | 2.9                                | 2.9                                |
| Power requirement         |                    | 19 V $\overline{\text{---}}$ 2.0 A | 19 V $\overline{\text{---}}$ 2.0 A |
| MODELS                    |                    | 28LY33**                           |                                    |
|                           |                    | 28LY330C-TA<br>(Only India)        | 28LY330C-TA<br>(Except for India)  |
| Dimensions<br>(W x H x D) | With stand (mm)    | 641.5 x 432.0 x 175                | 641.5 x 432.0 x 170                |
|                           | Without stand (mm) | 641.5 x 395.8 x 57.6               | 641.5 x 395.8 x 57.6               |
| Weight                    | With stand (kg)    | 4.5                                | 4.5                                |
|                           | Without stand (kg) | 4.2                                | 4.2                                |
| Power requirement         |                    | 19 V $\overline{\text{---}}$ 2.0 A | 19 V $\overline{\text{---}}$ 2.0 A |
| MODELS                    |                    | 32LY34**                           | 42LY34**                           |
|                           |                    | 32LY340C-TA                        | 42LY340C-TA                        |
| Dimensions<br>(W x H x D) | With stand (mm)    | 732 x 481 x 207                    | 961 x 612 x 218                    |
|                           | Without stand (mm) | 732 x 431 x 55.5                   | 961 x 567 x 55.5                   |
| Weight                    | With stand (kg)    | 6.2                                | 9.5                                |
|                           | Without stand (kg) | 6.0                                | 9.2                                |
| Power requirement         |                    | AC 100-240 V~ 50 / 60 Hz           | AC 100-240 V~ 50 / 60 Hz           |
| MODELS                    |                    | 47LY34**                           | 55LY34**                           |
|                           |                    | 47LY340C-TA                        | 55LY340C-TA                        |
| Dimensions<br>(W x H x D) | With stand (mm)    | 1073 x 676 x 247                   | 1243 x 772 x 247                   |
|                           | Without stand (mm) | 1073 x 629 x 55.8                  | 1243 x 725 x 56.8                  |
| Weight                    | With stand (kg)    | 12.7                               | 17.7                               |
|                           | Without stand (kg) | 12.3                               | 17.3                               |
| Power requirement         |                    | AC 100-240 V~ 50 / 60 Hz           | AC 100-240 V~ 50 / 60 Hz           |

| MODELS                    |                    | 60LY34**                   | 32LY54**                   |
|---------------------------|--------------------|----------------------------|----------------------------|
|                           |                    | 60LY340C-TA                | 32LY540H-TA<br>32LY540S-TA |
| Dimensions<br>(W x H x D) | With stand (mm)    | 1373 x 851 x 283           | 732 x 481 x 207            |
|                           | Without stand (mm) | 1373 x 801 x 58.8          | 732 x 431 x 55.5           |
| Weight                    | With stand (kg)    | 23.5                       | 6.2                        |
|                           | Without stand (kg) | 23.0                       | 6.0                        |
| Power requirement         |                    | AC 100-240 V~ 50 / 60 Hz   | AC 100-240 V~ 50 / 60 Hz   |
| MODELS                    |                    | 39LY54**                   | 42LY54**                   |
|                           |                    | 39LY540H-TA<br>39LY540S-TA | 42LY540H-TA<br>42LY540S-TA |
| Dimensions<br>(W x H x D) | With stand (mm)    | 885 x 567 x 218            | 961 x 612 x 218            |
|                           | Without stand (mm) | 885 x 524 x 55.5           | 961 x 567 x 55.5           |
| Weight                    | With stand (kg)    | 8.3                        | 9.5                        |
|                           | Without stand (kg) | 8                          | 9.2                        |
| Power requirement         |                    | AC 100-240 V~ 50 / 60 Hz   | AC 100-240 V~ 50 / 60 Hz   |
| MODELS                    |                    | 47LY54**                   | 55LY54**                   |
|                           |                    | 47LY540H-TA<br>47LY540S-TA | 55LY540H-TA<br>55LY540S-TA |
| Dimensions<br>(W x H x D) | With stand (mm)    | 1073 x 676 x 247           | 1243 x 772 x 247           |
|                           | Without stand (mm) | 1073 x 629 x 55.8          | 1243 x 725 x 56.8          |
| Weight                    | With stand (kg)    | 12.7                       | 17.7                       |
|                           | Without stand (kg) | 12.3                       | 17.3                       |
| Power requirement         |                    | AC 100-240 V~ 50 / 60 Hz   | AC 100-240 V~ 50 / 60 Hz   |
| MODELS                    |                    | 60LY54**                   |                            |
|                           |                    | 60LY540H-TA<br>60LY540S-TA |                            |
| Dimensions<br>(W x H x D) | With stand (mm)    | 1373 x 851 x 283           |                            |
|                           | Without stand (mm) | 1373 x 801 x 58.8          |                            |
| Weight                    | With stand (kg)    | 23.5                       |                            |
|                           | Without stand (kg) | 23.0                       |                            |
| Power requirement         |                    | AC 100-240 V~ 50 / 60 Hz   |                            |



|                                     |   |
|-------------------------------------|---|
| AC/DC Adapter<br>(Only 22/28LY33**) | Manufacturer : APD<br>Model : DA-48F19, DA-40I19<br>Manufacturer : Lien chang<br>Model : LCAP35 |
|-------------------------------------|---|

|                          |                       |                 |
|--------------------------|-----------------------|-----------------|
| Environment<br>condition | Operating Temperature | 0 °C to 40 °C   |
|                          | Operating Humidity    | Less than 80 %  |
|                          | Storage Temperature   | -20 °C to 60 °C |
|                          | Storage Humidity      | Less than 85 %  |

|  | Digital TV<br>(Depend on Country)                     | Analogue TV<br>(Depend on Country)                                 |
|--|---|--|
| Television System                        | DVB-T (DVB-T/T2 <sup>1</sup> ),<br>DVB-C <sup>2</sup> | PAL B/B, PAL B/G, PAL D/K, PAL-I<br>SECAM B/G, SECAM D/K<br>NTSC-M |
| Programme Coverage                       | VHF, UHF  | VHF, UHF, CATV   |
| Maximum number of<br>storable programmes | DVB-T/C & Analogue TV : 1,500                         |  |
| External Antenna Impedance               | 75 Ω  |  |

1 Only DVB-T2 support models.

2 Only DVB-C support models.

**Component port connecting information**

| Component ports on the TV        | Y                         | P <sub>B</sub> | P <sub>R</sub> |
|----------------------------------|---------------------------|----------------|----------------|
| Video output ports on DVD player | Y                         | P <sub>B</sub> | P <sub>R</sub> |
|                                  | Y                         | B-Y            | R-Y            |
|                                  | Y                         | Cb             | Cr             |
|                                  | Y                         | Pb             | Pr             |
| Signal                           | Component                 |                |                |
| 480i / 576i                      | O                         |                |                |
| 480p / 576p                      | O                         |                |                |
| 720p / 1080i                     | O                         |                |                |
| 1080p                            | O<br>(50 Hz / 60 Hz only) |                |                |

**HDMI/DVI-DTV Supported Mode**

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

**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                     | 70.08                   |
| 640 x 480             | 31.469                     | 59.94                   |
| 800 x 600             | 37.879                     | 60.31                   |
| 1024 x 768            | 48.363                     | 60.00                   |
| 1280 x 768            | 47.776                     | 59.870                  |
| 1152 x 864            | 54.348                     | 60.053                  |
| 1360 x 768            | 47.712                     | 60.015                  |
| 1280 x 1024 (HDMI-PC) | 63.981                     | 60.020                  |
| 1920 x 1080 (HDMI-PC) | 67.50                      | 60.00                   |

(Except for 32LY34\*\*, 32LY54\*\*, 22/28LY33\*\*)

**NOTE**

(Only 22/28LY33\*\*)

- The optimal display resolution : 1360 X 768 @60Hz
- The optimal timing in each mode is vertical frequency 60Hz.

## IR CODES

- This feature is not available for all models.

| Code (Hexa) | Function        | Note                                 | Code (Hexa) | Function      | Note                  |
|-------------|-----------------|--------------------------------------|-------------|---------------|-----------------------|
| 08          | ⏻ (POWER)       | Remote control Button (Power On/Off) | 28          | BACK ↩        | Remote control Button |
| F0          | TV/RAD          | Remote control Button                | 5B          | EXIT          | Remote control Button |
| 39          | SUBTITLE        | Remote control Button                | 44          | OK            | Remote control Button |
| 30          | AV MODE         | Remote control Button                | 40          | ^             | Remote control Button |
| 79          | RATIO           | Remote control Button                | 41          | v             | Remote control Button |
| 0B          | INPUT           | Remote control Button                | 07          | <             | Remote control Button |
| 10-19       | Number Key 0-9  | Remote control Button                | 06          | >             | Remote control Button |
| 53          | LIST            | Remote control Button                | 72          | RED           | Remote control Button |
| 1A          | Q.VIEW          | Remote control Button                | 71          | GREEN         | Remote control Button |
| 02          | ↗ +             | Remote control Button                | 63          | YELLOW        | Remote control Button |
| 03          | ↘ -             | Remote control Button                | 61          | BLUE          | Remote control Button |
| 1E          | FAV             | Remote control Button                | B1          | ■             | Remote control Button |
| AB          | GUIDE           | Remote control Button                | B0          | ▶             | Remote control Button |
| 09          | MUTE            | Remote control Button                | BA          |               | Remote control Button |
| 00          | P ^ / PAGE ^    | Remote control Button                | 8E          | ▶▶            | Remote control Button |
| 01          | P v / PAGE v    | Remote control Button                | 8F          | ◀◀            | Remote control Button |
| 20          | TEXT            | Remote control Button                | 7E          | SIMPLINK      | Remote control Button |
| 21          | T.OPT(T.Option) | Remote control Button                | 0C          | PORTAL        | Remote control Button |
| 43          | SETTINGS        | Remote control Button                | 95          | ENERGY SAVING | Remote control Button |
| 45          | Q.MENU          | Remote control Button                | 0E          | SLEEP         | Remote control Button |
| AA          | INFO            | Remote control Button                |             |               |                       |

# EXTERNAL CONTROL DEVICE SETUP

## RS-232C Setup

- Image shown may differ from your TV.

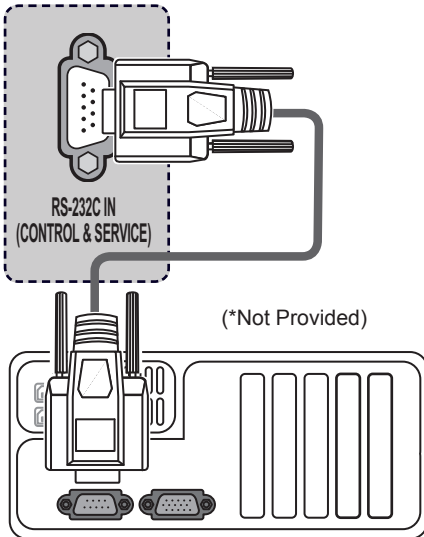
Connect the RS-232C (serial port) input jack to an external control device (such as a computer or an AV control system) to control the product's functions externally.

Connect the serial port of the control panel device to the RS-232C jack on the product back panel.

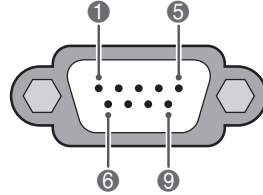


### NOTE

- RS-232C connection cables are not supplied with the product.



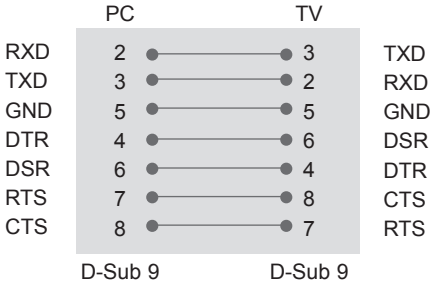
## Type of Connector: D-Sub 9-Pin Male



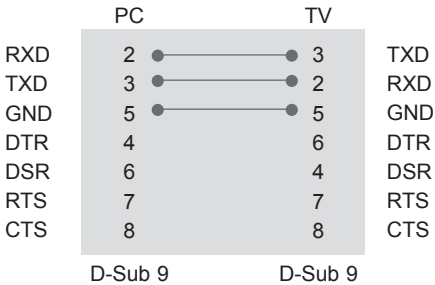
| No. | Pin name                                      |
|-----|---|
| 1   | 3.5 V   |
| 2   | RXD (Receive data)                            |
| 3   | TXD (Transmit data)                           |
| 4   | IR OUT from TV                                |
| 5   | GND   |
| 6   | No Connection                                 |
| 7   | No Connection (5 V available in some models)  |
| 8   | No Connection                                 |
| 9   | No Connection (12 V available in some models) |

## RS-232C Configurations

### 7-Wire Configurations (Standard RS-232C cable)



### 3-Wire Configurations (Not standard)



### Set ID

Set ID number. "Real Data Mapping".

- 1 Press **SETTINGS** or **HOME** 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)

|                    | COM-MAND1 | COM-MAND2 | DATA (Hexa-decimal) |                              | COM-MAND1 | COM-MAND2 | DATA (Hexa-decimal) |
|--------------------|-----------|-----------|---------------------|------------------------------|-----------|-----------|---------------------|
| 01. Power          | k         | a         | 00 to 01            | 12. Remote Control Lock Mode | k         | m         | 00 to 01            |
| 02. Aspect Ratio   | k         | c         | (See p.36)          | 13. Balance                  | k         | t         | 00 to 64            |
| 03. Screen Mute    | k         | d         | (See p.36)          | 14. Colour Temperature       | x         | u         | 00 to 64            |
| 04. Volume Mute    | k         | e         | 00 to 01            | 15. Energy Saving            | j         | q         | 00 to 05            |
| 05. Volume Control | k         | f         | 00 to 64            | 16. Auto Configuration       | j         | u         | 01                  |
| 06. Contrast       | k         | g         | 00 to 64            | 17. Equalize                 | j         | v         | (See p.38)          |
| 07. Brightness     | k         | h         | 00 to 64            | 18. Tune Command             | m         | a         | (See p.38)          |
| 08. Colour         | k         | i         | 00 to 64            | 19. Programme Add/Skip       | m         | b         | 00 to 01            |
| 09. Tint           | k         | j         | 00 to 64            | 20. Key                      | m         | c         | (See p.39)          |
| 10. Sharpness      | k         | k         | 00 to 32            | 21. Control Back Light       | m         | g         | 00 to 64            |
| 11. OSD Select     | k         | l         | 00 to 01            | 22. Input select (Main)      | x         | b         | (See p.39)          |



### 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 is 1 to 99. When selecting Set ID '0', every connected set is controlled.

Set ID is indicated as decimal (1 to 99) on menu and as Hexa decimal (0x0 to 0x63) on transmission/receiving protocol.

[Data] : To transmit command data. Transmit 'FF' data to read status of command.

[Cr] : Carriage Return

ASCII code '0x0D'

[ ] : ASCII code 'space (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

## 01. Power (Command: k a)

- ▶ To control Power On/Off of the set.

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

Data 00 : Power Off            01 : Power On

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

- ▶ To Show TV is Power On/Off.

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

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

- \* Similarly, if other functions transmit '0xFF' data based on this format, Acknowledgement data feed back presents status about each function.

- \* OK Ack., Error Ack. and other message may display on the screen when TV is power On.

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    07 : 14:9  
          (4:3)                    09 : Just Scan  
02 : Wide screen        0B : Full Wide  
          (16:9)  
04 : Zoom                10 to 1F : Cinema Zoom  
                                  1 to 16  
06 : 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 (1080i 50 Hz / 60 Hz, 720p 50Hz / 60 Hz, 1080p 24 Hz / 30 Hz / 50 Hz / 60 Hz), Component( 720p, 1080i, 1080p 50 Hz / 60 Hz) mode, Just Scan is available.
- \* Full Wide is supported only for Digital, Analogue ( Eu only ), AV (EU only ) .

## 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

- \* Refer to 'Real data mapping'. See p.39.

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

- \* Refer to 'Real data mapping'. See p.39.

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

- \* Refer to 'Real data mapping'. See p.39.

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

## 08. Colour (Command: k i)

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

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

Data Min : 00 to Max : 64

- \* Refer to 'Real data mapping'. See p.39.

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

- \* Refer to 'Real data mapping'. See p.39.

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

- \* Refer to 'Real data mapping'. See p.39.

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

## 11. OSD Select (Command: k l)

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

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

Data 00 : OSD off                      01 : OSD on

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

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

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

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

Data 00 : Lock off                      01 : Lock on

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

- \* If you are not using the remote control, use this mode. When main power is on/off, external control lock is released.
- \* In the standby mode, 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

- \* Refer to 'Real data mapping'. See p.39.

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

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

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

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

Data Warm: 00 to Cool:64

- \* Refer to 'Real data mapping'. See p.39.

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

15. 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]

| Power Saving Function |   |   |   |           | Level |   |   |   | Description |
|-----------------------|---|---|---|-----------|-------|---|---|---|-------------|
| 7                     | 6 | 5 | 4 |           | 3     | 2 | 1 | 0 |             |
| 0                     | 0 | 0 | 0 | Low Power | 0     | 0 | 0 | 0 | Off         |
| 0                     | 0 | 0 | 0 | Low Power | 0     | 0 | 0 | 1 | Minimum     |
| 0                     | 0 | 0 | 0 | Low Power | 0     | 0 | 1 | 0 | Medium      |
| 0                     | 0 | 0 | 0 | Low Power | 0     | 0 | 1 | 1 | Maximum     |
| 0                     | 0 | 0 | 0 | Low Power | 0     | 1 | 0 | 1 | Screen Off  |
| 0                     | 0 | 0 | 0 | Low Power | 0     | 1 | 0 | 0 | Auto        |

- ▶ 'Auto' is available in TV that supports 'Intelligent Sensor'.

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

16. Auto Configure (Command: j u) (Only RGB support model)

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

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

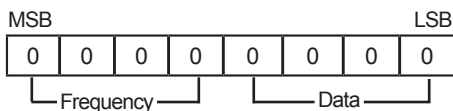
Data 01 : To set

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

17. Equalizer (Command : j v)

- ▶ To adjust equalize.

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



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

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

18. Tune Command (Command: m a)

- ▶ Select channel to following physical number.

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

Data 00 : High channel data

Data 01 : Low channel data  
 ex. No. 47 -> 00 2F (2FH)  
 No. 394 -> 01 8A (18AH),  
 DTV No. 0 -> Don't care

Data02 : [Antena]  
 0x00 : Analog Main  
 0x10 : DTV Main  
 0x20 : Radio

[Cable]  
 0x80 : Analog Main  
 0x90 : DTV Main  
 0xA0 : Radio

Channel data range  
 Analogue - Min: 00 to Max: 63 (0 to 99)  
 Digital - Min: 00 to Max: 3E7 (0 to 999)

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

Data Min: 00 to Max: 7DH

19. Programme Add/Skip (Command: m b)

- ▶ To set skip status for the current Programme.

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

Data 00 : Skip                      01 : Add

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

20. Key (Command: m c)

- ▶ To send IR remote key code.

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

Data Key code - See p.31.

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

| Input Number |   |   |   | Data   |
|--------------|---|---|---|--------|
| 0            | 0 | 0 | 0 | Input1 |
| 0            | 0 | 0 | 1 | Input2 |
| 0            | 0 | 1 | 0 | Input3 |
| 0            | 0 | 1 | 1 | Input4 |

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

21. Control Backlight (Command: m g)

- ▶ To control the backlight.

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

Data Min : 00 to Max : 64

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

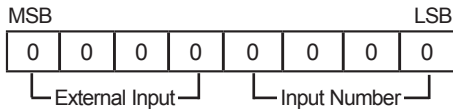
| * Real data mapping |                     |
|---------------------|---------------------|
| 00 :                | Step 0              |
| :                   |                     |
| A :                 | Step 10 (Set ID 10) |
| :                   |                     |
| F :                 | Step 15 (Set ID 15) |
| 10 :                | Step 16 (Set ID 16) |
| :                   |                     |
| 64 :                | Step 100            |
| :                   |                     |
| 6E :                | Step 110            |
| :                   |                     |
| 73 :                | Step 115            |
| 74 :                | Step 116            |
| :                   |                     |
| CF :                | Step 199            |
| :                   |                     |
| FE :                | Step 254            |
| FF :                | Step 255            |

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

- ▶ To select input source for main picture.

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

Data Structure



| External Input |   |   |   | Data      |
|----------------|---|---|---|-----------|
| 0              | 0 | 0 | 0 | DTV       |
| 0              | 0 | 0 | 1 | Analogue  |
| 0              | 0 | 1 | 0 | AV        |
| 0              | 1 | 0 | 0 | Component |
| 0              | 1 | 1 | 0 | RGB       |
| 0              | 1 | 1 | 1 | HDMI      |
| 1              | 0 | 0 | 0 |           |
| 1              | 0 | 0 | 1 |           |
| 1              | 0 | 1 | 0 |           |



Record the model number and serial number of the TV.  
Refer to the label on the back cover and quote this information to your dealer when requiring any service.

MODEL \_\_\_\_\_

SERIAL \_\_\_\_\_

(Only DTV)

**DVB**<sup>®</sup>  
Digital Video  
Broadcasting



OWNER'S MANUAL

# EXTERNAL CONTROL DEVICE SETUP

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

# KEY CODES

- This feature is not available for all models.

| Code (Hexa) | Function                    | Note       | Code (Hexa) | Function                     | Note       |
|-------------|-----------------------------|------------|-------------|------------------------------|------------|
| 00          | CH +, PR +                  | R/C Button | 53          | List                         | R/C Button |
| 01          | CH -, PR -                  | R/C Button | 5B          | Exit                         | R/C Button |
| 02          | Volume +                    | R/C Button | 60          | PIP(AD)                      | R/C Button |
| 03          | Volume -                    | R/C Button | 61          | Blue                         | R/C Button |
| 06          | > (Arrow Key / Right Key)   | R/C Button | 63          | Yellow                       | R/C Button |
| 07          | < (Arrow Key / Left Key)    | R/C Button | 71          | Green                        | R/C Button |
| 08          | Power                       | R/C Button | 72          | Red                          | R/C Button |
| 09          | Mute                        | R/C Button | 79          | Ratio / Aspect Ratio         | R/C Button |
| 0B          | Input                       | R/C Button | 91          | AD (Audio Description)       | R/C Button |
| 0E          | SLEEP                       | R/C Button | 7A          | User Guide                   | R/C Button |
| 0F          | TV, TV/RAD                  | R/C Button | 7C          | Smart / Home                 | R/C Button |
| 10 - 19     | * Number Key 0 - 9          | R/C Button | 7E          | SIMPLINK                     | R/C Button |
| 1A          | Q.View / Flashback          | R/C Button | 8E          | ▶▶ (Forward)                 | R/C Button |
| 1E          | FAV (Favorite Channel)      | R/C Button | 8F          | ◀◀ (Rewind)                  | R/C Button |
| 20          | Text (Teletext)             | R/C Button | AA          | Info                         | R/C Button |
| 21          | T. Opt (Teletext Option)    | R/C Button | AB          | Program Guide                | R/C Button |
| 28          | Return (BACK)               | R/C Button | B0          | ▶ (Play)                     | R/C Button |
| 30          | AV (Audio / Video) Mode     | R/C Button | B1          | ■ (Stop / File List)         | R/C Button |
| 39          | Caption/Subtitle            | R/C Button | BA          | (Freeze / Slow Play / Pause) | R/C Button |
| 40          | ∧ (Arrow Key / Cursor Up)   | R/C Button | BB          | Soccer                       | 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 | 99          | AutoConfig                   | R/C Button |
| 44          | OK / Enter                  | R/C Button | 9F          | App / *                      | R/C Button |
| 45          | Q.Menu                      | R/C Button |             |                              |            |
| 4C          | List, - (ATSC Only)         | R/C Button |             |                              |            |

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

# EXTERNAL CONTROL DEVICE SETUP

- Image shown may differ from your TV.

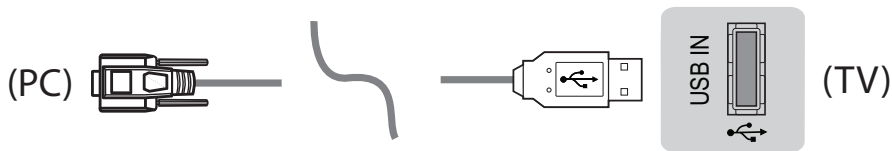
Connect the USB to Serial converter/RS-232C input jack to an external control device (such as a computer or an A/V control system) to control the product's functions externally.

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

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

## USB to Serial converter with USB Cable

USB Type

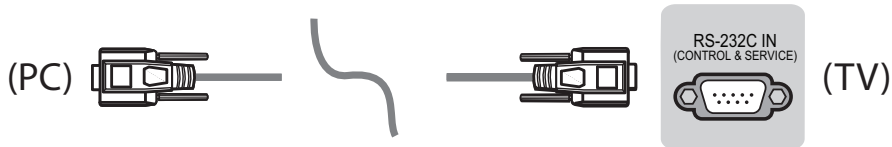


- LGTV supports PL2303 chip-based (Vendor ID : 0x0557, Product ID : 0x2008) USB to serial converter which is not made nor provided by LG.
- It can be purchased from computer stores that carry accessories for IT support professionals.

## RS-232C With RS232C Cable

DE9 (D-Sub 9pin) Type

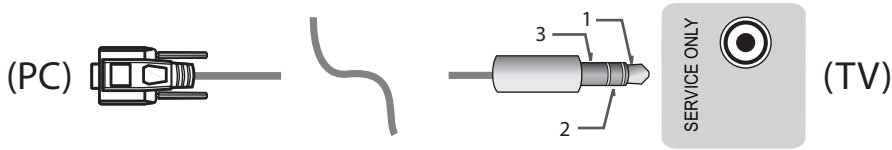
- You need to purchase the RS-232C (DE9, D-Sub 9pin female-to-female type) to RS-232C cable required for the connection between the PC and the TV, which is specified in the manual.



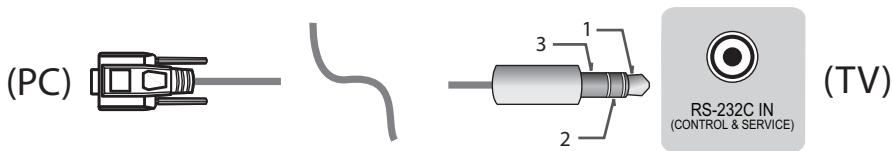
The connection interface may differ from your TV.

Phone jack Type

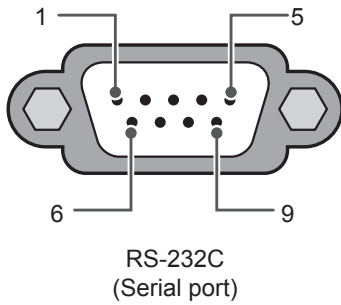
- You need to purchase the phone-jack to RS-232 cable required for the connection between the PC and the TV, which is specified in the manual.
- \* For other models, connect to the USB port.
- \* The connection interface may differ from your TV.



- or -

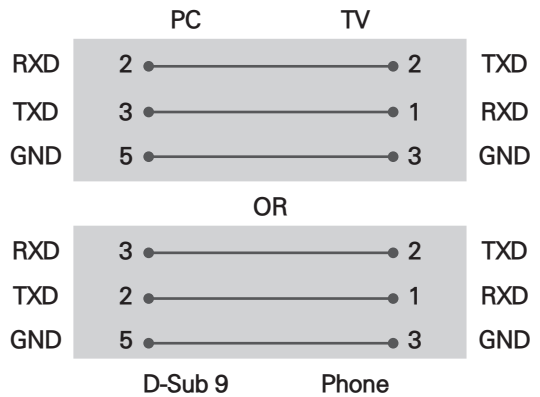


Customer Computer



RS-232C configurations

3-Wire Configurations(Not standard)



Set ID

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

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



## Communication Parameters

- Baud rate : 9600 bps (UART)
- Data length : 8 bits
- Parity : None
- Stop bit : 1 bit
- Communication code : ASCII code
- Use a crossed (reverse) cable.

## Command reference list

(Depending on model)

|                              | COMMAND1 | COMMAND2 | DATA<br>(Hexadecimal) |  | COMMAND1 | COMMAND2 | DATA<br>(Hexadecimal) |
|------------------------------|----------|----------|-----------------------|--|----------|----------|-----------------------|
| 01. Power*                   | k        | a        | 00 to 01              | 15. Balance                                | k        | t        | 00 to 64              |
| 02. Aspect Ratio             | k        | c        | (p.7)                 | 16. Color (Colour) Temperature             | x        | u        | 00 to 64              |
| 03. Screen Mute              | k        | d        | (p.7)                 | 17. ISM Method (Only Plasma TV)            | j        | p        | (p.8)                 |
| 04. Volume Mute              | k        | e        | 00 to 01              | 18. Equalizer                              | j        | v        | (p.8)                 |
| 05. Volume Control           | k        | f        | 00 to 64              | 19. Energy Saving                          | j        | q        | 00 to 05              |
| 06. Contrast                 | k        | g        | 00 to 64              | 20. Tune Command                           | m        | a        | (p.9)                 |
| 07. Brightness               | k        | h        | 00 to 64              | 21. Channel (Programme) Add/Del(Skip)      | m        | b        | 00 to 01              |
| 08. Color/ Colour            | k        | i        | 00 to 64              | 22. Key                                    | m        | c        | Key Codes             |
| 09. Tint                     | k        | j        | 00 to 64              | 23. Control Backlight, Control Panel Light | m        | g        | 00 to 64              |
| 10. Sharpness                | k        | k        | 00 to 32              | 24. Input select (Main)                    | x        | b        | (p.11)                |
| 11. OSD Select               | k        | l        | 00 to 01              | 25. 3D (Only 3D models)                    | x        | t        | (p.11)                |
| 12. Remote Control Lock Mode | k        | m        | 00 to 01              | 26. Extended 3D (Only 3D models)           | x        | v        | (p.11)                |
| 13. Treble                   | k        | r        | 00 to 64              | 27. Auto Configure                         | j        | u        | (p.12)                |
| 14. Bass                     | k        | s        | 00 to 64              |  |          |          |                       |

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

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

## Transmission / Receiving Protocol

### Transmission

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

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

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

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

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

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

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

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

[ ] : Space – ASCII code '0x20'

### OK Acknowledgement

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

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

### Error Acknowledgement

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

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

Data 00: Illegal Code

### Real data mapping (Hexadecimal → Decimal)

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

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

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

\* Commands may work differently depending on model and signal.

### 01. Power (Command: k a)

- ▶ To control Power \*On or Off of the set.

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

Data 00 : Power Off      01 : \*Power On

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

- ▶ To Show TV is Power On or \*Off

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

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

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

### 02. Aspect Ratio (Command: k c)

(Main Picture Size)

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

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

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

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

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

### 03. Screen Mute (Command: k d)

- ▶ To select screen mute on/off.

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

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

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

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

### 04. Volume Mute (Command: k e)

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

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

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

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

### 05. Volume Control (Command: k f)

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

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

Data Min : 00 to Max : 64

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

### 06. Contrast (Command: k g)

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

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

Data Min : 00 to Max : 64

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

### 07. Brightness (Command: k h)

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

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

Data Min : 00 to Max : 64

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

### 08. Color/Colour (Command: k i)

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

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

Data Min : 00 to Max : 64

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

09. Tint (Command: k j)

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

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

Data Red : 00 to Green : 64

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

10. Sharpness (Command: k k)

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

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

Data Min : 00 to Max : 32

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

11. OSD Select (Command: k l)

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

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

Data 00 : OSD off            01 : OSD on

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

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

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

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

Data 00 : Lock off            01 : Lock on

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

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

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

13. Treble (Command: k r)

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

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

Data Min : 00 to Max : 64

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

\* (Depending on model)

14. Bass (Command: k s)

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

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

Data Min : 00 to Max : 64

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

\* (Depending on model)

15. Balance (Command: k t)

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

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

Data Min : 00 to Max : 64

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

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

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

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

Data Min : 00 to Max : 64

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

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

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

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

Data Min : 02: Orbiter

08: Normal

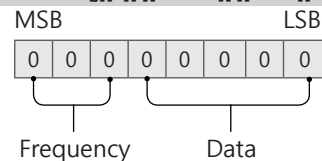
20: Color(Colour) Wash

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

18. Equalizer (Command : j v)

- ▶ Adjust EQ of the set.

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



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

|   |   |   |          |   |   |   |   |   |             |
|---|---|---|----------|---|---|---|---|---|-------------|
| 1 | 0 | 0 | 5th Band | 0 | 0 | 1 | 0 | 1 | 20(decimal) |
|---|---|---|----------|---|---|---|---|---|-------------|

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

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

### 19. Energy Saving (Command: j q)

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

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

Data

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

\* (Depending on model)

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

### 20. Tune Command (Command: m a)

\* This command may work differently depending on model and signal.

• For Europe, Mid-East, Colombia, Asia except South Korea and Japan Model

► Select channel to following physical number.

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

\* Analog Antenna/Cable

[Data 00][Data 01] Channel Data

Data 00 : High byte channel data

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

Data 02 : Input Source (Analog)

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

\* Digital Antenna/Cable/Satellite

[Data 00][Data 01]: Channel Data

Data 00 : High Channel data

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

Data 02 : Input Source (Digital)

- 10 : Antenna TV (DTV)
- 20 : Antenna Radio (Radio)
- 40 : Satellite TV (SDTV)
- 50 : Satellite Radio (S-Radio)
- 90 : Cable TV (CADTV)
- a0 : Cable Radio (CA-Radio)

\* Tune Command Examples:

1. Tune to the Analog antenna (PAL) Channel 10.

Set ID = All = 00

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

Data 02 = Analog Antenna TV = 00

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

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

Set ID = All = 00

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

Data 02 = Digital Antenna TV = 10

Result = **ma 00 00 01 10**

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

Set ID = All = 00

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

Data 02 = Digital Satellite TV = 40

Result = **ma 00 03 E8 40**

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

[Data 02][x][a][ ][Set ID][ ][NG][Data 00][x]

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

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

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

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

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

\* Analog Antenna/Cable

Data 00 : Physical Channel Number

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

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

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

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

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

Data 05: Input Source (Analog)

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

\* Digital Antenna/Cable

Data 00 : xx (Don't care)

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

Data 01 : High byte Channel Data

Data 02 : Low byte Channel Data

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

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

Data 03 : High byte Channel Data

Data 04 : Low byte Channel Data

Data 05 : Input Source (Digital)

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

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

Number

- 22 : Antenna TV (DTV) – Don't Use Physical Channel Number
- 26 : Cable TV (CADTV) - Don't Use Physical Channel Number
- 46 : Cable TV (CADTV) – Use Major Channel Number Only (One Part Channel)

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

\* Tune Command Examples:

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

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

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

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

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

• For Japan Model

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

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

\* Digital Antenna/Satellite

Data 00: xx (Don't care)

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

Data 01: High byte Channel Data

Data 02: Low byte Channel Data

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

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

(Don't care in Satellite)

Data 03: High byte Channel Data

Data 04: Low byte Channel Data

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

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

\* Tune Command Examples:

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

Set ID = All = 00  
 Data 00 = Don't know Physical = 00  
 Data 01 & 02 = Major is 17 = 00 11  
 Data 03 & 04 = Minor/Branch is 1 = 00 01

Data 05 = Digital Antenna TV = 02

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

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

Set ID = All = 00

Data 00 = Don't know Physical = 00

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

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

Data 05 = Digital BS TV = 07

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

\* This feature is varied based on the model.

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

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

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

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

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

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

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

22. Key (Command: m c)

- To send IR remote key code.

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

Data Key code - p.2.

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

23. Control Backlight (Command: m g)

• For LCD TV / LED TV

- To control the backlight.

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

Data Min : 00 to Max : 64

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

Control Panel Light (Command: m g)

• For Plasma TV

- To control the panel light.

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

Data Min : 00 to Max : 64

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

## 24. Input select (Command: x b) (Main Picture Input)

- ▶ To select input source for main picture.

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

### Data

00 : DTV                      01 : CADTV  
 02 : Satellite DTV        10 : ATV  
       ISDB-BS (Japan)  
 03 : ISDB-CS1 (Japan)  
 04 : ISDB-CS2 (Japan)  
 11 : CATV  
  
 20 : AV or AV1            21 : AV2  
 40 : Component1        41 : Component2  
 60 : RGB  
  
 90 : HDMI1                91 : HDMI2  
 92 : HDMI3                93 : HDMI4

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

- \* This function depends on model and signal.

## 25. 3D(Command: x t) (only 3D models) (Depending on model)

- ▶ To change 3D mode for TV.

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

- \* (Depending on model)

### Data Structure

[Data 00] 00 : 3D On  
           01 : 3D Off  
           02 : 3D to 2D  
           03 : 2D to 3D  
 [Data 01] 00 : Top and Bottom  
           01 : Side by Side  
           02 : Check Board  
           03 : Frame Sequential  
           04 : Column interleaving  
           05 : Row interleaving  
 [Data 02] 00 : Right to Left  
           01 : Left to Right  
 [Data 03] 3D Effect(3D Depth): Min : 00 - Max : 14  
           (\*transmit by Hexadecimal code)

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

|           |           |           |           |
|-----------|-----------|-----------|-----------|
| [Data 00] | [Data 01] | [Data 02] | [Data 03] |
|-----------|-----------|-----------|-----------|

|    |   |   |   |
|----|---|---|---|
| 00 | O | O | O |
| 01 | X | X | X |
| 02 | X | X | X |
| 03 | X | O | O |

X : don't care

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

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

- ▶ To change 3D option for TV.

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

### [Data 00] 3D option

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

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

### 1) When [Data 00] is 00

00 : Right to Left  
 01 : Left to Right

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

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

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

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

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

00 : Off  
 01 : On

### 4) When [Data 00] is 08

00 : Revert to 3D video from 3D-to-2D converted 2D video  
 01 : Change 3D video to 2D video, except 2D-to-3D video

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

### 5) When [Data 00] is 09

00 : Standard                      01 : Sport  
 02 : Cinema                        03 : Extreme  
 04 : Manual                         05 : Auto

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

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

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

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

Data 01 : To set

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