



LG

Life's Good

ENGLISH

OWNER'S MANUAL

LED LCD TV

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

LED LCD TV MODELS

M2250D

M2350D

M2450D

M2550D

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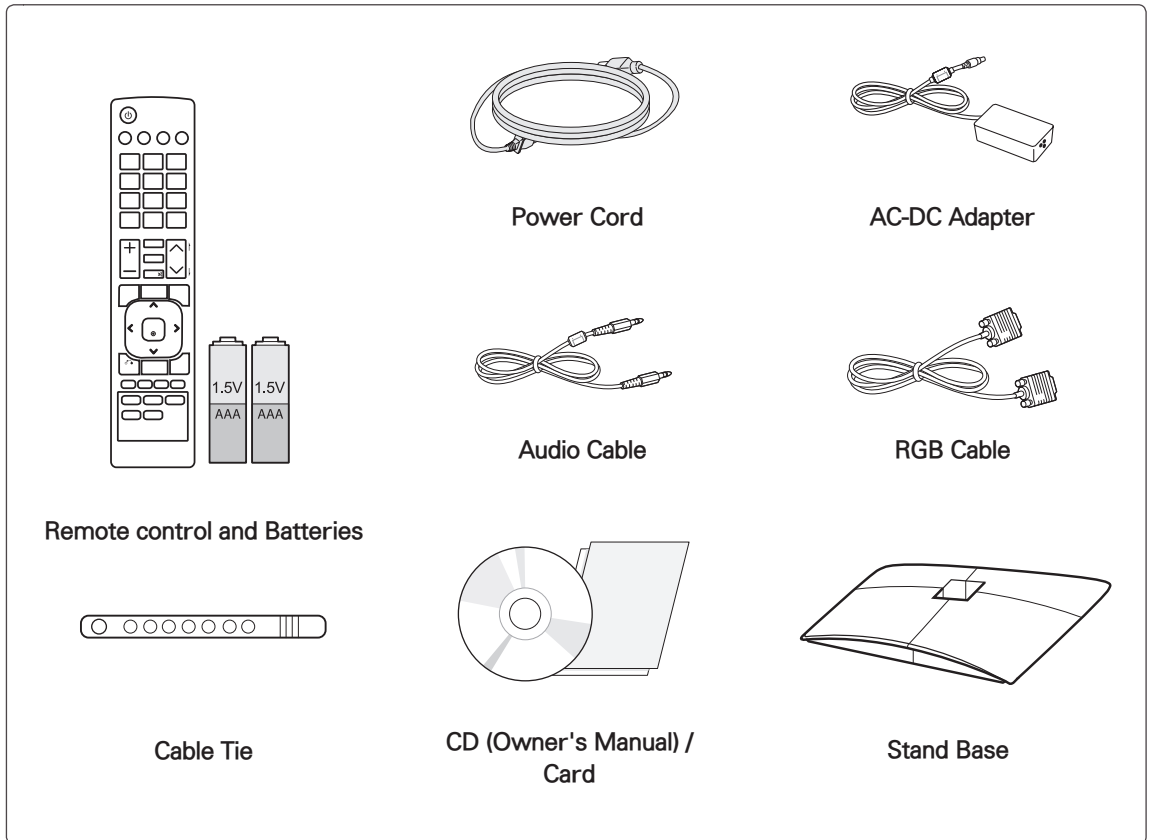
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ASSEMBLING AND PREPARING

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 accessories.



CAUTION

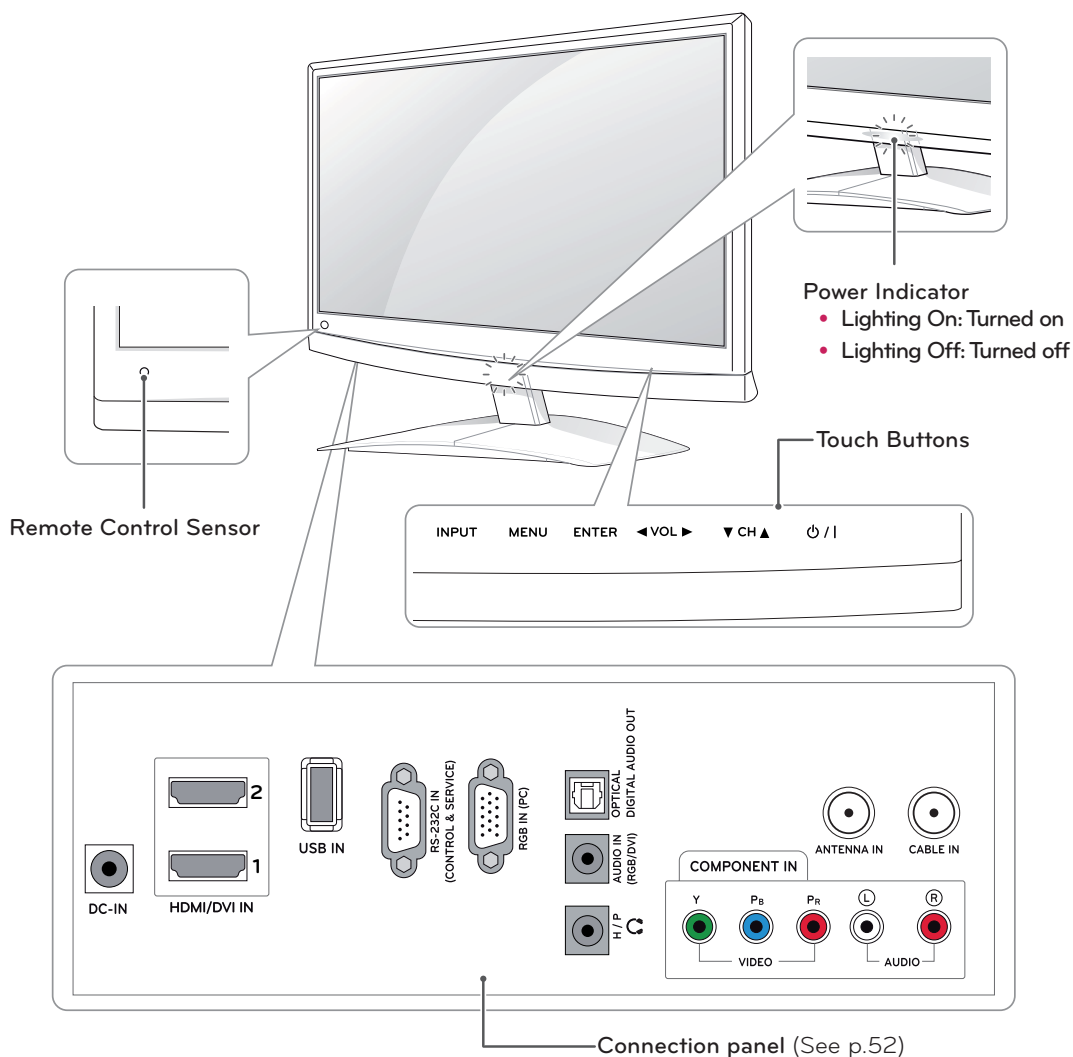
- Do not use any pirated items to ensure the safety and product life span.
- Any damages or injuries by using pirated items are not covered by the warranty.



NOTE

- The accessories supplied with your product may vary depending on the model.
- Product specifications or contents in this manual may be changed without prior notice due to upgrade of product functions.

Parts and buttons



Touch button	Description
INPUT	Changes the input source.
MENU	Accesses the main menus, or saves your input and exits the menus.
ENTER	Selects the highlighted menu option or confirms an input.
◀VOL▶	Adjusts the volume level.
▼CH▲	Scrolls through the saved channels
⏻/⏷	Turns the power on or off.

All of the buttons are touch sensitive and can be operated through simple touch with your finger.



NOTE

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

Lifting and moving the TV

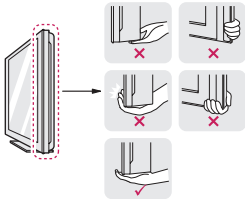
When moving or lifting the TV, read the following to prevent the TV from being scratched or damaged and for safe transportation regardless of its type and size.



CAUTION

Avoid touching the screen at all times, as this may result in damage to the screen or some of the pixels used to create images.

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



- When holding the TV, the screen should face away from you to prevent the screen from scratches.



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

Setting up the TV

Attaching the Stand Base

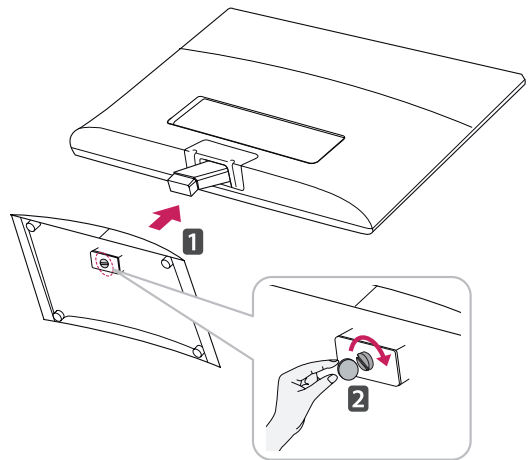
- 1 Place the TV with the screen side down on a flat and cushioned surface.



CAUTION

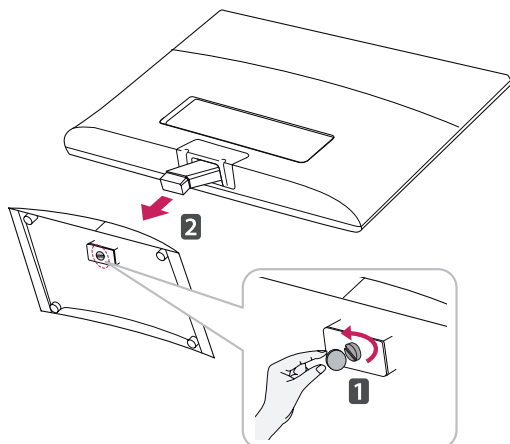
Lay a foam mat or soft protective cloth on the surface to protect the screen from damage.

- 2 Attach the **Stand Base** from the TV by turning the screw to the right with a **Coin**.

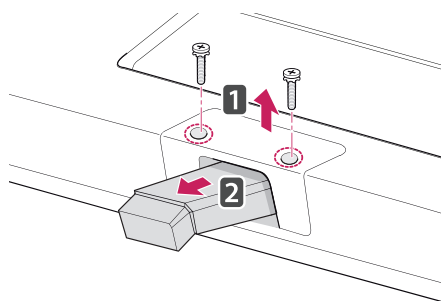


Detaching the Stand Base and Body

- 1 Place the TV with the screen side down on a flat and cushioned surface.
- 2 Turn the screw to the left, and then pull out the **Stand Base** from the **Stand Body**.

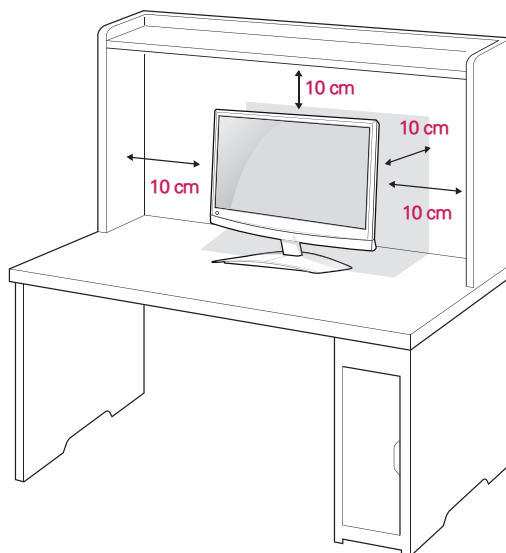


- 3 Remove 2 screws and pull out the **Stand Body** from the TV.

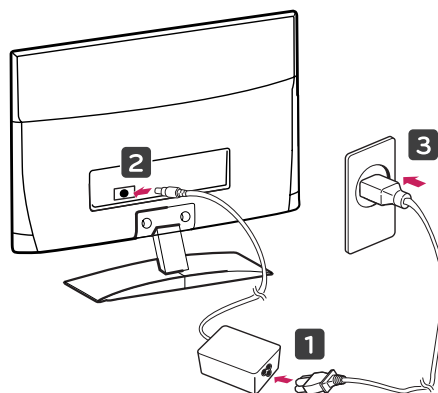


Mounting on a table

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

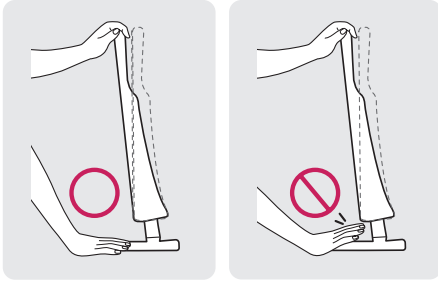


- 2 Connect the **AC-DC Adapter** and **Power Cord** to a wall outlet.



! WARNING

When you adjust the angle, do not hold the bottom of the TV frame as shown on the following illustration, it may injure your fingers.

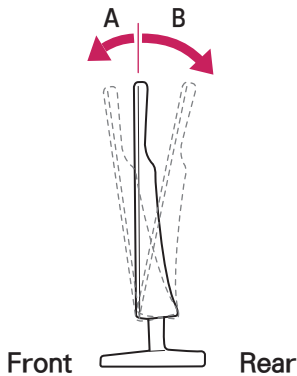


! CAUTION

Disconnect the power cord first, and then move or install the TV. Otherwise electric shock may occur.

! NOTE

Tilt from +10 to -5 degrees up or down to adjust the angle of the TV to suit your view

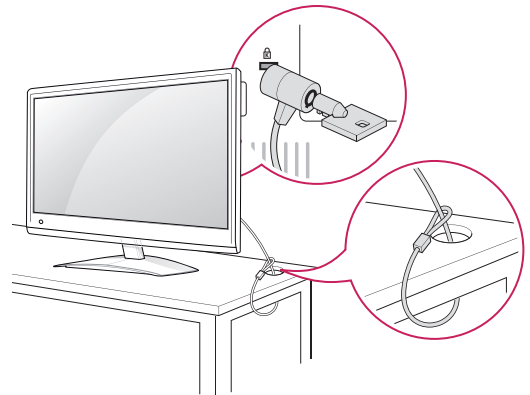


Tilt Range	Front (A)	- 5 °
	Rear (B)	10°

Using the Kensington security system

The Kensington security system connector is located at the back of the TV. For more information of installation and using, refer to the manual supplied with the Kensington security system or visit <http://www.kensington.com>.

Connect the Kensington security system cable between the TV and a table.

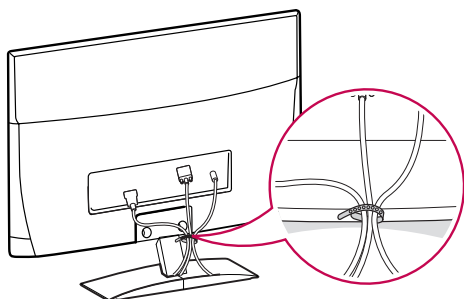


! NOTE

The Kensington security system is optional. You can obtain additional accessories from most electronics stores.

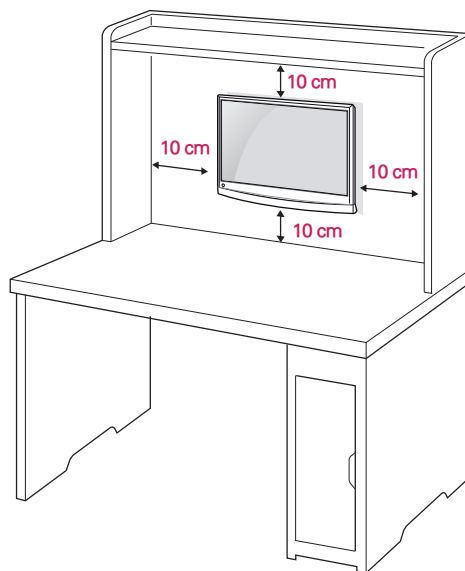
Tidying cables

Gather and bind the cables with the supplied cable tie.



Mounting on a wall

For proper ventilation, allow a clearance of 10 cm on each side and from the wall. Detailed installation instructions are available from your dealer, see the optional Tilt Wall Mounting Bracket Installation and Setup Guide.

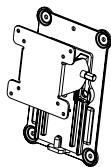
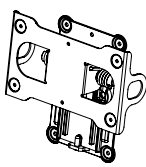


If you intend to mount the TV to a wall, attach the Wall mounting interface (optional parts) to the back of the set.

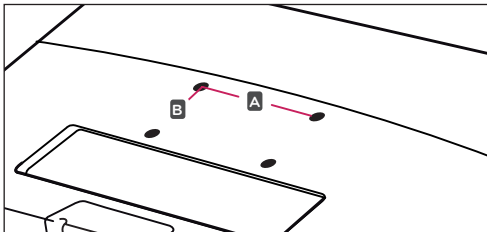
When you install the TV using the wall mounting interface (optional parts), attach it carefully so it will not drop.

- 1 Please use a wall mount interface in accordance with VESA Standards.
- 2 If you use screws longer than standard, the TV might be damaged internally.
- 3 If you use improper screws, the product might be damaged and drop from the mounted position. In this case, LG Electronics is not responsible for damage.
- 4 VESA compatible only with respect to screw mounting interface dimensions and mounting screw specifications.

- 5 Please use VESA standard as below.
- 784.8 mm (30.9 inch) and under
 - * Wall Mount Pad Thickness : 2.6 mm
 - * Screw : Φ 4.0 mm x Pitch 0.7 mm x Length 10 mm
 - 787.4 mm (31.0 inch) and above
 - * Please use VESA standard wall mount pad and screws.

Model	M2250D M2350D	M2450D M2550D
VESA (A x B)	75 x 75	200 x 100
Standard screw	M4	M4
Number of screws	4	4
Wall mount bracket (optional)	RW120 	RW240 

- VESA (A x B)



CAUTION

- Disconnect the power cord 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 screws and a wall mount that complies with the VESA standard. Any damages or injuries by misuse or using an improper accessory are not covered by the warranty.



NOTE

- Use the screws that are listed on the VESA standard screw specifications.
- The wall mount kit includes an installation manual and necessary parts.
- The wall mount bracket is optional. You can obtain additional accessories from your local dealer.
- The length of screws may differ depending on the wall mount. Be sure to use the proper length.
- For more information, refer to the instructions supplied with the wall mount.

REMOTE CONTROL

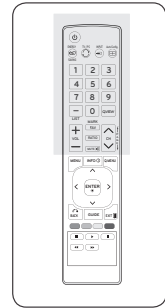
The descriptions in this manual are based on the buttons of the remote control.

Please read this manual carefully and use the TV correctly.

To replace batteries, open the battery cover, replace batteries (1.5 V AAA) matching

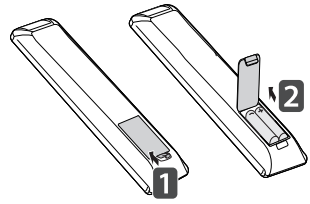
⊕ and ⊖ ends to the label inside the compartment, and close the battery cover.

To remove the batteries, perform the installation actions in reverse.

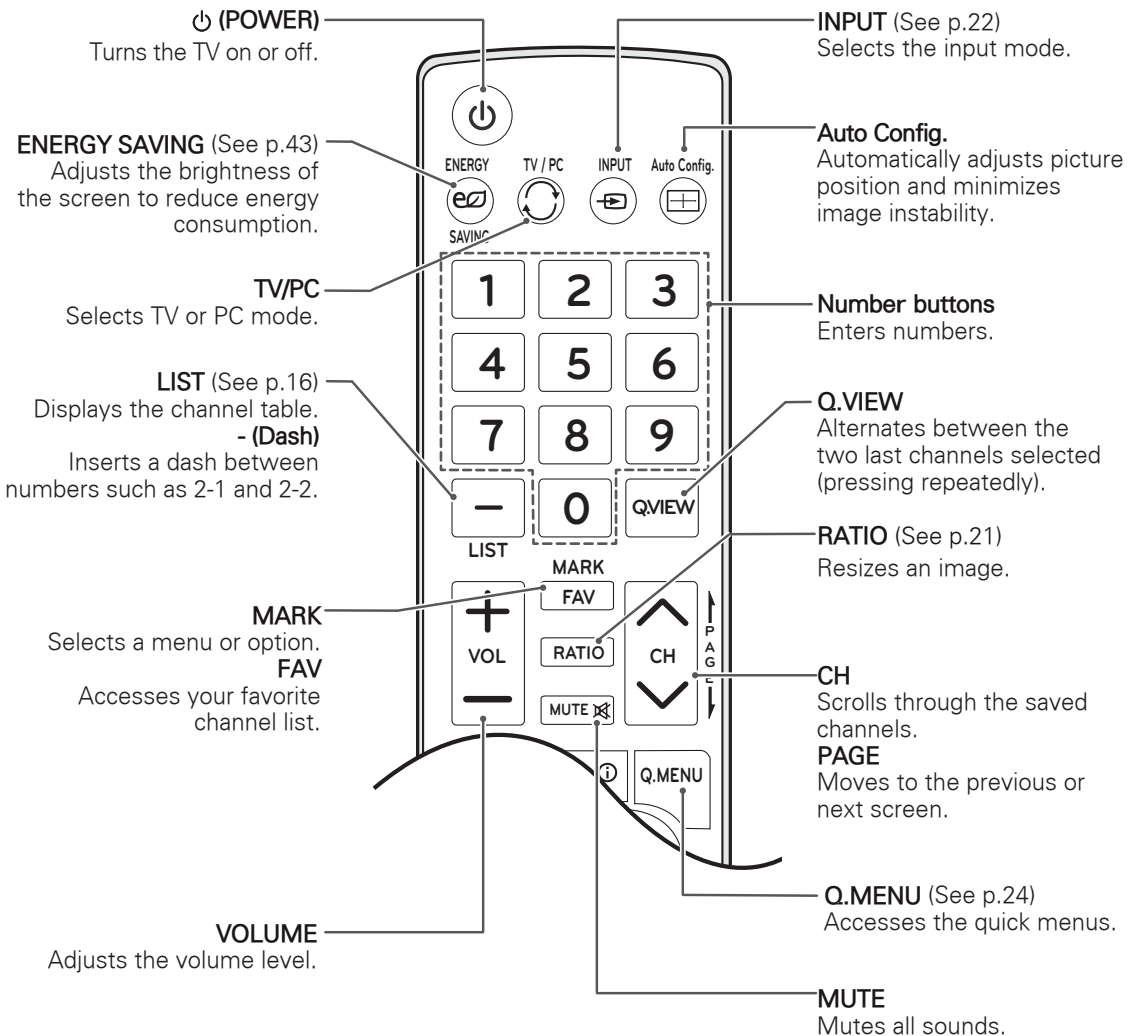


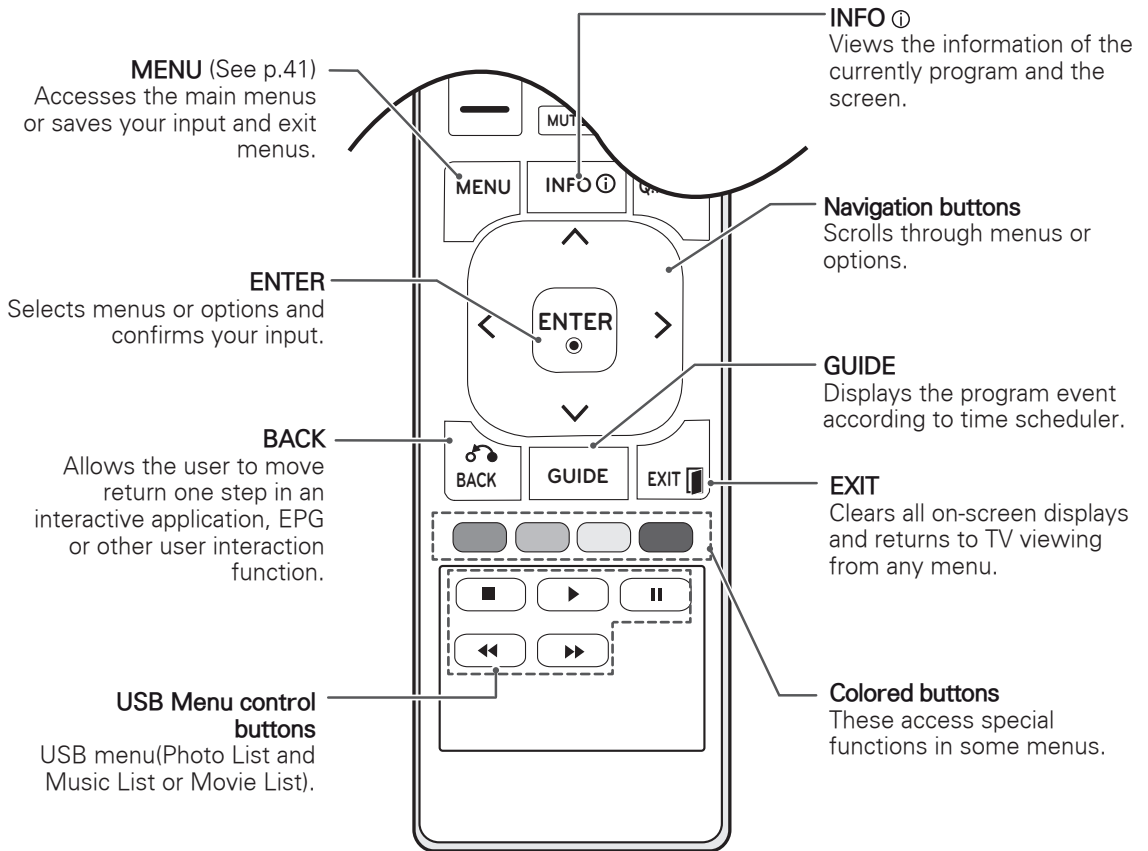
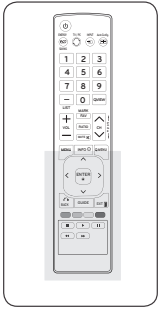
CAUTION

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



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





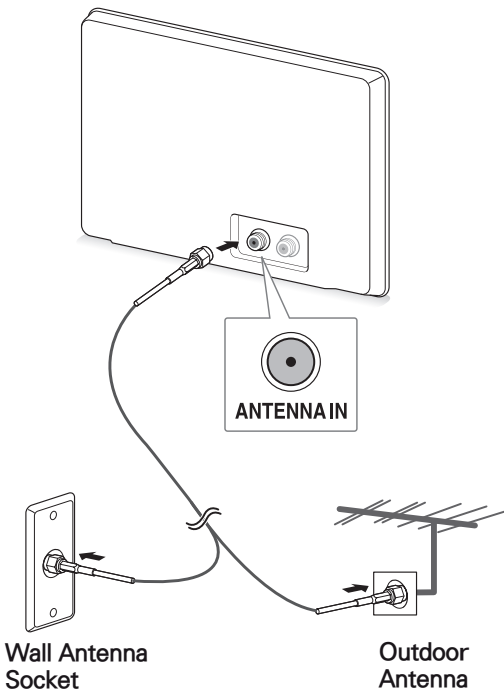
WATCHING TV

Connecting an antenna or cable

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

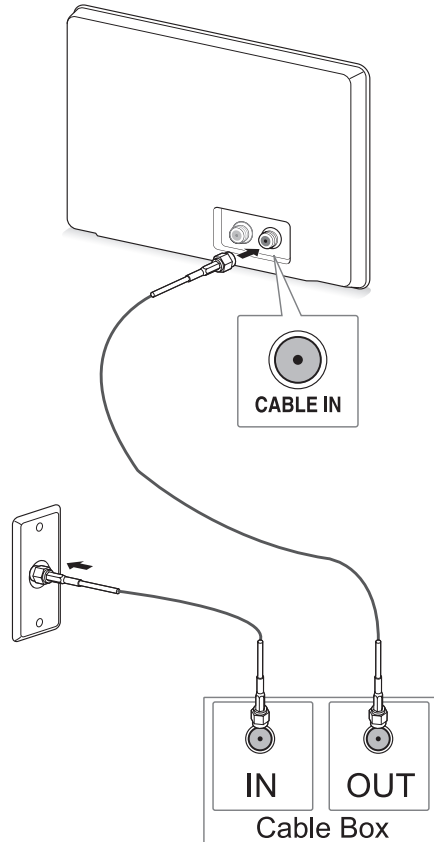
Connecting an antenna or basic cable

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



Connecting with a cable box

Connect the TV to a cable box and the cable box to a wall antenna socket with 2 RF cables (75 ohm).



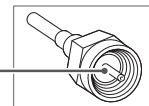
NOTE

- 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, aim the antenna to the proper direction.
- Visit <http://AntennaWeb.org> for more information about the antenna and cable connection.

CAUTION

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

Copper wire

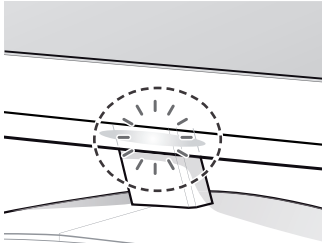


- Complete all connections instructions between devices, and then connect the power cord to the power outlet to prevent damages to your TV.

Accessing the TV for the first time

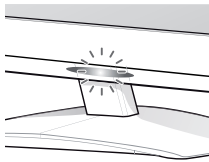
When you access the TV for the first time, the initial setting screen appears. Select a language and customize the basic settings.

- 1 Connect the power cord to a power outlet.
- 2 Press **⏻/I** on the TV to turn the TV on. The Power indicator lighting is turned on.



NOTE

The brightness of the power indicator will be reduced by 20% when the TV is in power-saving mode.



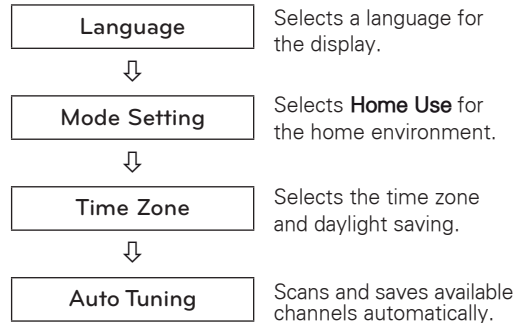
If the input mode is RGB-PC or HDMI1/HDMI2 (with Input Label set to PC), the cables are connected, and either the horizontal sync or vertical sync signal is not present, the Power Saving mode is enabled.

- 3 The initial setting screen appears if you access the TV for the first time.

NOTE

- You can also switch the TV from PC mode to TV mode, press **TV/PC**.
- You can also access **Initial Setting** by accessing **OPTION** in the main menus.
- If you do not operate the TV within 40 seconds when the setting menu screen appears, the setting menus will disappear.

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



NOTE

- To display images in the best quality for your home environment, select **Home Use** mode.
- **Store Demo** mode is suitable for the retail environment.
- If you select **Store Demo** mode, the previously customized settings will switch to the default settings of **Store Demo** mode in 2 minutes.

- 5 When the basic settings are complete, press **ENTER**.

NOTE

If you do not complete the initial setting, it will appear whenever you access the TV.

- 6 To turn the TV off, press **⏻/I** on the TV. The Power Indicator turns off.

CAUTION

Disconnect the power cord from the power outlet when you do not use the TV for a long period of time.

Watching TV

- 1 Press **⏻** on the Remote control or **⏻/I** on the TV to turn the TV on.
- 2 Press **INPUT** and select **TV**.
- 3 Control the TV using the following buttons and menus while you are watching TV.

Button / Menu	Description
CH(∧, ∨)	Scrolls through the saved channels
LIST	Selects a channel on the saved channel list
Numbers	Selects a channel by entering numbers
VOL (+, -)	Adjusts the volume level
MUTE	Mutes all sounds
Q.MENU	Accesses the quick menus
Q.VIEW	Alternates between the last two channels selected
RATIO	Resizes an image (See p.21)

- 4 To turn the TV off, Press **⏻** on the Remote control or **⏻/I** on the TV.

Managing channels

Setting up channels

Storing channels

To store channels Automatically,

- 1 Press **MENU** to access the main menus.
- 2 Press the Navigation buttons to scroll to **CHANNEL** and press **ENTER**.
- 3 Press the Navigation buttons to scroll to **Auto Tuning** and press **ENTER**.
- 4 Select **Start** to start automatic tuning.
The TV scans and saves available channels automatically.
- 5 When you are finished, press **EXIT**.
When you return to the previous menu, press **BACK**.

To store channels Manually,

- 1 Press **MENU** to access the main menus.
- 2 Press the Navigation buttons to scroll to **CHANNEL** and press **ENTER**.
- 3 Press the Navigation buttons to scroll to **Manual Tuning** and press **ENTER**.
- 4 Scroll through the channel types, and then add or delete channels.
- 5 When you are finished, press **EXIT**.
When you return to the previous menu, press **BACK**.

! NOTE

- The TV will ask for a password if parental control has been activated (LOCK Menu). Use the password you set up in the LOCK Menu to allow a channel search.
- When setting the Auto tuning or Manual tuning, the number of maximum channel you can store is 1,000. This number is subject to change depending on the broadcasting signal environment.

Editing your channel list

- 1 Press **MENU** to access the main menus.
- 2 Press the Navigation buttons to scroll to **CHANNEL** and press **ENTER**.
- 3 Press the Navigation buttons to scroll to **Channel Edit** and press **ENTER**.
- 4 Edit channels using the following buttons.


Button	Description
^	Highlights the channel type.
Navigation	Scrolls through channel types or channels.
ENTER	Selects a channel to view
CH (^, v)	Moves to the previous or next page.
Blue button	Adds or deletes a channel. The deleted channel displays in blue.
FAV	Registers or cancels the current channel in favorite channel list.
Q.MENU	Selects your desired favorite channel group.
Yellow button	Blocks or unblocks a channel.

- 5 When you are finished, press **EXIT**.
When you return to the previous menu, press **BACK**.

Selecting a channel on the channel list

- 1 Press **LIST** to access the channel list.
 - To move to the previous or next page, press **CH (^, v)**.
 - To tune to the "CHANNEL menu - Channel Edit", press **Blue** button.
- 2 Select a channel you want and press **ENTER**.

 **NOTE**

- The Lock icon () appears in front of a channel blocked with parental control.
- If you select the blocked channel, you will be prompted to enter your password.

Using favorite channels

Add the channels that you watch frequently to the favorite list.

Setting up your favorite list

- 1 Select a channel to add to the favorite list.
- 2 Press **FAV**.
- 3 Press the Navigation buttons to select your desired favorite channel group.
- 4 Press the **Yellow** button to register or cancel the current channel in favorite channel list. Press the **Blue** button to move to **Channel Edit**.
- 5 Press the Navigation buttons to scroll to **Favorite**.
- 6 Press **ENTER** to add the selected channel to the favorite list.
- 7 When you are finished, press **EXIT**.

 **NOTE**

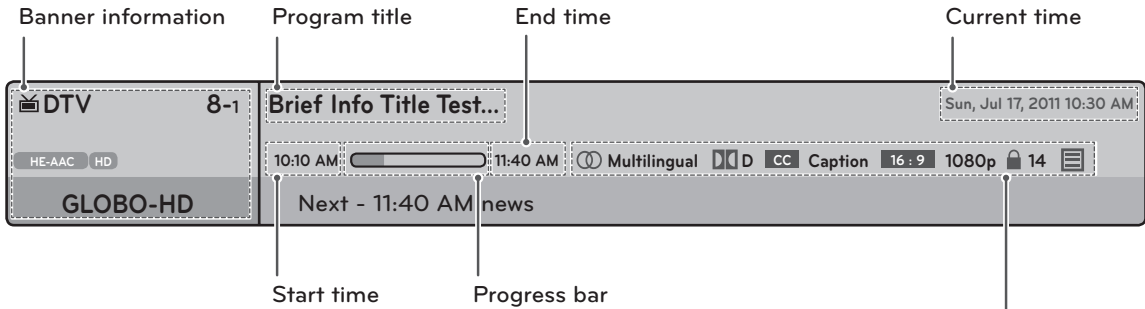
- You can also setup Favorite List in the **CHANNEL** menu - **Channel Edit**.

Selecting a channel on the favorite list

- 1 Press **FAV** to access the favorite list.
 - To move to the previous or next page, press **CH (^, v)**.
- 2 Select a channel you want and press **ENTER**.

Checking current program info

Press **ENTER** to view the information of the currently program while you are watching. The following information appears at the top of the screen.



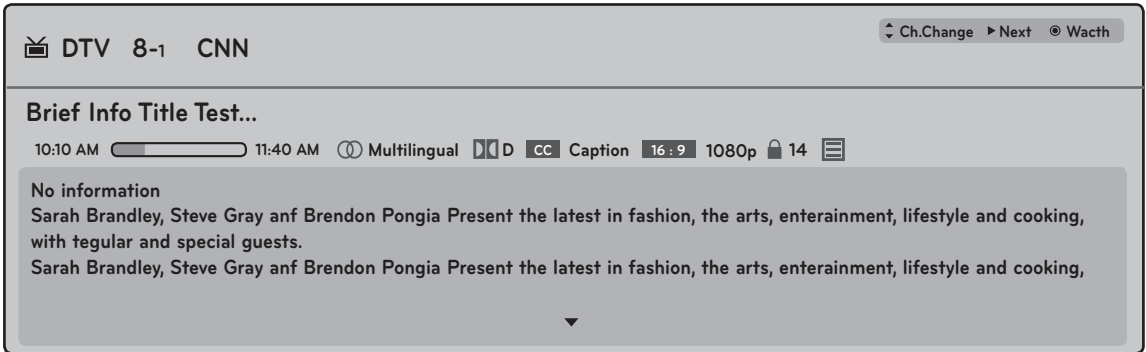
Icon	Description	
Multilingual		The program contains two or more audio language services. You can change the audio language using the quick menu.
Dolby Digital		The program contains a Dolby Digital audio signal in TV and HDMI input sources.
Caption		The program contains one or more language caption services. You can change the caption language using the main menu.
Aspect ratio		<ul style="list-style-type: none"> The original aspect ratio of the video is 4:3. The original aspect ratio of the video is 16:9 (wide).
Resolution		<ul style="list-style-type: none"> The video resolution is 720 x 480i. The video resolution is 720 x 480p. The video resolution is 1280 x 720p. The video resolution is 1920 x 1080i. The video resolution is 1920 x 1080p.
Rating		The program contains Rating information. See "LOCK Settings" page 49.
Description		Caption description.



NOTE

When viewing cable channels, some information will not show if the cable company does not provide the data in the signal.

Channel Program Reservation



- 1 Press **INFO** to view the current channel program Information on the screen.
- 2 Press the **>** button to select a next channel program information and press **ENTER**.
- 3 Press the **<** or **>** buttons to scroll to **Yes** or **No** and press **ENTER**.

Button	Description
INFO	Shows current channel information.
< or >	Shows next program information.
^ or v	Shows other channel's program information.

EPG (Electronic Program Guide) (In digital mode)

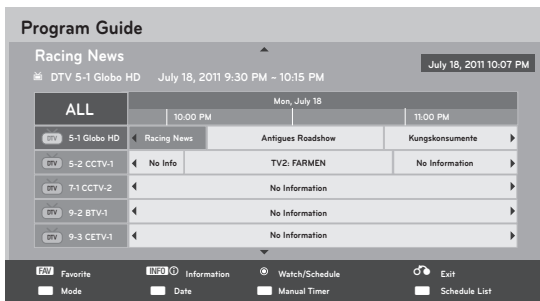
Press **GUIDE** to view the program guide on the screen.

This system has an Electronic Program Guide (EPG) to help your navigation through all the possible viewing options.

The EPG supplies information such as program listings, start and end times for all available services. In addition, detailed information about the program is often available in the EPG (the availability and amount of these program details will vary, depending on the particular broadcaster).

This function can be used only when the EPG information is broadcast by broadcasting companies.

The EPG displays the program details for next 8 days.



NOW/NEXT Guide Mode

You can view a program being broadcasted and one scheduled to follow.

Button	Description
Red	Changes EPG mode.
Yellow	Enters Manual Timer mode.
Blue	Enters Schedule List mode.
ENTER	When 'Now' is selected, it is moved to selected program and EPG disappears. When 'Next' is selected, a reservation pop-up window appears.
< or >	Selects NOW or NEXT Program.
^ or v	Selects the Broadcast Program.
PAGE (^, v)	Page Up/Down.
GUIDE / BACK / EXIT	Switches off EPG.

8 Day Guide Mode

Button	Description
Red	Changes EPG mode.
Green	Enters Date setting mode.
Yellow	Enters Manual Timer mode.
Blue	Enters Schedule List mode.
ENTER	When 'Currently broadcasting program' is selected, it is moved to selected program and EPG disappears. When 'Future broadcasting program' is selected, a reservation pop-up window appears.
< or >	Selects Program.
^ or v	Selects the Broadcast Program.
PAGE (^, v)	Page Up/Down.
GUIDE / BACK / EXIT	Switches off EPG.
INFO ⓘ	Displays details.

Date Setting Mode

Button	Description
Green	Switches off Date setting mode.
ENTER	Changes to the selected date.
< or >	Selects a date.
^ or v	Switches off Date setting mode.
PAGE (^, v)	Page Up/Down.
GUIDE / EXIT	Switches off EPG.

Detailed Information Box

Button	Description
< or >	Selects Remind setting mode.
^ or v	Text Up/Down
PAGE (^, v)	Page Up/Down.
GUIDE / EXIT	Switches off EPG.

Manual Timer Mode

Button	Description
Yellow	Changes to Guide mode.
Blue	Changes to Schedule List mode.
ENTER	Sets Timer Watch.
<, >, ^, v	Selects date.
GUIDE	Changes to Guide mode.
BACK / EXIT	Exits Manual Timer mode.

Schedule List Mode

If you've created a schedule list, a scheduled program is displayed at the scheduled time even when you are watching a different program at the time.

Button	Description
Yellow	Changes to Manual Timer mode.
Blue	Changes to Guide mode.
ENTER	Selects your desired Option (Modify/Delete/Delete All).
^ or v	Selects Schedule List.
PAGE (^, v)	Page Up/Down
BACK / EXIT	Switches off Schedule List.

Using additional options

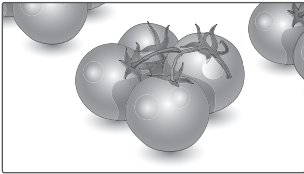
Adjusting aspect ratio

Resize the image to view the image at its optimal size by pressing **RATIO** or **Q.MENU** while you are watching TV.

! NOTE

- You can also change the image size by pressing **Q. MENU** or accessing Aspect Ratio in the **PICTURE** menu.
- The available ratio varies depending on the input source.
 - The input sources: **HDMI-PC** and **RGB-PC** support 4:3 and 16:9.
 - The input sources: **HDMI-PC 1920 X 1080** supports all of the aspect ratios.

- **16:9**: Resizes images to fit the screen width.



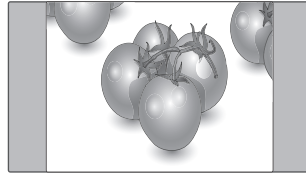
- **Just Scan**: Displays video images in the original size without cutting off the edges.



! NOTE

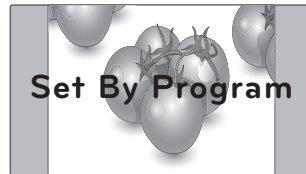
- If you select **Just Scan**, you may see image noises at the edge or edges of the screen.
- The input sources: **DTV, CADTV, Component, HDMI-DTV(720p/1080i/1080p)**, support **Just Scan**.

- **4:3**: Resizes images at the standard 4:3 without distortion.

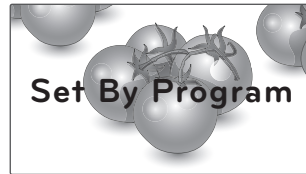


- **Set By Program**: Displays images in the same aspect ratio with the original image.

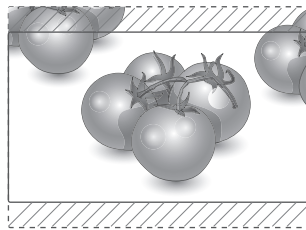
(4:3 -> 4:3)



(16:9 -> 16:9)



- **Zoom**: Formats an image to fit the screen width. The top and bottom of the image may not appear.



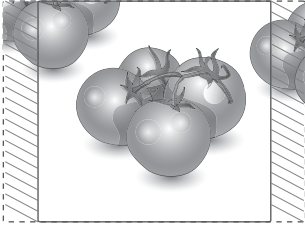
! NOTE

If you access, **Aspect Ratio** in the Quick menus,

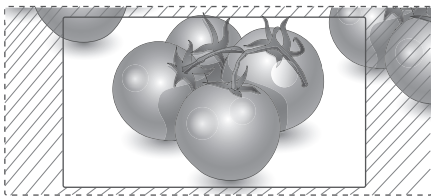
- Press **<** or **>** to stretch an image vertically.
- Press **^** or **v** to move the zoom focus up or down.

- **Zoom2** : With this function, when the SD screen is sent to the HD with black at the left side and the right side, this screen can be extended to be fully displayed with no black area.

It is enabled at the HD (DTV, Component, HDMI) input (It is the reference for displaying 'HD' at the channel banner if the height is greater than 480).



- **Cinema Zoom**: Formats an image to the cinemascope ratio, 2.35:1.
 - To change the ratio of the cinema zoom, press < or > and its range is from 1 to 16.
 - To move the zoom focus up or down, press ^ or v.



NOTE
If you enlarge or reduce an image, the image may be distorted.

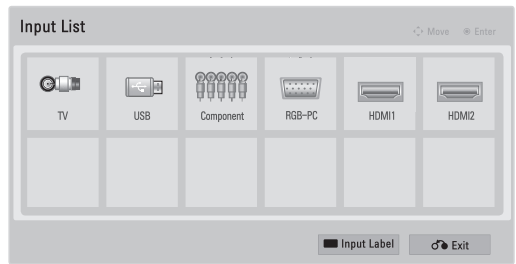
Using the input list

Selecting an input source

- 1 Press **INPUT** to access the input source list.
 - The connected device displays on each input source.

NOTE
• You can also access the input source list by selecting **INPUT** in the **MENU**.

- 2 Press the Navigation buttons to scroll to one of the input sources and press **ENTER**.



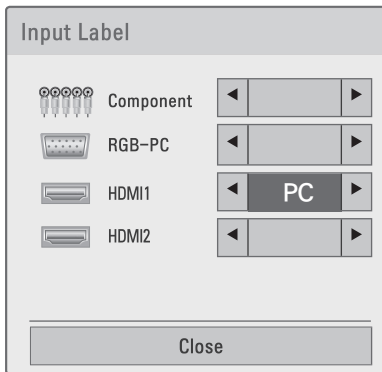
Input source	Description
TV	Watch TV over the air, cable, and digital cable broadcast
USB	Play media files from a thumb drive
Component	Watch the contents in a DVD or other external devices, or through a digital set-top box
RGB-PC	View a PC display on the screen
HDMI1 HDMI2	Watch contents in a PC, DVD or Digital settop box other high definition devices

The connected input source is displayed as enabled; other input sources are displayed in gray.

- If you add an input label to each input sources, you can easily identify a device connected to each input source.

Adding an Input label

Add a label to an input source so that you can easily identify a device connected to each input source.



- 1 Press **INPUT** to access the menus.
- 2 Press the **Blue** button.
- 3 Press the Navigation buttons to scroll to the setting or option you want and press **ENTER**.
- 4 When you are finished, press **EXIT**.
When you return to the previous menu, press **BACK**.

! NOTE

- If you want to use HDMI-PC mode, you must set the input label to PC mode.

Locking the buttons on the TV (Child Lock)

Lock the buttons on the TV to prevent any unwanted operations or accidents by children.

- 1 Press **MENU** to access the main menus.
- 2 Press the Navigation buttons to scroll to **LOCK** and press **ENTER**.
- 3 Input password.
- 4 Press the Navigation buttons to scroll to **Key Lock** and press **ENTER**.
- 5 Press the Navigation buttons to scroll to **On** and press **ENTER** to activate the Key lock feature.
- To deactivate the Key lock feature, select **Off**.
- 6 When you are finished, press **EXIT**.
When you return to the previous menu, press **BACK**.

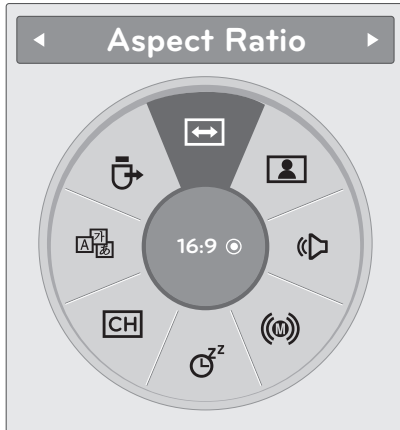
! NOTE

- The TV is programmed to remember the last setting after you turn the TV off.
- If you turn the TV off with the Key lock feature activated, press **⏻** / **INPUT**, **CH** (**▲**, **▼**) on the TV or **POWER**, **INPUT**, **CH** (**+**, **-**), **TV/PC** or Number buttons on the remote control.
- If you press any button on the TV with the Key lock feature activated, **⚠ Key Lock On** appears on the screen.

Using the Quick menu

Customize the frequently using menus.

- 1 Press **Q.MENU** to access the quick menu.
- 2 Press the Navigation buttons to scroll through the following menus.



Menu	Description
Aspect Ratio	Changes the image size.
Picture Mode	Changes the image mode.
Sound Mode	Changes the sound mode.
Multi Audio	Selects the sound output.
	SAP Changes the MTS sound (Analog signal).
Sleep Timer	Sets the length of time until the TV to turns off
Del/Add	Edits the channels to add or delete the channel.
Caption	Activates or deactivate the subtitles.
USB Device	Ejects a USB device when a USB device is connected.



NOTE

The available menus and options may differ from the input source that you are using.

- 3 Press the Navigation buttons to scroll to an option you want and press **ENTER**.
- 4 When you are finished, press **Q. MENU** or **EXIT**.

Using the customer support

Testing the Picture / Sound

To execute picture and sound tests.

- 1 Press **MENU** to access the main menus.
- 2 Press the **Red** button to scroll **Customer Support**.
- 3 Press the Navigation buttons to scroll **Picture Test** or **Sound Test**.
- 4 If you have any problem, press the Navigation buttons to scroll to **Yes** and press **ENTER**.
- 5 When you are finished, press **EXIT**.
When you return to the previous menu, press **BACK**.

Using the product or service information

To check the product or service information.

- 1 Press **MENU** to access the main menus.
- 2 Press the **Red** button to scroll **Customer Support**.
- 3 Press the Navigation buttons to scroll **Product/Service Info..** You can check the various product/Service information based on your model.
- 4 When you are finished, press **EXIT**.
When you return to the previous menu, press **BACK**.

CONNECTING TO A PC

Your TV supports the Plug & Play* feature and has the built-in speakers with Surround X that reproduces sound clearly with rich bass.

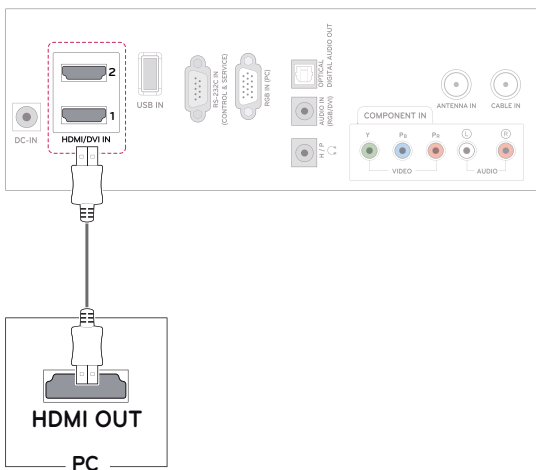
* Plug & Play: This is the function that allows a PC to use the TV without installing a driver.

NOTE

- It is recommended to use the TV with the HDMI connection for the best image quality.
- If you want to use an optional external speaker instead of the built-in speaker, set the TV speaker feature to off (See p.46).

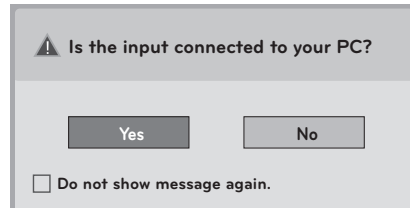
HDMI connection

Transmits the digital video and audio signals from your PC to the TV. Connect the PC and the TV with the HDMI cable as shown in the following illustrations. You should set PC as an input label to connect the PC to the TV with an HDMI connection. To add an input label, see Adding an Input label on See p.23.



NOTE

- The **OSD (On Screen Display)** is displayed on the screen as shown below.
 - » When turning the product on in **HDMI** input.
 - » When switching to **HDMI** input.
 - » When connecting an **HDMI** cable with no signal.



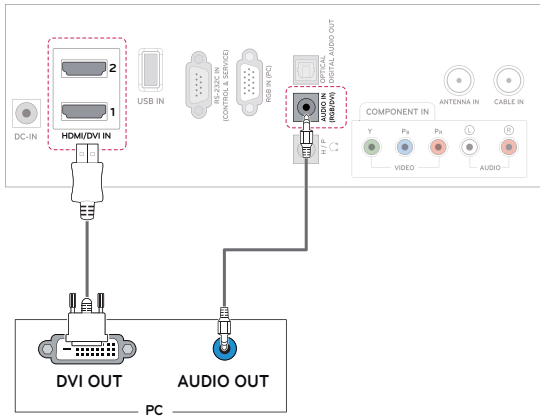
- If you select **"Yes"** the size and image quality are optimised for your PC.
- If you select **"No"** the size and image quality are optimised for the **AV device (DVD player, set-top box, gaming device)**.
- If you select **"Do not show message again"** this message does not appear until the TV is reset. You can change the set value in **Input** ► **Blue button** ► **Input Label**.
- The values set for HDMI1/HDMI2 are saved independently.

NOTE

- Use a High Speed HDMI™ Cable.
- Please check the PC environment if you cannot hear the sound in HDMI mode.
- If you want to use HDMI-PC mode, you must set the input label to PC mode.

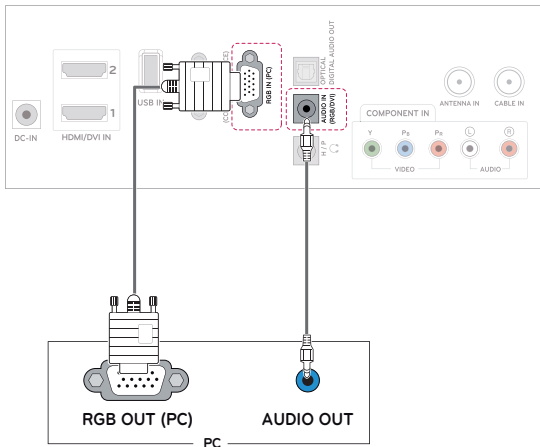
DVI to HDMI connection

Transmits the digital video signal from your PC to the TV. Connect the PC and the TV with the DVI to HDMI cable as shown the following illustrations.



RGB connection

Transmits the analog video signal from your PC to the TV. Connect the PC and the TV with the D-sub 15 pin cable as shown the following illustrations.

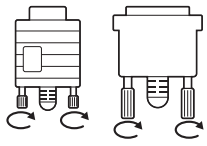


NOTE

- If you want to use HDMI-PC mode, you must set the input label to PC mode.
- If you do not use an optional external speaker, connect the PC to the TV with the supplied audio cable.
- If you turn the TV on when the set becomes cold, the screen may flicker. This is normal.
- Use a shielded signal interface cable, such as D-sub 15 pin signal cable and DVI to HDMI cable, with a ferrite core to maintain standard compliance for the product.
- Some red, green, or blue spots may appear on the screen. This is normal.

CAUTION

- Connect the signal input cable and tighten it by turning the screws clockwise.
- Do not press the screen with your finger for a long time as this may result in temporary distortion on the screen.
- Avoid displaying a fixed image on the screen for a long period of time to prevent image burn. Use a screensaver if possible.



Adjusting the screen

Selecting an image mode

Display images in its optimized settings by selecting one of the preset image modes.

- 1 Press **MENU** to access the main menus.
- 2 Press the Navigation buttons to scroll to **PICTURE** and press **ENTER**.
- 3 Press the Navigation buttons to scroll to **Picture Mode** and press **ENTER**.
- 4 Press the Navigation buttons to scroll to an image mode you want and press **ENTER**.

Mode	Description
Vivid	Adjusts the video image for the retail environment by enhancing the Contrast, Brightness, Color, and Sharpness .
Standard	Adjusts the image for the normal environment.
Cinema	Optimizes the video image for the cinematic look and enjoy movies as if you are in a movie theater.
Sport	Optimizes the video image for high and dynamic actions by emphasizing primary Colors such as white, grass, or sky blue.
Game	Optimizes the video image for a fast gaming screen such as PCs or games.
Expert1/2	Adjusts the detailed video image settings for video experts as well as general viewers.

- 5 When you are finished, press **EXIT**.
When you return to the previous menu, press **BACK**.

Customizing image options

Customize basic and advanced options of each image mode for the best screen performance.

- 1 Press **MENU** to access the main menus.
- 2 Press the Navigation buttons to scroll to **PICTURE** and press **ENTER**.
- 3 Press the Navigation buttons to scroll to **Picture Mode** and press **ENTER**.
- 4 Press the Navigation buttons to scroll to an image mode you want and press **ENTER**.
- 5 Select and adjust following options, and then press **ENTER**.

Option	Description
Backlight	Adjusts the brightness of the screen by controlling the LCD backlight. If you decrease the brightness level, the screen becomes darker and the power consumption will be reduced without any video signal loss.
Contrast	Increases or decreases the gradient of the video signal. You may use Contrast when the bright part of the image is saturated.
Brightness	Adjusts the base level of the signal in the image. You may use Brightness when the dark part of the image is saturated.
Sharpness	Adjusts the level of crispness in the edges between the light and dark areas of the picture. The lower the level, the softer the image.
Color	Adjusts intensity of all Colors .
Tint	Adjusts the balance between Red and Green levels.
Color Temp.	Set to warm to enhance hotter colors such as red, or set to cool to enhance cooler colors such as blue.
Advanced Control	Customizes the advanced options. See more information about advanced options See p.45.
Picture Reset	Restores the options to the default setting.

- 6 When you are finished, press **EXIT**.
When you return to the previous menu, press **BACK**.

Customizing PC display options

Customize options of each image mode for the best image quality.

- This function works in the following mode: RGB[PC] mode.

- 1 Press **MENU** to access the main menus.
- 2 Press the Navigation buttons to scroll to **PICTURE** and press **ENTER**.
- 3 Press the Navigation buttons to scroll to **Screen(RGB-PC)** and press **ENTER**.
- 4 Select and adjust following options, and then press **ENTER**.

Option	Description
Resolution	Match the resolution of RGB mode. (Resolution menu is enabled only for the following resolution with 60Hz.)
	Vertical resolution : 768
	1024 x 768(Default) 1280 x 768 1360 x 768
	Vertical resolution : 1050
	1400 x 1050 1680 x 1050(Default)
Vertical resolution : 900	
1280 x 960 1440 x 900 1600 x 900(Default)	
Auto Config.	Adjusts the screen Position , Size and Phase automatically. The displayed image may be unstable for a few seconds while the configuration is in progress.
Position/Size/Phase	Adjusts the options when the image is not clear, especially when characters are shaky, after the auto configuration.
Reset	Restores the options to the default settings.

- 5 When you are finished, press **EXIT**.
When you return to the previous menu, press **BACK**.

Adjusting the sound

Selecting an sound mode

Play the sound in its optimized settings by selecting one of the preset sound modes.

- 1 Press **MENU** to access the main menus.
- 2 Press the Navigation buttons to scroll to **AUDIO** and press **ENTER**.
- 3 Press the Navigation buttons to scroll to **Sound Mode** and press **ENTER**.
- 4 Press the Navigation buttons to scroll to a sound mode you want and press **ENTER**.

Mode	Description
Standard	Selects when you want standard-quality sound.
Music	Selects when you listen to music.
Cinema	Selects when you watch movies.
Sport	Selects when you watch sports events.
Game	Selects when you play games.

- 5 When you are finished, press **EXIT**.
When you return to the previous menu, press **BACK**.

Customizing sound options

Customize options of each sound mode for the best sound quality.

- 1 Press **MENU** to access the main menus.
- 2 Press the Navigation buttons to scroll to **AUDIO** and press **ENTER**.
- 3 Press the Navigation buttons to scroll to **Sound Mode** and press **ENTER**.
- 4 Press the Navigation buttons to scroll to a sound mode you want and press **ENTER**.
- 5 Select and adjust following options, and then press **ENTER**.

Option	Description
Surround X	This option enhances sound depth and clarity by maximizing the Surround effect.
Treble	Controls the dominant sounds in the output. When you turn up the treble, it will increase the output to the higher frequency range.
Bass	Controls the softer sounds in the output. When you turn up the bass, it will increase the output to the lower frequency range.
Reset	Resets the sound mode to the default setting.

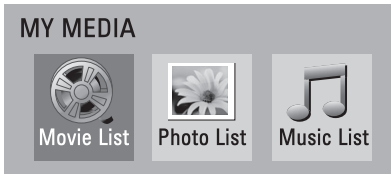
- 6 When you are finished, press **EXIT**.
When you return to the previous menu, press **BACK**.

- Please back up important files because data on the USB device may be damaged. Data management is solely the consumer's responsibility and the manufacturer does not cover the product bearing data damage.
- If the USB is connected in Standby Mode, the device will automatically be loaded when the TV is turned on.
- The recommended capacity is 1TB or less for an external USB hard disk and 32GB or less for USB memory.
- Any device with more than the recommended capacity may not work properly.
- If an external USB hard disk with a "Power Saving" function does not work, turn the hard disk off and on again to make it work properly.
- USB storage devices below USB 2.0 are supported, but they may not work properly in the movie list.
- When using a USB HDD via a USB extension cable, connect it to a supported power source.

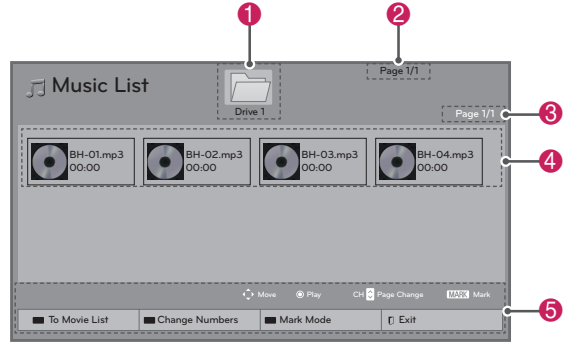
Browsing files

Access the **Movie**, **Photo**, **Music** or lists and browse files.

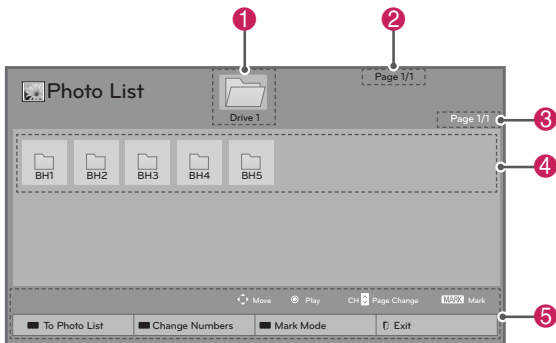
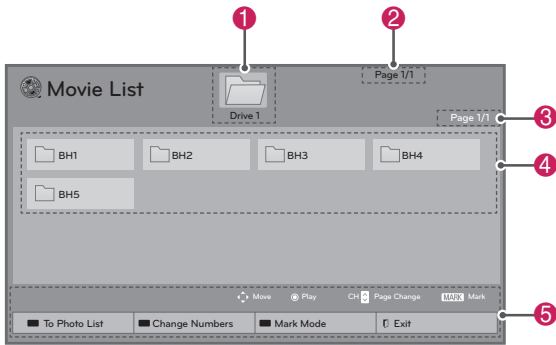
- 1 Connect a **USB** storage device.
- 2 Press **MENU** to access the main menus.
- 3 Press the Navigation buttons to scroll to **MY MEDIA** and press **ENTER**.
- 4 Press the Navigation buttons to scroll to **Movie List**, **Photo List**, **Music List** or and press **ENTER**.



- 5 Select **Drive1** to access the connected USB storage device.
- 6 Press the Navigation buttons to Select a folder/ file you want.



NO	Description
1	Moves to the upper level folder
2	Current page number/total number of pages
3	Current page number/total number of pages
4	Contents under the folder focused on 1
5	Available buttons on the remote control
NO	Description
Green button	Move to Photo List, Music List, or Movie List
Yellow button	Change Numbers: Changes the number or thumbnails displayed at a time.
Blue button	Allows you to mark certain files.



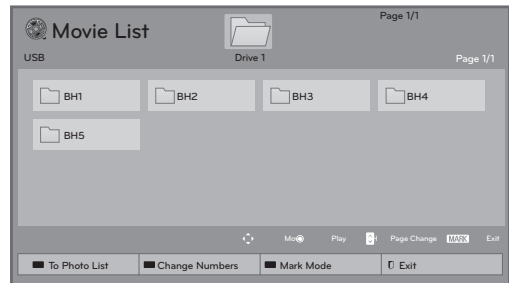
Supported file format

Type	Supported file format
Video	<ul style="list-style-type: none"> • MPG, MPEG, DAT, TS, TRP, TP, VOD, MP4, MOV, MKV, DivX, AVI, Motion JPEG (AVI, MP4, MKV), ASF, WMV, FLV • Max bit rate of playable movie file: 20Mbps (Mega bit per second) • Bit rate of audio format: within 32 - 320kbps (MP3) • Supported subtitle format: *.smi, *.srt, *.sub (MicroDVD, SubViewer1.0/2.0), *.ass, *.ssa, *.txt (TMPlayer), *.psb(PowerDivX)
Photo	<ul style="list-style-type: none"> • JPG • Available size Baseline: 64 pixel (W) x 64 pixel (H) - 15360 pixel (W) x 8640 pixel (H) Progressive: 64 pixel (W) x 64 pixel (H) - 1920 pixel (W) x 1440 pixel (H)
Music	<ul style="list-style-type: none"> • MP3 • Bit rate range 32 Kbps - 320 Kbps • Sampling rate (Sampling Frequency) MPEG1 layer 3: 32 kHz, 44.1 kHz, 48 kHz MPEG2 layer 3: 16 kHz, 22.05 kHz, 24 kHz MPEG2.5 layer 3: 8 kHz, 11.025 kHz, 12 kHz <p>* A copy-protected file will not play.</p>

Viewing Movies



Play video files on the TV. Your TV displays all of the video files saved in a USB storage device.

- 1 Press **MENU** to access the main menus.
- 2 Press the Navigation buttons to scroll to **MY MEDIA** and press **ENTER**.
- 3 Press the Navigation buttons to scroll to **Movie List** and press **ENTER**.
- 4 Select **Drive1** to access the connected USB storage device.
- 5 Press the Navigation buttons to scroll to a folder you want and press **ENTER**.
- 6 Play a movie by using the following menus/ buttons.



Button	Description
Navigation button	Scrolls through the files.
ENTER	Plays the highlighted file or enters the mark mode.
CH (^, v)	Moves to the previous or next page.
MARK	Enters the mark mode.
Button	Description
Play Marked	Plays the selected video.
Mark All	Selects all files.
Unmark All	Clears all of your selections.
Exit Mark Mode	Exits the Mark Mode.

NOTE

-  : Abnormal files are displayed using this graphic.
-  : Non-supported files are displayed using this graphic.

- 7 Control playback by using the following buttons.



Button	Description
■	Stops the playback
▶	Plays a video
⏸	Pauses or resumes the playback
◀◀	Scans backward in a file
▶▶	Scans forward in a file
⏪ and ⏩	Plays videos in slow motion
< or >	Skips to specific points in a file during playback. The time of a specific point will appear on the status bar. In some files, this function may not work properly.
⚡ (ENERGY SAVING)	Increases or decreases the brightness of your screen.
Q.MENU	Shows the Option menu
BACK	Hides the menu on screen. To see the menu again, press ENTER button to display.
EXIT	Returns to previous menu.

Q.MENU options for movie list

- 1 Press **Q. MENU**.
A pop-up window will appear.
- 2 Press the Navigation buttons to scroll to movie list option and press **ENTER**.
- 3 Press the Navigation buttons to scroll to one of the following options and press **ENTER**.

Set Video Play.

Option	Description	
Picture Size	<ul style="list-style-type: none"> • Selects your desired picture format for videos. • Full Mode: Files are played in full screen mode according to the aspect ratio of video. • Original Mode: Files are played in their native size. 	
Audio Language	Changes the Language Group of the audio for video files. Files with a single audio track cannot be selected.	
Subtitle Language	The subtitles can be turned on or off.	
Language	Activated for SMI subtitles and can select the language within the subtitle.	
Code Page	Subtitle font selection. When set to default, contents are displayed in the language set in "Option - Language - Menu Language."	
	Subtitle Language Group	Supported Language
	Latin1	English, Spanish, Portuguese
Sync	If the video is not synchronized with the captions, it can be adjusted by 0.5 second.	
Position	Moves the location of the subtitles.	
Size	Changes the subtitle font size.	
Repeat	Turn on/off repeat function of movie playback. When turned on, the file within the folder will be played back repeatedly. When turned off, if the next file name is similar to the previous file, it can be played sequentially.	

**CAUTION**

- When replaying a video file after stopping, select “Yes” to restart where it previously stopped.
- If continuous series files exist within the folder, the next file will automatically be played. But, this excludes cases when the Repeat function of Movie List Option is turned “On” (See p.34) or when set as **Play Marked**.

Set Video.

Allows you to change Video presets.
(Refer to “PICTURE Settings” on See p.43)

Set Audio.

Allows you to change Audio presets.
(Refer to “AUDIO Settings” on See p.46)

Movie Playing Precautions

- Some user-created subtitles may not work properly.
- Some special characters are not supported in subtitles.
- HTML tags are not supported in subtitles.
- Subtitles in languages other than the supported languages are not available.
- Time information in an external subtitle file should be arranged in ascending order to be played.
- The screen may suffer temporary interruptions (image stoppage, faster playback, etc.) when the audio language is changed.
- A damaged video file may not play correctly, or some player functions may not be usable.
- Video files produced with some encoders may not play correctly.
- If the video and audio structure of a recorded file is not interleaved, either the video or audio is output.
- HD videos with a maximum of 1920x1080 @ 25/30P or 1280x720 @ 50/60P are supported, depending on the frame rate.
- Videos with resolutions higher than 1920x1080 @ 25/30P or 1280x720 @ 50/60P may not work properly depending on the frame rate.
- Video files other than the specified types and formats may not work properly.
- Video files encoded with the GMC (Global Motion Compensation) are not supported.
- Only files saved in ASCII CODE are supported in subtitles.
- Only 250 Korean characters, 500 letters and 500 numbers are supported for each line of the subtitles.
- Only 10,000 sync blocks can be supported within the subtitle file.
- The max bitrate of playable movie files is 20Mbps.
- We do not guarantee smooth playback of profiles encoded level 4.1 or higher in H.264/AVC.
- DTS Audio codec is not supported.
- A video file more than 30GB in file size is not supported for playback.
- Playing a video via a USB connection that doesn't support high speed may not work properly.

- USB storage devices below USB 2.0 are supported, but they may not work properly in the movie list.
- The video file and the subtitle file must be located in the same folder.
- The name of the video file and the subtitle file must be the same to view the subtitles normally.

Video Format

- DivX3.11, DivX4.12, DivX5.x, DivX6, Xvid1.00, Xvid1.01, Xvid1.02, Xvid1.03, Xvid 1.10-beta-1/beta-2, Mpeg-1, Mpeg-2, Mpeg-4, H.264/AVC Xvid 1.01, Xvid 1.02, Xvid 1.03, Xvid 1.10-beta 1, Xvid 1.10-beta 2, H.264 / AVC

Audio Format

- Dolby Digital, AAC, Mpeg, MP3, LPCM, HE-AAC

Subtitle format

- *.smi/* .srt/* .sub(MicroDVD,SubViewer1.0/2.0)/* .ass/* .ssa/* .txt(TMPlayer)/* .psb(PowerDivX)

Video Decoder

- **mpg, mpeg, vob:** MPEG1, MPEG2
- **dat:** MPEG1
- **ts, trp, tp:** MPEG2, H.264 / AVC
- **mp4:** MPEG4 SP, MPEG4 ASP, DivX 3.11, DivX 4.12, DivX 5.x, DivX 6, Xvid 1.00, Xvid 1.01, Xvid 1.02, Xvid 1.03, Xvid 1.10-beta 1, Xvid 1.10-beta 2, H.264/AVC
- **avi:** MPEG 2, MPEG 4 SP, MPEG4 ASP, DivX 3.11, DivX 4, DivX 5, DivX 6, Xvid 1.00, Xvid 1.01, Xvid 1.02, Xvid 1.03, Xvid 1.10-beta 1, Xvid 1.10-beta 2, H.264/AVC
- **mkv:** H.264 / AVC, MPEG 1, MPEG 2, MPEG 4 SP, MPEG4 ASP
- **divx:** MPEG 2, MPEG 4 SP, MPEG4 ASP, DivX 3.11, DivX 4, DivX 5, DivX 6, Xvid 1.00, Xvid 1.01, Xvid 1.02, Xvid 1.03, Xvid 1.10-beta 1, Xvid 1.10-beta 2, H.264 / AVC

Audio Codec

- **mpeg, vob:** Dolby Digital, MPEG, MP3, LPCM
- **dat:** Dolby Digital, MPEG, MP3, LPCM

- **ts, trp, tp:** Dolby Digital, AAC, MPEG
- **mp4:** Dolby Digital, HE-AAC, AAC, MPEG, MP3, LPCM
- **avi:** Dolby Digital, HE-AAC, AAC, MPEG, MP3, LPCM
- **mkv:** Dolby Digital, HE-AAC, AAC, MPEG, MP3, LPCM
- **divx:** Dolby Digital, HE-AAC, AAC, MPEG, MP3, LPCM

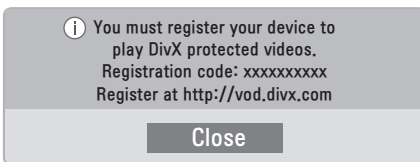
Max Resolution

- 1920 x 1080P @ 25 / 30P
- 1280 x 720P @ 50 / 60P

DivX registration code

Check and register the DivX registration code of your TV so that you can rent or purchase the latest movies at www.divx.com/vod. To play a rented or purchased DivX file, the file's registration code should be same with your TV's DivX registration code.

- 1 Press **MENU** to access the **MY MEDIA** menus.
- 2 Press Blue to access the **POP-UP** menus.
- 3 Press the **Blue** button.
- 4 Press the Navigation button to scroll to **DivX Reg. Code** and press **ENTER**.
- 5 View the registration code of your TV.



- 6 When you are finished, press **ENTER**.

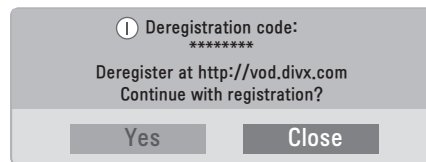
NOTE

- While you are checking the registration code, some buttons may not work.
- If you use the DivX registration code of another device, you cannot play the rented or purchased DivX file. Make sure to use the DivX registration code assigned to your TV.
- The video or audio files that are not converted by the standard DivX codec may be corrupted or not be played.
- The DivX VOD code allows you to activate up to 6 devices under one account.

Deactivating the DivX feature

Deactivate all of the devices through the web server and block devices from activating. Delete the existing authentication information to receive a new DivX user authentication for the TV. Once this function is executed, a DivX user authentication is required again to see DivX DRM files.

- 1 Press **MENU** to access the **MY MEDIA** menus.
- 2 Press Blue to access the **POP-UP** menus.
- 3 Press the Navigation button to scroll to **Deactivation** and press **ENTER**.
- 4 Select **Yes** to confirm.

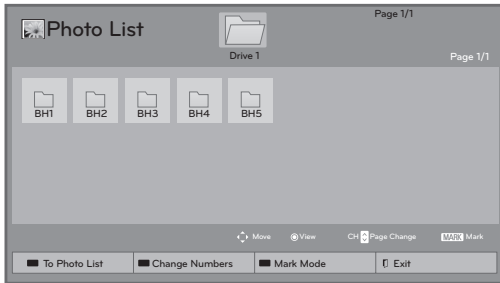


- 5 When you are finished, press **EXIT**. When you return to the previous menu, press **BACK**.

Viewing Photos

View image files saved in a USB storage device. The displays on the screen may differ from the model.

- 1 Press **MENU** to access the main menus.
- 2 Press the Navigation buttons to scroll to **MY MEDIA** and press **ENTER**.
- 3 Press the Navigation buttons to scroll to **Photo List** and press **ENTER**.
- 4 Select **Drive1** to access the connected USB storage device.
- 5 Press the Navigation buttons to scroll to a folder you want and press **ENTER**.
- 6 View photos by using the following menus/buttons.



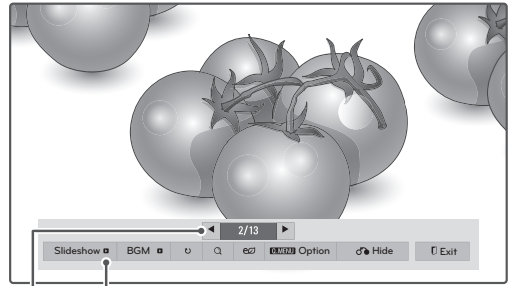
Button	Description
Navigation button	Scrolls through the files.
ENTER	Views the highlighted file or enters the mark mode.
CH (^, v)	Moves to the previous or next page.
MARK	Enters the mark mode.
Button	Description
View Marked	Views the selected photo.
Mark All	Selects all files.
Unmark All	Clears all of your selections.
Exit Mark Mode	Exits the Mark Mode.

NOTE

- Abnormal files are displayed using this graphic.
- Non-supported files are displayed using this graphic.

Using photo options

Use the following options while viewing photos.



Options
Number of selected photos

Option	Description
Slide show	Starts or stops a slideshow with selected photos. If there are no selected photos, all photos saved in the current folder display during a slideshow. To set a slideshow speed, select Option .
BGM (Background Music)	Turns the background music on or off. To set the background music folder, select Option .
⤵ (Rotate)	Rotates photos clockwise (90°, 180°, 270°, 360°). NOTE The supported photo size is limited. You cannot rotate a photo if the resolution of the rotated width is larger than the supported resolution size.
🔍 (Zoom In)	Views the photo by zoom in 2, 4 times by using Blue button.
⚡ (ENERGY SAVING)	Increases or decreases the brightness of your screen.
Option	Shows the Option menu.
Hide	Hides the option window. To display the options, press ENTER .
Exit	Moves to the previous menu screen.

NOTE

- Option values changed in Movie List does not affect the Photo List and Music List.
- Option value changed in Photo List and Music List are changed likewise in Photo List and Music List.

Q.MENU options for photo list

- 1 Press **Q. MENU**.
A pop-up window will appear.
- 2 Press the Navigation buttons to scroll to photo list option and press **ENTER**.
- 3 Press the Navigation buttons to scroll to one of the following options and press **ENTER**.

Set Photo View.

Option	Description
Slide Speed	Selects a slideshow speed (Fast, Medium, Slow).
BGM (Background Music)	Selects a music folder for the background music. <ul style="list-style-type: none"> • Repeat • Random

NOTE

You cannot change the music folder while the background music is playing.

Set Video.

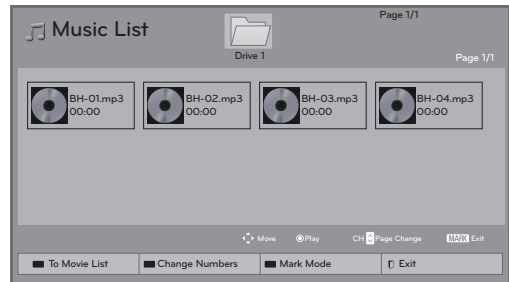
Allows you to change Video presets.
(Refer to "PICTURE Settings" on See p.43)

Set Audio.

Allows you to change Audio presets.
(Refer to "AUDIO Settings" on See p.46)

Listening to Music



- 1 Press **MENU** to access the main menus.
- 2 Press the Navigation buttons to scroll to **MY MEDIA** and press **ENTER**.
- 3 Press the Navigation buttons to scroll to **Music List** and press **ENTER**.
- 4 Select **Drive1** to access the connected USB storage device.
- 5 Press the Navigation buttons to scroll to a folder you want and press **ENTER**.
- 6 Play music by using the following menus/buttons.



Button	Description
Navigation button	Scrolls through the files.
ENTER	Plays the highlighted file or enters the mark mode.
CH (^, v)	Moves to the previous or next page.
MARK	Enters the mark mode.

Button	Description
Play Marked	Plays the selected music file.
Mark All	Selects all files.
Unmark All	Clears all of your selections.
Exit Mark Mode	Exits the Mark Mode.

NOTE

-  Abnormal files are displayed using this graphic.
-  Non-supported files are displayed using this graphic.

- 7 Control playback by using the following buttons.

Button	Description
■	Stops playback
▶	Plays a music file
	Pauses or resumes playback
▶▶	Skips to the next file
◀◀	Skips to the previous file
Play with Photo	Displays photos during playback.
e (ENERGY SAVING)	Increases or decreases the brightness of your screen.
Option	Shows the Option menu (See p.58).
Hide	Hides the option window. To display the options, press ENTER .
Exit	Moves to the previous menu screen.

Q.MENU options for music list

- 1 Press **Q. MENU**.
A pop-up window will appear.
- 2 Press the Navigation buttons to scroll to photo list option and press **ENTER**.
- 3 Press the Navigation buttons to scroll to one of the following options and press **ENTER**.

! NOTE

- Option values changed in Movie List does not affect the Photo List and Music List.
- Option value changed in Photo List and Music List are changed likewise in Photo List and Music List.

Set Audio Play.

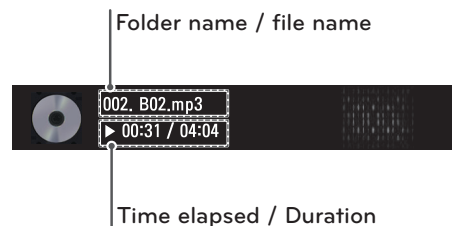
Select Repeat or Random option.

Set Audio.

Allows you to change Audio presets.
(Refer to "AUDIO Settings" on See p.46)

! NOTE

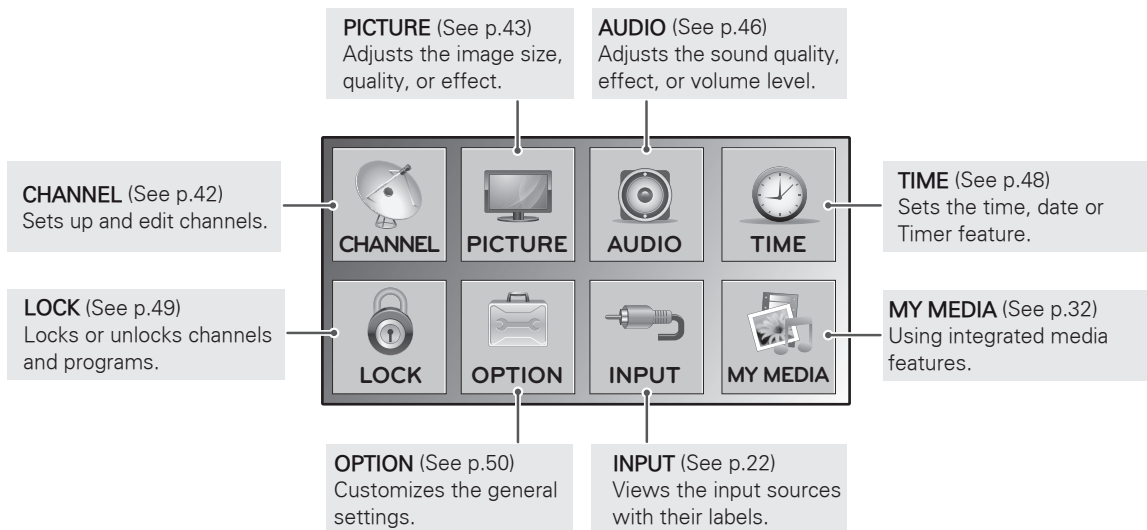
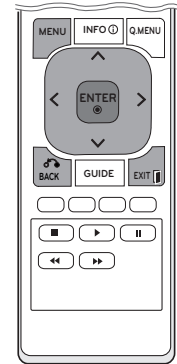
- The TV will not play copy protected files.
- If the TV is not in use for some time during playback, the information box as a screensaver will appear to prevent image burn. To return to the Music list screen, press **ENTER** or **BACK**.



CUSTOMIZING SETTINGS

Accessing main menus

- 1 Press **MENU** to access the main menus.
- 2 Press the Navigation buttons to scroll to one of the following menus and press **ENTER**.
- 3 Press the Navigation buttons to scroll to the setting or option you want and press **ENTER**.
- 4 When you are finished, press **EXIT**.
When you return to the previous menu, press **BACK**.



Customizing settings

CHANNEL settings

- 1 Press **MENU** to access the main menus.
- 2 Press the Navigation buttons to scroll to **CHANNEL** and press **ENTER**.
- 3 Press the Navigation buttons to scroll to the setting or option you want and press **ENTER**.
 - To return to the previous level, press **BACK**.
- 4 When you are finished, press **EXIT**.
 - When you return to the previous menu, press **BACK**.

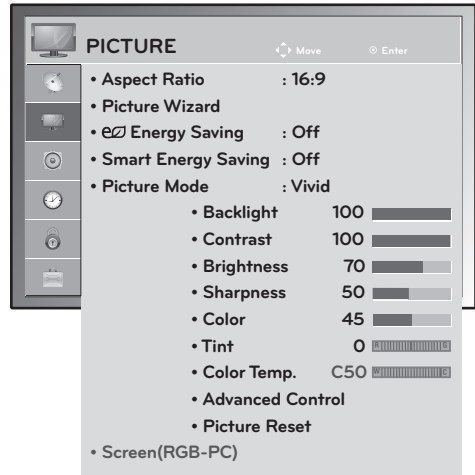


The available Channel settings are described in the following:

Setting	Description			
Auto Tuning	Tunes and stores all available channels through antennas or cable inputs (See p.15).			
Manual Tuning	Tunes and stores the channels you want manually (See p.15).			
Channel Edit	Adds or deletes channels (See p.16).			
Scan Option	Whether to search all channels or the first channel of virtual channels is switched with CH button when one or more virtual channels exist at one physical channel.			
	Option			
	<table border="1"> <tr> <td>Primary Channel</td> <td>Only scan the first channel of virtual channels.</td> </tr> <tr> <td>All Channels</td> <td>Scan full channel.</td> </tr> </table>	Primary Channel	Only scan the first channel of virtual channels.	All Channels
Primary Channel	Only scan the first channel of virtual channels.			
All Channels	Scan full channel.			
System Color	Sets color suited the each signal. This feature is disable in digital channel.			

PICTURE settings

- 1 Press **MENU** to access the main menus.
- 2 Press the Navigation buttons to scroll to **PICTURE** and press **ENTER**.
- 3 Press the Navigation buttons to scroll to the setting or option you want and press **ENTER**.
- To return to the previous level, press **BACK**.
- 4 When you are finished, press **EXIT**.
When you return to the previous menu, press **BACK**.



The available Picture settings are described in the following:

Setting	Description								
Aspect Ratio	Changes the image size to view images at its optimal size. (See p.21)								
Picture Wizard	Adjusts the image quality and calibrates the screen. The customized options will be saved as Expert1 in the Picture Mode . <div style="border: 1px solid black; padding: 5px;"> <p>NOTE</p> <ul style="list-style-type: none"> If you use Picture wizard, the Energy saving feature will turn off automatically. To reset changes made by Picture Wizard, operate Picture Reset when Picture Mode is on Expert1. </div>								
Energy Saving	Reduces the power consumption by adjusting the screen brightness. <div style="border: 1px solid black; padding: 5px;"> <p>NOTE</p> <p>When selecting Maximum, Backlight will not work.</p> </div> <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th colspan="2">Option</th> </tr> </thead> <tbody> <tr> <td>Off</td> <td>Select if this feature is not necessary.</td> </tr> <tr> <td>Minimum/Medium/Maximum</td> <td>Selects the brightness level.</td> </tr> <tr> <td>Screen off</td> <td>The screen turns off in 3 seconds. Pressing any button of the remote control and touch button (except power button) will turn on the screen again.</td> </tr> </tbody> </table>	Option		Off	Select if this feature is not necessary.	Minimum/Medium/Maximum	Selects the brightness level.	Screen off	The screen turns off in 3 seconds. Pressing any button of the remote control and touch button (except power button) will turn on the screen again.
Option									
Off	Select if this feature is not necessary.								
Minimum/Medium/Maximum	Selects the brightness level.								
Screen off	The screen turns off in 3 seconds. Pressing any button of the remote control and touch button (except power button) will turn on the screen again.								
Smart Energy Saving	Dims the screen backlight to reduce power consumption. By enhancing the contrast ratio, the darker screen will look similar to the original image. <div style="border: 1px solid black; padding: 5px;"> <p>NOTE</p> <ul style="list-style-type: none"> when using the Smart Energy Saving function, the screen may look saturated in the white area of a still image. If Energy Saving is set to Minimum, Medium or Maximum, the Smart Energy Saving function is disabled. </div>								

Setting	Description	
Picture Mode	Selects one of the preset image or customizes options in each mode for the best TV screen performance. You are also able to customize advanced options of each mode. The available preset picture modes vary depending on the TV .	
	Mode	
	Vivid	Adjusts the video image for the retail environment by enhancing the contrast, brightness, Color, and sharpness.
	Standard	Adjusts the image for the normal environment.
	Cinema	Optimizes the video image for a cinematic look to enjoy movies as if you are in a movie theater.
	Sport	Optimizes the video image for high and dynamic actions by emphasizing primary Colors such as white, grass, or sky blue.
	Game	Optimizes the video image for a fast gaming screen such as PCs or games.
	Expert1/2	Adjusts the detailed video image settings for video experts as well as general viewers.
Screen (In RGB-PC Mode Only)	Customizes the PC display options in RGB mode.	
	Option	
	Resolution	Selects a proper resolution. See "Customizing PC display options", page 28
	Auto Config.	Sets the TV to optimize the options automatically for the TV display.
	Position	Locates the image at the proper position.
	Size	Adjusts the image size.
	Phase	Eliminates horizontal streaking.
	Reset	Restores the options to the default setting.

Basic image options

Setting	Description
Backlight	Adjusts the brightness of the screen by controlling the LCD backlight. If you decrease the brightness level, the screen becomes darker and the power consumption will be reduced without any video signal loss.
Contrast	Increases or decreases the amplitude of the video signal. You may use Contrast when the bright part of the picture is saturated.
Brightness	Adjusts the base level of the signal in the picture.
Sharpness	Adjusts the level of crispness in the edges between the light and dark areas of the picture. The lower the level, the softer the image.
Color	Adjusts intensity of all colors.
Tint	Adjusts the balance between red and green levels.
Color Temp.	Set to warm to enhance hotter colors such as red, or set to cool to enhance cooler colors such as blue.
Advanced Control	Customizes the advanced options.
Picture Reset	Restores the options of each mode to the factory default.



NOTE

- You cannot adjust **Color** and **Tint** in the RGB-PC / HDMI-PC mode.
- When the Expert 1/2 is selected, you can select **H Sharpness**, **V Sharpness**, **Expert control** .

Advanced image / Expert control options

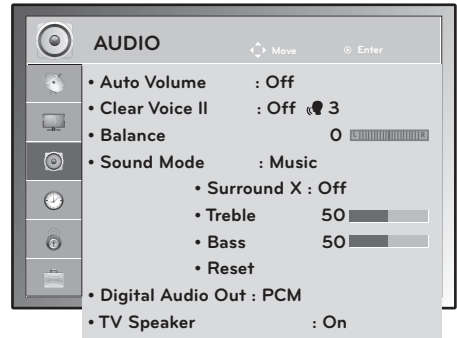
Setting	Description		
Dynamic Contrast	Adjusts the contrast to keep it at the best level according to the brightness of the screen. The picture is improved by making bright parts brighter and dark parts darker.		
Dynamic Color	Adjusts screen colors so that they look livelier, richer and clearer. This feature enhances hue, saturation and luminance so that red, blue and green white look more vivid.		
Clear White	Make the white area of screen brighter and more white.		
Skin Color	It detects the skin area of video and adjusts it to express a natural skin color.		
Noise Reduction	Reduces screen noise without compromising video quality.		
Digital Noise Reduction	Removes noise caused by compressing video.		
Gamma	You can adjust brightness of dark area and middle gray level area of the picture.. <ul style="list-style-type: none"> » Low: Make the dark and middle gray level areas brighter. » Medium: Express the original picture level. » High: Make the dark and middle gray level area darker. 		
Black Level	Sets the black level of the screen to proper level. This function is available in ATV, Component, and HDMI modes. In other modes, the black level will be set to Auto, which recognizes the black level and set <ul style="list-style-type: none"> » Auto: Realizing the black level of the screen and set it to High or Low automatically. » Low: The reflection of the screen gets darker. » High: The reflection of the screen gets brighter. 		
Film Mode	Sets to display the screen with the best image quality for the film. This feature is available in TV, Component 480i/1080i, and HDMI 1080i modes.		
Edge Enhancer	Shows clearer and distinctive yet natural edges of the video. This function works well over Sharpness UI 60 value.		
Color Filter	This is the function to filter the specific colors of the video. You can use the RGB filter to set color saturation and hue accurately.		
Expert Pattern	This is the pattern used for expert adjustment This function is enabled in "Picture Mode - Expert" when you watch DTV.		
Color Temperature	<table border="0" style="width: 100%;"> <tr> <td style="vertical-align: top; width: 50%;"> a. Gamma : Select Low, Medium, High b. Method : 2 Points » Pattern: Inner, Outer » Red/Green/Blue Contrast, Red/Green/Blue Brightness d. Apply to all inputs </td> <td style="vertical-align: top; width: 50%;"> c. Method : 10 Point IRE » Pattern: Inner, Outer » IRE (Institute of Radio Engineers) is the unit to display the size of the video signal and can be set among 0, 10, 20, 30 - 100. You can adjust Red, Green or Blue according to each setting. » Luminance: This function displays calculated luminance value for 2.2 gamma. You can input luminance value you want at 100 IRE, than the target luminance value for 2.2 gamma is displayed at every 10 steps from 10 IRE to 90 IRE. » Red/Green/Blue: The adjustment range is -50 - +50. </td> </tr> </table>	a. Gamma : Select Low, Medium, High b. Method : 2 Points » Pattern: Inner, Outer » Red/Green/Blue Contrast, Red/Green/Blue Brightness d. Apply to all inputs	c. Method : 10 Point IRE » Pattern: Inner, Outer » IRE (Institute of Radio Engineers) is the unit to display the size of the video signal and can be set among 0, 10, 20, 30 - 100. You can adjust Red, Green or Blue according to each setting. » Luminance: This function displays calculated luminance value for 2.2 gamma. You can input luminance value you want at 100 IRE, than the target luminance value for 2.2 gamma is displayed at every 10 steps from 10 IRE to 90 IRE. » Red/Green/Blue: The adjustment range is -50 - +50.
a. Gamma : Select Low, Medium, High b. Method : 2 Points » Pattern: Inner, Outer » Red/Green/Blue Contrast, Red/Green/Blue Brightness d. Apply to all inputs	c. Method : 10 Point IRE » Pattern: Inner, Outer » IRE (Institute of Radio Engineers) is the unit to display the size of the video signal and can be set among 0, 10, 20, 30 - 100. You can adjust Red, Green or Blue according to each setting. » Luminance: This function displays calculated luminance value for 2.2 gamma. You can input luminance value you want at 100 IRE, than the target luminance value for 2.2 gamma is displayed at every 10 steps from 10 IRE to 90 IRE. » Red/Green/Blue: The adjustment range is -50 - +50.		
Color Management System	As the tool used by the experts to make adjustments by using the test patterns, this does not affect other colors but can be used to selectively adjust the 6 color areas (Red/Green/Blue/Cyan/Magenta/Yellow). Color difference may not be distinctive even when you make the adjustments for the general video. Adjusts Red/Green/Blue/Yellow/Cyan, Magenta. Red/Green/Blue/Yellow/Cyan/Magenta Color: The adjustment range is -30 - +30. Red/Green/Blue/Yellow/Cyan/Magenta Tint: The adjustment range is -30 - +30. This feature is disable in RGB-PC and HDMI-PC mode.		

 **NOTE**

Edge Enhancer, Color Filter, Expert Pattern, Color Temperature, Color Management System are supported in the Expert control options only.

AUDIO settings

- 1 Press **MENU** to access the main menus.
- 2 Press the Navigation buttons to scroll to **AUDIO** and press **ENTER**.
- 3 Press the Navigation buttons to scroll to the setting or option you want and press **ENTER**.
 - To return to the previous level, press **BACK**.
- 4 When you are finished, press **EXIT**.
When you return to the previous menu, press **BACK**.



The available Audio options are described in the following:

Setting	Description
Auto Volume	Activates the Auto Volume feature to keep the volume level consistent whenever you change channels. The volume level may not be consistent due to different signal conditions of broadcasting stations.
Clear Voice II	Sets whether to enhance human voice clarity. You can adjust the level of clarity when you set this feature on.
Balance	Adjust balance between the left and right speakers according to your room environment.
Sound Mode	Selects one of the preset sound modes or customizes options in each mode.
Mode	
Standard	Select when you want standard-quality sound.
Music	Select when you listen to music.
Cinema	Select when you watch movies.
Sport	Select when you watch sports events.
Game	Select when you play games.
<p>NOTE If sound quality or volume is not at the level you want, it is recommended to use a separate home theater system or amplifier to cope with different user environments.</p>	
Option	
Surround X	Provides an enveloping surround sound with clear dialog and bass using just two speakers. Surround X is a patented Surround technology that solves the problem of playing 5.1 multichannel contents over two speakers.
Treble	Controls the dominant sounds in the output. When you turn up the treble, it will increase the output to the higher frequency range.
Bass	Controls the softer sounds in the output. When you turn up the bass, it will increase the output to the lower frequency range.
<p>NOTE You cannot adjust Treble and Bass in the RGB-PC / HDMI-PC mode.</p>	
Reset	Resets the sound mode to the default setting.

Setting	Description		
Digital Audio Out	This function is setting the Dolby digital/PCM to connect the audio outputs. If you select "Digital Audio Out - Auto" when Dolby digital is available, SPDIF (Sony Philips Digital InterFace) output will be Dolby Digital. If you select "Digital Audio Out - PCM" when Dolby digital is not available, SPDIF output will be PCM (Pulsecode modulation).		
	Item	Audio Input	Digital Audio output
	Auto	MPEG DD HE-AAC	PCM DD DD
	PCM	All	PCM
TV Speaker	Turns on the internal speaker of the TV when using an external Hi-Fi system. You can use the TV speaker as an audio output device even if there is no video input.		

TIME settings

- 1 Press **MENU** to access the main menus.
- 2 Press the Navigation buttons to scroll to **TIME** and press **ENTER**.
- 3 Press the Navigation buttons to scroll to the setting or option you want and press **ENTER**.
 - To return to the previous level, press **BACK**.
- 4 When you are finished, press **EXIT**.
When you return to the previous menu, press **BACK**.



The available Time settings are described in the following:

Setting	Description
Clock	Sets the time, date, time zone, and daylight-saving time feature. The time will be set automatically according to a digital channel signal which includes time information provided by the broadcasting station. If not, set the time and date manually.
Off Time/On Time	<p>Sets the time to turn on or off the TV automatically. To use this function, you should set the current time and date in the Clock menu.</p> <div style="border: 1px solid black; padding: 5px;"> <p>NOTE</p> <ul style="list-style-type: none"> • If you do not press any button within 2 hours after the TV turns on by the On Time feature, the TV enters the Standby mode automatically. • If you set both Off time and On time features to the same time, the Off time feature overrides the On time feature. </div>
Sleep Timer	Sets the length of time until the TV to turns off. When you turn the TV off and turn it on again, the Sleep timer feature will be set to off.

LOCK settings

- 1 Press **MENU** to access the main menus.
- 2 Press the Navigation buttons to scroll to **LOCK** and press **ENTER**.
- 3 Press the Navigation buttons to scroll to the setting or option you want and press **ENTER**.
 - To return to the previous level, press **BACK**.
- 4 When you are finished, press **EXIT**.
 - When you return to the previous menu, press **BACK**.

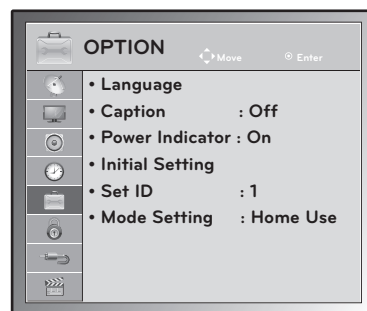


The available Lock settings are described in the following:


Setting	Description		
Set Password	Changes the 4-digit password. The default PIN is "0 0 0 0". If you forget your password, press "0-3-2-5" on the remote control.		
Lock System	Activates or deactivates the lock system.		
	Mode		
	Block Channel	Blocks the channels that contain inappropriate contents for children by pressing the Yellow button. The Lock icon appears in front of the blocked channels. The channels can be selected but the screen blank and the audio is muted. To watch a locked channel, enter the password.	
	Rating	Blocks the movies that are only broadcasted on the TV and contain inappropriate contents, based on the Motion Picture Association of America (MPAA) rating.	
		Rating	
		Blocking Off	General audiences . All ages admitted.
		10 and above	Parental guidance suggested . Some material may not be suitable for children.
		12 and above	Parents strongly cautioned . Some material may be inappropriate for children under 12.
		14 and above	Restricted . Under 14 requires accompanying parent or adult guardian.
16 and above		No one 16 and under admitted.	
18 and above	Adults only.		
Input Block	Block the input sources.		
Key Lock	Locks or unlocks the buttons on the TV.		

OPTION settings

- 1 Press **MENU** to access the main menus.
- 2 Press the Navigation buttons to scroll to **OPTION** and press **ENTER**.
- 3 Press the Navigation buttons to scroll to the setting or option you want and press **ENTER**.
 - To return to the previous level, press **BACK**.
- 4 When you are finished, press **EXIT**.
 - When you return to the previous menu, press **BACK**.



The available Option settings are described in the following:

Setting	Description		
Language	Selects a desired language.		
	Option		
	Menu Language	Selects a language for the display text.	
	Audio Language	Selects an audio language for your program. This feature operates only in the DTV or CADTV mode.	
Caption	Sets whether to display captions and customize your option in each mode.		
	Mode		
	Analog	CC 1-2 (Closed captioning) Text 1-2	Displays the audio portion of a TV program as text on the TV screen. CC1 is the most common mode in use.
	Digital		This is only available for the digital broadcasting system. Selects Portuguese or English.
Power Indicator	Sets to turn on or off the indicator light on the TV.		
Initial Setting	Customizes the TV settings to suit your preference. The initial setup screen will appear when you turn on the TV for the first time.		
	Setting		
	Language	Selects a desired language.	
	Mode Setting	Selects Home Use for the home environment. Selects Store Demo for the retail environment. Selects Demo Mode to set to show special features of the TV. You can cancel the demo mode by pressing any buttons except the Volume and Mute buttons.	
	<div style="border: 1px solid black; padding: 5px; display: inline-block;">  NOTE When selecting Store Demo, Demo Mode will be activated. </div>		
Time Zone	Sets the time zone and daylight saving.		
Auto Tuning	Scans and saves available channels automatically.		

Setting	Description	
Set ID	Adds an ID to the connected devices. (See p.69)	
Mode Setting	Default selection is "Home Use". We recommend setting the TV to "Home Use" mode for the best picture in your home environment.	
	Option	
	Home Use	Selects it for the home environment.
	Store Demo	Selects it for the retail environment.
	Demo Mode	The Demo Mode option will be enabled only when Store Demo mode is enabled. Sets to show special features of the TV. You can cancel the demo mode by pressing any buttons except the Volume and Mute buttons.

MAKING CONNECTIONS

Connect various external devices to the TV and switch input modes to select an external device. For more information about an external device's connection, refer to the manual supplied with each device.

Available external devices are: HD receivers, DVD players, VCRs, Audio systems, USB storage devices, PC, Camcorders or Cameras, Gaming devices, and other External devices.



NOTE

- If you record a TV program on a DVD recorder or VCR, make sure to connect the TV signal input cable to the TV through a DVD recorder or VCR. For more information about recording, refer to the manual supplied with the connected device.
- The external device connection may differ from the model.

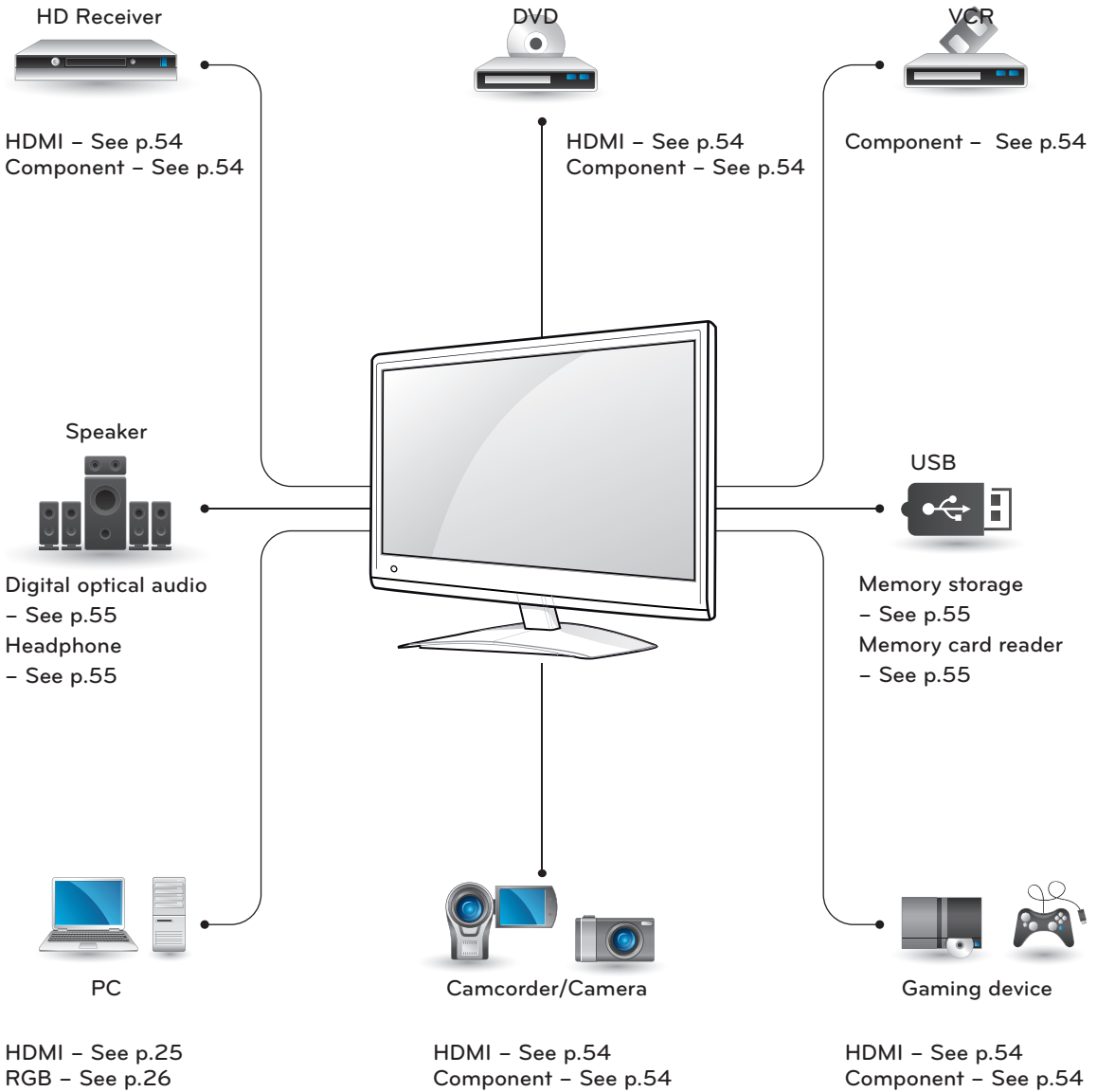
Connect external devices to the TV by referring to the following table.

Connection overview

Connection type	Video		Audio	
	Digital	Analog	Digital	Analog
HDMI (highly recommended)	○	-	○	-
Component	-	○	-	-
RGB	-	○	-	-
Optical audio	-	-	○	-
Analog audio	-	-	-	○

Connect various external devices to the ports on the TV's back panel.

- 1 Find an external device you want to connect to your TV shown on the following illustration.
- 2 Check the connection type of the external device.
- 3 Go to the appropriate illustration and check the connection details.



NOTE

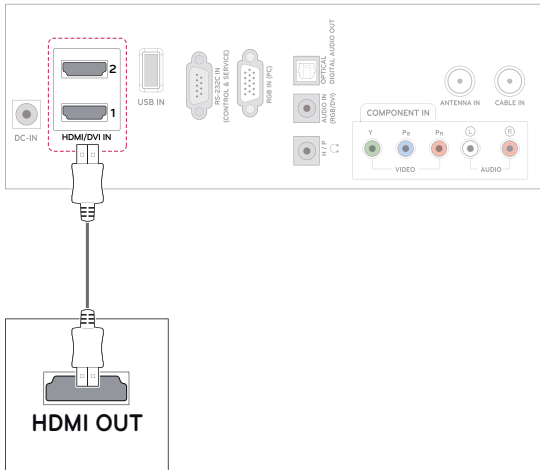
If you connect a gaming device to the TV, use the cable supplied with the gaming device.

Connecting to a Camcorder, Camera, HD receiver, DVD, VCR player or Gaming device

Connect a Camcorder, Camera, HD receiver, DVD, VCR player or Gaming device to the TV and select an appropriate input mode.

HDMI connection

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

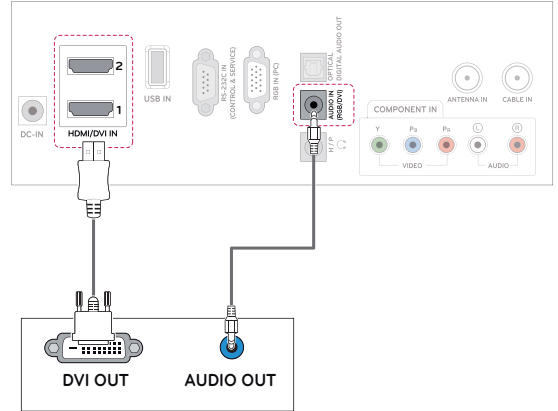


NOTE

- Use a High Speed HDMI™ Cable.
- High Speed HDMI™ Cables are tested to carry an HD signal up to 1080p and higher.

DVI to HDMI connection

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

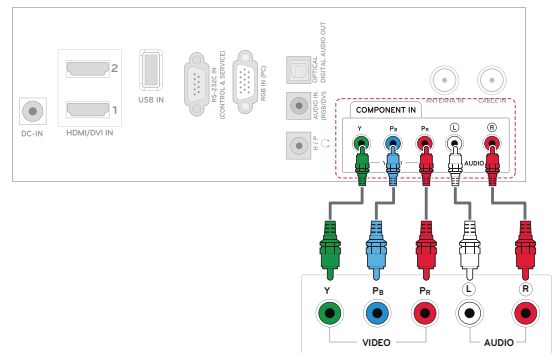


NOTE

- If you do not use an optional external speaker, connect the PC to the TV with the supplied audio cable.

Component connection

Transmits the analog video and audio signals from an external device to the TV. Connect the external device and the TV with the component cable as shown on the following illustration. To display images by using progressive scan, make sure to use the component cable.



Connecting to an audio system

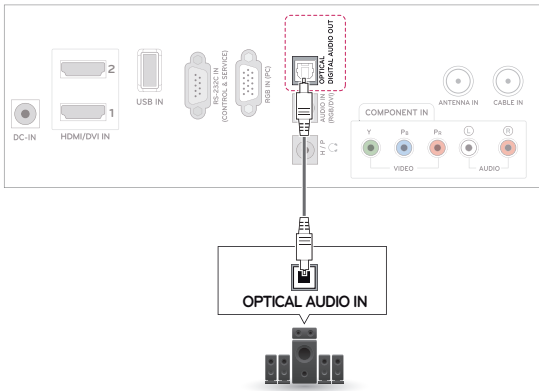
Use an optional external audio system instead of the built-in speaker.

! NOTE

- If you use an external audio device instead of the built-in speaker, set the TV speaker feature to off (See p.46).

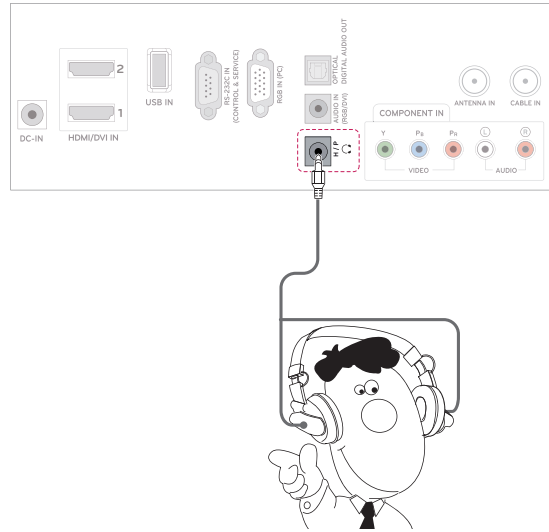
Digital optical audio connection

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



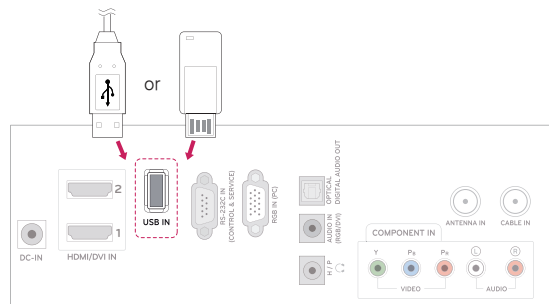
Headphone connection

Transmits the headphone signal from the TV to an external device. Connect the external device and the TV with the headphone as shown on the following illustration.



Connecting to a USB

Connect a USB storage device such as a USB flash memory, external hard drive, MP3 player or a USB memory card reader to the TV and access the USB menu to use various multimedia files. "Connecting USB storage devices" on See p.30 and "Browsing files" on See p.32



MAINTENANCE

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

Updating the TV Firmware

Download and install the latest firmware through DTV signal to enhance or change the product function, or add new features.

To check the current firmware version or update the firmware,

- 1 Press **MENU** to access the main menus.
- 2 Press the **Red** button to scroll **Customer Support**.
- 3 Press the Navigation buttons to scroll to **Software Update** and press **ENTER**.
The current firmware version displays.

OTA (Over-The-Air): When software update is on, the TV will automatically check for software updates. A pop-up window will appear on the screen when an update is available.

! NOTE

- If you change the channel during the firmware update through OTA, the update is stopped.
- The process resumes when you go back to the original channel. The update continues even when the power is switched off using the remote control. In this case, it is normal that the color of the power indicator may change and a dim light may be displayed on the screen. The system operates normally once the update is complete.
- You can check the software update status in the Software Update menu or from the update information displayed under the channel banner.

- 4 When the update is complete, the TV will automatically restart in 5 seconds. You may need to reset some **CHANNEL**, **PICTURE**, or **AUDIO** menus.

! NOTE

- You cannot downgrade back to an older firmware version.
- The period of time for the firmware update may be different depending on the firmware size and DTV signal strength.

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 and frame

To remove dust, wipe the surface with a dry 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 clean and dry cloth.



CAUTION

- Do not push, rub, or hit the surface with your fingernail or a sharp object, as this may result in scratches on the screen and image distortions.
- Do not use any chemicals, such as waxes, benzene, alcohol, thinners, insecticides, air fresheners, lubricants, as these may damage the screen's finish and cause discolorations.

Cabinet and stand

To remove dust, wipe the cabinet with a dry and soft cloth.

To remove major dirt, wipe the cabinet with a soft cloth dampened in a clean water or water containing a small amount of mild detergent.



CAUTION

- Do not spray liquid onto the surface. If water enters the TV, it may result in fire, electric shock, or malfunction.
- Do not use any chemicals as this may deteriorate the surface.

Power cord

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

TROUBLESHOOTING

General

The TV does not operate normally.

Problem	Resolution
The remote control doesn't work	<ul style="list-style-type: none"> • Check to see if there is any object between the product and the remote control causing obstruction. Ensure you are pointing the remote control • Ensure that the batteries are installed with correct polarity (⊕ to ⊕, ⊖ to ⊖). • Ensure that the correct remote operating mode is set: TV, VCR, etc. • Install new batteries.
Power is suddenly turned off	<ul style="list-style-type: none"> • Is the sleep timer set? • Check the power control settings. Power interrupted. • If the TV is switched on and there is no input signal, it will switch off automatically after 15 minutes to save the power consumption. • When a broken file was played in the USB mode, the TV may turn off. Please check the file in your usb storage. • Except the screen off mode of the energy saving menu.

Video Problems

Problem	Resolution
No picture & No sound	<ul style="list-style-type: none"> • Check whether the product is turned on. • Try another channel. The problem may be with the broadcast. • Is the power cord inserted into wall power outlet? • Check your antenna direction and/or location. • Test the wall power outlet, plug another product's power cord into the outlet where the product's power cord was plugged in.
Picture appears slowly after switching on	<ul style="list-style-type: none"> • This is normal, the image is muted during the product startup process. Please contact your service centre, if the picture has not appeared after five minutes.
No Color, poor color, or poor picture	<ul style="list-style-type: none"> • Adjust Color in menu option. • Keep a sufficient distance between the product and the VCR. • Try another channel. The problem may be with the broadcast. • Are the video cables installed properly? • Activate any function to restore the brightness of the picture.
Horizontal / vertical bars or picture shaking	<ul style="list-style-type: none"> • Check for local interference such as an electrical appliance or power tool.
Poor reception on some channels	<ul style="list-style-type: none"> • Station or cable product experiencing problems, tune to another station. • Station signal is weak, reorient antenna to receive weaker station. • Check for sources of possible interference.
Lines or streaks in pictures	<ul style="list-style-type: none"> • Check antenna (Change the direction of the antenna).

Problem	Resolution
No picture when connecting HDMI	<ul style="list-style-type: none"> Check that your HDMI cable is High Speed HDMI Cable. If the HDMI cables are not High Speed HDMI Cable, flickering or no screen display can result. Please use the High Speed HDMI Cable.

Audio Problems

Problem	Resolution
Picture OK & No sound	<ul style="list-style-type: none"> Press the VOL(+, -) button or VOL (◀, ▶) button. Sound muted? Press MUTE button. Try another channel. The problem may be with the broadcast. Are the audio cables installed properly?
No output from one of the speakers	<ul style="list-style-type: none"> Adjust Balance in menu option.
Unusual sound from inside the product	<ul style="list-style-type: none"> A change in ambient humidity or temperature may result in an unusual noise when the product is turned on or off and does not indicate a problem with the product.
No sound when connecting HDMI or USB	<ul style="list-style-type: none"> Check HDMI cable is High Speed HDMI Cable. Check USB cable over version 2.0. Use a normal MP3 file

There is a problem with PICTURE settings.

Problem	Resolution
When the user changes the picture settings, the TV automatically converts back to the initial settings after a certain period of time.	<ul style="list-style-type: none"> It means that the TV is currently set to Store Demo mode. To switch to Home use mode you should do the followings: From the TV Menu, choose OPTION ▶ Choose Initial Setting ▶ Choose Home use. Now, you have completed switching to the Home use mode.

PC mode

No image is displayed.

Problem	Resolution
Power is on, power indicator is blue but the screen appears extremely dark.	<ul style="list-style-type: none"> Adjust brightness and contrast again.
Does the 'Invalid format' message appear?	<ul style="list-style-type: none"> The signal from the PC (Video card) is out of the vertical or horizontal frequency range of the product. Adjust the frequency range by referring to the Specifications in this user's guide.
Does the 'Check signal cable' message appear?	<ul style="list-style-type: none"> The signal cable between PC and product is not connected. Check the signal cable. Press the 'INPUT' button in the remote control to check the input signal.
The power indicator is dimmed.	<ul style="list-style-type: none"> If the product is in power saving mode, move the mouse or press any key.

'Unknown Product' message appears when the product is connected.

Problem	Resolution
Did you install the driver?	<ul style="list-style-type: none"> • Install the product driver, which is provided with the product, or download it from the web site. (http://www.lg.com) • See if the plug & play function is supported by referring to the video card user's guide.

After-image appears on the screen.

Problem	Resolution
After-image appears when the product is turned off.	<ul style="list-style-type: none"> • If you use a fixed image for a long time, the pixels may be damaged quickly. Use the screen saver function.

Screen Color is abnormal.

Problem	Resolution
Screen has poor Color resolution (16_Colors).	<ul style="list-style-type: none"> • Set screen Color resolution to more than 24 bits (true Color) Select control Pane ► Display ► Settings ► Color Table menu in Windows.
Screen Color is unstable or mono Color.	<ul style="list-style-type: none"> • Check the connection status of the signal cable.
Do back spots appear on the screen?	<ul style="list-style-type: none"> • Several pixels (red, green, white or black Color) may appear on the screen, which can be attributable to the unique characteristics of the LCD panel. It is not a malfunction of the LCD.

The screen image looks abnormal.

Problem	Resolution
Is the screen position wrong?	<ul style="list-style-type: none"> • Adjust the Position menu in OSD. From the TV Menu, Choose PICTURE ► Choose Screen(RGB-PC) ► Adjusts Position. • A See if the video card resolution and frequency are supported by the product. If the frequency is out of range, set to the recommended resolution in the Control Panel ► Display ► Setting menu.
Do thin lines appear on the background screen?	<ul style="list-style-type: none"> • Adjust the Size menu in OSD. From the TV Menu, Choose PICTURE ► Choose Screen(RGB-PC) ► Adjusts Size.
Horizontal noise appears or the characters look blurred.	<ul style="list-style-type: none"> • Adjust the Phase menu in OSD. From the TV Menu, Choose PICTURE ► Choose Screen(RGB-PC) ► Adjusts Phase.

SPECIFICATIONS

M2250D

LCD Panel	Screen Type	546.86 mm Wide (21.53 inch) TFT (Thin Film Transistor) LCD (Liquid Crystal Display) Panel. Visible diagonal size : 546.86 mm
	Pixel Pitch	0.248 mm (H) x 0.248 mm (V)
Video Signal	Max. Resolution	1920 × 1080 @ 60 Hz
	Recommended Resolution	1920 × 1080 @ 60 Hz
	Horizontal Frequency	30 kHz to 83 kHz
	Vertical Frequency	56 Hz to 75 Hz
	Synchronization Type	Separate Sync, Digital
Input Connector		TV, D-Sub Analog, PC Audio In, Component, HDMI*2, USB
Power	Rated Voltage	19 V $\overline{\text{---}}$ 2.2 A
	Power Consumption	On Mode : 35 W (typ.) Off Mode ≤ 0.5 W
AC/DC Adapter		Manufacturer: LITE-ON, Model PA-1650-68
Tilt	Tilt Range	-5° to 10°
Dimensions (Width x Height x Depth) Weight		509.1 mm x 404.2 mm x 164 mm 3.37 kg
Environmental conditions	Operating Temperature	10 °C to 35 °C
	Operating Humidity	20 % to 80 %
	Storage Temperature	-10 °C to 60 °C
	Storage Humidity	5 % to 90 %

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

M2350D

LCD Panel	Screen Type	584.2 mm Wide (23 inch) TFT (Thin Film Transistor) LCD (Liquid Crystal Display) Panel. Visible diagonal size : 584.2 mm
	Pixel Pitch	0.265 mm (H) x 0.265 mm (V)
Video Signal	Max. Resolution	1920 × 1080 @ 60 Hz
	Recommended Resolution	1920 × 1080 @ 60 Hz
	Horizontal Frequency	30 kHz to 83 kHz
	Vertical Frequency	56 Hz to 75 Hz
	Synchronization Type	Separate Sync, Digital
Input Connector		TV, D-Sub Analog, PC Audio In, Component, HDMI*2, USB
Power	Rated Voltage	19 V --- 2.4 A
	Power Consumption	On Mode : 40 W (typ.) Off Mode ≤ 0.5 W
AC/DC Adapter		Manufacturer: LITE-ON, Model PA-1650-68
Tilt	Tilt Range	-5° to 10°
Dimensions (Width x Height x Depth)		546.7 mm x 423.8 mm x 180 mm
Weight		3.7 kg
Environmental conditions	Operating Temperature	10 °C to 35 °C
	Operating Humidity	20 % to 80 %
	Storage Temperature	-10 °C to 60 °C
	Storage Humidity	5 % to 90 %

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

M2450D

LCD Panel	Screen Type	609.7 mm Wide (24 inch) TFT (Thin Film Transistor) LCD (Liquid Crystal Display) Panel. Visible diagonal size : 609.7 mm
	Pixel Pitch	0.276 mm (H) x 0.276 mm (V)
Video Signal	Max. Resolution	1920 × 1080 @ 60 Hz
	Recommended Resolution	1920 × 1080 @ 60 Hz
	Horizontal Frequency	30 kHz to 83 kHz
	Vertical Frequency	56 Hz to 75 Hz
	Synchronization Type	Separate Sync, Digital
Input Connector		TV, D-Sub Analog, PC Audio In, Component, HDMI*2, USB
Power	Rated Voltage	19 V --- 2.4 A
	Power Consumption	On Mode : 40 W (typ.) Off Mode ≤ 0.5 W
AC/DC Adapter		Manufacturer: LITE-ON, Model PA-1650-68
Tilt	Tilt Range	-5° to 10°
Dimensions (Width x Height x Depth) Weight		569.9 mm x 435.8 mm x 180 mm 4.43 kg
Environmental conditions	Operating Temperature	10 °C to 35 °C
	Operating Humidity	20 % to 80 %
	Storage Temperature	-10 °C to 60 °C
	Storage Humidity	5 % to 90 %

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

M2550D

LCD Panel	Screen Type	634.4 mm Wide (25 inch) TFT (Thin Film Transistor) LCD (Liquid Crystal Display) Panel. Visible diagonal size : 634.4 mm
	Pixel Pitch	0.288 mm (H) x 0.288 mm (V)
Video Signal	Max. Resolution	1920 × 1080 @ 60 Hz
	Recommended Resolution	1920 × 1080 @ 60 Hz
	Horizontal Frequency	30 kHz to 83 kHz
	Vertical Frequency	56 Hz to 75 Hz
	Synchronization Type	Separate Sync, Digital
Input Connector		TV, D-Sub Analog, PC Audio In, Component, HDMI*2, USB
Power	Rated Voltage	19 V --- 2.8 A
	Power Consumption	On Mode : 50 W (typ.) Off Mode ≤ 0.5 W
AC/DC Adapter		Manufacturer: LITE-ON, Model PA-1650-68
Tilt	Tilt Range	-5° to 10°
Dimensions (Width x Height x Depth)		594.9 mm x 451 mm x 180 mm
Weight		4.85 kg
Environmental conditions	Operating Temperature	10 °C to 35 °C
	Operating Humidity	20 % to 80 %
	Storage Temperature	-10 °C to 60 °C
	Storage Humidity	5 % to 90 %

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

RGB (PC) / HDMI (PC) supported mode

Resolution	Horizontal Frequency(kHz)	Vertical Frequency(Hz)
720 x 400	31.468	70.080
640 x 480	31.469	59.940
640 x 480	37.500	75.000
800 x 600	37.879	60.317
800 x 600	46.875	75.000
1024 x 768	48.363	60.004
1024 x 768	60.023	75.029
1152 x 864	67.500	75.000
1280 x 720	45.000	60.000
1280 x 800	49.702	59.810
1280 x 1024	63.981	60.020
1280 x 1024	79.976	75.025
1400 x 1050	65.317	59.978
1440 x 900	55.935	59.887
1600 x 900	60.000	60.000
1680 x 1050	64.674	59.883
1680 x 1050	65.290	59.954
1920 x 1080	67.500	60.000

HDMI (DTV) supported mode

Resolution	Horizontal Frequency(kHz)	Vertical Frequency(Hz)
720 x 480	31.469 31.500	59.940 60.000
720 x 576	31.250	50.000
1280 x 720	37.500	50.000
1280 x 720	44.960 45.000	59.940 60.000
1920 x 1080	33.720 33.750	59.940 60.000
1920 x 1080	28.125	50.000
1920 x 1080	27.000	24.000
1920 x 1080	33.750	30.000
1920 x 1080	56.250	50.000
1920 x 1080	67.430 67.500	59.940 60.000

Component supported mode

Resolution	Horizontal Frequency(kHz)	Vertical Frequency(Hz)
720 x 480	15.730	59.940
720 x 480	15.750	60.000
720 x 576	15.625	50.000
720 x 480	31.470	59.940
720 x 480	31.500	60.000
720 x 576	31.250	50.000
1280 x 720	44.960	59.940
1280 x 720	45.000	60.000
1280 x 720	37.500	50.000
1920 x 1080	33.720	59.940
1920 x 1080	33.750	60.000
1920 x 1080	28.125	50.000
1920 x 1080	56.250	50.000
1920 x 1080	67.432	59.940
1920 x 1080	67.500	60.000

Component port connecting informatio

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

**NOTE**

- Avoid keeping a fixed image on the set's screen for prolonged periods of time. The fixed image may become permanently imprinted on the screen. Use a screen saver when possible.
- There may be interference relating to resolution, vertical pattern, contrast or brightness in PC mode. Change the PC mode to another resolution or change the refresh rate to another rate or adjust the brightness and contrast on the menu until the picture is clear. If the refresh rate of the PC graphic card can not be changed, change the PC graphic card or consult the manufacturer of the PC graphic card.
- The synchronization input waveform for Horizontal and Vertical frequencies are separate.
- Connect the signal cable from the TV output port of the PC to the RGB (PC) port of the TV or the signal cable from the HDMI output port of the PC to the HDMI/DVI IN port on the TV.
- Connect the audio cable from the PC to the Audio input on the TV.
- If using a sound card, adjust PC sound as required.
- If the graphic card on the PC does not output analogue and digital RGB simultaneously, connect only one of either RGB or HDMI/DVI IN to display the PC output on the TV.
- If the graphic card on the PC does output analogue and digital RGB simultaneously, set the TV to either RGB or HDMI. (The other mode is set to Plug and Play automatically by the TV.)
- DOS mode may not work depending on the video card if you use an HDMI to DVI cable.
- If you use too long an RGB-PC cable that is too long, there may be interference on the screen. We recommend using under 5 m of cable. This provides the best picture quality.

IR CODES

- This feature is not available for all models.

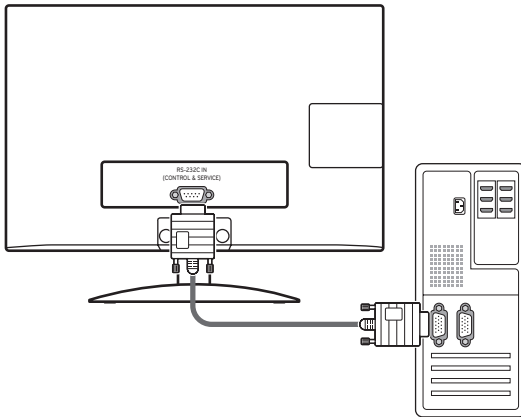
Code (Hexa)	Function	Note	Code (Hexa)	Function	Note
08	⏻ (POWER)	Remote control Button (Power On/Off)	99	Auto Config.	Remote control Button
45	Q.MENU	Remote control Button	72	RED	Remote control Button
43	Menu	Remote control Button	71	GREEN	Remote control Button
0B	INPUT	Remote control Button	63	YELLOW	Remote control Button
10 - 19	Number Key 0-9	Remote control Button	61	BLUE	Remote control Button
4C	- (Dash)/LIST	Remote control Button	B1	■	Remote control Button
1A	Q.VIEW	Remote control Button	B0	▶	Remote control Button
9	MUTE	Remote control Button	BA		Remote control Button
2	VOL +	Remote control Button	8E	▶▶	Remote control Button
3	VOL -	Remote control Button	8F	◀◀	Remote control Button
0	CH ^	Remote control Button	AB	GUIDE	Remote control Button
1	CH v	Remote control Button	5B	EXIT	Remote control Button
1E	FAV/MARK	Remote control Button	D6	TV	Discrete IR Code (TV Input Selection)
40	^	Remote control Button	C4	POWER ON	Discrete IR Code (Only Power On)
41	v	Remote control Button	C5	POWER OFF	Discrete IR Code (Only Power Off)
7	<	Remote control Button	BF	COMPONENT1	Discrete IR Code (Component1 Input Selection)
6	>	Remote control Button	D5	RGB-PC	Discrete IR Code (RGB-PC Input Selection)
44	Enter(Ⓞ)	Remote control Button	CE	HDMI1	Discrete IR Code (HDMI1 Input Selection)
28	BACK	Remote control Button	CC	HDMI2	Discrete IR Code (HDMI2 Input Selection)
79	RATIO	Remote control Button	76	Ratio 4:3	Discrete IR Code (Only 4:3 Mode)
95	Energy Saving (e○)	Remote control Button	77	Ratio 16:9	Discrete IR Code (Only 16:9 Mode)
50	TV/PC	Remote control Button	AF	Ratio Zoom	Discrete IR Code (Only Zoom Mode)
AA	INFO ⓘ	Remote control Button			

EXTERNAL CONTROL DEVICE SETUP

RS-232C Setup

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

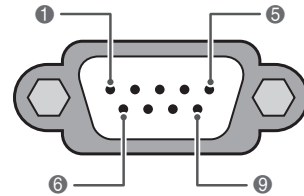
Connect the serial port of the control device to the RS-232C jack on the product back panel.



! NOTE

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

Type of connector; D-Sub 9-Pin Male



RS-232C IN
(CONTROL & SERVICE)

No.	Pin name
1	No connection
2	RXD (Receive data)
3	TXD (Transmit data)
4	DTR (DTE side ready)
5	GND
6	DSR (DCE side ready)
7	RTS (Ready to send)
8	CTS (Clear to send)
9	No Connection

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.

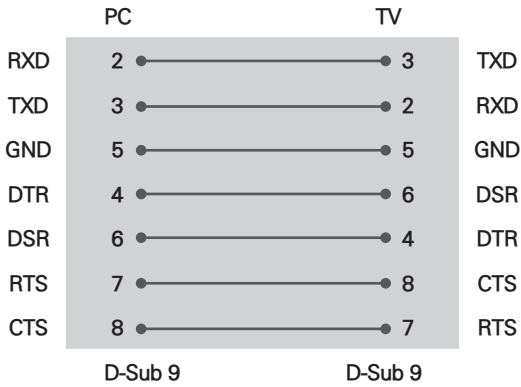
! NOTE

This product has command echo back in the RS-232C Command.

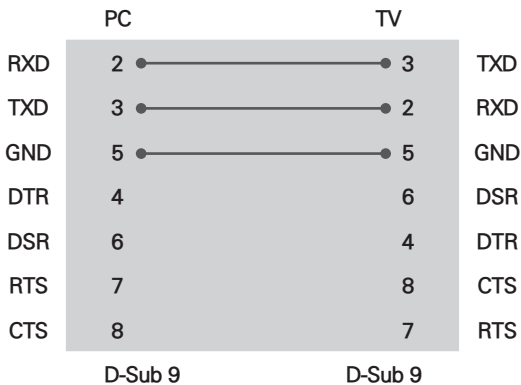
RS-232C configurations

7-Wire Configuration

(Serial female-female NULL modem cable)



3-Wire Configurations(Not standard)



Set ID

Set ID number. "Real Data Mapping"



- 1 Press **MENU** to access the main menus.
- 2 Press the Navigation buttons to scroll to **OPTION** and press **ENTER**.
- 3 Press the Navigation buttons to scroll to **Set ID** and press **ENTER**.
- 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**.
When you return to the previous menu, press **BACK**.

* REAL DATA MAPPING

1 : Step 0	Tint
:	Step 0 : R50
A : Step 10 (Set ID 10)	:
:	Step 49 : R1
F : Step 15 (Set ID 15)	Step 50 : 0
10 : Step 16 (Set ID 16)	Step 51 : G1
:	:
63 : Step 99 (Set ID 99)	Step 100 : G50
64 : Step 100	
	Balance
	Step 0 : L50
	:
	Step 49 : L1
	Step 50 : 0
	Step 51 : R1
	:
	Step 100 : R50
	Colour Temperature
	Step 0 : W50
	:
	Step 49 : W1
	Step 50 : 0
	Step 51 : C1
	:
	Step 100 : C50

Command reference list

	COMMAND1	COMMAND2	DATA (Hexadecimal)
01. Power	k	a	00 to 01
02. Input Select	x	b	See p.72
03. Aspect Ratio	k	c	See p.72
04. Screen Mute	k	d	00 to 01
05. Volume Mute	k	e	00 to 01
06. Volume Control	k	f	00 to 64
07. Contrast	k	g	00 to 64
08. Brightness	k	h	00 to 64
09. Color	k	i	00 to 64
10. Tint	k	j	00 to 64
11. Sharpness	k	k	00 to 64
12. OSD Select	k	l	00 to 01
13. Remote Control Lock Mode	k	m	00 to 01
14. Treble	k	r	00 to 64
15. Bass	k	s	00 to 64
16. Balance	k	t	00 to 64
17. Color Temperature	x	u	00 to 64
18. Energy Saving	j	q	00 to 05
19. Auto Configuration	j	u	01
20. Channel Add/Del	m	b	00 to 01
21. Key	m	c	Key Code
22. Backlight	m	g	00 to 64

	COMMAND 1	COMMAND 2	DATA00 (Hexadecimal)	DATA01 (Hexadecimal)
23. Channel Tuning	m	a	physical channel	major high
	DATA02 (Hexadecimal)	DATA03 (Hexadecimal)	DATA04 (Hexadecimal)	DATA05 (Hexadecimal)
	major low	minor high	minor low	attribute

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 TV ID number in Setup menu. Adjustment range is 1 to 99. When selecting Set ID '0', every connected the TV 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 the command data. Transmit the 'FF' data to read status of command.

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

[] : ASCII code 'space (0x20)'

* In this model, TV will not send the status during the standby mode.

OK Acknowledgement

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

The TV 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.

* In this model, TV will not send the status during the standby mode.

* Data Format

[Command 2] : Use as command.

[Set ID] : Use the small character, if set ID is 10, it will send the '0', 'a'.

[DATA] : Use the small character, if data is 0 x ab, it will send the 'a', 'b'.

[OK] : Use the large character.

Error Acknowledgement

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

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

Data1: Illegal Code

Data2: Not supported function

Data3: Wait more time

* In this model, TV will not send the status during the standby mode.

* Data Format

[Command 2] : Use as command.

[Set ID] : Use the small character, if set ID is 10, it will send the '0', 'a'.

[DATA] : Use the small character, if data is 0 x ab, it will send the 'a', 'b'.

[NG] : Use the large character

01. Power (Command: k a)

To control Power On/Off of the TV.

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

Data 00: Power Off Data 01: Power On

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

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

* Note: In this model, TV will send the Acknowledge after power on processing completion.

There might be a time delay between command and acknowledge.

02. Input Select (Command: x b)

To select input source for TV.

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

Data 00: DTV (Antenna)
Data 10: Analog (Antenna)
Data 11: Analog (Cable)
Data 40: Component
Data 60: RGB-PC
Data 90: HDMI1
Data 91: HDMI2

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

03. Aspect Ratio (Command: k c)

To adjust the screen format.

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

Data 01: 4:3
Data 02: 16:9
Data 04: Zoom
Data 05: Zoom 2
Data 06: Set by program
Data 09: Just scan
Data 10: Cinema Zoom1
:
Data 1F: Cinema Zoom16

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

04. 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-out Mute off

Data 01: Screen mute on (Picture off)

Data 10: Video-out Mute on

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

* In case of Video-out Mute on only, TV will display On Screen Display (OSD). But, in case of screen mute on, TV will not display On Screen Display (OSD).

05. 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)

Data 01: Volume mute off (Volume on)

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

06. 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

(*transmit by Hexadecimal code)

*Refer to 'Real data mapping'. See p.69

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

07. 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

(*transmit by Hexadecimal code)

*Refer to 'Real data mapping'. See p.69

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

08. 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

(*transmit by Hexadecimal code)

*Refer to 'Real data mapping'. See p.69

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

09. Color (Command: k i)

To adjust screen color.

You can also adjust color in the PICTURE menu.

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

Data Min: 00 to Max: 64

(*transmit by Hexadecimal code)

*Refer to 'Real data mapping'. See p.69

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

10. Tint (Command: k j)

To adjust screen tint.

You can also adjust tint in the PICTURE menu.

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

Data Red: 00 to Green: 64

(*transmit by Hexadecimal code)

*Refer to 'Real data mapping'. See p.69

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

11. Sharpness (Command: k k)

To adjust screen sharpness.

You can also adjust sharpness in the PICTURE menu.

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

Data Min: 00 to Max: 64

(*transmit by Hexadecimal code)

*Refer to 'Real data mapping'. See p.69

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

12. OSD Select (Command: k l)

To select OSD (On Screen Display) on/off.

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

Data 00: OSD off

Data 01: OSD on

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

13. Remote Control Lock Mode (Command: k m)

To lock the remote control and the front panel controls on the TV.

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

Data 00: Lock off

Data 01: Lock on

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

If you're not using the remote control and front panel controls on the TV, use this mode. When main power is on/off, remote control lock is released. If Key Lock is on in the standby mode, TV will not turn on by POWER button of remote control and on the TV.

14. Treble (Command: k r)

To adjust treble.

You can also adjust treble in the AUDIO menu.

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

Data Min: 00 to Max: 64

(*transmit by Hexadecimal code)

*Refer to 'Real data mapping'. See p.69

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

15. Bass (Command: k s)

To adjust bass.

You can also adjust bass in the AUDIO menu.

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

Data Min: 00 to Max: 64

(*transmit by Hexadecimal code)

*Refer to 'Real data mapping'. See p.69

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

16. 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

(*transmit by Hexadecimal code)

*Refer to 'Real data mapping'. See p.69

Acknowledgement

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

17. Color Temperature (Command: x u)

To adjust color temperature.

You can also adjust color temperature in the PICTURE menu.

Transmission

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

Data Min: 00 to Max: 64

(*transmit by Hexadecimal code)

*Refer to 'Real data mapping'. See p.69

Acknowledgement

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

18. Energy Saving (Command: j q)

To control the energy saving function.

Transmission

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

Data 00: Energy saving - off

Data 01: Energy saving - Minimum

Data 02: Energy saving - Medium

Data 03: Energy saving - Maximum

Data 05: Energy saving - Screen off

Acknowledgement

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

19. Auto Configuration (Command: j u)

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

Transmission

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

Data 01: To set

Acknowledgement

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

20. Channel Add/Del (Command: m b)

To add and delete the channels.

Transmission

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

Data 00: Channel Delete

Data 01: Channel Add

Acknowledgement

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

21. Key (Command: m c)

To send IR remote control code.

Transmission

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

* Data Key cod -See p.67

Acknowledgement

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

When TV is in the standby mode, TV will turn on by POWER button of remote control only.

22. Backlight (Command: m g)

To adjust screen backlight.

Transmission

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

Data Min: 00 to Max: 64

(*transmit by Hexadecimal code)

*Refer to 'Real data mapping'. See p.69

Acknowledgement

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

23. Channel Tuning (Command: m a)

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

Transmission

```
[m][a][ ][Set ID][ ][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 subchannel.

Since the ATSC tuner automatically maps the channel to the Major number, the Physical number is not required when sending a command.

Data 00: Physical Channel Number

Analog air: 01 to 69, Analog cable: 01 to 135

DTV air: 01 to 69

Data 01 & 02: Major Channel Number

Data 01: High byte

Data 02: Low byte

Two bytes are available for the Major and Minor, normally only the second byte is used.

Data 03 & 04: Minor Channel Number

Not needed for NTSC.

Data05 :

7 Main/Sub Picture	6 Two/One Part Channel	5 Using Physical Channel	4 Reserved	3	2	1	0	Step
0 Main	0 Two	0 Use	x	0	0	0	0	NTSC Air
1 Sub	1 One	1 No Use	x	0	0	0	1	NTSC Cable
			x	0	0	1	0	ATSC Air
			x	0	0	1	1	ATSC Cable_std
			x	0	1	0	0	ATSC Cable_hrc
			x	0	1	0	1	ATSC Cable_irc
			x	0	1	1	0	ATSC cable_auto
			x	0	1	1	1	Reserved
			x	x	x	x	x	...
			x	1	1	1	1	Reserved

The table above lists the binary code that must be converted to hexadecimal before sending. For example, the binary code to tune the sub source to an NTSC cable channel is "1000 0001", which translates to "81" in hex.

* 7th bit: for which source do you want to change the channel.

* 6th bit: use a two part or one part channel. Most cases just use 0 since it's ignored when using NTSC.

* 5th bit: use 0 with NTSC since it can only use the physical channel number. Normally use 1 for ATSC since most times it doesn't matter what the physical number is

* 4th bit: set to 0.

* 3-0 bits: choose signal type.

* Tune Command Examples:

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

Data 00 = Physical of 35 = 23

Data 01 & 02 = No Major = 00 00

Data 03 & 04 = No Minor = 00 00

Data 05 = 0000 0001 in binary = 01

Total = ma 00 23 00 00 00 00 01

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

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 = 0010 0010 in binary = 22

Total = ma 00 00 00 1E 00 03 22

Acknowledgement

```
[a][ ][Set ID][ ][OK][Data00][Data01][Data02][Data03][Data04][x][a][ ][Set ID][ ][NG][Data00][x]
```

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Make sure to read the Safety Precautions before using the product.

Keep the Owner's Manual (CD) in an accessible place for future reference.

The model and serial number of the TV is located on the back and one side of the TV.

Record it below should you ever need service.

MODEL _____

SERIAL _____