








SIMPLE MANUAL

You can easily and effectively access the TV information by viewing a simple manual on the TV. During the Simple Manual operation, audio will be muted.

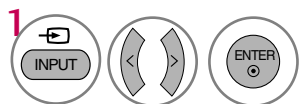


- 1   Select **OPTION**.
- 2   Select **Simple Manual**.
- 3   Select the part of the manual you want to see.
- 4  Return to TV viewing.

WATCHING TV / CHANNEL CONTROL

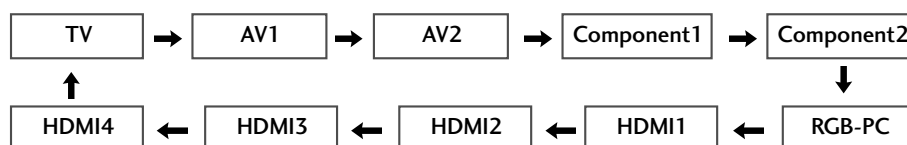
INPUT LIST

Only these input signals which are connected to a TV can be activated and selected.

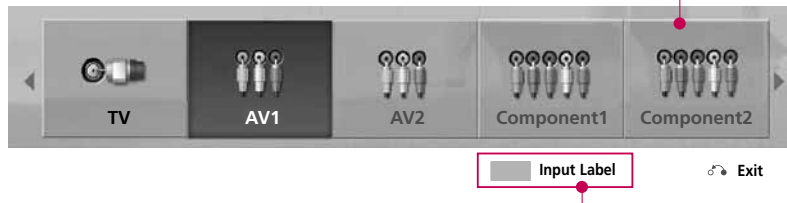


1 Select the desired input source.

- You can also select the desired input source in the **INPUT** menu.



ie)



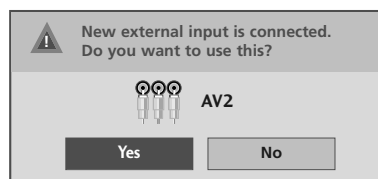
Disconnected inputs are inactive (grayed out)

Select a desired input source (except TV). Then, you can select your desired **Input Label** with using Blue button. ► **p.63**

ie) In case of changing the input label using Blue button



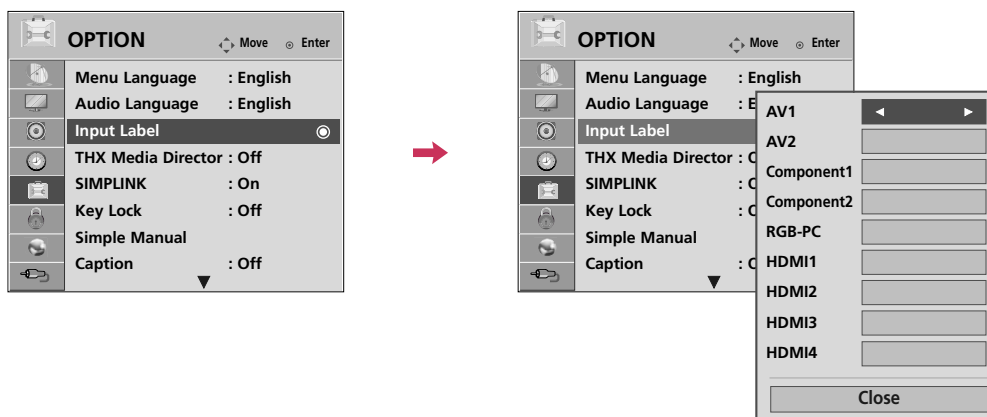
- When new external device is connected, this popup menu is displayed automatically.
If selecting **Yes**, you can select input source that you want to appreciate.
- But, when selecting "**SIMPLINK - On**", popup menu for HDMI input will not be displayed.



- **TV**: Select it to watch over-the-air, cable and digital cable broadcasts.
- **AV**: Select them to watch a VCR or other external equipment.
- **Component**: Select them to watch DVD or a Digital set-top box.
- **RGB-PC**: Select it to view PC input.
- **HDMI**: Select them to watch high definition devices.

INPUT LABEL

You can set a label for each input source when it's not in use.



With using OPTION menu

- 1 Select **OPTION**.
- 2 Select **Input Label**.
- 3 Select the source.
- 4 Select the label.
- 5 Return to the previous menu.
- Return to TV viewing.

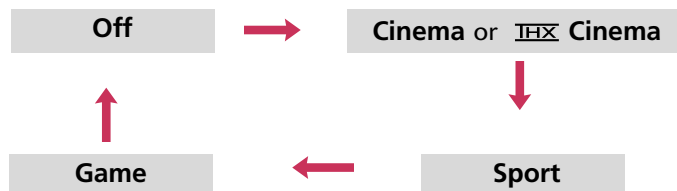
With using INPUT button

- 1 Select the source.
- 2 Select the label.
- 3 Return to the previous menu.
- Return to TV viewing.

WATCHING TV / CHANNEL CONTROL

AV MODE

AV Mode toggles through preset Video and Audio settings.



1



Press the **AV MODE** button repeatedly to select the desired source.

2



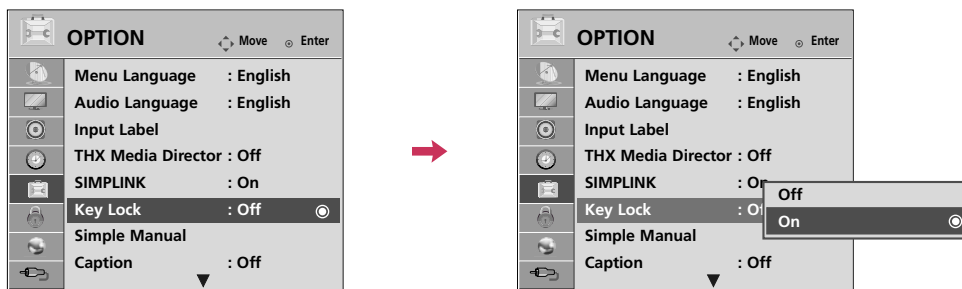
- If you select “**Cinema / THX Cinema**” in AV mode, **Cinema** will be selected both for “**PICTURE** menu - **Picture Mode**” and “**AUDIO** menu - **Sound Mode**” respectively.
- If you select “**Off**” in AV mode, the “**Picture Mode**” and “**Sound Mode**” return to previous selected value.
- **Off**: Disables the AV MODE.
- **Cinema**: Optimizes video and audio for watching movies.
- **Sport**: Optimizes video and audio for watching sports events.
- **Game**: Optimizes video and audio for playing games.









KEY LOCK

The TV can be set up so that it can only be used with the remote control.

This feature can be used to prevent unauthorized viewing by locking out the front panel controls.

This TV is programmed to remember which option it was last set to even if you turn the TV off.



- 1   Select **OPTION**.
- 2   Select **Key Lock**
- 3   Select **On** or **Off**.
- 4  Return to the previous menu.
-  Return to TV viewing.

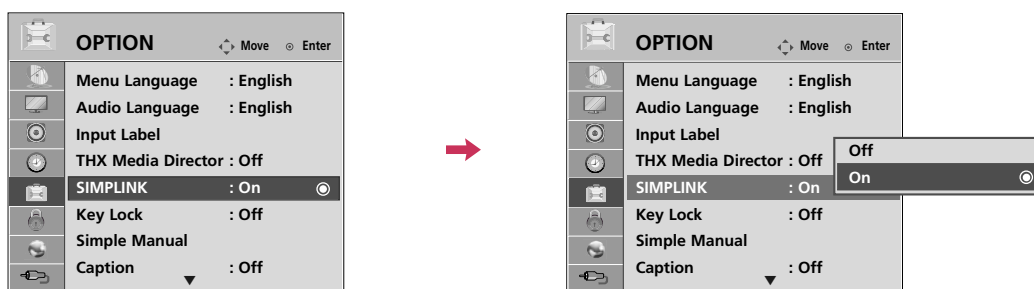
- In **Key Lock 'On'**, if the TV is turned off, press the **⏻ / I, INPUT, CH (▲▼ or ^ v)** button on the TV or **POWER, INPUT, CH (^ v)** or **NUMBER** buttons on the remote control.
- With the **Key Lock On**, the display **'⚠ Key Lock'** appears on the screen if any button on the front panel is pressed while viewing the TV.









WATCHING TV / CHANNEL CONTROL



SIMPLINK allows you to control and play other AV devices connected with HDMI cable without additional cables and settings. This TV may work with devices with HDMI-CEC support, but only devices with the SIMPLINK logo are fully supported.

SIMPLINK can be turned on and off in the user menus.



- 1   Select **OPTION**.
- 2   Select **SIMPLINK**.
- 3   Select **On** or **Off**.
- 4  Return to the previous menu.
-  Return to TV viewing.

NOTE

- ▶ Connect the HDMI/DVI IN or HDMI IN terminal of the TV to the rear terminal (HDMI terminal) of the SIMPLINK device with the HDMI cable.
- ▶ When you switch the Input source with the INPUT button on the remote control, the SIMPLINK device will stop.
- ▶ When you select a device with home theater functionality, the sound output automatically switches to the home theater speakers and the TV speakers are turned off.
- ▶ If a connected SIMPLINK home theater system doesn't play the audio from the TV, connect the DIGITAL AUDIO OUT terminal on the back of the TV to the DIGITAL AUDIO IN terminal on the back of the SIMPLINK device with an OPTICAL cable.


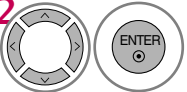
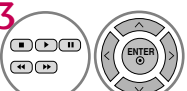
SIMPLINK Functions

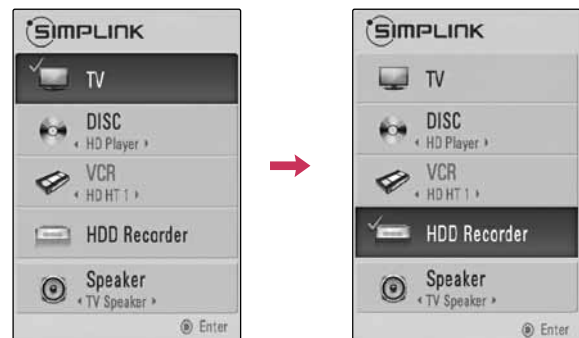
- **Direct Play:** After connecting AV devices to the TV, you can directly control the devices and play media without additional settings.
- **Select AV device:** Enables you to select one of the AV devices connected to TV.
- **Disc playback:** Control connected AV devices by pressing the \wedge \vee \lt \gt , ENTER, \blacktriangleright , \blacksquare , \parallel , \blacktriangleleft and \blacktriangleright buttons.
- **Power off all devices:** When you power off the TV, all connected devices are turned off.
- **Switch audio-out:** Offers an easy way to switch audio-out.
- **Sync Power on:** When the equipment with Simplink function connected HDMI terminal starts to play, The TV will change automatically to turn on mode.

(A device, which is connected to the TV through a HDMI cable but does not support SIMPLINK, does not provide this function)

Note: To operate SIMPLINK, an HDMI cable over Version 1.3 with *CEC function should be used. (*CEC: Consumer Electronics Control).

SIMPLINK Menu

-  Display **SIMPLINK** menu.
-  Select the desired device.
-  Control connected AV devices.



- TV viewing:** Switch to the previous TV channel regardless of the current mode.
- DISC playback:** Select and play discs. When multiple discs are available, the titles of discs are conveniently displayed at the bottom of the screen.
- VCR playback:** Control the connected VCR.
- HDD Recordings playback:** Control recordings stored in HDD.
- Audio Out to Home Theater speaker/Audio Out to TV:** Select Home Theater speaker or TV speaker for Audio Out.



- ▶ When no device is connected (displayed in gray)
- ▶ Selected Device
- ▶ When a device is connected (displayed in bright color)

NETWORK

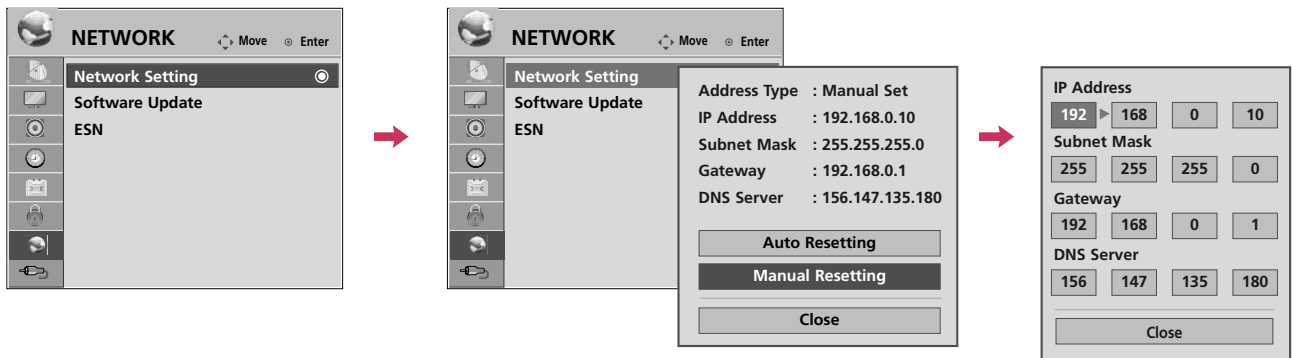
NETWORK SETTING





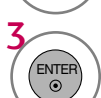

If there is a DHCP server on the local area network (LAN), the TV will automatically be allocated an IP address. If you're using a broadband router or broadband modem that has a DHCP (Dynamic Host Configuration Protocol) server function, select **Auto Resetting**. The IP address will automatically be determined.

If there is no DHCP server on the network and you want to set the IP address manually, select **Manual Resetting**.





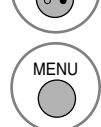
For detail information, contact your internet provider.

NETWORK



- 1   Select **NETWORK**.
- 2   Select **Network Setting**.
- 3   Select **Auto Resetting** or **Manual Resetting**.

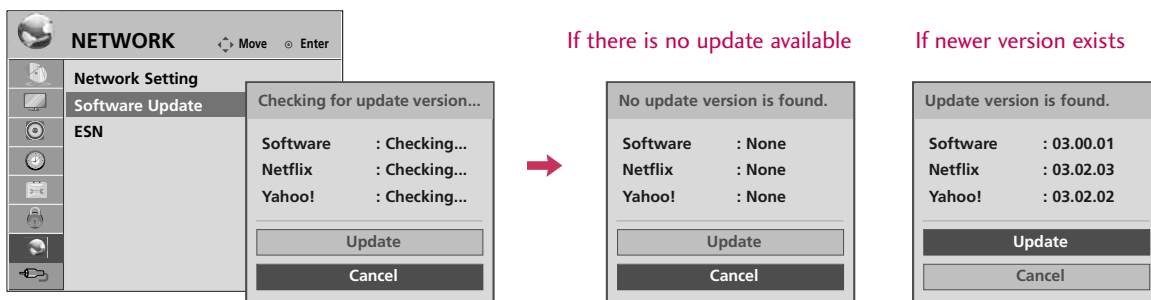
Manual Resetting






- 4    Input the setting value.
- 5  Return to the previous menu.
-  Return to TV viewing.

SOFTWARE UPDATE

You can update the TV using the latest software to enhance the products operation and/or add new features. You can update the software by connecting the unit directly to the software update server.

The Software Update function may not work properly depending on your internet environment. In this case, you can obtain the latest software from the authorized LG Electronics Service Center then update your player.



- 1   Select **NETWORK**.
- 2   Select **Software Update**.
- 3  Start update version checking.
If newer version exists, start update.

- Before updating the software, remove USB Device from the TV.
- Before updating the software, turn the TV off and then turn it on again.
- During the software update procedure, do not turn off the TV or disconnect AC power, or do not press any button.
- If you cancel the update, turn off the TV and turn it on for stable performance.
- This TV cannot be updated to previous software version.
- After software update, you can confirm the update software version in ??/ menu.

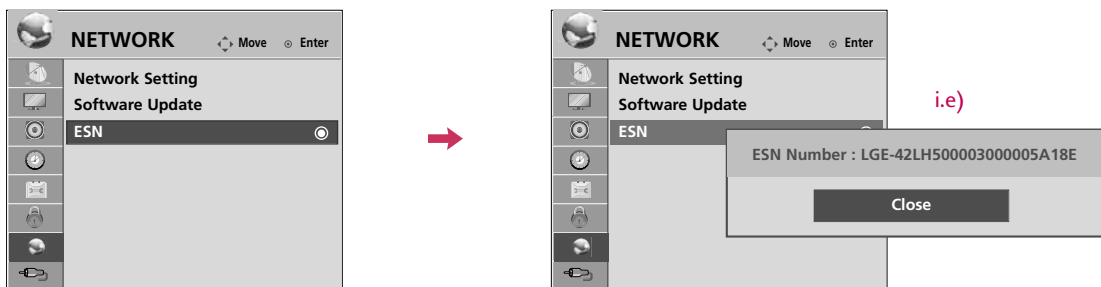
NETWORK

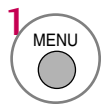
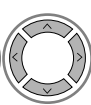

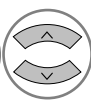

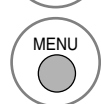
NETFLIX ESN (ELECTRONIC SERIAL NUMBER)

We provide you the Netflix ESN (Electronic Serial Number) that allows you to rent and purchase videos using the Netflix website.

For more information, please visit: www.netflix.com

NETWORK



-   Select **NETWORK**.
-   Select **ESN**.
The serial number will appear.
-  Return to the previous menu.
-  Return to TV viewing.

NETFLIX

Activating TV

The TV with Netflix® straming capabilities lets you instantly access a library of over 12000 video titles right on our HDTV. It's simple. With high-speed internet access and a Netflix® subscription, you have your choice of any Netflix® "Watch Instantly" title to view to home in a matter of seconds.



To become a Netflix member visit: www.netflix.com/LG

Activating your TV establishes a connection between your TV and your Netflix account. You must activate your TV before you can use it to watch movies streamed over the INTERNET from Netflix.

1   Select **NETWORK**.

2   Select **NETFLIX**.



3   Select **yes-activate instant streaming from Netflix** if you have an existing account.

- "no-start my FREE trial" : If you have no an account, visit <http://www.netflix.com/LG> on your computer.

yes-activate instant streaming from Netflix



no - start my FREE trial



4   Select **I'm now a member**.

5 On your computer, visit www.netflix.com/activate.

Wait for the activation screen to appear on your TV screen. You are now ready to complete activation on the Netflix website.

If necessary, enter your **Sign in Name** and **Password** to log into your account.

6 Enter the activation code that appears on your TV screen.

7 When the "Congratulations" screen appears on your TV, you're ready to add movies to your instant Queue. See **Filling your instant Queue** for instruction.

Netflix Deactivation

- To deactivates the TV, press the **BLUE** button on the remote control.

Watching instant by Netflix

After you activate your player, you're ready to add movies & TV episodes to your instant Queue. You can then use your player's remote to browse your instant Queue and to select and watch titles on your TV. You will be amazed at how quick and easy it is.

Your instant Queue works just like your DVD Queue. Add and manage the movies & TV episodes in your instant Queue from the Netflix website on your computer. Your instant Queue also appears on your TV via your player, so your selections are available to watch anytime.

1

Visit the Netflix website on your computer:

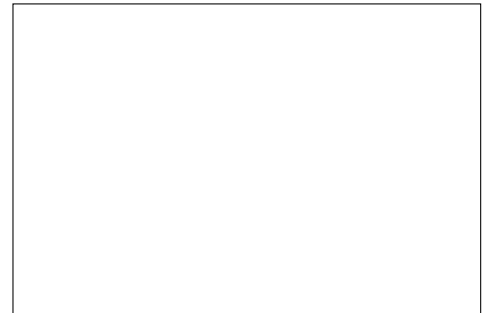
<http://www.netflix.com>

If necessary, enter your Sign in Name and Password to log into your account.



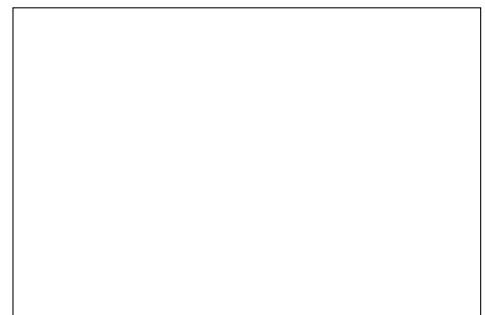
2

Click **Watch Instantly**.



3

When you find a movie or TV episode you want to watch, mouse over the **Add/Play** button to reveal additional options, and then click **Add to instant Queue**.



4

Repeat step 4 to add more movies & TV episodes to your instant Queue.

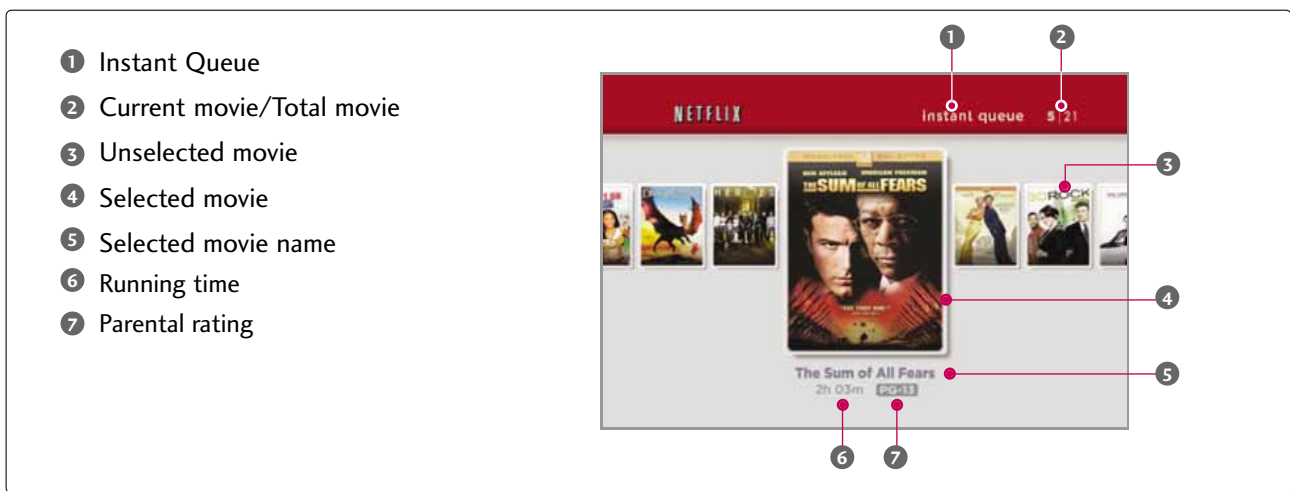
5

(Optional) Arrange your instant Queue by clicking the **Instant** subtab.

- To rearrange your instant Queue, drag and drop the titles in the order you want them, or change the numbers to the left of the titles and then click **Update Instant Queue** to your changes.
- To remove a title from your instant Queue, click the **Remove** check box to the right of the title and then click **Update Instant Queue** to your changes.

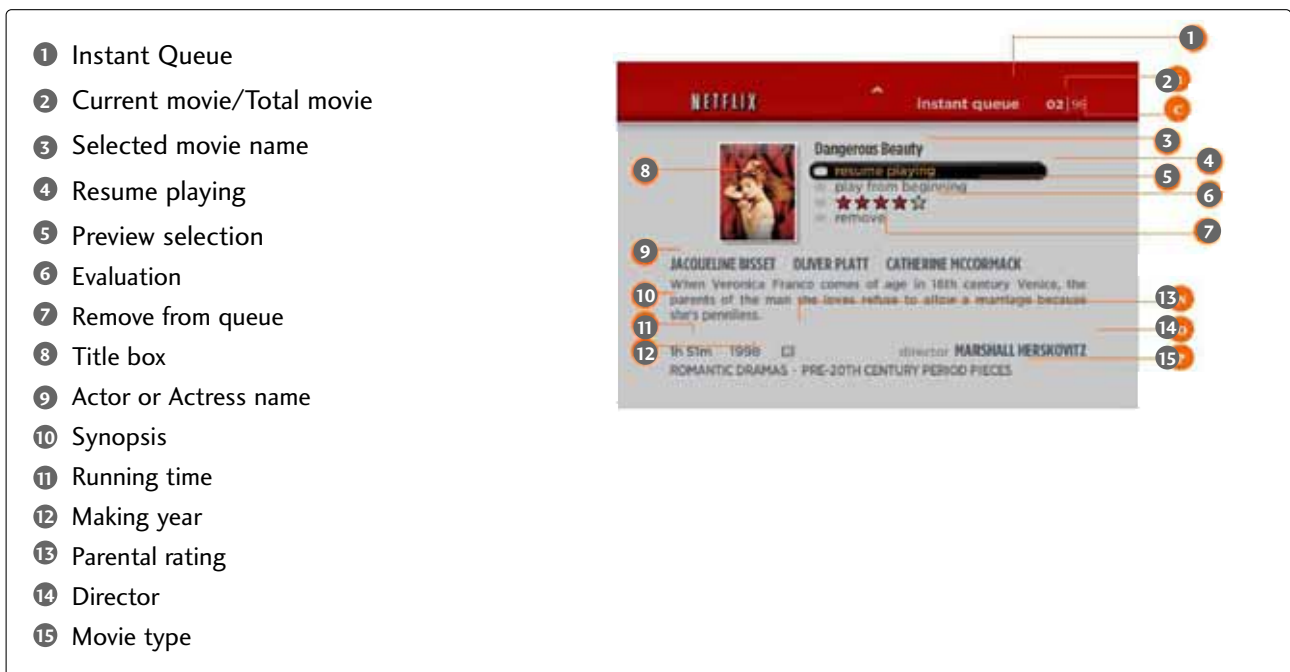
The Poster Screen Components

It shows “box art” (title-specific DVD cover or movie poster images) for each of the movie in the member’s instant queue and allows navigation through that queue using the remote control. The instant queue is a list of movies and TV shows selected previously by the member on the Netflix web site.



The Springboard Screen Components













It shows a synopsis and other details about the title, and lists actions that can be taken on it (including resuming playback, rating the title, and selecting a different episode if the title has episodes).



NETWORK

Selecting a movie to watch on your TV

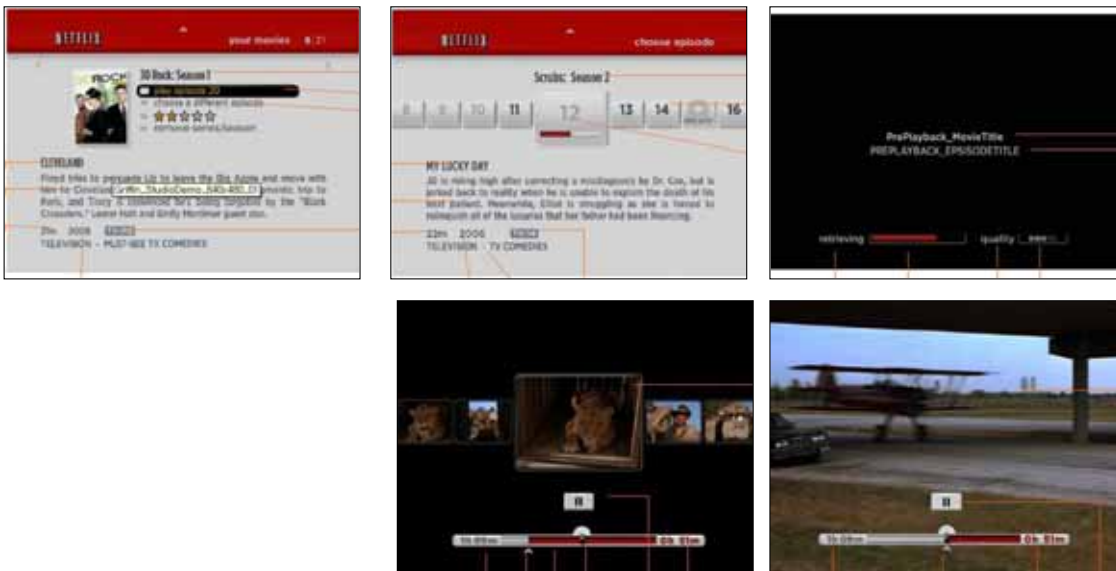
After you set up your player and add movies & TV episodes, you can browse and watch them on your TV.

-   Select **NETWORK**.
-    Select **NETFLIX**.
The instant Queue screen will appear.
-  Move to previous or next movie on your instant Queue.
-  Move to the previous or next page.
The selected movie shows the title, rating and total time.
-  Play back the highlighted title.
-  View details for the highlighted title.
-  Choose any of the menu items
-  Show springboard screen for selected title (See previous page).
-  Return to your instant Queue.

- **play**: Starts playing the selected title.
- **resume playing**: Plays a previously paused title from the scene where you paused it. This option is available only if you begin watching a title and then pause it.
- **play from beginning**: Starts playing from the beginning of the selected title.
- **choose a different episode** (TV series only): Enables you to select a specific show of a TV series. Press b / B to highlight the show you want to view, and then press ENTER to choose it.
- **rate**: Enables you to rate a movie or show. The more stars, the higher the rating. Press ENTER to access the rating feature, and then press b / B to increase or decrease the rating. Press ENTER again to confirm the selected rating.
- **remove**: Deletes the selected movie from your instant Queue.
- **remove series** (TV series only): Deletes the selected TV series from your instant Queue.

Playing a movie

While watching a movie or TV episode from Netflix via your TV, you have full control over your viewing experience. You can use the buttons on the remote to pause and resume viewing and to scan forward and backward, just like when you watch a DVD. While playing a movie, the buttons on the remote do the following:



Button	Operation
	Starts playing back the movie.
	To pause a movie while it's playing. To resume playing a paused movie, press again.
	Stops the movie.
	Displays your instant Queue.
	Pauses playing the movie and enters frame scanning mode.
	Pauses playing the movie and enters frame scanning mode. To scan forward one frame at a time, press the button again.
	Pauses playing the movie and enters frame scanning mode. To scan backward one frame at a time, press the button again.
	Pauses playing the movie and scans forward or backward through the movie. To scan faster, press the button again. To play the highlighted scene, press ENTER or (Play). To resume playing from the point you paused the movie, press .
	When you have finished watching movies streamed from Netflix, simply press the button on the remote control to go to the NETWORK Menu.

NOTE

- ▶ Even if you use a high-resolution setup, audio/video quality may be compromised based on the speed of your broadband internet connection.
- ▶ Your Internet Service Provider (ISP) determines your broadband speed. We recommend a minimum connection speed of 1.5 Mbps. For the best quality picture, a connection speed of 4.0 Mbps is required.
- ▶ Sometimes your broadband speed varies based on your ISP's network conditions. Contact your ISP if you have problems maintaining a fast connection that is reliable, or if you want to increase your connection speed. Many ISPs offer a variety of broadband speed options.

MY MEDIA

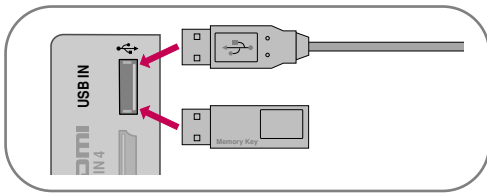
Entry mode using USB device

When you connect a USB device, this pop up menu is displayed automatically.

~~When the Pop-Up menu does not appear, you can select Photo List or Music List in the NETWORK menu.~~

In USB device, you can not add a new folder or delete the existing folder.

1 Connect the USB device to the **USB IN** jacks on the TV.



■ This TV supports JPG and MP3 files.

2   Select **MY MEDIA**.

3    Select **Photo List** or **Music List**.



When removing the USB device

Select the **USB Device** menu before removing the USB device.

1   Select **USB Device**.

2  Select **Eject**.

Precautions when using the USB device

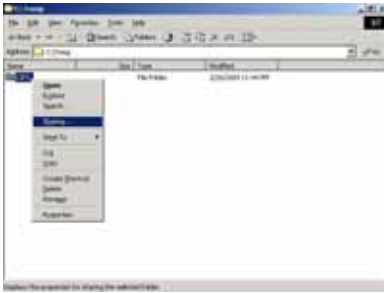
- ▶ Only a USB storage device is recognizable.
- ▶ If the USB storage device is connected through a USB hub, the device is not recognizable.
- ▶ A USB storage device using an automatic recognition program may not be recognized.
- ▶ A USB storage device which uses its own driver may not be recognized.
- ▶ The recognition speed of a USB storage device may depend on each device.
- ▶ Please do not turn off the TV or unplug the USB device when the connected USB storage device is working. When such device is suddenly separated or unplugged, the stored files or the USB storage device may be damaged.
- ▶ Only use a USB storage device which has normal music files or image files.
- ▶ Please use only a USB storage device which was formatted as a FAT 32 or NTFS file system provided with the Windows operating system. In case of a storage device formatted as a different utility program which is not supported by Windows, it may not be recognized.
- ▶ Please connect power to a USB storage device (over 0.5A) which requires an external power supply. If not, the device may not be recognized.
- ▶ Please connect a USB storage device with cable is offered by USB maker. If connected with cable is not offered by USB maker or an excessively long cable, the device may not be recognized.
- ▶ Some USB storage devices may not be supported or operate properly.
- ▶ Please backup important files because data on USB device may be damaged. Data management is consumer's responsibility and as a result, the manufacturer does not cover data damage.
- ▶ If your USB memory device has multiple partitions, or if you use a USB multi-card reader, you can use up to 4 partitions or USB memory devices.
- ▶ In case of USB storage devices formatted as NTFS, deletion is not allowable.
- ▶ File alignment method of USB storage device is similar to Window XP and file name can recognize up to 100 English characters.
- ▶ The recommended capacity is 1TB or less for a USB external hard disk and 32 GB or less for USB memory.
- ▶ If a USB external hard disk with a "Energy Saving" function doesn't work, turn the hard disk off and on again to make it work properly. Refer to the user manual of the application USB external hard disk.

Entry mode using Network

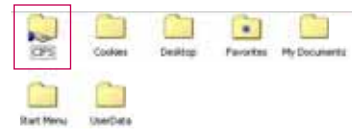
You can view the photo or listen musics in the folder shared by the network.

- 1 Setup CIFS (Commom Internet File System) in your PC.

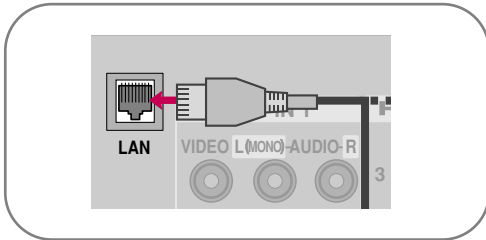
Click **Sharing**.



Check **Share this folder**.

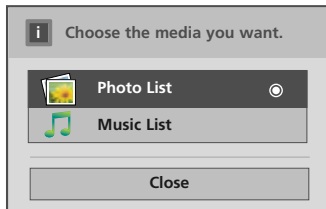


- 2 Connect the Modem or Router LAN port to the LAN port of the TV.



- 3   Select **MY MEDIA**.

- 4    Select **Photo List** or **Music List**.



NETWORK

PHOTO LIST

You can view .JPG files from USB storage devices or the folder shared by the network.
The On Screen Display on your model may be slightly different.

Supported photo file: *.JPG

- You can play JPG files only.
- Only baseline scan is supported among JPG.
- Available JPG size (width x height, pixel): 64 x 64 - 15360 x 8640

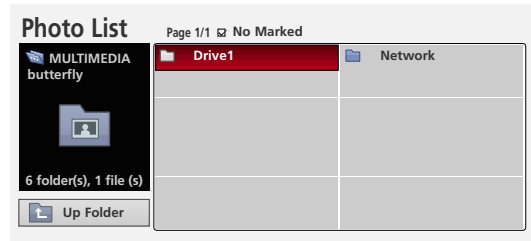
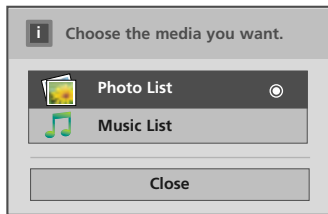
Screen Components

The screenshot shows the 'Photo List' interface. On the left, a preview window displays a butterfly photo with the text 'Drive1 butterfly' and '1366x768, 125KB'. Below the preview is an 'Up Folder' button. To the right is a table of photo files. At the bottom is a navigation bar with buttons for 'Navigation', 'Popup Menu', 'Page Change', 'MARK Mark', and 'Exit'. Numbered callouts 1-5 point to the 'Up Folder' button, the photo preview, the 'Page 2/3' indicator, the 'No Marked' status, and the 'Navigation' button respectively.

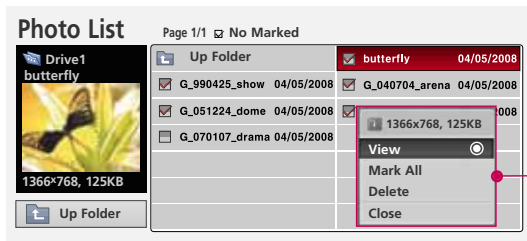
Photo List		Page 2/3 <input checked="" type="checkbox"/> No Marked		
	Up Folder	<input checked="" type="checkbox"/> butterfly	04/05/2008	
<input checked="" type="checkbox"/>	G_990425_show	04/05/2008	<input checked="" type="checkbox"/> G_040704_arena	04/05/2008
<input checked="" type="checkbox"/>	G_051224_dome	04/05/2008	<input checked="" type="checkbox"/> G_060114_korea	04/05/2008
<input type="checkbox"/>	G_070107_drama	04/05/2008		

Navigation Popup Menu CH Page Change MARK Mark Exit

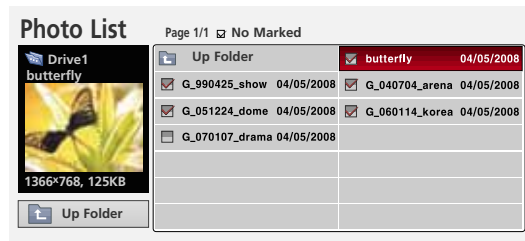
Photo Selection and Popup Menu



Navigation ● PopUp Menu CH Page Change MARK Mark Exit



Navigation ● PopUp Menu CH Page Change MARK Mark Exit





Navigation ● PopUp Menu CH Page Change MARK Mark Exit



When you select a file (not folder), this PopUp menu is displayed.


- ▶ **View:** Display the selected item.
- ▶ **Mark All:** Mark all photos on the screen.
- ▶ **Unmark All:** Deselect all marked photos.
- ▶ **Delete:** Delete the selected photo item.
- ▶ **Close:** Close the pop-up menu.



1   Select **MY MEDIA**.

2   Select **Photo List**.

3   Select the target drive or Network.
(It displays the device which connected TV).

4   Select the desired photos.

5  Show the Popup menu.

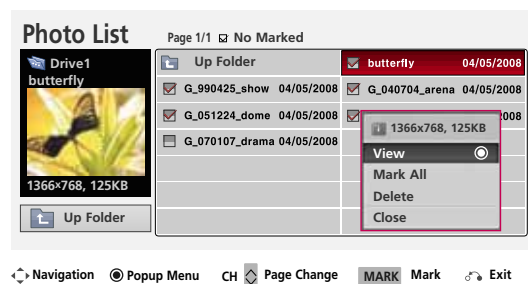
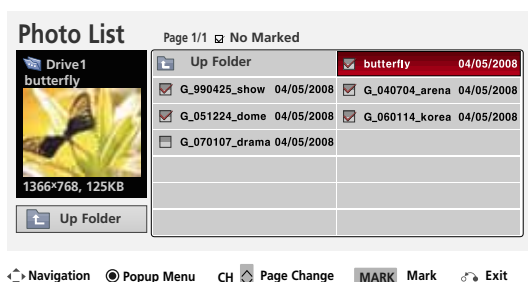
6   Select the desired Popup menu.

- Use the **CH** ^ v button to navigation in the photo page.
- Use the **MARK** button to mark or unmark a photo. When one or more photos are marked, you can view individual photos or a slide show of the marked photos. If no photos are marked, you can view all photos individually or all photos in the folder in a slide show.







NETWORK

Full Screen Menu

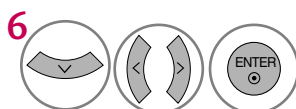
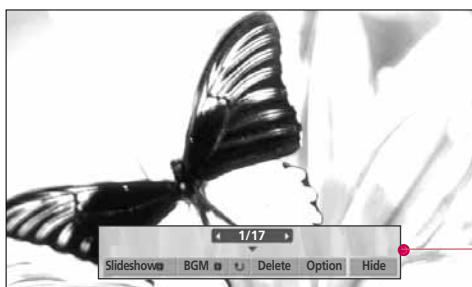
You can change the Photo List view so that it fills the screen. More operations are available in full screen mode.



The aspect ratio of a photo may change the size of the photo displayed on the screen in full size.



- 1  Select the target drive or Network.
- 2   Select the desired photos.
- 3  Show the Popup menu.
- 4  Select **View**.
- 5  The selected photo is displayed in full size.

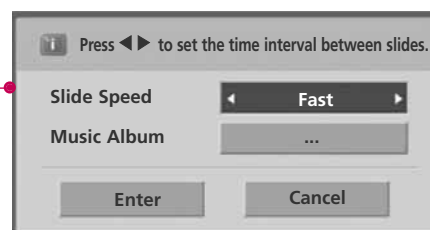
■ Use the CH ^ v button to navigation in the photo page.



6 Select the **Slideshow**, **BGM**,  (**Rotate**), **Delete**, **Option**, or **Hide**.

- Use < > button to select the previous or next photo.
- Use ^ v < > button to select and control the menu on the full-sized screen.

- ▶ **Slideshow:** Selected photos are displayed during the slide show. If no photo is selected, all photos in the current folder are displayed during slide show.
 - Set the time interval of the slide show in **Option**.
- ▶ **BGM:** Listen to music while viewing photos in full size.
 - Set the BGM device and album in **Option**.
- ▶  (**Rotate**): Rotate photos.
 - Rotates the photo 90°, 180°, 270°, 360° clockwise.
 - Photo cannot be rotated if its width is greater than the available supported resolution height.
- ▶ **Delete:** Delete photos.
- ▶ **Option:** Set values for **Slide Speed** and **Music Album**.
 - Use ^ v < > button and **ENTER** button to set values. Then go to  and press **ENTER** to save the settings.
 - You cannot change **Music Album** while BGM is playing.
- ▶ **Hide :** Hide the menu on the full-sized screen.
 - To see the menu again on the full-sized screen, press **ENTER** button to display.



! NOTE

- ▶ This TV will not be able to decode most JPG images saved using the Progressive option.

NETWORK

MUSIC LIST

You can use the Music List menu to play MP3 files from a USB storage device or the folder shared by the network

This TV cannot play back copy-protected files.

The On Screen Display on your model may be slightly different.

Supported music file: *.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

Screen Components

1 Moves to upper level folder

2 Preview: If any album jacket for the file exists, this jacket is displayed.

3 Current page/Total pages

4 Total number of marked musics

5 Corresponding buttons on the remote control

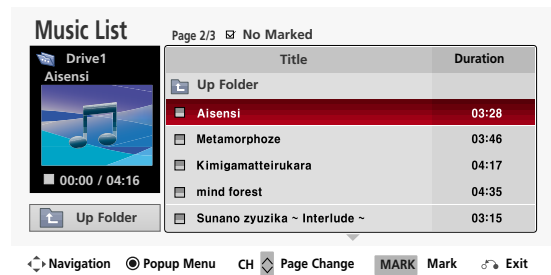
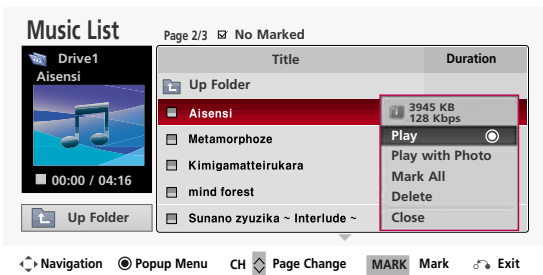
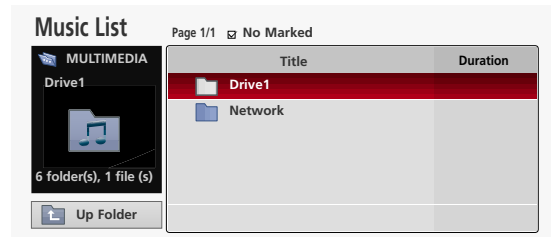
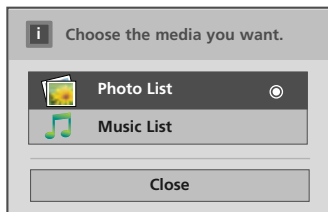
Music List


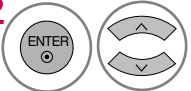
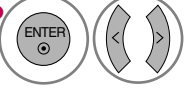
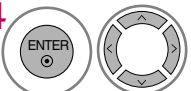

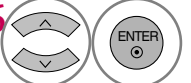
Page 2/3 No Marked

Title	Duration
Up Folder	
Aisensi	03:28
Metamorphoze	03:46
Kimigamateirukara	04:17
mind forest	04:35
Sunano zyuzika ~ Interlude ~	03:15

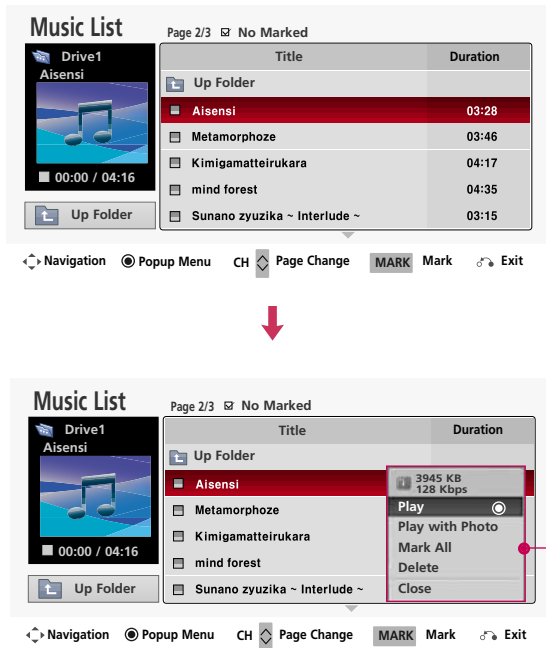
Navigation ● Popup Menu CH Page Change MARK Mark Exit

Music Selection and Popup Menu


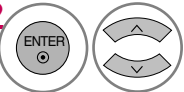

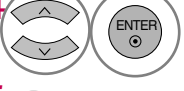



- 1  Select **MY MEDIA**.
- 2  Select **Music List**.
- 3  Select **Drive 1** or **Network**.
(It displays the device which connected TV).
- 4  Select the desired musics.
- 5  Show the **Popup menu**.
- 6  Select the desired **Popup menu**.

NETWORK



- ▶ **Play (During stop):** Play the selected music. Once a song finishes playing, the next selected one will be played. When there are no selected musics to play, the next one in the current folder will be played. If you go to a different folder and press the **ENTER** button, the current music in playback will stop.
- ▶ **Play Marked:** Play the selected musics. Once a music finishes playing, the next selected one will be played automatically.
- ▶ **Stop Play (During playback):** Stop the playing musics.
- ▶ **Play with Photo:** Start playing the selected musics and then move to the Photo List.
- ▶ **Mark All:** Mark all musics in the folder.
- ▶ **Unmark All:** Deselect all marked music.
- ▶ **Delete:** Delete the selected music.
- ▶ **Close:** Close the pop-up menu.

- 1  Select the target folder or drive.
- 2  Select the desired musics.
- 3  Show the Popup menu.
- 4  Select the desired Popup menu.
- 5  Return to TV viewing.

- Use the **CH** ^ v button to navigation in the music page.
- Use **MARK** button to mark or unmark a music file. If no music is marked, all the music in the folder will be played in sequence. When one or more music files are marked, the marked music files will be played in sequence. If you want to listen to only one song repeatedly, just mark that one file and play.

- The play information box (as shown below) will automatically move across the screen when there is no user input to prevent a fixed image remaining on the screen for an extended period of time.



! NOTE

- ▶ When music is playing, 🎵 is displayed in front of the music play time.
- ▶ A damaged or corrupted music file that does not play displays 00:00 as the play time.
- ▶ Music files with copy-protection will not play.
- ▶ Press **ENTER**, **■**, or **RETURN** button to stop the screen saver.

NETWORK

YAHOO!WIDGETS

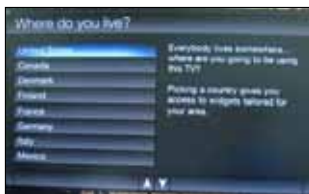
You can enjoy widget on your TV and available to select a useful snippets in dock,at the bottom of your TV. These snippets contain updated weather, sports score, updated stock, and view photo/video.

Oobe (Out-of-Box-Experience)

NETWORK



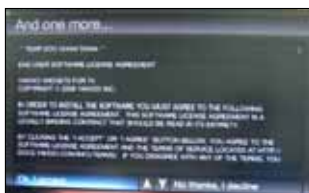
- 1    Display the Yahoo!Widgets. Start Widgets setting.



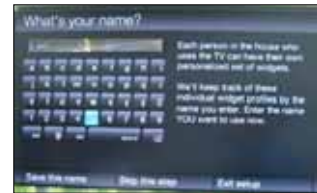
- 2   Select your country.



- 3   Select **Ok, I accept.**

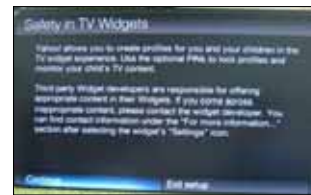


- 4   Select **Ok, I accept.**

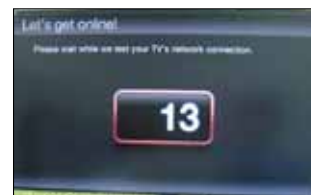


- 5   Select the alphabet.

- 6   Select **Save this name.**



- 7   Select **Ok, I accept.**



Tutorial 1



Choose any of the menu items

Tutorial 2



Tutorial 3



Tutorial 4



Tutorial 5



Red button: Close the widget.

Green button: Change the widget's settings.

Yellow button: Manage your snippets.

Blue button: Size video to fit, or make it fullscreen.

Tutorial 6



If you want to run this step again, select "Replay introduction" from the Profile widget at any time.

Available Widgets



?

- ▶ **Flicker:**
- ▶ **Finance:**
- ▶ **Gallery:**
- ▶ **News:**
- ▶ **Weather:** When pressing the Yellow button in the dock, you can select the Weather widget.

Setting Widgets



L/R button: Select snippet.

U/D

Enter button: Enter the selected widget.

Blue button: Change viewport.

Yellow: Move/Delete the selected widget.

Yahoo: Slide out the dock.

Menu: Show the Menu.

Button	Operation
Yahoo (Widgets)	Show the DOCK.
up/down	Move to sub menu highlight.
enter	Show Snippets.
menu	Return to MENU OSD
back/red	Exit Yahoo mode.
red	Close the widget.
green	Enter to weather widget setting mode
blue	Change viewport (aspect ratio)
Left/right	Move between snippets in the dock
Yellow	Edit snippets

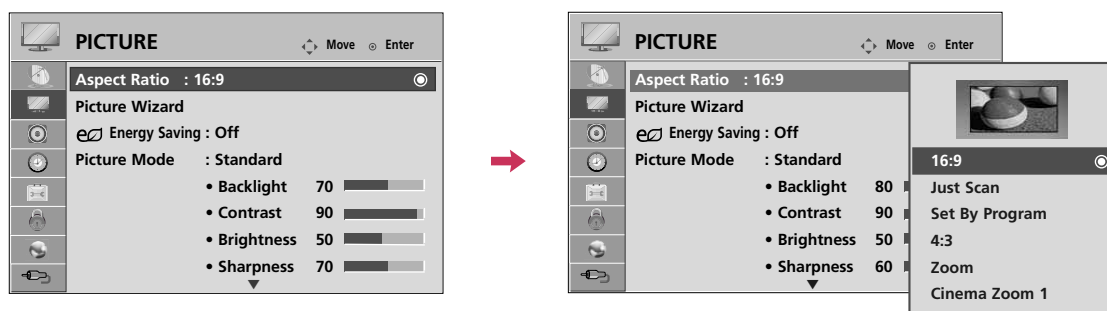










PICTURE CONTROL

PICTURE SIZE (ASPECT RATIO) CONTROL

This feature lets you choose the way an analog picture with a 4:3 aspect ratio is displayed on your TV.

- RGB-PC input source use 4:3 or 16:9 aspect ratio.



-   Select **PICTURE**.
-   Select **Aspect Ratio**.
-   Select the desired picture format.
-  Return to the previous menu.
-  Return to TV viewing.

- You can also adjust **Aspect Ratio** in the **Q.MENU**.
- Press the **RATIO** button repeatedly to select the desired picture format.

16:9

Adjust the picture horizontally, in a linear proportion to fill the entire screen.



Just Scan

Normally the edges of video signals are cropped 1-2%. Just Scan turns off this cropping and shows the complete video.

Notes: If there is noise on the edges of the original signal, it will be visible when Just Scan is activated.

Just Scan operates only in DTV/CADTV/Component/HDMI-DTV/DVI-DTV (720p/1080i/1080p) input source.



Set By Program

Selects the proper picture proportion to match the source's image.

(4:3 → 4:3)



(16:9 → 16:9)



4:3

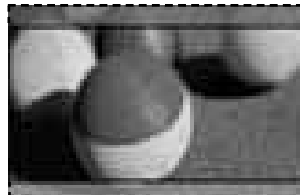
Choose 4:3 when you want to view a picture with an original 4:3 aspect ratio.



Zoom

Choose Zoom when you want to view the picture without any alteration. However, the top and bottom portions of the picture will be cropped.

- When adjusting in Q.MENU menu,
 - a. < or > button: Adjust proportion of Zoom.
 - b. ^ or v button: Move the image on the screen.



Cinema Zoom

Choose Cinema Zoom when you want to enlarge the picture in correct proportion.

Note: When enlarging or reducing the picture, the image may become distorted.

- < or > button: Adjust proportion of Cinema Zoom. The adjustment range is 1-16.
- ^ or v button: Move the image on the screen.



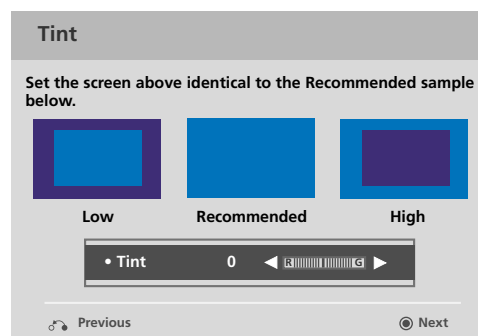
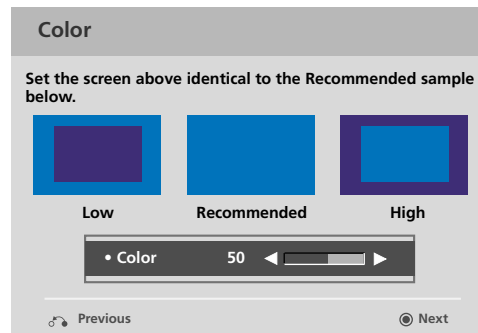
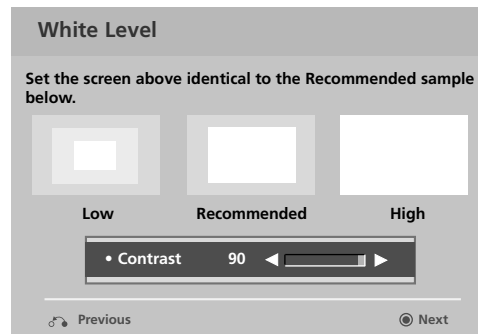
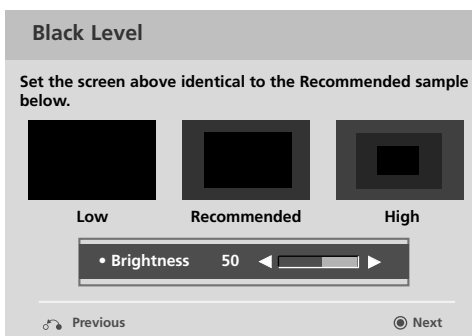
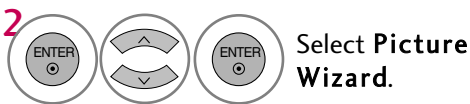
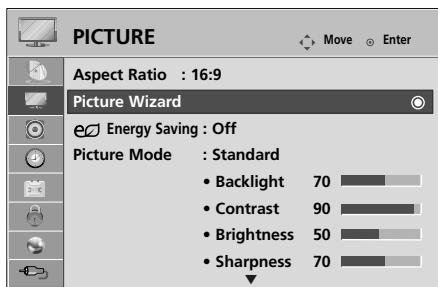
PICTURE CONTROL

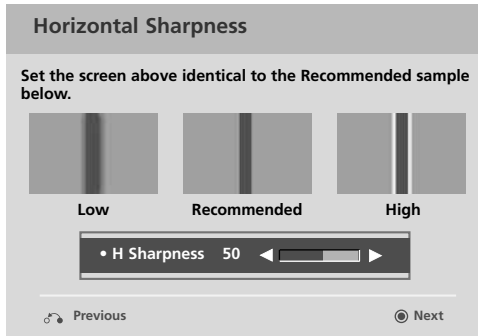
PICTURE WIZARD

This feature lets you adjust the picture quality of the original image.

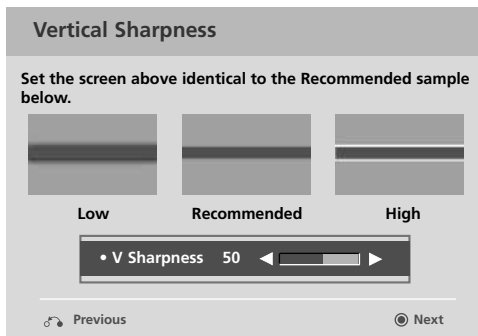
Use this to calibrate the screen quality by adjusting the Black and White Level etc. You can calibrate the screen quality by easily following each step.

When you adjust the image to **Low**, **Recommended** or **High**, you can see the example of the changes you made.



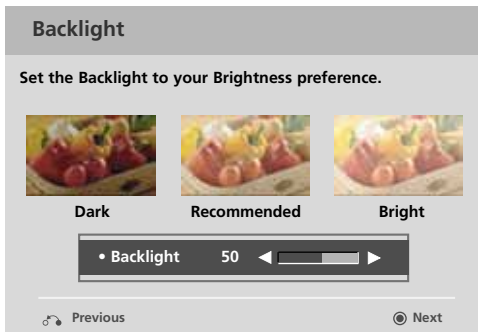


8   Adjust **Horizontal Sharpness**.

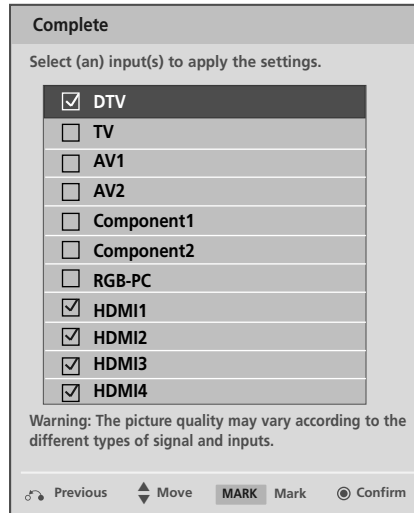




9   Adjust **Vertical Sharpness**.

For LCD TV

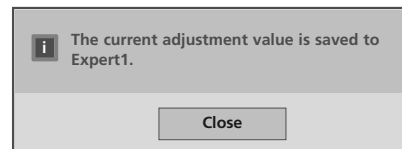



10   Adjust **Backlight**.



11   Select input source to apply the settings.

12  Save.



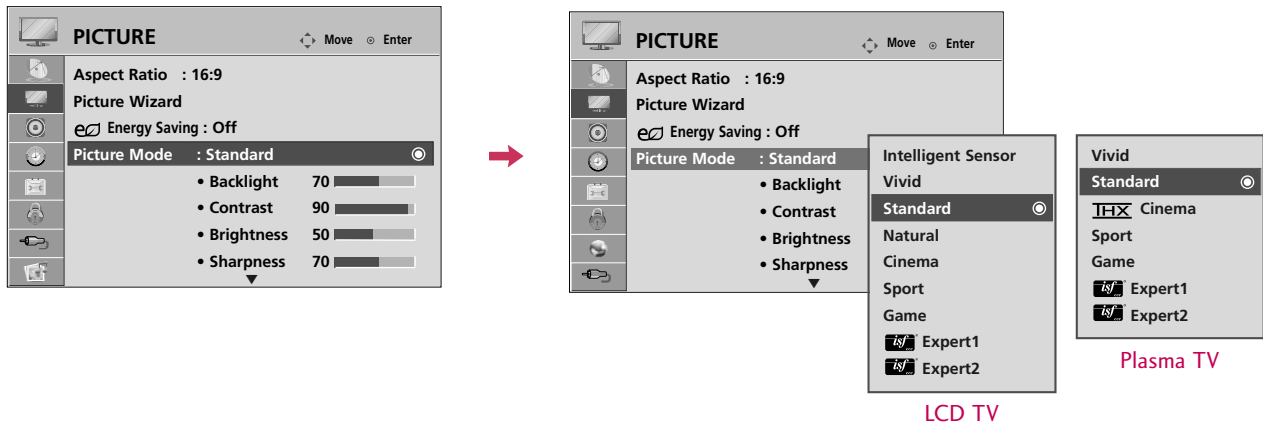
13  Finish the Picture Wizard.

- If you stop the setting before the final step, the changes will not be saved to the TV.
- Once the **Picture Wizard** sets the picture quality, **Energy Saving** is changed to **Off** automatically.

PICTURE CONTROL

PRESET PICTURE SETTINGS (PICTURE MODE)

There are factory presets for picture settings available in the user menus. You can use a preset, change each setting manually, or use the Intelligent Sensor.



- 1 Select **PICTURE**.
- 2 Select **Picture Mode**.
- 3 **Plasma TV**: Select **Vivid**, **Standard**, **THX Cinema**, **Sport**, or **Game**.
LCD TV: Select **Intelligent Sensor**, **Vivid**, **Standard**, **Natural**, **Cinema**, **Sport**, or **Game**.
- 4 Return to the previous menu.
 Return to TV viewing.

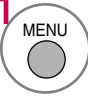






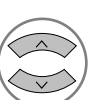

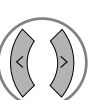


- **Vivid, Standard, Natural, Cinema, Sport, and Game** Settings are preset for the optimum picture quality at the factory.
- **Vivid**: This is the mode to maximize the effect of the video in the retail store. Strengthen the contrast, brightness, color and sharpness for vivid picture.
- **Standard**: This is the mode to realize optimum viewing condition for the general user.
- **Natural**: This is the mode to display the most natural screen status.
- **Cinema**: This mode optimizes video for watching movies.
- **Sport**: This is the video mode to emphasize dynamic video and primary color (e.g, white, uniform, grass, sky blue etc.) by realizing the optimal screen for sports.
- **Game**: This is the mode to realize fast response speed in a fast gaming screen.
- **Expert**: This is the mode to adjust the video in detail for video quality expert and general user.
- You can also adjust **Picture Mode** in the **Q.MENU**.

- When selecting **Intelligent Sensor**, **Energy Saving** is changed to **Auto** automatically.
- When selecting **Intelligent Sensor**, it is changed contrast, brightness, sharpness, color and tint automatically.
- **Intelligent Sensor**: The most suitable picture is automatically adjusted according to the surrounding conditions.
- **THX Cinema**: This is cinema quality mode to provide you the experience of watching a movie at home. The user will be able enjoy the best level of satisfactory screen quality in any movie without any separate adjustments. **THX Cinema** expresses the optimal screen quality when it is darkest.
- When selecting **THX Cinema**, Aspect ratio changes to Just scan.

MANUAL PICTURE ADJUSTMENT - USER MODE

Adjust the picture appearance to suit your preference and viewing situations.
 This feature is disabled in "Picture Mode- ~~THX~~ Cinema" (For Plasma TV).



- 1   Select **PICTURE**.
- 2   Select **Picture Mode**.
- 3   Select **Vivid, Standard, Natural, Cinema, Sport, or Game**.
- 4   Select **Backlight (For LCD TV), Contrast, Brightness, Sharpness, Color, or Tint**.
- 5   Make appropriate adjustments.
- 6  Return to the previous menu.
-  Return to TV viewing.

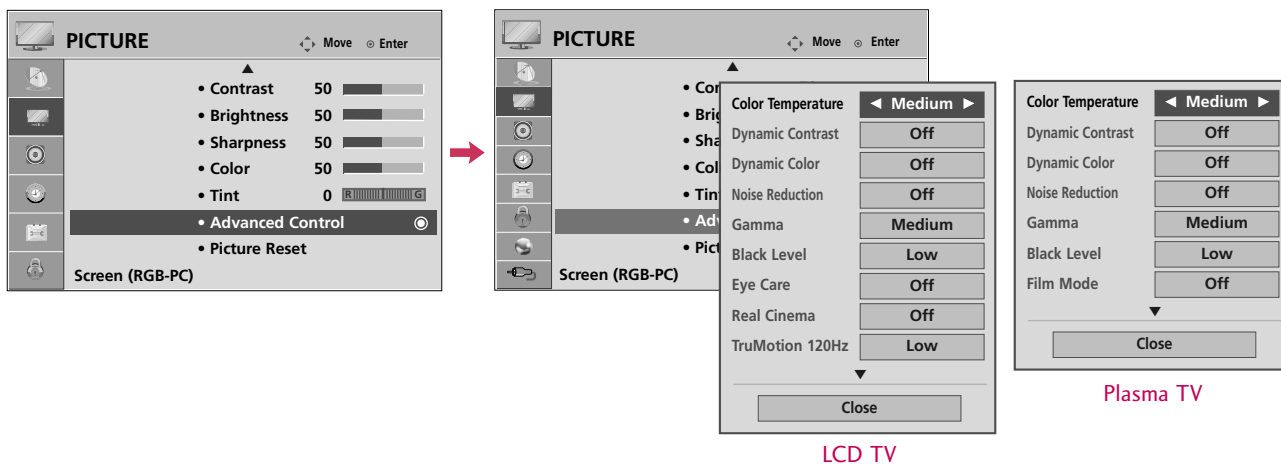
- When adjusting Energy Saving, **Backlight** function is disabled.
- **Backlight** (For LCD TV): This function adjusts the brightness of LCD panel, to control the brightness of the screen. Adjusting the backlight is recommended when setting the brightness of the set. When decreasing the backlight, the brightness of the black becomes darker without any loss in video signal and the power consumption is reduced.
- **Contrast**: Increase or decrease the gradient of the video signal. You may use Contrast when the bright part of picture is saturated.
- **Brightness**: Adjusts the base level of the signal in the picture. You may use Brightness when the dark part of the picture 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.

PICTURE CONTROL










PICTURE IMPROVEMENT TECHNOLOGY

You can calibrate the screen for each Picture Mode or set the video value according to the special video screen. You can set the video seeing differently for each input.

To reset to the factory default after making adjustments to each input source, execute the **Picture Reset** function for each Picture Mode.



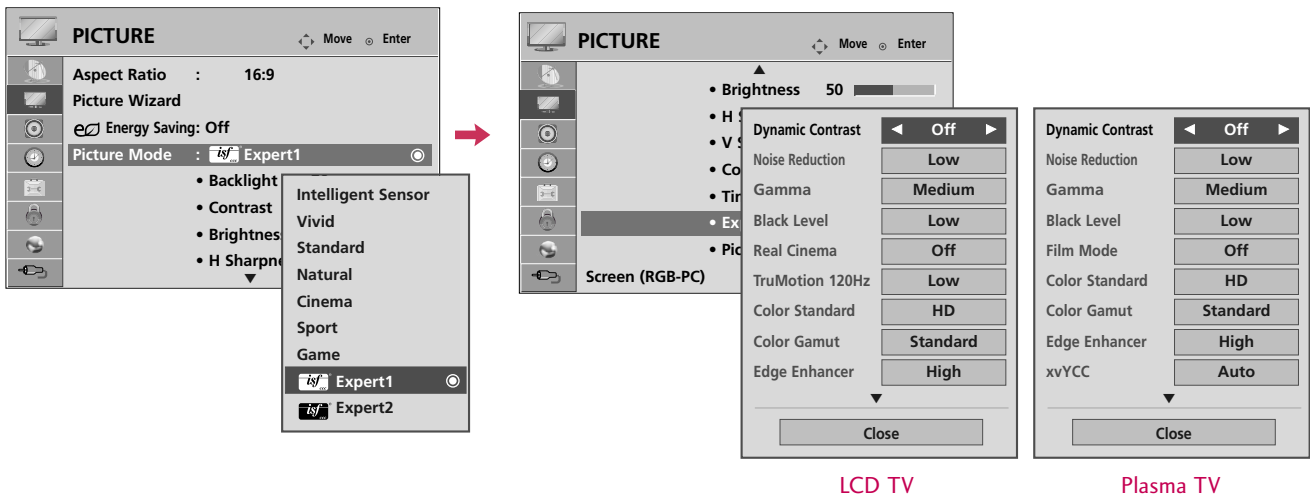
PICTURE CONTROL

















- 1   Select **PICTURE**.
- 2   Select **Advanced Control**.
- 3   Select your desired options.
- 4  Make appropriate adjustments.
- 5  Return to the previous menu.
-  Return to TV viewing.

EXPERT PICTURE CONTROL

By segmenting categories, **Expert1** and **Expert2** provide more categories which users can set as they see fit, offering the optimal picture quality for users.

This may also be used by a professional to help optimize the TV performance in the environment the TV is in.



- 1   Select **PICTURE**.
- 2   Select **Picture Mode**.
- 3   Select  **Expert1** or  **Expert2**.
- 4   Select **Expert Control**.
- 5   Select your desired menu option.
- 6   Make appropriate adjustments.
- 7  Return to the previous menu.
-  Return to TV viewing.

PICTURE CONTROL

Color Temperature	<ul style="list-style-type: none"> Set to warm to enhance hotter colors such as red, or set to cool to make picture bluish.
Dynamic Contrast	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Adjusts screen colors so that they look livelier, richer and clearer. This feature enhances hue, saturation and luminance so that red, blue, green and white look more vivid.
Noise Reduction	<ul style="list-style-type: none"> Reduces screen noise without compromising video quality.
Gamma	<p><i>Low : Make dark and middle gray level area of the picture brighter.</i> <i>Medium: Express original picture levels.</i> <i>High: Make dark and middle gray level area of the picture darker.</i></p> <ul style="list-style-type: none"> You can adjust brightness of dark area and middle gray level area of the picture.
Black Level	<p><i>Low: The reflection of the screen gets darker.</i> <i>High: The reflection of the screen gets brighter.</i> <i>Auto: Realizing the black level of the screen and set it to High or Low automatically.</i></p> <ul style="list-style-type: none"> Set black level of the screen to proper level. This function enables to select 'Low' or 'High' in the following mode: AV (NTSC-M), HDMI or Component. Otherwise, 'Black level' is set to 'Auto'.
Eye Care (For LCD TV)	<ul style="list-style-type: none"> Adjust the brightness of the screen to prevent the screen from being too bright. Dims extremely bright pictures. This feature is disabled in "Picture Mode-Vivid, Cinema, Intelligent Sensor(For LCD TV)".
Real Cinema or Film Mode	<ul style="list-style-type: none"> Makes video clips recorded in film look more natural by eliminating judder effect. DVD and Blu-ray movies are filmed at 24 frames per second. With LG Real Cinema, every frame is consistently processed 5 times in 1/24 of a second producing 120 fps with TruMotion or 2 times in 1/24 of a second producing 48 fps without TruMotion, thus totally eliminating the judder effect.
TruMotion 120Hz (For LCD TV)	<p><i>High: Provides smoother picture movement.</i> <i>Low: Provides smooth picture movement. Use this setting for standard use.</i> <i>Off: Use this setting when "High" and "Low" setting result in noise.</i></p> <ul style="list-style-type: none"> TruMotion120Hz provides even better quality for movies than 3:2 Pull-Down conversions. TruMotion can reduce the perception of blur on fast moving scenes by displaying 120 images per second. It is used for the best picture quality without any motion blur or judder when you enter a quick image or Film Source. TruMotion120Hz works with all inputs except PC mode. If you enable "TruMotion 120Hz", noise may appear on the screen. If this occurs, set "TruMotion 120Hz" to "Off".

Color Gamut	<p><i>Standard: Displays standard color area.</i></p> <p><i>Wide: Mode to use and set the rich color area of the display.</i></p> <ul style="list-style-type: none"> Maximize the utilization of color to increase color quality.
Edge Enhancer	<ul style="list-style-type: none"> Show clearer and distinctive yet natural corners of the video.
Color Standard	<ul style="list-style-type: none"> Convert the color of a different video to HD color.
Color Filter	<ul style="list-style-type: none"> 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.
xvYCC	<ul style="list-style-type: none"> This is the function to express richer color. This feature represents rich color as much as conventional video signal. This function is enabled in "Picture mode - Cinema, Expert" when xvYCC signal is inputted through HDMI.
Expert Pattern	<ul style="list-style-type: none"> This is the pattern necessary for expert adjustment. This function is enabled in "Picture Mode - Expert" when you watch DTV.
White Balance	<ul style="list-style-type: none"> This is the function to adjust the overall color of the screen to the feeling you want. <ul style="list-style-type: none"> a. Method : 2 Points <ul style="list-style-type: none"> - Pattern: Inner, Outer - Red/Green/Blue Contrast, Red/Green/Blue Brightness: The adjustment range is -50 - +50. <p><i>LCD TV</i></p> b. Method : 10 Point IRE <ul style="list-style-type: none"> - Pattern: Inner, Outer - IRE (Institute of Radio Engineers) is the unit to display the size of the video signal and can be set among 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. <p><i>Plasma TV</i></p> b. Method : 20 Point IRE <ul style="list-style-type: none"> - IRE (Institute of Radio Engineers) is the unit to display the size of the video signal and can be set among 5, 10, 15 - 100 Plasma TV. You can adjust Red, Green or Blue according to each setting. - Red/Green/Blue: The adjustment range is -50 - +50.
Color Management System	<ul style="list-style-type: none"> 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/Mgt/Yellow). Color difference may not be distinctive even when you make the adjustments for the general video. Adjusts Red/Green/Blue/Yellow/Cyan, Magenta. <ul style="list-style-type: none"> - 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.
OPC	<p><i>*This feature is not available for all models.</i></p> <ul style="list-style-type: none"> As the technology to reduce the power consumption while keeping the same brightness, this has the effect of reducing power consumption, improvement in contrast.

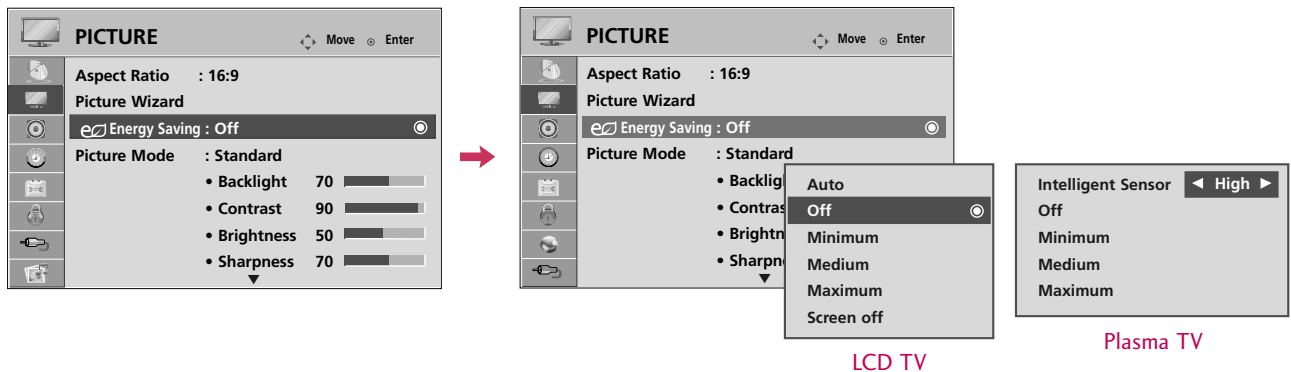
PICTURE CONTROL







ENERGY SAVING


It reduces the TV's power consumption by lowering the backlight level.

The default factory setting complies with the **Energy Star** requirements and is adjusted to the comfortable level to be viewed at home.

You can increase the brightness of your screen by adjusting the **Energy Saving** level or by setting the **Picture Mode**.





- 1   Select **PICTURE**.
- 2   Select **Energy Saving**.
- 3   **Plasma TV**: Select **Intelligent Sensor**, **Off**, **Minimum**, **Medium**, or **Maximum**.

**When selecting Intelligent Sensor*
 Select **Low**, **Middle**, or **High**.

LCD TV: Select **Auto**, **Off**, **Minimum**, **Medium**, **Maximum**, or **Screen Off**.









- When selecting **Screen off**, TV turned off after 3 seconds.
- If you adjust “**Energy Saving-Auto** (For LCD TV), **Minimum**, **Medium**, **Maximum**”, **Backlight** feature will not work.
- When selecting **Auto**, **Backlight** is automatically adjusted through **Intelligent sensor** according to the surrounding conditions (For LCD TV).
- Press the **ENERGY SAVING** button repeatedly to select the appropriate Energy Saving setup.

- 4  Return to the previous menu.
-  Return to TV viewing.

PICTURE RESET

Settings of the selected picture modes return to the default factory settings.

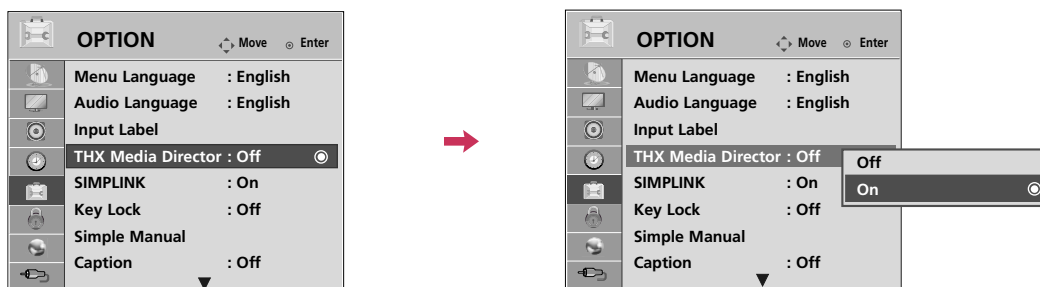


- 1   Select **PICTURE**.
- 2   Select **Picture Reset**.
- 3   Select **Yes**.
- 4  Initialize the adjusted value.
- 5  Return to TV viewing.

PICTURE CONTROL

THX MEDIA DIRECTOR - For Plasma TV

?











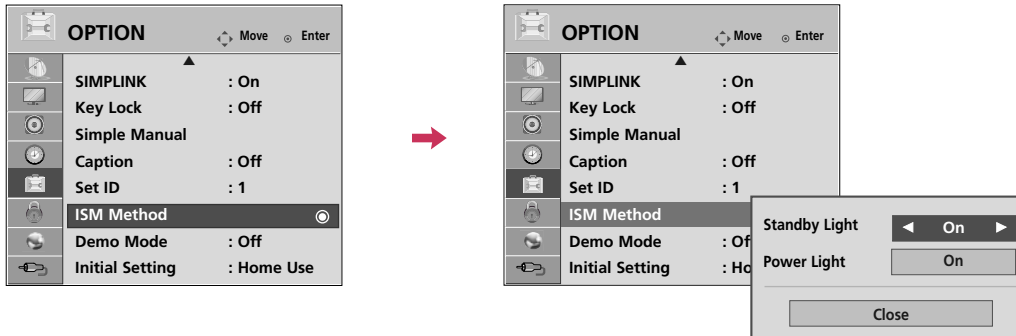








-   Select **OPTION**.
-   Select **THX Media Director**.
-   Select **On** or **Off**.
-  Return to the previous menu.
-  Return to TV viewing.

IMAGE STICKING MINIMIZATION (ISM) METHOD - For Plasma TV

A frozen still picture displayed on the screen for prolonged periods can result in a ghost image. You can use Orbiter to help prevent image sticking. The other two functions are for removing a ghost image.



- 1   Select **OPTION**.
- 2   Select **ISM Method**.
- 3   Select **Normal, Orbiter, Color Wash,** or **White Wash**.
- 4  Return to the previous menu.
-  Return to TV viewing.

- **Normal:** If image sticking is never a problem, ISM is not necessary - set to Normal.
- **Orbiter:** Orbiter may help prevent ghost images. However, it is best not to allow any fixed image to remain on the screen. To avoid a ghost image on the screen, the image will move every 2 minutes.
- **Color Wash:** The color block with the screen moved a little and the white pattern are alternately displayed. It is difficult to see the after image on all colors. Once it has been corrected it will not be visible in any color.
- **White Wash:** White Wash removes ghost images from the screen. Use sparingly. Watch the TV normally for a while before using this feature to see if the ghost image disappears on its own.

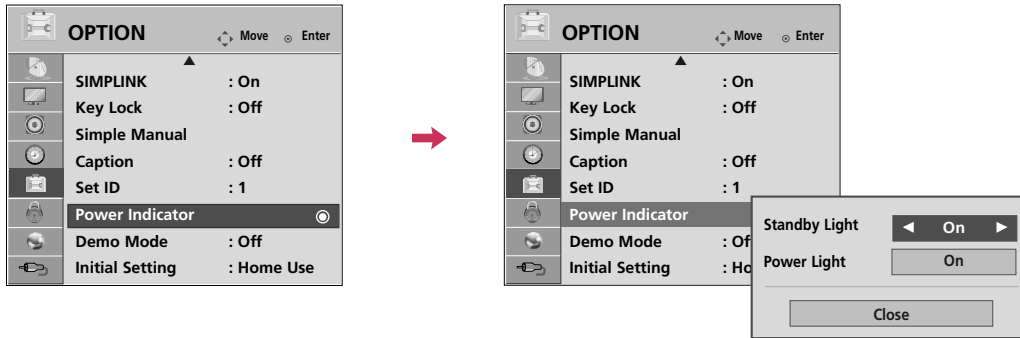
! NOTE










- ▶ An excessive ghosted image may be impossible to clear entirely with White Wash. To return to normal viewing, press the any button.

PICTURE CONTROL

POWER INDICATOR - For LCD TV

Adjust the power/standby indicator light of TV front.

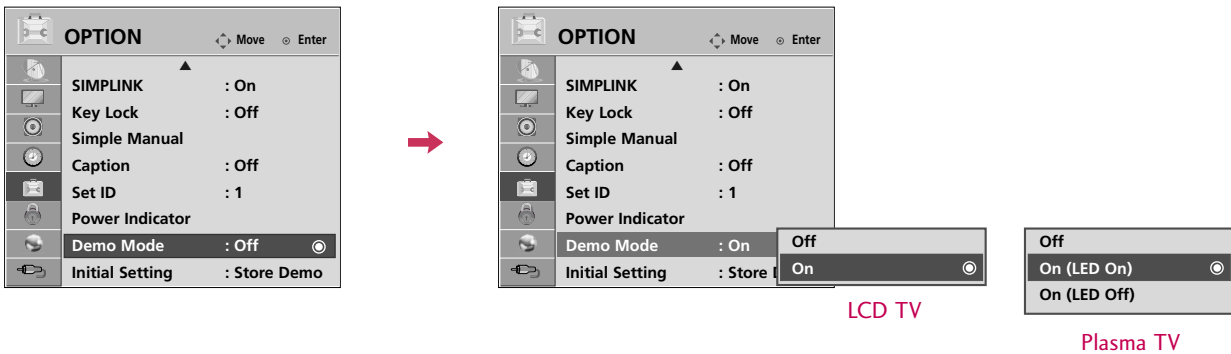


-   Select **OPTION**.
-   Select **Power Indicator**.
-   Select **Standby Light** or **Power Light**.
-  Select your desired options.
-  Return to the previous menu.
-  Return to TV viewing.

- **Standby Light:** Determines whether to set the indicator light on the front of the TV to **On** or **Off** in standby mode.
- **Power Light:** Determines whether to set the indicator light on the front of the TV to **On** or **Off** when the power turns on.

DEMO MODE

Displays a slide show to explain the various feature of this TV.



1 Select **OPTION**.

2 Select **Demo Mode**.

3 **Plasma TV**: Select **LED On** or **LED Off** to show the various feature of the TV.
LCD TV: Select **On** to show the various feature of the TV.

4 Return to TV viewing.
 After a while, **Demo Mode** starts.
 If you want to stop the demo, press any button (Except VOL +, - and MUTE button).

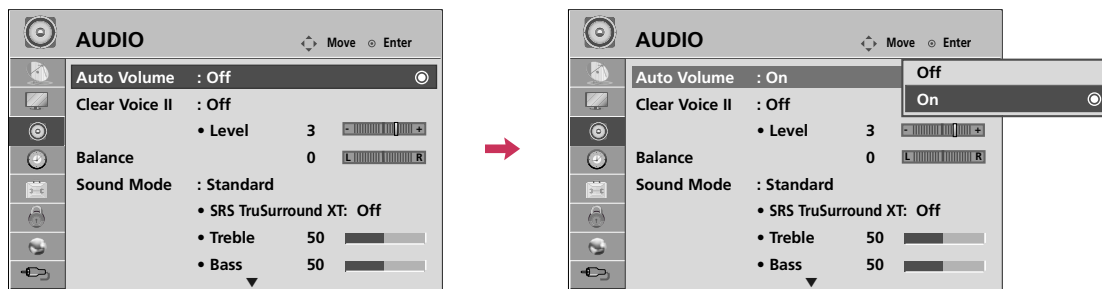
- This feature is disabled in "Initial Setting-Home Use".
- LED On: ?
- LED Off: ?









SOUND & LANGUAGE CONTROL

AUTO VOLUME LEVELER (AUTO VOLUME)

Auto Volume makes sure that the volume level remains consistent whether you are watching a commercial or a regular TV program.

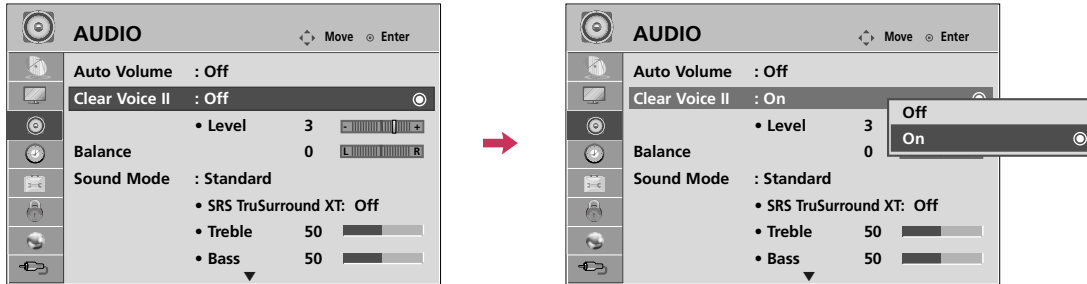
Because each broadcasting station has its own signal conditions, volume adjustment may be needed every time the channel is changed. This feature allows users to enjoy stable volume levels by making automatic adjustments for each program.



-   Select **AUDIO**.
-   Select **Auto Volume**.
-   Select **On** or **Off**.
-  Return to the previous menu.
-  Return to TV viewing.

CLEAR VOICE II

By differentiating the human sound range from others, it improves the sound quality of voices.





1   Select **AUDIO**.


2   Select **Clear Voice II**.


3   Select **On** or **Off**.

Adjustment for Clear Voice Level With selecting **On**

4   Select **Level**.

5   Make appropriate adjustments.

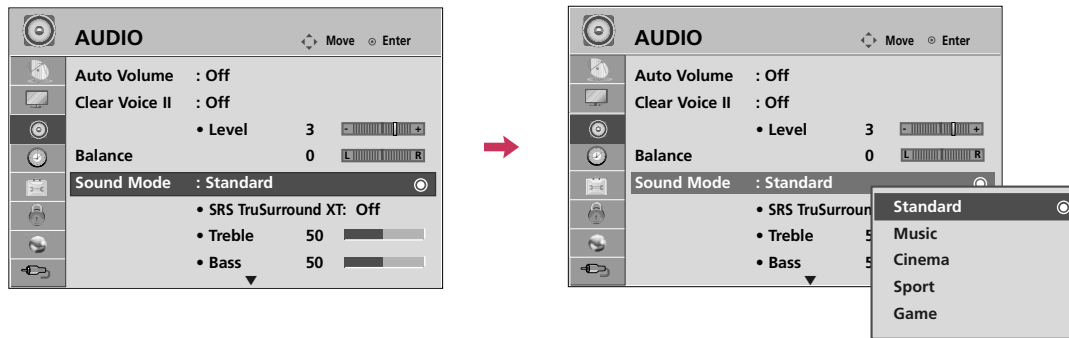
6  Return to the previous menu.









 Return to TV viewing.

SOUND & LANGUAGE CONTROL

PRESET SOUND SETTINGS (SOUND MODE)

Sound Mode lets you enjoy the best sound without any special adjustment as the TV sets the appropriate sound options based on the program content.

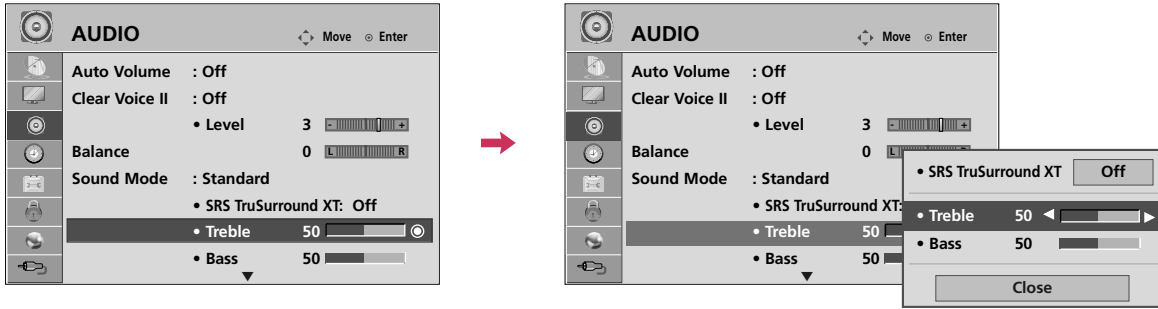










- 1   Select **AUDIO**.
- 2   Select **Sound Mode**.
- 3   Select **Standard, Music, Cinema, Sport, or Game**.
- 4  Return to the previous menu.
-  Return to TV viewing.





- **Standard, Music, Cinema, Sport, and Game** are preset for optimum sound quality at the factory.
- You can also adjust **Sound Mode** in the **Q.MENU**.
- **Standard**: Offers standard-quality sound.
- **Music**: Optimizes sound for listening to music.
- **Cinema**: Optimizes sound for watching movies.
- **Sport**: Optimizes sound for watching sports events.
- **Game**: Optimizes sound for playing games.

SOUND SETTING ADJUSTMENT - USER MODE

Adjust the sound to suit your taste and room situations.











- 1   Select **AUDIO**.
- 2   Select **Sound Mode**.
- 3   Select **Standard, Music, Cinema, Sport, or Game**.
- 4   Select **Treble or Bass**.

- 5   Make appropriate adjustments.
- 6  Return to the previous menu.
-  Return to TV viewing.

SRS TRUSURROUND XT

Select this option to sound realistic.

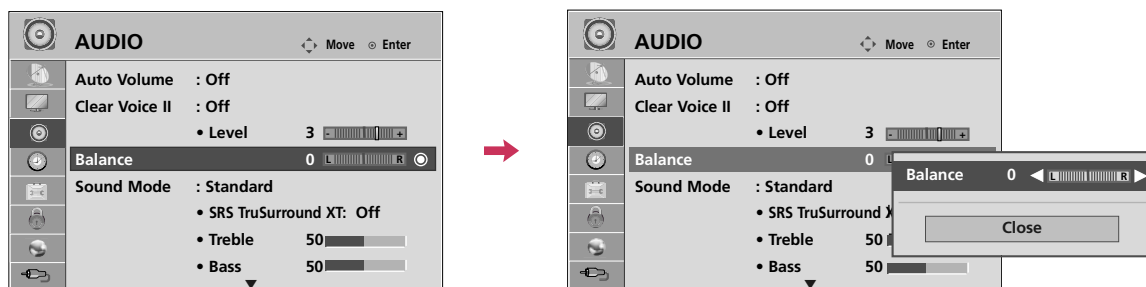
- 1   Select **AUDIO**.
- 2   Select **SRS TruSurround XT**.
- 3   Select **On or Off**.
- 4  Return to the previous menu.
-  Return to TV viewing.








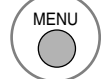
- If sound quality or volume is not at the level you want, it is recommended to use a separate home theater system or amp to cope with different user environments.
- If you select “**Clear Voice II-On**”, **SRS TruSurround XT** feature will not work.
- **SRS TruSurround XT**: TruSurround XT is a patented SRS technology that solves the problem of playing 5.1 multichannel content over two speakers.

SOUND & LANGUAGE CONTROL

BALANCE

Adjust the left/right sound of speaker to suit your taste and room situations.



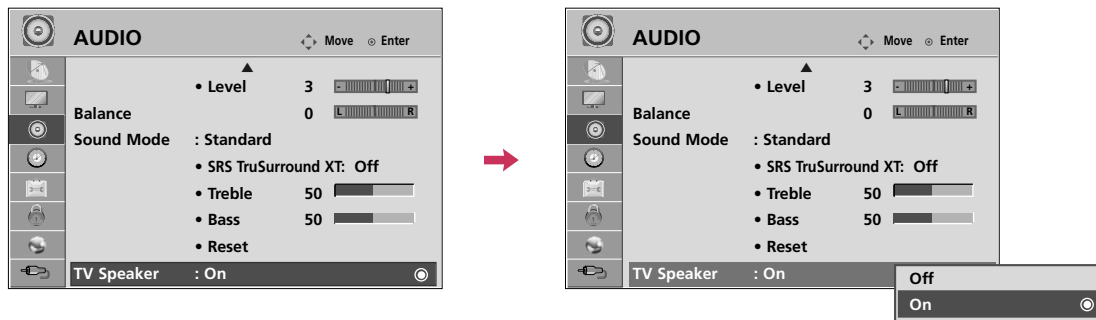
-   Select **AUDIO**.
-   Select **Balance**.
-   Make appropriate adjustments.
-  Return to the previous menu.
-  Return to TV viewing.









TV SPEAKERS ON/OFF SETUP

Turn the TV speakers off if using external audio equipment.

In **AV**, **Component**, **RGB** and **HDMI** with HDMI to DVI cable, the TV speaker can be operational even when there is no video signal.

If you wish to use an external Hi-Fi system or a SRS System, turn off the TV's internal speakers.

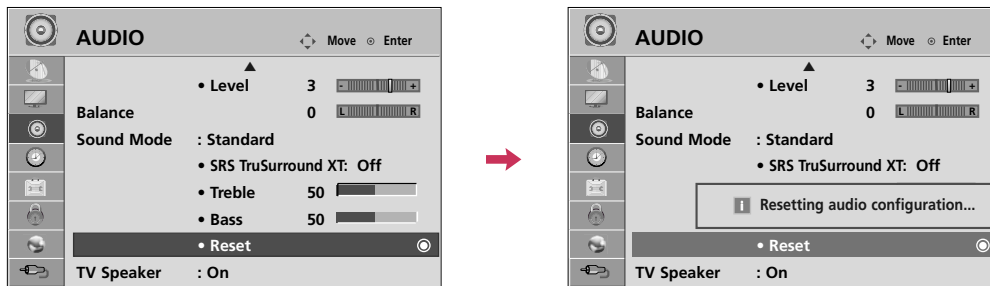








-   Select **AUDIO**.
-   Select **TV Speaker**.
-   Select **On** or **Off**.
-  Return to the previous menu.
-  Return to TV viewing.

SOUND & LANGUAGE CONTROL

AUDIO RESET

Settings of the selected Sound Mode return to the default factory settings.



-   Select **AUDIO**.
-   Select **Reset**.
-  Initialize the adjusted value.
-  Return to TV viewing.

STEREO/SAP BROADCAST SETUP

For Analog only: This TV can receive MTS stereo programs and any SAP (Secondary Audio Program) that accompanies the stereo program if the station transmits an additional sound signal. Mono sound is automatically used if the broadcast is only in Mono.



Analog TV

1 Select **SAP**.

2 Select **Mono, Stereo, or SAP**.

3 Return to TV viewing.

Digital TV

1 Select **Multi Audio**.

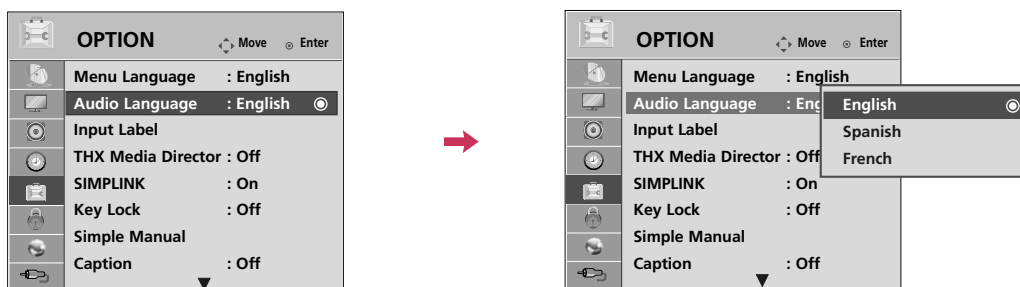
2 Select other languages.









3 Return to TV viewing.

SOUND & LANGUAGE CONTROL

AUDIO LANGUAGE

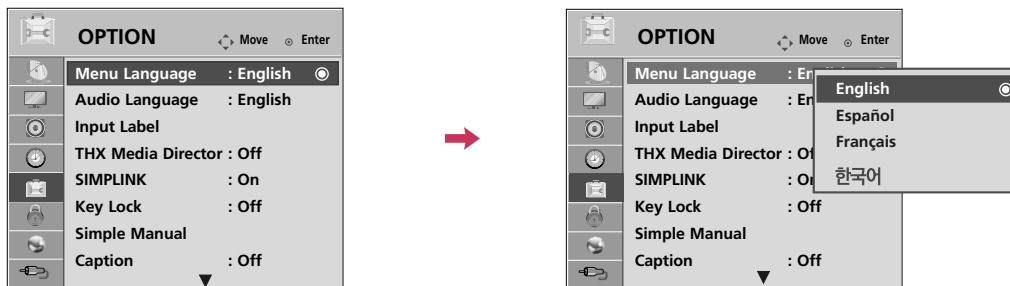
Other languages may be available if a digital signal is provided by the broadcasting station.
This feature operates only in DTV/CADTV mode.











- 1   Select **OPTION**.
- 2   Select **Audio Language**.
- 3   Select your desired language.
- 4  Return to the previous menu.
-  Return to TV viewing.

ON-SCREEN MENUS LANGUAGE SELECTION

The menus can be shown on the screen in the selected language.



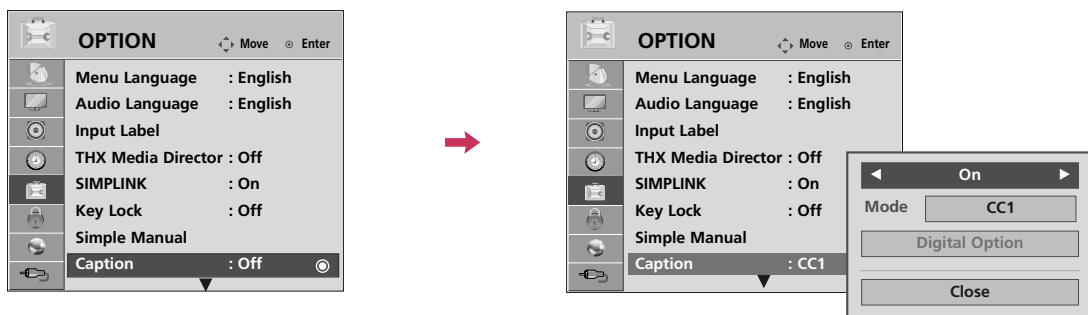
- 1   Select **OPTION**.
- 2   Select **Menu Language**.
- 3   Select your desired language.
From this point on, the on-screen menus will be shown in the selected language.
- 4  Return to the previous menu.
-  Return to TV viewing.











SOUND & LANGUAGE CONTROL

CAPTION MODE

Analog Broadcasting System Captions

Captions are provided to help people with hearing loss watch TV. Select a caption mode for displaying captioning information if provided on a program. Analog caption displays information at any position on the screen and is usually the program's dialog. Caption/Text, if provided by the broadcaster, would be available for both digital and analog channels on the Antenna/Cable. This TV is programmed to memorize the caption/text mode which was last set when you turned the power off. This function is only available when **Caption Mode** is set **On**.



- 1   Select **OPTION**.
- 2   Select **Caption**.
- 3   Select **On**.
- 4   Select **CC1-4** or **Text1-4**.
- 5  Return to the previous menu.
-  Return to TV viewing.

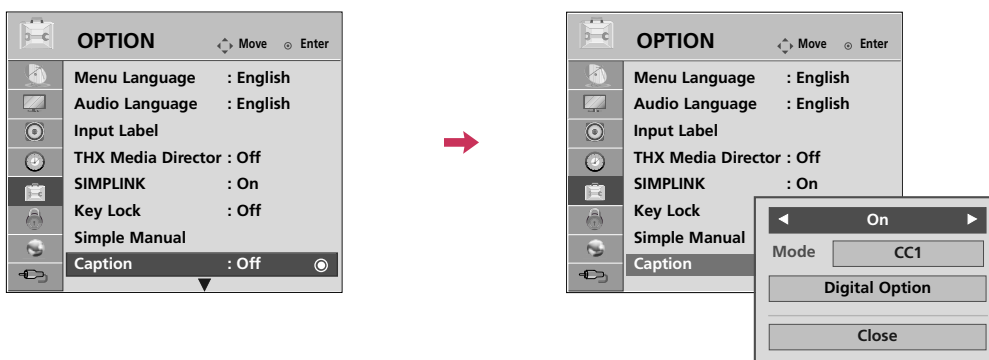
- When selecting **Off**, Sub-menus for Analog, DTV, and Digital Option become disabled.
- **CAPTION**
The term for the words that scroll across the bottom of the TV screen; usually the audio portion of the program provided for the hearing impaired.
- **TEXT**
The term for the words that appear in a large black frame and almost cover the entire screen; usually messages provided by the broadcaster.











Digital Broadcasting System Captions

Choose the language you want the DTV/CADTV Captions to appear in.

Other Languages can be chosen for digital sources only if they are included on the program.

This function is only available when Caption Mode is set On.



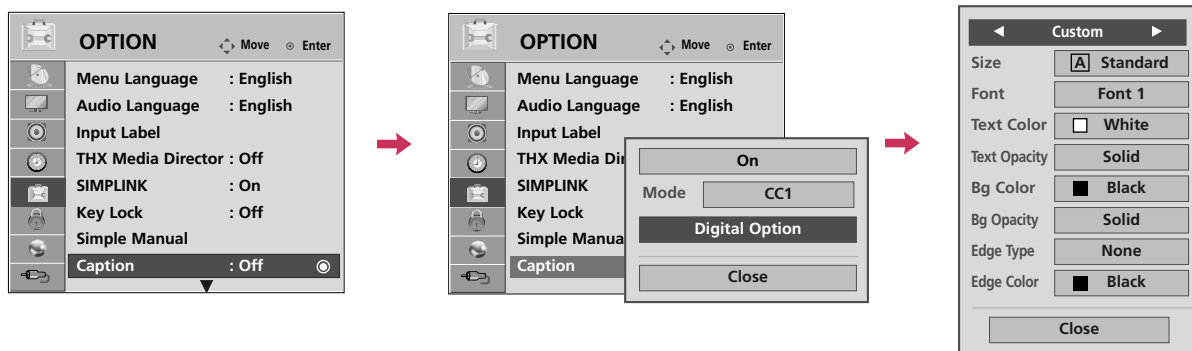
- 1   Select **OPTION**.
 - 2   Select **Caption**.
 - 3   Select **On**.
 - 4   Select **CC1-4, Text1-4, or Service1 - 6**.
 - 5  Return to the previous menu.
-  Return to TV viewing.















SOUND & LANGUAGE CONTROL

Caption Option

Customize the DTV/CADTV captions that appear on your screen.

This function is only available when **Caption Mode** is set **On**.



- 1   Select **OPTION**.
- 2   Select **Caption**
- 3   Select **On**.
- 4   Select **Digital Option**.
- 5   Select **Custom**.
- 6   Customize the **Size, Font, etc.**, to your preference. A preview icon is provided at the bottom of the screen, use it to see the caption language.
- 7  Return to the previous menu.
-  Return to TV viewing.

- **Size:** Set the word size.
- **Font:** Select a typeface for the text.
- **Text Color:** Choose a color for the text.
- **Text Opacity:** Specify the opacity for the text color.
- **Bg (Background) Color:** Select a background color.
- **Bg (Background) Opacity:** Select the opacity for the background color.
- **Edge Type:** Select an edge type.
- **Edge Color:** Select a color for the edges.

TIME SETTING

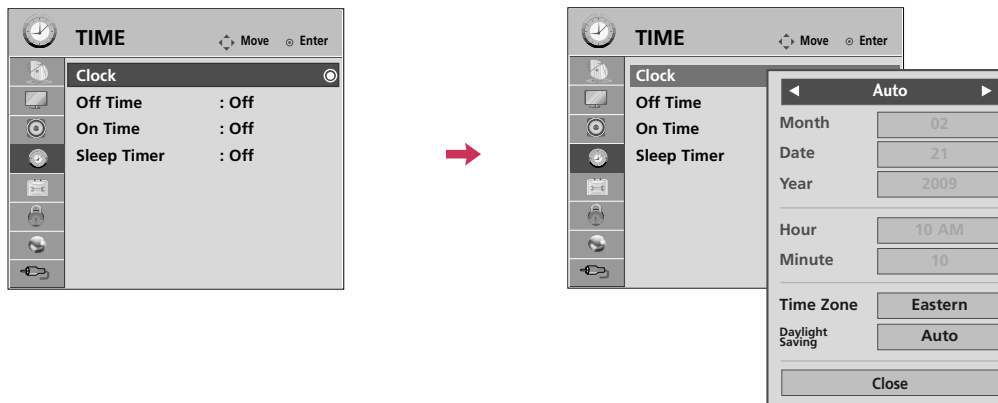
CLOCK SETTING













Auto Clock Setup

The time is set automatically from a digital channel signal.

The digital channel signal includes information for the current time provided by the broadcasting station.

Set the clock manually if the current time is set incorrectly by the auto clock function.



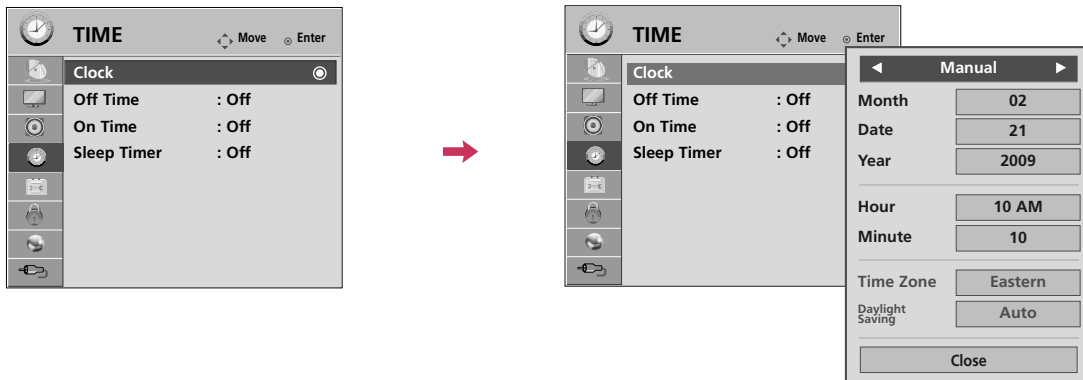
- 1   Select **TIME**.
- 2   Select **Clock**.
- 3   Select **Auto**.
- 4   Select your viewing area time zone.
 - U.S.A: **Eastern, Central, Mountain, Pacific, Alaska, or Hawaii.**
 - Canada: **Eastern, Central, Mountain, Pacific, New F.land, or Atlantic.**
- 5   Select **Auto, Off, or On** (depending on whether or not your viewing area observes Daylight Saving time).
- 6  Return to the previous menu.
-  Return to TV viewing.


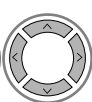

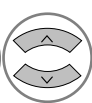





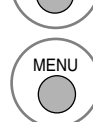
TIME SETTING

Manual Clock Setup

If the current time setting is wrong, reset the clock manually.

If this TV is unplugged once or turn off with the AC power control switch on the TV, reset the **Clock** function.



-   Select **TIME**.
-   Select **Clock**.
-   Select **Manual**.
-  Select the Year, Month, Date, Hour, or Minutes option.
-  Set the Year, Month, Date, Hour, or Minutes option.
-  Return to the previous menu.
-  Return to TV viewing.

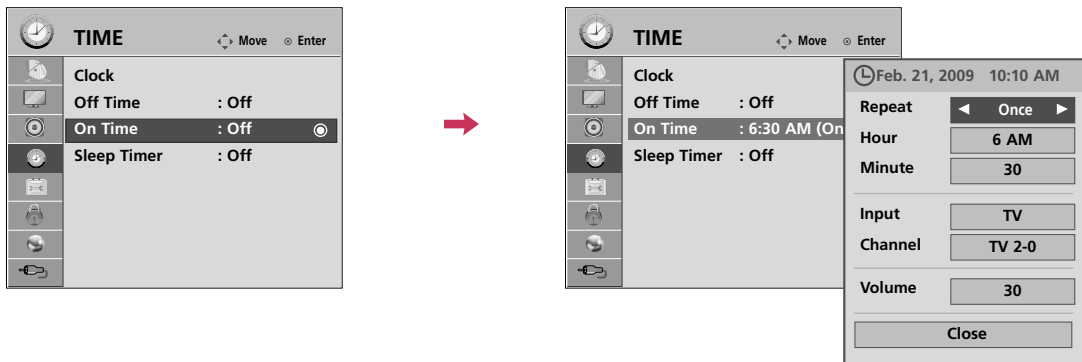
AUTO ON/OFF TIME SETTING

This function operates only if the current time has been set.

The **Off Time** function overrides the **On Time** function if they are both set to the same time.

The TV must be in standby mode for the **On Time** to work.

If you do not press any button within 2 hours after the TV turns on with the **On Time** function, the TV will automatically revert to standby mode.



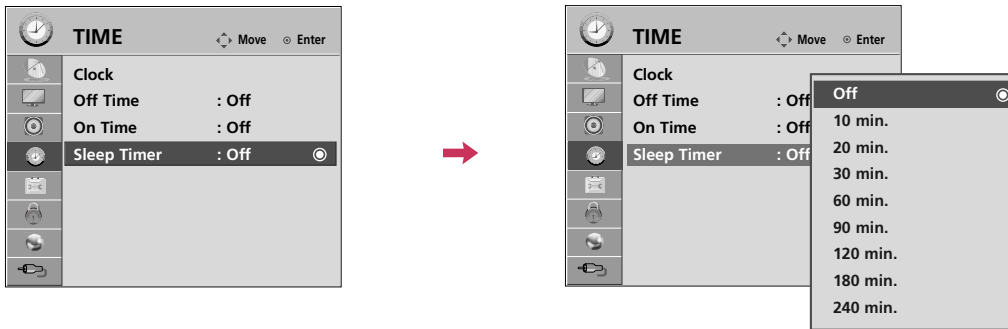
- 1 Select **TIME**.
- 2 Select **Off Time** or **On Time**.
- 3 Select **Repeat**.
- 4 Select **Off, Once, Daily, Mon.~Fri., Mon.~Sat., Sat.~ Sun., or Sun..**
- 5 Select and set **Hour** or **Minute**.
- 6 Return to the previous menu.
- Return to TV viewing.









- To cancel **On/Off Time** function, select **Off**.
 - Only for **On Time** function
- 1 Select **Input**.
 - 2 Select the desired input source.
 - 3 When Selecting **TV**: set the channel at turn-on.
 - 4 Adjust to sound level at turn-on.

TIME SETTING

SLEEP TIMER SETTING

The Sleep Timer turns the TV off at the preset time.
Note that this setting is cleared when the TV is turned off.



- 1   Select **TIME**.
- 2   Select **Sleep Timer**.
- 3   Make appropriate adjustments.
- 4  Return to the previous menu.
-  Return to TV viewing.

- To cancel the **Sleep Timer**, select **Off**.
- You can also adjust **Sleep Timer** in the **Q.MENU**.
- Press the **SLEEP** button repeatedly to select the number of minutes.

PARENTAL CONTROL / RATINGS

Parental Control can be used to block specific channels, ratings and other viewing sources.

The Parental Control Function (V-Chip) is used to block program viewing based on the ratings sent by the broadcasting station. The default setting is to allow all programs to be viewed. Viewing can be blocked by choosing the type of the program and the categories. It is also possible to block all program viewing for a time period. To use this function, the following must be done :

1. Set ratings and categories to be blocked.
2. Specify a password
3. Enable the lock

V-Chip rating and categories

Rating guidelines are provided by broadcasting stations. Most television programs and television movies can be blocked by TV Rating and/or Individual Categories. Movies that have been shown at the theaters or direct-to-video movies use the Movie Rating System (MPAA) only.

Ratings for Television programs including made-for-TV movies:




- TV-G (General audience)
- TV-PG (Parental guidance suggested)
- TV-14 (Parents strongly cautioned)
- TV-MA (Mature audience only)
- TV-Y (All children)
- TV-Y7 (Children 7 years older)


SET PASSWORD & LOCK SYSTEM

Setting up Your Password

Set up blocking schemes to block specific channels, ratings, and external viewing sources. A password is required to gain access to this menu.



1    Select **LOCK**.

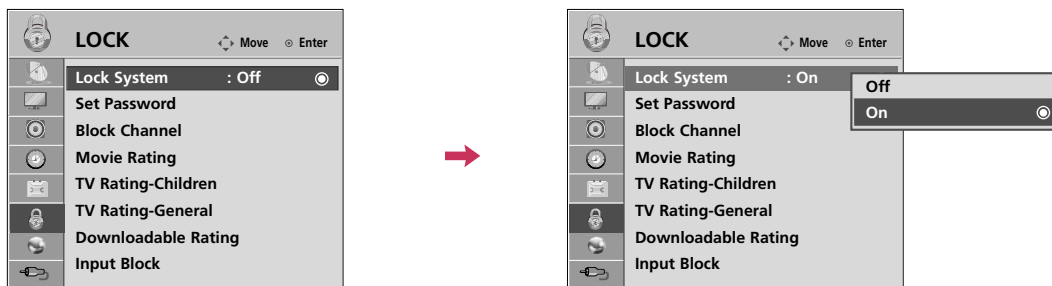
2  Input the password.

- Enter the password as requested.
- The TV is set up with the initial password "0-0-0-0".

PARENTAL CONTROL / RATINGS

Lock System

Enables or disables the blocking scheme you set up previously.



1 MENU Select LOCK.

2 Input the password.

3 Select Lock System.

4 Select On or Off.

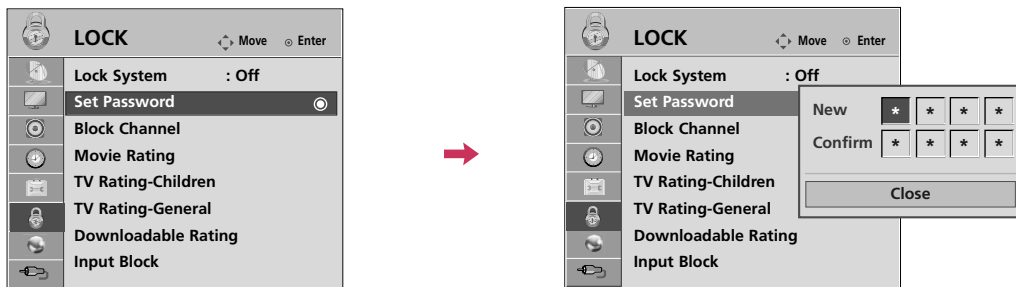
5 RETURN Return to the previous menu.




MENU Return to TV viewing.


■ When you select **On**, the Lock System is enable.

Set Password



Change the password by inputting a new password twice.





1 MENU    Select **LOCK**.

2  Input the password.

3  Select **Set Password**.

4   Choose any 4 digits for your new password.
As soon as the 4 digits are entered, re-enter the same 4 digits on the **Confirm**.

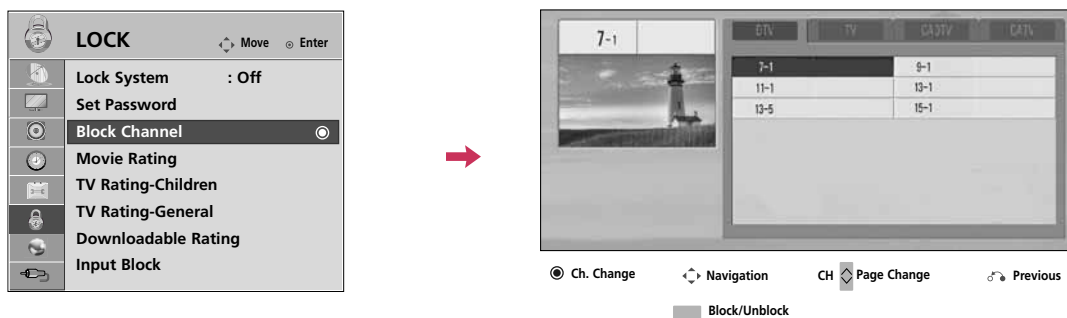
5  Return to the previous menu.

 Return to TV viewing.

PARENTAL CONTROL / RATINGS

CHANNEL BLOCKING

Blocks any channels that you do not want to watch or that you do not want your children to watch.



1 MENU Select LOCK.

2 Input the password.

3 Select Block Channel.

4 Select a channel to block or unblock.

5 Block or unblock a channel.

6 RETURN Return to the previous menu.

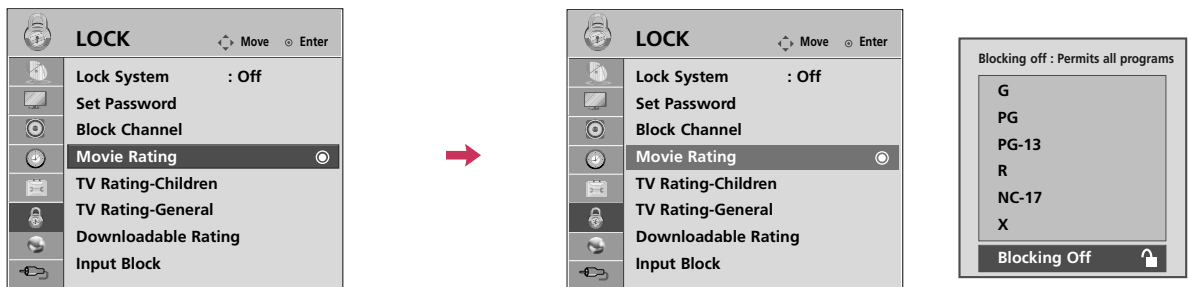
MENU Return to TV viewing.

■ If a channel is locked, enter the password to unblock it temporarily.

MOVIE & TV RATING

Movie Rating (MPAA) - For USA

Blocks movies according to the movie ratings limits specified, so children cannot view certain movies. You can set the ratings limit by blocking out all the movies with the ratings above a specified level. Keep in mind that the movie ratings limit only applies to movies shown on TV, not TV programs, such as soap operas.



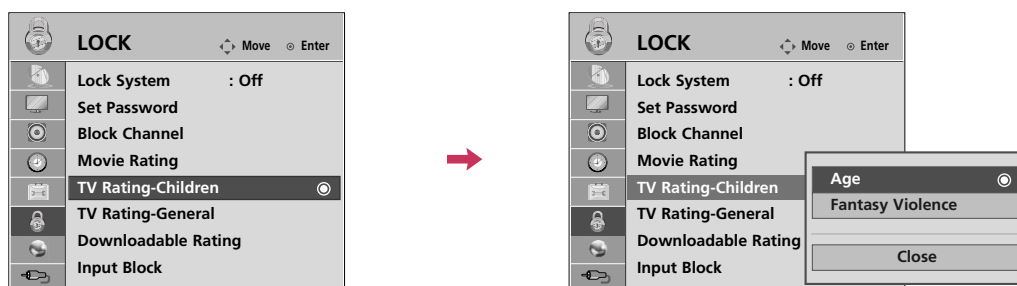
- 1 Select **LOCK**.
- 2 Input the password.
- 3 Select **Movie Rating**.
- 4 Select **G, PG, PG-13, R, NC-17, X, or Blocking Off**.
- 5 Return to the previous menu.
- Return to TV viewing.

- If **Movie Rating, TV Rating-Children** or **TV Rating-General** is locked, enter the password to unlocked it temporarily.
- G (General audience)
- PG (Parental guidance suggested)
- PG-13 (Parents strongly cautioned)
- R (Restricted)
- NC-17 (No one 17 and under admitted)
- X (Adult only)
- Blocking Off (Permits all programs)
- ▶ If you set PG-13: G and PG movies will be available, PG-13, R, NC-17 and X will be blocked.

PARENTAL CONTROL / RATINGS

TV Rating Children - For USA

Prevents children from watching certain children's TV programs, according to the ratings limit set. The children rating does not apply to other TV programs. Unless you block certain TV programs intended for mature audiences in the TV Rating - sub menu, your children can view those programs.



1 MENU Select LOCK.

2 Input the password.

3 Select TV Rating-Children.

4 Select Age or Fantasy Violence.

5 Select block options.

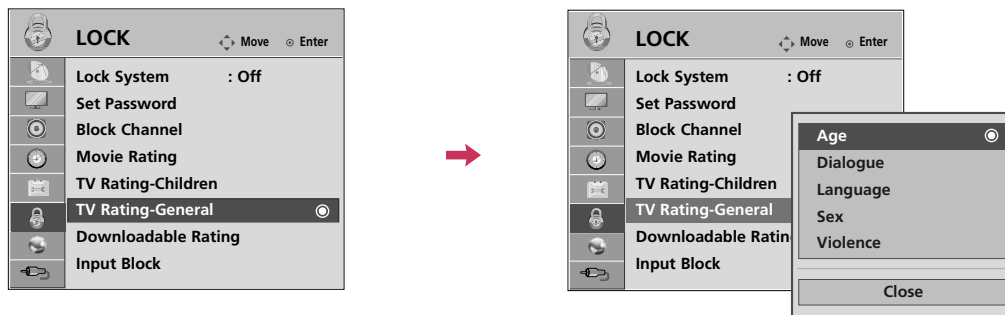
6 RETURN Return to the previous menu.




MENU Return to TV viewing.


- Age (applies to TV-Y, TV-Y7)
- Fantasy Violence (applies to TV-Y7)

TV Rating General - For USA

Based on the ratings, blocks certain TV programs that you and your family do not want to view.




1    Select **LOCK**.


2  Input the password.

3  Select **TV Rating-General**.

4   Select **Age, Dialogue, Language, Sex or Violence**.

5   Select block options.

6  Return to the previous menu.

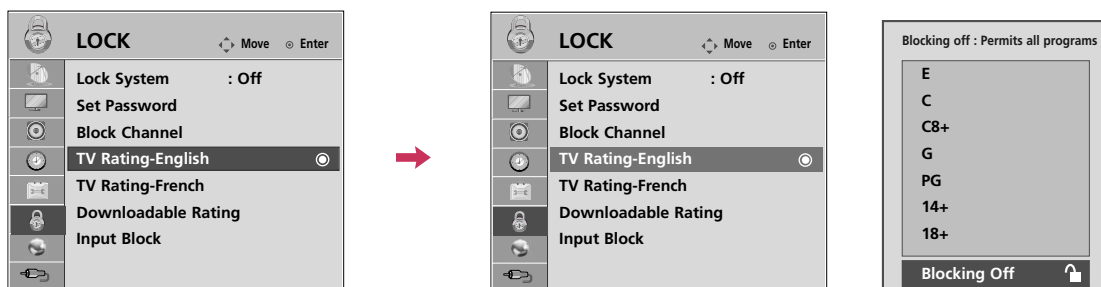
 Return to TV viewing.

- Age (applies to TV-G,TV-PG,TV-14,TV-MA).
- Dialogue-sexual dialogue (applies to TV-PG,TV-14).
- Language-adult language (applies to TV-PG, TV-14, TV-MA).
- Sex-sexual situations (applies to TV-PG, TV-14, TV-MA).
- Violence (applies to TV-PG, TV-14, TV-MA).

PARENTAL CONTROL / RATINGS

TV Rating English - For CANADA

Selecting Canadian English rating system.



1 MENU Select LOCK.

2 Input the password.

3 Select TV Rating-English.

4 Select E, C, C8+, G, PG, 14+, 18+, or Blocking Off.

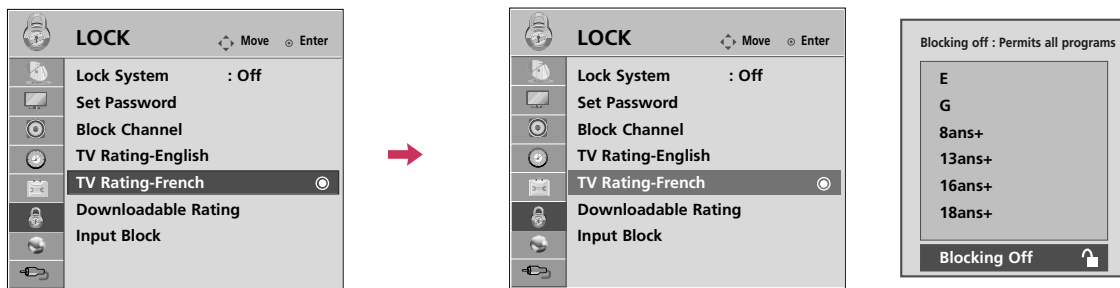
5 RETURN Return to the previous menu.




MENU Return to TV viewing.


- If **TV Rating-English** or **TV Rating-French** is locked, enter the password to unlock it temporarily.
- E (Exempt)
- C (Children)
- C8+ (Children eight years and older)
- G (General programming, suitable for all audiences)
- PG (Parental Guidance)
- 14+ (Viewers 14 years and older)
- 18+ (Adult programming)
- Blocking Off (Permits all programs)

TV Rating French - For CANADA



Selecting Canadian French rating system.





1    Select **LOCK**.

2  Input the password.

3  Select **TV Rating-French**.

4   Select **E, G, 8ans+, 13ans+, 16ans+, 18ans+, or Blocking off**.

5  Return to the previous menu.

 Return to TV viewing.

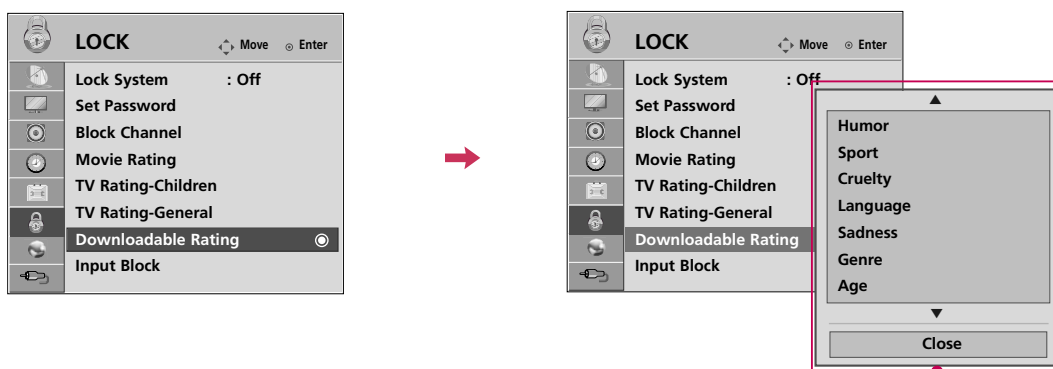
- E (Exempt)
- G (General)
- 8ans+ (General-Not convenient for little children)
- 13ans+ (Not convenient for children of 13 years and younger)
- 16ans+ (Not convenient for children of 16 years and younger)
- 18ans+ (This programs is only for adults)
- Blocking off (Permits all programs)

PARENTAL CONTROL / RATINGS

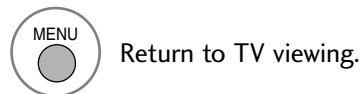
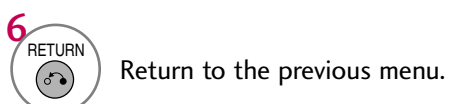
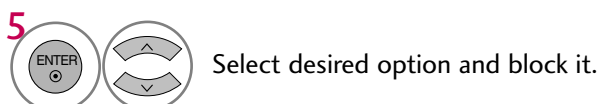
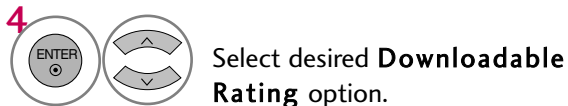
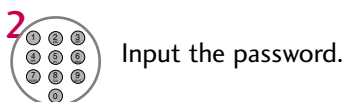
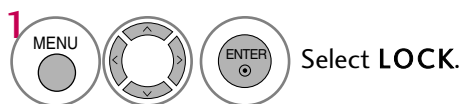
DOWNLOADABLE RATING

This function is available only for digital channels.

This function operates only when TV has received Region5 Rating data.



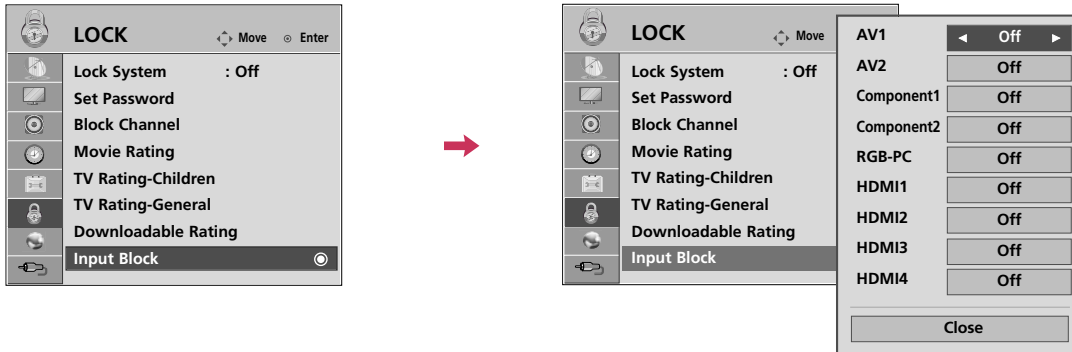
- Based on rating table, your TV's OSD (On Screen Display) may differ slightly from what is shown in this manual.













- If a Downloadable rating is locked, enter the password to unlock it temporarily.

EXTERNAL INPUT BLOCKING

Enables you to block an input.



- 1    Select **LOCK**.
- 2  Input the password.
- 3  Select **Input Block**.
- 4   Select input source.
- 5  Select **On** or **Off**.
- 6  Return to the previous menu.
-  Return to TV viewing.

APPENDIX

TROUBLESHOOTING

The operation does not work normally.

The remote control doesn't work

- Check to see if there is any object between the product and the remote control causing obstruction. Ensure you are pointing the remote control directly at the TV.
- 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.

*This feature is not available for all models.

Power is suddenly turned off

- Is the sleep timer set?
- Check the power control settings. Power interrupted.
- TV will be automatically turned off, in case of no signal for 15 minutes.

The video does not work.

No picture & No sound

- 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

- This is normal, the image is muted during the product startup process. Please contact your service center, if the picture has not appeared after five minutes.

No or poor color or poor picture

- 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

- Check for local interference such as an electrical appliance or power tool.

Poor reception on some channels

- 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

- Check antenna (Change the direction of the antenna).

No picture when connecting HDMI

- Check HDMI cable over version 1.3.
The HDMI cables don't support HDMI version 1.3, it cause flickers or no screen display. In this case use the latest cables that support HDMI version 1.3.

The audio does not work.

Picture OK & No sound	<ul style="list-style-type: none"> ■ Press the VOL or VOLUME 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 fault with the product.
No sound when connecting HDMI/USB	<ul style="list-style-type: none"> ■ Check HDMI cable over version 1.3. ■ Check USB cable over version 2.0. ■ Use normal MP3 file. <p style="text-align: right; margin-top: 0;">*This feature is not available for all models.</p>

There is a problem in PC mode. (Only PC mode applied)

The signal is out of range	<ul style="list-style-type: none"> ■ Adjust resolution, horizontal frequency, or vertical frequency. ■ Check the input source.
Vertical bar or stripe on background & Horizontal Noise & Incorrect position	<ul style="list-style-type: none"> ■ Work the Auto configure or adjust clock, phase, or H/V position. (Option)
Screen color is unstable or single color	<ul style="list-style-type: none"> ■ Check the signal cable. ■ Reinstall the PC video card.

APPENDIX

MAINTENANCE

Early malfunctions can be prevented. Careful and regular cleaning can extend the amount of time you can enjoy your new TV.

Caution: Be sure to turn the power off and unplug the power cord before you begin any cleaning.

Cleaning the Screen

- 1 Here's a great way to keep the dust off your screen for a while. Wet a soft cloth in a mixture of lukewarm water and a little fabric softener or dish washing detergent. Wring the cloth until it's almost dry, and then use it to wipe the screen.
- 2 Make sure the excess water is off the screen, and then let it air-dry before you turn on your TV.

Cleaning the Cabinet

- To remove dirt or dust, wipe the cabinet with a soft, dry, lint-free cloth.
- Please be sure not to use a wet cloth.

Extended Absence

CAUTION

- ▶ If you expect to leave your TV dormant for a long time (such as a vacation), it's a good idea to unplug the power cord to protect against possible damage from lightning or power surges.

PRODUCT SPECIFICATIONS

MODELS		50PS80 (50PS80-UA)	60PS80 (60PS80-UA)
Dimensions (Width x Height x Depth)	With stand	48.4 x 32.9 x 12.2 inches 1228.0 x 835.8 x 309.0 mm	57.7 x 38.6 x 15.5 inches 1465.4 x 982.6 x 395.5 mm
	Without stand	48.4 x 31.3 x 3.1 inches 1228.0 x 795.1 x 78.9 mm	57.7 x 36.5 x 3.2 inches 1465.4 x 926.7 x 82.1 mm
Weight	With stand	84.4 lbs / 38.3 kg	115.5 lbs / 52.4 kg
	Without stand	75.6 lbs / 34.3 kg	102.7 lbs / 46.6 kg
MODELS		42LH50 (42LH50-UA)	47LH50 (47LH50-UA)
Dimensions (Width x Height x Depth)	With stand	41.4 x 28.3 x 11.6 inches 1052.2 x 719.1 x 296.2 mm	46.1 x 31.0 x 13.2 inches 1173.4 x 789.7 x 337.4 mm
	Without stand	41.5 x 25.8 x 3.5 inches 1052.2 x 657.3 x 90.8 mm	46.1 x 28.4 x 3.9 inches 1173.4 x 723.4 x 100.8 mm
Weight	With stand	41.8 lbs / 19.0 kg	51.5 lbs / 23.4 kg
	Without stand	37.9 lbs / 17.2 kg	45.8 lbs / 20.8 kg
Power requirement Television System Program Coverage External Antenna Impedance		AC100-240V ~ 50/60Hz NTSC-M, ATSC, 64 & 256 QAM VHF 2-13, UHF 14-69, CATV 1-135, DTV 2-69, CADTV 1-135 75 ohm	
Environment condition	Operating Temperature Operating Humidity	32 ~ 104°F (0 ~ 40°C) Less than 80%	
	Storage Temperature Storage Humidity	-4 ~ 140°F (-20 ~ 60°C) Less than 85%	

■ The specifications shown above may be changed without prior notice for quality improvement.

APPENDIX

IR CODES

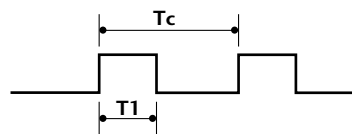
1. How to Connect

- Connect your wired remote control to the Remote Control port on the TV.

2. Remote Control IR Codes

■ Output waveform

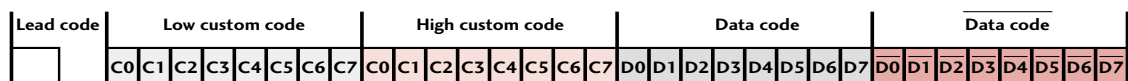
Single pulse, modulated with 37.917KHz signal at 455KHz



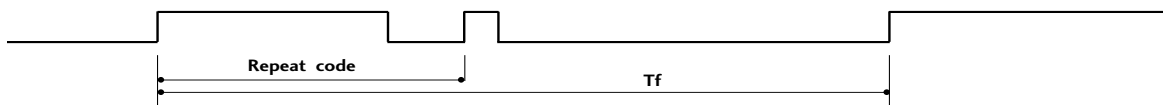
Carrier frequency
 $FCAR = 1/TC = fOSC/12$
 Duty ratio = $T1/TC = 1/3$

■ Configuration of frame

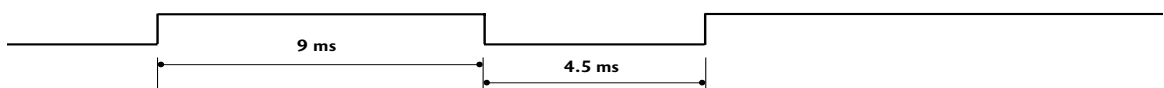
1st frame



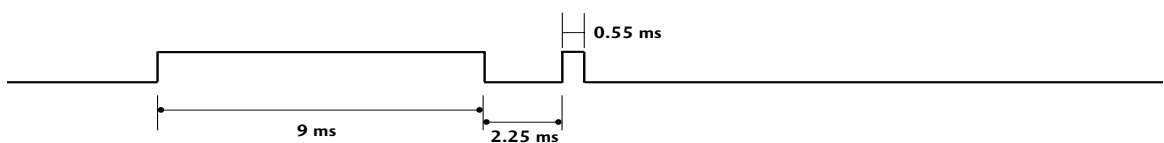
Repeat frame



■ Lead code



■ Repeat code

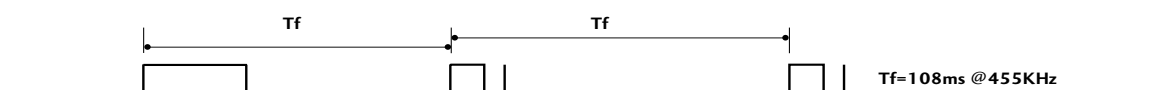


■ Bit description



■ Frame interval: Tf

The waveform is transmitted as long as a key is depressed.



Code (Hexa)	Function	Note	Code (Hexa)	Function	Note
08	POWER	Remote control Button (Power On/Off)	D6	TV	Discrete IR Code (TV Input Selection)
45	Q.MENU	Remote control Button			
43	MENU	Remote control Button	C4	POWER ON	Discrete IR Code (Only Power On)
0B	INPUT	Remote control Button			
10-19	Number Key 0-9	Remote control Button	C5	POWER OFF	Discrete IR Code (Only Power Off)
4C	- (Dash)/LIST	Remote control Button			
1A	FLASHBK	Remote control Button	5A	AV1	Discrete IR Code (AV1 Input Selection)
09	MUTE/DELETE	Remote control Button			
02	VOL +	Remote control Button	D0	AV2	Discrete IR Code (AV2 Input Selection)
03	VOL -	Remote control Button			
00	CH ^	Remote control Button	BF	COMPONENT1	Discrete IR Code (Component1 Input Selection)
01	CH v	Remote control Button			
1E	FAV/MARK/ CHAR/NUM	Remote control Button	D4	COMPONENT2	Discrete IR Code (Component2 Input Selection)
40	^	Remote control Button			
41	v	Remote control Button	D5	RGB-PC	Discrete IR Code (RGB-PC Input Selection)
07	<	Remote control Button			
06	>	Remote control Button	CE	HDMI1	Discrete IR Code (HDMI1 Input Selection)
44	ENTER	Remote control Button			
28	RETURN	Remote control Button	CC	HDMI2	Discrete IR Code (HDMI2 Input Selection)
79	RATIO	Remote control Button			
?	FREEZE	Remote control Button	E9	HDMI3	Discrete IR Code (HDMI3 Input Selection)
95	ENERGY SAVING	Remote control Button			
7E	SIMPLINK	Remote control Button	DA	HDMI4	Discrete IR Code (HDMI4 Input Selection)
AA	INFO	Remote control Button			
30	AV MODE	Remote control Button	76	Ratio 4:3	Discrete IR Code (Only 4:3 Mode)
58	WIDGETS	Remote control Button			
59	NETCAST	Remote control Button	77	Ratio 16:9	Discrete IR Code (Only 16:9 Mode)
72	RED	Remote control Button			
71	GREEN	Remote control Button	AF	Ratio Zoom	Discrete IR Code (Only Zoom Mode)
63	YELLOW (▶)	Remote control Button			
61	BLUE (II)	Remote control Button			
B1	■	Remote control Button			
B0	▶	Remote control Button			
BA	II	Remote control Button			
8F	◀◀	Remote control Button			
8E	▶▶	Remote control Button			

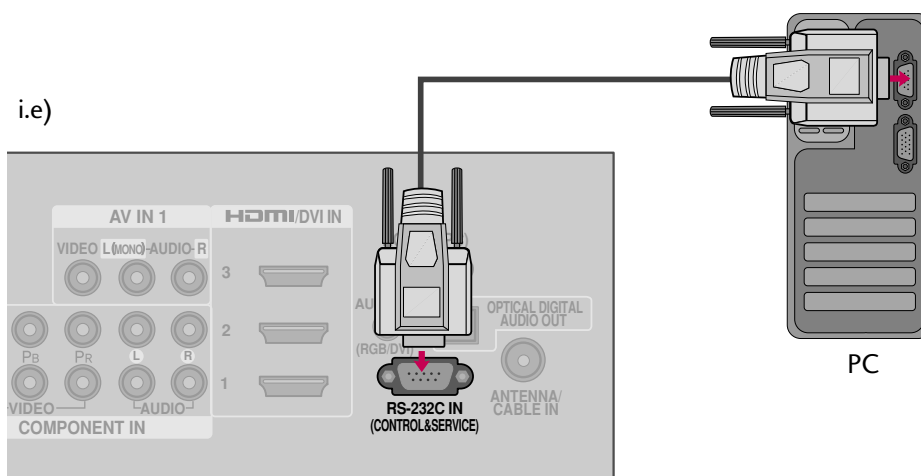
APPENDIX

EXTERNAL CONTROL THROUGH RS-232C

The RS-232C port allows you connect the RS-232C input jack to an external control device (such as a computer or an A/V control system) to control the TV's functions externally.

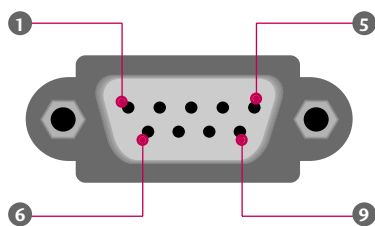
- Note: RS-232C on this unit is intended to be used with third party RS-232C control hardware and software. The instructions below are provided to help with programming software or to test functionality using telenet software.

RS-232C Setup



Type of Connector; D-Sub 9-Pin Male

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

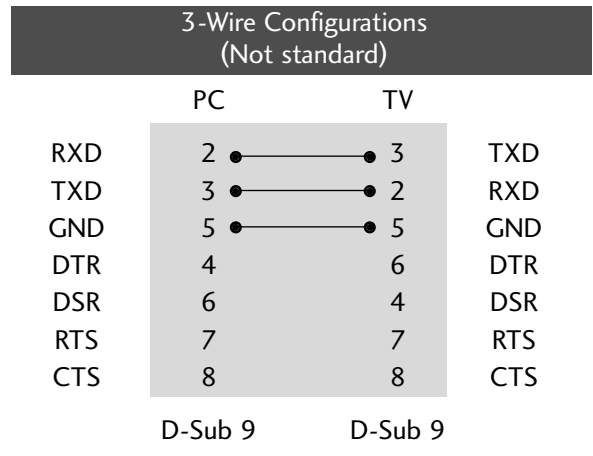
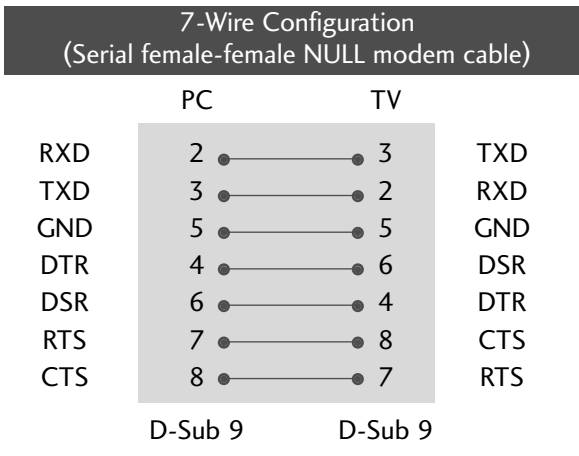
- Baud rate : 9600 bps (UART)
- Data length : 8 bits
- Parity : None
- Stop bit : 1 bit
- Communication code : ASCII code
- Use a crossed (reverse) cable.

! NOTE

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

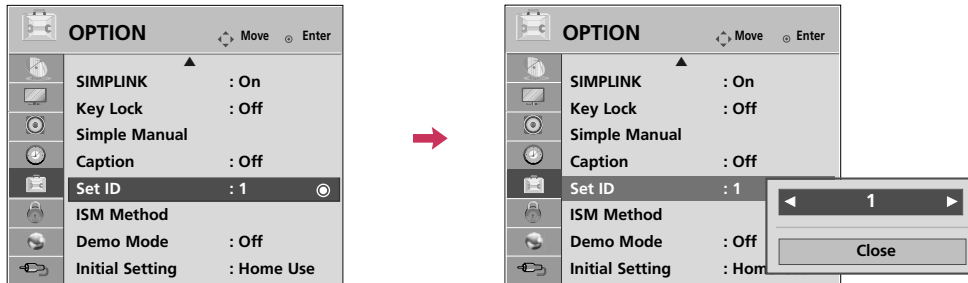
RS-232C Configurations

Either cable below can be used.



Set ID

Use this function to specify a TV ID number.
Refer to 'Real Data Mapping'.



- 1 Select **OPTION**.
- 2 Select **Set ID**.
- 3 Choose the desired TV ID number.
The adjustment range of Set ID is 1~99.
- 4 Return to the previous menu.
- Return to TV viewing.

- Real data mapping
 - 0 : Step 0
 - ⋮
 - A : Step 10 (SET ID 10)
 - ⋮
 - F : Step 15 (SET ID 15)
 - 10 : Step 16 (SET ID 16)
 - ⋮
 - 63 : Step 99 (SET ID 99)
 - 64 : Step 100

APPENDIX

Command Reference List

	COMMAND1	COMMAND2	DATA (Hexadecimal)		COMMAND1	COMMAND2	DATA (Hexadecimal)
01. Power	k	a	00 ~ 01	14. Treble	k	r	00 ~ 64
02. Input Select	x	b	(▶ p.141)	15. Bass	k	s	00 ~ 64
03. Aspect Ratio	k	c	(▶ p.141)	16. Balance	k	t	00 ~ 64
04. Screen Mute	k	d	(▶ p.141)	17. Color Temperature	k	u	00 ~ 02
05. Volume Mute	k	e	00 ~ 01	18. ISM Method	j	p	(▶ p.142)
06. Volume Control	k	f	00 ~ 64	19. Energy Saving	j	q	(▶ p.142)
07. Contrast	k	g	00 ~ 64	20. Auto Configuration	j	u	(▶ p.142)
08. Brightness	k	h	00 ~ 64	22. Channel Add/Del	m	b	00 ~ 01
09. Color	k	i	00 ~ 64	23. Key	m	c	(▶ p.143)
10. Tint	k	j	00 ~ 64	24. Backlight	m	g	00 ~ 64
11. Sharpness	k	k	00 ~ 64				
12. OSD Select	k	l	00 ~ 01				
13. Remote Control Lock Mode	k	m	00 ~ 01				

Only Plasma TV Model (points to rows 18, 19, 20, 22, 23, 24)

Only LCD TV Model (points to row 24)

	COMMAND1	COMMAND2	DATA00 (Hexadecimal)	DATA01 (Hexadecimal)	DATA02 (Hexadecimal)	DATA03 (Hexadecimal)	DATA04 (Hexadecimal)	DATA05 (Hexadecimal)
21. Channel Tuning	m	a	physical program high	major program low	major low	minor high	minor low	attribute

Transmission / Receiving Protocol

Transmission

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

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

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

[Set ID] : You can adjust the set ID to choose desired TV ID number in Setup menu. Adjustment range is 1 ~ 99. When selecting Set ID '0', every connected the TV is controlled. Set ID is indicated as decimal (1 ~ 99) on menu and as Hexa decimal (0x0~0x63) 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 01: DTV (Cable)

Data 10: Analog (Antenna) Data 11: Analog (Cable)

Data 20: AV1 Data 21: AV2

Data 40: Component1 Data 41: Component 2

Data 60: RGB-PC Data 90: HDMI1

Data 91: HDMI2 Data 92: HDMI3

Data 93: HDMI4

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 09: Just scan

02: 16:9 10: Cinema Zoom1

04: Zoom ⋮

06: Set by program 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 ~ Max: 64 (*transmit by Hexadecimal code)

*Refer to 'Real data mapping'.

Acknowledgement [f][] [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 ~ Max: 64 (*transmit by Hexadecimal code)

*Refer to 'Real data mapping'.

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 ~ Max: 64 (*transmit by Hexadecimal code)

*Refer to 'Real data mapping'.

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 ~ Max: 64 (*transmit by Hexadecimal code)

*Refer to 'Real data mapping'.

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 ~ Green: 64 (*transmit by Hexadecimal code)

*Refer to 'Real data mapping'.

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 ~ Max: 64 (*transmit by Hexadecimal code)

*Refer to 'Real data mapping'.

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

APPENDIX

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 set.

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 ~ Max: 64 (*transmit by Hexadecimal code)

*Refer to 'Real data mapping'.

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 ~ Max: 64 (*transmit by Hexadecimal code)

*Refer to 'Real data mapping'.

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 ~ Max: 64 (*transmit by Hexadecimal code)

*Refer to 'Real data mapping'.

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

17. Color Temperature (Command: k u)

To adjust color temperature.

You can also adjust color temperature in the PICTURE menu.

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

Data 00: Medium 01: Cool 02: Warm

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

18. ISM Method (Command: j p)

(For Plasma TV)

To avoid having a fixed image remain on screen.

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

Data 02: Orbiter 04: White Wash

08: Normal 20: Color Wash

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

19. Energy Saving (Command: j q)

To control the energy saving function.

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

Data 00: Energy saving - off

01: Energy saving - Minimum

02: Energy saving - Medium

03: Energy saving - Maximum

04: Energy saving - Auto

05: Energy saving - Screen off

For LCD TV

10: Intelligent Sensor - Low

11: Intelligent Sensor - Middle

For Plasma TV

12: Intelligent Sensor - High

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

20. 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]

21. 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 sub-channel. 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

NTSC air: 02~45, NTSC cable: 01, 0E~7D

ATSC air: 01~45, ATSC cable: 01~87

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.

Data5:

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 which 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]
```

22. 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]

23. Key (Command: m c)

To send IR remote control code.

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

See page 115.

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.

24. Backlight (Command: m g)

(For LCD TV)

To adjust screen backlight.

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

Data Min:00 ~ Max:64 (*transmit by Hexadecimal code)

*Refer to 'Real data mapping'.

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

APPENDIX

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APPENDIX

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one line to give the program's name and a brief idea of what it does.

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Version 2.1, February 1999

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(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

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Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the library.

In addition, mere aggregation of another work not based on the library with the library (or with a work based on the library) on a volume of a storage or distribution medium does not bring the other work under the scope of this license.

APPENDIX

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This option is useful when you wish to copy part of the code of the library into a program that is not a library.

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However, linking a “work that uses the library” with the Library creates an executable that is a derivative of the Library (because it contains portions of the library), rather than a “work that uses the library”. The executable is therefore covered by this license. Section 6 states terms for distribution of such executable.

When a “work that uses the library” uses material from a header file that is part of the library, the object code for the work may be a derivative work of the library even though the source code is not.

Whether this is true is especially significant if the work can be linked without the library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessories, and small macros and small inline functions (ten lines or less in length), then the use of

the object file is unrestricted, regardless of whether it is legally a derivative work. (Executable containing this object code plus portions of the library will still fall under Section 6.)

Otherwise, if the work is a derivative of the library, you may distribute the object code for the work under the terms of Section 6. Any executable containing that work also fall under Section 6, whether or not they are linked directly with the library itself.

6. As an exception to the sections above, you may also combine or link a “work that uses the library” with the library to produce a work containing portions of the library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer’s own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the library is used in it and that the Library and its use are covered by this license. You must supply a copy of this license. If the work during execution displays copyright notices, you must include the copyright notice for the library among them, as well as a reference directing the user to the copy of this license. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable “work that uses the Library”, as object code and/or source code, so that the user can modify the library and then relink to produce a modified executable containing the modified library. (It is understood that the user who changes the contents of definitions files in the library will not necessarily be able to recompile the application to use the modified definitions.)
- b) Use a suitable shared library mechanism for linking with the library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user’s computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.
- c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6, above, for a charge no more than the cost of performing this distribution.
- d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the “work that uses the library” must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the library together in an executable that you distribute.

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Version 1.1

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You must cause all covered code to which you contribute to contain a file documenting the changes You made to create that covered code and the date of any change. You must include a prominent statement that the modification is derived, directly or indirectly, from original code provided by the initial developer and including the name of the initial developer in (a) the source code, and (b) in any notice in an executable version or related documentation in which you describe the origin or ownership of the covered code.

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