



LG

Life's Good

OWNER'S MANUAL

LED LCD TV / PLASMA TV

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

LED LCD TV MODELS

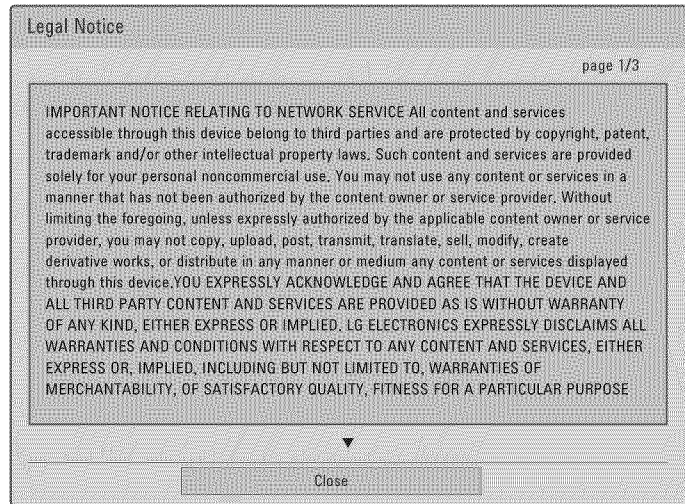
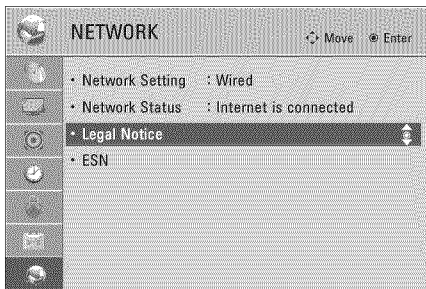
47LX9500
55LX9500
47LEX8
55LEX8
60LEX9
72LEX9

PLASMA TV MODELS

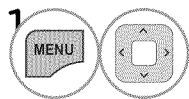
50PK950
60PK950

NETWORK

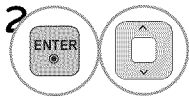
LEGAL NOTICE



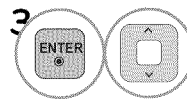
NETWORK



Select **NETWORK**.



Select **Legal Notice**.



Check Legal notice.



Return to TV viewing.

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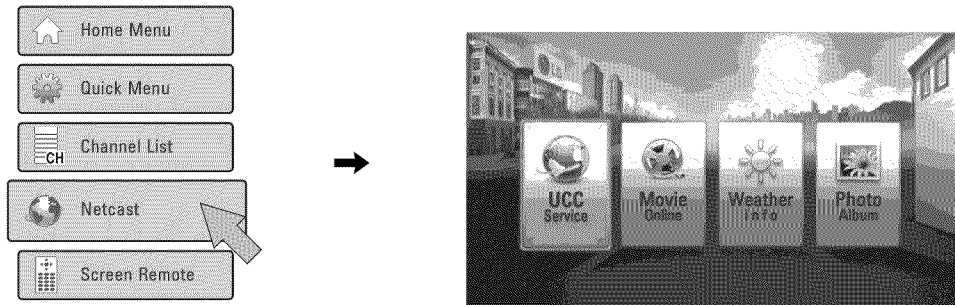
NETCAST

NETCAST MENU

These services are provided by separate Content Provider.
NETCAST menu source can differ by country.

What is a NETCAST?

Stream movies, TV shows and video, or get up to the minute news, stock information or weather updates directly to your TV.



1. Select **NetCast**.
2. Select **NETCAST** menu option.
Enjoy **Online Service**.

- To view the owner's manual that provided by the Content Provider, visit our website at <http://www.lg.com>.
- To see the activation method of Yahoo!, Netflix, or Vudu, click the **Yahoo!**, **Netflix**, **Vudu** in the CD manual (For USA).
- You can also select the **NETCAST** using the NETCAST button on the TV remote control.

■ Yahoo! (For USA)

Yahoo! TV Widgets give you the best of the Internet in perfect harmony with the simplicity and reliability of your TV. TV Widgets deliver a Cinematic internet™ experience by converting your favorite web services for viewing on the TV.

■ Netflix (For USA)

You can instantly watch movies (quite a few new releases) & TV episodes from Netflix streamed over the internet to your TV.

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

Note that this service is provided by the Content Provider, Netflix. It is dependent on Netflix to provide the data.

■ Vudu (For USA)

In order to make rental/purchase transactions on the Vudu service, a user must create an account on vudu.com.

That account is linked to a specific device, via a process called "activation". It is possible to have multiple devices associated with a single Vudu account.

Note that this service is provided by the Content Provider, Vudu. It is dependent on Vudu to provide the data.

■ YouTube

YouTube is a video sharing website where users can upload, view, and share video clips.

■ Picasa

Picasa is an application from Google that appreciates digital image files.

NOTE

- ▶ The videos list searched from the TV may differ with the list searched from a web browser on PC.
- ▶ The settings of this TV do not affect the YouTube's playback quality.
- ▶ The playback of videos may be paused, stopped or buffering occurring often depending on your broadband speed.
- ▶ For service that requires log in, join the applicable service on the website using the PC and log in through the TV to enjoy various additional functionalities.
- ▶ When you set the city you want with Setup by pressing the red button, the background of NetCast will be set to the weather of the selected city.
- ▶ For Plasma TV: If there is no user action 2 minutes following freezing image or video on screen, the screensaver will activate itself preventing fixed image remaining on screen.

NETCAST

YOUTUBE

YouTube is a video sharing website where users can upload, view, and share video clips.

Screen Components

- ① YouTube menu
- ② Videos list



	Set the option menu.
	Return to Netcast menu.
	Return to TV viewing.

NOTE

- ▶ When you press the Q.menu button while the Youtube video is playing in full mode, you can set the video options.

YouTube menu

Home: You can watch the popular video in real time.

Featured: The featured videos list will be displayed.

Popular: The best rated videos list from YouTube server will be displayed.

Most Viewed: The most viewed videos list will be displayed.








Search: The keypad/keyboard menu will be displayed.

History: The videos list that you previously played will be displayed. Maximum of 20 videos can be stored.

Favorites: In sign-in status, this menu will be displayed the videos list that is arranged in the YouTube server with your account (Some videos may not appear on the **Favorites** list, even if the videos are arranged in the server).

Sign in (Sign Out): Displays the keypad/keyboard menu to sign in or returns to the sign-out status.

Using the remote control

	Stops the video and displays related videos list.
	Pause the video while it is playing.
	Play the selected video.
	Skip the playback forward or backward.
	Set the option menu.
	Return to Netcast menu.
	Return to TV viewing.

NETCAST





PICASA

Picasa is a photo organizing or sharing website where users can upload, view, and share photos.

Screen Components

- ① Picasa menu
- ② Photo list



	Navigate the desired photos.
	The selected photo file is displayed.
	Return to Netcast menu.
	Return to TV viewing.

Picasa menu

Home: The featured photos list will be displayed.

Friends: You can register users with the pictures you want as friends. You can add up to 10 friends.

Search: The keypad/keyboard menu will be displayed.

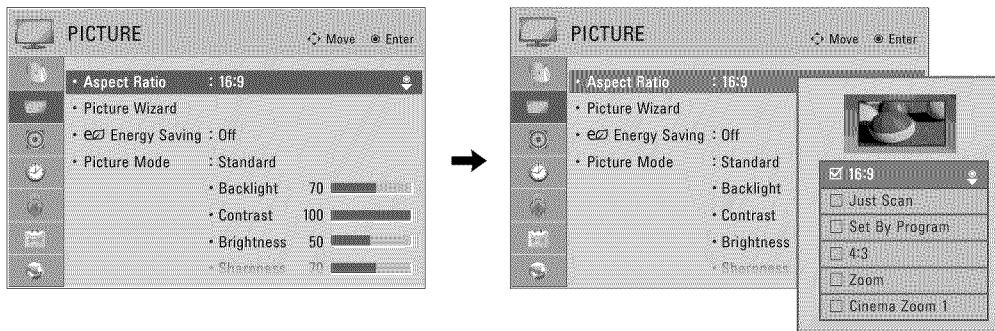
My Photos: You can view the pictures uploaded to the Web. This function can only be used when you sign in.


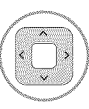

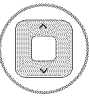

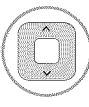


Sign in (Sign Out): Displays the keypad/keyboard menu to sign in or returns to the sign-out status.

PICTURE CONTROL

PICTURE SIZE (ASPECT RATIO) CONTROL


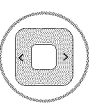

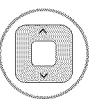
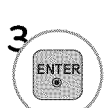
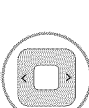
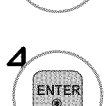
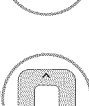
This feature lets you choose the way an analog picture with a 4:3 aspect ratio is displayed on your TV. You can select a different aspect ratio depending on input source (analog broadcasting, digital broadcasting, aux).



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

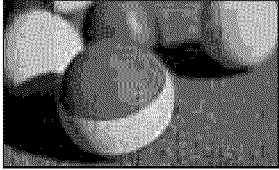
- You can also adjust **Aspect Ratio** in the **Q.MENU**.
- Press the **RATIO** button repeatedly to select the desired picture format.

When adjusting Zoom or Cinema Zoom in Q.MENU

- 1   Select **Aspect Ratio**.
- 2   Select **Zoom** or **Cinema Zoom**.
- 3   Adjust proportion of Zoom or Cinema Zoom. The Cinema Zoom adjustment range is 1-16.
- 4   Move the image on the screen.

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/Cable DTV/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)

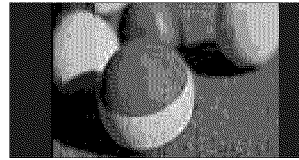


(16:9 → 16:9)



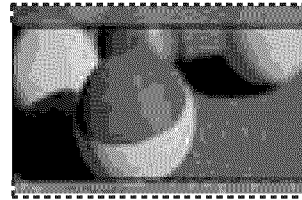
4:3

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.

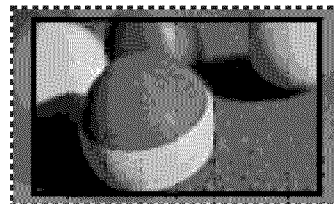


Cinema Zoom

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

This enlarges an image with cinemascope aspect ratio (2.35:1) without distortion.

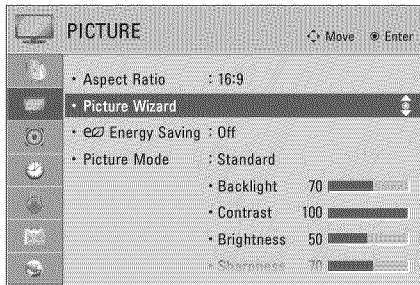
Note: When enlarging or reducing the picture, the image may become distorted.



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.



1 Select **PICTURE**.

2 Select **Picture Wizard**.

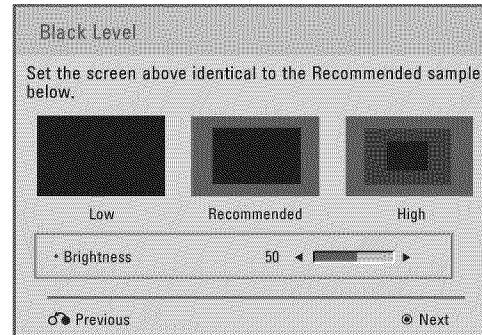


3 Adjust **Picture Wizard**.

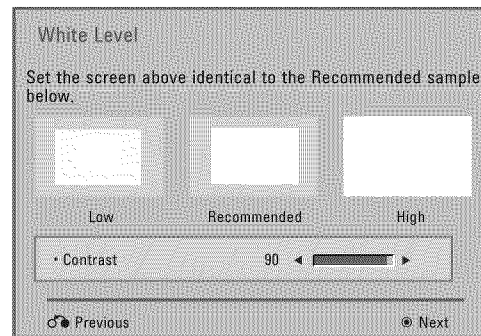


4 Adjust **Standard/Preferred**.

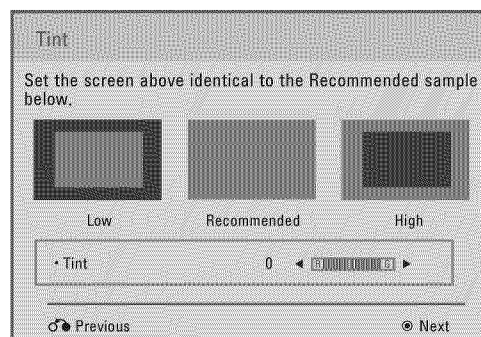
■ If you select **Preferred**, OSD (On Screen Display) differ from that shown in this manual.



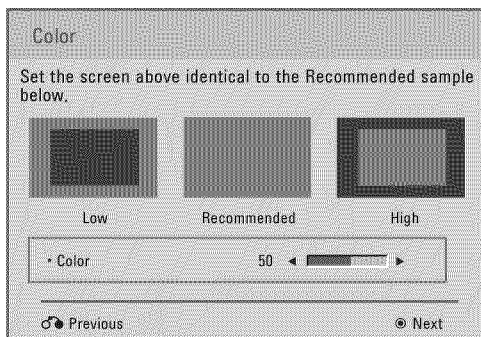
5 Adjust **Black Level**.



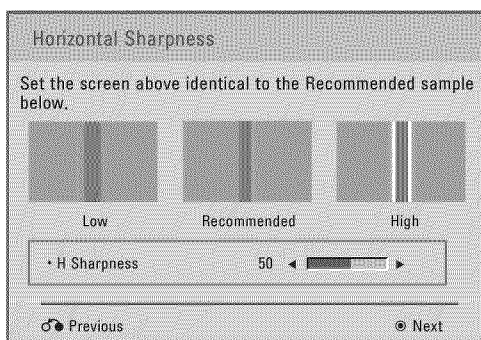
6 Adjust **White Level**.



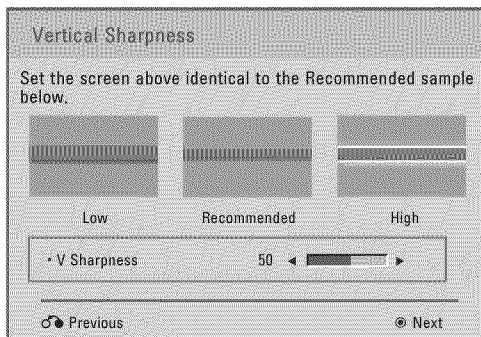
7 Adjust **Tint**.



8   Adjust **Color**.

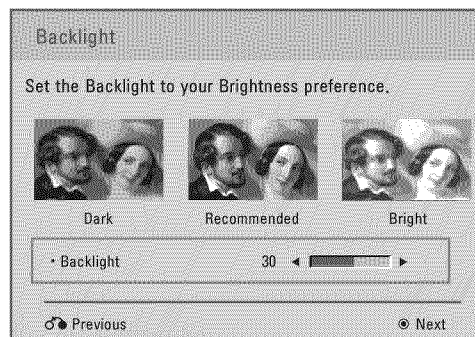


9   Adjust **Horizontal Sharpness**.



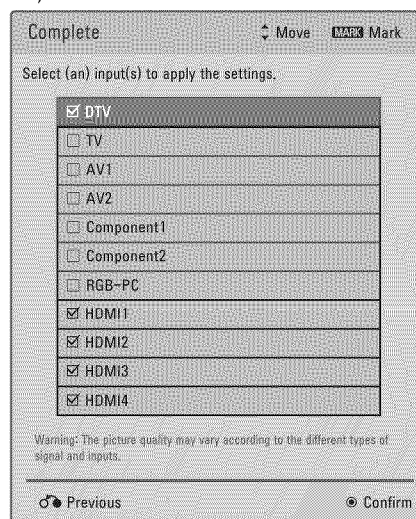
10   Adjust **Vertical Sharpness**.



For LED LCD TV



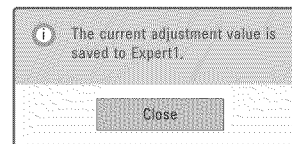
11   Adjust **Backlight**.


i.e)



12   Select input source to apply the settings.

13  Save.



14  Finish the Picture Wizard.

- If you stop the Picture Wizard 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.
- To reset changes made by **Picture Wizard**, operate **Picture Reset** when **Picture Mode** is on **Expert1**.

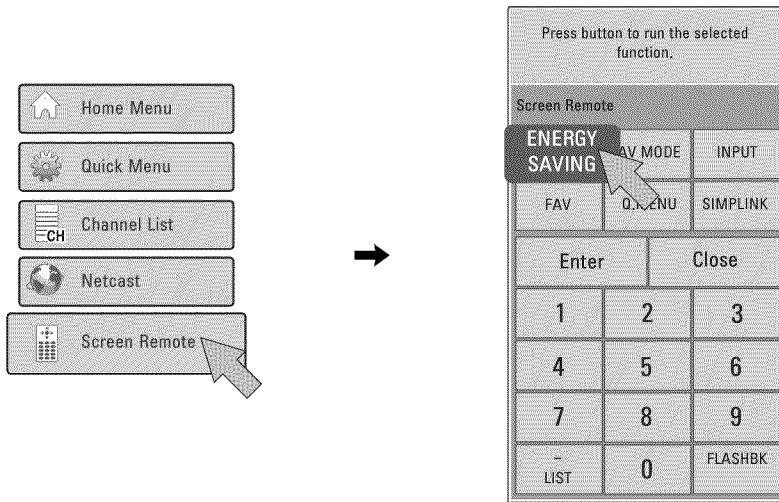
PICTURE CONTROL

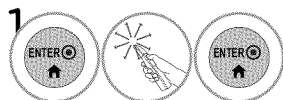
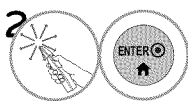
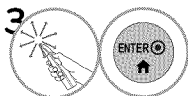
e ENERGY SAVING

It reduces the TV's power consumption.

The default factory setting 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 adjusting the **Picture Mode**.

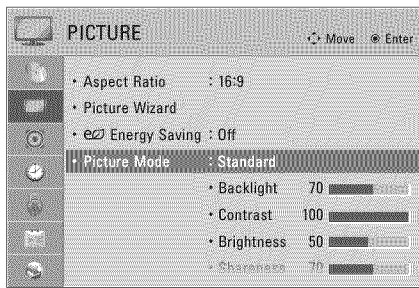


-  Select **Screen Remote**.
-  Select **ENERGY SAVING**.
-  Select **ENERGY SAVING** repeatedly to select your desired menu option.

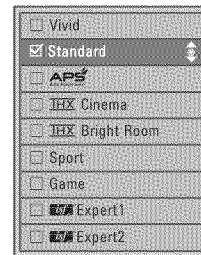
- When selecting **Screen off**, the screen will turn off after 3 seconds. Pressing any button of the remote controller will turn on the screen again.
- If you adjust "**Energy Saving-Auto, Maximum**", **Backlight** option will not work (For LED LCD TV).
- When selecting "**Energy Saving - Off, Minimum, or Medium**", you can adjust **Backlight** feature (For LED LCD TV).
- If you adjust "Energy Saving-Intelligent Sensor", Sharpness, Color, Color Temperature feature will not work (For Plasma TV).
- When selecting **Auto**, **Backlight** is automatically adjusted through **Intelligent Sensor** according to the surrounding conditions. (For LED LCD TV)
- When selecting **Off**, **Energy Saving** is not used.
- Press the **ENERGY SAVING** button repeatedly to select the appropriate Energy Saving.
- You can also adjust **Energy Saving** in the **PICTURE** menu.
- **Intelligent Sensor**: The most suitable picture is automatically adjusted according to the surrounding conditions (For Plasma TV).

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.



Other models



Plasma TV

- 1 Select **PICTURE**.
- 2 Select **Picture Mode**.
- 3 Select your desired menu option.

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

- **Vivid, Standard, 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.
- **APS (Auto Power Saving):** This is the mode to maximize reducing the power consumption without hurting the picture quality. This feature is available only on Plasma TV.
- **Cinema:** This mode optimizes video for watching movies.
- **THX Cinema:** This is cinema quality mode to provide you the experience of watching a movie at home. The user will be able to 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.

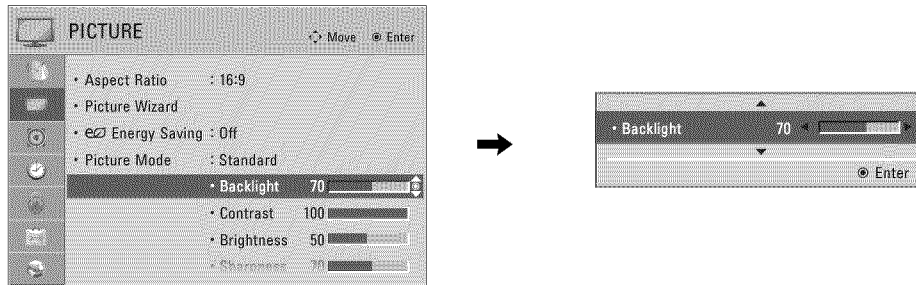
When selecting **THX Cinema**, Aspect ratio changes to Just scan.


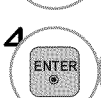
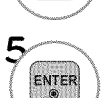
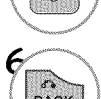
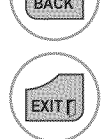
- **THX Bright Room:** This is the specification to optimize TV viewing in Bright Room. When selecting **THX Bright Room**, Aspect ratio changes to Just scan.
- **Sport:** This is the video mode to emphasize dynamic video and primary color (e.g. white, uniform, grass, sky blue etc.) by realizing the 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 (For LED LCD TV).
- When selecting **Intelligent Sensor**, it changes Backlight, contrast, brightness, sharpness, color, tint and color temperature automatically (For LED LCD TV).
- **Intelligent Sensor:** The most suitable picture is automatically adjusted according to the surrounding conditions.

PICTURE CONTROL

MANUAL PICTURE ADJUSTMENT - USER MODE

Adjust the picture appearance to suit your preference and viewing situations.

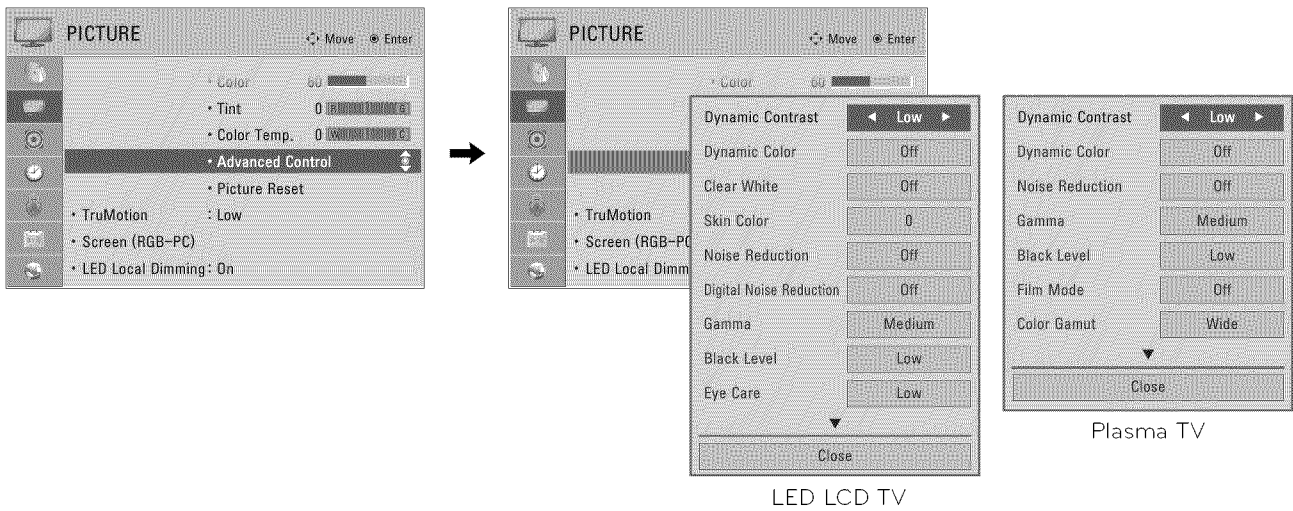











-   Select **PICTURE**.
-   Select **Picture Mode**.
-   Select your desired menu option.
-   Select **Backlight** (For LED LCD TV), **Contrast**, **Brightness**, **Sharpness**, **Color**, **Tint**, **Color Temp.**, or **Advanced Control**.
-   Make appropriate adjustments.
-  Return to the previous menu.
-  Return to TV viewing.

- **Backlight** (For LED LCD TV): This function adjusts the brightness of the backlight behind the LCD screen. Adjusting the backlight is recommended when setting the brightness of the TV. When decreasing the backlight, the brightness of the black becomes darker without any loss in video signal and the power consumption is reduced.
- **Backlight** can only be adjusted in "Energy Saving - Off, Minimum, or Medium".
- **Contrast**: Increase or decrease the gradient of the video signal. You may use Contrast when the bright part of the picture is saturated.
- **Brightness**: Adjusts the base level of the signal in the picture. 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.
- **Color Temp.**: Set to warm to enhance hotter colors such as red, or set to cool to enhance cooler colors such as blue.

PICTURE IMPROVEMENT TECHNOLOGY (ADVANCED CONTROL)

Advanced Control allows you to adjust some of the advanced features of your LG display. To reset to the factory default after making adjustments to each input source, execute the **Picture Reset** function for each Picture Mode.

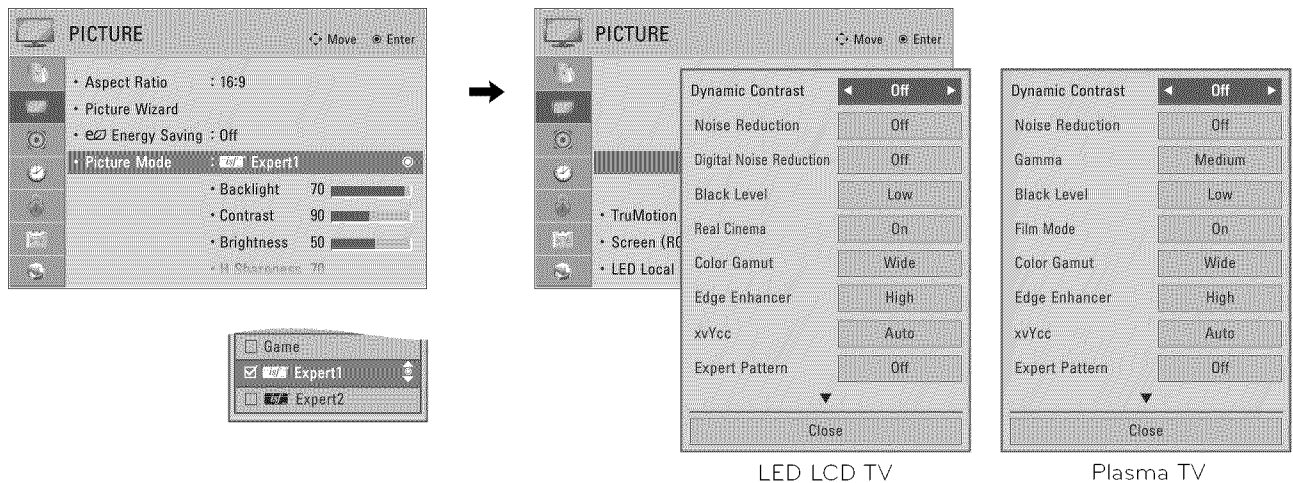


- 1   Select **PICTURE**.
- 2   Select **Advanced Control**.
- 3   Select your desired menu option.
- 4  Make appropriate adjustments.
- 5  Return to the previous menu.
-  Return to TV viewing.

PICTURE CONTROL

EXPERT PICTURE CONTROL

Expert1 and Expert2 provide even more advanced picture settings for users. Typical used by professionals for calibrating the TV.




- 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.

*This feature is not available for all models.

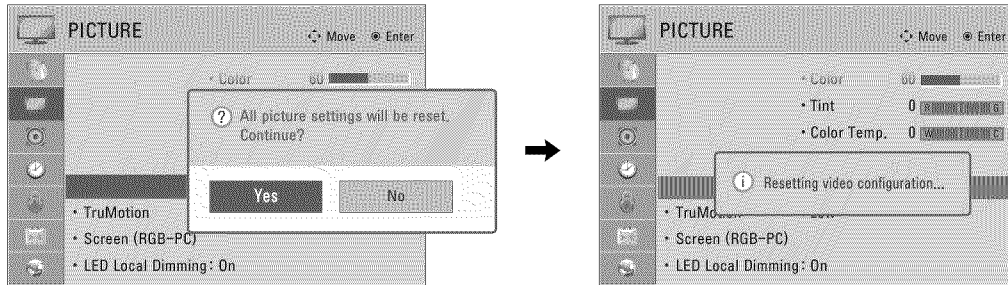
Dynamic Contrast	<ul style="list-style-type: none"> Adjusts the contrast to keep it at the best level according to the brightness of the screen. The picture is improved by making bright parts brighter and dark parts darker.
Dynamic Color	<ul style="list-style-type: none"> Adjusts screen colors so that they look livelier, richer and clearer. This feature enhances hue, saturation and luminance so that red, blue, and green look more vivid.
Skin Color	<ul style="list-style-type: none"> It detects the skin area of video and adjusts it to express a natural skin color.
Noise Reduction	<ul style="list-style-type: none"> Reduces screen noise without compromising video quality.
Digital Noise Reduction	<ul style="list-style-type: none"> Removes noise caused by compressing video.
Gamma	<ul style="list-style-type: none"> You can adjust brightness of dark areas and middle gray level areas of the picture. Low : Make brighter and middle gray level areas of the picture brighter. Medium : Express original picture levels. High: Make dark and middle gray level areas of the picture darker.
Black Level	<p>Low: The reflection of the screen gets darker. High: The reflection of the screen gets brighter.</p> <ul style="list-style-type: none"> Set black level of the screen to proper level. This function is available in the following modes: TV, AV (NTSC-M), HDMI or Component.
Clear White	<ul style="list-style-type: none"> Make the white area of screen brighter and more white.
Eye Care	<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 enabled in "Picture Mode-Standard, Sports, Game".
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 (fps). 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. This function can also work when TruMotion is off.
Color Gamut	<p>LED LCD TV: Advanced Control Plasma TV: Advanced Control, Expert Control</p> <p>Standard/sRGB: Displays standard set of colors. Wide: Increase number of colors used.</p> <ul style="list-style-type: none"> Maximize the utilization of colors to increase color quality. <p>LED LCD TV: Expert Control</p> <ul style="list-style-type: none"> Displays color domain of the signal. Standard: Displays standard set of colors. Wide: Increase number of colors used. EBU: Mode to display EBU standard color area. SMPTE: Mode to display SMPTE standard color area. BT709: Mode to display BT709 standard color area.



PICTURE CONTROL

Edge Enhancer	<ul style="list-style-type: none"> Show clearer and distinctive yet natural edges in the video.
xvYCC	<ul style="list-style-type: none"> This produces richer colors. This feature represents rich color as much as conventional video signal. This function is enabled in "Picture mode - Cinema / THX Cinema / THX Bright Room,  Expert" when a xvYCC signal is inputted through HDMI.
Color Filter	<ul style="list-style-type: none"> This function filters specific colors in the video. You can use the RGB filter to set color saturation and hue accurately.
Expert Pattern	<ul style="list-style-type: none"> This is a pattern used for expert adjustment. This function is enabled in "Picture mode -  Expert" when you watch DTV.
Color Temperature	<ul style="list-style-type: none"> Adjusts the overall color of the screen by changing the white baseline. <ol style="list-style-type: none"> Gamma : Select 1.9, 2.2, 2.4 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. c-1. Method : 10 Point IRE (LED LCD TV) <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, then 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. c-2. Method : 20 Point IRE (Plasma TV) <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. You can adjust Red, Green or Blue according to each setting. Red/Green/Blue: The adjustment range is -50 - +50. d. Apply to all inputs
Color Management System	<ul style="list-style-type: none"> A 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 disabled in RGB-PC and HDMI-PC mode.

PICTURE RESET

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

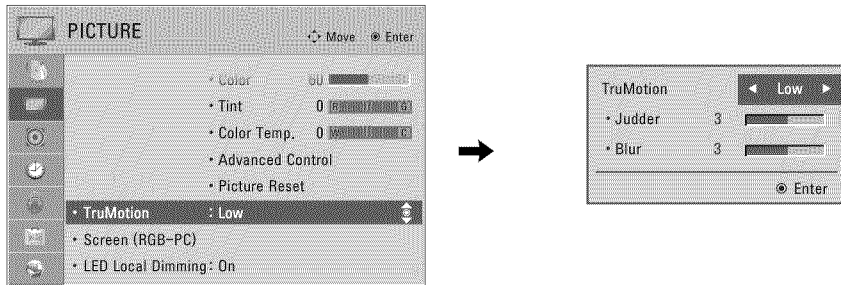



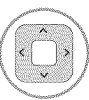

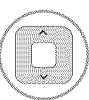
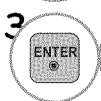
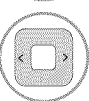
-   Select **PICTURE**.
-   Select **Picture Reset**.
-   Select **Yes**.
-  Initialize the adjusted value.
-  Return to TV viewing.

PICTURE CONTROL

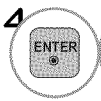
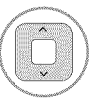
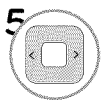


TRUMOTION - For LED LCD TV

Advance video technology that provides clearer, smoother images, even during fast action scenes creating a more stable structure for a crisper picture.



- 1   Select **PICTURE**.
- 2   Select **TruMotion**.
- 3   Select **Low, High, User, or Off**.

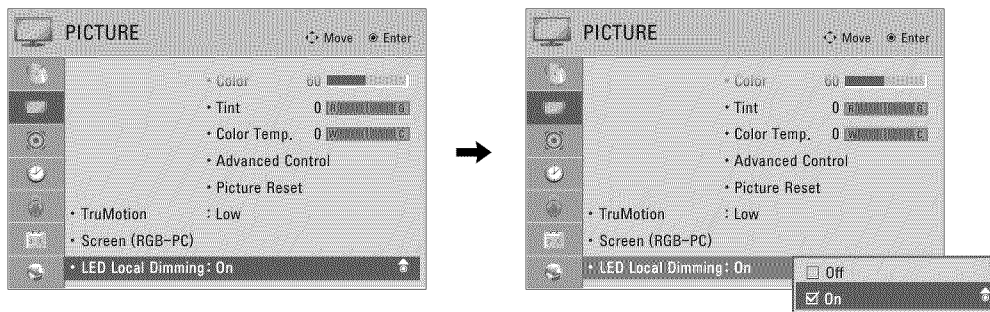
Adjustment for TruMotion (Judder and Blur) with selecting User









- 4   Select **Judder** or **Blur**.
- 5  Make appropriate adjustments.
- 6  Return to the previous menu.
-  Return to TV viewing.

- **Off**: Turn off **TruMotion** operation.
- **Low**: Provides smooth picture movement. Use this setting for standard use.
- **High**: Provides smoother picture movement.
- **Judder**: Adjusts noise of the screen.
- **Blur**: Adjusts after-image of the screen.
- **TruMotion** works with all inputs except PC mode.
- If you enable "**TruMotion**", noise may appear on the screen. If this occurs, set "**TruMotion**" to "**Off**".
- If you select "**Picture Mode-Game**" set "**TruMotion**" to "**Off**".

LED LOCAL DIMMING - For LED LCD TV

After analyzing the signal of the input video by areas of the screen, it adjusts the backlight to improve the contrast ratio. This feature is disabled in "Picture Mode-Game".

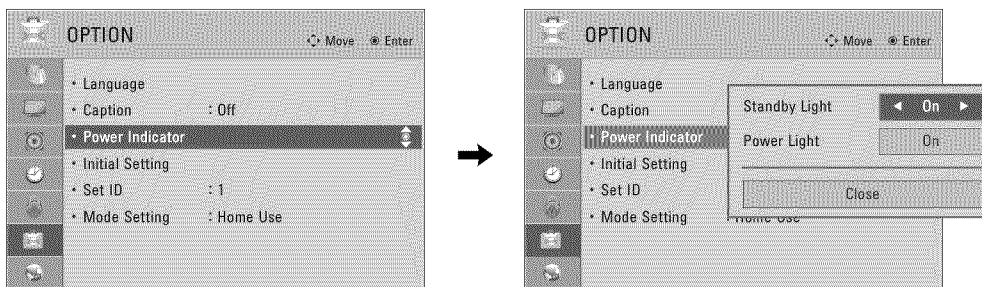




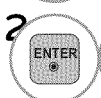



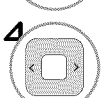


- 1   Select **PICTURE**.
- 2   Select **LED Local Dimming**.
- 3   Select **On** or **Off**.
- 4  Return to the previous menu.
-  Return to TV viewing.

PICTURE CONTROL

POWER INDICATOR - For LED LCD TV

Adjust the power/standby indicator light on the front of the TV.

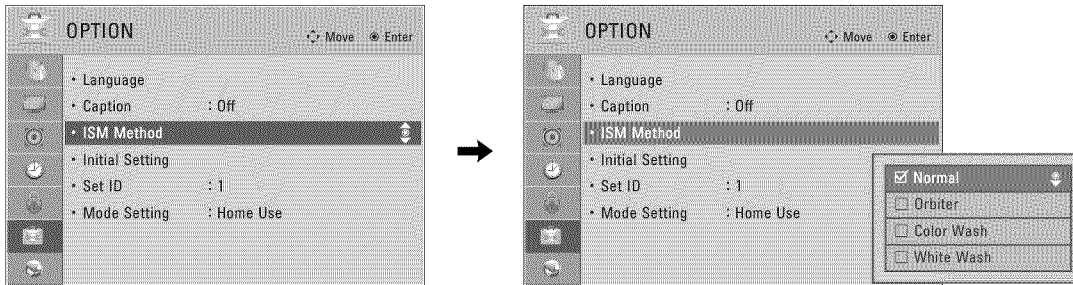









- 1   Select **OPTION**.
- 2   Select **Power Indicator**.
- 3   Select **Standby Light** or **Power Light**.
- 4  Select your desired options.
- 5  Return to the previous menu.
-  Return to TV viewing.

- **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.
- If you select 3D mode, "**Power Indicator**" is turned off automatically (Except 50/60PK950).

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 TV viewing.

- **Normal:** If image sticking is never a problem, ISM is not necessary - set to Normal.
- **Orbiter:** To avoid a ghost image on the screen, the image will move every 2 minutes to help prevent ghost images. However, it is best not to allow any fixed image to remain on the screen.
- **Color Wash:** The color block with the screen moved a little and the white pattern are 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

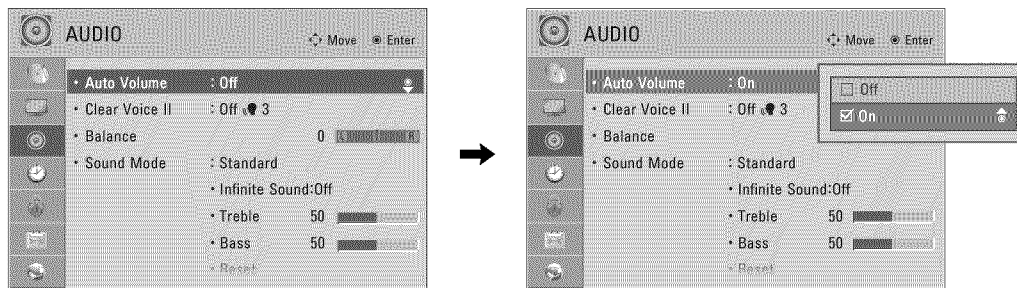
- ▶ An excessive ghosted image may be impossible to clear entirely with White Wash. To return to normal viewing, press the any button.





SOUND & LANGUAGE CONTROL

AUTO VOLUME

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

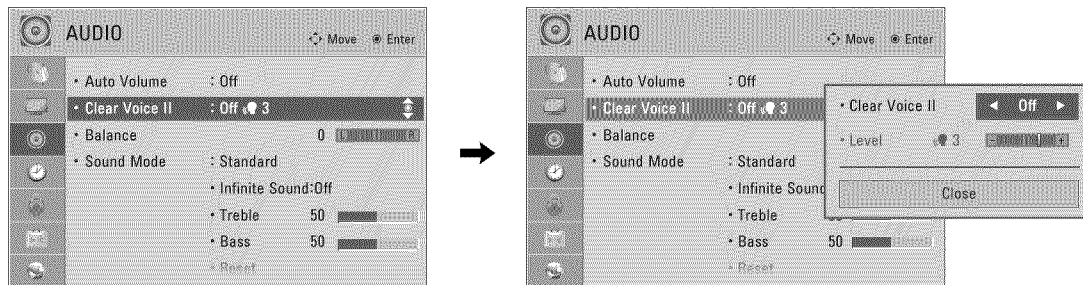
Because each broadcasting station has its own signal conditions, volume adjustment may be needed every time the channel is changed. This feature allows users to enjoy stable volume levels by making automatic adjustments for each program.



-   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.

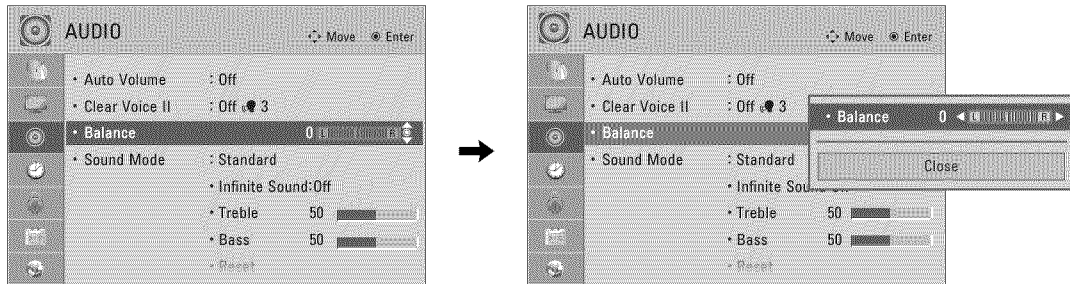
6  Return to the previous menu.


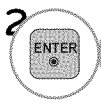
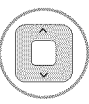
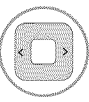

 Return to TV viewing.

SOUND & LANGUAGE CONTROL

BALANCE

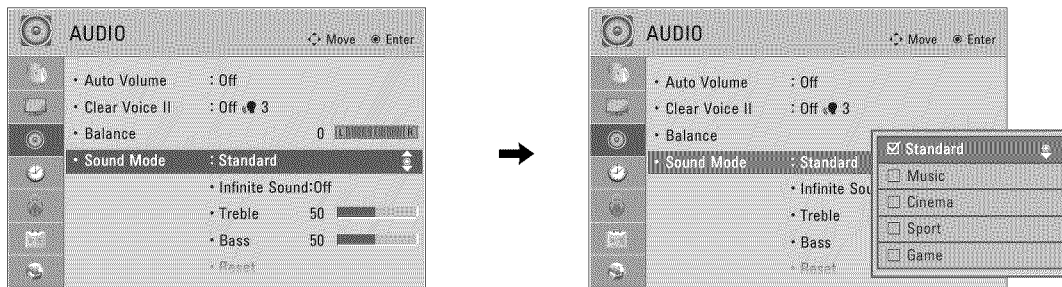
Adjust the left/right sound of speaker to suit your taste and room situations.











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

PRESET SOUND SETTINGS (SOUND MODE)

Sound Mode lets you enjoy the best sound without any special adjustment using factory presets.



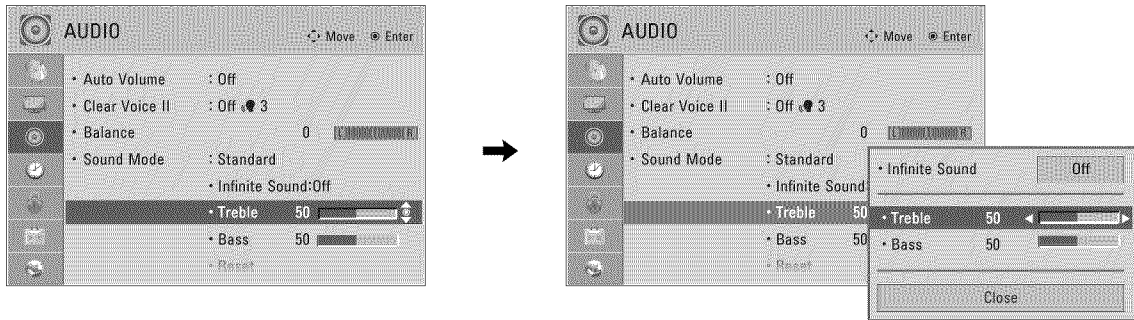
-   Select **AUDIO**.
-   Select **Sound Mode**.
-   Select **Standard, Music, Cinema, Sport, or Game**.
-  Return to the previous menu.
-  Return to TV viewing.













- **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 & LANGUAGE CONTROL

SOUND SETTING ADJUSTMENT - USER MODE

Adjust the sound to suit your taste and room situations.

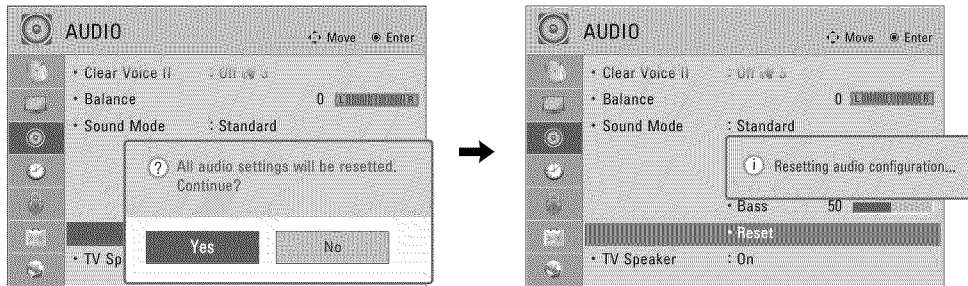









- 1   Select **AUDIO**.
- 2   Select **Sound Mode**.
- 3   Select **Standard, Music, Cinema, Sport, or Game**.
- 4   Select **Infinite Sound, Treble, or Bass**.
- 5   Make appropriate adjustments.
- 6  Return to the previous menu.
-  Return to TV viewing.

- 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", the **Infinite Sound** feature will not operate.
- **Infinite Sound**: Infinite Sound is a patented LG proprietary sound processing technology that strives immersive 5.1 surround sound with just two front speakers.

AUDIO RESET

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

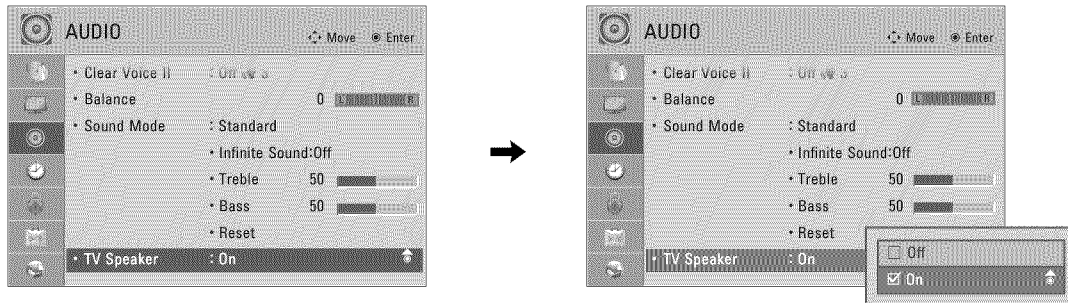



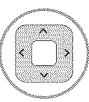


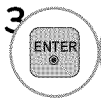
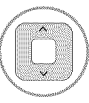


- 1   Select **AUDIO**.
- 2   Select **Reset**.
- 3   Select **Yes**.
- 4  Initialize the adjusted value.
-  Return to TV viewing.

SOUND & LANGUAGE CONTROL

TV SPEAKERS ON/OFF SETUP

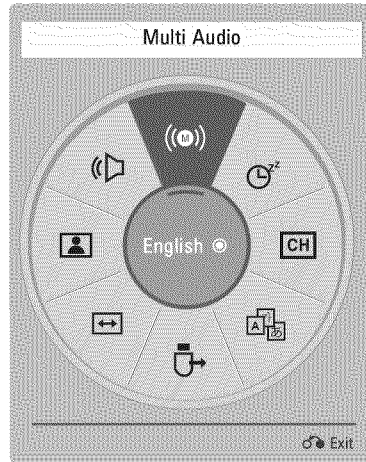
If you wish to use an external Hi-Fi system, turn off the TV's internal speakers.







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

STEREO/SAP BROADCAST SETUP






On analog signals, 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.

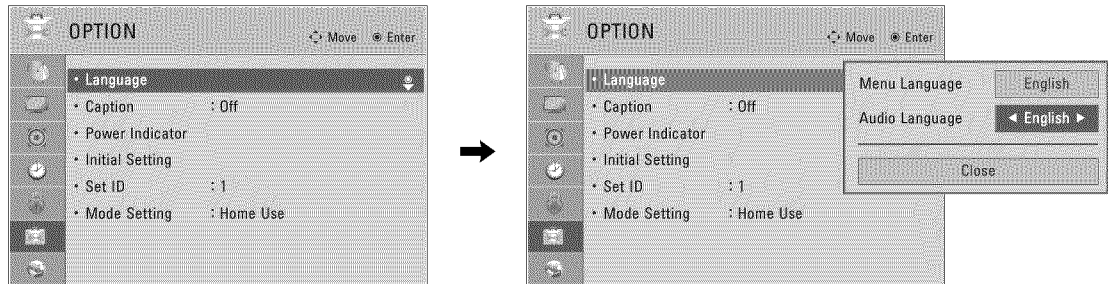
Digital TV


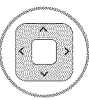

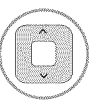
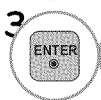

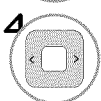


1.   Select **Multi Audio**.
2.   Select other languages.
3.  Return to TV viewing.

SOUND & LANGUAGE CONTROL

AUDIO LANGUAGE

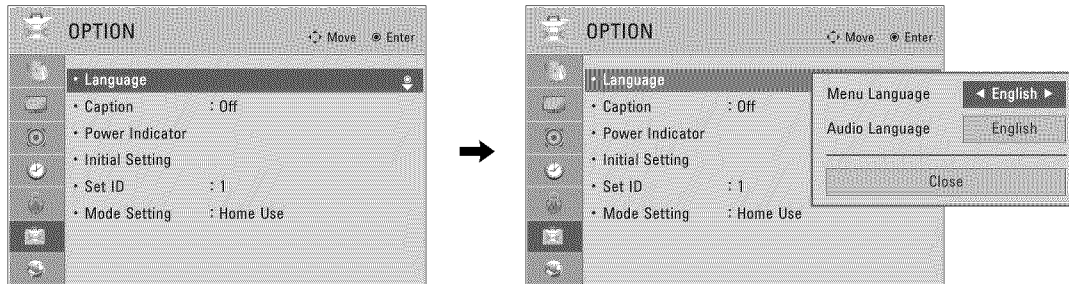
This feature operates only in DTV/Cable DTV mode.












-   Select **OPTION**.
-   Select **Language**.
-   Select **Audio Language**.
-  Select your desired language.
-  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.



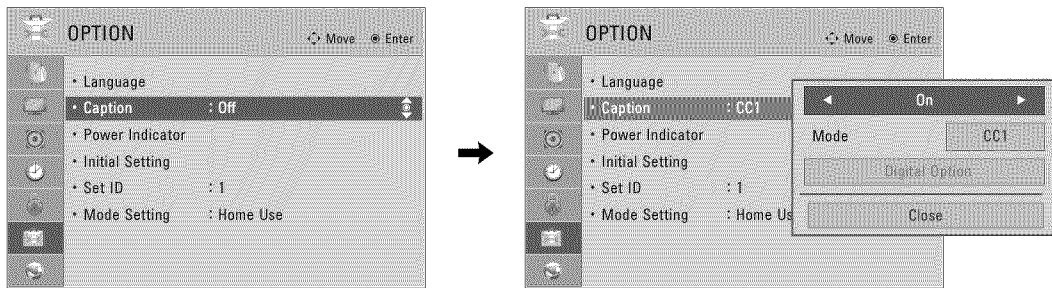
- 1   Select **OPTION**.
- 2   Select **Language**.
- 3   Select **Menu Language**.
- 4  Select your desired language.
From this point on, the on-screen menus will be shown in the selected language.
- 5  Return to the previous menu.
-  Return to TV viewing.




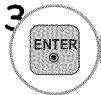

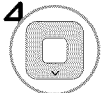



SOUND & LANGUAGE CONTROL

CAPTION MODE

Analog Broadcasting System Captions

Captions are provided to help the hearing impaired 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**

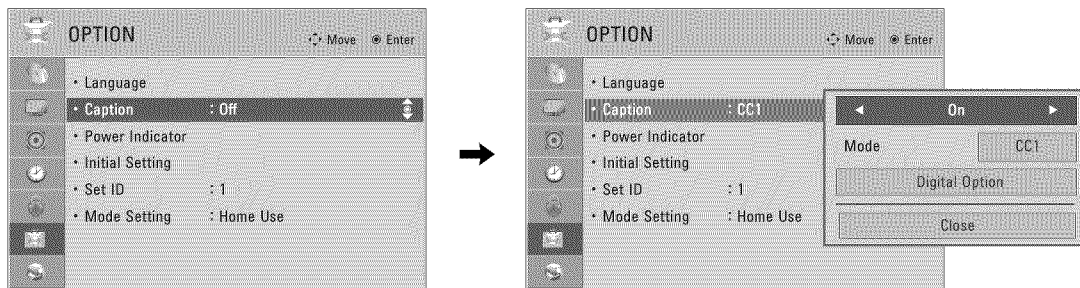
The term for the words that appear in a large black frame and almost cover the entire screen; usually messages provided by the broadcaster.











Digital Broadcasting System Captions

Choose the language you want the DTV/Cable DTV 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**.



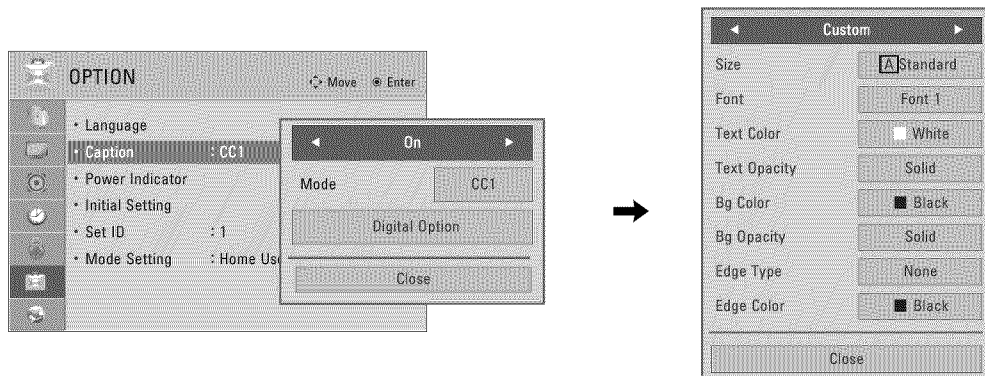
- 1   Select **OPTION**.
- 2   Select **Caption**.
- 3   Select **On**.
- 4   Select **CC1-4, Text1-4, or Service1 - 6**.
- 5  Return to the previous menu.
-  Return to TV viewing.

SOUND & LANGUAGE CONTROL

Caption Option

Customize the DTV/Cable DTV 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

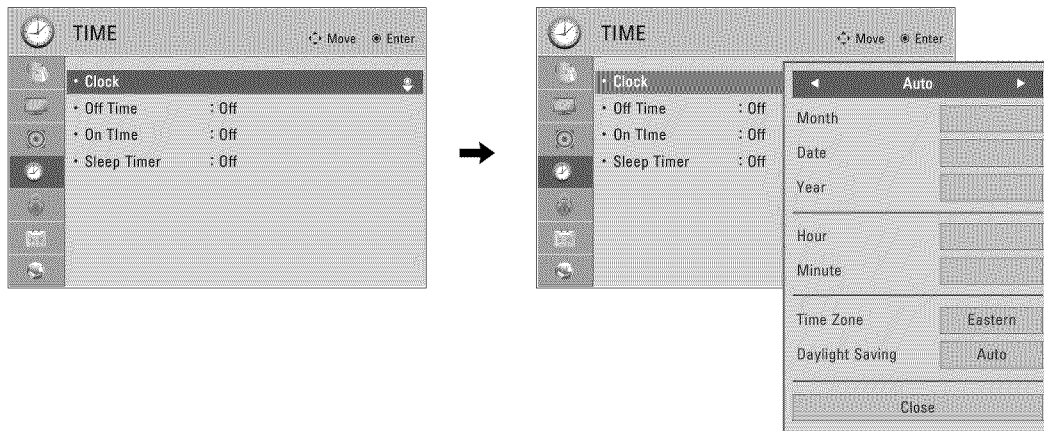
CLOCK SETTING











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.

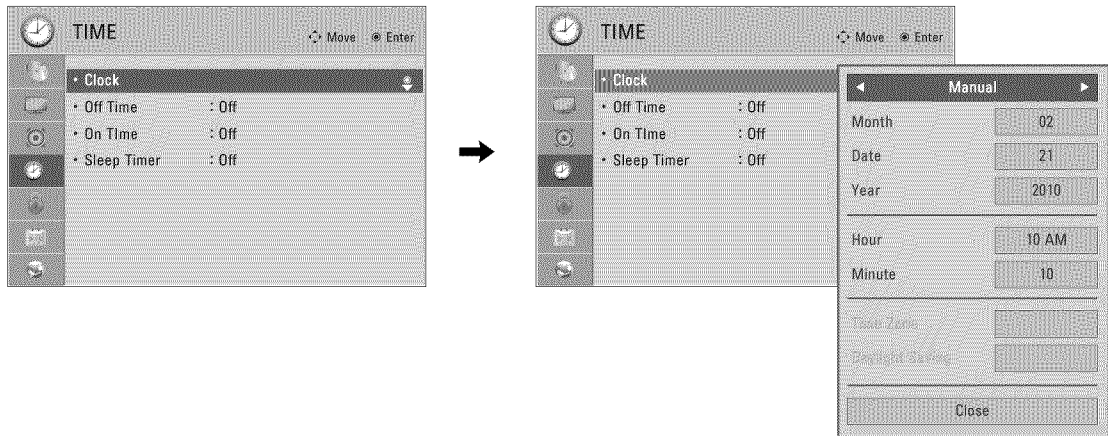












- 1   Select **TIME**.
- 2   Select **Clock**.
- 3   Select **Auto**.
- 4   Select your viewing area time zone.
USA: **Eastern, Central, Mountain, Pacific, Alaska, or Hawaii.**
Canada: **Eastern, Central, Mountain, Pacific, New Foundland, or Atlantic.**
- 5   Select **Auto, Off, or On** (depending on 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.



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

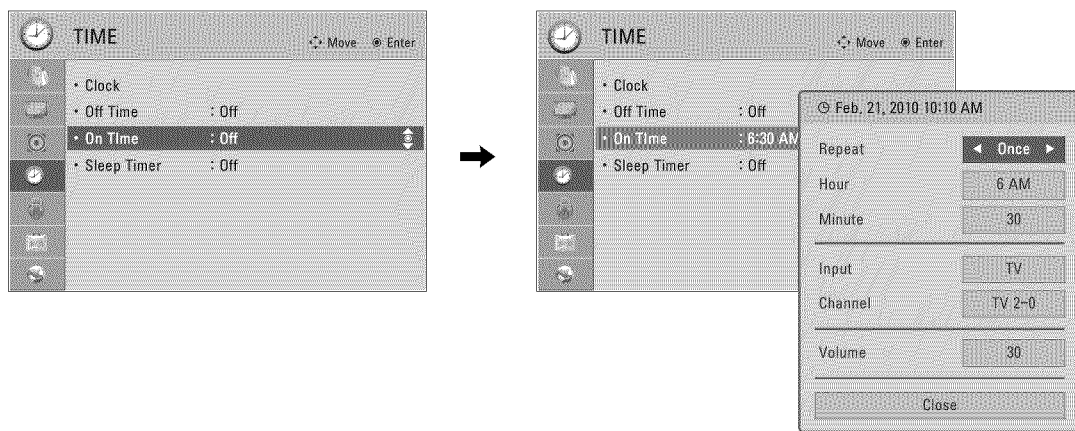
AUTO ON/OFF TIME SETTING

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

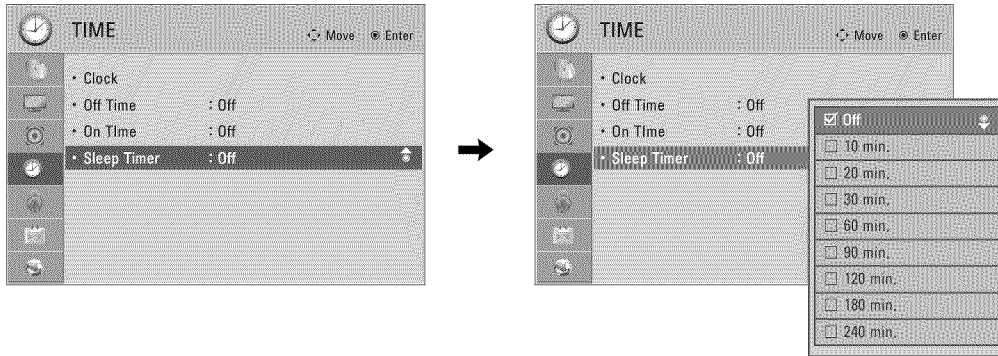
- 1 Select **Input**.
- 2 Select the desired input source.
- 3 When Selecting **TV**: set the channel at turn-on.
- 4 Adjust to sound level at turn-on.








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.



-   Select **TIME**.
-   Select **Sleep Timer**.
-   Make appropriate adjustments.
-  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**.

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)

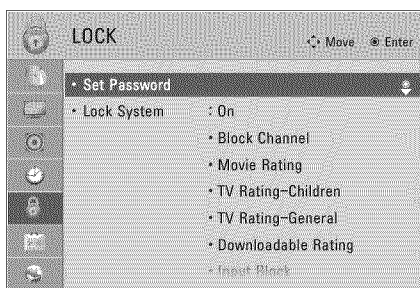
SET PASSWORD & LOCK SYSTEM

Setting up Your Password

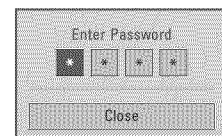
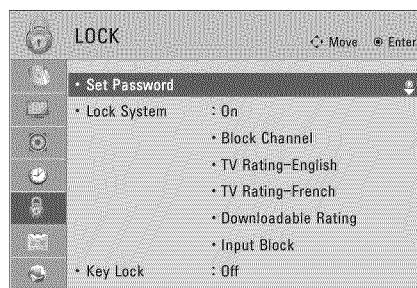
Set up blocking schemes to block specific channels, ratings, and external viewing sources.





A password is required to gain access to this menu.

For USA



For Canada



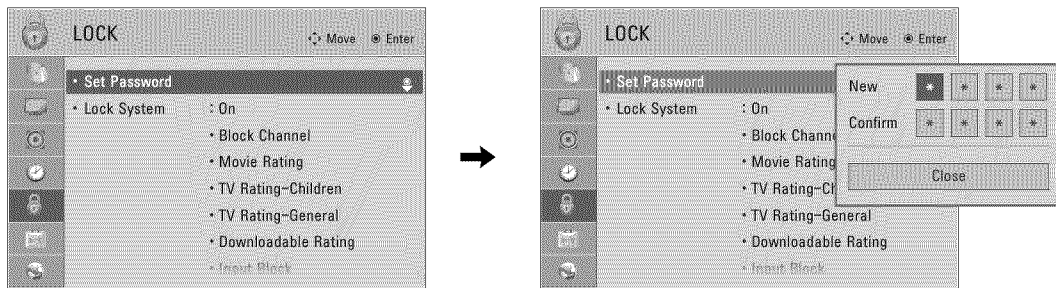
1.    Select **LOCK**.
2.  Input the password.


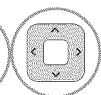

- Enter the password as requested.
- The TV is set up with the initial password "0-0-0-0".
- If you forget your password, press "0-3-2-5" on the remote control.


PARENTAL CONTROL / RATINGS

Set Password



Change the password by inputting a new password twice.





1    Select **LOCK**.

2  Input the password.

3  Select **Set Password**.

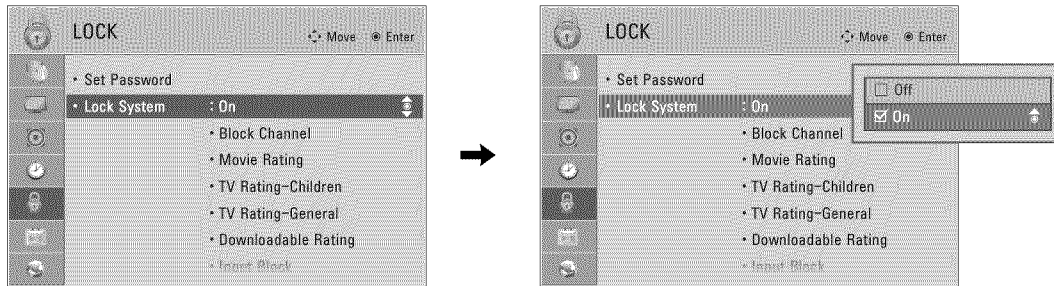
4   Choose any 4 digits for your new password.
As soon as the 4 digits are entered, re-enter the same 4 digits on the **Confirm**.




5  Return to the previous menu.


 Return to TV viewing.

Lock System

Enables or disables the blocking scheme you set up previously.





1    Select **LOCK**.

2  Input the password.

3  Select **Lock System**.

4   Select **On** or **Off**.

5  Return to the previous menu.

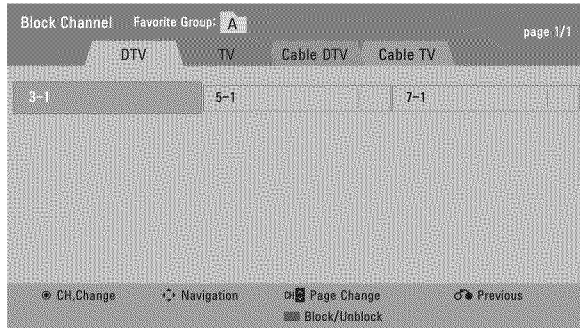
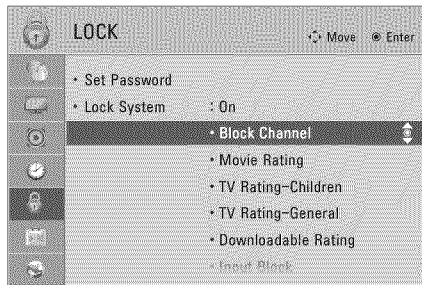
 Return to TV viewing.


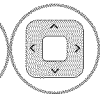

■ When you select **On**, the Lock System is enable.


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    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 to the previous menu.

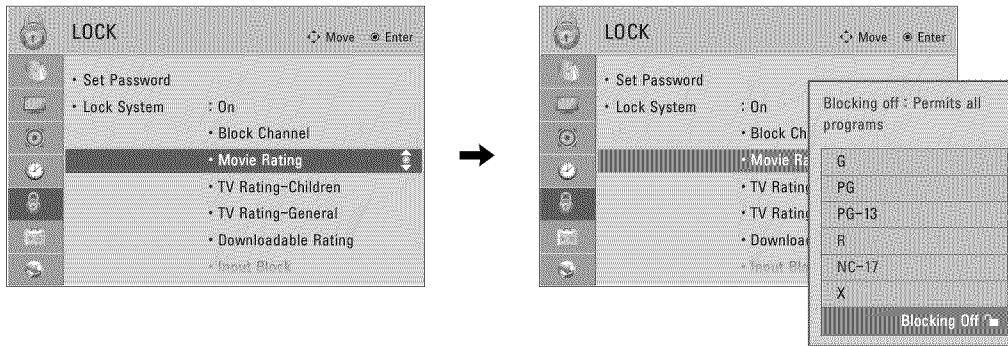
 Return to TV viewing.

■ If a channel is locked, enter the password to unlock 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.



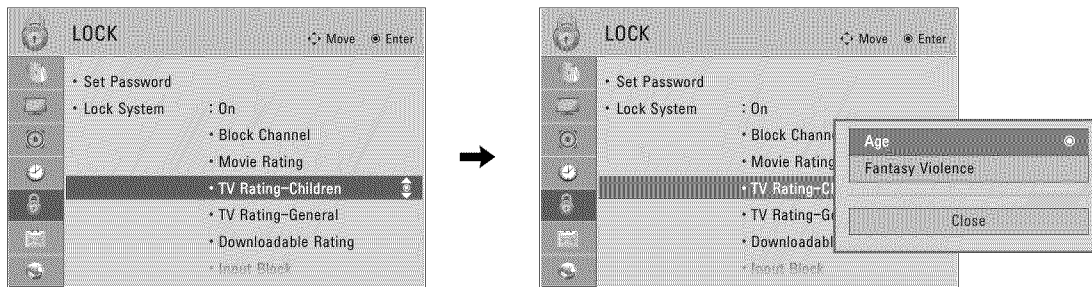
- 1 Select **LOCK**.
- 2 Input the password.
- 3 Select **Movie Rating**.
- 4 Select **G, PG, PG-13, R, NC-17, X, or Blocking Off**.
- 5 Return to the previous menu.
- Return to TV viewing.


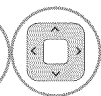

- If **Movie Rating, TV Rating-Children** or **TV Rating-General** is locked, enter the password to unlock it temporarily.
- **G** (General audience)
- **PG** (Parental guidance suggested)
- **PG-13** (Parents strongly cautioned)
- **R** (Restricted)
- **NC-17** (No one 17 and under admitted)
- **X** (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    Select **LOCK**.


2  Input the password.

3  Select **TV Rating-Children**.

4   Select **Age** or **Fantasy Violence**.

5   Select block options.

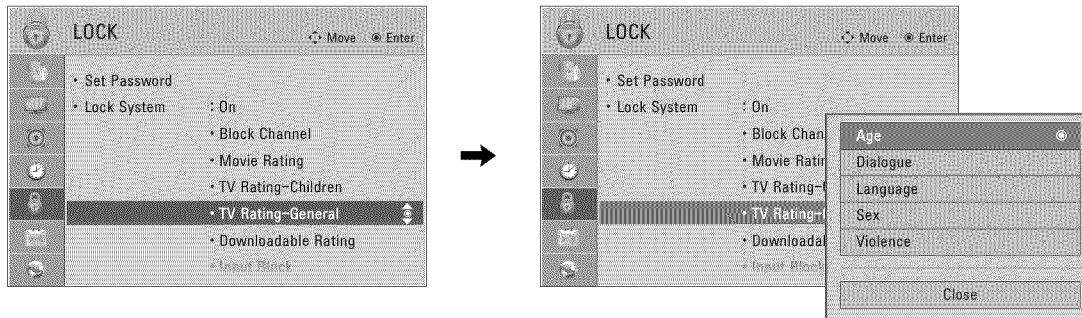
6  Return to the previous menu.












 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.



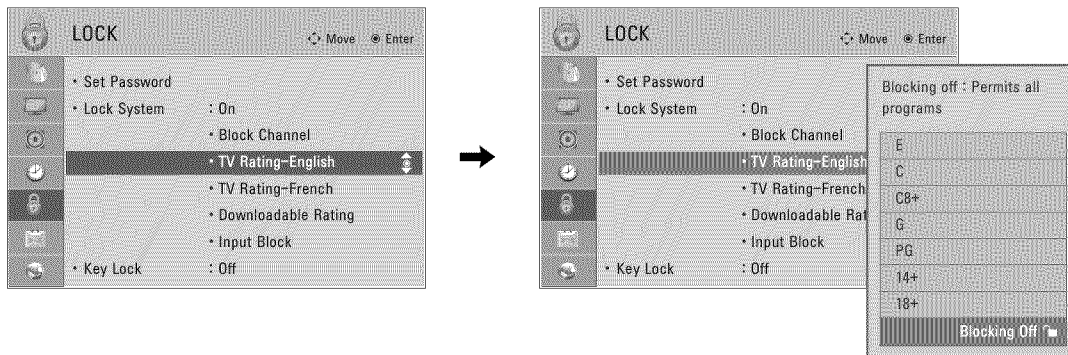
- 1    Select **LOCK**.
- 2  Input the password.
- 3  Select **TV Rating-General**.
- 4   Select **Age, Dialogue, Language, Sex** or **Violence**.
- 5   Select block options.
- 6  Return to the previous menu.
-  Return to TV viewing.










- **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.

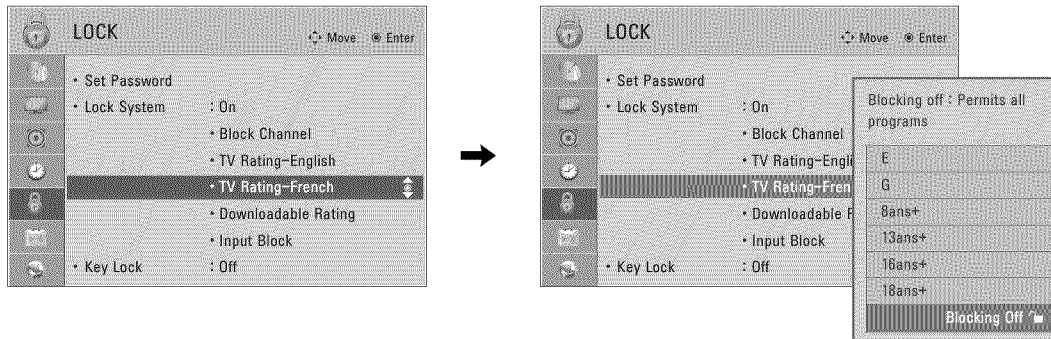











1.    Select **LOCK**.
2.  Input the password.
3.  Select **TV Rating-English**.
4.   Select **E, C, C8+, G, PG, 14+, 18+, or Blocking Off**.
5.  Return to the previous menu.
-  Return to TV viewing.

- 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.

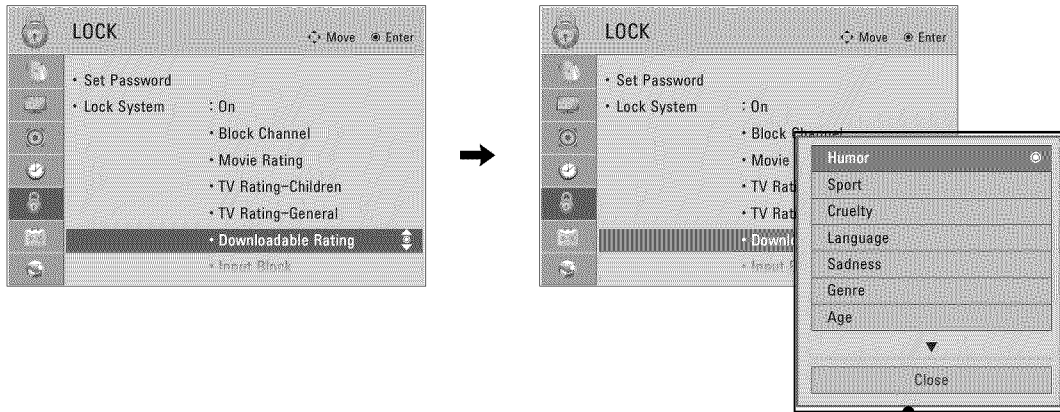
- **E** (Exempt)
- **G** (General)
- **8ans+** (General-Not convenient for little children)
- **13ans+** (Not convenient for children of 13 years and younger)
- **16ans+** (Not convenient for children of 16 years and younger)
- **18ans+** (This programs is only for adults)
- **Blocking Off** (Permits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

PARENTAL CONTROL / RATINGS


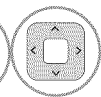


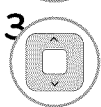
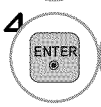
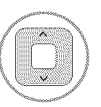

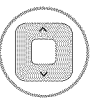


DOWNLOADABLE RATING

This function is available only for digital channels.

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



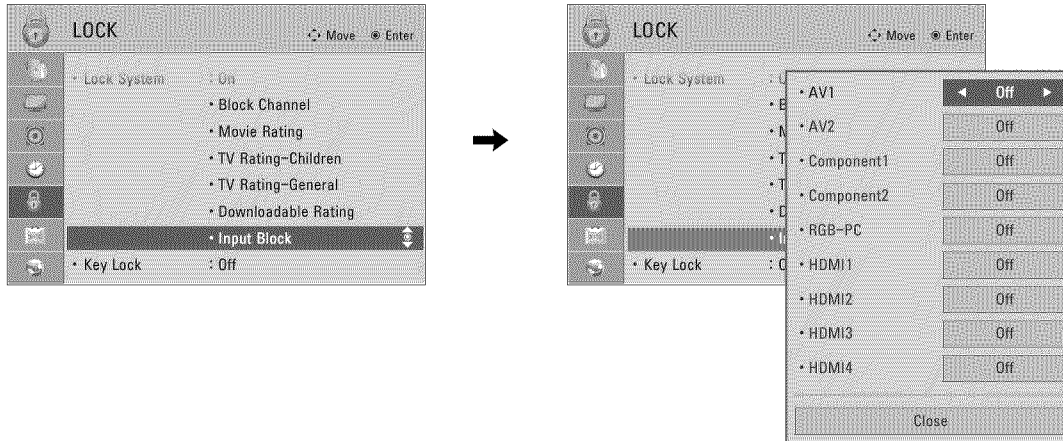
■ Based on rating table, your TV's OSD (On Screen Display) may differ slightly from what is shown in this manual.

- 1    Select **LOCK**.
- 2  Input the password.
- 3  Select **Downloadable Rating**.
- 4   Select desired **Downloadable Rating** option.
- 5   Select desired option and block it.
- 6  Return to the previous menu.
-  Return to TV viewing.

■ 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.

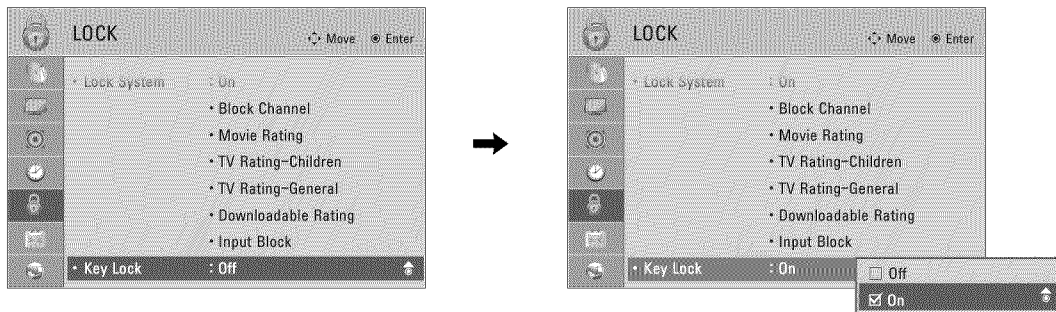
Return to TV viewing.

PARENTAL CONTROL / RATINGS

KEY LOCK

This feature can be used to prevent unauthorized viewing by locking out the front panel controls, so that it can only be used with the remote control.

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



1 Select **LOCK**.

2 Input the password.

3 Select **Key Lock**.

4 Select **On** or **Off**.

5 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) button on the TV or POWER, INPUT, CH () 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.

APPENDIX

TROUBLESHOOTING

Abnormal Operation	
The remote control doesn't work	<ul style="list-style-type: none"> ■ Check to see if there is any object between the product and the remote control causing obstruction. Ensure you are pointing the remote control 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.
TV turns off suddenly	<ul style="list-style-type: none"> ■ Is the sleep timer set? ■ Check the power control settings. Power interrupted. ■ If there is no signal, the TV turns off automatically in 15 minutes.

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

APPENDIX

Audio Problems	
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 High Speed HDMI cable. ■ Check USB cable over version 2.0. ■ Use normal MP3 file. *This feature is not available for all models.

PC Mode Problems	
The signal is out of range	<ul style="list-style-type: none"> ■ Adjust resolution, horizontal frequency, or vertical frequency on the PC. ■ Check the input source.
Vertical bar or stripe on background & Horizontal Noise & Incorrect position	<ul style="list-style-type: none"> ■ Activate the Auto configure feature or adjust size, 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.
When connecting the HDMI cable to the PC, there is no audio.	<ul style="list-style-type: none"> ■ Check the manual for the video card in the PC to see if it supports HDMI audio and how to set it up properly.

Movie List Problems	
The file does not appear on the Movie List.	<ul style="list-style-type: none"> ■ Check whether the file extension is supported.
Message is displayed saying "This file is invalid" or the audio is working normally but the video is not working normally.	<ul style="list-style-type: none"> ■ Check whether the file is playing normally on a PC. (Check whether the file is damaged.) ■ Check whether the resolution is supported. ■ Check whether the video/audio codec is supported. ■ Check whether the frame rate is supported.
Message is displayed saying "Unsupported Audio" or the video is working normally but the audio is not working normally.	<ul style="list-style-type: none"> ■ Check whether the file is playing normally on a PC. (Check whether the file is damaged.) ■ Check whether the audio codec is supported. ■ Check whether the bit rate is supported. ■ Check whether the sample rate is supported.
Subtitle is not working.	<ul style="list-style-type: none"> ■ Check whether the file is playing normally on a PC. (Check whether the file is damaged.) ■ Check whether the video file and subtitle file name are the same. ■ Check whether the video file and subtitle file are located in the same folder. ■ Check whether the subtitle file is supported. ■ Check whether the language is supported. (When you open the subtitle file on a PC, you can check the language of the subtitle file.)

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		47LX9500 (47LX9500-UA)	55LX9500 (55LX9500-UA)
Dimensions (Width x Height x Depth)	With stand	1085.9 mm x 710.6 mm x 255.0 mm (42.7 inch x 27.9 inch x 10.0 inch)	1255.8 mm x 805.0 mm x 255.0 mm (49.4 inch x 31.6 inch x 10.0 inch)
	Without stand	1085.9 mm x 654.2 mm x 31.6 mm (42.7 inch x 25.7 inch x 1.2 inch)	1255.8 mm x 749.6 mm x 31.6 mm (49.4 inch x 29.5 inch x 1.2 inch)
Weight	With stand	26.7 kg (58.8 lbs)	32.7 kg (72.0 lbs)
	Without stand	22.1 kg (48.7 lbs)	28.1 kg (61.9 lbs)

Power requirement	AC 120 V ~ 50 / 60 Hz	
Television System	NTSC-M, ATSC, 64 & 256 QAM	
Program Coverage	VHF 2-13, UHF 14-69, CATV 1-135, DTV 2-69, CADTV 1-135	
External Antenna Impedance	75 Ω	
Environment condition	Operating Temperature	0 °C to 40 °C (32 °F to 104 °F)
	Operating Humidity	Less than 80 %
	Storage Temperature	-20 °C to 60 °C (-4 °F to 140 °F)
	Storage Humidity	Less than 85 %

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

APPENDIX

MODELS		47LEX8 (47LEX8-UA)	55LEX8 (55LEX8-UA)
Dimensions (Width x Height x Depth)	With stand	1126.6 mm x 757.9 mm x 284.4 mm (44.3 inch x 29.8 inch x 11.1 inch)	1306.0 mm x 867.0 mm x 345.0 mm (51.4 inch x 34.1 inch x 13.5 inch)
	Without stand	1126.6 mm x 692.0 mm x 29.3 mm (44.3 inch x 27.2 inch x 1.1 inch)	1306.0 mm x 797.0 mm x 30.7 mm (51.4 inch x 31.3 inch x 1.2 inch)
Weight	With stand	22.9 kg (50.4 lbs)	34.5 kg (76.0 lbs)
	Without stand	19.6 kg (43.2 lbs)	28.8 kg (63.4 lbs)

MODELS		60LEX9 (60LEX9-UA)	72LEX9 (72LEX9-UA)
Dimensions (Width x Height x Depth)	With stand	1126.6 mm x 757.9 mm x 284.4 mm (44.3 inch x 29.8 inch x 11.1 inch)	1306.0 mm x 867.0 mm x 345.0 mm (51.4 inch x 34.1 inch x 13.5 inch)
	Without stand	1126.6 mm x 692.0 mm x 29.3 mm (44.3 inch x 27.2 inch x 1.1 inch)	1306.0 mm x 797.0 mm x 30.7 mm (51.4 inch x 31.3 inch x 1.2 inch)
Weight	With stand	22.9 kg (50.4 lbs)	34.5 kg (76.0 lbs)
	Without stand	19.6 kg (43.2 lbs)	28.8 kg (63.4 lbs)

Power requirement	AC 120 V ~ 50 / 60 Hz	
Television System	NTSC-M, ATSC, 64 & 256 QAM	
Program Coverage	VHF 2-13, UHF 14-69, CATV 1-135, DTV 2-69, CADTV 1-135	
External Antenna Impedance	75 Ω	
Environment condition	Operating Temperature	0 °C to 40 °C (32 °F to 104 °F)
	Operating Humidity	Less than 80 %
	Storage Temperature	-20 °C to 60 °C (-4 °F to 140 °F)
	Storage Humidity	Less than 85 %

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

MODELS		50PK950 (50PK950-UA, 50PK950-UF)	60PK950 (60PK950-UA, 60PK950-UF)
Dimensions (Width x Height x Depth)	With stand	1190.0 mm x 804.5 mm x 294.5 mm (46.8 inch x 31.6 inch x 11.5 inch)	1408.8 mm x 937.9 mm x 384.0 mm (55.4 inch x 36.9 inch x 15.1 inch)
	Without stand	1190.0 mm x 737.0 mm x 52.4 mm (46.1 inch x 29.0 inch x 2.0 inch)	1408.8 mm x 860.7 mm x 52.4 mm (55.4 inch x 33.8 inch x 2.0 inch)
Weight	With stand	34.8 kg (76.7 lbs)	50.9 kg (112.2 lbs)
	Without stand	30.2 kg (66.5 lbs)	43.3 kg (95.4 lbs)

Power requirement	AC 100-240 V ~ 50 / 60 Hz	
Television System	NTSC-M, ATSC, 64 & 256 QAM	
Program Coverage	VHF 2-13, UHF 14-69, CATV 1-135, DTV 2-69, CADTV 1-135	
External Antenna Impedance	75 Ω	
Environment condition	Operating Temperature	0 °C to 40 °C (32 °F to 104 °F)
	Operating Humidity	Less than 80 %
	Storage Temperature	-20 °C to 60 °C (-4 °F to 140 °F)
	Storage Humidity	Less than 85 %

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

APPENDIX

IR CODES

*This feature is not available for all models.

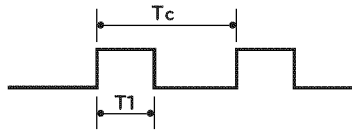
1. How to Connect

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

2. Remote Control IR Codes

■ Output waveform

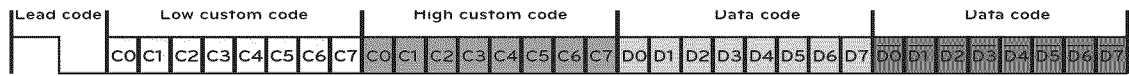
Single pulse, modulated with 37.917 KHz signal at 455 KHz



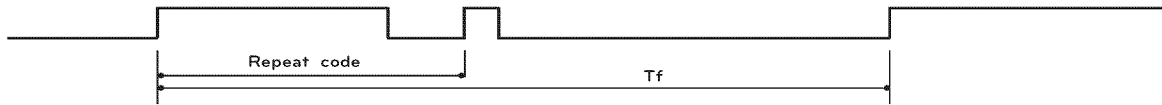
Carrier frequency
 $FCAR = 1/TC = fOSC/12$
 Duty ratio = $T1/TC = 1/3$

■ Configuration of frame

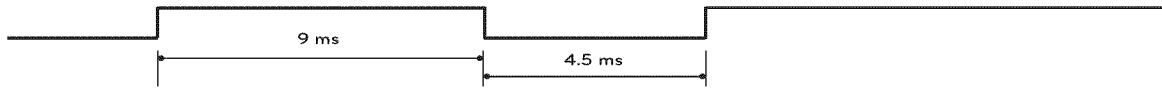
1st frame



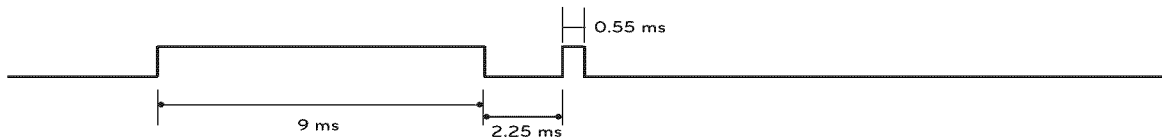
Repeat frame



■ Lead code

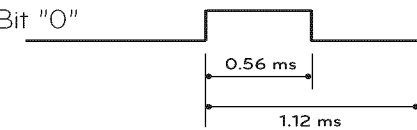


■ Repeat code

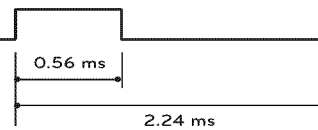


■ Bit description: Tf

Bit "0"

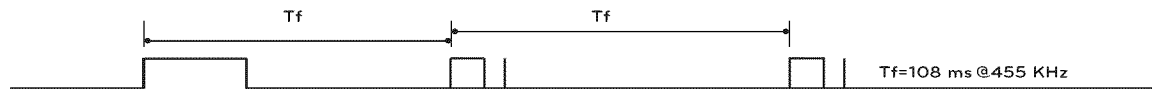


Bit "1"



■ Frame interval: Tf

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



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

■ Use this feature depending on your models.

APPENDIX

EXTERNAL CONTROL THROUGH RS-232C

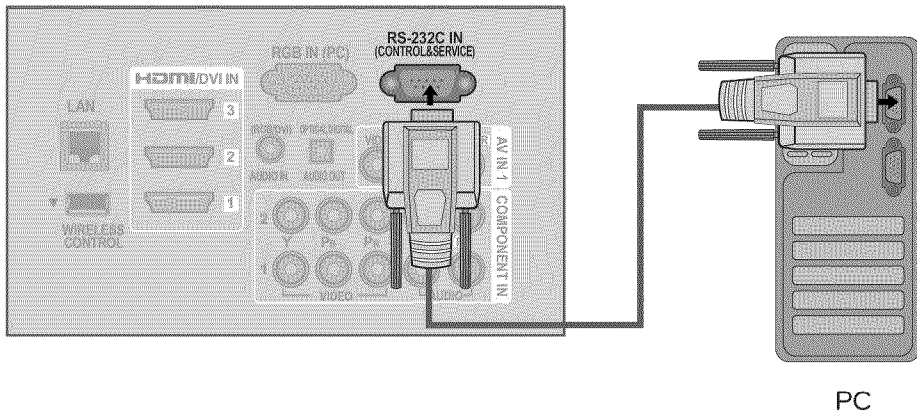
The RS-232C port allows you connect the RS-232C input jack to an external control device (such as a computer or an A/V control system) to control the TV's functions externally.

■ 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

i.e)



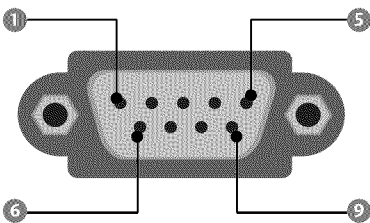
Type of Connector; D-Sub 9-Pin Male

Communication Parameters

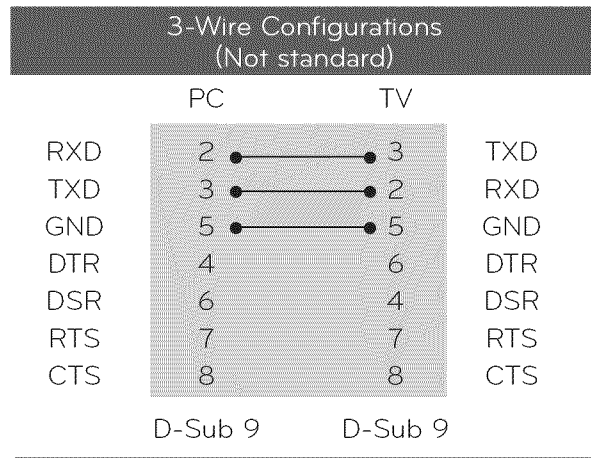
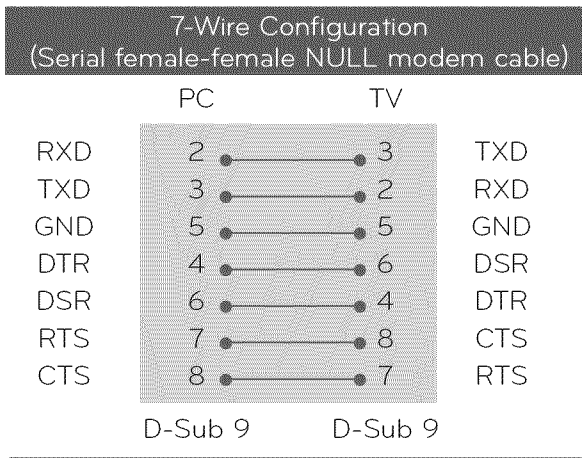
No.	Pin Name
1	No connection
2	RXD (Receive data)
3	TXD (Transmit data)
4	DTR (DTE side ready)
5	GND
6	DSR (DCE side ready)
7	RTS (Ready to send)
8	CTS (Clear to send)
9	No Connection

- 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.

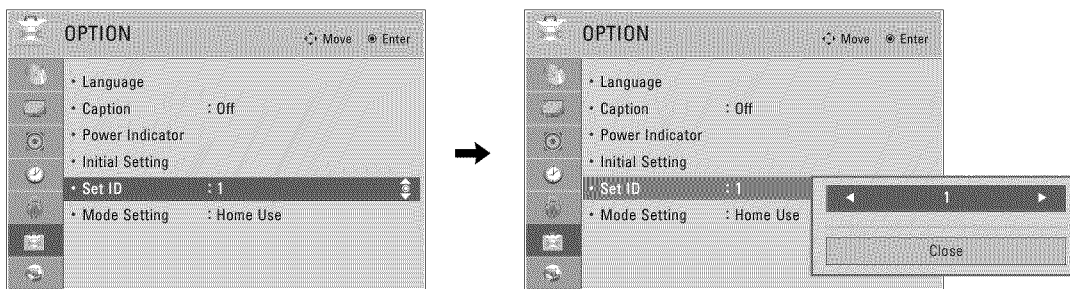


RS-232C Configurations



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)
01. Power	k	a	00 - 01
02. Input Select	x	b	▶ P185
03. Aspect Ratio	k	c	▶ P185
04. Screen Mute	k	d	00 - 01
05. Volume Mute	k	e	00 - 01
06. Volume Control	k	f	00 - 64
07. Contrast	k	g	00 - 64
08. Brightness	k	h	00 - 64
09. Color	k	i	00 - 64
10. Tint	k	j	00 - 64
11. Sharpness	k	k	00 - 64
12. OSD Select	k	l	00 - 01
13. Remote Control Lock Mode	k	m	00 - 01
14. Treble	k	r	00 - 64
15. Bass	k	s	00 - 64
16. Balance	k	t	00 - 64
17. Color Temperature	x	u	00 - 64
18. ISM Method	j	p	▶ P186
19. Energy Saving	j	q	▶ P186
20. Auto Configuration	j	u	▶ P186
22. Channel Add/Del	m	b	00 - 01
23. Key	m	c	▶ P187
24. Backlight	m	g	00 - 64

For LED LCD TV

For Plasma TV

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

Transmission / Receiving Protocol

Transmission

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

[Command 1] : First command to control the 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: AV 2

Data 40: Component1 Data 41: Component 2

Data 42: Component 3 Data 60: RGB-PC

Data 90: HDMI1 Data 91: HDMI2

Data 92: HDMI3 Data 93: HDMI4

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

* Use the feature depending on your model.

03. Aspect Ratio (Command: k c)

To adjust the screen format.

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

Data 01: 4:3 Data 09: Just scan

Data 02: 16:9 Data 10: Cinema Zoom1

Data 04: Zoom :

Data 06: Set by program Data 1F: Cinema Zoom16

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

04. Screen Mute (Command: k d)

To select screen mute on/off.

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

Data 00: Screen mute off (Picture on), Video-out Mute off

Data 01: Screen mute on (Picture off)

Data 10: Video-out Mute on

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

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

05. Volume Mute (Command: k e)

To control volume mute on/off.

You can also adjust mute using the MUTE button on remote control.

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

Data 00: Volume mute on (Volume off)

Data 01: Volume mute off (Volume on)

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

06. Volume Control (Command: k f)

To adjust volume.

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

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

Data Min: 00 - 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]

APPENDIX

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]

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: x u)

To adjust color temperature.

You can also adjust color temperature in the Picture menu.

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

Data Warm: 00 - Cool: 64 (*transmit by Hexadecimal code)

*Refer to 'Real data mapping'.

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

Data 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: Off Data 01: Minimum

Data 02: Medium Data 03: Maximum

Data 04: Auto/Intelligent Sensor (depending on model)

Data 05: Screen off

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 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 181.

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

24. Backlight (Command: m g) (For LED 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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NOTE: The text of this exhibit A may differ slightly from the text of the notices in the source code files of the original code. You should use the text of this exhibit A rather than the text found in the original code/source code for Your modifications.



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

MODEL _____

SERIAL _____

NETCAST

YAHOO! TV WIDGETS

You can enjoy the best of the Internet in perfect harmony with the simplicity and reliability of your TV. Yahoo! TV Widgets provide an integrated Internet TV experience powered by the Yahoo!® Connected TV platform. You can monitor financial stocks, share photos with friends and family, track news and weather and much more, all through the Yahoo! TV Widgets service on your TV.

Note that these services are provided by the Content Provider, using Yahoo! Widget Platform provided by Yahoo!. All the services are dependent on appropriate Content Provider. Please check about page of each widgets for Terms of service.

Note If you have any question or need any help for the widgets which is not covered in this manual, please contact web site for further help which shall be listed in about page of each widget, or Yahoo! help site <http://connectedtv.yahoo.com/help>.

What is a TV Widget?















A TV Widget is an Internet application designed to run on your TV.

What is a Snippet?

A Snippet is a shortcut used to open a TV Widget, as a dynamic bookmark to TV Widget content.

Using the Remote Control

When Yahoo! TV Widgets are displayed, you can use the following remote control buttons.

	Begin using Yahoo! TV Widgets. Press it again to go back to just watching TV.		Select the focused item.
	Highlight and focus on buttons in the Yahoo! TV Widgets user interface.		Go to the TV Menu.
	Move the focus selection up.		Close the open widget and return to watching TV.
	Move the focus selection down.		Change the open widget's settings.
	Move the focus selection to the left.		Add, move, or delete your snippets.
	Move the focus selection to the right.		Resize the video to fit onscreen, or to make it fullscreen.
	Return to the previous menu.		Return to TV viewing.

Getting Started Out of the Box

Once your television is powered up and your network is operational, the Yahoo! TV Widgets software guides you through its step-by-step on-screen wizard the first time you startup. These setup steps are designed to provide you with the information and settings you'll need to start using the Yahoo! TV Widgets user interface.

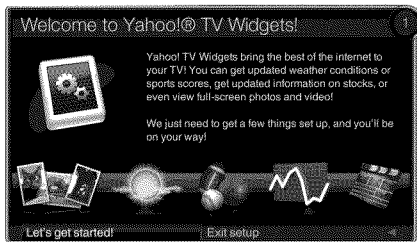
Guided Setup



Activate Yahoo! TV Widgets. The first time you use Yahoo! TV Widgets the step-by-step wizard begins with the Welcome Screen.



1 Select Let's get started!. If you select Exit Setup now, this step will be resumed the next time you press WIDGETS.



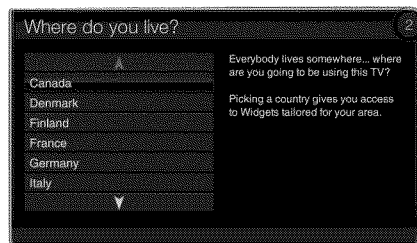
2 Choosing your country allows the use of localized content.



Navigate to your location.



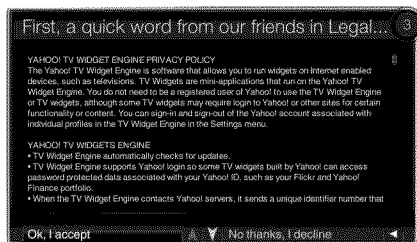
Select your country.



3 Accepting the Yahoo! Privacy Policy is required to use Yahoo! Widgets.



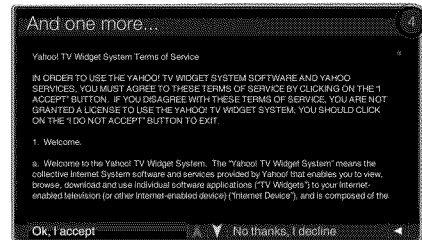
Select Ok, I accept.



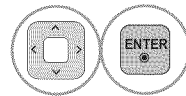
4 Accepting Yahoo! Terms of Service is also required to use Yahoo! TV Widgets.



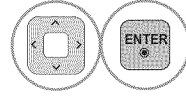
Select Ok, I accept.



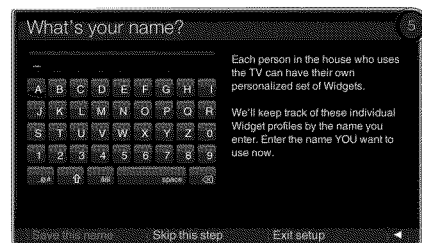
5 Enter your name to setup your profile.



Select letters and spell your name.



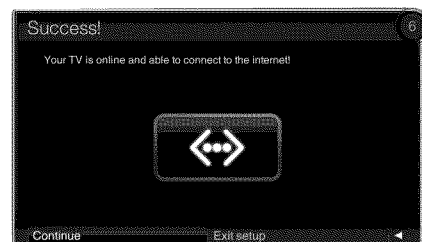
Select Save this name and create your profile.



6 Test your network connection. After setup is completed, a tutorial on how to use Yahoo! TV Widgets will come up next.



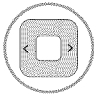
Select Continue and review the tutorial. Select Exit setup to start using Yahoo! Widgets now.



Using Yahoo! TV Widgets



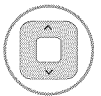
- Activate Yahoo! TV Widgets.
- The horizontal list at the bottom of your TV screen is called "**the dock**".
 - The items in this list are called "**snippets**".
 - A snippet is a shortcut which opens a TV Widget.



- Move between snippets.
- Focus is located in the leftmost region (high-lighted in dark red).
 - The dock scrolls snippets under this focal point.



- Open the **Sidebar** when the TV Widget snippet is in focus.
- The Home button including the main logo is at the top of the sidebar.



- Navigate a menu item.
- The currently focused button is the one high-lighted in dark red.



- Select the focused button.

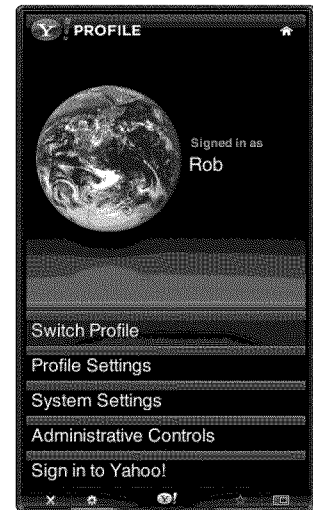
The sidebar's bottom toolbar includes four color-coded buttons.



RED	Close the sidebar and return to watching TV.	YELLOW	Add or delete a snippet.
GREEN	Change the widget's settings.	BLUE	Resize video to fit onscreen, or to make it fullscreen.

Using the Profile Widget

- The **Profile Widget** configures your user profile.
- You can set up multiple profiles for multiple users.
- Each profile maintains its own list of TV Widgets.
- The **Switch Profile** menu allows you to switch to a different user profile.
- The **Profile Settings** menu allows you to customize your profile, create a profile PIN, or limit the installation of widgets.
- The **System Settings** menu allows you to change your **Location**, **Repeat the Tutorial**, and **Restore Factory Settings**.
- **Restore Factory Settings** will erase all profiles and widgets installed by users, and restore the original configuration. (See also **NetCast** → **Setup** → **Service maintenance** → **Restore Yahoo! Factory Settings**)
- The **Administrative Controls** menu allows you to set the **Screen Saver** timeout, create the **Owner PIN**, and to **Create a Profile**.
- The **Sign in to Yahoo!** menu allows you to personalize your experience using your Yahoo! ID.
- If you don't have a Yahoo! ID yet, please visit <http://www.yahoo.com> to create one.



Using the Widget Gallery

- The **Widget Gallery** allows you to browse and discover new TV Widgets.
- The featured TV Widgets are highlighted in the display case at the top of the sidebar.
- You can also browse available TV Widgets by category.
- To install a widget, select **Add Widget to My Profile** and press the ENTER button.
- The **Owner PIN** is needed to install widgets for profiles that have been protected through the **Limit Profile** indicator under **Profile Widget** → **Profile Settings**.
- Go to the **Profile Widget** → **Administrative Controls** menu to set or change the **Owner PIN**.
- The maximum number of Widget which can be installed is 10.
- You can delete the Widget by pressing the RED button after YELLOW button in Dock setting.



Using the Yahoo! News Widget

- The **Yahoo! News Widget** provides the latest headline news for business, entertainment, politics, sports, top stories, and many other categories.
- Select a category, press **ENTER**.
- Select a headline within the category, press **ENTER**.
- View the dynamically updated news summary for the selected headline.



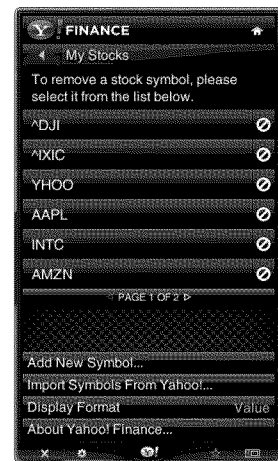
Using the Yahoo! Weather Widget

- The **Yahoo! Weather Widget** provides updates on your local and favorite weather locations with content that dynamically changes with weather conditions.
- Press the **GREEN** button to display the **Settings** menu.
- From the **Settings** menu you can add or remove a city for which you want to view weather information.
 - **Add a New City** by entering the name of the city. Once the search results are displayed, select the city you want and press **ENTER** button.
 - **Delete a City** by selecting the city you want to delete from the city list. Press **ENTER** button and confirm the deletion.
 - Select the Display Units As button to change the temperature indication mode to **Imperial** or **Metric**. **Imperial** will show temperatures in Fahrenheit and **Metric** will use Celsius.
- To create a snippet for a favorite city:
 - Select the city from the home page and view the detailed weather information.
 - Press the **YELLOW** button.
 - Select the **Add Snippet** button and press **ENTER** to add the city as a snippet.
- To delete a snippet for a city:
 - Navigate to the snippet and press **ENTER** button to start the widget. The detailed page for the snippet's city will be displayed.
 - Press the **YELLOW** button.
 - Select the Delete Snippet button and press **ENTER** button to remove the snippet.



Using the Yahoo! Finance Widget

- View stock information and the latest stock news with the Yahoo! Finance Widget.
- Press the **GREEN** button to set up your stocks.
 - Use the **Add New Symbol** menu to enter the name of a new stock.
 - Select the stock you want to add from the search results and select the **Add Symbol** button and press **ENTER** button.
 - The selected stock is added to the **My Stocks** list.
 - The **Import Symbols From Yahoo!** menu retrieves the stocks from your Yahoo! Finance portfolio.
 - The **Merge Symbols** button merges the symbols in the Yahoo! Finance Widget with the symbols from your portfolio.
 - The **Replace Symbols** button deletes the symbols in the Yahoo! Finance Widget and replaces them with the symbols from your portfolio.
 - The **Display Format** button changes the stock-price fluctuation transition to **Value** or **Percentage**.
- To create a snippet for a favorite stock:
 - Select the stock symbol from the home page and view the detailed finance information.
 - Press the **YELLOW** button.
 - Select the **Add Snippet** button and press **ENTER** button to add the stock as a snippet.
- To delete a snippet:
 - Navigate to the snippet and press **ENTER** button to start widget. The detailed page for the snippet's stock will be displayed.
 - Press the **YELLOW** button.
 - Select the **Delete Snippet** button and press **ENTER** button to remove the snippet.



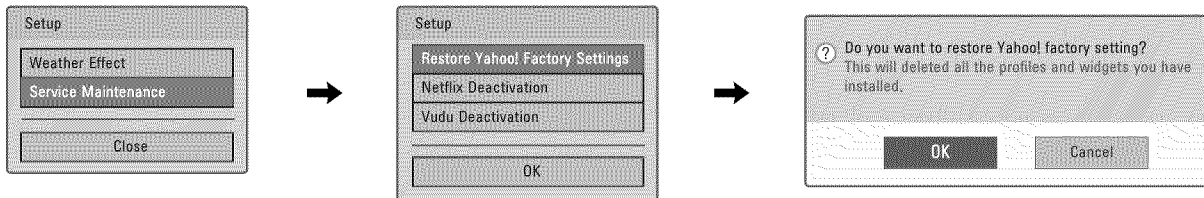
Using the flickr Widget



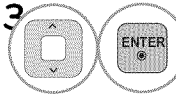
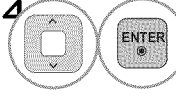
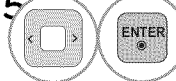
- The **flickr Widget** provides a television-viewing experience while watching slideshows of family and friends' photos.
- Personalize the **flickr Widget** by logging in with your Yahoo! ID. Refer to **Using the Profile Widget** for instructions.
- The **Your Photos** menu shows photos you have registered with the flickr website.
- The **Your Sets** menu allows you to view photos you have classified in flickr.
- The **Explore** menu allows you to explore photos featured by the flickr website.
- The **Mark as Favorite** moves photos to your **Favorite Photos** set.
- The **Favorite Photos** menu allows you to see the photos you have classified as favorites.
- The **Your Contacts** menu allows you to see updates from family and friends.
- The **Your Groups** menu allows you to select your favorite groups from the flickr website <http://www.flickr.com> to share and enjoy photos with the flickr community of users.
- To view photos in a slideshow:
 - Select a thumbnail of a photo and press **ENTER** button to view the photo's details.
 - Select **Start Slideshow** and press **ENTER** button.
- To control the slideshow display:
 - Press **ENTER** button during a slideshow.
 - The thumbnails of photos are displayed on the bottom of the screen.
 - When the slideshow control is displayed, you can **Pause**, **Play**, and **Stop** the slideshow.
 - If you select the **INFO** button and press **ENTER** button, you can view details for the selected photo.
- To configure the **Settings**, press the **GREEN** button.
 - The **Time Per Slide** button controls the speed of the slideshow.
 - The **Repeat** button will restart the slideshow at the beginning after the last photo is shown.



Restore Yahoo! Factory Settings

Restoring Yahoo! Factory Settings will delete all of your profiles and installed widgets.



- 1  Display **NetCast** menu.
- 2  Select **Setup** option.
- 3  Select **Service Maintenance**.
- 4  Select **Restore Yahoo! Factory Settings**.
- 5  Select **OK** to restore Yahoo! factory settings. This TV will restore Yahoo! factory settings.

Troubleshooting

Yahoo! TV Widgets Problems	
Misc.-Caption, Language displayed within Widget	<p>Did the customer change Menu language but Widget did not change its language.</p> <ul style="list-style-type: none"> ■ Some Widgets do not fully support TV Menu options. ■ The help site for individual widget can be found in the settings panel of each widget by pressing the GREEN button on your remote after opening that widget from the Dock.

Yahoo! TV Widgets Problems		
Failed to launch Yahoo! TV Widgets	Was the customer watching HDMI input?	<ul style="list-style-type: none"> ■ To use Yahoo! TV Widgets while using the HDMI input, turn off "Simplink-on" in the OPTION menu. Or change to another Input and press then press the WIDGETS button.
	Was the customer watching My Media?	<ul style="list-style-type: none"> ■ The WIDGETS button is blocked when using MY MEDIA. ■ Exit MY MEDIA by pressing the NETCAST button and then select Yahoo!
	Nothing happens when pressing WIDGETS button	<ul style="list-style-type: none"> ■ Turn off the TV and then turn it back on. Press the NETCAST button and then the RED button. Select "Restore Yahoo! Factory Settings" to restore the Yahoo! Factory Settings. ■ For more help, visit the Yahoo! help site: http://connectedtv.yahoo.com/help.
Failed to open some widgets	Is "Loading" message displayed?	<ul style="list-style-type: none"> ■ If the "Loading" message does not go away after a reasonable amount of time, delete that widget and re-install it.
	Check IP Address setting is OK?	<ul style="list-style-type: none"> ■ Make sure the TV can connect to the internet.
	Is Connection Unavailable icon (yellow triangle) displayed on snippet?	<ul style="list-style-type: none"> ■ If connection unavailable icon is displayed, the server may under maintenance or unreachable for other reasons. Try again later or visit the Yahoo! help site. http://connectedtv.yahoo.com/help
	Some Widgets work properly while others do not.	<ul style="list-style-type: none"> ■ Try again later. ■ Try re-installing the Widget. Delete that widget by pressing the Yellow button when it's highlighted in the dock. Then press the Red button twice to delete that widget. Then open the Widget Gallery and browse to find that widget and select "Add Widget to My Profile" to install that widget and then try again. ■ If problem still exists, restore Yahoo! factory settings by pressing NETCAST button and RED button on your remote control.
	If it stops in Loading	<ul style="list-style-type: none"> ■ Perform Restore Yahoo! Factory Settings.

Yahoo! TV Widgets Problems		
Widget is stuck if the remote control button is pressed.	Press BACK button and try again later.	<ul style="list-style-type: none"> ■ The error may only be temporary. Exit out and try again.
	Check IP Address setting is OK?	<ul style="list-style-type: none"> ■ If not, connect Network Cable properly and set IP address from Network menu and try again or contact Internet service provider.
	Press RED or WIDGETS button on remote control.	<ul style="list-style-type: none"> ■ Exits Yahoo! TV Widgets by pressing RED button on your remote and re-enter by WIDGETS button.
	Press NETCAST button.	<ul style="list-style-type: none"> ■ Exits Yahoo! TV Widgets by pressing NETCAST button and enter NETFLIX temporarily, and re-enter Yahoo! Widgets by pressing NETCAST button and select Yahoo! ■ If the problem still exists, re-install the Widget. Press the Yellow button with the Widget highlighted in the Dock. Press the Red button twice to delete that widget. Now open the Widget Gallery and browse to find that widget and select "Add Widget to My Profile" to install that widget and then try again. ■ If the problem still exists for all widgets, restore the Yahoo! Factory settings by pressing the NETCAST button and the RED button on your remote control. Select "Restore Yahoo! Factory Settings" to reset.
Gallery - Unable to install widget from gallery	Check IP Address setting is OK?	<ul style="list-style-type: none"> ■ If not, connect Network Cable properly and set IP address from menu-Option and try again or contact Internet service provider.
	Is Lock Icon on right side of "Add Widget to My Profile"?	<ul style="list-style-type: none"> ■ Need Owner PIN to install. If you forgot Owner PIN, contact Yahoo! for further help. http://connectedtv.yahoo.com/help
	"Install completed" but it never worked.	<ul style="list-style-type: none"> ■ Try to re-start Yahoo! TV Widgets after you enter YouTube and exit from YouTube. ■ Or Delete it and re-install it.
Flicker - "We could not find anything to display" message displayed	Is connection unavailable icon (yellow triangle) displayed?	<ul style="list-style-type: none"> ■ If yes, check network settings or contact internet service provider, or try later.
	Did you sign-in Yahoo! account?	<ul style="list-style-type: none"> ■ If yes, you need to upload your photos to Flickr site to display. ■ If not, try again later. The Flickr server may be under maintenance, or contact service provider.

NETFLIX

Your TV's OSD (On Screen Display) may differ slightly from that shown in this manual.

Activating the TV





You can instantly watch movies (quite a few new releases) & TV episodes from Netflix streamed over the internet to your TV.

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.

If newer software is needed, a software update screen will automatically appear.

Note that this service is provided by the Content Provider, Netflix. It is dependent on Netflix to provide the data.

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



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



- Visit the Netflix website on your computer:

www.netflix.com/activate

Enter your Sign in Name and Password to log into your account.

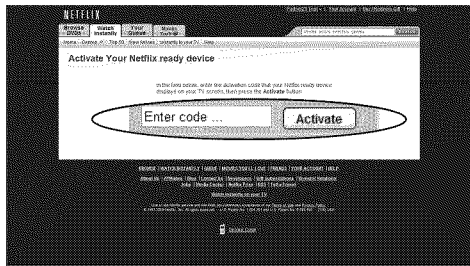


- 4 See the activation code on your TV screen,



Activation Code

Enter this activation code to the Netflix Website and click Activate.



- 5 Wait for the poster screen to appear on your TV.



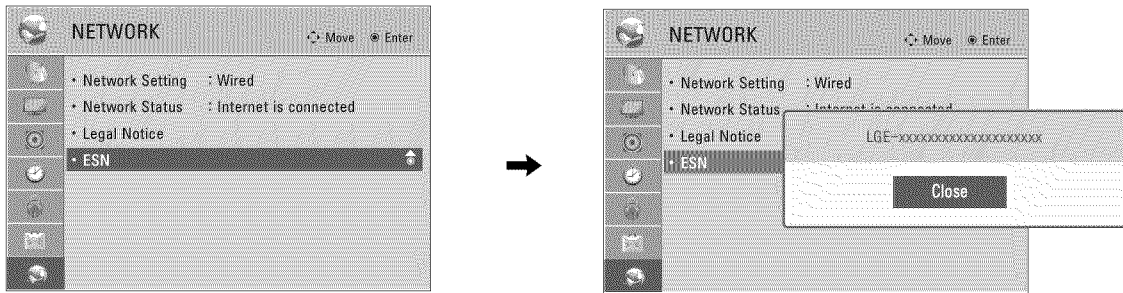
- 6 You're ready to add movies to your instant Queue.

NETCAST



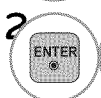

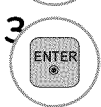
Netflix ESN (Electronic Serial Number)

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

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



NETCAST

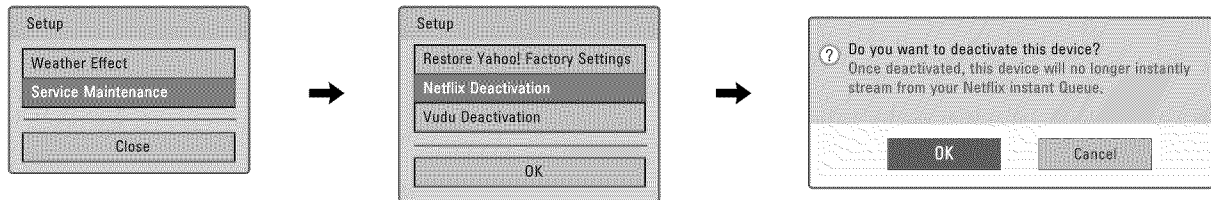
- 1   Select **NETWORK**.
- 2   Select **ESN**.
- 3  See the ESN serial number.

Netflix Deactivation

Once deactivated, TV will no longer instantly stream from your Netflix Instant Queue.

If you deactivate, the TV cannot instantly stream from your Netflix Instant Queue.

If you want, you can activate Netflix later.



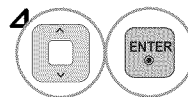
1 Display **NetCast** menu.



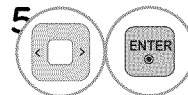
2 Select **Setup** option.



3 Select **Service Maintenance**.



4 Select **Netflix Deactivation**.



Select **OK** to deactivate the TV. This TV is not currently activated to instantly stream from your Netflix instant Queue.

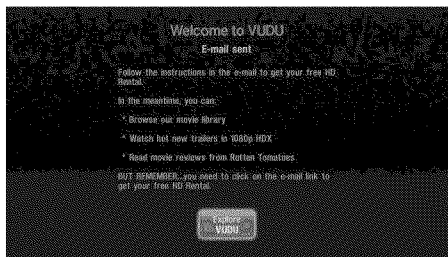
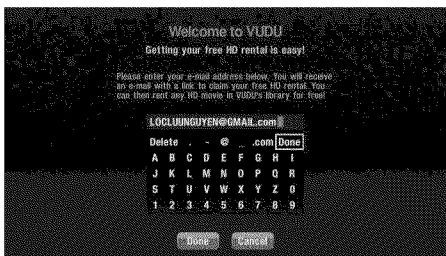
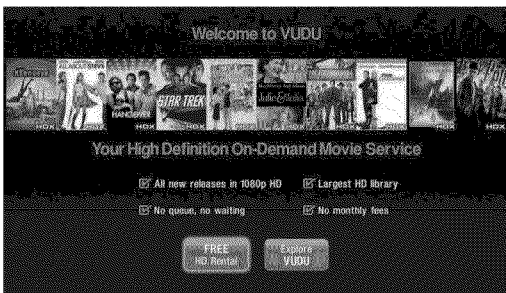


Activating the TV

In order to make rental/purchase transactions on the Vudu service, a user must create an account on vudu.com. That account is linked to a specific device, via a process called "activation". It is possible to have multiple devices associated with a single Vudu account.

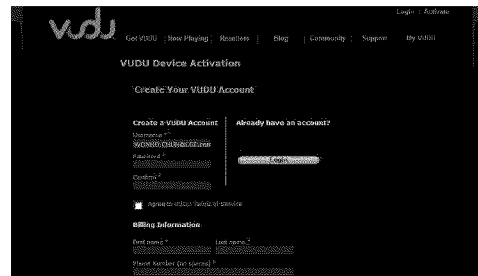
If newer software is needed, a software update screen will automatically appear.

Note that this service is provided by the Content Provider, Vudu. It is dependent on Vudu to provide the data.

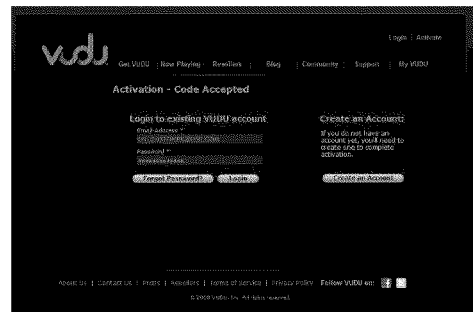


4 You will receive an e-mail with a link.
Click the e-mail link.

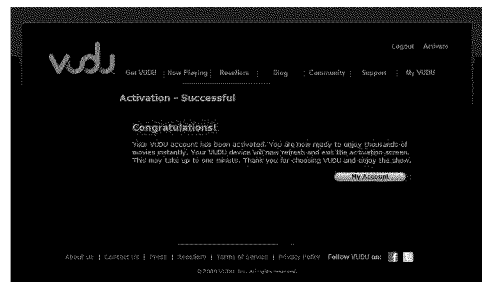
5 Create your VUDU account to activate your TV if you no have account.
If you have an existing account, log into your account.



6 Enter your Sign in Email address and Password to log into your account.

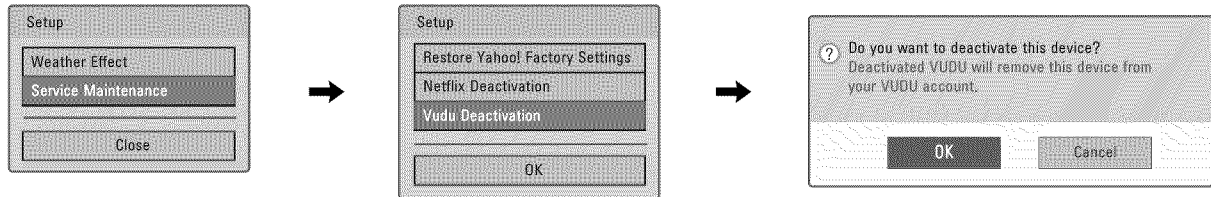




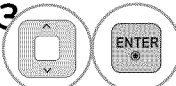
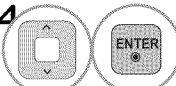
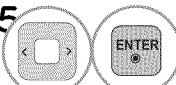
7 Your VUDU account has been activated.



VUDU Deactivation

Once deactivated, this TV will no longer instantly stream from Vudu. If you want, you can activate VUDU later.



-  Display **NetCast** menu.
-  Select **Setup** option.
-  Select **Service Maintenance**.
-  Select **Vudu Deactivation**.
-  Select **OK** to deactivate the TV.