



OWNER'S MANUAL

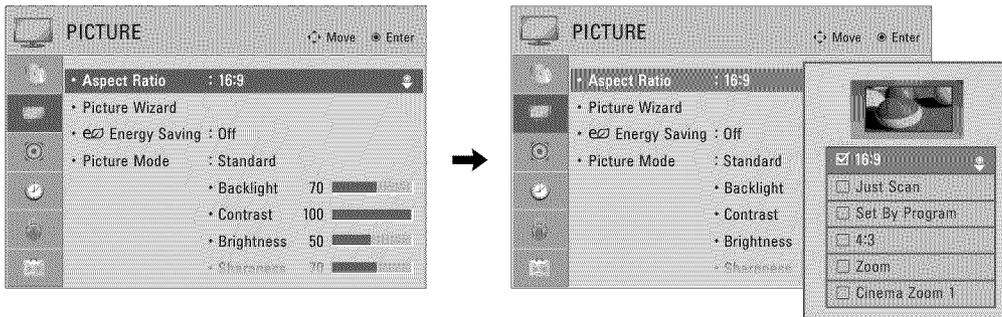
LED LCD TV / LCD TV

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

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).



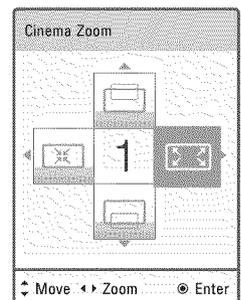
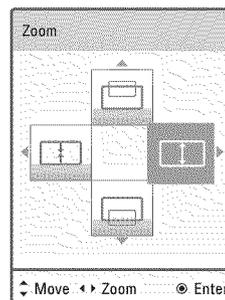
PICTURE CONTROL

- 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.

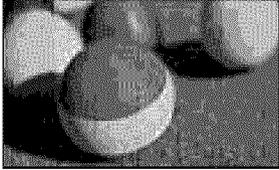
When adjusting **Zoom** or **Cinema Zoom** in **Q.MENU**

- 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)

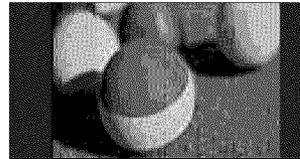


(16:9 → 16:9)



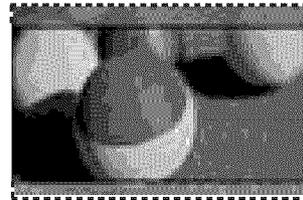
4:3

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.

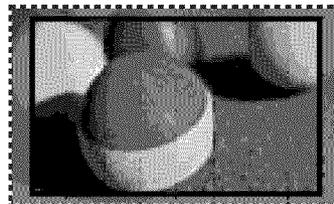


Cinema Zoom

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.

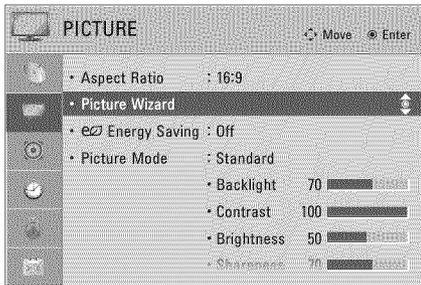
Note: When enlarging or reducing the picture, the image may become distorted.



PICTURE CONTROL

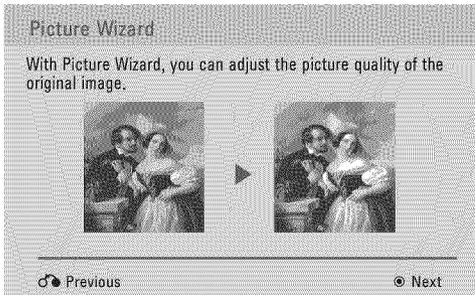
PICTURE WIZARD

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**.

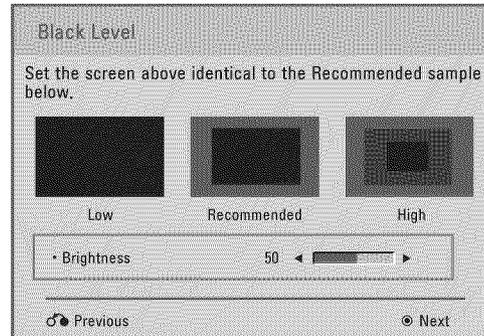


3 Adjust **Picture Wizard**.

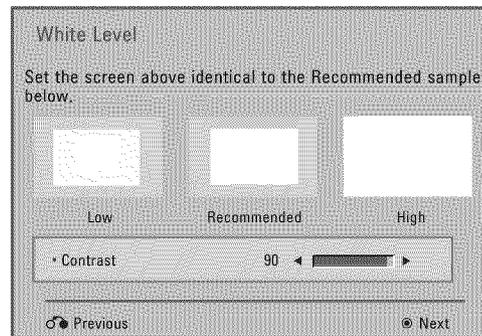


4 Adjust **Standard/Preferred**.

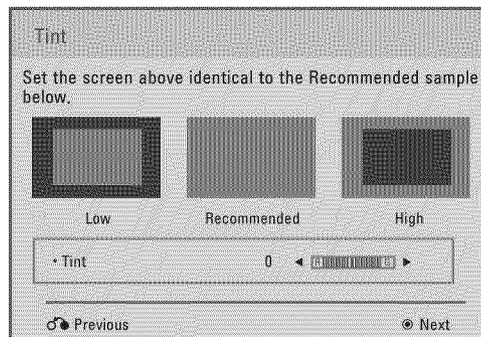
■ If you select **Preferred**, OSD (On Screen Display) differ from that shown in this manual.



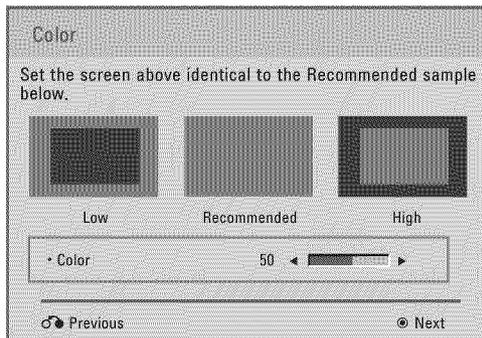
5 Adjust **Black Level**.



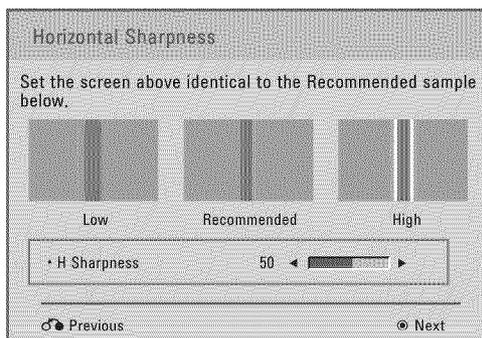
6 Adjust **White Level**.



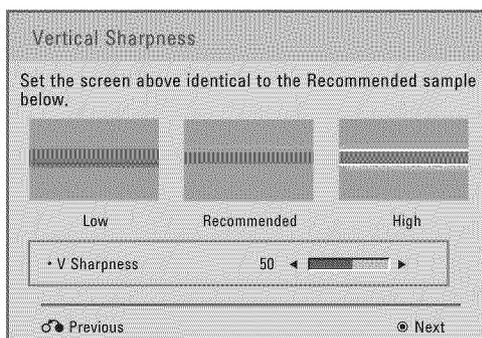
7 Adjust **Tint**.



8   Adjust **Color**.



9   Adjust **Horizontal Sharpness**.

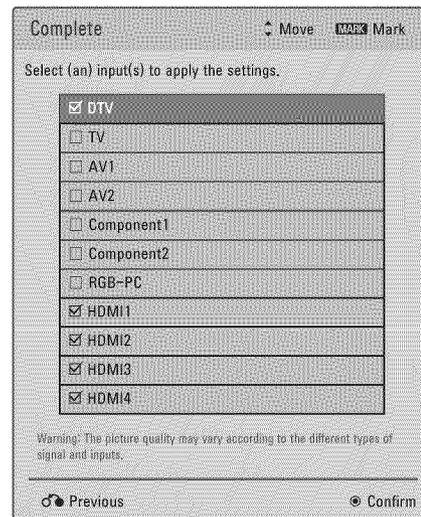


10   Adjust **Vertical Sharpness**.



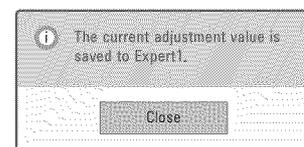
11   Adjust **Backlight**.

i.e)



12   Select input source to apply the settings.

13  Save.



14  Finish the Picture Wizard.

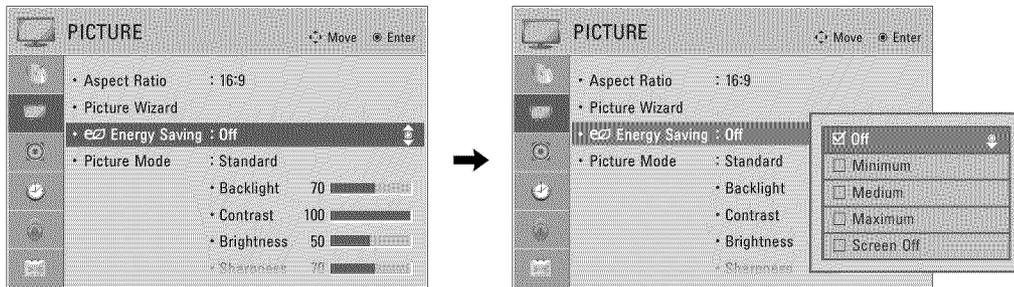
- If you stop the Picture Wizard before the final step, the changes will not be saved to the TV.
- Once the **Picture Wizard** sets the picture quality, **Energy Saving** is changed to **Off** automatically.
- To reset changes made by **Picture Wizard**, operate **Picture Reset** when **Picture Mode** is on **Expert1**.

PICTURE CONTROL

e_o ENERGY SAVING

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

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

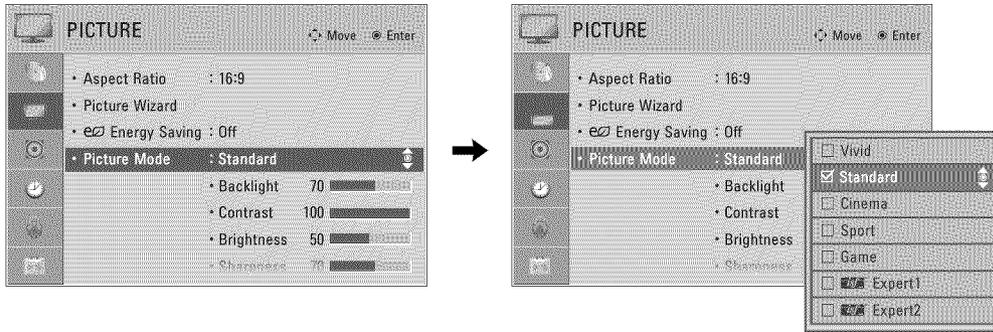


-   Select **PICTURE**.
-   Select **e_o Energy Saving**.
-   Select **Off, Minimum, Medium, Maximum, or Screen Off**.
-  Return to the previous menu.
-  Return to TV viewing.

- When selecting **Screen off**, the screen will turn off after 3 seconds.
- If you adjust "**Energy Saving-Maximum**", **Backlight** feature will not work.
- Press the **ENERGY SAVING** button repeatedly to select the appropriate Energy Saving setup.

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.



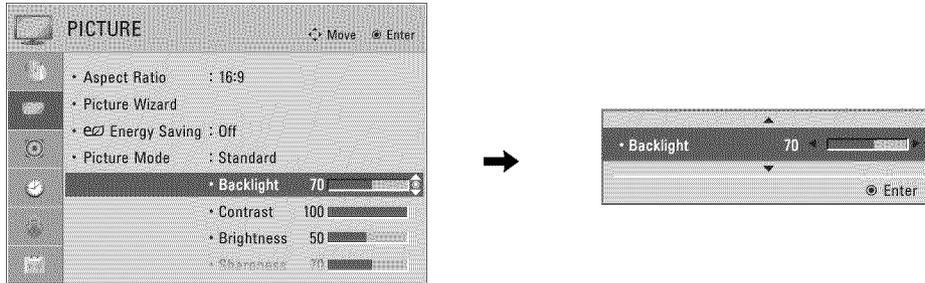
- 1   Select **PICTURE**.
- 2   Select **Picture Mode**.
- 3   Select **Vivid, Standard, Cinema, Sport, or Game**.
- 4  Return to the previous menu.
-  Return to TV viewing.

- **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.
- **Cinema:** This mode optimizes video for watching movies.
- **Sport:** This is the video mode to emphasize dynamic video and primary color (e.g, white, uniform, grass, sky blue etc.) by realizing the optimal screen for sports.
- **Game:** This is the mode to realize fast response speed in a fast gaming screen.
- **Expert:** This is the mode to adjust the video in detail for video quality expert and general user.
- You can also adjust **Picture Mode** in the **Q.MENU**.

PICTURE CONTROL

MANUAL PICTURE ADJUSTMENT - USER MODE

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

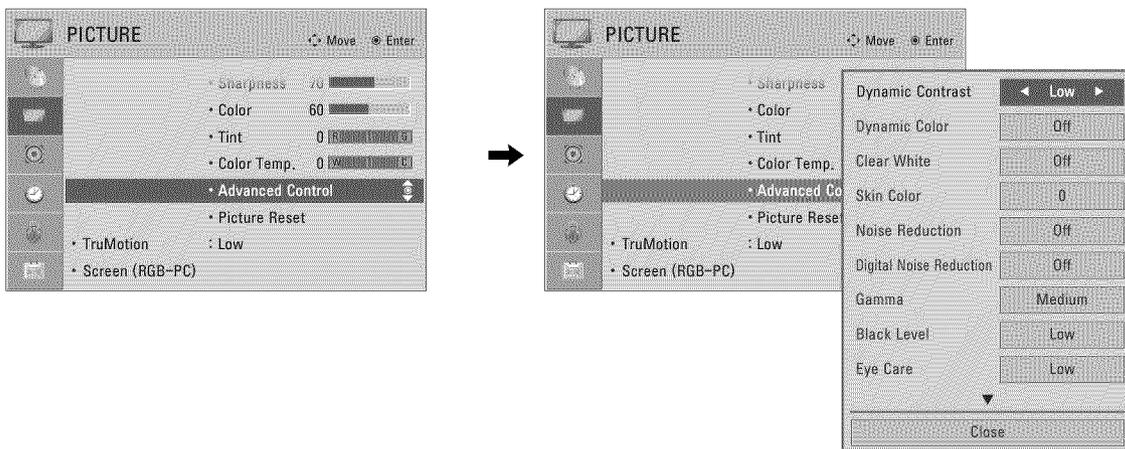


- 1   Select **PICTURE**.
- 2   Select **Picture Mode**.
- 3   Select **Vivid, Standard, Cinema, Sport, or Game**.
- 4   Select **Backlight, Contrast, Brightness, Sharpness, Color, Tint, Color Temp., or Advanced Control**.
- 5   Make appropriate adjustments.
- 6  Return to the previous menu.
-  Return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

- **Backlight:** 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.
- **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.

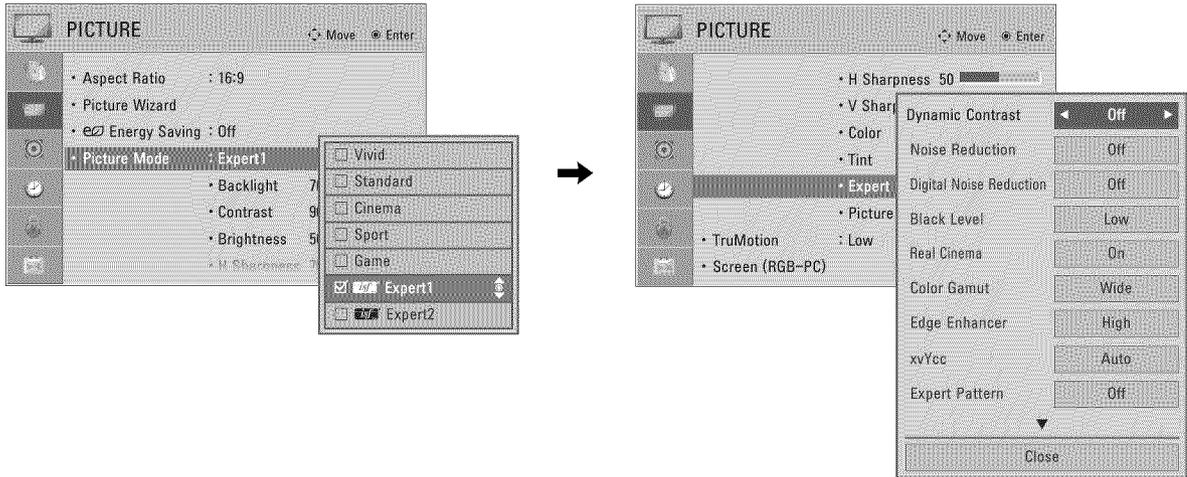


- 1   Select **PICTURE**.
- 2   Select **Advanced Control**.
- 3   Select your desired menu option.
- 4  Make appropriate adjustments.
- 5  Return to the previous menu.
-  Return to TV viewing.

PICTURE CONTROL

EXPERT PICTURE CONTROL

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



PICTURE CONTROL

-   Select **PICTURE**.
-   Select **Picture Mode**.
-   Select  **Expert1** or  **Expert2**.
-   Select **Expert Control**.
-   Select your desired menu option.
-  Make appropriate adjustments.
-  Return to the previous menu.
-  Return to TV viewing.

*This feature is not available for all models.

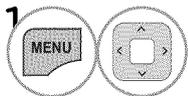
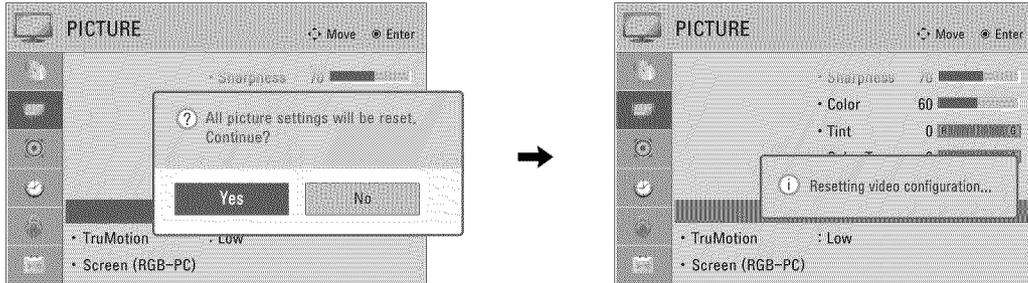
| | |
|-------------------------|---|
| Dynamic Contrast | <ul style="list-style-type: none"> Adjusts the contrast to keep it at the best level according to the brightness of the screen. The picture is improved by making bright parts brighter and dark parts darker. |
| Dynamic Color | <ul style="list-style-type: 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 white 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: 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 | <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>Advanced Control</p> <ul style="list-style-type: none"> Maximize the utilization of colors to increase color quality. Standard: Displays standard set of colors. Wide: Increase number of colors used. |
| | <p>LED LCD TV/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

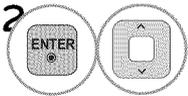
| | |
|-------------------------|--|
| Edge Enhancer | <ul style="list-style-type: none"> ■ Show clearer and distinctive yet natural edges in of the video. ■ This function is enabled in "Picture Mode - Expert". |
| xvYCC | <ul style="list-style-type: none"> ■ This produces richer colors. ■ This feature represents rich color as much as conventional video signal. ■ This function is enabled in "Picture Mode - Cinema, 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"> a. Gamma : Select 1.9, 2.2, 2.4 b. 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. Method : 10 Point IRE <ul style="list-style-type: none"> - Pattern: Inner, Outer - IRE (Institute of Radio Engineers) is the unit to display the size of the video signal and can be set among 10, 20, 30 - 100. You can adjust Red, Green or Blue according to each setting. - Luminance: This function displays calculated luminance value for 2.2 gamma. You can input luminance value you want at 100 IRE, 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. 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

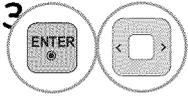
Settings of the selected picture modes return to the default factory settings.



1 Select **PICTURE**.



2 Select **Picture Reset**.



3 Select **Yes**.



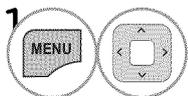
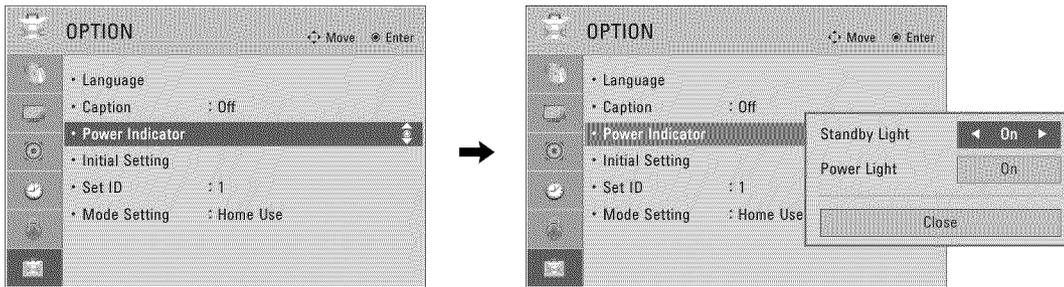
4 Initialize the adjusted value.



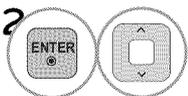
Return to TV viewing.

POWER INDICATOR

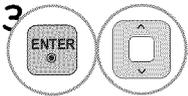
Adjust the power/standby indicator light on the front of the TV.



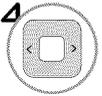
1 Select **OPTION**.



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.

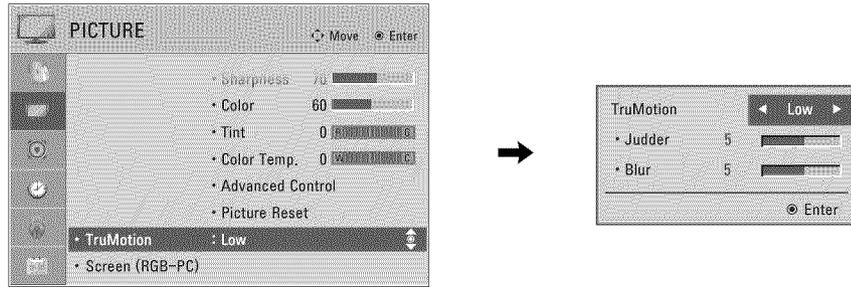
- **Standby Light:** Determines whether to set the indicator light on the front of the TV to **On** or **Off** in standby mode.
- **Power Light:** Determines whether to set the indicator light on the front of the TV to **On** or **Off** when the power turns on.

PICTURE CONTROL

TRUMOTION

- For 32/37/42/47/55LE5300, 42/47/55LE7300, 32/42/47/55LD520, 42/47/55LD630

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



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

Adjustment for TruMotion (Judder and Blur) with selecting User

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

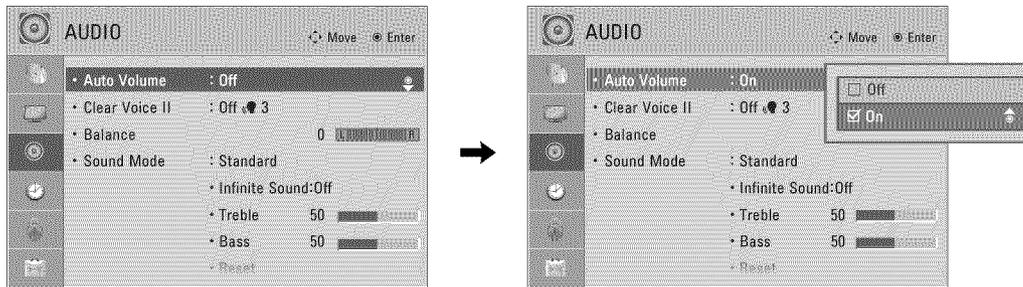
- **Off**: Turn off **TruMotion** operation.
- **Low**: Provides smooth picture movement. Use this setting for standard use.
- **High**: Provides smoother picture movement.
- **Judder**: Adjusts noise of the screen.
- **Blur**: Adjusts after-image of the screen.
- **TruMotion** works with all inputs 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**".

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.

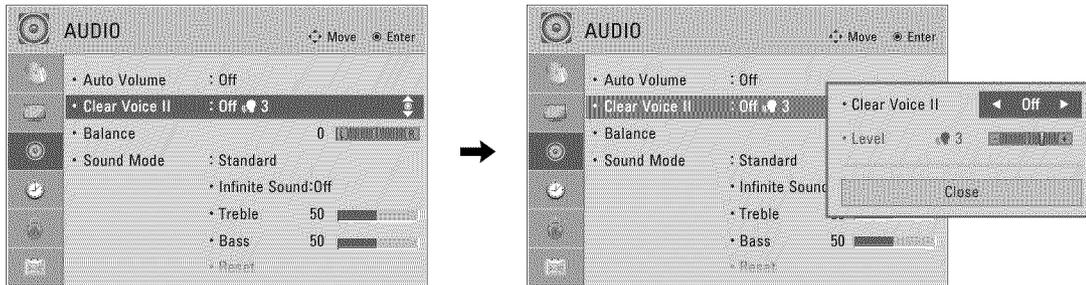


-   Select **AUDIO**.
-   Select **Auto Volume**.
-   Select **On** or **Off**.
-  Return to the previous menu.
-  Return to TV viewing.

SOUND & LANGUAGE CONTROL

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**.

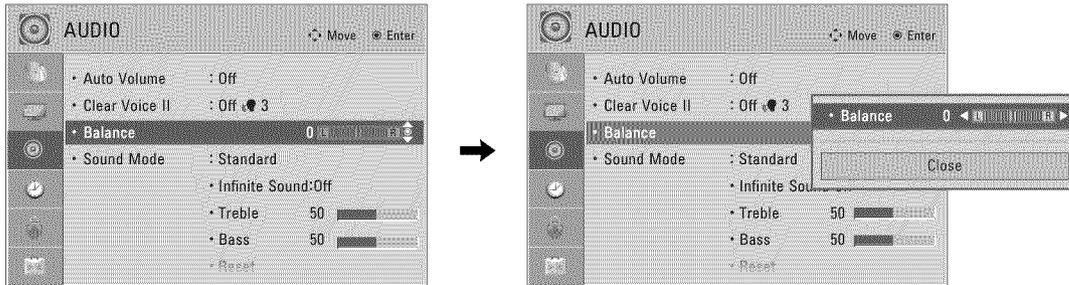
5   Make appropriate adjustments.

6  Return to the previous menu.

 Return to TV viewing.

BALANCE

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

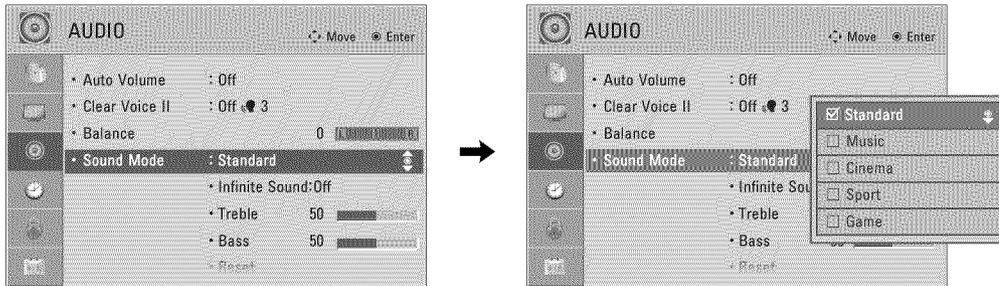


- 1   Select **AUDIO**.
- 2   Select **Balance**.
- 3   Make appropriate adjustments.
- 4  Return to the previous menu.
-  Return to TV viewing.

SOUND & LANGUAGE CONTROL

PRESET SOUND SETTINGS (SOUND MODE)

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

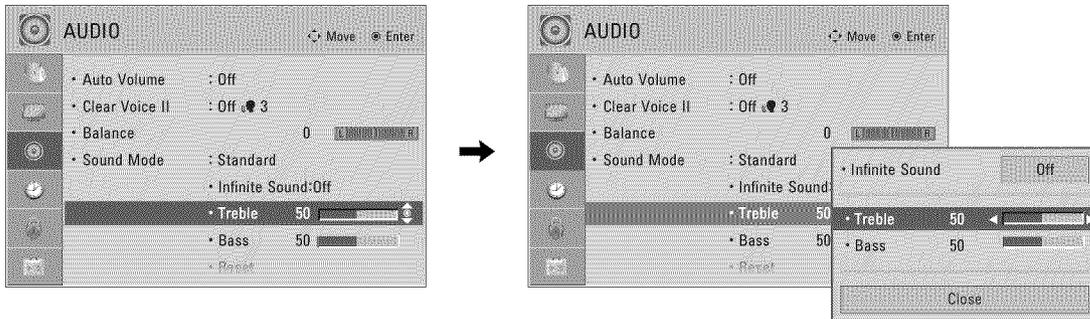


-   Select **AUDIO**.
-   Select **Sound Mode**.
-   Select **Standard, Music, Cinema, Sport, or Game**.
-  Return to the previous menu.
-  Return to TV viewing.

- **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 SETTING ADJUSTMENT - USER MODE

Adjust the sound to suit your taste and room situations.



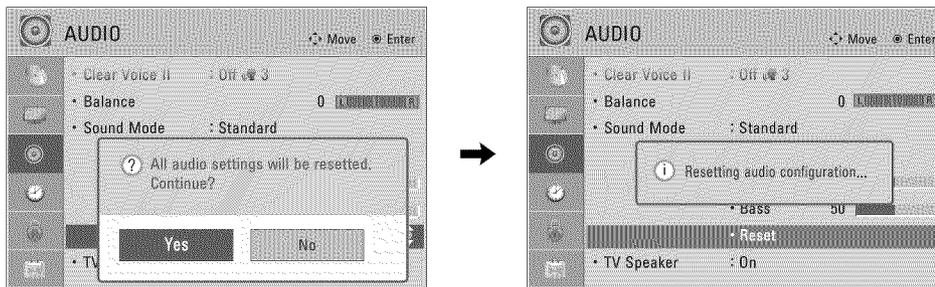
- 1   Select **AUDIO**.
- 2   Select **Sound Mode**.
- 3   Select **Standard, Music, Cinema, Sport, or Game**.
- 4   Select **Infinite Sound, Treble, or Bass**.
- 5   Make appropriate adjustments.
- 6  Return to the previous menu.
-  Return to TV viewing.

- 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.

SOUND & LANGUAGE CONTROL

AUDIO RESET

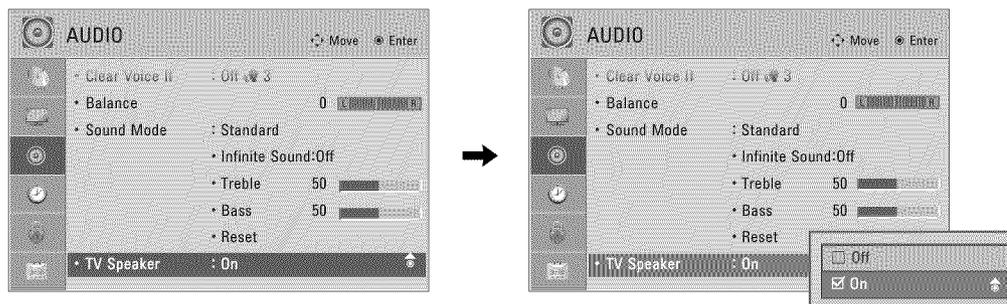
Settings of the selected Sound Mode return to the default factory settings.



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

TV SPEAKERS ON/OFF SETUP

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

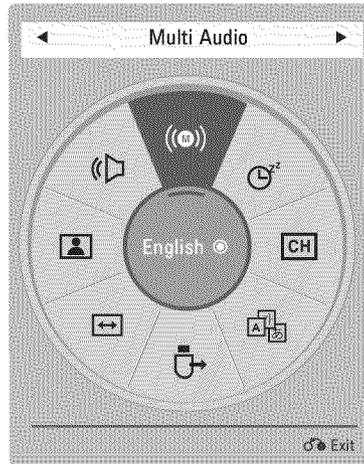


-   Select **AUDIO**.
-   Select **TV Speaker**.
-   Select **On** or **Off**.
-  Return to the previous menu.
-  Return to TV viewing.

SOUND & LANGUAGE CONTROL

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

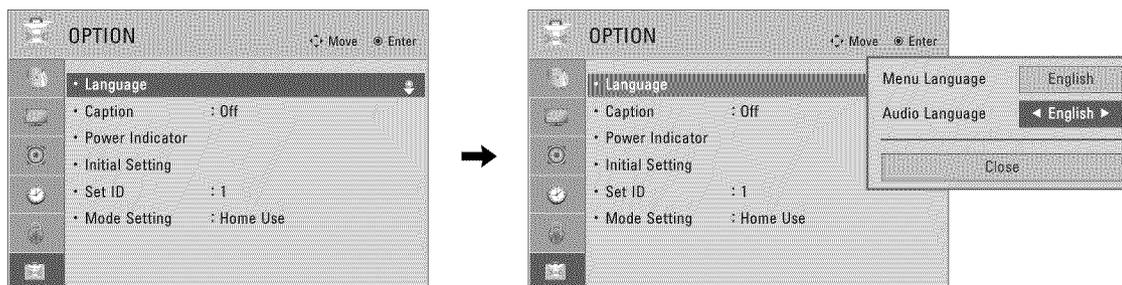
- 1   Select **SAP**.
- 2   Select **Mono, Stereo, or SAP**.
- 3  Return to TV viewing.

Digital TV

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

AUDIO LANGUAGE

This feature operates only in DTV/Cable DTV mode.

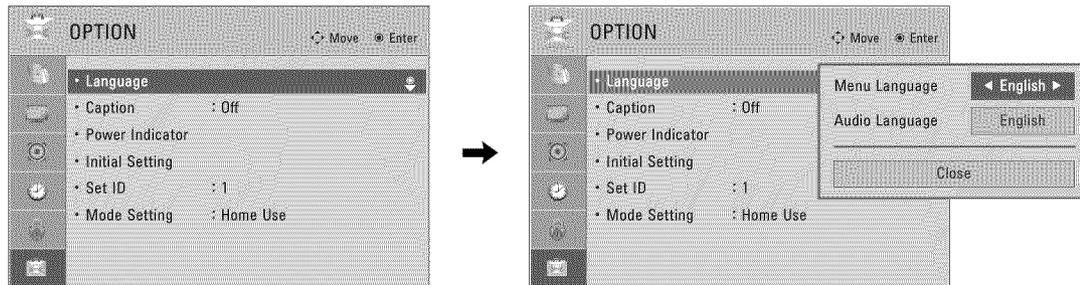


-   Select **OPTION**.
-   Select **Language**.
-   Select **Audio Language**.
-  Select your desired language.
-  Return to the previous menu.
-  Return to TV viewing.

SOUND & LANGUAGE CONTROL

ON-SCREEN MENUS LANGUAGE SELECTION

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

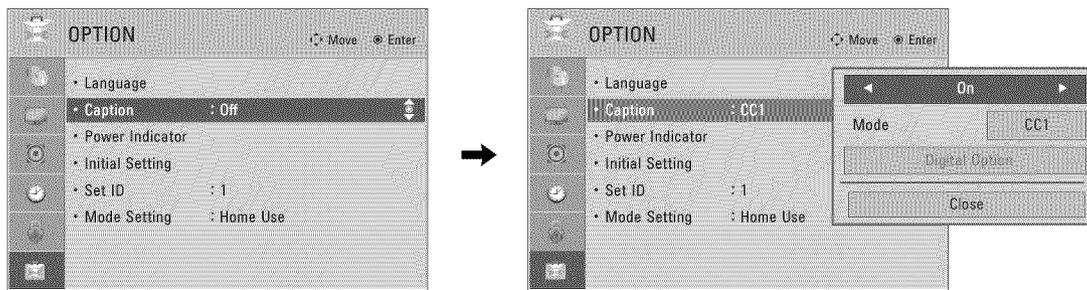


-   Select **OPTION**.
-   Select **Language**.
-   Select **Menu Language**.
-  Select your desired language.
From this point on, the on-screen menus will be shown in the selected language.
-  Return to the previous menu.
-  Return to TV viewing.

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.

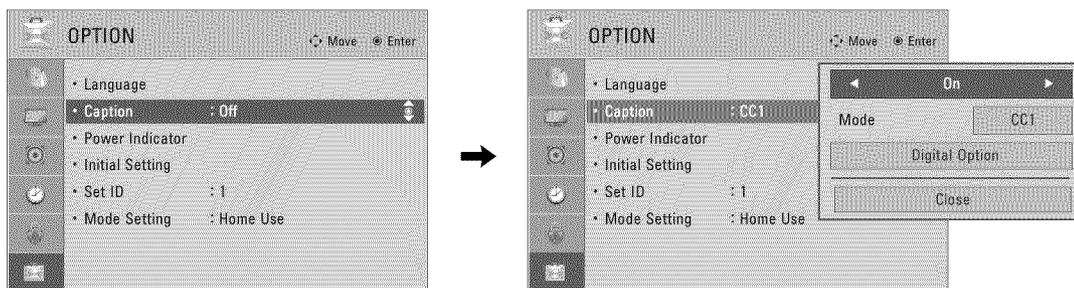
SOUND & LANGUAGE CONTROL

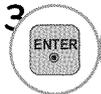
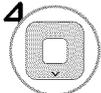
Digital Broadcasting System Captions

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**.

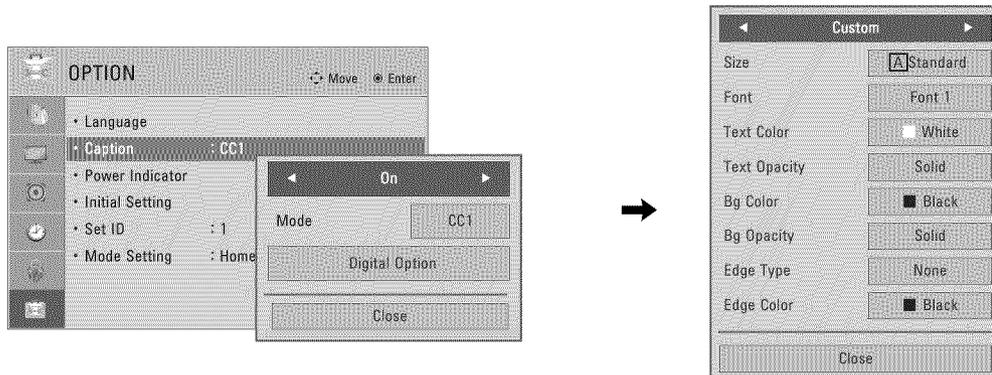


-   Select **OPTION**.
-   Select **Caption**.
-   Select **On**.
-   Select **CC1-4, Text1-4, or Service1 - 6**.
-  Return to the previous menu.
-  Return to TV viewing.

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

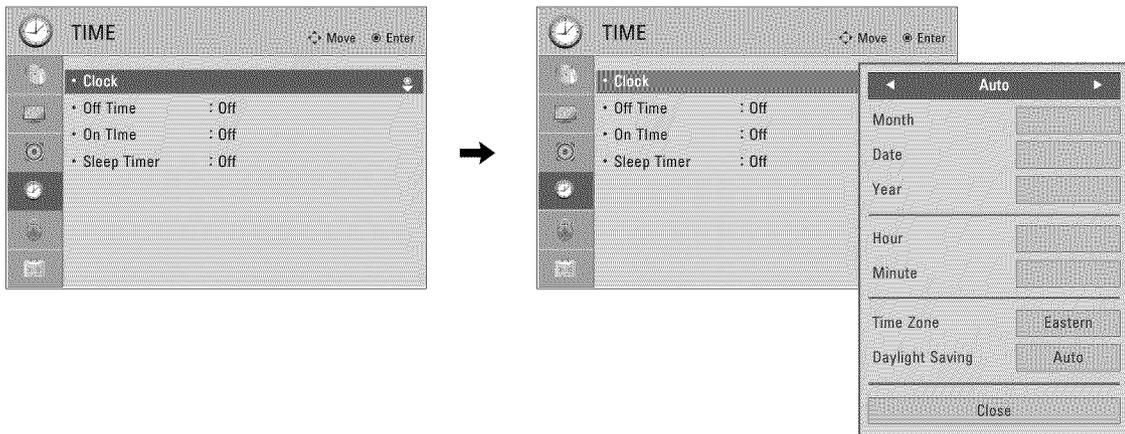
CLOCK SETTING

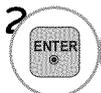
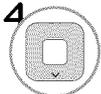
Auto Clock Setup

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.

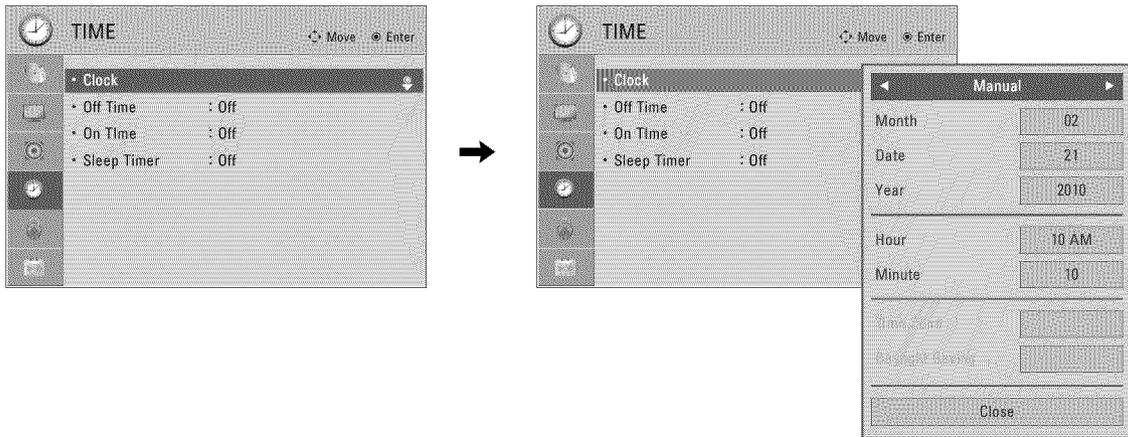
Set the clock manually if the current time is set incorrectly by the auto clock function.



-   Select **TIME**.
-   Select **Clock**.
-   Select **Auto**.
-   Select your viewing area time zone.
USA: **Eastern, Central, Mountain, Pacific, Alaska, or Hawaii.**
Canada: **Eastern, Central, Mountain, Pacific, New Foundland, or Atlantic.**
-   Select **Auto, Off, or On** (depending on whether or not your viewing area observes Daylight Saving time).
-  Return to the previous menu.
-  Return to TV viewing.

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.

TIME SETTING

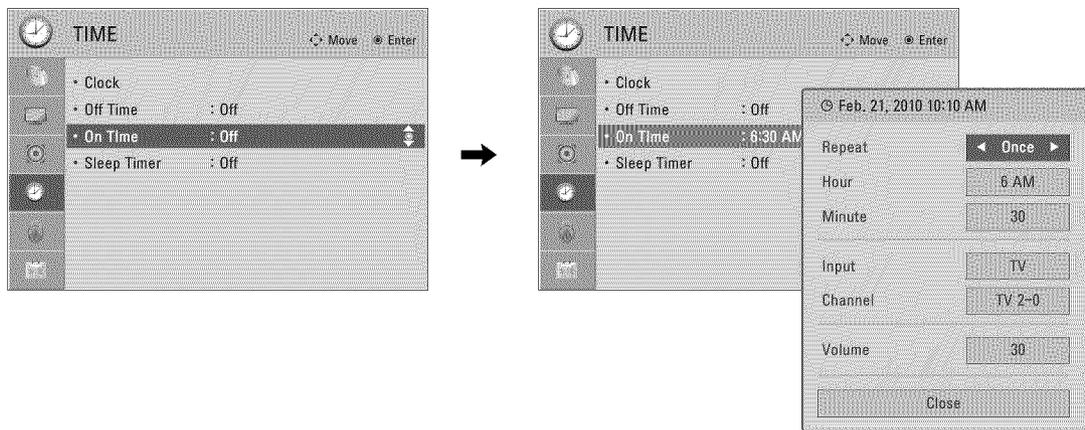
AUTO ON/OFF TIME SETTING

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.

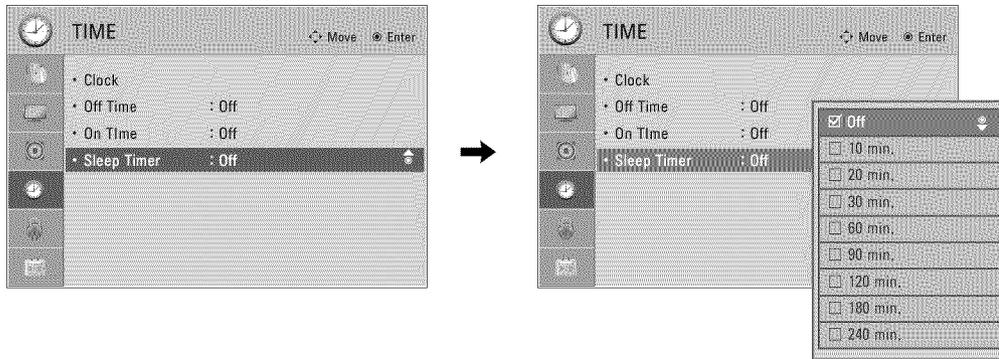


- 1 Select **TIME**.
- 2 Select **Off Time** or **On Time**.
- 3 Select **Repeat**.
- 4 Select **Off**, **Once**, **Daily**, **Mon.~Fri.**, **Mon.~Sat.**, **Sat.~ Sun.**, or **Sun.**
- 5 Select and set Hour or Minute.
- 6 Return to the previous menu.
- Return to TV viewing.

- 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.

SLEEP TIMER SETTING

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



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

■ To cancel the **Sleep Timer**, select **Off**.
■ You can also adjust **Sleep Timer** in the **Q.MENU**.

PARENTAL CONTROL / RATINGS

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

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

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

V-Chip rating and categories

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

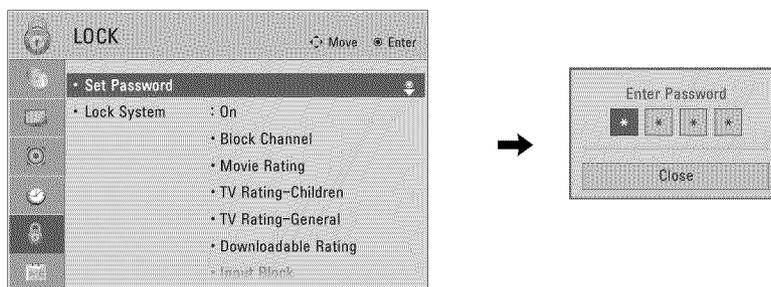
Ratings for Television programs including made-for-TV movies:

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

SET PASSWORD & LOCK SYSTEM

Setting up Your Password

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

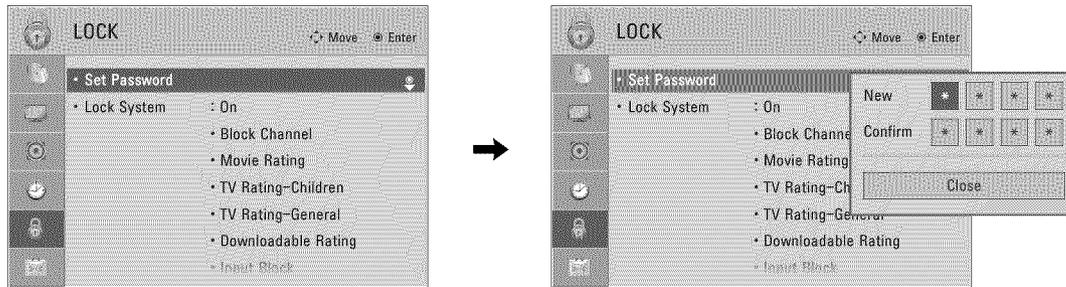


1.    Select **LOCK**.
2.  Input the password.

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

Set Password

Change the password by inputting a new password twice.

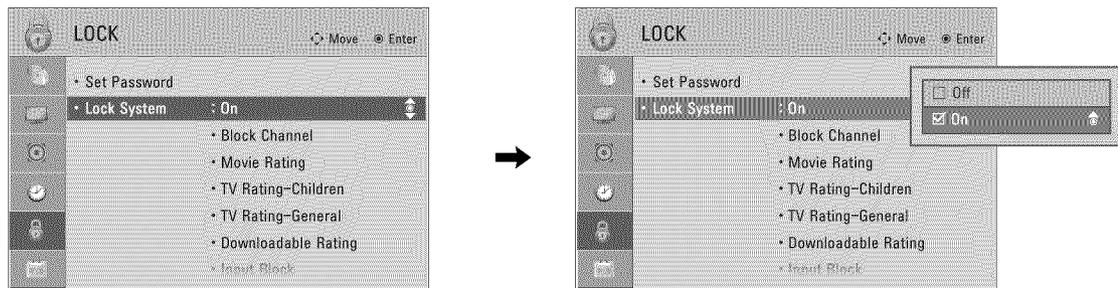


-    Select **LOCK**.
-  Input the password.
-  Select **Set Password**.
-   Choose any 4 digits for your new password.
As soon as the 4 digits are entered, re-enter the same 4 digits on the **Confirm**.
-  Return to the previous menu.
-  Return to TV viewing.

PARENTAL CONTROL / RATINGS

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**.

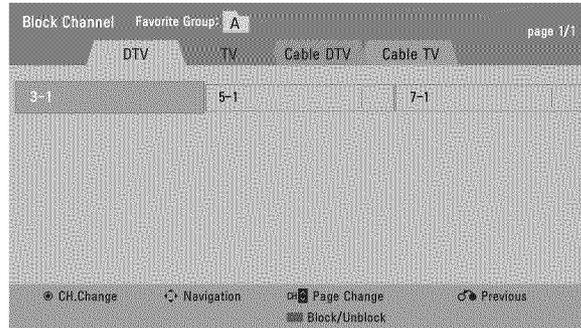
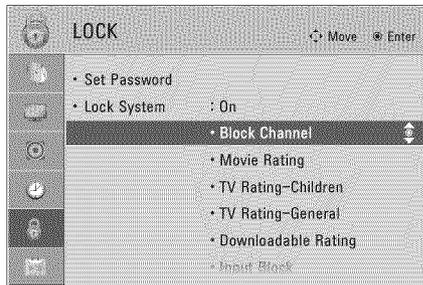
5  Return to the previous menu.

 Return to TV viewing.

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

CHANNEL BLOCKING

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



-    Select **LOCK**.
-  Input the password.
-  Select **Block Channel**.
-   Select a channel to block or unblock.
-  Block or unblock a channel.
-  Return to the previous menu.
-  Return to TV viewing.

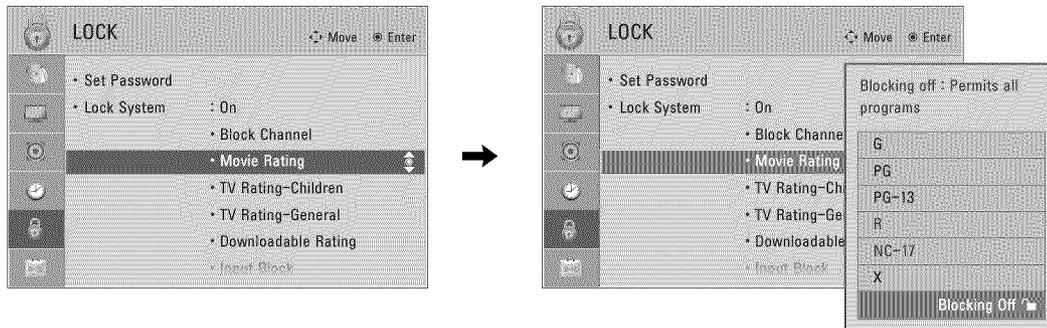
■ If a channel is locked, enter the password to unlock it temporarily.

PARENTAL CONTROL / RATINGS

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.

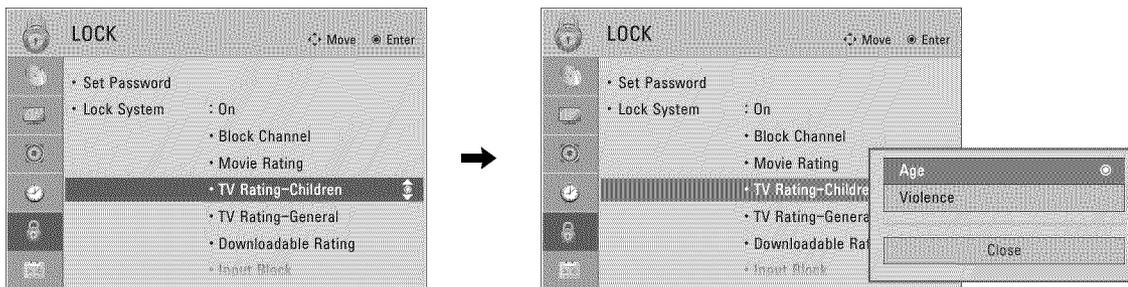


- 1 Select **LOCK**.
- 2 Input the password.
- 3 Select **Movie Rating**.
- 4 Select **G, PG, PG-13, R, NC-17, X, or Blocking Off**.
- 5 Return to the previous menu.
- Return to TV viewing.

- 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.

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.



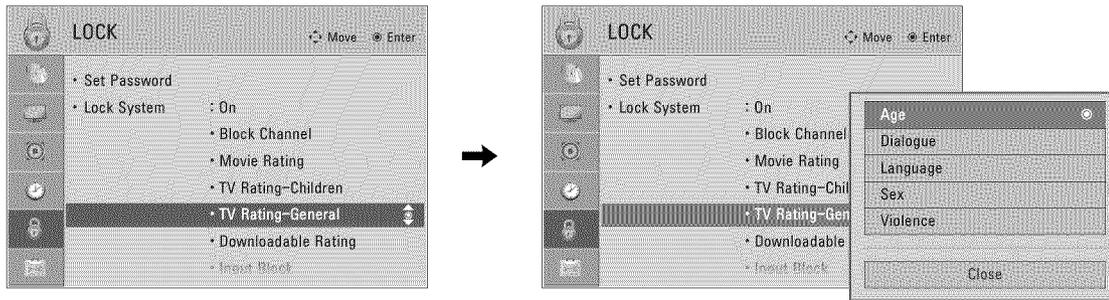
-    Select **LOCK**.
-  Input the password.
-  Select **TV Rating-Children**.
-   Select **Age** or **Fantasy Violence**.
-   Select block options.
-  Return to the previous menu.
-  Return to TV viewing.

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

PARENTAL CONTROL / RATINGS

TV Rating General - For USA

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

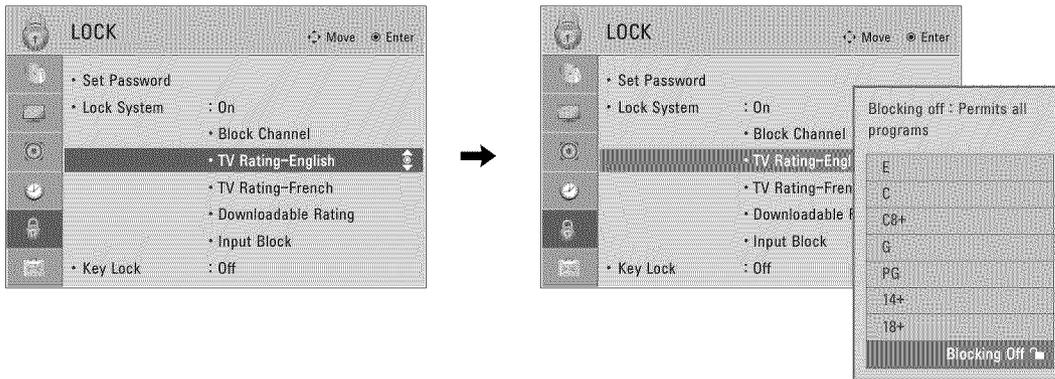


- 1 Select **LOCK**.
- 2 Input the password.
- 3 Select **TV Rating-General**.
- 4 Select **Age, Dialogue, Language, Sex** or **Violence**.
- 5 Select block options.
- 6 Return to the previous menu.
- Return to TV viewing.

- **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).

TV Rating English - For CANADA

Selecting Canadian English rating system.



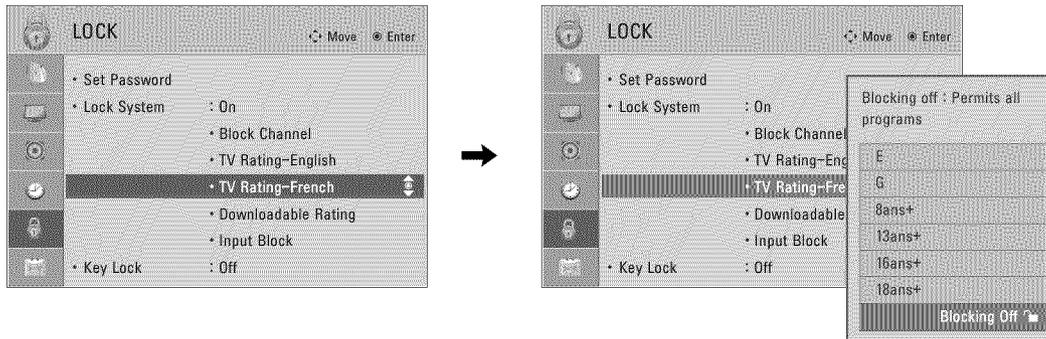
- 1    Select **LOCK**.
- 2  Input the password.
- 3  Select **TV Rating-English**.
- 4   Select **E, C, C8+, G, PG, 14+, 18+, or Blocking Off**.
- 5  Return to the previous menu.
-  Return to TV viewing.

- If TV Rating-English or TV Rating-French is locked, enter the password to unlocked 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)

PARENTAL CONTROL / RATINGS

TV Rating French - For CANADA

Selecting Canadian French rating system.



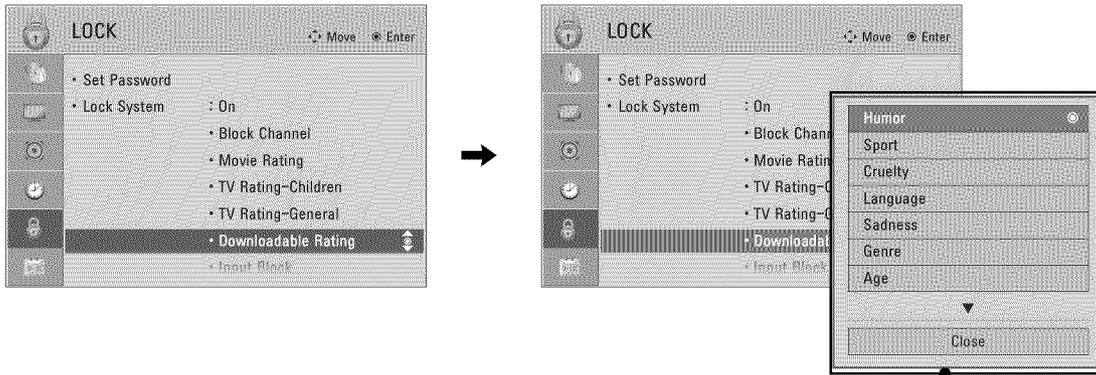
-    Select **LOCK**.
-  Input the password.
-  Select **TV Rating-French**.
-   Select **E**, **G**, **8ans+**, **13ans+**, **16ans+**, **18ans+**, or **Blocking Off**.
-  Return to the previous menu.
-  Return to TV viewing.

- **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)

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.

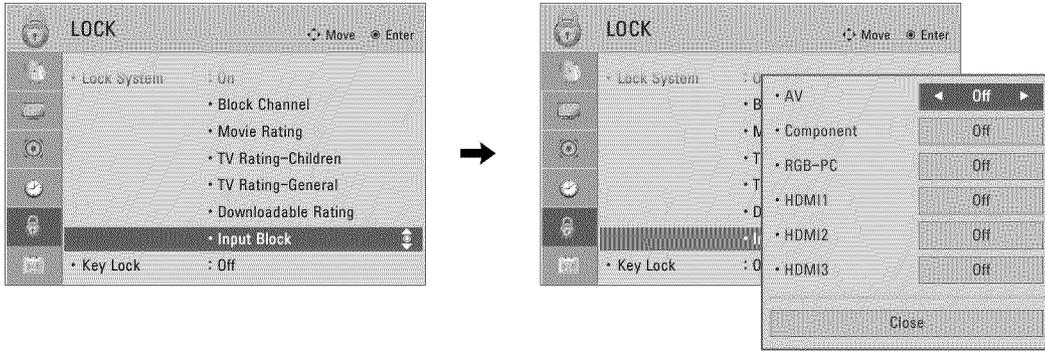
Return to TV viewing.

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

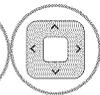
PARENTAL CONTROL / RATINGS

EXTERNAL INPUT BLOCKING

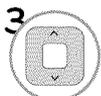
Enables you to block an input.

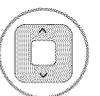


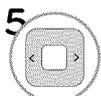
i.e)

1    Select **LOCK**.

2  Input the password.

3  Select **Input Block**.

4   Select input source.

5  Select **On** or **Off**.

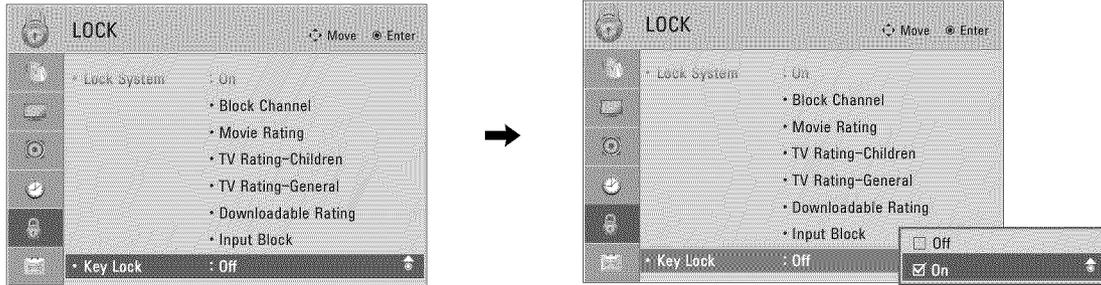
6  Return to the previous menu.

 Return to TV viewing.

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 **LOCK**.
- 4   Select **On** or **Off**.
- 4  Return to the previous menu.
-  Return to TV viewing.

- In Key Lock 'On', if the TV is turned off, press the  / I, INPUT, CH (  or  ) 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"> ■ Check HDMI cable over version 1.3. The HDMI cables don't support HDMI version 1.3, it cause flickers or no screen display. In this case use the latest cables that support HDMI version 1.3. |

| 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 HDMI cable over version 1.3. ■ Check USB cable over version 2.0. ■ Use normal MP3 file. <small>*This feature is not available for all models.</small> |

| 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. |

APPENDIX

| 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.) |

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.

APPENDIX

PRODUCT SPECIFICATIONS

| MODELS | | 19LE5300 (19LE5300-UE) | 22LE5300 (22LE5300-UE) |
|--|---------------|--|--|
| Dimensions (Width x Height x Depth) | With stand | 471.2 mm x 365.9 mm x 155.4 mm (18.6 inch x 14.4 inch x 6.1 inch) | 542.9 mm x 407.1 mm x 155.4 mm (21.4 inch x 16.0 inch x 6.1 inch) |
| | Without stand | 471.2 mm x 315.5 mm x 34.4 mm (18.6 inch x 12.4 inch x 1.4 inch) | 542.9 mm x 357.6 mm x 34.4 mm (21.4 inch x 14.1 inch x 1.4 inch) |
| Weight | With stand | 3.4 kg (7.5 lbs) | 4.2 kg (9.3 lbs) |
| | Without stand | 3.2 kg (7.1 lbs) | 3.9 kg (8.6 lbs) |

| MODELS | | 26LE5300 (26LE5300-UE) |
|--|---------------|--|
| Dimensions (Width x Height x Depth) | With stand | 652.0 mm x 480.8 mm x 191.4 mm (25.7 inch x 18.9 inch x 7.5 inch) |
| | Without stand | 652.0 mm x 420.3 mm x 34.4 mm (25.7 inch x 16.5 inch x 1.4 inch) |
| Weight | With stand | 6.1 kg (13.4 lbs) |
| | Without stand | 5.1 kg (11.2 lbs) |

| | | |
|----------------------------|---|-----------------------------------|
| Power Requirement | 19LE5300: 24V $\overline{=}$, 1.6A 22LE5300: 24V $\overline{=}$, 1.7 A 26LE5300: 24V $\overline{=}$, 1.8 A | |
| Adapter (DC Power) | In: AC100-240 V ~ 50/60 Hz Out: DC 24 V, 3.42 A | |
| 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 | | 32LE5300 (32LE5300-UC) | 37LE5300 (37LE5300-UC) |
|--|---------------|--|---|
| Dimensions (Width x Height x Depth) | With stand | 784.6 mm x 558.1 mm x 221.0 mm (30.9 inch x 22.0 inch x 8.7 inch) | 905.0 mm x 630.0 mm x 270.0 mm (35.6 inch x 24.8 inch x 10.6 inch) |
| | Without stand | 784.6 mm x 499.5 mm x 39.9 mm (30.9 inch x 19.7 inch x 1.6 inch) | 905.0 mm x 568.0 mm x 39.9 mm (35.6 inch x 22.3 inch x 1.6 inch) |
| Weight | With stand | 12.6 kg (27.9 lbs) | 15.3 kg (33.7 lbs) |
| | Without stand | 10.5 kg (23.1 lbs) | 11.8 kg (26.0 lbs) |

| MODELS | | 42LE5300 (42LE5300-UC) | 47LE5300 (47LE5300-UC) |
|--|---------------|--|--|
| Dimensions (Width x Height x Depth) | With stand | 1016.0 mm x 692.0 mm x 270.0 mm (40.0 inch x 27.2 inch x 10.6 inch) | 1126.6 mm x 757.9 mm x 284.4 mm (44.3 inch x 29.8 inch x 11.1 inch) |
| | Without stand | 1016.0 mm x 630.0 mm x 29.3 mm (40.0 inch x 24.8 inch x 1.1 inch) | 1126.6 mm x 692.0 mm x 29.3 mm (44.3 inch x 27.2 inch x 1.1 inch) |
| Weight | With stand | 19.5 kg (42.9 lbs) | 22.6 kg (49.8 lbs) |
| | Without stand | 16.7 kg (36.8 lbs) | 19.6 kg (43.2 lbs) |

| MODELS | | 55LE5300 (55LE5300-UC) |
|--|---------------|--|
| Dimensions (Width x Height x Depth) | With stand | 1306.0 mm x 867.0 mm x 345.0 mm (51.4 inch x 34.1 inch x 13.5 inch) |
| | Without stand | 1306.0 mm x 797.0 mm x 30.7 mm (51.4 inch x 31.3 inch x 1.3 inch) |
| Weight | With stand | 34.5 kg (76.0 lbs) |
| | Without stand | 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.

APPENDIX

| MODELS | | 42LE7300 (42LE7300-UA) | 47LE7300 (47LE7300-UA) |
|--|---------------|--|--|
| Dimensions (Width x Height x Depth) | With stand | 1018.2 mm x 693.5 mm x 269.8 mm (40.0 inch x 27.2 inch x 10.6 inch) | 1128.6 mm x 758.9 mm x 284.4 mm (44.4 inch x 29.8 inch x 11.1 inch) |
| | Without stand | 1018.2 mm x 630.7 mm x 29.3 mm (40.0 inch x 24.8 inch x 1.1 inch) | 1128.6 mm x 693.3 mm x 29.8 mm (44.4 inch x 27.2 inch x 1.1 inch) |
| Weight | With stand | 21.9 kg (48.2 lbs) | 26.2 kg (57.7 lbs) |
| | Without stand | 19.1 kg (42.1 lbs) | 23.0 kg (50.7 lbs) |

| MODELS | | 55LE7300 (55LE7300-UA) |
|--|---------------|--|
| Dimensions (Width x Height x Depth) | With stand | 1306.0 mm x 867.7 mm x 328.0 mm (51.4 inch x 34.1 inch x 12.9 inch) |
| | Without stand | 1306.0 mm x 797.4 mm x 31.2 mm (51.4 inch x 31.3 inch x 1.2 inch) |
| Weight | With stand | 38.4 kg (84.6 lbs) |
| | Without stand | 32.8 kg (72.3 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 | | 32LD320 (32LD320-UA) | 32LD420 (32LD420-UA) |
|--|---------------|--|--|
| Dimensions (Width x Height x Depth) | With stand | 805.0 mm x 583.0 mm x 224.0 mm (31.6 inch x 22.9 inch x 8.8 inch) | 805.0 mm x 583.0 mm x 224.0 mm (31.6 inch x 22.9 inch x 8.8 inch) |
| | Without stand | 805.0 mm x 528.0 mm x 79.9 mm (31.6 inch x 20.7 inch x 3.1 inch) | 805.0 mm x 531.0 mm x 79.9 mm (31.6 inch x 20.9 inch x 3.1 inch) |
| Weight | With stand | 11.5 kg (25.3 lbs) | 12.1 kg (26.6 lbs) |
| | Without stand | 10.3 kg (22.7 lbs) | 11.0 kg (24.2 lbs) |

| MODELS | | 42LD420 (42LD420-UA) | 47LD420 (47LD420-UA) |
|--|---------------|--|--|
| Dimensions (Width x Height x Depth) | With stand | 1028.0 mm x 715.4 mm x 297.0 mm (40.4 inch x 28.1 inch x 11.6 inch) | 1140.6 mm x 784.8 mm x 337.4 mm (44.9 inch x 30.8 inch x 13.2 inch) |
| | Without stand | 1028.0 mm x 658.6 mm x 88.7 mm (40.4 inch x 25.9 inch x 3.4 inch) | 1140.6 mm x 722.9 mm x 99.0 mm (44.9 inch x 28.4 inch x 3.8 inch) |
| Weight | With stand | 18.0 kg (39.6 lbs) | 22.5 kg (49.6 lbs) |
| | Without stand | 16.2 kg (35.7 lbs) | 19.9 kg (43.8 lbs) |

| MODELS | | 32LD450 (32LD450-UA) | 37LD450 (37LD450-UA) |
|--|---------------|--|---|
| Dimensions (Width x Height x Depth) | With stand | 799.0 mm x 555.0 mm x 207.0 mm (31.5 inch x 21.8 inch x 8.1 inch) | 916.0 mm x 625.0 mm x 261.0 mm (36.1 inch x 24.6 inch x 10.3 inch) |
| | Without stand | 799.0 mm x 506.0 mm x 73.5 mm (31.5 inch x 19.9 inch x 2.9 inch) | 916.0 mm x 575.0 mm x 77.4 mm (36.1 inch x 22.6 inch x 3.0 inch) |
| Weight | With stand | 9.1 kg (20.1 lbs) | 12.5 kg (27.6 lbs) |
| | Without stand | 8.1 kg (17.9 lbs) | 10.8 kg (23.8 lbs) |

| MODELS | | 42LD450 (42LD450-UA) | 47LD450 (47LD450-UA) |
|--|---------------|--|--|
| Dimensions (Width x Height x Depth) | With stand | 1023.0 mm x 685.0 mm x 261.0 mm (40.3 inch x 27.0 inch x 10.3 inch) | 1136.0 mm x 757.0 mm x 270.0 mm (44.7 inch x 29.8 inch x 10.6 inch) |
| | Without stand | 1023.0 mm x 635.0 mm x 76.6 mm (40.3 inch x 25.0 inch x 3.0 inch) | 1136.0 mm x 698.0 mm x 76.5 mm (44.7 inch x 27.5 inch x 3.0 inch) |
| Weight | With stand | 15.1 kg (33.2 lbs) | 19.5 kg (43.0 lbs) |
| | Without stand | 13.5 kg (29.7 lbs) | 17.5 kg (38.6 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

| MODELS | | 32LD520 (32LD520-UA) | 42LD520 (42LD520-UA) |
|--|---------------|--|--|
| Dimensions (Width x Height x Depth) | With stand | 815.0 mm x 585.6 mm x 210.9 mm (32.0 inch x 23.0 inch x 8.3 inch) | 1052.2 mm x 720.1 mm x 270.6 mm (41.4 inch x 28.3 inch x 10.6 inch) |
| | Without stand | 815.0 mm x 529.6 mm x 82.0 mm (32.0 inch x 20.8 inch x 3.2 inch) | 1052.2 mm x 657.3 mm x 90.8 mm (41.4 inch x 25.8 inch x 3.5 inch) |
| Weight | With stand | 12.6 kg (27.7 lbs) | 19.0 kg (41.8 lbs) |
| | Without stand | 11.4 kg (25.1 lbs) | 17.2 kg (37.9 lbs) |

| MODELS | | 47LD520 (47LD520-UA) | 55LD520 (55LD520-UA) |
|--|---------------|--|--|
| Dimensions (Width x Height x Depth) | With stand | 1173.4 mm x 791.4 mm x 319.0 mm (46.2 inch x 31.1 inch x 12.5 inch) | 1357.0 mm x 901.0 mm x 423.0 mm (53.4 inch x 35.4 inch x 16.6 inch) |
| | Without stand | 1173.4 mm x 723.4 mm x 100.8 mm (46.2 inch x 28.4 inch x 3.9 inch) | 1357.0 mm x 835.4 mm x 109.6 mm (53.4 inch x 32.8 inch x 4.3 inch) |
| Weight | With stand | 23.6 kg (52.0 lbs) | 36.4 kg (80.2 lbs) |
| | Without stand | 20.8 kg (45.8 lbs) | 32.9 kg (72.5 lbs) |

| MODELS | | 42LD630 (42LD630-UA) | 47LD630 (47LD630-UA) |
|--|---------------|--|--|
| Dimensions (Width x Height x Depth) | With stand | 1052.2 mm x 719.1 mm x 296.2 mm (41.4 inch x 28.3 inch x 11.6 inch) | 1137.0 mm x 758.0 mm x 270.0 mm (44.7 inch x 29.8 inch x 10.6 inch) |
| | Without stand | 1052.2 mm x 657.3 mm x 90.8 mm (41.5 inch x 25.8 inch x 3.5 inch) | 1137.0 mm x 685.0 mm x 76.8 mm (44.7 inch x 26.9 inch x 3.0 inch) |
| Weight | With stand | 19.0 kg (41.8 lbs) | 20.3 kg (44.7 lbs) |
| | Without stand | 17.2 kg (37.9 lbs) | 18.3 kg (40.3 lbs) |

| MODELS | | 55LD630 (55LD630-UA) |
|--|---------------|--|
| Dimensions (Width x Height x Depth) | With stand | 1329.0 mm x 872.0 mm x 330.0 mm (52.3 inch x 34.3 inch x 12.9 inch) |
| | Without stand | 1329.0 mm x 796.0 mm x 96.5 mm (52.3 inch x 31.3 inch x 3.7 inch) |
| Weight | With stand | 32.1 kg (70.7 lbs) |
| | Without stand | 28.9 kg (63.7 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.

IR CODE

| 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 | AV or AV1 | Discrete IR Code (AV1 Input Selection) |
| 09 | MUTE | Remote Control Button | D0 | AV2 | Discrete IR Code (AV2 Input Selection) |
| 0B | INPUT | Remote Control Button | BF | COMPONENT | Discrete IR Code (Component Input Selection) |
| 0F | TV | Remote Control Button | D5 | RGB-PC | Discrete IR Code (RGB-PC Input Selection) |
| 10-19 | Number 0-9 | Remote Control Button | CE | HDMI1 | Discrete IR Code (HDMI1 Input Selection) |
| 1A | FLASHBK | Remote Control Button | CC | HDMI2 | Discrete IR Code (HDMI2 Input Selection) |
| 1E | FAV/MARK | Remote Control Button | E9 | HDMI3 | Discrete IR Code (HDMI3 Input Selection) |
| 28 | BACK | Remote Control Button | DA | HDMI4 | Discrete IR Code (HDMI4 Input Selection) |
| 30 | AV MODE | Remote Control Button | 76 | Ratio 4:3 | Discrete IR Code (Only 4:3 Mode) |
| 40 | ^ | Remote Control Button | 77 | Ratio 16:9 | Discrete IR Code (Only 16:9 Mode) |
| 41 | v | Remote Control Button | AF | Ratio Zoom | Discrete IR Code (Only Zoom Mode) |
| 43 | MENU | Remote Control Button | | | |
| 44 | ENTER | Remote Control Button | | | |
| 45 | Q.MENU | Remote Control Button | | | |
| 4C | - (Dash)/LIST | Remote Control Button | | | |
| 5B | EXIT | Remote Control Button | | | |
| 61 | BLUE | 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

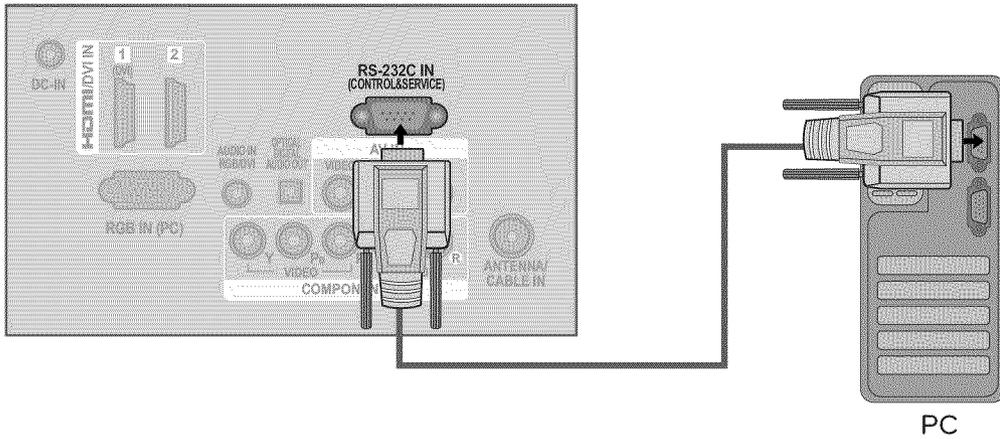
The RS-232C port allows you connect the RS-232C input jack to an external control device (such as a computer or an A/V control system) to control the TV's functions externally.

- 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)



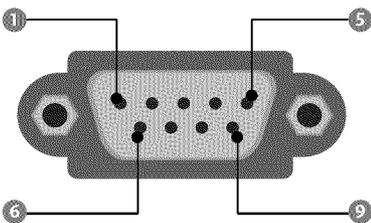
Type of Connector; D-Sub 9-Pin Male

Communication Parameters

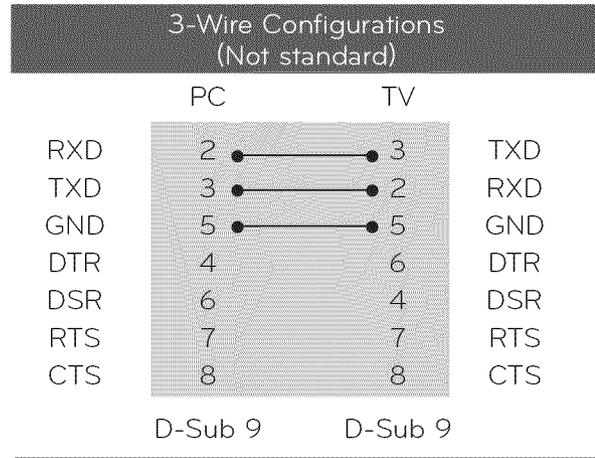
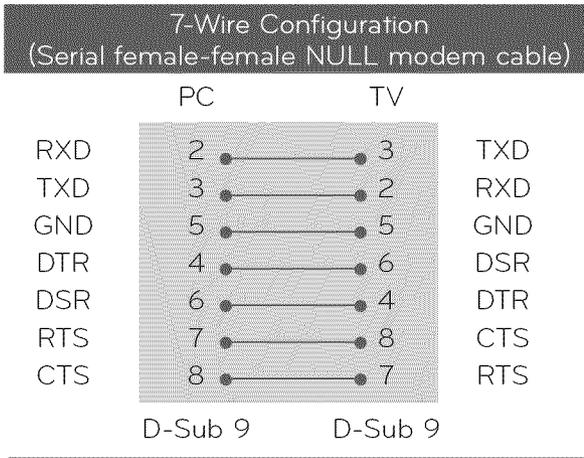
| No. | Pin Name |
|-----|----------------------|
| 1 | No connection |
| 2 | RXD (Receive data) |
| 3 | TXD (Transmit data) |
| 4 | DTR (DTE side ready) |
| 5 | GND |
| 6 | DSR (DCE side ready) |
| 7 | RTS (Ready to send) |
| 8 | CTS (Clear to send) |
| 9 | No Connection |

- 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.

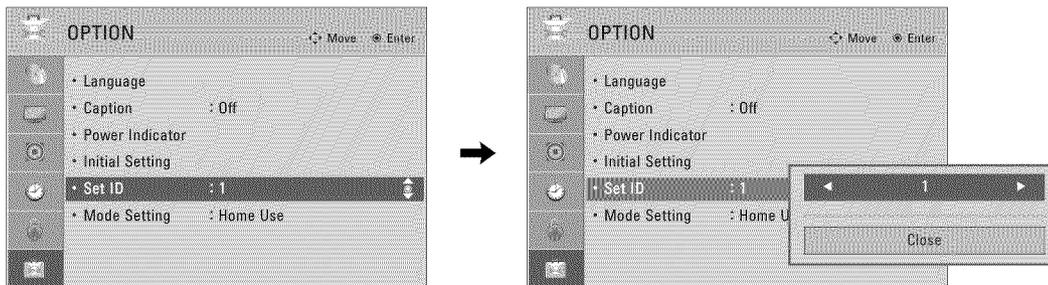


RS-232C Configurations



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 | ▶ P155 |
| 03. Aspect Ratio | k | c | ▶ P155 |
| 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. Energy Saving | j | q | ▶ P156 |
| 19. Auto Configuration | j | u | ▶ P156 |
| 21. Channel Add/Del | m | b | 00 - 01 |
| 22. Key | m | c | ▶ P157 |
| 23. Backlight | m | g | 00 - 64 |

| | COMMAND1 | COMMAND2 | DATA00 (Hexadecimal) | DATA01 (Hexadecimal) | | |
|--------------------|----------|----------|-------------------------|-------------------------|-------------------------|-------------------------|
| 20. 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 10: Analog (Antenna) Data 11: Analog (Cable)

Data 20: AV or AV1 Data 21: AV 2

Data 40: Component

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 05: Zoom2 Data 1F: Cinema Zoom16

Data 06: Set by program

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

*Refer to 'Real data mapping'.

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

18. Energy Saving (Command: j q)

To control the energy saving function.

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

Data 00: Energy saving - off

01: Energy saving - Minimum

02: Energy saving - Medium

03: Energy saving - Maximum

04: Energy saving - Auto (depending on model)

05: Energy saving - Screen off

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

19. Auto Configuration (Command: j u)

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

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

Data 01: To set

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

20. Channel Tuning (Command: m a)

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

Transmission [m][a][][Set ID][][Data00][][Data01]

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

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

Data 00: Physical Channel Number

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

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

Data 01 & 02: Major Channel Number

Data 01: High byte Data 02: Low byte

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

Data 03 & 04: Minor Channel Number

Not needed for NTSC.

| Data5: | 7 Main/Sub Picture | 6 Two/One Part Channel | 5 Using Physical Channel | 4 Reserved | 3 | 2 | 1 | 0 | Step |
|--------|--------------------------|------------------------------|--------------------------------|---------------|---|---|---|---|-----------------|
| | 0 Main | 0 Two | 0 Use | x | 0 | 0 | 0 | 0 | NTSC Air |
| | 1 Sub | 1 One | 1 No Use | x | 0 | 0 | 0 | 1 | NTSC Cable |
| | | | | x | 0 | 0 | 1 | 0 | ATSC Air |
| | | | | x | 0 | 0 | 1 | 1 | ATSC Cable_std |
| | | | | x | 0 | 1 | 0 | 0 | ATSC Cable_hrc |
| | | | | x | 0 | 1 | 0 | 1 | ATSC Cable_irc |
| | | | | x | 0 | 1 | 1 | 0 | ATSC cable_auto |
| | | | | x | 0 | 1 | 1 | 1 | Reserved |
| | | | | x | x | x | x | x | ... |
| | | | | x | 1 | 1 | 1 | 1 | Reserved |

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

- * 7th bit : For which source do you want to change the channel.
- * 6th bit: Use a two part or one part channel. Most cases just use 0 since it's ignored when using NTSC.
- * 5th bit: Use 0 with NTSC since it can only use the physical channel number. Normally use 1 for ATSC since most times it doesn't matter what the physical number is.
- * 4th bit: Set to 0.
- * 3-0 bits: Choose signal type.

***Tune Command Examples:**

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

Data 00 = Physical of 35 = 23
 Data 01 & 02 = No Major = 00 00
 Data 03 & 04 = No Minor = 00 00
 Data 05 = 0000 0001 in binary = 01
 Total = ma 00 23 00 00 00 00 01

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

Data 00 = Don't know Physical = 00
 Data 01 & 02 = Major is 30 = 00 1E
 Data 03 & 04 = Minor is 3 = 00 03
 Data 05 = 0010 0010 in binary = 22
 Total = ma 00 00 00 1E 00 03 22

21. 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]

22. Key (Command: m c)

To send IR remote control code.

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

See page 151.

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

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

23. Backlight (Command: m g)

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

If such an object file uses only numerical parameters, data structure layouts and accessories, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executable containing this object code plus portions of

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

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Version 1.1

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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 _____



OWNER'S MANUAL

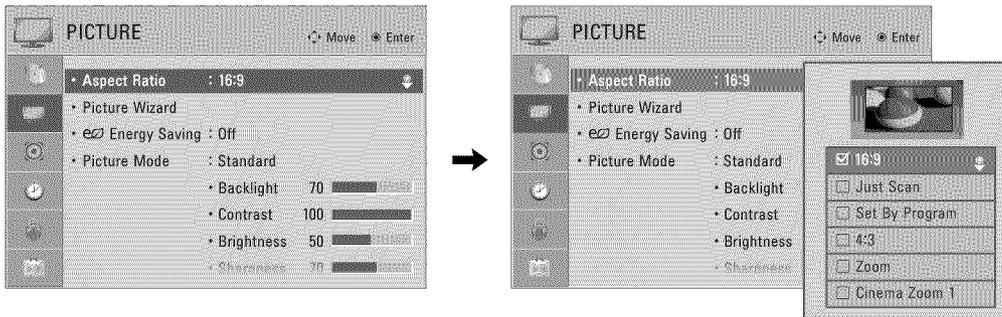
LED LCD TV / LCD TV

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

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).



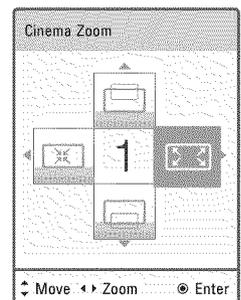
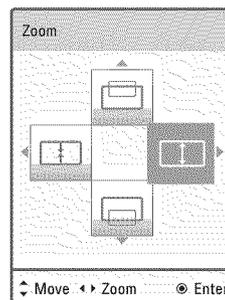
PICTURE CONTROL

- 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.

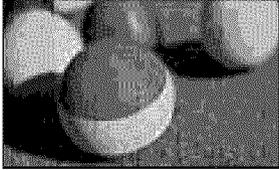
When adjusting **Zoom** or **Cinema Zoom** in **Q.MENU**

- 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.



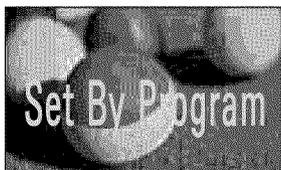
Set By Program

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

(4:3 → 4:3)

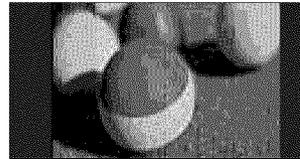


(16:9 → 16:9)



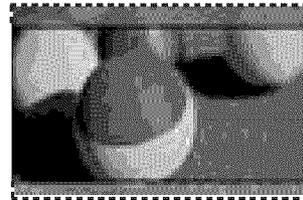
4:3

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.

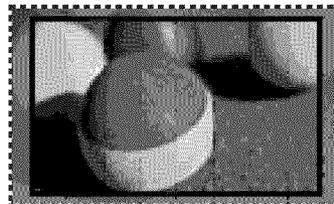


Cinema Zoom

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.

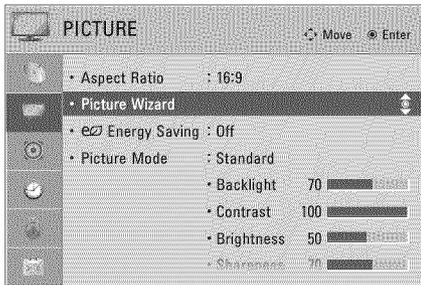
Note: When enlarging or reducing the picture, the image may become distorted.



PICTURE CONTROL

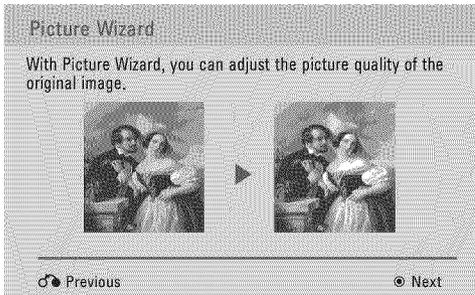
PICTURE WIZARD

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**.

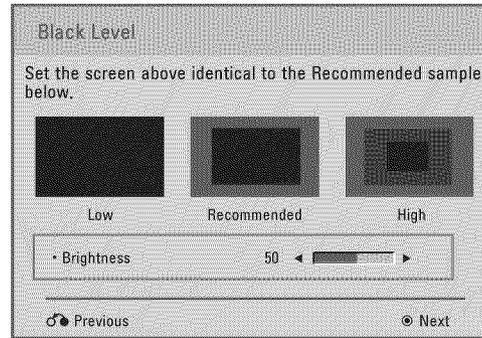


3 Adjust **Picture Wizard**.

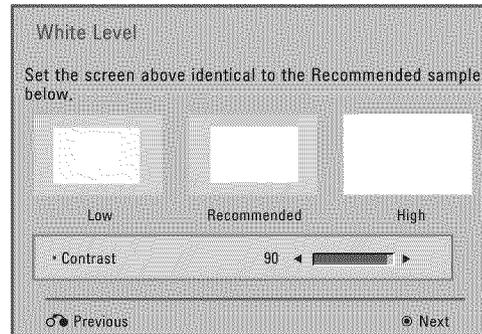


4 Adjust **Standard/Preferred**.

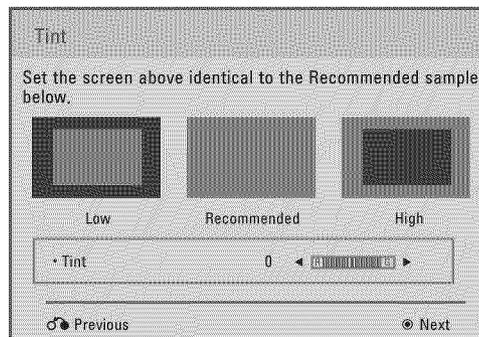
■ If you select **Preferred**, OSD (On Screen Display) differ from that shown in this manual.



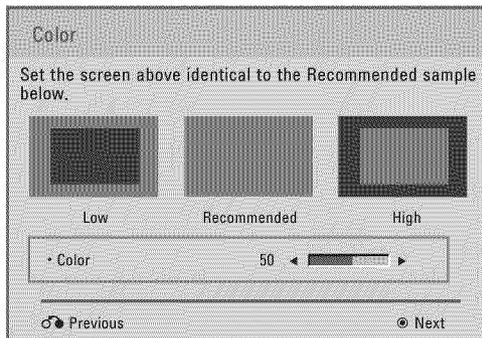
5 Adjust **Black Level**.



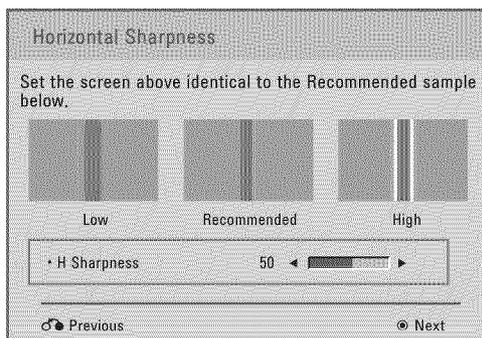
6 Adjust **White Level**.



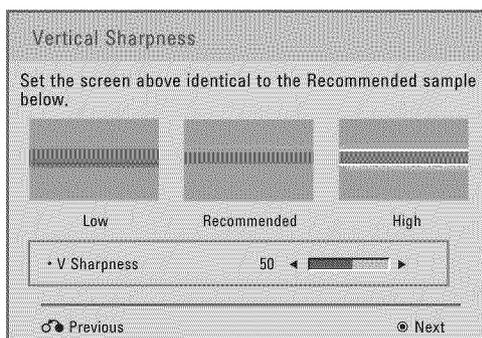
7 Adjust **Tint**.



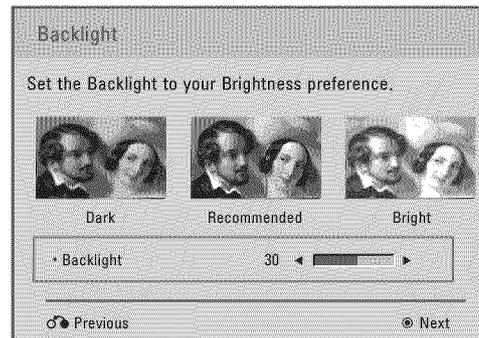
8   Adjust **Color**.



9   Adjust **Horizontal Sharpness**.

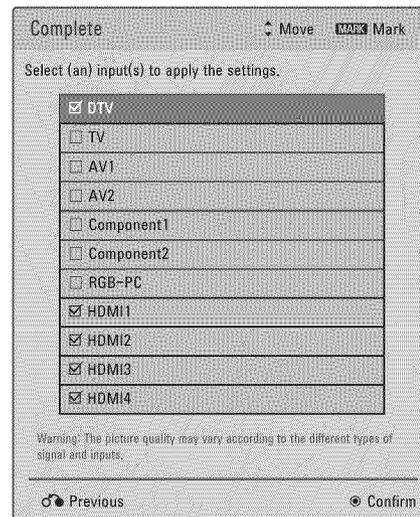


10   Adjust **Vertical Sharpness**.



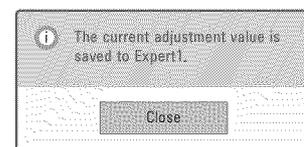
11   Adjust **Backlight**.

i.e)



12   Select input source to apply the settings.

13  Save.



14  Finish the Picture Wizard.

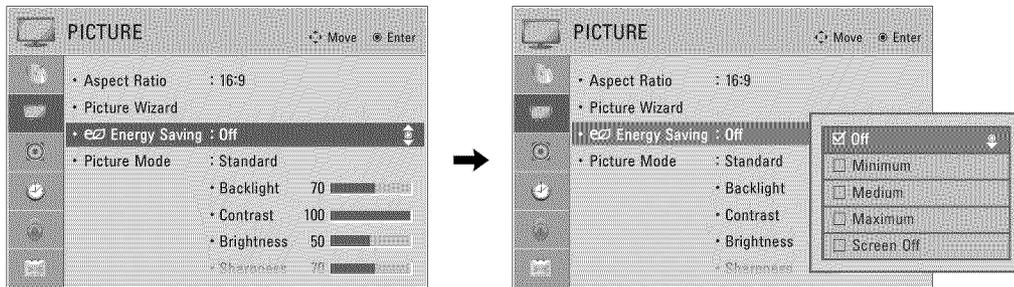
- If you stop the Picture Wizard before the final step, the changes will not be saved to the TV.
- Once the **Picture Wizard** sets the picture quality, **Energy Saving** is changed to **Off** automatically.
- To reset changes made by **Picture Wizard**, operate **Picture Reset** when **Picture Mode** is on **Expert1**.

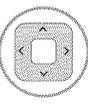
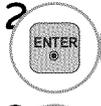
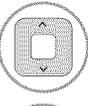
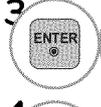
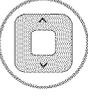
PICTURE CONTROL

e^o ENERGY SAVING

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

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

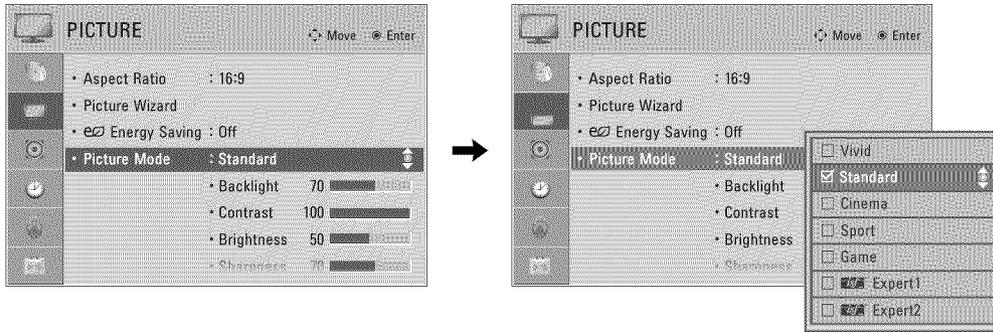


-   Select **PICTURE**.
-   Select **e^o Energy Saving**.
-   Select **Off, Minimum, Medium, Maximum, or Screen Off**.
-  Return to the previous menu.
-  Return to TV viewing.

- When selecting **Screen off**, the screen will turn off after 3 seconds.
- If you adjust "**Energy Saving-Maximum**", **Backlight** feature will not work.
- Press the **ENERGY SAVING** button repeatedly to select the appropriate Energy Saving setup.

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.



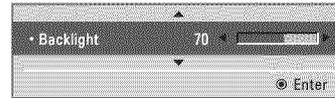
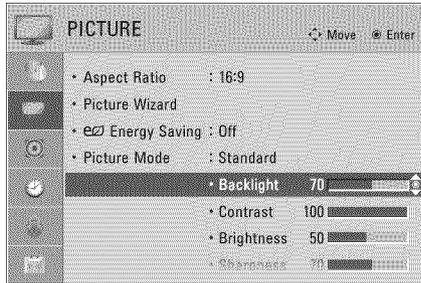
- 1   Select **PICTURE**.
- 2   Select **Picture Mode**.
- 3   Select **Vivid, Standard, Cinema, Sport,** or **Game**.
- 4  Return to the previous menu.
-  Return to TV viewing.

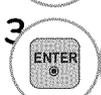
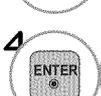
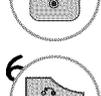
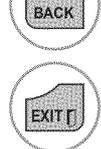
- **Vivid, Standard, Cinema, Sport, and Game** Settings are preset for the optimum picture quality at the factory.
- **Vivid:** This is the mode to maximize the effect of the video in the retail store. Strengthen the contrast, brightness, color and sharpness for vivid picture.
- **Standard:** This is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

PICTURE CONTROL

MANUAL PICTURE ADJUSTMENT - USER MODE

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

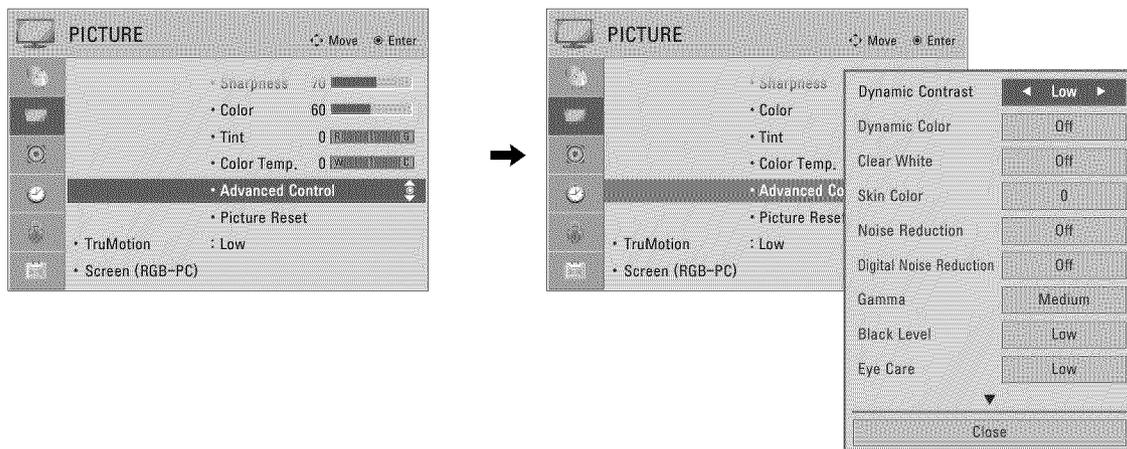


-   Select **PICTURE**.
-   Select **Picture Mode**.
-   Select **Vivid, Standard, Cinema, Sport, or Game**.
-   Select **Backlight, Contrast, Brightness, Sharpness, Color, Tint, Color Temp., or Advanced Control**.
-   Make appropriate adjustments.
-  Return to the previous menu.
-  Return to TV viewing.

- **Backlight:** 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.
- **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.

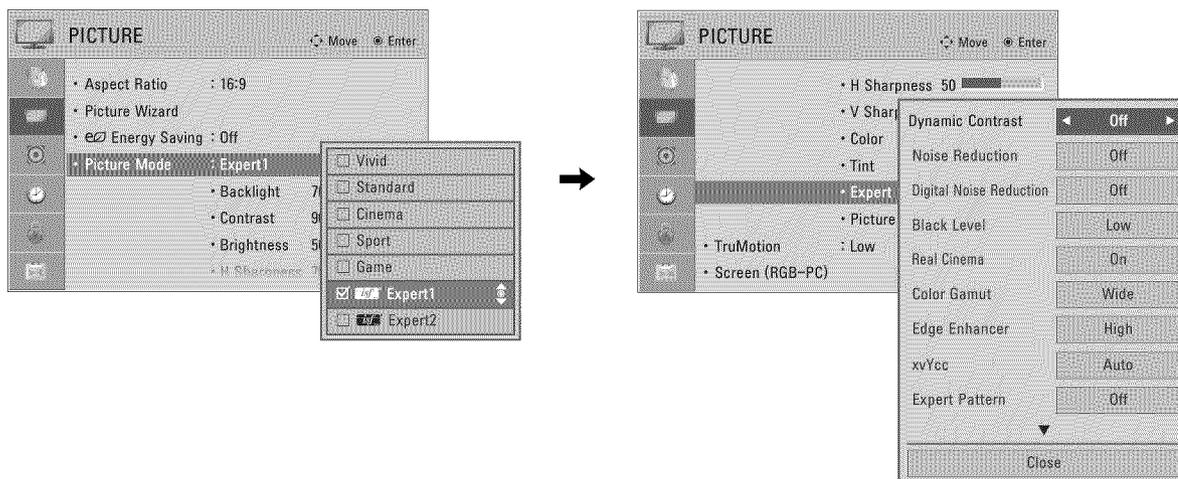


- 1   Select **PICTURE**.
- 2   Select **Advanced Control**.
- 3   Select your desired menu option.
- 4  Make appropriate adjustments.
- 5  Return to the previous menu.
-  Return to TV viewing.

PICTURE CONTROL

EXPERT PICTURE CONTROL

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



PICTURE CONTROL

-   Select **PICTURE**.
-   Select **Picture Mode**.
-   Select  **Expert1** or  **Expert2**.
-   Select **Expert Control**.
-   Select your desired menu option.
-  Make appropriate adjustments.
-  Return to the previous menu.
-  Return to TV viewing.

*This feature is not available for all models.

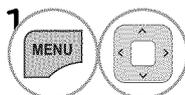
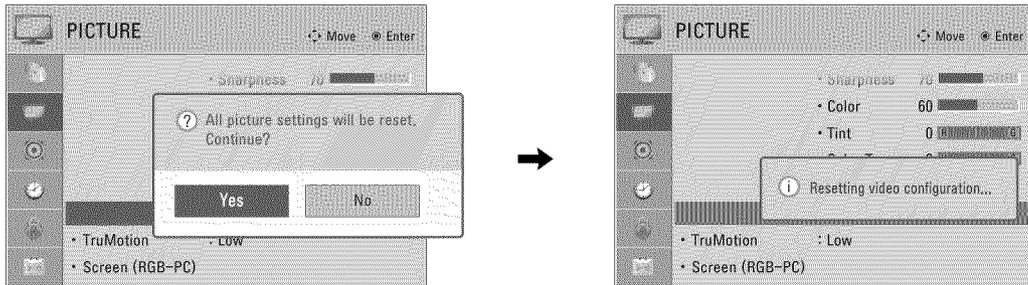
| | |
|-------------------------|---|
| Dynamic Contrast | <ul style="list-style-type: none"> Adjusts the contrast to keep it at the best level according to the brightness of the screen. The picture is improved by making bright parts brighter and dark parts darker. |
| Dynamic Color | <ul style="list-style-type: 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 white 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: 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 | <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>Advanced Control</p> <ul style="list-style-type: none"> Maximize the utilization of colors to increase color quality. Standard: Displays standard set of colors. Wide: Increase number of colors used. |
| | <p>LED LCD TV/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

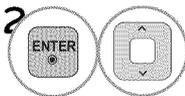
| | |
|-------------------------|--|
| Edge Enhancer | <ul style="list-style-type: none"> ■ Show clearer and distinctive yet natural edges in of the video. ■ This function is enabled in "Picture Mode - Expert". |
| xvYCC | <ul style="list-style-type: none"> ■ This produces richer colors. ■ This feature represents rich color as much as conventional video signal. ■ This function is enabled in "Picture Mode - Cinema, 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"> a. Gamma : Select 1.9, 2.2, 2.4 b. 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. Method : 10 Point IRE <ul style="list-style-type: none"> - Pattern: Inner, Outer - IRE (Institute of Radio Engineers) is the unit to display the size of the video signal and can be set among 10, 20, 30 - 100. You can adjust Red, Green or Blue according to each setting. - Luminance: This function displays calculated luminance value for 2.2 gamma. You can input luminance value you want at 100 IRE, 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. 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

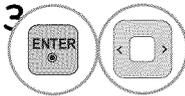
Settings of the selected picture modes return to the default factory settings.



1 Select **PICTURE**.



2 Select **Picture Reset**.



3 Select **Yes**.



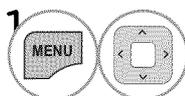
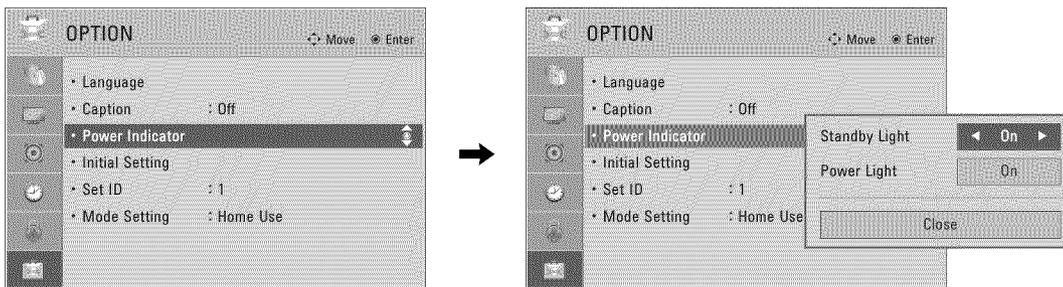
4 Initialize the adjusted value.



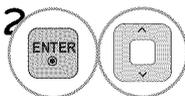
5 Return to TV viewing.

POWER INDICATOR

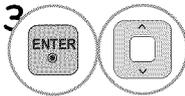
Adjust the power/standby indicator light on the front of the TV.



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.



6 Return to TV viewing.

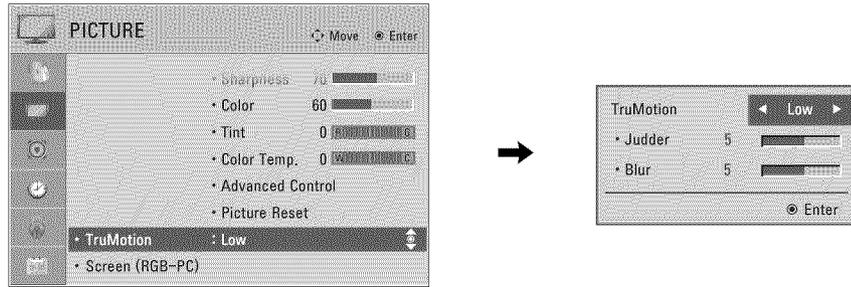
- **Standby Light:** Determines whether to set the indicator light on the front of the TV to **On** or **Off** in standby mode.
- **Power Light:** Determines whether to set the indicator light on the front of the TV to **On** or **Off** when the power turns on.

PICTURE CONTROL

TRUMOTION

- For 32/37/42/47/55LE5300, 42/47/55LE7300, 32/42/47/55LD520, 42/47/55LD630

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.

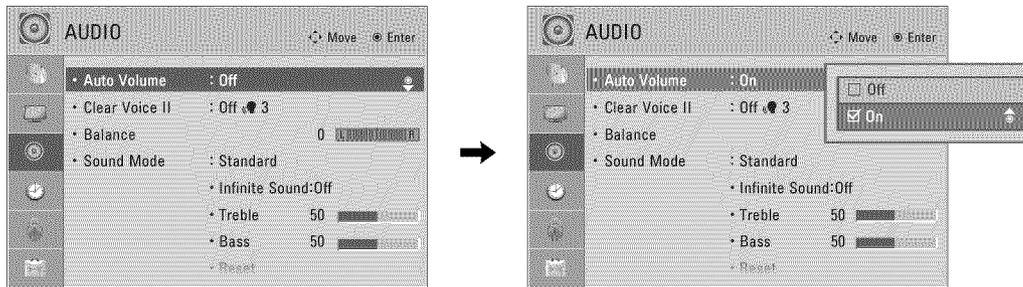
- **Off**: Turn off **TruMotion** operation.
- **Low**: Provides smooth picture movement. Use this setting for standard use.
- **High**: Provides smoother picture movement.
- **Judder**: Adjusts noise of the screen.
- **Blur**: Adjusts after-image of the screen.
- **TruMotion** works with all inputs 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**".

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.

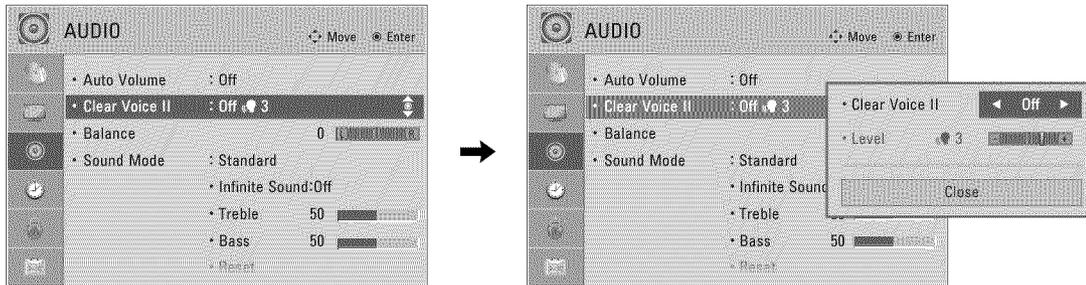


-   Select **AUDIO**.
-   Select **Auto Volume**.
-   Select **On** or **Off**.
-  Return to the previous menu.
-  Return to TV viewing.

SOUND & LANGUAGE CONTROL

CLEAR VOICE II

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



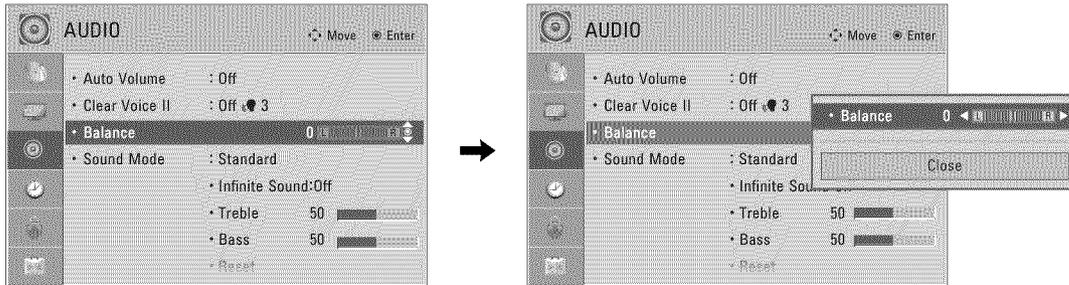
- 1   Select **AUDIO**.
- 2   Select **Clear Voice II**.
- 3   Select **On** or **Off**.

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.

BALANCE

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

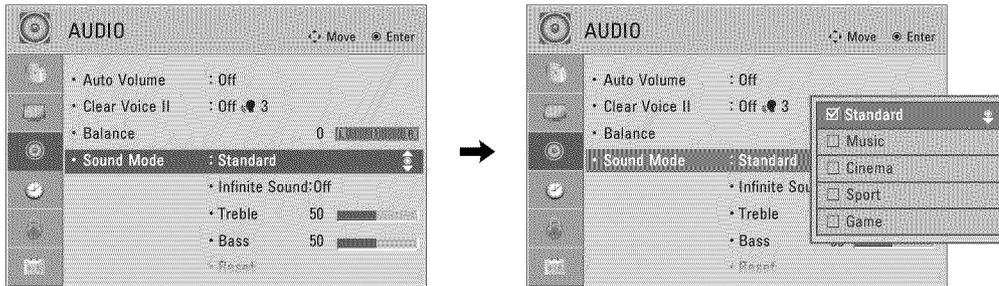


-   Select **AUDIO**.
-   Select **Balance**.
-   Make appropriate adjustments.
-  Return to the previous menu.
-  Return to TV viewing.

SOUND & LANGUAGE CONTROL

PRESET SOUND SETTINGS (SOUND MODE)

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

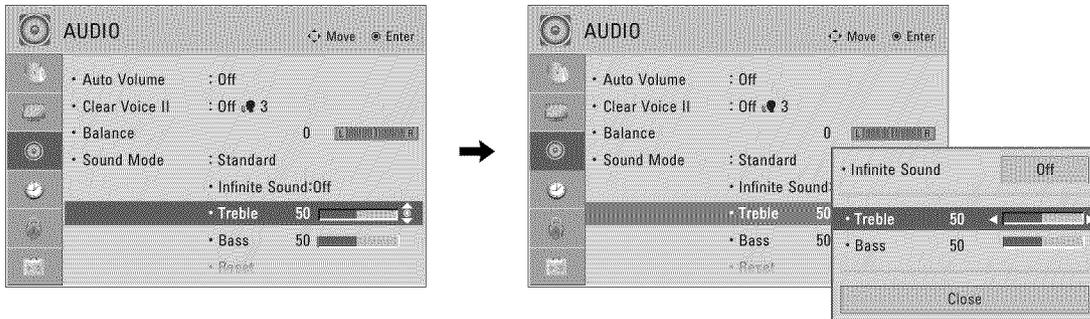


- 1   Select **AUDIO**.
- 2   Select **Sound Mode**.
- 3   Select **Standard, Music, Cinema, Sport, or Game**.
- 4  Return to the previous menu.
-  Return to TV viewing.

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

SOUND SETTING ADJUSTMENT - USER MODE

Adjust the sound to suit your taste and room situations.



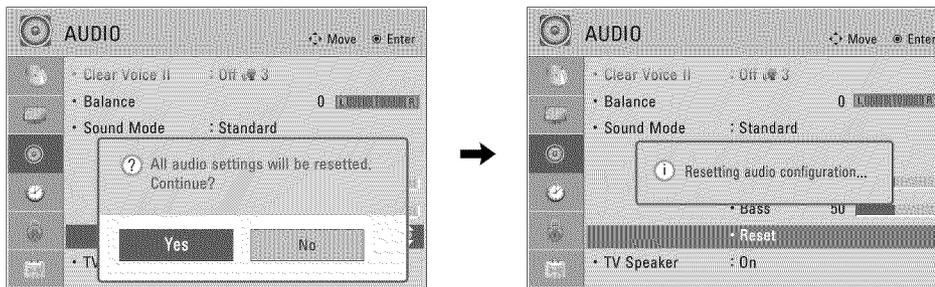
- 1   Select **AUDIO**.
- 2   Select **Sound Mode**.
- 3   Select **Standard, Music, Cinema, Sport, or Game**.
- 4   Select **Infinite Sound, Treble, or Bass**.
- 5   Make appropriate adjustments.
- 6  Return to the previous menu.
-  Return to TV viewing.

- 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.

SOUND & LANGUAGE CONTROL

AUDIO RESET

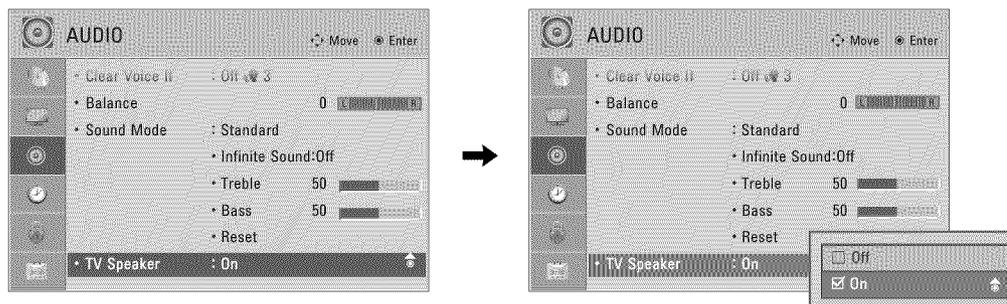
Settings of the selected Sound Mode return to the default factory settings.



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

TV SPEAKERS ON/OFF SETUP

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

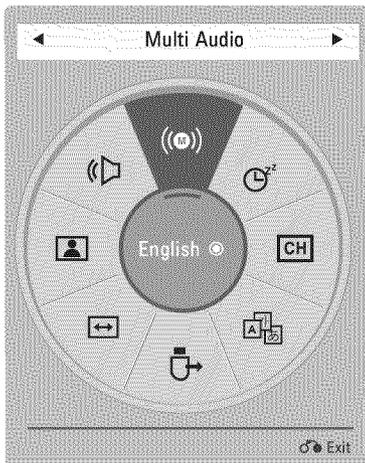


-   Select **AUDIO**.
-   Select **TV Speaker**.
-   Select **On** or **Off**.
-  Return to the previous menu.
-  Return to TV viewing.

SOUND & LANGUAGE CONTROL

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

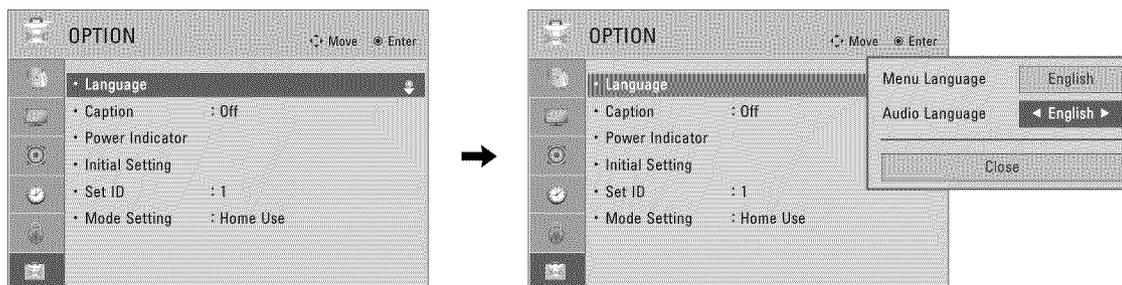
- 1   Select **SAP**.
- 2   Select **Mono, Stereo, or SAP**.
- 3  Return to TV viewing.

Digital TV

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

AUDIO LANGUAGE

This feature operates only in DTV/Cable DTV mode.

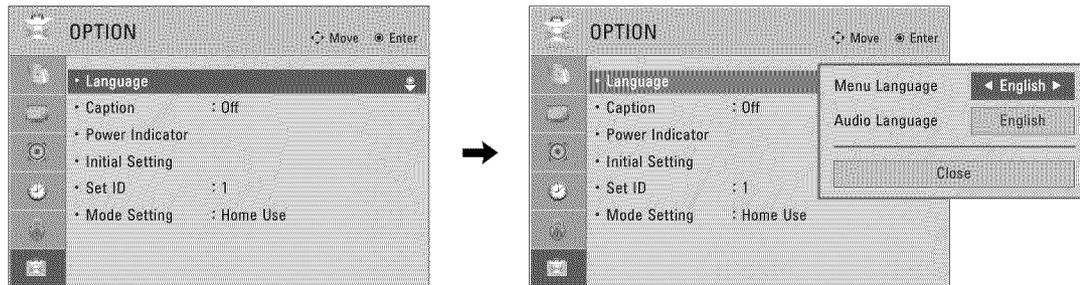


-   Select **OPTION**.
-   Select **Language**.
-   Select **Audio Language**.
-  Select your desired language.
-  Return to the previous menu.
-  Return to TV viewing.

SOUND & LANGUAGE CONTROL

ON-SCREEN MENUS LANGUAGE SELECTION

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

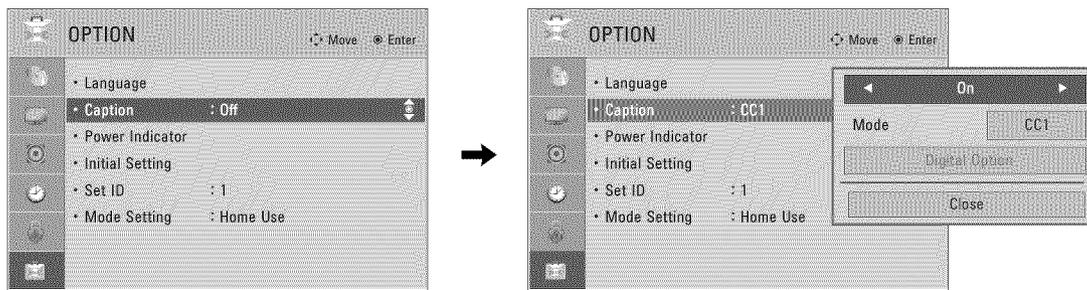


-   Select **OPTION**.
-   Select **Language**.
-   Select **Menu Language**.
-  Select your desired language.
From this point on, the on-screen menus will be shown in the selected language.
-  Return to the previous menu.
-  Return to TV viewing.

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.

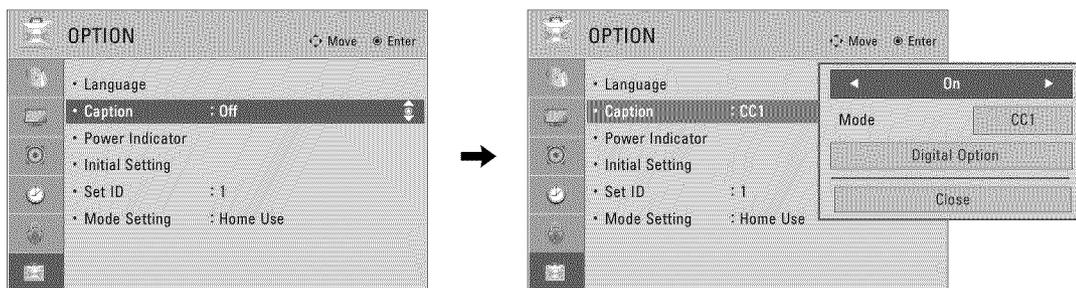
SOUND & LANGUAGE CONTROL

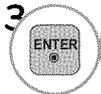
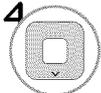
Digital Broadcasting System Captions

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**.

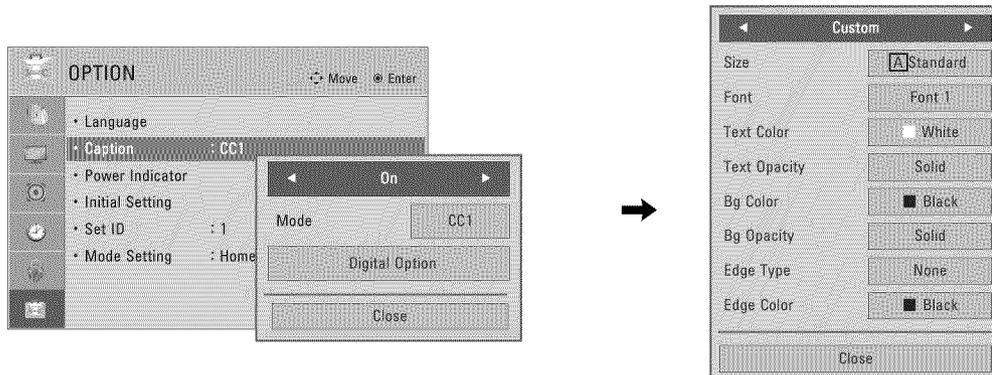


-   Select **OPTION**.
-   Select **Caption**.
-   Select **On**.
-   Select **CC1-4, Text1-4, or Service1 - 6**.
-  Return to the previous menu.
-  Return to TV viewing.

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

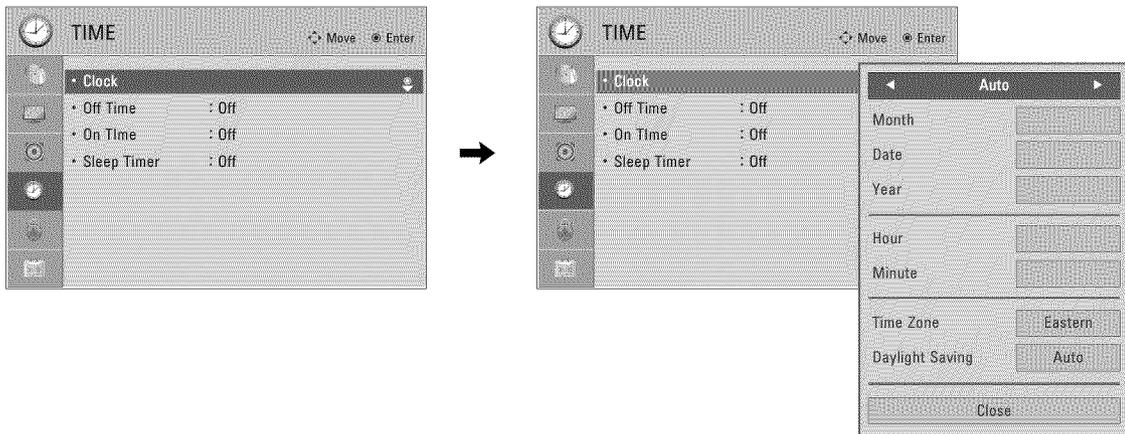
CLOCK SETTING

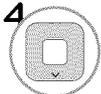
Auto Clock Setup

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.

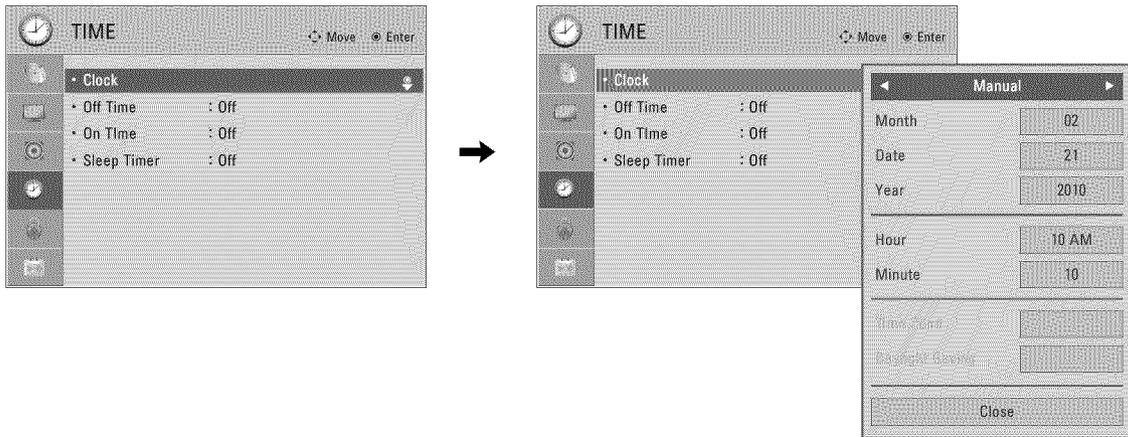
Set the clock manually if the current time is set incorrectly by the auto clock function.



-   Select **TIME**.
-   Select **Clock**.
-   Select **Auto**.
-   Select your viewing area time zone.
USA: **Eastern, Central, Mountain, Pacific, Alaska, or Hawaii.**
Canada: **Eastern, Central, Mountain, Pacific, New Foundland, or Atlantic.**
-   Select **Auto, Off, or On** (depending on whether or not your viewing area observes Daylight Saving time).
-  Return to the previous menu.
-  Return to TV viewing.

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.

TIME SETTING

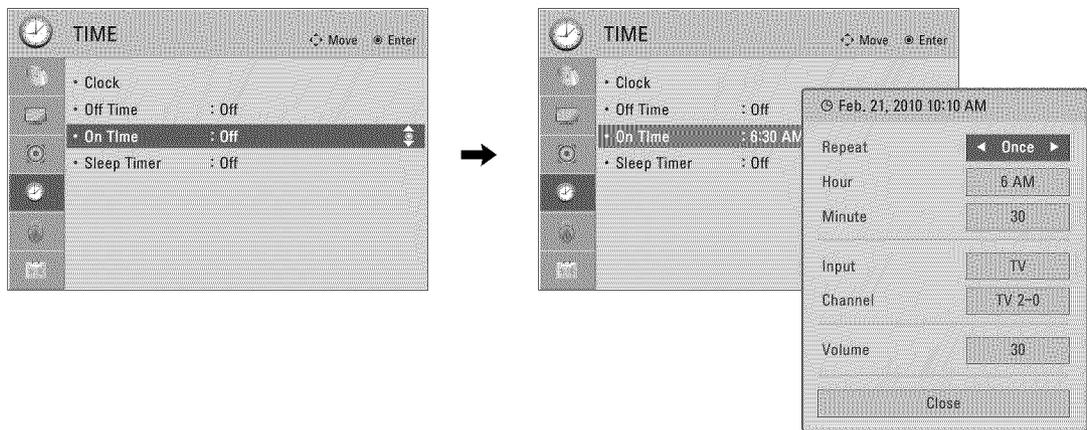
AUTO ON/OFF TIME SETTING

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.

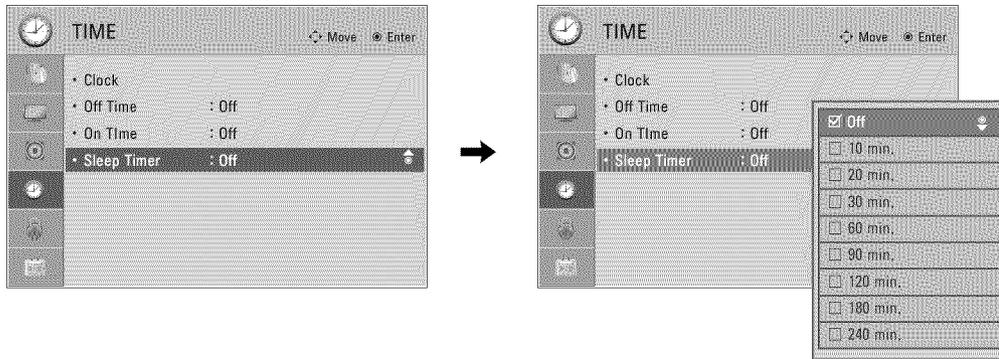
■ To cancel **On/Off Time** function, select **Off**.

■ 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.

SLEEP TIMER SETTING

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



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

- To cancel the **Sleep Timer**, select **Off**.
- You can also adjust **Sleep Timer** in the **Q.MENU**.

PARENTAL CONTROL / RATINGS

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

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

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

V-Chip rating and categories

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

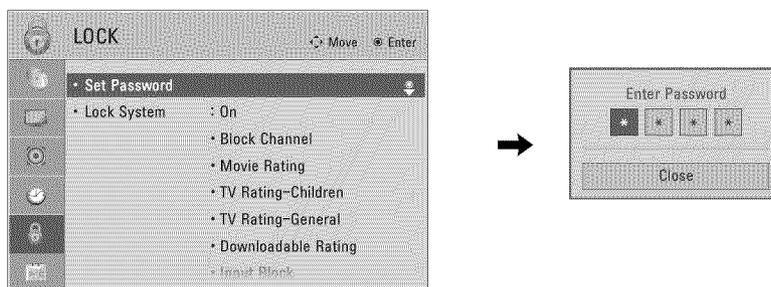
Ratings for Television programs including made-for-TV movies:

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

SET PASSWORD & LOCK SYSTEM

Setting up Your Password

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

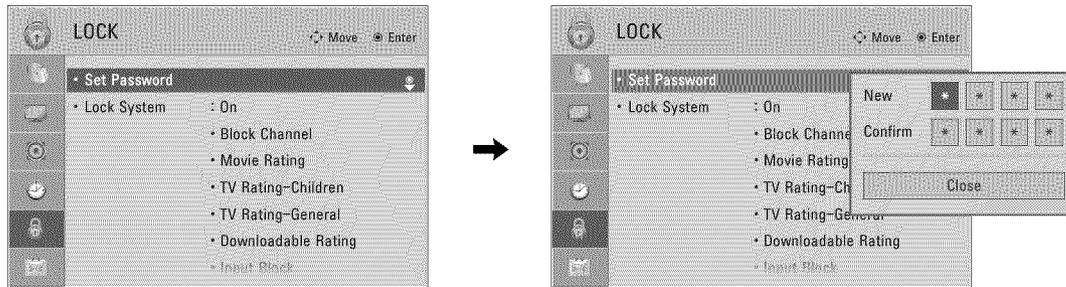


1.    Select **LOCK**.
2.  Input the password.

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

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**.

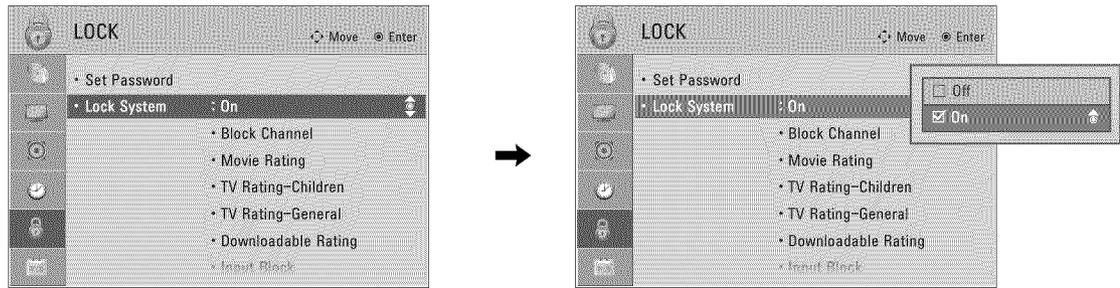
5  Return to the previous menu.

 Return to TV viewing.

PARENTAL CONTROL / RATINGS

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**.

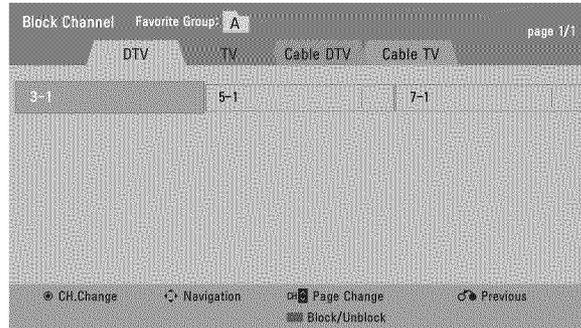
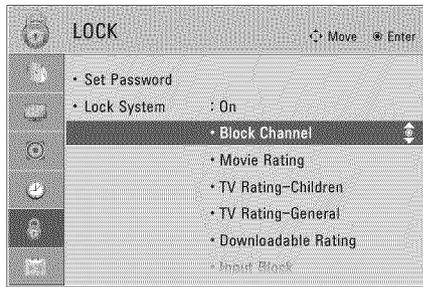
5  Return to the previous menu.

 Return to TV viewing.

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

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.

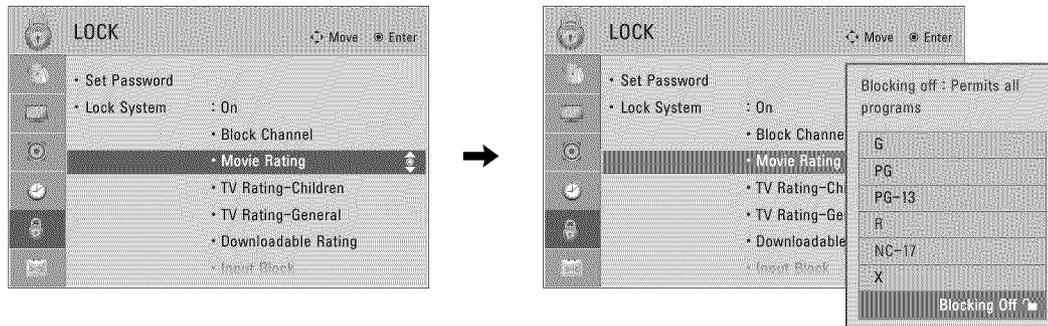
■ If a channel is locked, enter the password to unlock it temporarily.

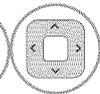
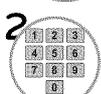
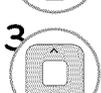
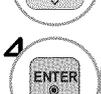
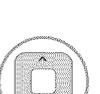
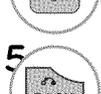
PARENTAL CONTROL / RATINGS

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.

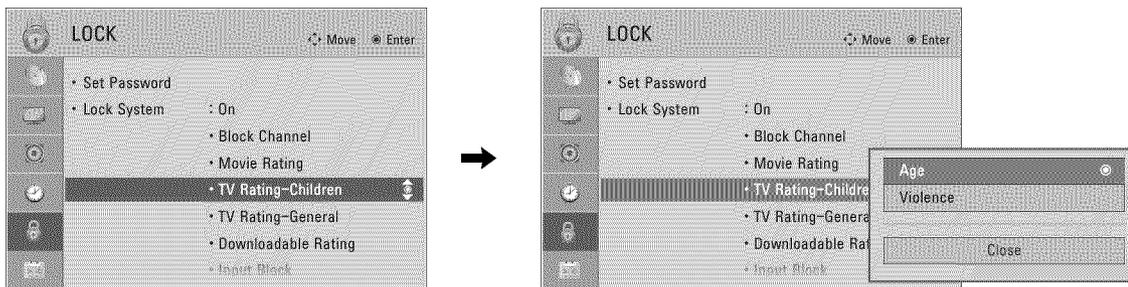


-    Select **LOCK**.
-  Input the password.
-  Select **Movie Rating**.
-   Select **G, PG, PG-13, R, NC-17, X, or Blocking Off**.
-  Return to the previous menu.
-  Return to TV viewing.

- 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.

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.



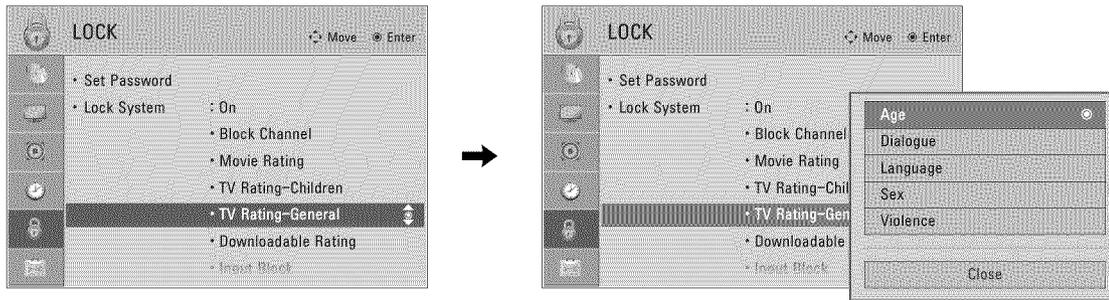
-    Select **LOCK**.
-  Input the password.
-  Select **TV Rating-Children**.
-   Select **Age** or **Fantasy Violence**.
-   Select block options.
-  Return to the previous menu.
-  Return to TV viewing.

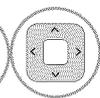
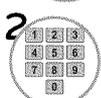
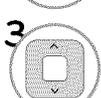
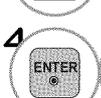
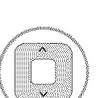
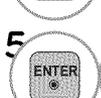
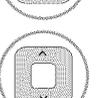
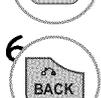
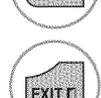
- **Age** (applies to TV-Y, TV-Y7)
- **Fantasy Violence** (applies to TV-Y7)

PARENTAL CONTROL / RATINGS

TV Rating General - For USA

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

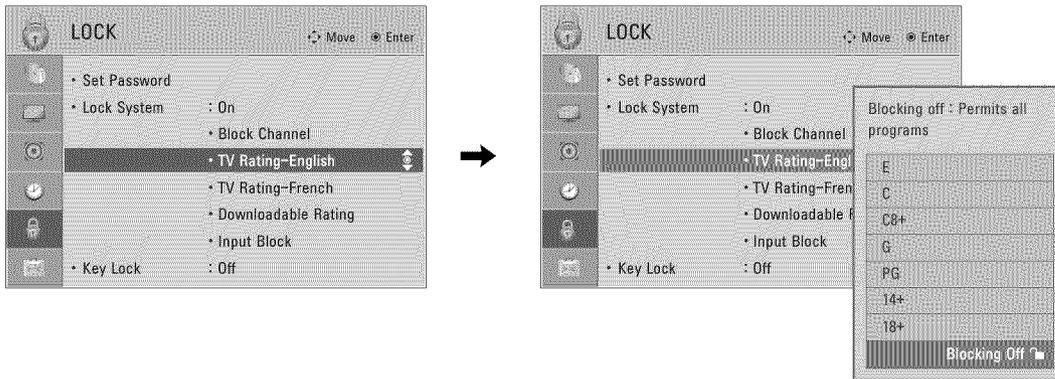


- 1    Select **LOCK**.
- 2  Input the password.
- 3  Select **TV Rating-General**.
- 4   Select **Age, Dialogue, Language, Sex** or **Violence**.
- 5   Select block options.
- 6  Return to the previous menu.
-  Return to TV viewing.

- **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).

TV Rating English - For CANADA

Selecting Canadian English rating system.



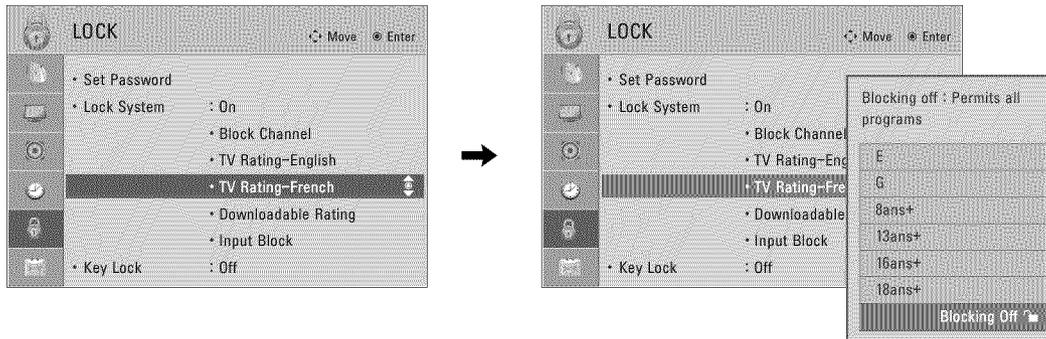
- 1    Select **LOCK**.
- 2  Input the password.
- 3  Select **TV Rating-English**.
- 4   Select **E, C, C8+, G, PG, 14+, 18+, or Blocking Off**.
- 5  Return to the previous menu.
-  Return to TV viewing.

- If TV Rating-English or TV Rating-French is locked, enter the password to unlocked 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)

PARENTAL CONTROL / RATINGS

TV Rating French - For CANADA

Selecting Canadian French rating system.



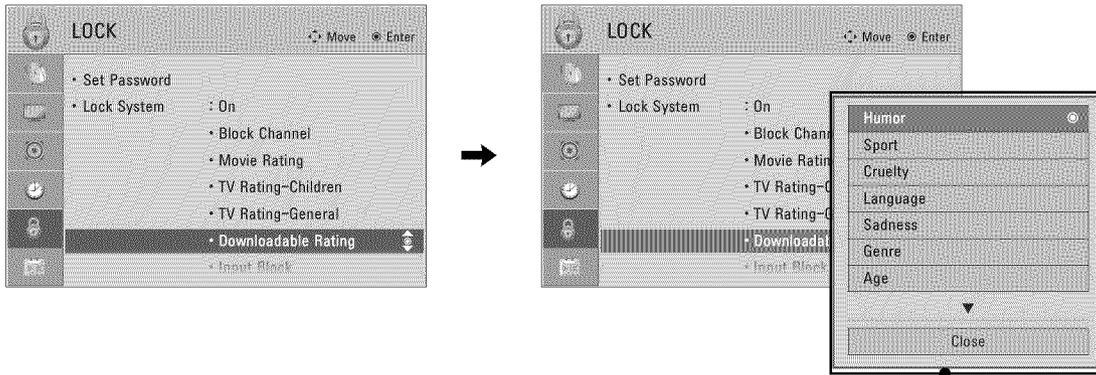
-    Select **LOCK**.
-  Input the password.
-  Select **TV Rating-French**.
-   Select **E, G, 8ans+, 13ans+, 16ans+, 18ans+, or Blocking Off**.
-  Return to the previous menu.
-  Return to TV viewing.

- **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)

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.

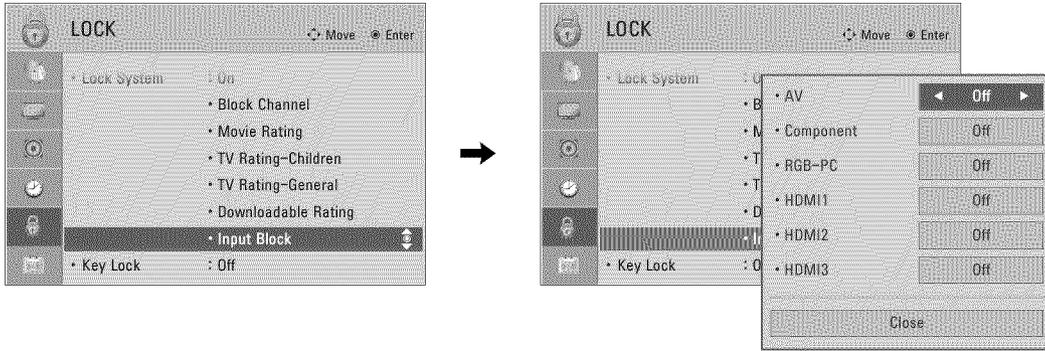
Return to TV viewing.

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

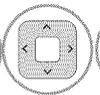
PARENTAL CONTROL / RATINGS

EXTERNAL INPUT BLOCKING

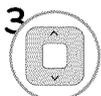
Enables you to block an input.



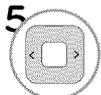
i.e)

1    Select **LOCK**.

2  Input the password.

3  Select **Input Block**.

4   Select input source.

5  Select **On** or **Off**.

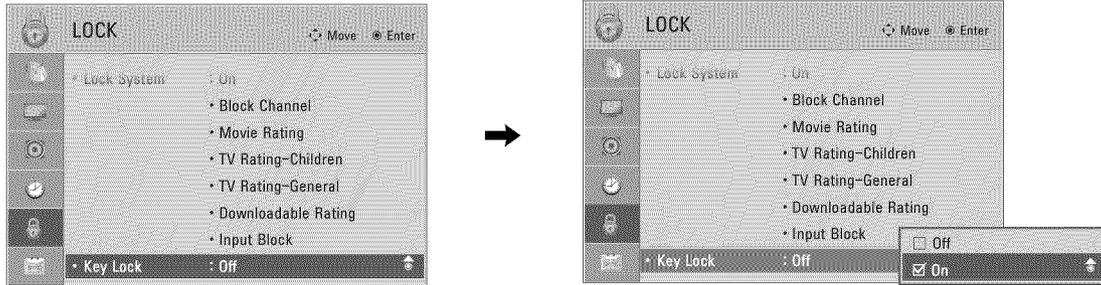
6  Return to the previous menu.

 Return to TV viewing.

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 **LOCK**.
- 4   Select **On** or **Off**.
- 4  Return to the previous menu.
-  Return to TV viewing.

- In Key Lock 'On', if the TV is turned off, press the  / I, INPUT, CH (  or  ) 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"> ■ Check HDMI cable over version 1.3. The HDMI cables don't support HDMI version 1.3, it cause flickers or no screen display. In this case use the latest cables that support HDMI version 1.3. |

| 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 HDMI cable over version 1.3. ■ Check USB cable over version 2.0. ■ Use normal MP3 file. <small>*This feature is not available for all models.</small> |

| 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. |

APPENDIX

| 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.) |

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.

APPENDIX

PRODUCT SPECIFICATIONS

| MODELS | | 19LE5300 (19LE5300-UE) | 22LE5300 (22LE5300-UE) |
|--|---------------|--|--|
| Dimensions (Width x Height x Depth) | With stand | 471.2 mm x 365.9 mm x 155.4 mm (18.6 inch x 14.4 inch x 6.1 inch) | 542.9 mm x 407.1 mm x 155.4 mm (21.4 inch x 16.0 inch x 6.1 inch) |
| | Without stand | 471.2 mm x 315.5 mm x 34.4 mm (18.6 inch x 12.4 inch x 1.4 inch) | 542.9 mm x 357.6 mm x 34.4 mm (21.4 inch x 14.1 inch x 1.4 inch) |
| Weight | With stand | 3.4 kg (7.5 lbs) | 4.2 kg (9.3 lbs) |
| | Without stand | 3.2 kg (7.1 lbs) | 3.9 kg (8.6 lbs) |

| MODELS | | 26LE5300 (26LE5300-UE) |
|--|---------------|--|
| Dimensions (Width x Height x Depth) | With stand | 652.0 mm x 480.8 mm x 191.4 mm (25.7 inch x 18.9 inch x 7.5 inch) |
| | Without stand | 652.0 mm x 420.3 mm x 34.4 mm (25.7 inch x 16.5 inch x 1.4 inch) |
| Weight | With stand | 6.1 kg (13.4 lbs) |
| | Without stand | 5.1 kg (11.2 lbs) |

| | | |
|----------------------------|---|-----------------------------------|
| Power Requirement | 19LE5300: 24V $\overline{=}$, 1.6A 22LE5300: 24V $\overline{=}$, 1.7 A 26LE5300: 24V $\overline{=}$, 1.8 A | |
| Adapter (DC Power) | In: AC100-240 V ~ 50/60 Hz Out: DC 24 V, 3.42 A | |
| 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 | | 32LE5300 (32LE5300-UC) | 37LE5300 (37LE5300-UC) |
|--|---------------|--|---|
| Dimensions (Width x Height x Depth) | With stand | 784.6 mm x 558.1 mm x 221.0 mm (30.9 inch x 22.0 inch x 8.7 inch) | 905.0 mm x 630.0 mm x 270.0 mm (35.6 inch x 24.8 inch x 10.6 inch) |
| | Without stand | 784.6 mm x 499.5 mm x 39.9 mm (30.9 inch x 19.7 inch x 1.6 inch) | 905.0 mm x 568.0 mm x 39.9 mm (35.6 inch x 22.3 inch x 1.6 inch) |
| Weight | With stand | 12.6 kg (27.9 lbs) | 15.3 kg (33.7 lbs) |
| | Without stand | 10.5 kg (23.1 lbs) | 11.8 kg (26.0 lbs) |

| MODELS | | 42LE5300 (42LE5300-UC) | 47LE5300 (47LE5300-UC) |
|--|---------------|--|--|
| Dimensions (Width x Height x Depth) | With stand | 1016.0 mm x 692.0 mm x 270.0 mm (40.0 inch x 27.2 inch x 10.6 inch) | 1126.6 mm x 757.9 mm x 284.4 mm (44.3 inch x 29.8 inch x 11.1 inch) |
| | Without stand | 1016.0 mm x 630.0 mm x 29.3 mm (40.0 inch x 24.8 inch x 1.1 inch) | 1126.6 mm x 692.0 mm x 29.3 mm (44.3 inch x 27.2 inch x 1.1 inch) |
| Weight | With stand | 19.5 kg (42.9 lbs) | 22.6 kg (49.8 lbs) |
| | Without stand | 16.7 kg (36.8 lbs) | 19.6 kg (43.2 lbs) |

| MODELS | | 55LE5300 (55LE5300-UC) |
|--|---------------|--|
| Dimensions (Width x Height x Depth) | With stand | 1306.0 mm x 867.0 mm x 345.0 mm (51.4 inch x 34.1 inch x 13.5 inch) |
| | Without stand | 1306.0 mm x 797.0 mm x 30.7 mm (51.4 inch x 31.3 inch x 1.3 inch) |
| Weight | With stand | 34.5 kg (76.0 lbs) |
| | Without stand | 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.

APPENDIX

| MODELS | | 42LE7300 (42LE7300-UA) | 47LE7300 (47LE7300-UA) |
|--|---------------|--|--|
| Dimensions (Width x Height x Depth) | With stand | 1018.2 mm x 693.5 mm x 269.8 mm (40.0 inch x 27.2 inch x 10.6 inch) | 1128.6 mm x 758.9 mm x 284.4 mm (44.4 inch x 29.8 inch x 11.1 inch) |
| | Without stand | 1018.2 mm x 630.7 mm x 29.3 mm (40.0 inch x 24.8 inch x 1.1 inch) | 1128.6 mm x 693.3 mm x 29.8 mm (44.4 inch x 27.2 inch x 1.1 inch) |
| Weight | With stand | 21.9 kg (48.2 lbs) | 26.2 kg (57.7 lbs) |
| | Without stand | 19.1 kg (42.1 lbs) | 23.0 kg (50.7 lbs) |

| MODELS | | 55LE7300 (55LE7300-UA) |
|--|---------------|--|
| Dimensions (Width x Height x Depth) | With stand | 1306.0 mm x 867.7 mm x 328.0 mm (51.4 inch x 34.1 inch x 12.9 inch) |
| | Without stand | 1306.0 mm x 797.4 mm x 31.2 mm (51.4 inch x 31.3 inch x 1.2 inch) |
| Weight | With stand | 38.4 kg (84.6 lbs) |
| | Without stand | 32.8 kg (72.3 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 | | 32LD320 (32LD320-UA) | 32LD420 (32LD420-UA) |
|--|---------------|--|--|
| Dimensions (Width x Height x Depth) | With stand | 805.0 mm x 583.0 mm x 224.0 mm (31.6 inch x 22.9 inch x 8.8 inch) | 805.0 mm x 583.0 mm x 224.0 mm (31.6 inch x 22.9 inch x 8.8 inch) |
| | Without stand | 805.0 mm x 528.0 mm x 79.9 mm (31.6 inch x 20.7 inch x 3.1 inch) | 805.0 mm x 531.0 mm x 79.9 mm (31.6 inch x 20.9 inch x 3.1 inch) |
| Weight | With stand | 11.5 kg (25.3 lbs) | 12.1 kg (26.6 lbs) |
| | Without stand | 10.3 kg (22.7 lbs) | 11.0 kg (24.2 lbs) |

| MODELS | | 42LD420 (42LD420-UA) | 47LD420 (47LD420-UA) |
|--|---------------|--|--|
| Dimensions (Width x Height x Depth) | With stand | 1028.0 mm x 715.4 mm x 297.0 mm (40.4 inch x 28.1 inch x 11.6 inch) | 1140.6 mm x 784.8 mm x 337.4 mm (44.9 inch x 30.8 inch x 13.2 inch) |
| | Without stand | 1028.0 mm x 658.6 mm x 88.7 mm (40.4 inch x 25.9 inch x 3.4 inch) | 1140.6 mm x 722.9 mm x 99.0 mm (44.9 inch x 28.4 inch x 3.8 inch) |
| Weight | With stand | 18.0 kg (39.6 lbs) | 22.5 kg (49.6 lbs) |
| | Without stand | 16.2 kg (35.7 lbs) | 19.9 kg (43.8 lbs) |

| MODELS | | 32LD450 (32LD450-UA) | 37LD450 (37LD450-UA) |
|--|---------------|--|---|
| Dimensions (Width x Height x Depth) | With stand | 799.0 mm x 555.0 mm x 207.0 mm (31.5 inch x 21.8 inch x 8.1 inch) | 916.0 mm x 625.0 mm x 261.0 mm (36.1 inch x 24.6 inch x 10.3 inch) |
| | Without stand | 799.0 mm x 506.0 mm x 73.5 mm (31.5 inch x 19.9 inch x 2.9 inch) | 916.0 mm x 575.0 mm x 77.4 mm (36.1 inch x 22.6 inch x 3.0 inch) |
| Weight | With stand | 9.1 kg (20.1 lbs) | 12.5 kg (27.6 lbs) |
| | Without stand | 8.1 kg (17.9 lbs) | 10.8 kg (23.8 lbs) |

| MODELS | | 42LD450 (42LD450-UA) | 47LD450 (47LD450-UA) |
|--|---------------|--|--|
| Dimensions (Width x Height x Depth) | With stand | 1023.0 mm x 685.0 mm x 261.0 mm (40.3 inch x 27.0 inch x 10.3 inch) | 1136.0 mm x 757.0 mm x 270.0 mm (44.7 inch x 29.8 inch x 10.6 inch) |
| | Without stand | 1023.0 mm x 635.0 mm x 76.6 mm (40.3 inch x 25.0 inch x 3.0 inch) | 1136.0 mm x 698.0 mm x 76.5 mm (44.7 inch x 27.5 inch x 3.0 inch) |
| Weight | With stand | 15.1 kg (33.2 lbs) | 19.5 kg (43.0 lbs) |
| | Without stand | 13.5 kg (29.7 lbs) | 17.5 kg (38.6 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

| MODELS | | 32LD520 (32LD520-UA) | 42LD520 (42LD520-UA) |
|--|---------------|--|--|
| Dimensions (Width x Height x Depth) | With stand | 815.0 mm x 585.6 mm x 210.9 mm (32.0 inch x 23.0 inch x 8.3 inch) | 1052.2 mm x 720.1 mm x 270.6 mm (41.4 inch x 28.3 inch x 10.6 inch) |
| | Without stand | 815.0 mm x 529.6 mm x 82.0 mm (32.0 inch x 20.8 inch x 3.2 inch) | 1052.2 mm x 657.3 mm x 90.8 mm (41.4 inch x 25.8 inch x 3.5 inch) |
| Weight | With stand | 12.6 kg (27.7 lbs) | 19.0 kg (41.8 lbs) |
| | Without stand | 11.4 kg (25.1 lbs) | 17.2 kg (37.9 lbs) |

| MODELS | | 47LD520 (47LD520-UA) | 55LD520 (55LD520-UA) |
|--|---------------|--|--|
| Dimensions (Width x Height x Depth) | With stand | 1173.4 mm x 791.4 mm x 319.0 mm (46.2 inch x 31.1 inch x 12.5 inch) | 1357.0 mm x 901.0 mm x 423.0 mm (53.4 inch x 35.4 inch x 16.6 inch) |
| | Without stand | 1173.4 mm x 723.4 mm x 100.8 mm (46.2 inch x 28.4 inch x 3.9 inch) | 1357.0 mm x 835.4 mm x 109.6 mm (53.4 inch x 32.8 inch x 4.3 inch) |
| Weight | With stand | 23.6 kg (52.0 lbs) | 36.4 kg (80.2 lbs) |
| | Without stand | 20.8 kg (45.8 lbs) | 32.9 kg (72.5 lbs) |

| MODELS | | 42LD630 (42LD630-UA) | 47LD630 (47LD630-UA) |
|--|---------------|--|--|
| Dimensions (Width x Height x Depth) | With stand | 1052.2 mm x 719.1 mm x 296.2 mm (41.4 inch x 28.3 inch x 11.6 inch) | 1137.0 mm x 758.0 mm x 270.0 mm (44.7 inch x 29.8 inch x 10.6 inch) |
| | Without stand | 1052.2 mm x 657.3 mm x 90.8 mm (41.5 inch x 25.8 inch x 3.5 inch) | 1137.0 mm x 685.0 mm x 76.8 mm (44.7 inch x 26.9 inch x 3.0 inch) |
| Weight | With stand | 19.0 kg (41.8 lbs) | 20.3 kg (44.7 lbs) |
| | Without stand | 17.2 kg (37.9 lbs) | 18.3 kg (40.3 lbs) |

| MODELS | | 55LD630 (55LD630-UA) |
|--|---------------|--|
| Dimensions (Width x Height x Depth) | With stand | 1329.0 mm x 872.0 mm x 330.0 mm (52.3 inch x 34.3 inch x 12.9 inch) |
| | Without stand | 1329.0 mm x 796.0 mm x 96.5 mm (52.3 inch x 31.3 inch x 3.7 inch) |
| Weight | With stand | 32.1 kg (70.7 lbs) |
| | Without stand | 28.9 kg (63.7 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.

IR CODE

| 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 | AV or AV1 | Discrete IR Code (AV1 Input Selection) |
| 09 | MUTE | Remote Control Button | D0 | AV2 | Discrete IR Code (AV2 Input Selection) |
| 0B | INPUT | Remote Control Button | BF | COMPONENT | Discrete IR Code (Component Input Selection) |
| 0F | TV | Remote Control Button | D5 | RGB-PC | Discrete IR Code (RGB-PC Input Selection) |
| 10-19 | Number 0-9 | Remote Control Button | CE | HDMI1 | Discrete IR Code (HDMI1 Input Selection) |
| 1A | FLASHBK | Remote Control Button | CC | HDMI2 | Discrete IR Code (HDMI2 Input Selection) |
| 1E | FAV/MARK | Remote Control Button | E9 | HDMI3 | Discrete IR Code (HDMI3 Input Selection) |
| 28 | BACK | Remote Control Button | DA | HDMI4 | Discrete IR Code (HDMI4 Input Selection) |
| 30 | AV MODE | Remote Control Button | 76 | Ratio 4:3 | Discrete IR Code (Only 4:3 Mode) |
| 40 | ^ | Remote Control Button | 77 | Ratio 16:9 | Discrete IR Code (Only 16:9 Mode) |
| 41 | v | Remote Control Button | AF | Ratio Zoom | Discrete IR Code (Only Zoom Mode) |
| 43 | MENU | Remote Control Button | | | |
| 44 | ENTER | Remote Control Button | | | |
| 45 | Q.MENU | Remote Control Button | | | |
| 4C | - (Dash)/LIST | Remote Control Button | | | |
| 5B | EXIT | Remote Control Button | | | |
| 61 | BLUE | 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

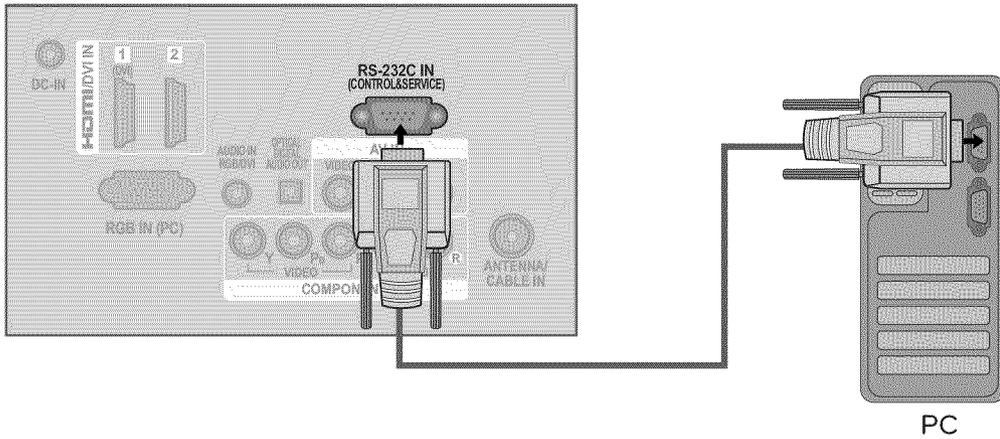
The RS-232C port allows you connect the RS-232C input jack to an external control device (such as a computer or an A/V control system) to control the TV's functions externally.

- 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)



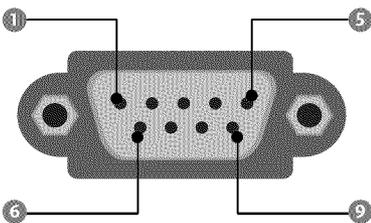
Type of Connector; D-Sub 9-Pin Male

Communication Parameters

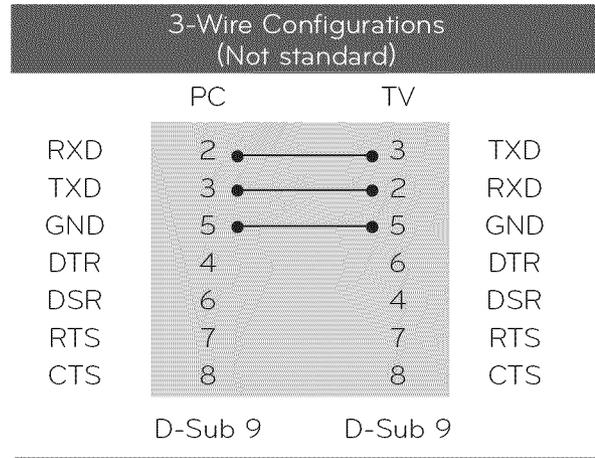
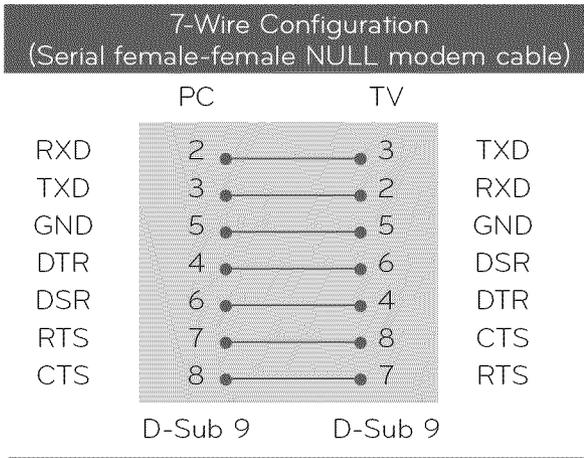
| No. | Pin Name |
|-----|----------------------|
| 1 | No connection |
| 2 | RXD (Receive data) |
| 3 | TXD (Transmit data) |
| 4 | DTR (DTE side ready) |
| 5 | GND |
| 6 | DSR (DCE side ready) |
| 7 | RTS (Ready to send) |
| 8 | CTS (Clear to send) |
| 9 | No Connection |

- 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.

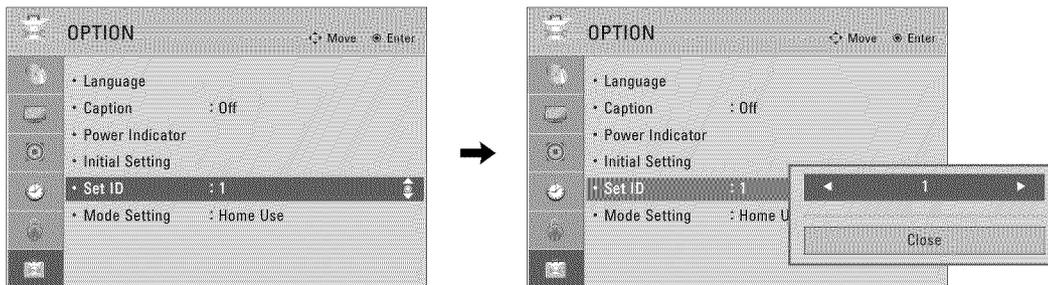


RS-232C Configurations



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 | ▶ P155 |
| 03. Aspect Ratio | k | c | ▶ P155 |
| 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. Energy Saving | j | q | ▶ P156 |
| 19. Auto Configuration | j | u | ▶ P156 |
| 21. Channel Add/Del | m | b | 00 - 01 |
| 22. Key | m | c | ▶ P157 |
| 23. Backlight | m | g | 00 - 64 |

| | COMMAND1 | COMMAND2 | DATA00 (Hexadecimal) | DATA01 (Hexadecimal) | | |
|--------------------|----------|----------|-------------------------|-------------------------|-------------------------|-------------------------|
| 20. 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 10: Analog (Antenna) Data 11: Analog (Cable)

Data 20: AV or AV1 Data 21: AV 2

Data 40: Component

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 05: Zoom2 Data 1F: Cinema Zoom16

Data 06: Set by program

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

*Refer to 'Real data mapping'.

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

18. Energy Saving (Command: j q)

To control the energy saving function.

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

Data 00: Energy saving - off

01: Energy saving - Minimum

02: Energy saving - Medium

03: Energy saving - Maximum

04: Energy saving - Auto (depending on model)

05: Energy saving - Screen off

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

19. Auto Configuration (Command: j u)

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

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

Data 01: To set

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

20. Channel Tuning (Command: m a)

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

Transmission [m][a][][Set ID][][Data00][][Data01]

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

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

Data 00: Physical Channel Number

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

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

Data 01 & 02: Major Channel Number

Data 01: High byte Data 02: Low byte

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

Data 03 & 04: Minor Channel Number

Not needed for NTSC.

| Data5: | 7 Main/Sub Picture | 6 Two/One Part Channel | 5 Using Physical Channel | 4 Reserved | 3 | 2 | 1 | 0 | Step |
|--------|--------------------------|------------------------------|--------------------------------|---------------|---|---|---|---|-----------------|
| | 0 Main | 0 Two | 0 Use | x | 0 | 0 | 0 | 0 | NTSC Air |
| | 1 Sub | 1 One | 1 No Use | x | 0 | 0 | 0 | 1 | NTSC Cable |
| | | | | x | 0 | 0 | 1 | 0 | ATSC Air |
| | | | | x | 0 | 0 | 1 | 1 | ATSC Cable_std |
| | | | | x | 0 | 1 | 0 | 0 | ATSC Cable_hrc |
| | | | | x | 0 | 1 | 0 | 1 | ATSC Cable_irc |
| | | | | x | 0 | 1 | 1 | 0 | ATSC cable_auto |
| | | | | x | 0 | 1 | 1 | 1 | Reserved |
| | | | | x | x | x | x | x | ... |
| | | | | x | 1 | 1 | 1 | 1 | Reserved |

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

- * 7th bit : For which source do you want to change the channel.
- * 6th bit: Use a two part or one part channel. Most cases just use 0 since it's ignored when using NTSC.
- * 5th bit: Use 0 with NTSC since it can only use the physical channel number. Normally use 1 for ATSC since most times it doesn't matter what the physical number is.
- * 4th bit: Set to 0.
- * 3-0 bits: Choose signal type.

*Tune Command Examples:

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

Data 00 = Physical of 35 = 23
 Data 01 & 02 = No Major = 00 00
 Data 03 & 04 = No Minor = 00 00
 Data 05 = 0000 0001 in binary = 01
 Total = ma 00 23 00 00 00 00 01

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

Data 00 = Don't know Physical = 00
 Data 01 & 02 = Major is 30 = 00 1E
 Data 03 & 04 = Minor is 3 = 00 03
 Data 05 = 0010 0010 in binary = 22
 Total = ma 00 00 00 1E 00 03 22

21. 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]

22. Key (Command: m c)

To send IR remote control code.

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

See page 151.

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

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

23. Backlight (Command: m g)

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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APPENDIX

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Version 1.1

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You must duplicate the notice in exhibit A in each file of the source code. If it is not possible to put such notice in a particular source code file due to its structure, then You must include such notice in a location (such as a relevant directory) where a user would be likely to look for such a notice. If You created one or more modification(s), you may add your name as a contributor to the notice described in exhibit A. you must also duplicate this license in any documentation for the source code where You describe recipients' rights or ownership rights relating to covered code. You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of covered code. However, you may do so only on your own behalf, and not on behalf of the Initial developer or any contributor. You must make it absolutely clear than any such warranty, support, indemnity or liability obligation is offered by you alone, and You hereby agree to indemnify the Initial developer and every contributor for any liability incurred by the Initial developer or such contributor as a result of warranty, support, indemnity or liability terms you offer.

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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 _____