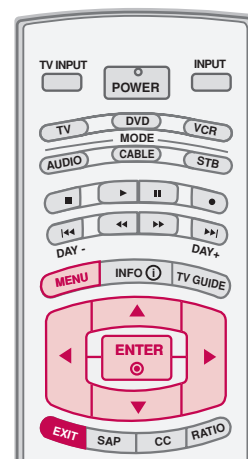


ADVANCED-CINEMA 3:2 MODE SETUP

Set up the TV for the best picture appearance for viewing movies.

When you operate Cinema 3:2 Mode (3:2 Pull-Down Mode or Cinema Correction Mode), the TV will adjust 24 fps video from movies to 30 fps video for display.

This feature operates only in Analog, AV1, AV2, and Component 480i mode.



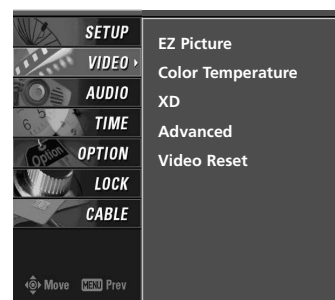
1 Press the **MENU** button and then use ▲ or ▼ button to select the **VIDEO** menu.

2 Press the ► button and then use ▲ or ▼ button to select **Advanced**.

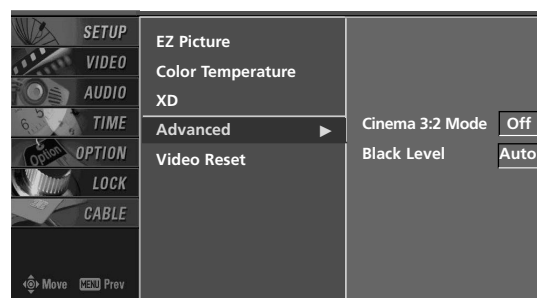
3 Press the ► button and then use ▲ or ▼ button to select **Cinema 3:2 Mode**.

4 Press the ► button and then use ▲ or ▼ button to select **On** or **Off**.

5 Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.



1



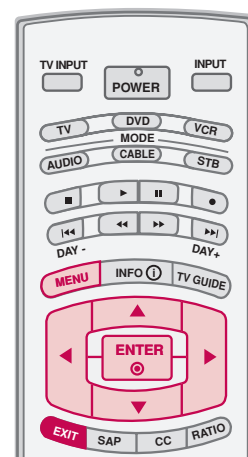
2 3 4

TV MENU | VIDEO ADJUSTMENT

ADVANCED-BLACK LEVEL

Adjusting the contrast and the brightness of the screen using the black level of the screen.

This feature operates only in AV1, AV2, HDMI1/DVI, or HDMI2 mode.



1 Press the **MENU** button and then use ▲ or ▼ button to select the **VIDEO** menu.

2 Press the ► button and then use ▲ or ▼ button to select **Advanced**.

3 Press the ► button and then use ▲ or ▼ button to select **Black level**.

4 Press the ► button and then use ▲ or ▼ button to select **Auto**, **Low**, or **High**.

■ **Auto**

Realizing the black level of the screen and set it to High or Low automatically.

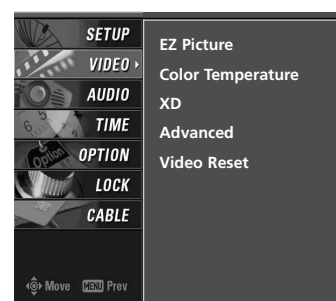
■ **Low**

The screen gets darker.

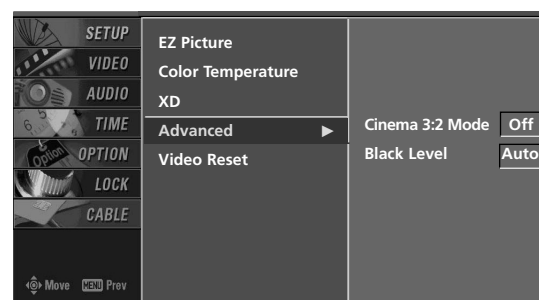
■ **High**

The screen gets brighter.

5 Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.



1

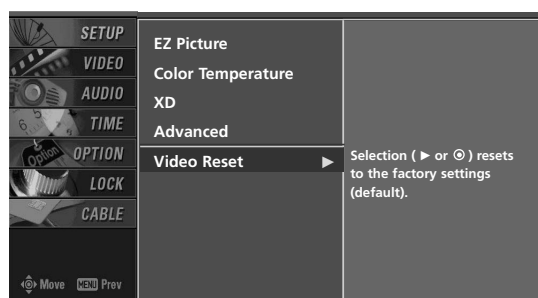
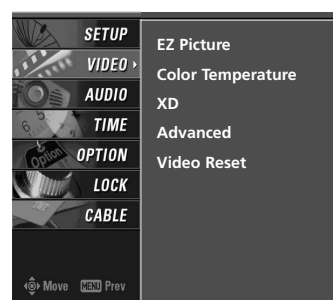
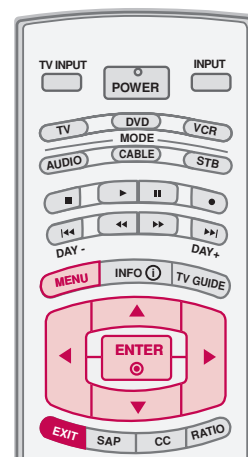


2 3 4

VIDEO RESET

Use to quickly reset all the Video menu options to their original factory preset values.

- 1 Press the **MENU** button and then use ▲ or ▼ button to select the **VIDEO** menu.
- 2 Press the ► button and then use ▲ or ▼ button to select **Video Reset**.
- 3 Press the ► button to reset the Video menu options to original values.

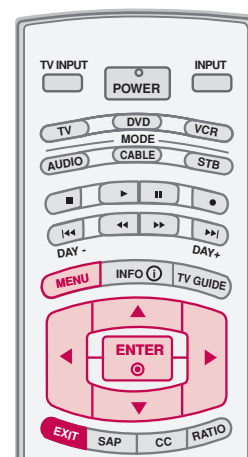


TV MENU | AUDIO ADJUSTMENT

AUDIO LANGUAGE

Other languages may be available if a digital signal is provided by the broadcasting station.

This feature operates only in DTV/CADTV mode.

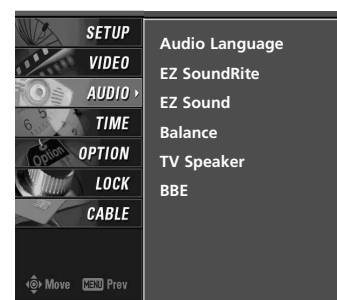


1 Press the **MENU** button and then use ▲ or ▼ button to select the **AUDIO** menu.

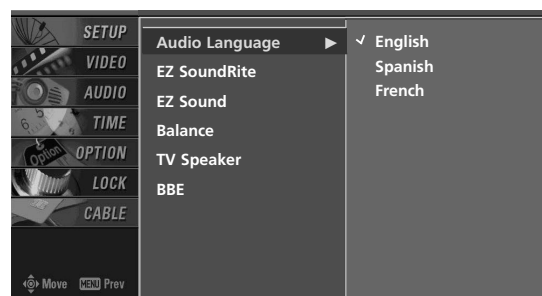
2 Press the ► button and then use ▲ or ▼ button to select **Audio Language**.

3 Press the ► button and then use ▲ or ▼ button to select : **English, Spanish, or French**.

4 Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.



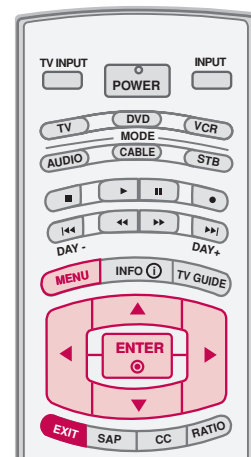
1



2 3

AUTO VOLUME LEVELER (EZ SOUNDRITE)

Scans for changes in sound levels during commercials, then adjusts the sound to match the specified audio level. SoundRite makes sure that the volume level remains consistent whether you are watching a commercial or a regular TV program.



1 Press the **MENU** button and then use ▲ or ▼ button to select the **AUDIO** menu.

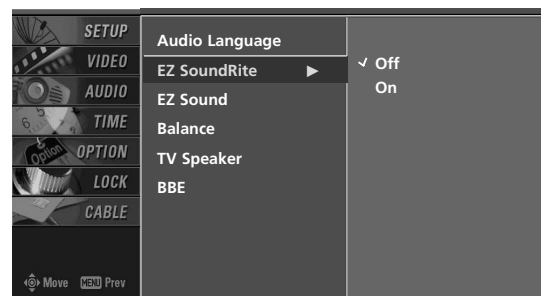
2 Press the ► button and then use ▲ or ▼ button to select **EZ SoundRite**.

3 Press the ► button and then use ▲ or ▼ button to select **On** or **Off**.

4 Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.

Audio Language
EZ SoundRite
EZ Sound
Balance
TV Speaker
BBE

1



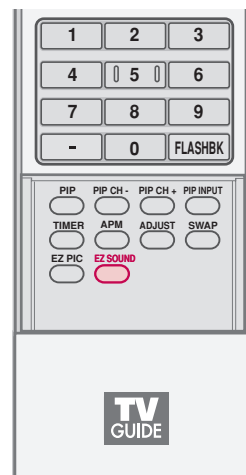
2 3

TV MENU | AUDIO ADJUSTMENT

AUTO SOUND CONTROL (EZ SOUND)

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

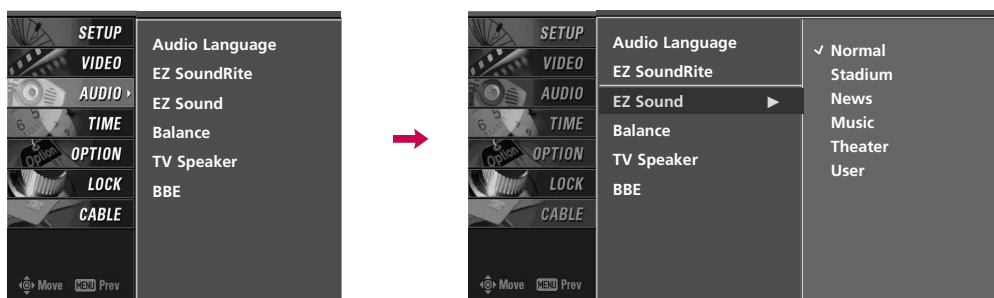
Normal, Stadium, News, Music and Theater are preset for good sound quality at the factory and are not adjustable.



- 1 Press the **EZ SOUND** button repeatedly to select the appropriate sound setup as below :
Normal, Stadium, News, Music, Theater, and User (your own settings).

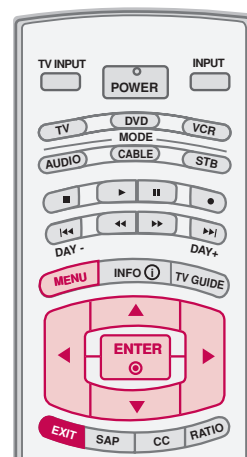
- 2 Press **EXIT** button to return to TV viewing.

■ You can also adjust **EZ Sound** in the **AUDIO** menu.

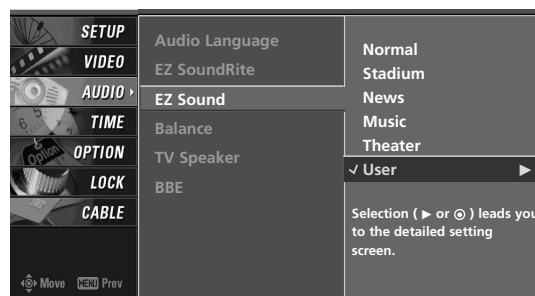


MANUAL SOUND CONTROL (EZ SOUND-**User** option)

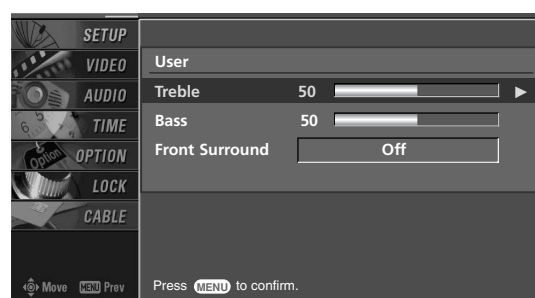
Adjust the sound to suit your taste and room situations.



- 1 Press the **MENU** button and then use ▲ or ▼ button to select the **AUDIO** menu.
- 2 Press the ► button and then use ▲ or ▼ button to select **EZ Sound**.
- 3 Press the ► button and then use ▲ or ▼ button to select **User**.
- 4 Press the ► button and then use ▲ or ▼ button to select the desired sound option (**Treble**, **Bass**, or **Front Surround**).



1 2 3



4

(Continued on next page)

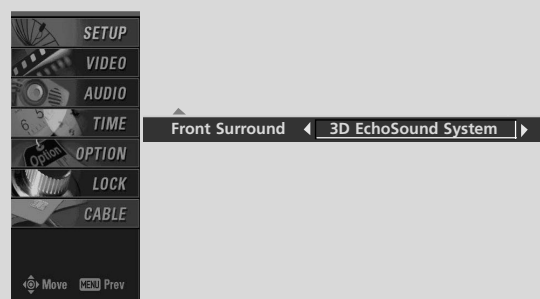
TV MENU | AUDIO ADJUSTMENT

MANUAL SOUND CONTROL Continued

- 5 Press the ► button and then use ◀ or ▶ button to make appropriate adjustments.

Selecting the Front surround

Press the ► button and then use ◀ or ▶ button to select **Off**, **3D EchoSound System** or **SRS (Sound Retrieval System) TruSurround XT**.



- 6 Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.

SRS TruSurround XT

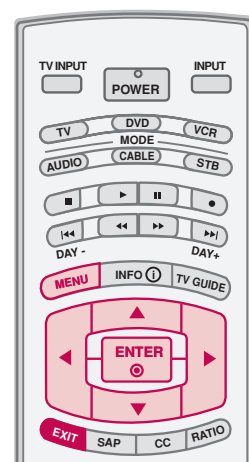
Takes advantage of any multi-channel format without needing to add extra speakers or equipment. Dialog clarity, bass enrichment, and the addition of stereo audio enhancement produces an immersive sound experience from standard stereo material.

3D EchoSound System

Creates a stunning simulated stereo effect from any mono sound and a realistic three-dimensional sound with a very wide and deep sound stage.

BALANCE

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

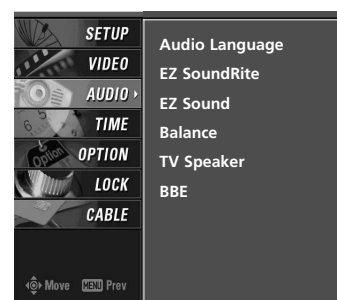


1 Press the **MENU** button and then use ▲ or ▼ button to select the **AUDIO** menu.

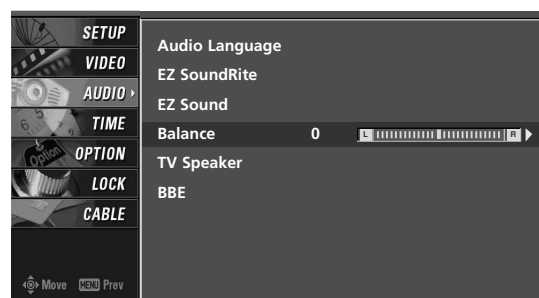
2 Press the ► button and then use ▲ or ▼ button to select **Balance**.

3 Press the ► button and then use ◀ or ▶ button to make appropriate adjustments.

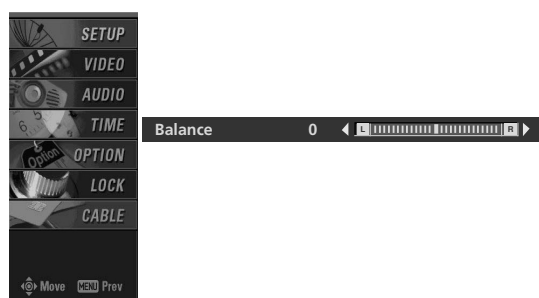
4 Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.



1



2

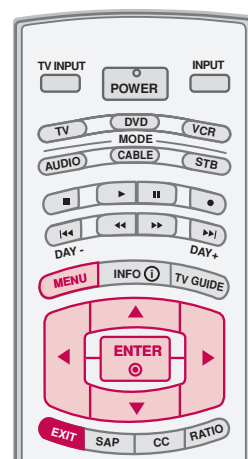


3

TV MENU | AUDIO ADJUSTMENT

TV SPEAKERS ON/OFF SETUP

Turn the TV speakers off if using external audio equipment.
Feature turns the TV Speakers option On or Off.

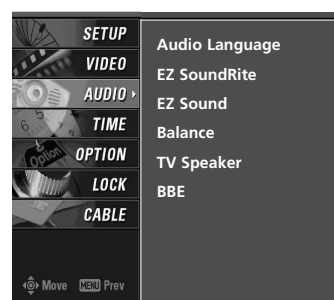


1 Press the **MENU** button and then use ▲ or ▼ button to select the **AUDIO** menu.

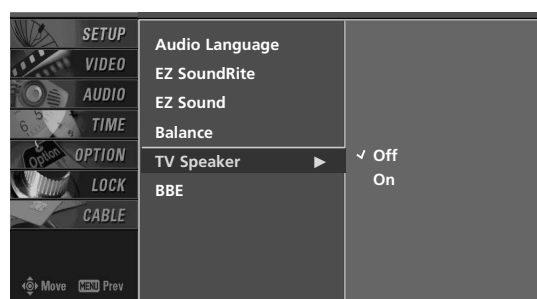
2 Press the ► button and then use ▲ or ▼ button to select **TV Speaker**.

3 Press the ► button and then use ▲ or ▼ button to select **On** or **Off**.

4 Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.



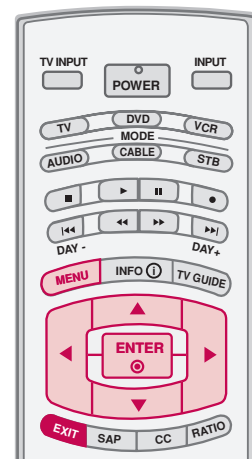
1



2 3

BBE

BBE High Definition Sound restores clarity for better speech intelligibility and musical realism.

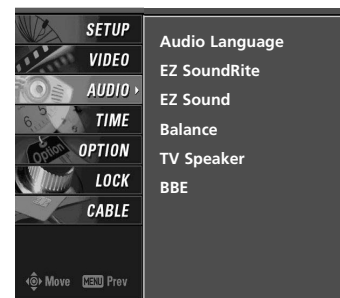


1 Press the **MENU** button and then use ▲ or ▼ button to select the **AUDIO** menu.

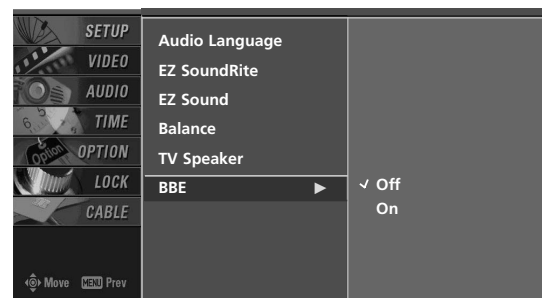
2 Press the ► button and then use ▲ or ▼ button to select **BBE**.

3 Press the ► button and then use ▲ or ▼ button to select **On** or **Off**.

4 Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.



1



2 3

TV MENU | AUDIO ADJUSTMENT

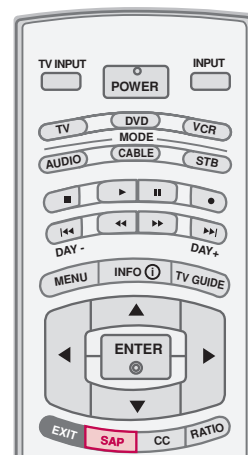
STEREO/SAP BROADCAST SETUP

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 as well as the original one and when you select Stereo or SAP on the remote control.

Mono sound is automatically received if the broadcast is only in Mono; even though Stereo or SAP has been selected.

Select Mono if you want to listen to the mono sound in remote areas during stereo/SAP broadcasting.

Stereo or SAP can be received in Analog channel.



- 1 Use the **SAP** button to select your desired MTS mode in analog signal. Each time you press the **SAP** button, **Mono**, **Stereo**, or **SAP** appear in turn.
 - If other languages available on the digital signal, select them with the **SAP** button.
- 2 Press **EXIT** button to save and return to TV viewing.

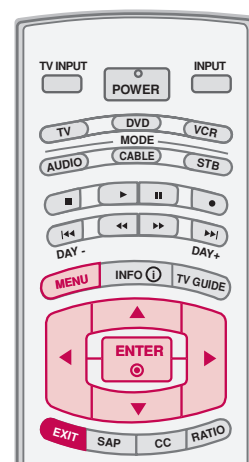
TV MENU | TIME SETTING

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.

Note: When you set up the TV Guide On Screen system, Auto Clock menu is not available.



- 1 Press the **MENU** button and then use ▲ or ▼ button to select the **TIME** menu.

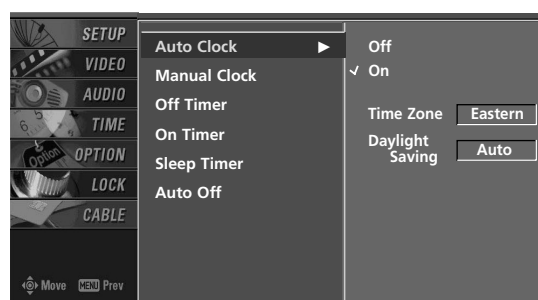
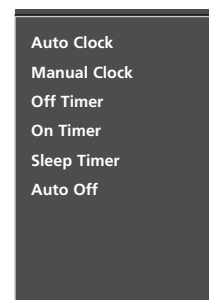
- 2 Press the ► button and then use ▲ or ▼ button to select **Auto Clock**.

- 3 Press the ► button and then use ▲ or ▼ button to select **On**.

- 4 Press the ► button and then use ▲ or ▼ button to select your viewing area time zone:
U.S.A : **Eastern, Central, Mountain, Pacific, Alaska** or **Hawaii**.
Canada : **Eastern, Central, Mountain, Pacific, New F.land** or **Atlantic**.

- 5 Press the ► button and then use ▲ or ▼ button to select **Auto, Off, On**, depending on whether or not your viewing area observes Daylight Saving time.

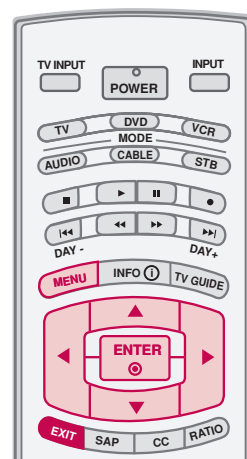
- 6 Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.



TV MENU | TIME SETTING

MANUAL CLOCK SETUP

If the current time setting is wrong, reset the clock manually.
When you set up the TV Guide On Screen system, the Manual Clock menu is not available.

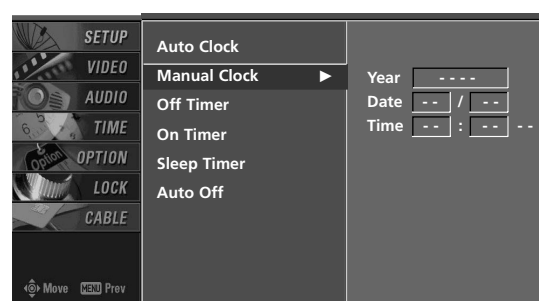
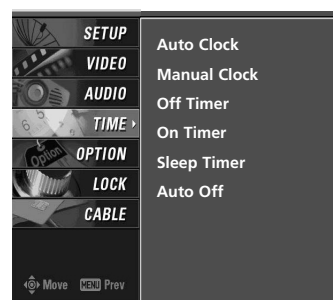


1 Press the **MENU** button and then use **▲** or **▼** button to select the **TIME** menu.

2 Press the **►** button and then use **▲** or **▼** button to select **Manual Clock**.

3 Press the **►** button and then use **◀** or **▶** to select either the year, date, or time option. Once selected, use the **▲** or **▼** button to set the year, date, and time options.

4 Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.



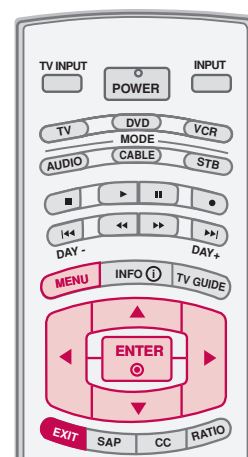
ON/OFF TIMER SETUP

The timer function operates only if the current time has been set.

The Off-Timer function overrides the On-Timer function if they are both set to the same time.

The TV must be in standby mode for the On-Timer to work.

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



- 1 Press the **MENU** button and then use ▲ or ▼ button to select the **TIME** menu.

- 2 Press the ► button and then use ▲ or ▼ button to select **Off Timer** or **On Timer**.

- 3 Press the ► button and then use ▲ or ▼ button to select **On**.

■ To cancel the **On/Off timer** function, select **Off**.

- 4 Press the ► button and then use ▲ or ▼ button to set the hour.

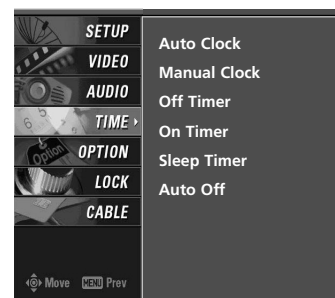
- 5 Press the ► button and then use ▲ or ▼ button to set the minutes.

6 Only On timer

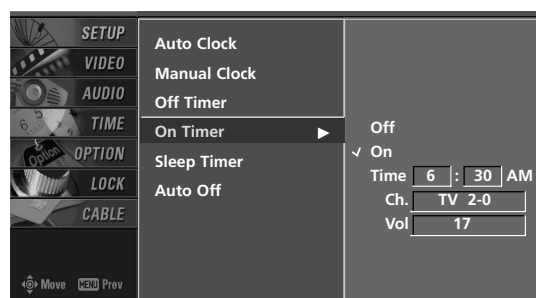
Press the ► button and then use ▲ or ▼ to select the channel at turn-on.

Press the ► button and then use ▲ or ▼ to set the sound level at turn-on.

- 7 Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.



1



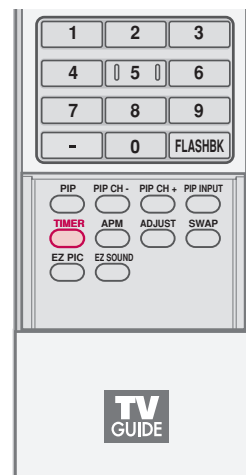
2 3 4 5 6

TV MENU | TIME SETTING

SLEEP TIMER

The Sleep Timer turns the TV off at the preset time.

Note that this setting is cleared when the TV is turned off.



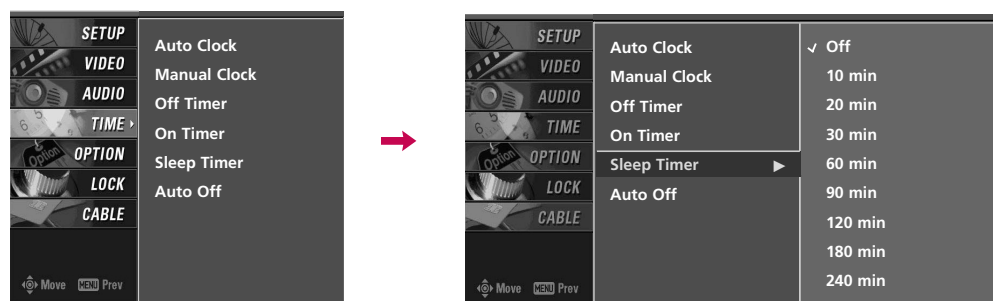
- 1 Press the **TIMER** button repeatedly to select the number of minutes. First the **Off** option appears on the screen, followed by the following sleep timer options : 10, 20, 30, 60, 90, 120, 180, and 240 minutes.

- 2 When the number of minutes you want is displayed on the screen, press the **ENTER** button. The timer begins to count down from the number of minutes selected.

- 3 To check the remaining minutes before the TV turns off, press the **TIMER** button once.

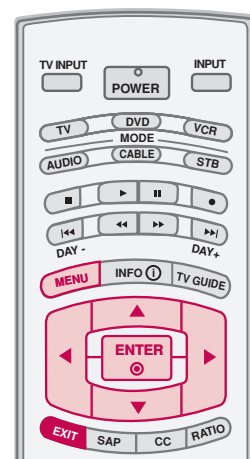
- 4 To cancel the Sleep Timer, press the **TIMER** button repeatedly to select **Off**.

■ You can also set up the **Sleep Timer** in the **TIME** menu.



AUTO OFF

If set to on and there is no input signal, the TV turns off automatically after 10 minutes.

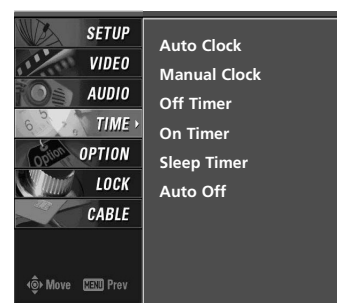


1 Press the **MENU** button and then use ▲ or ▼ button to select the **TIME** menu.

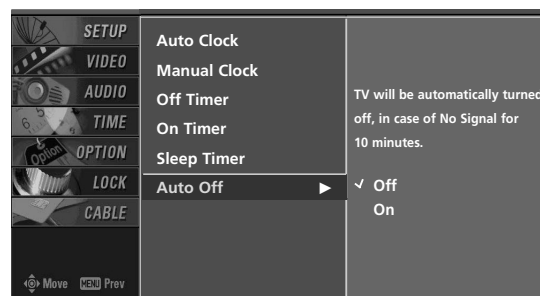
2 Press the ► button and then use ▲ or ▼ button to select **Auto Off**.

3 Press the ► button and then use ▲ or ▼ button to select **On** or **Off**.

4 Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.



1



2 3

TV MENU | OPTIONAL FEATURES

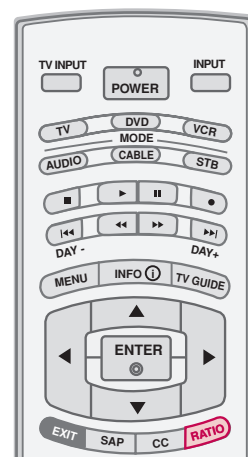
ASPECT RATIO CONTROL

This feature lets you choose the way an analog picture with a 4:3 aspect ratio is displayed on your TV. When you receive an analog picture with a 4:3 aspect ratio on your 16:9 TV, you need to specify how the picture is to be displayed.

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

! NOTE

- ▶ If a fixed image is displayed on the screen for a long time, the image may become imprinted on the screen and remain visible. This phenomenon is common to all manufactures and in consequence the manufactures warranty does not cover the product bearing this phenomenon.



- 1 Press the **RATIO** button repeatedly to select the desired picture format.

You can also adjust **Aspect Ratio** in the **OPTION** menu.

Set by program

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

4:3 → 4:3



16:9 → 16:9



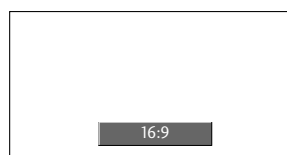
4:3

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



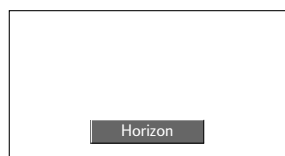
16:9

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



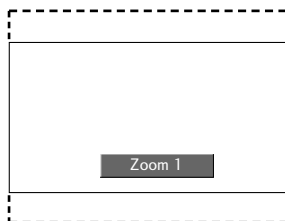
Horizon

The screen size is, more enlarged at both sides, to create a spectacular view.



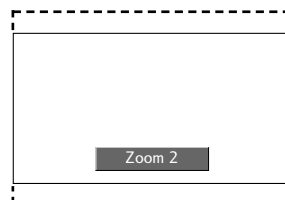
Zoom 1

Choose Zoom 1 when you want to view the picture without any alteration. However, the top and bottom portions of the picture will be cropped.



Zoom 2

Choose Zoom 2 when you want the picture to be altered, both vertically extended and cropped. The picture taking a halfway trade off between alteration and screen coverage.



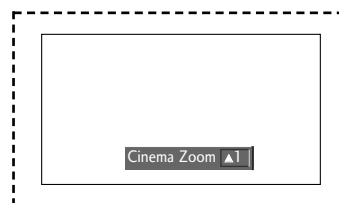
Cinema Zoom

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

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

You can adjust the enlarge proportion of Cinema Zoom using ▲ or ▼ button.

The adjustment range is 1-16.



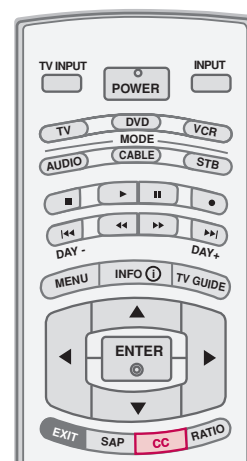
TV MENU | OPTIONAL FEATURES

CAPTION / TEXT

Analog Broadcasting System Captions

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.

Text displays information, usually at the bottom position and is used for a data service, generally not program related. 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 turn the power off.

- 1 Use the **CC** button repeatedly to select Caption **Off**, **CC1**, **CC2**, **CC3**, **CC4**, **Text1**, **Text2**, **Text3** or **Text4**.

■ CAPTION

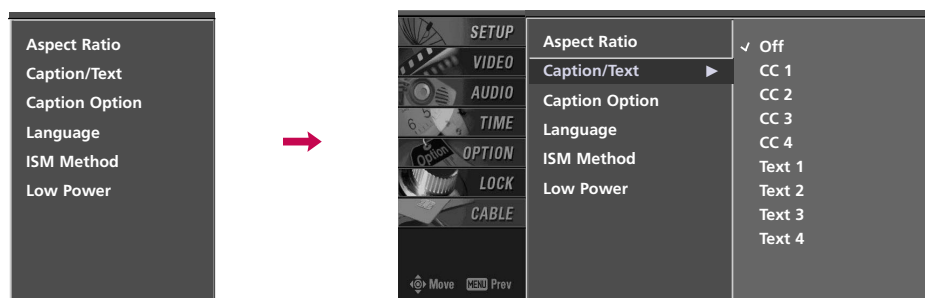
The term for the words that scroll across the bottom of the TV screen; usually the audio portion of the program provided for the hearing impaired.

■ 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.

- 2 Press **EXIT** to save and return to TV viewing.

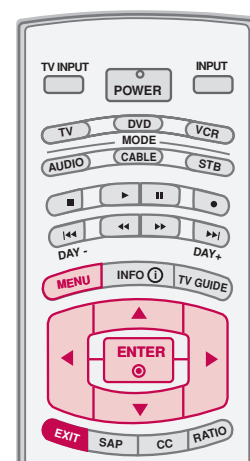
- You can also use the **OPTION** menu to select **Caption/Text**.



Digital Broadcasting System Captions

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

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

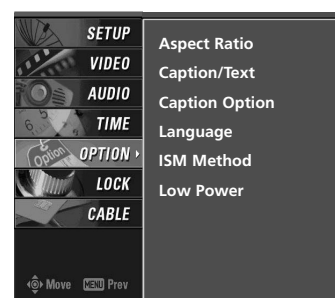


1 Press the **MENU** button and then use ▲ or ▼ button to select the **OPTION** menu.

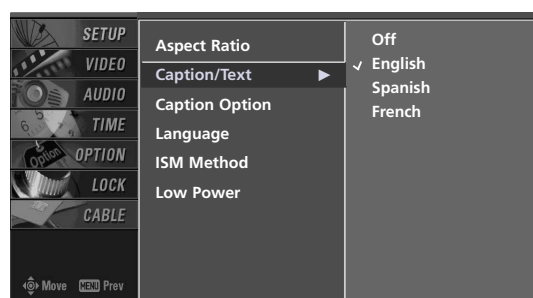
2 Press the ► button and then use ▲ or ▼ button to select **Caption/Text**.

3 Press the ► button and then use ▲ or ▼ button to select available caption languages : **English, Spanish** or **French**.

4 Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.



1

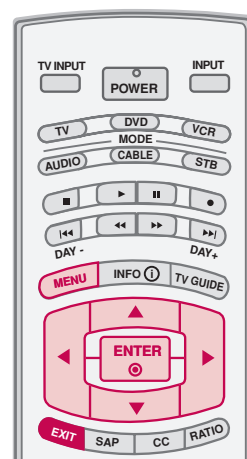


2 3

TV MENU | OPTIONAL FEATURES

CAPTION OPTION

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



- 1 Press the **MENU** button and then use ▲ or ▼ button to select the **OPTION** menu.

- 2 Press the ► button and then use ▲ or ▼ button to select **Caption Option**.

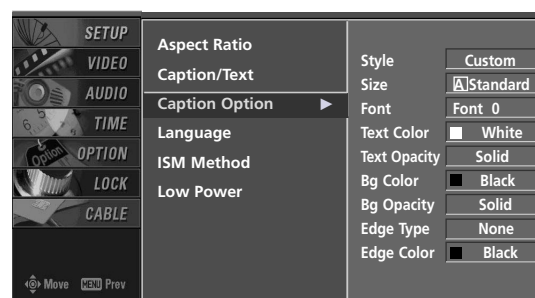
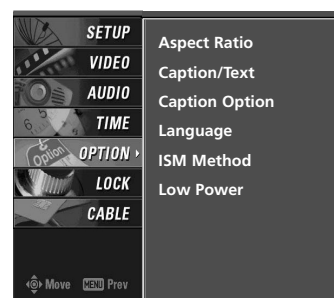
- 3 Press the ► button and then use ◀ or ▶ button to select **Custom**.

- 4 Use ▲ or ▼ button to customize the **Style, Font**, etc., to your preference.

A preview icon is provided at the bottom of the screen, use it to see the caption language.

- ▶ **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.

- 5 Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.



3 4

ISM (IMAGE STICKING MINIMIZATION) METHOD

A frozen still picture from a PC/video game displayed on the screen for prolonged periods will result in a ghost image. Use our unique method to minimize any fixed image on the screen.

- 1 Press the **MENU** button and then use ▲ or ▼ button to select the **OPTION** menu.

- 2 Press the ► button and then use ▲ or ▼ button to select **ISM Method**.

- 3 Press the ► button and then use ▲ or ▼ button to select either **Normal**, **White wash**, **Orbiter** or **Inversion**.

■ Normal

If image sticking is never a problem, ISM is not necessary - set to Normal.

■ White wash

White Wash removes permanent images from the screen.

! NOTE

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

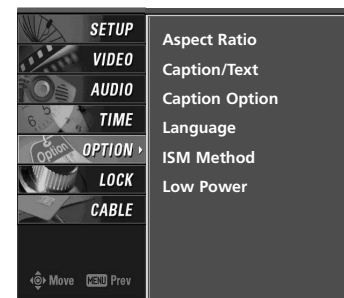
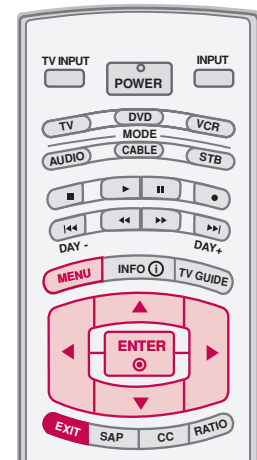
■ Orbiter

Orbiter may help prevent ghost images. However, it is best not to allow any fixed image to remain on the screen. To avoid a permanent image on the screen, the image will move once per 2 minutes : Left → Right → Upside → Downside → Right → Left → Downside → Upside.

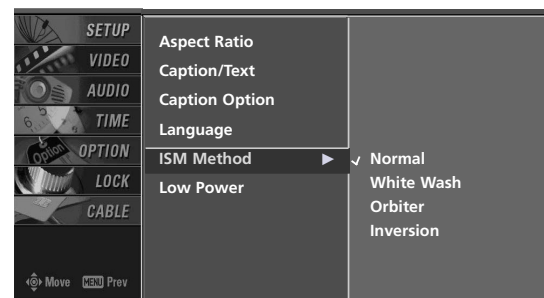
■ Inversion

Inversion will automatically invert the plasma display panel color every 30 minutes.

- 4 Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.



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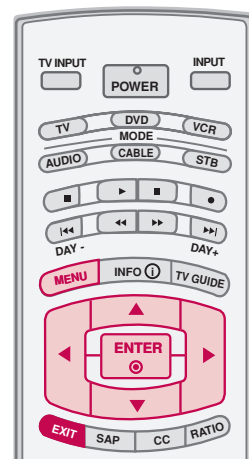


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TV MENU | OPTIONAL FEATURES

LOW POWER

Low power reduces the plasma display power consumption.



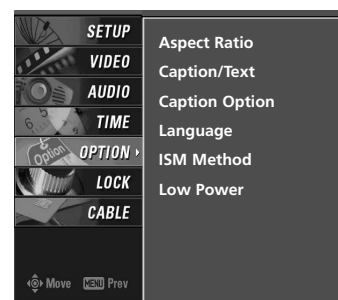
- 1 Press the **MENU** button and then use ▲ or ▼ button to select the **OPTION** menu.

- 2 Press the ► button and then use ▲ or ▼ button to select **Low power**.

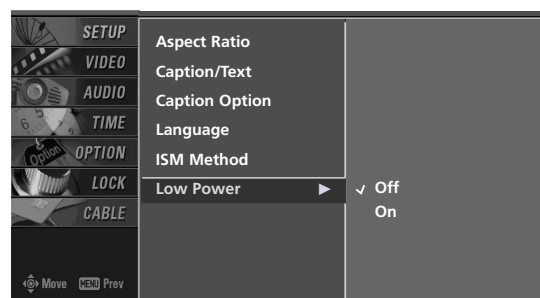
- 3 Press the ► button and then use ▲ or ▼ button to select **On** or **Off**.

■ When you select **On**, the screen darkens.

- 4 Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.



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2 3

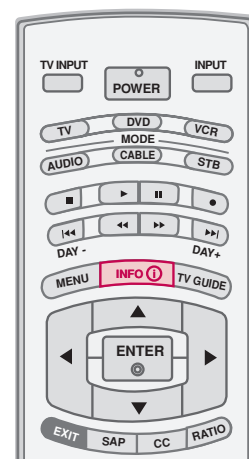
BRIEF INFO.

What is Brief Info.?

- : Brief Info shows the present screen information.
- : On Watching with the upper Input signal, press the **INFO** button.

How To Use?

1. Press the **INFO** button to show the Brief Info on the screen.
2. Press the **INFO** button or **EXIT** button to exit.



Multilingual : Press the **SAP** button to select your choice.



Caption : Press the **CC** button to select wanted Closed caption.

4:3

Screen Ratio of Input Signal 4:3

16:9

Screen Ratio of Input Signal 16:9

480i

Resolution of Input Signal 720x480i

480p

Resolution of Input Signal 720x480p

720p

Resolution of Input Signal 1280x720p

1080i

Resolution of Input Signal 1920x1080i



Input Signal have rating information. Refer to the <Lock Menu>.
D(Dialogue), L(Language), S(Sex), V(Violence), FV(Fantasy Violence)

- ① Program title
- ② Day, Month, Year
- ③ Program start time
- ④ Program progress bar
- ⑤ Program finish time
- ⑥ Present time
- ⑦ Program information
- ⑧ Banner information

TV MENU | LOCK ADJUSTMENT

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

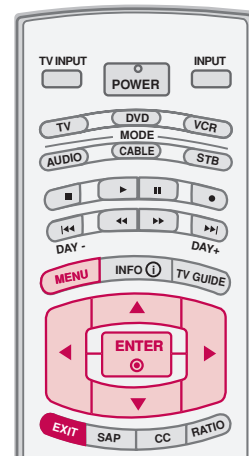
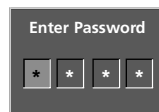
SETTING UP YOUR PASSWORD

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

A password is required to gain access to this menu.

- 1 Press the **MENU** button and then use the ▲ or ▼ button to select the **LOCK** menu. Then, press the ► button.

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



LOCK SYSTEM

Enables or disables the blocking scheme you set up previously.

1 After inputting the password, use the ▲ or ▼ button to choose **Lock System**.

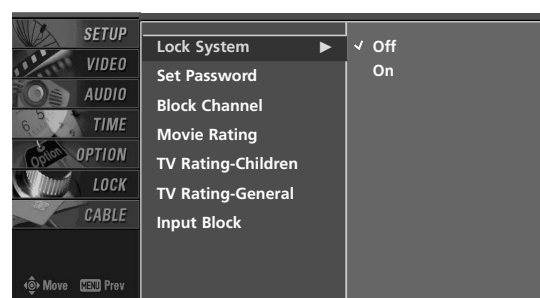
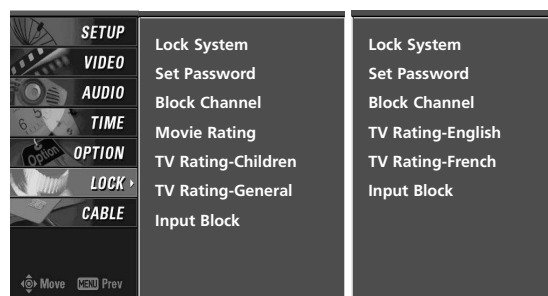
2 Press the ► button and then use the ▲ or ▼ button to select **On** or **Off**.

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

3 Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.

For USA

For Canada



SET PASSWORD

Change the password by inputting a new password twice.

1 After inputting the password, use the ▲ or ▼ button to choose **Set password**.

2 Press the ► button and then choose any 4 digits for your new password.

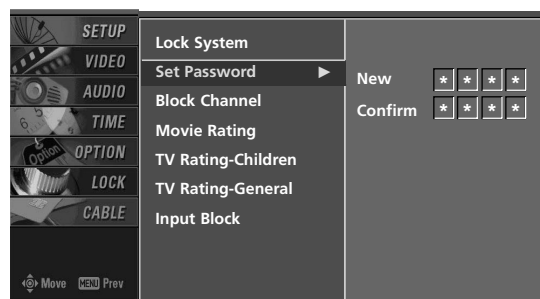
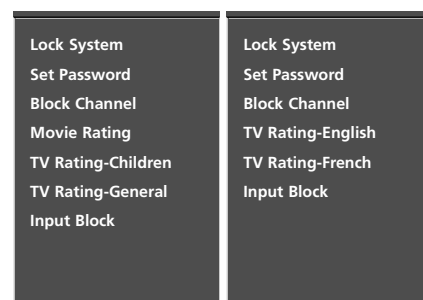
As soon as the 4 digits are entered, re-enter the same 4 digits on the **Confirm**.

Then your changed password has been memorized.

3 Press **EXIT** to return to TV viewing or press **MENU** to return to the previous menu.

For USA

For Canada



! NOTE

- If you ever forget your password, key in '7', '7', '7', '7' on the remote control.

TV MENU | LOCK ADJUSTMENT

BLOCK CHANNEL

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

1 After inputting the password, use the ▲ or ▼ button to choose **Block Channel**.

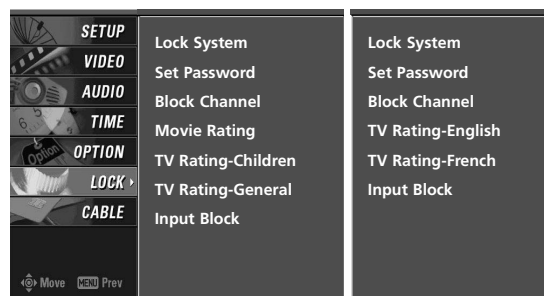
2 Press the ► button. You will now see a screen filled with channel numbers and a preview picture.

3 Use ▲ ▼ ◀ ▶ button to select a channel and then use the **ENTER** button to block or unblock it.

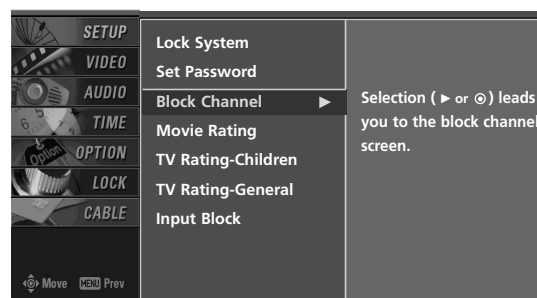
4 Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.

For USA

For Canada



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Selection (► or ◉) leads you to the block channel screen.

MOVIE RATING (MPAA) - for USA only

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.

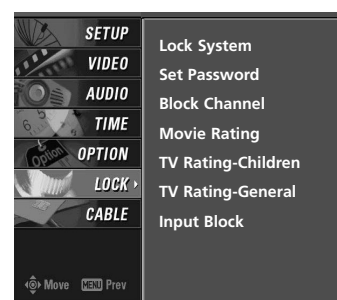
1 After inputting the password, use the ▲ or ▼ button to choose **Movie Rating**.

2 Press the ► button and then use the ▲ or ▼ button to select **G, PG, PG-13, R, NC-17** or **X**.

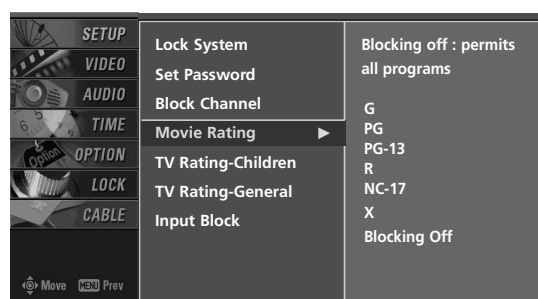
- G (General audience)
- PG (Parental guidance suggested)
- PG-13 (Parents strongly cautioned)
- R (Restricted)
- NC-17 (No one 17 and under admitted)
- X (Adult only)
- Blocking Off (Permits all programs)

► If you set PG-13 : G and PG movies will be available, PG-13, R, NC-17 and X will be blocked.

3 Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.



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TV MENU | LOCK ADJUSTMENT

TV RATING CHILDREN - *for USA only*

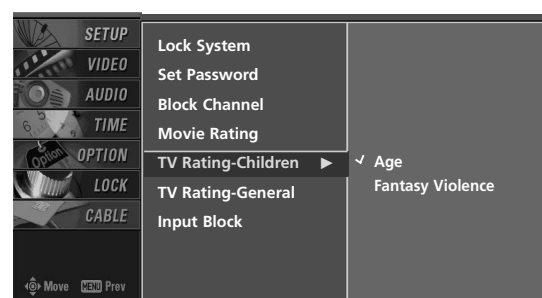
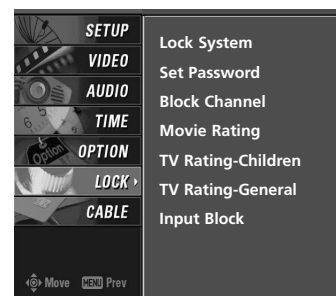
Prevents children from watching certain children's TV programs, according to the ratings limit set. The children rating does not apply to other TV programs. Unless you block certain TV programs intended for mature audiences in the TV Rating - sub menu, your children can view those programs.

- 1 After inputting the password, use the ▲ or ▼ button to choose **TV Rating-Children**.

- 2 Press the ► button and then use the ▲ or ▼ button to select **Age**, or **Fantasy Violence**.
Press the ► button and then use the ▲ or ▼ button to select block options.

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

- 3 Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.



TV RATING GENERAL - *for USA only*

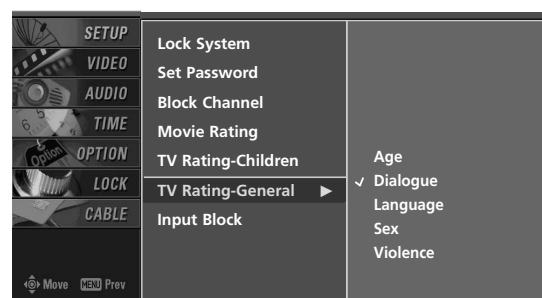
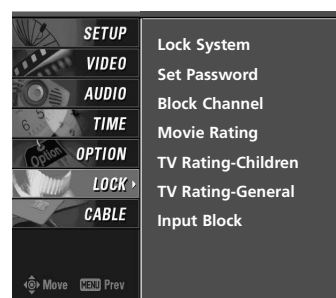
Based on the ratings, blocks certain TV programs that you and your family do not want to view.

- 1 After inputting the password, use the ▲ or ▼ button to choose **TV Rating-General**.

- 2 Press the ► button and then use the ▲ or ▼ button to select **Age**, **Dialogue**, **Language**, **Sex** or **Violence**.
Press the ► button and then use the ▲ or ▼ button to select block options.

- 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)

- 3 Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.



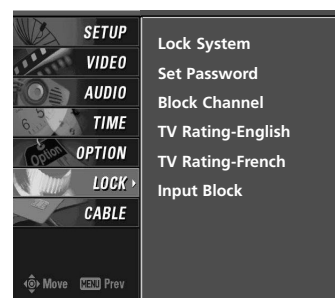
TV RATING ENGLISH - *for CANADA only*

Selecting canadian english language rating system.

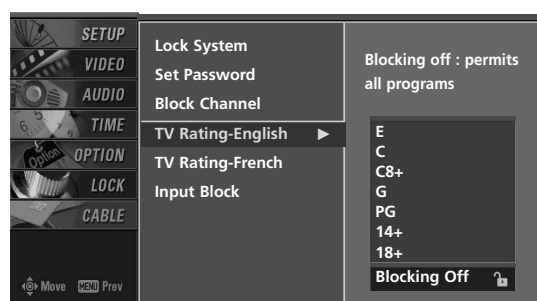
- 1 After inputting the password, use the ▲ or ▼ button to choose **TV Rating-English**.
- 2 Press the ► button and then use the ▲ or ▼ button to select **E**, **C**, **C8+**, **G**, **PG**, **14+**, **18+**, or **Blocking Off**.

- 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)

- 3 Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.



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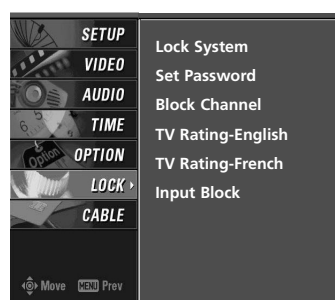
TV RATING FRENCH - *for CANADA only*

Selecting canadian french language rating system.

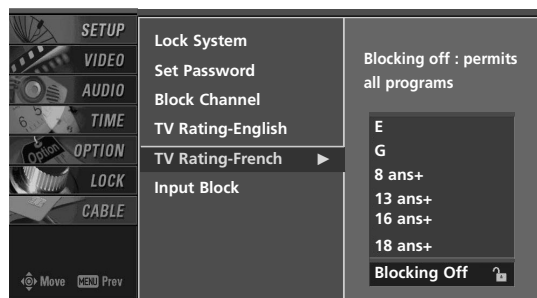
- 1 After inputting the password, use the ▲ or ▼ button to choose **TV Rating-French**.
- 2 Press the ► button and then use the ▲ or ▼ button to select **E**, **G**, **8ans+**, **13ans+**, **16ans+**, **18ans+**, or **Blocking off**.

- 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)

- 3 Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.



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TV MENU | LOCK ADJUSTMENT

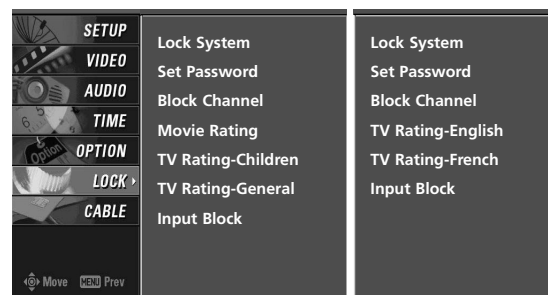
INPUT BLOCK

Enables you to select a source to block from the external source devices you have hooked up.

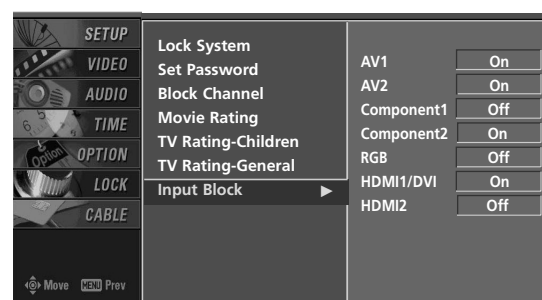
- 1 After inputting the password, use the ▲ or ▼ button to choose **Input Block**.
- 2 Press the ► button and then use the ◀ or ▶ button to select a source.
- 3 Press the ► button and then use the ▲ or ▼ button to select **On** or **Off** on the each source.
- 4 Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.

For USA

For Canada



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2 3

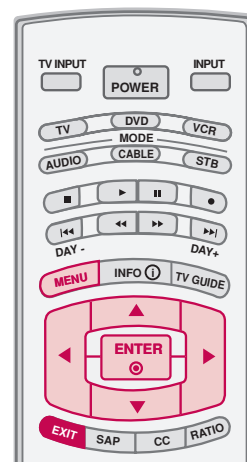
TV MENU | CableCARD™ FUNCTION

In this manual, the OSD (On Screen Display) may be different from your TV's because it is just example to help the TV operation.

CABLE MENU OPTIONS

The Cable sub menu displays when inserting the CableCARD™ to the TV.

The CableCARD™ type is Motorola, Scientific Atlanta (SA), or SCM etc. The OSD (On screen display) is different from your TV according to your CableCARD™ type.

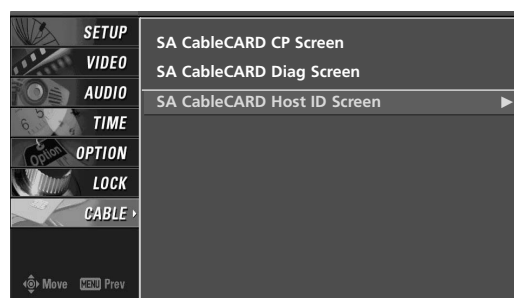


1 Press the **MENU** button and then use ▲ or ▼ button to select the **CABLE** menu.

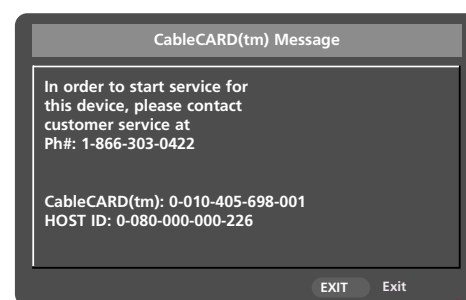
2 Press the ► button and then use ▲ or ▼ button to select your desired item.

3 Press the ► button.

4 Press **EXIT** button to return to TV viewing.



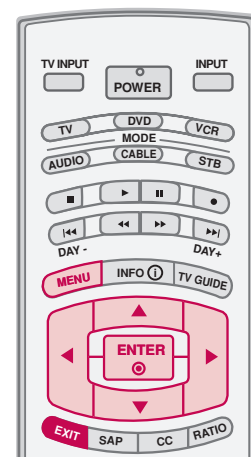
In case of Scientific Atlanta CableCARD™



CableCARD™ / Host ID Screen
As shown, the pairing number means your TV and CableCARD™ ID. For further information regarding cable TV service, contact your local cable TV service provider(s).

TV MENU | CableCARD™ FUNCTION

SCRAMBLED CHANNEL



- 1 Insert the CableCARD™. It takes about 1 minute to exchange data between the TV and the CableCARD™. The screen displays information as shown to the right.

- 2 Let your cable TV service provider know the CableCARD™ ID and Host ID.

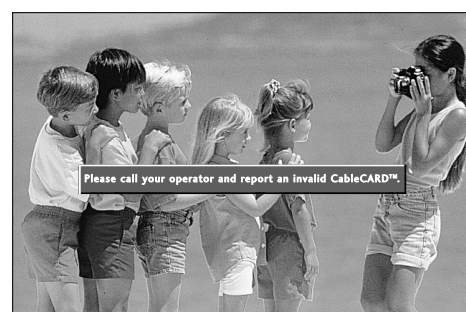
- 3 If your cable TV service provider registers the CableCARD™ ID and Host ID, you can watch premium or high value channel. If you are subscribed to them.

- 4 If you registered with the cable TV service provider, you can watch premium or high value channel without a message.

- 5 If the certificates don't match between the TV and the CableCARD™, the OSD (On screen display) displays as shown right.



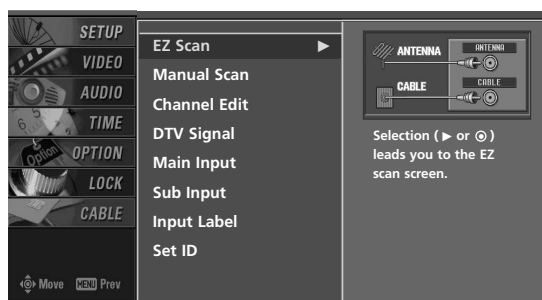
1 2 3 4



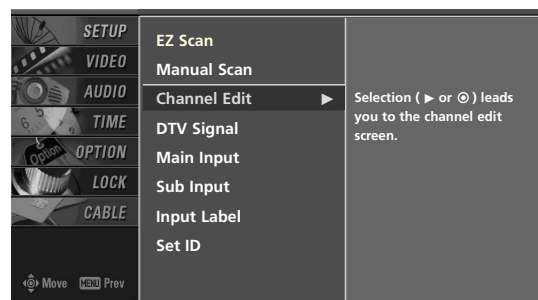
5

CABLE CHANNEL LIST

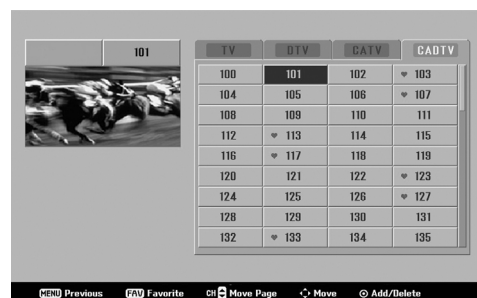
- 1 If you select **Channel Edit** after running the EZ Scan without a CableCARD™, the cable channel list displays, as in the picture below.
- 2 Insert the CableCARD™. After a few minutes (about 2~3 minutes), the TV receives a new cable channel list. (Occasionally more time will be needed)



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4

EMERGENCY MESSAGE ALERT

- 1 If an emergency situation occurs while you are watching the TV/DTV/CATV/CADTV, you may receive a message from your cable TV service provider(s).
- 2 When receiving an emergency message, the message is displayed on the screen as shown or the channel is changed to one that maintains the emergency message. When the broadcast is complete the TV returns to the channel you were viewing.



1 2

APPENDIX

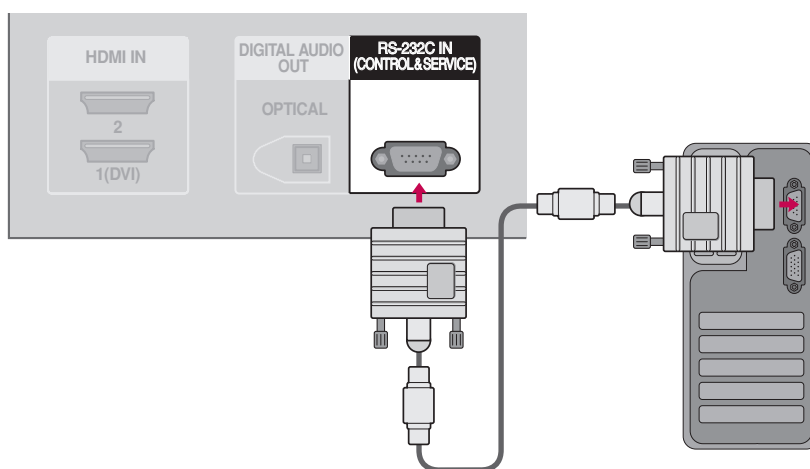
EXTERNAL CONTROL DEVICE SETUP

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

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

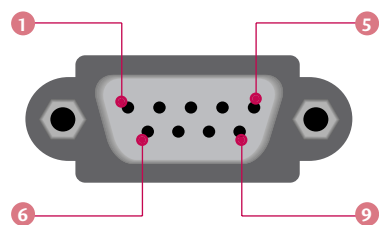
Note: RS-232C connection cables are not supplied with the product.

RS-232C Setup



Type of Connector; D-Sub 9-Pin Male

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



RS-232C Configurations

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

	PC	TV	
RXD	2	3	TXD
TXD	3	2	RXD
GND	5	5	GND
DTR	4	6	DSR
DSR	6	4	DTR
RTS	7	8	CTS
CTS	8	7	RTS
	D-Sub 9	D-Sub 9	

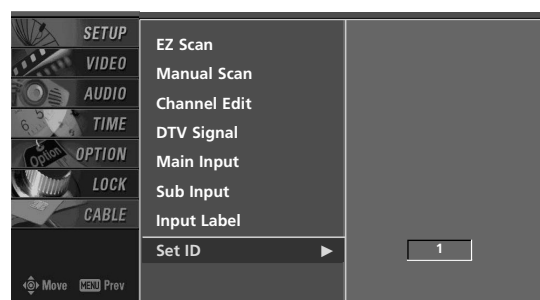
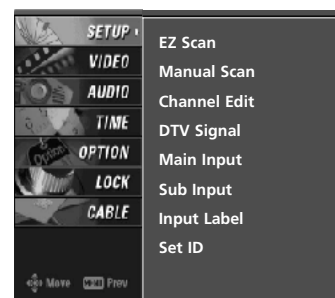
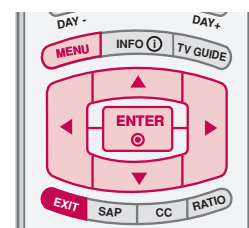
3-Wire Configurations (Not standard)

	PC	TV	
RXD	2	3	TXD
TXD	3	2	RXD
GND	5	5	GND
DTR	4	6	DTR
DSR	6	4	DSR
RTS	7	7	RTS
CTS	8	8	CTS
	D-Sub 9	D-Sub 9	

Set ID

Use this function to specify a TV ID number.
Refer to 'Real Data Mapping 1'. ► **p.113**.

- 1 Press the **MENU** button and then use ▲ or ▼ button to select the **SETUP** menu.
- 2 Press the ► button and then use ▲ or ▼ button to select **Set ID**.
- 3 Press the ► button and then use ▲ or ▼ button to adjust **Set ID** to choose the desired TV ID number.
The adjustment range of Set ID is 1~99.
- 4 Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.



Communication Parameters

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

APPENDIX

Command Reference List

	COMMAND1	COMMAND2	DATA (Hexadecimal)		COMMAND1	COMMAND2	DATA (Hexadecimal)
01. Power	k	a	0 ~ 1	15. PIP Position	k	q	0 ~ 3
02. Input Select	k	b	0 ~ 9	16. Treble	k	r	0 ~ 64
03. Aspect Ratio	k	c	(▶ p.113)	17. Bass	k	s	0 ~ 64
04. Screen Mute	k	d	0 ~ 1	18. Balance	k	t	0 ~ 64
05. Volume Mute	k	e	0 ~ 1	19. Color Temperature	k	u	0 ~ 3
06. Volume Control	k	f	0 ~ 64	20. Red adjustment	k	v	0 ~ C8
07. Contrast	k	g	0 ~ 64	21. Green adjustment	k	w	0 ~ C8
08. Brightness	k	h	0 ~ 64	22. Blue adjustment	k	\$	0 ~ C8
09. Color	k	i	0 ~ 64	23. PIP Input Select	k	y	0 ~ 3
10. Tint	k	j	0 ~ 64	24. ISM Method	j	p	(▶ p.115)
11. Sharpness	k	k	0 ~ 64	25. Low Power	j	q	0 ~ 1
12. OSD Select	k	l	0 ~ 1	26. Orbiter Time Setting	j	r	1 ~ FE
13. Remote Control Lock Mode	k	m	0 ~ 1	27. Orbiter Pixel Setting	j	s	1 ~ 3
14. PIP/POP/Twin	k	n	0,1,2,5				

	COMMAND1	COMMAND2	DATA0 (Hexadecimal)	DATA1 (Hexadecimal)	DATA2 (Hexadecimal)	DATA3 (Hexadecimal)	DATA4 (Hexadecimal)	DATA5 (Hexadecimal)
28. Channel Tuning	m	a	physical program high	major program low	major low	minor high	minor low	attribute
29. Channel Add/Del	m	b	0 ~ 1					
30. Key	m	c	(▶ p.116)					
31. Input Select	x	b	(▶ p.116)					
32. PIP Input Select	x	y	(▶ p.116)					

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 command data.

Transmit 'FF' data to read status of command.

[Cr] : Carriage Return

ASCII code '0x0D'

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

OK Acknowledgement

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

The 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.

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

01. Power (Command2:a)

To control Power On/Off of the TV.

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

Data 0 : Power Off Data 1 : 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.

02. Input Select (Command2:b) (Main Picture Input)

To select input source for the TV.

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

Data 0: DTV	Data 1: Analog
Data 2: AV1	Data 3: AV2
Data 4: Component 1	Data 5: Component 2
Data 6: RGB-DTV	Data 7: RGB-PC
Data 8: HDMI1/DVI	Data 9: HDMI2

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

03. Aspect Ratio (Command2:c) (Main picture format)

To adjust the screen format.

You can also adjust the screen format using the RATIO button on remote control or in the Option menu.

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

Date 1: 4:3	5: Zoom 2
2: 16:9	6: Set by program
3: Horizon	10: Cinema Zoom (1)
4: Zoom 1	⋮
	1F: Cinema Zoom (16)

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

04. Screen Mute (Command2:d)

To select screen mute on/off.

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

Data 0 : Screen mute off (Picture on)

Data 1 : Screen mute on (Picture off)

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

05. Volume Mute (Command2: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 0 : Volume mute off (Volume on)

Data 1 : Volume mute on (Volume off)

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

06. Volume Control (Command2: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 : 0 ~ Max : 64

Refer to 'Real data mapping1' as shown below.

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

07. Contrast (Command2:g)

To adjust screen contrast.

You can also adjust contrast in the Video menu.

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

Data Min : 0 ~ Max : 64

Refer to 'Real data mapping1' as shown below.

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

08. Brightness (Command2:h)

To adjust screen brightness.

You can also adjust brightness in the Video menu.

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

Data Min : 0 ~ Max : 64(*transmit by Hexadecimal code)

Refer to 'Real data mapping1' as shown below.

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

09. Color (Command2:i)

To adjust the screen color.

You can also adjust color in the Video menu.

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

Data Min : 0 ~ Max : 64

Refer to 'Real data mapping1' as shown below.

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

*Real data mapping 1

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

10. Tint (Command2:j)

To adjust the screen tint.

You can also adjust tint in the Video menu.

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

Data Red : 0 ~ Green : 64

*Refer to 'Real data mapping1'. ► p.113.

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

11. Sharpness (Command2:k)

To adjust the screen sharpness.

You can also adjust sharpness in the Video menu.

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

Data Min: 0 ~ Max: 64

*Refer to 'Real data mapping1'. ► p.113.

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

12. OSD Select (Command2:l)

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

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

Data 0: OSD off Data 1: OSD on

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

13. Remote Control Lock Mode (Command2:m)

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

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

Data 0: Lock off Data 1: 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.

14. PIP / POP / Twin Picture (Command2:n)

To control the PIP (Picture-in-Picture)/POP/Twin picture. You can also control the PIP/POP/Twin picture using the PIP button on the remote control.

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

Data 0: PIP Off 2: Twin picture
1: PIP 3: POP4(POP Scan)

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

15. PIP Position (Command2:q)

To select sub picture position for PIP.

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

Data 0: Right down on screen

Data 1: Left down on screen

Data 2: Left up on screen

Data 3: Right up on screen

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

16. Treble (Command2:r)

To adjust treble.

You can also adjust treble in the Audio menu.

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

Data Min: 0 ~ Max: 64(*transmit by Hexadecimal code)

*Refer to 'Real data mapping1'. ► p.113.

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

17. Bass (Command2:s)

To adjust bass.

You can also adjust bass in the Audio menu.

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

Data Min: 0 ~ Max: 64(*transmit by Hexadecimal code)

*Refer to 'Real data mapping1'. ► p.113.

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

18. Balance (Command2:t)

To adjust balance.

You can also adjust balance in the Audio menu.

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

Data Min: 0 ~ Max: 64(*transmit by Hexadecimal code)

*Refer to 'Real data mapping1'. ► p.113.

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

19. Color Temperature (Command2:u)

To adjust color temperature.

You can also adjust color temperature in the Video menu.

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

Data 0: Medium 1: Cool 2: Warm 3: User

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

20. Red adjustment(Command:v)

To adjust red in color temperature

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

Data Min:0 ~ Max:C8

*Refer to "Real data mapping 2". ► p.115.

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

APPENDIX

Data5:

7 Main/Sub Picture	6 Using Physical Channel	5 Two/One Part 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	1	1	1	1	Reserved
			x	x	x	x	x	-
			x	1	1	1	1	Reserved

All data are transmitted by Hexadecimal code

* Two/One part Channel: 6th bit

This bit is used in a cable-ready system.

* Using physical channel: 5th bit

If the channel band is NTSC air or NTSC cable, channel tuning can be done by only physical channel. In this case, using physical channel bit must be low(0).

But if the channel band is ATSC air or ATSC cable, there are two cases that physical channel enable or disable.

If the physical channel sending is meaningful, you should set this bit low(0). If the physical channel sending is meaningless, you should set this bit high(1).

Example)

1. Analog channel: NTSC cable, channel number(35), main picture Command: ma 00 23 xx xx xx 01
attribute(0x01): main picture, two part(it's not mandatory), using physical channel, NTSC cable 'xx' data: don't care major and minor channel number in case analog channel tuning.
2. Digital channel: ATSC air, channel number(don't know physical channel, major(30), minor(3)), sub picture Command: ma 00 xx 00 1E 00 03 A2
attribute(0xA2): sub picture, two part, not using physical channel, ATSC air 'xx' data: don't care analog channel number in case digital channel tuning.
3. Digital channel: ATSC air, channel number(physical(20),major(20), minor(3)), sub picture Command: ma 00 14 00 14 00 03 82

attribute(0x82): sub picture, two part, using physical channel, ATSC air.

Acknowledgement[a][][Set ID][][OK][Data0][Data1][Data2][Data3][Data4][x][a][][Set ID][][NG][Data0][x]

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

To add and delete the channels

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

Data 0: Channel Delete Data 1: Channel Add

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

30. Key (Command: m c)

To send IR remote key code.

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

Data Key code: Refer to page 118.

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

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

To select input source for TV.

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

Data 00 : DTV (Antenna) Data 01 : DTV (Cable)
Data 10 : Analog (Antenna) Data 11 : Analog (Cable)
Data 20 : AV1 Data 21 : AV2
Data 40 : Component 1 Data 41 : Component 2
Data 50 : RGB DTV Data 60 : RGB PC
Data 90 : HDMI1/DVI Data 91 : HDMI2

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

32. PIP Input Select(Command: x y)

To adjust input source for sub picture in PIP mode.

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

Data 00 : DTV (Antenna)
Data 01 : DTV (Cable)
Data 10 : Analog (Antenna)
Data 11 : Analog (Cable)
Data 20 : AV1
Data 21 : AV2

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

IR CODES

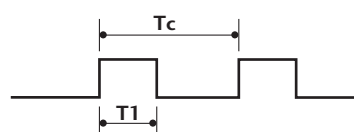
1. How to Connect

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

2. Remote Control IR Codes

■ Output waveform

Single pulse, modulated with 37.917KHz signal at 455KHz



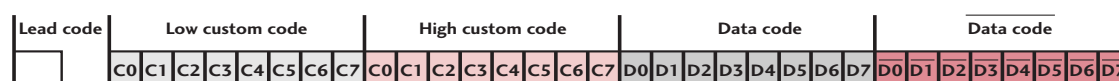
Carrier frequency

$$FCAR = 1/TC = fOSC/12$$

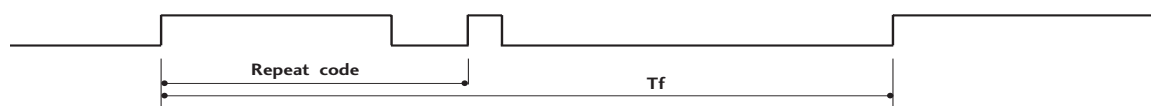
$$\text{Duty ratio} = T1/TC = 1/3$$

■ Configuration of frame

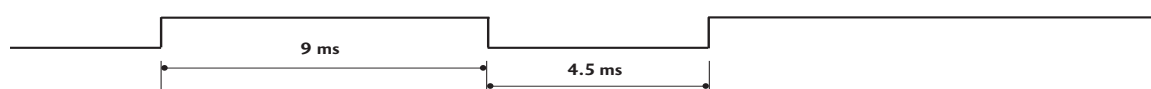
1st frame



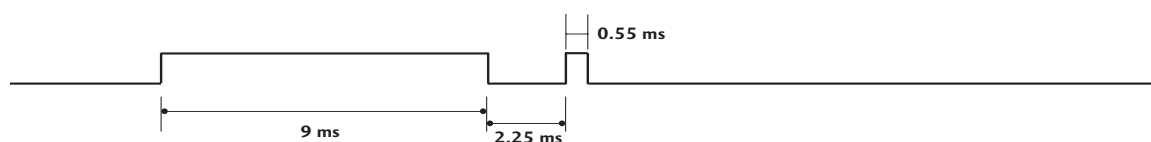
Repeat frame



■ Lead code

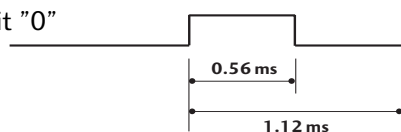


■ Repeat code

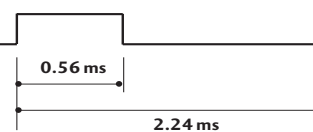


■ Bit description

Bit "0"



Bit "1"



■ Frame interval: Tf

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



APPENDIX

Code (Hexa)	Function	Note	Code (Hexa)	Function	Note
0F	TV INPUT	Remote control Button	BF	COMPONENT1	Discrete IR Code (Component1 Input Selection)
0B	INPUT	Remote control Button			
08	POWER	Remote control Button (Power On/Off)	D4	COMPONENT2	Discrete IR Code (Component2 Input Selection)
79	RATIO	Remote control Button			
0E	TIMER	Remote control Button	D5	RGB-PC	Discrete IR Code (RGB-PC Input Selection)
10-19	Number Key 0-9	Remote control Button			
4C	- (Dash)	Remote control Button	D7	RGB-DTV	Discrete IR Code (RGB-DTV Input Selection)
1A	FLASHBK	Remote control Button			
09	MUTE	Remote control Button	C6	HDMI1/DVI	Discrete IR Code (HDMI1/DVI Input Selection)
02	VOL ▲	Remote control Button			
03	VOL ▼	Remote control Button	CC	HDMI2	Discrete IR Code (HDMI2 Input Selection)
00	CH ▲	Remote control Button			
01	CH ▼	Remote control Button	76	Ratio 4:3	Discrete IR Code (Only 4:3 Mode)
1E	FAV	Remote control Button			
AA	INFO	Remote control Button	77	Ratio 16:9	Discrete IR Code (Only 16:9 Mode)
39	CC	Remote control Button			
40	▲	Remote control Button	AF	Ratio Zoom	Discrete IR Code (Only Zoom1 Mode)
41	▼	Remote control Button			
07	◀	Remote control Button	70	POP	Discrete IR Code (Channel Search)
06	▶	Remote control Button			
44	ENTER	Remote control Button	C4	POWER ON	Discrete IR Code (Only Power On)
43	MENU	Remote control Button			
52	EZ SOUND	Remote control Button	C5	POWER OFF	Discrete IR Code (Only Power Off)
4D	EZ PIC	Remote control Button			
5B	EXIT	Remote control Button	A9	TV GUIDE	Remote control Button
60	PIP	Remote control Button	92	APM	Remote control Button
72	PIPCH -	Remote control Button			
71	PIPCH +	Remote control Button			
61	PIP INPUT	Remote control Button			
63	SWAP	Remote control Button			
0A	SAP	Remote control Button			
CB	ADJUST	Remote control Button			
D6	TV	Discrete IR Code (TV Input Selection)			
5A	AV1	Discrete IR Code (AV1 Input Selection)			
D0	AV2	Discrete IR Code (AV2 Input Selection)			

PROGRAMMING THE REMOTE CONTROL

The provided universal remote control can be programmed to operate most remote-controllable devices. Note that the remote may not control all models of other brands.

Programming a code into a remote mode

- 1** To find out whether your remote control can operate each device without programming, turn on the device (such as a VCR) and press the corresponding mode button on the remote.
After that, press the **POWER** button. If the device is turned off and it responds properly the remote control need not be programmed. If not, the remote should be programmed to operate the device. The programming procedures are explained below.
- 2** Press the **MENU** and **MUTE** button continuously at the same time for two seconds; the currently selected device button is illuminated.
If you don't press any button for 20 seconds, the light on the mode button will be turned off. In that case, you have to repeat from step 2.
- 3** Enter the appropriate code from the code table on the following pages. When pressing the button, the light blinks at a time. If the device turned off, the programming is successful.
- 4** Press the **MENU** button to store the code. After blinking twice, this code is stored.
- 5** Test the remote control functions to see if the device responds properly. If not, steps 2-5.

APPENDIX

PROGRAMMING CODES

VCRs

Brand	Codes	Brand	Codes	Brand	Codes
AIWA	034	MAGNAVOX	031 033 034 041	SAMSUNG	032 040 102 104
AKAI	016 043 046 124 125 146		067 068 012 031 033 067		105 107 109 112 113 115 120 122 125
AMPRO	072	MARANTZ	069	SANSUI	022 043 048 135
ANAM	031 033 103	MARTA	101	SANYO	003 007 010 014 102 134
AUDIO DYNAMICS	012 023 039 043	MATSUI	027 030	SCOTT	017 037 112 129 131
BROKSONIC	035 037 129	MEI	031 033	SEARS	003 008 009 010 013 014 017 020 031 042 073 081 101
CANON	028 031 033	MEMOREX	003 010 014 031 033 034 053 072 101 102 134 139	SHARP	031 054 149
CAPEHART	108			SHINTOM	024
CRAIG	003 040 135	MGA	045 046 059	SONY	003 009 031 052 056 057 058 076 077 078 149
CURTIS MATHES	031 033 041	MINOLTA	013 020	SOUNDESIGN	034
DAEWOO	005 007 010 064 065 108 110 111 112 116 117 119	MITSUBISHI	013 020 045 046 049 051 059 061 151	STS	013
DAYTRON	108	MTC	034 040	SYLVANIA	031 033 034 059 067
DBX	012 023 039 043	MULTITECH	024 034	SYMPHONIC	034
DYNATECH	034 053	NEC	012 023 039 043 048	TANDY	010 034
ELECTROHOME	059			TATUNG	039 043
EMERSON	006 017 025 027 029 031 034 035 036 037 046 101 129 131 138 153	NORDMENDE	043	TEAC	034 039 043
FISHER	003 008 009 010	OPTONICA	053 054	TECHNICS	031 033 070
FUNAI	034	PANASONIC	066 070 074 083 133 140 145	TEKNIKA	019 031 033 034 101
GE	031 033 063 072 107 109 144 147	PENTAX	013 020 031 033 063	THOMAS	034
GO VIDEO	132 136	PHILCO	031 034 067	TMK	006
HARMAN KARDON	012 045	PHILIPS	031 033 034 054 067 071 101	TOSHIBA	008 013 042 047 059 082 112 131
HITACHI	004 018 026 034 043 063 137 150	PILOT	101	TOTEVISION	040 101
INSTANTREPLAY	031 033	PIONEER	013 021 048	UNITECH	040
JCL	031 033	PORTLAND	108	VECTOR RESEARCH	012
JCPENNY	012 013 015 033 040 066 101	PULSAR	072	VICTOR	048
JENSEN	043	QUARTZ	011 014	VIDEO CONCEPTS	012 034 046
JVC	012 031 033 043 048 050 055 060 130 150 152	QUASAR	033 066 075 145	VIDEOSONIC	040
KENWOOD	014 034 039 043 047 048	RCA	013 020 033 034 040 041 062 063 107 109 140 144 145 147	WARDS	003 013 017 024 031 033 034 040 053 054 131
LG (GOLDSTAR)	001 012 013 020 101 106 114 123	REALISTIC	003 008 010 014 031 033 034 040 053 054 101	YAMAHA	012 034 039 043
LLOYD	034	RICO	058	ZENITH	034 048 056 058 072 080 101
LXI	003 009 013 014 017 034 101 106	RUNCO	148		
MAGIN	040	SALORA	014		

Cable Box

Brand	Codes	Brand	Codes	Brand	Codes
ABC	003 004 039 042 046 052 053	LG (GOLDSTAR)	074 001 106 101 005	REMBRANT	025
AJIN	112	M-NET	037	SAMSUNG	102 107 030 068
ANTRONIK	014	MACOM	033	SCIENTIFIC ATLANTA	003 011 041 042 043 045 046
ARCHER	005 007 014 024	MAGNAVOX	010 012 064 079	SHERITECH	022
CABLE STAR	026	MEMOREX	100	SIGNAL	030
CENTURION	092	MOVIE TIME	028 032	SIGNATURE	052
CENTURY	007	NSC	015 028 038 071 073	SL MARX	030
CITIZEN	007	OAK	016 031 037 053	SPRUCER	047 078
COLOUR VOICE	065 090	PANASONIC	044 047	STARCOM	002 004 008 009
COMBANO	080 081	PARAGON	100	STARGATE	008 030
COMTRONICS	019 030	PHILIPS	006 012 013 020 065 085 090	TADIRAN	030
DIAMOND	023	PIONEER	034 051 052 063 076	TAEKWANG	110
EAGLE	020 030 040	POST NEWS WEEK	016	TAIHAN	105
EASTERN	057 062 066	PRUCER	059	TANDY	017
ELECTRICORD	032	PTS	011 048 071 072 073 074	TEXSCAN	029
GE	072	PULSAR	100	TOCOM	039 040 056
GEMINI	008 022 025 054	RCA	047	TOSHIBA	100
GI	052 074	REGAL	049 050	UNIKA	007 014 024
GOLDEN CHANNEL	030	REGENCY	057	UNITED CABLE	004 053
HAMLIN	049 050 055			UNIVERSAL	005 007 014 024 026 027 032 035
HITACHI	052 055			VIEWSTAR	012 015 018 086 087 088 089
HOSPITALITY	070 077			ZENITH	100 114 060 093
JERROLD	002 003 004 008 009 010 052 069				

HDSTB

Brand	Codes	Brand	Codes	Brand	Codes
ALPHASTAR DSR	123	HOUSTON TRACKER	033 037 039 051 057 104	PROSAT	072
AMPLICA	050	HUGHES	068	RCA	066 106
BIRDVIEW	051 126 129	JANIEL	060 147	REALISTIC	043 074
CHANNEL MASTER	013 014 015 018 036 055	JERROLD	061	SAMSUNG	123
CHAPARRAL	008 009 012 077	KATHREIN	108	SATELLITE SERVICE CO	028 035 047 057 085
CITOH	054	LEGEND	057	SCIENTIFIC ATLANTA	032 138
CURTIS MATHES	050 145	LG	001	SONY	103
DRAKE	005 006 007 010 011 052 112 116 141	LUTRON	132	STARCAST	041
DX ANTENNA	024 046 056 076	LUXOR	062 144	SUPER GUIDE	020 124 125
ECHOSTAR	038 040 057 058 093 094 095 096 097 098 099 100 122	MACOM	010 059 063 064 065	TEECOM	023 026 075 087 088 090 107 130 137
ELECTRO HOME	089	MEMOREX	057	TOSHIBA	002 127
EUROPLUS	114	NEXTWAVE	028 124 125	UNIDEN	016 025 042 043 044 045 048 049 078 079 080 086 101 135 136
FUJITSU	017 021 022 027 133 134	NORSAT	069 070	VIEWSTAR	115
GENERAL INSTRUMENT	003 004 016 029 031 059 101	PACE SKY SATELLITE	143	WINEGARD	128 146
HITACHI	139 140	PANASONIC	060 142	ZENITH	081 082 083 084 091 120
		PANSAT	121		
		PERSONAL CABLE	117		
		PHILIPS	071		
		PICO	105		
		PRESIDENT	019 102		
		PRIMESTAR	030 110 111		

APPENDIX

Audio

Brand	Codes	Brand	Codes	Brand	Codes
AIWA	014 028 070 096 125 129 139 229 230		157 158 159 160 189 207 222 224 225 226 227 243 247	RCX	092
AKAI	163			REALISTIC	103 106
ANAM	003 014 017 023 059 106 189 216 217 235 236	LOTTE	014 016 036 098 100 172 173 174 175 176 177 178 179 180 181 183 201 202 208 213 214 219 223 232 238 240	SAMSUNG	124 145 146 182 193 194 195 203 204 244 245 246
BURMECTER	252			SANSUI	011 135 138 144
CARVER	086			SANYO	019 083 234
CLARION	199			SCOTT	106 186
DAEWOO	027 053 060 084 102 148 198 221	LXI	103	SHARP	031 032 051 052 072 082 117 119 156 184 199 200 206 209
DENON	015 075 130 143	MAGNAVOX	111	SHERWOOD	005 006 158
FANTASIA	071	MARANTZ	002 018 020 025 034 041 081 090 097 112	SONY	044 045 109 114 118 126 248 249
FINEARTS	022			TAEKWANG	012 020 073 074 076 077 105 161 162 163 164 165 166 167 168 169 205 231 233 242
FISHER	089 099	MCINTOSH	049		
LG(GOLDSTAR)	001 021 024 029 087 107 108 110 190 191 192 210 211 212 239	MCS	104		
		MEMOREX	107		
HAITAI	034 035 188 222	NAD	046		
HARMAN/KARDON	068	ONKYO	013 040 041 047 048 056 057 132 133 140	TEAC	010 085 106 136 185 187 237
JVC	004 013 141	OPTIMUS	158	TECHNICS	101 113 128 134 147 218
KEC	185 186 187	PANASONIC	007 033 064 113 142 220 241 251	TOSHIBA	137
KOHEL	030	PENNEY	104	THE	061
NAD	045 046	PHILIPS	026 112 143	VICTOR	088 131
KENWOOD	038 050 067 089 170 171 197 206 215 222	PIONEER	039 042 043 063 065 091 093 094 115 123 127 250	WARDS	089
INKEL	037 058 062 069 078 079 095 121 122 149 150 151 152 153 154 155	QUASAR	113	YAMAHA	054 055 066 092 199
		RCA	080		

DVD

Brand	Codes	Brand	Codes	Brand	Codes
APEX DIGITAL	022	MITSUBISHI	002	RCA	005 006
DENON	020 014	NAD	023	SAMSUNG	011 015
GE	005 006	ONKYO	008 017	SONY	007
HARMAN KARDON	027	PANASONIC	003 009	THOMPSON	005 006
JVC	012	PHILIPS	013	TOSHIBA	019 008
LG	001 010 016 025	PIONEER	004 026	YAMAHA	009 018
MAGNAVOX	013	PROCEED	021	ZENITH	010 016 025
MARANTZ	024	PROSCAN	005 006		

TROUBLESHOOTING CHECKLIST

The operation does not work normally.

The remote control doesn't work	■ Check to see if there is any object between the product and the remote control causing obstruction. Ensure you are pointing the remote control directly at the TV. ■ Ensure that the batteries are installed with correct polarity (+ to +, - to -). ■ Ensure that the correct remote operating mode is set: TV, VCR etc. ■ Install new batteries.
Power is suddenly turned off	■ Is the sleep timer set? ■ Check the power control settings. Power interrupted. ■ No broadcast on station tuned with Auto off activated.

The video function does not work.

No picture & No sound	■ Check whether the product is turned on. ■ Try another channel. The problem may be with the broadcast. ■ Is the power cord inserted into wall power outlet? ■ Check your antenna direction and/or location. ■ Test the wall power outlet, plug another product's power cord into the outlet where the product's power cord was plugged in.
Picture appears slowly after switching on	■ This is normal, the image is muted during the product startup process. Please contact your service center, if the picture has not appeared after five minutes.
No or poor color or poor picture	■ Adjust Color in menu option. ■ Keep a sufficient distance between the product and the VCR. ■ Try another channel. The problem may be with the broadcast. ■ Are the video cables installed properly? ■ Activate any function to restore the brightness of the picture.
Horizontal/vertical bars or picture shaking	■ Check for local interference such as an electrical appliance or power tool.
Poor reception on some channels	■ Station or cable product experiencing problems, tune to another station. ■ Station signal is weak, reorient antenna to receive weaker station. ■ Check for sources of possible interference.
Lines or streaks in pictures	■ Check antenna (Change the direction of the antenna).

APPENDIX

The audio function does not work.

Picture OK & No sound	■ Press the VOL or VOLUME button. ■ Sound muted? Press MUTE button. ■ Try another channel. The problem may be with the broadcast. ■ Are the audio cables installed properly?
No output from one of the speakers	■ Adjust Balance in menu option.
Unusual sound from inside the product	■ 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.

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

The signal is out of range	■ Adjust resolution, horizontal frequency, or vertical frequency. ■ Check the input source.
Vertical bar or stripe on background & Horizontal Noise & Incorrect position	■ Work the Auto configure or adjust clock, phase, or H/V position. (Option)
Screen color is unstable or single color	■ Check the signal cable. ■ Reinstall the PC video card.

There is a problem on the TV Guide On Screen™ function.

My Guide listings disappeared after a power failure	You should begin to receive listings again within 24 hours.
Some channel numbers in the Guide are incorrect.	You can correct them using Change Channel Display under the Setup menu.
I have not received any Guide listings.	- Listings usually appear within 24 hours after a successful Setup. - It may take up to a week to fill the Listings grid with the full 8 days of listings. - If you see a Listings grid with the message "No Listings" displayed you should start to receive updated program listings within 24 hours. - If the message "No data for this screen" is displayed: - Check the connections between the TV, cable, antenna. - Verify Setup information under Change System Settings. - If this message is still displayed after multiple days, please contact the LG®Brand Customer Support.
A show I set to Remind did not.	Check the Schedule menu and verify that the show is listed as a reminder.
I set a show to Auto-Tune and it did not.	- Check the Schedule menu and verify that the show is listed as a Reminder. - Highlight the show under Listings and do the following: - Press the MENU button on the remote. - Use the down arrow to highlight Edit Reminder, and press the ENTER. - Verify the Auto-Tune option reads Yes. - The TV must be On at the scheduled time for Auto-Tune.
I set a show with the Power On TV option and it did not	- Check the Schedule menu and verify that the show is listed as a Reminder. - Highlight the show under Listings and do the following: - Press the MENU button on the remote. - Use the down arrow to highlight Edit Reminder, and press the ENTER. - Verify the Power On TV option reads Yes.

APPENDIX

MAINTENANCE

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

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

Cleaning the Screen

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

Cleaning the Cabinet

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

Extended Absence

CAUTION

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

PRODUCT SPECIFICATIONS

MODELS		Z42PX3D	Z60PC1D
Dimensions (Width x Height x Depth)	Including stand	44.4 x 29.6 x 15.0 inches 1129.0 x 752.5 x 380.0 mm	
	Excluding stand	44.4 x 27.4 x 3.9 inches 1129.0 x 695.0 x 98.5 mm	
Weight	including stand	64.6 pounds / 29.3 kg	
	excluding stand	56.2 pounds / 25.5 kg	
Power requirement Television System Program Coverage External Antenna Impedance		AC100-240V ~ 50/60Hz NTSC-M, ATSC, 64 & 256 QAM VHF 2-13, UHF 14-69, CATV 1-135, DTV 2-69, CADTV 1-135 75 ohm	
Environment condition	Operating Temperature	32 ~ 104°F (0 ~ 40°C)	
	Operating Humidity	Less than 80%	
	Storage Temperature	-4 ~ 140°F (-20 ~ 60°C)	
	Storage Humidity	Less than 85%	

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

ZENITH ELECTRONICS CORPORATION
PLASMA TV Z42PX1D / Z50PX2D LIMITED WARRANTY – USA

Zenith will repair or replace your product, at Zenith's option, if it proves to be defective in material or workmanship under normal use, during the warranty period ("Warranty Period") listed below, effective from the date of original consumer/end user purchase. This warranty is good only to the original consumer/end user of the product and is effective only when used in the United States.

<u>WARRANTY PERIOD:</u> LABOR: ONE YEAR from the Date of Purchase. PARTS: ONE YEAR from the Date of Purchase. Effective Date of Warranty: Your warranty period Begins on the date of sale to the original consumer/end user. KEEP THE DEALER'S DATED BILL OF SALE OR PROOF OF DELIVERY as evidence of the purchase date. You will be required to submit a legible copy of your bill of sale or proof of delivery when requesting warranty service. Repair Parts and Replacement Units are warranted for the remaining period of the original warranty.	<u>HOW SERVICE IS HANDLED:</u> In Home Service. Please Call the Zenith Interactive Center at 1-877-9ZENITH (1-877-993-6484) to schedule a service appointment. Your unit will be repaired or replaced with a new, substitute model or factory reconditioned unit, at Zenith's option. If repaired, parts used in the repair may be new or remanufactured. Visit our website at http://www.zenithservice.com
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THIS WARRANTY IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. TO THE EXTENT ANY IMPLIED WARRANTY IS REQUIRED BY LAW, IT IS LIMITED IN DURATION TO THE EXPRESS WARRANTY PERIOD ABOVE. ZENITH WILL NOT BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL, INDIRECT, SPECIAL, OR PUNITIVE DAMAGES OF ANY NATURE, INCLUDING, WITHOUT LIMITATION, LOST PROFITS, LOST OR CORRUPTED PROGRAMMING OR DATA, OR ANY OTHER DAMAGE WHETHER BASED IN CONTRACT, TORT, OR OTHERWISE. Some states do not allow the exclusion or limitation of incidental or consequential damages or limitations on how long an implied warranty lasts, so the above exclusion or limitation may not apply to you. This warranty gives you specific legal rights and you may also have other rights that vary from state to state.

THIS LIMITED WARRANTY DOES NOT APPLY TO:

● damage caused in shipping or transit ● service required as a result of improper installation, including incorrect or insufficient AC supply (please consult the owner's manual for power supply requirements) ● installation or repair of antenna systems, cable converters, cable company supplied equipment, or other components in a video system ● set-up or adjustment on consumer controls, or damage caused by improper adjustments ● damage caused by other system components ● any unit that has been modified or incorporated into any other product ● replacement of batteries on the remote control. ● damage (including cosmetic damage), failure, loss	or personal injury due to misuse, abuse, negligence, improper maintenance or storage, or to acts of nature or other causes beyond Zenith's control. (Causes beyond Zenith's control include but are not limited to lightning strike, power surges, power outages and water damage.) ● Image burn-in ● repair or replacement of warranted parts by other than Zenith Authorized Service Centers. ● units purchased or serviced outside of the U.S.A. ● product where the original factory serial numbers have been removed, defaced or changed in any way. ● product sold and labeled as "as is, where is" or similar disclaimer.
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The costs of repair or replacement under these excluded circumstances shall be borne by the consumer.

CONCERNING PIXEL FUNCTIONALITY: Your Plasma Television contains about one million individual pixels. Plasma TVs typically contain a small number of pixels that do not function normally. Your display has been inspected and is in compliance with manufacturer's specifications, indicating that any pixel defects do not affect the operation or use of your display.

CUSTOMER INTER-ACTIVE CENTER NUMBERS:

To obtain customer assistance, product information, or Dealer or Service locations	Call 1-877-9Zenith (1-877-993-6484) (24 hours a day, 365 days per year) and select appropriate options from the menu. Or visit our website at http://www.zenithservice.com
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BEFORE CALLING FOR SERVICE:

- Please check your operating guide – you may avoid a service call.
- Please have your product model number, serial number and the date of purchase or the date of original installation available.
- If a replacement unit is required, under some circumstances you may be asked to provide a reserve deposit to Zenith against a credit card number as surety for advanced shipment. Your credit card will not be charged if you return the defective unit within 10 working days.
- If a replacement unit is received, please use the carton and packaging from that unit in returning the defective unit to Zenith.
- Parts and service in accordance with the Zenith warranty are Zenith's responsibility and will be provided without charge. Other service requirements will be at the owner's expense. If you have problems in obtaining satisfactory warranty service, write or call the Zenith Customer Interactive Center. Service may be provided by independently owned and operated service organizations.
- To assure proper credit and avoid unnecessary charges, you must obtain a Return Authorization before returning any product for Zenith Warranty Service. Contact the number below or your authorized Zenith repair facility for details.

IMPORTANT: Please fill out and mail your Product Registration Card or go to www.zenithservice.com to register your product online. This information allows Zenith to reach you promptly should we discover a safety or reliability problem that could affect you.

TO CONTACT ZENITH BY MAIL:

LG Customer Interactive Center
201 James Record Road
Huntsville, Alabama 35824
<http://www.zenithservice.com>