Life's Good

LG

LCD TV | PLASMA TV
OWNER'S MANUAL

LCD TV MODELS	PLASMA TV MODELS
32LC7D	42PC5D
32LC7DC	42PC5DC
37LC7D	50PC5D
42LC7D	50PC5DC

Please read this manual carefully before operating your set.
Retain it for future reference.
Record model number and serial number of the set.
See the label attached on the back cover and quote this information to your dealer when you require service.

ENERGY STAR is a set of power-saving guidelines issued by the U.S. Environmental Protection Agency(EPA).

ENERGY STAR

As an ENERGY STAR Partner LGE U. S. A.,Inc. has determined that this product meets the ENERGY STAR guidelines for energy efficiency.

TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING/CAUTION

TO REDUCE THE RISK OF FIRE AND ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.

NOTE TO CABLE/TV INSTALLER

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the National Electric Code (U.S.A.). The code provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of the cable entry as practical.

WARNING / CAUTION

To prevent fire or shock hazards, do not expose this product to rain or moisture.

FCC NOTICE

Class B digital device

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

CAUTION

Do not attempt to modify this product in any way without written authorization from LG Electronics. Unauthorized modification could void the user's authority to operate this product

SAFETY INSTRUCTIONS

IMPORTANT SAFETY INSTRUCTIONS

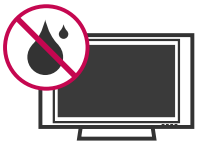
Important safety instructions shall be provided with each apparatus. This information shall be given in a separate booklet or sheet, or be located before any operating instructions in an instruction for installation for use and supplied with the apparatus.

This information shall be given in a language acceptable to the country where the apparatus is intended to be used.

The important safety instructions shall be entitled "Important Safety Instructions". The following safety instructions shall be included where applicable, and, when used, shall be verbatim as follows. Additional safety information may be included by adding statements after the end of the following safety instruction list. At the manufacturer's option, a picture or drawing that illustrates the intent of a specific safety instruction may be placed immediately adjacent to that safety instruction:

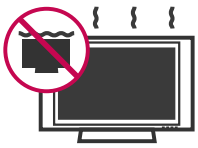
Read these instructions.
Keep these instructions.
Heed all warnings.
Follow all instructions.

1. Do not use this apparatus near water.



2. Clean only with dry cloth.

3. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.



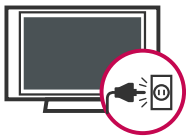
4. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers)that produce heat.

5. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong, The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

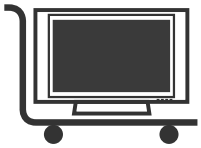
6. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

7. Only use attachments/accessories specified by the manufacturer.

8. Unplug this apparatus when unused for long periods of time.



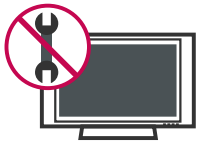
9 Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.



10 Never touch this apparatus or antenna during a thunder or lighting storm.

11 Do not allow a impact shock or any objects to fall into the product, and do not drop onto the screen with something.

12 Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has exposed to rain or moisture, does not operate normally, or has been dropped.



13 CAUTION concerning the Power Cord :
Most appliances recommend they be placed upon a dedicated circuit; that is, a single outlet circuit which powers only that appliance and has no additional outlets or branch circuits. Check the specification page of this owner's manual to be certain.

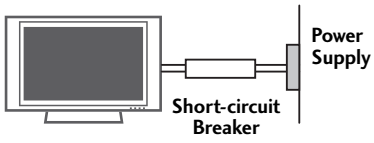
Do not overload wall outlets. Overloaded wall outlets, loose or damaged wall outlets, extension cords, frayed power cords, or damaged or cracked wire insulation are dangerous. Any of these conditions could result in electric shock or fire. Periodically examine the cord of your appliance, and if its appearance indicates damage or deterioration, unplug it, discontinue use of the appliance, and have the cord replaced with an exact replacement part by an authorized servicer. Protect the power cord from physical or mechanical abuse, such as being twisted, kinked, pinched, closed in a door, or walked upon. Pay particular attention to plugs, wall outlets, and the point where the cord exits the appliance.

14 Outdoor use marking :
WARNING - To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture.

15 Wet Location Marking : Apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on or over apparatus.

16 GROUNDING
Ensure that you connect the earth ground wire to prevent possible electric shock. If grounding methods are not possible, have a qualified electrician install a separate circuit breaker.

Do not try to ground the unit by connecting it to telephone wires, lightening rods, or gas pipes.



17 DISCONNECTING DEVICE FROM MAINS
Mains plug is the disconnecting device. The plug must remain readily operable.

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FEATURE OF THIS TV

LG's own special digital image generator, consisting of a full digital image processor, six different main picture quality factors.

High-definition television. High-resolution digital television broadcast and playback system composed of roughly a million or more pixels, 16:9 aspect-ratio screens, and AC3 digital audio. A subset of digital television, HDTV formats include 1080i and 720p resolutions.

With HDMI CEC support of LG's audio/video device connected to the HDMI (high-definition multimedia interface), LG TV with this logo works easily with one remote control.

Manufactured under license from Dolby Laboratories. "*Dolby* "and the double-D symbol are trademarks of Dolby Laboratories.

is a trademark of SRS Labs, Inc. TruSurround XT technology is incorporated under license from SRS Labs, Inc.

It has 2 HDMI ports that connect audio and video devices with one cable and produces the highest quality digital images and sound.

FOR LCD TV

- If the TV feels cold to the touch, there may be a small "flicker" when it is turned on. This is normal, there is nothing wrong with TV.
- Some minute dot defects may be visible on the screen, appearing as tiny red, green, or blue spots. However, they have no adverse effect on the monitor's performance.
- Avoid touching the LCD screen or holding your finger(s) against it for long periods of time. Doing so may produce some temporary distortion effects on the screen.

On Disposal

a. The fluorescent lamp used in this product contains a small amount of mercury.

b. Do not dispose of this product with general household waste.

c. Disposal of this product must be carried out in accordance to the regulations of your local authority.

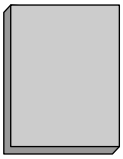
PREPARATION

ACCESSORIES

Ensure that the following accessories are included with your product. If an accessory is missing, please contact the dealer where you purchased the product.

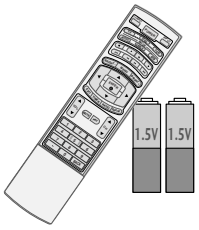
User must use shielded signal interface cables (D-sub 15 pin cable) with ferrite cores to maintain standard compliance for the product.

The accessories can be different from the figures shown here.

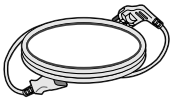


Owner's Manual

CD Manual

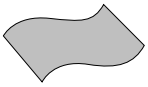


Remote Control, Batteries



Power Cord

75ohm Round Cable

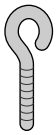


Polishing Cloth

* Slightly wipe stained spot on the exterior only with the polishing cloth for the product exterior if there is stain or fingerprint on surface of the exterior.
* Do not wipe roughly when removing stain. Please be cautions of that excessive pressure may cause scratch or discoloration.

For Plasma TV models

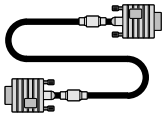
This feature is not available for all models



2-Eye-bolts
(Refer to p.16)

2-Wall brackets
(Refer to p.16)

Option Extras



D-sub 15 pin Cable

For LCD TV models

Cable Management

This feature is not available for all models

2- TV Bracket Bolts
(Refer to p.16)

2- TV Brackets,
2- Wall Brackets
(Refer to p.16)

Twist Holder
Arrange the wires with the twist holder.

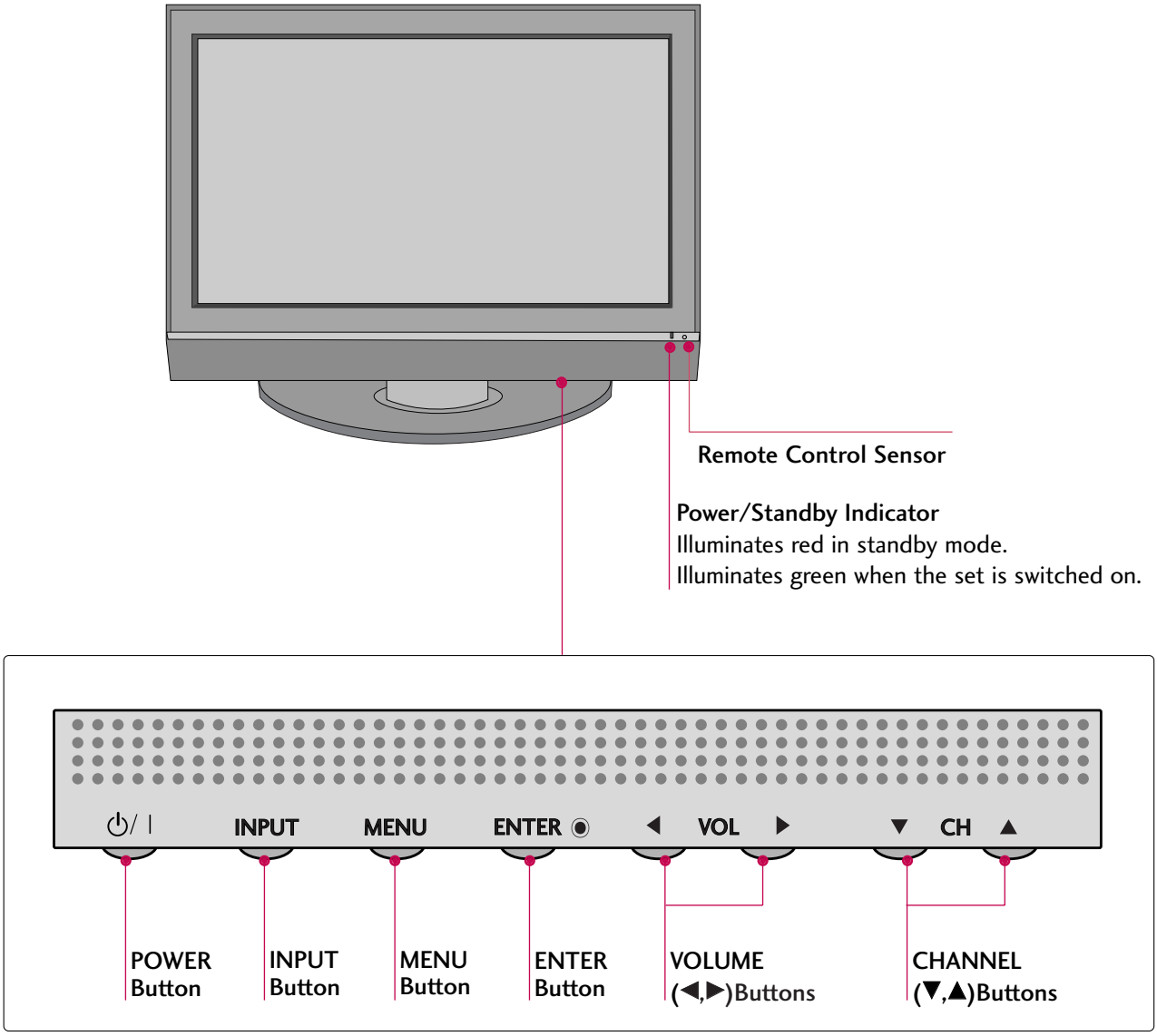
32/37 inches only

4-Bolts for stand assembly
(Refer to p.12)

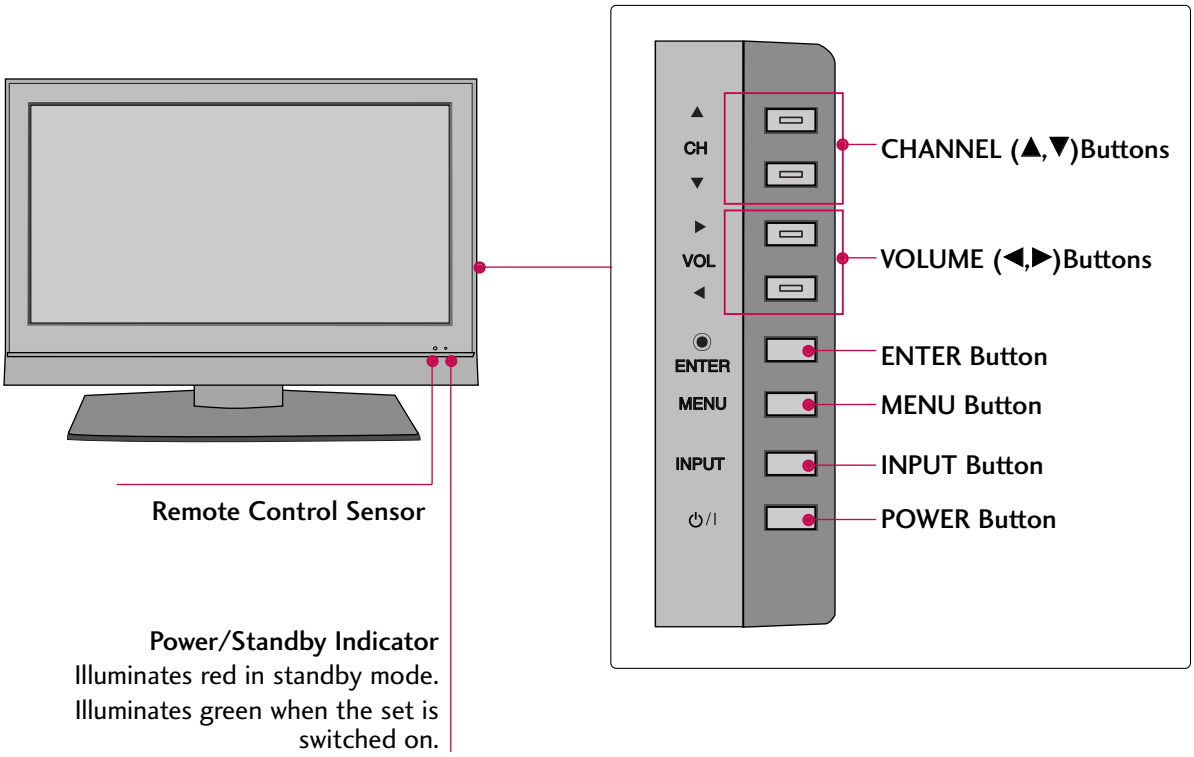
FRONT PANEL INFORMATION

- Here shown may be somewhat different from your TV.
- **NOTE**: If your product has a protection tape attached, remove the tape.
  And then wipe the product with a cloth (If a polishing cloth is included with your product, use it).

Plasma TV Model



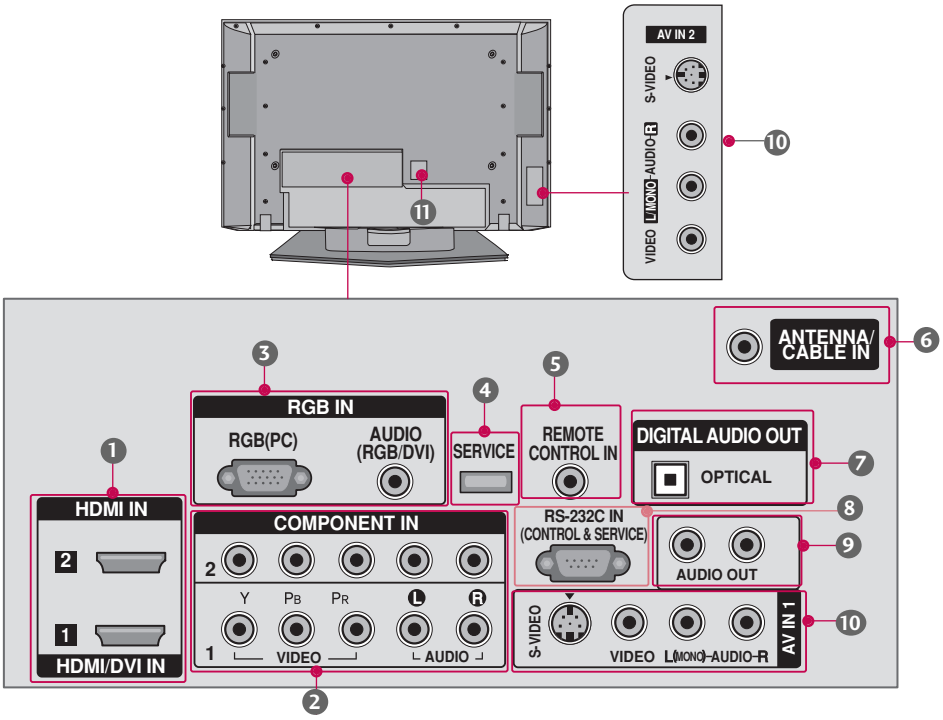
LCD TV Model


CH
VOL
ENTER
MENU
INPUT
CHANNEL (▲,▼)Buttons
VOLUME (◀,▶)Buttons
ENTER Button
MENU Button
INPUT Button
POWER Button
Remote Control Sensor
Power/Standby Indicator
Illuminates red in standby mode.
Illuminates green when the set is switched on.

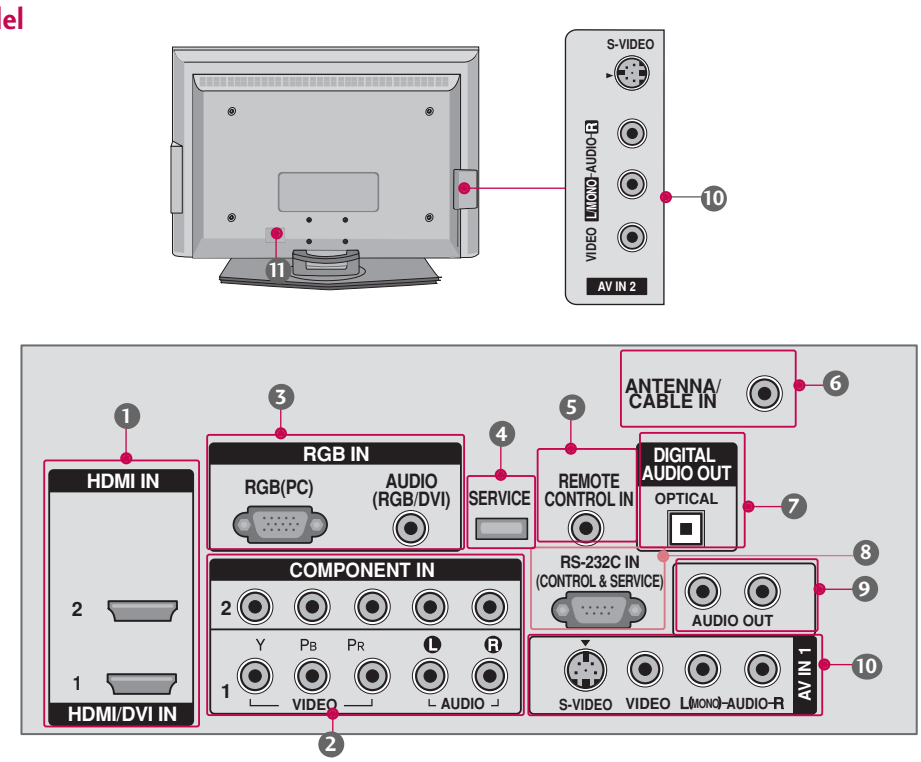
BACK PANEL INFORMATION

■ Here shown may be somewhat different from your TV.

Plasma TV Model



LCD TV Model



❶ **HDMI/DVI IN 1, HDMI IN 2**
Connect a HDMI (DVI) connection to either input.

❷ **COMPONENT IN**
Connect a component video/audio device to these jacks.

❸ **RGB (PC)**
Connect the output from a PC.
AUDIO (RGB/DVI)
Connect the audio from a PC or DTV.

❹ **SERVICE**

❺ **Remote Control Port**
Connect a wired remote control.

❻ **ANTENNA/CABLE IN**
Connect over-the air signals to this jack.
Connect cable signals to this jack.

❼ **DIGITAL AUDIO OUT**
Connect digital audio from various types of equipment.
Note: In standby mode, these ports do not work.

❽ **RS-232C IN (CONTROL & SERVICE) PORT**
For external control devices.

❾ **AUDIO OUT**
Connect analog audio to various types of equipment.

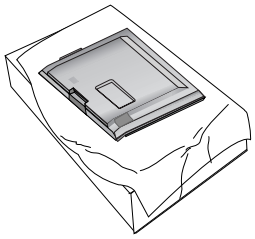
❿ **AV (Audio/Video) IN**
Connect audio/video output from an external device to these jacks.
S-VIDEO
Connect S-Video out from an S-VIDEO device.

⓫ **Power Cord Socket**
For operation with AC power.
Caution: Never attempt to operate the TV on DC power.

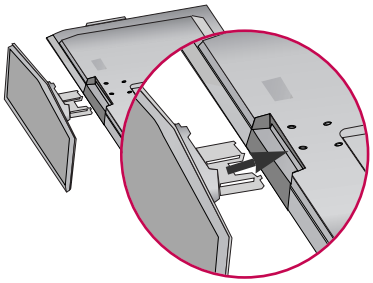
STAND INSTALLATION (Only 32/37 inches LCD TV models)

- Here shown may be somewhat different from your TV.

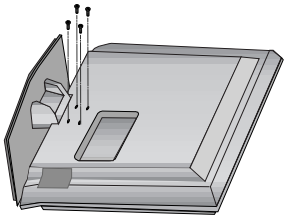
1. Carefully place the product screen side down on a cushioned surface that will protect product and screen from damage.



2. Assemble the product stand with the product as shown.



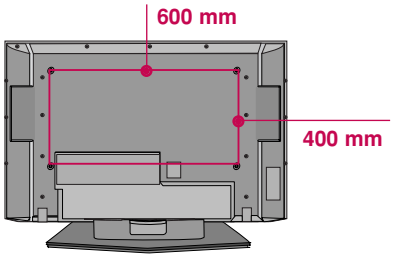
3. Securely install the 4 bolts provided.



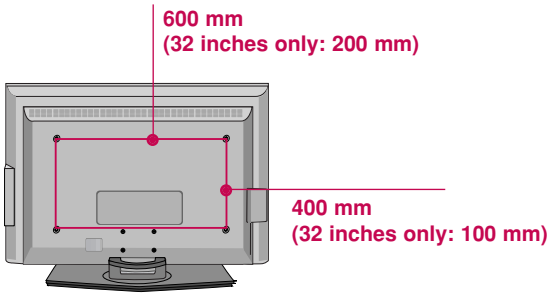
VESA WALL MOUNTING

This product accepts a VESA-compliant mounting interface pad. (optional)
There 4 threaded holes are available for attaching the bracket.

Plasma TV Model



LCD TV Model



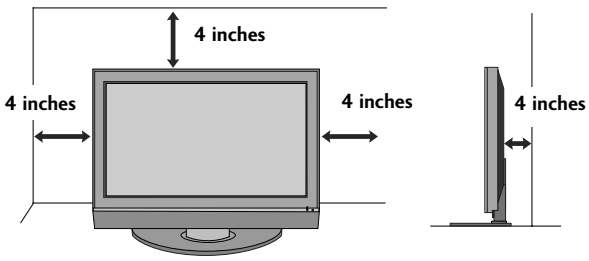
NOTE

- Screw length needed depends on the wall mount used. For further information, refer to the VESA Wall Mounting Instruction Guide.

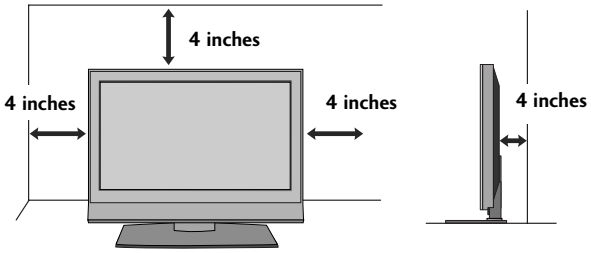
DESKTOP PEDESTAL INSTALLATION

For proper ventilation, allow a clearance of 4 inches on all four sides from the wall.

Plasma TV Model



LCD TV Model



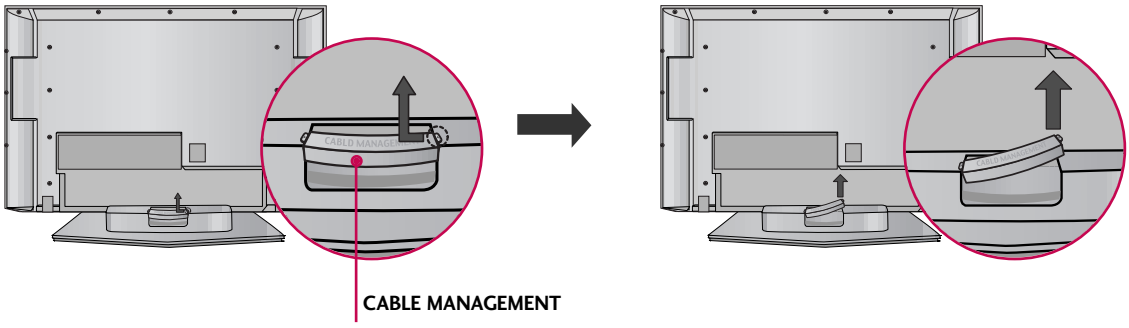
CAUTION ▶ Ensure adequate ventilation by following the clearance recommendations.

BACK COVER FOR WIRE ARRANGEMENT

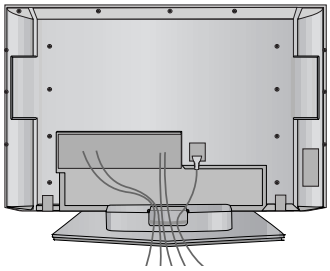
■ Here shown may be somewhat different from your TV.

Plasma TV Model

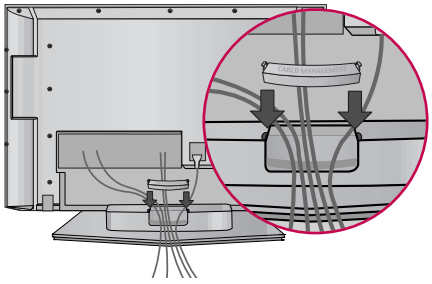
1 Hold the **CABLE MANAGEMENT** with both hands and pull it backward as shown.



2 Connect the cables as necessary.
To connect an additional equipment, see the **EXTERNAL EQUIPMENT SETUP** section.

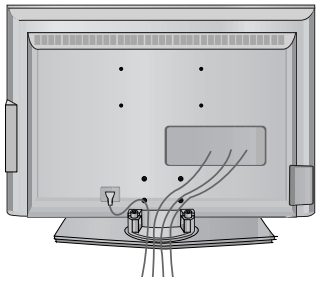


3 Install the **CABLE MANAGEMENT** as shown.

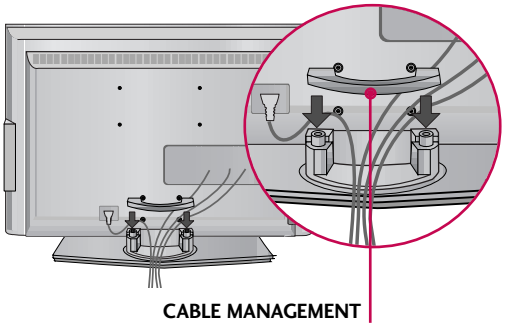


LCD TV Model

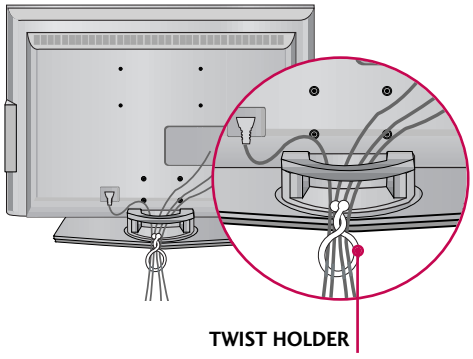
1. Connect the cables as necessary.
   To connect an additional equipment, see the **EXTERNAL EQUIPMENT SETUP** section.



2. Install the **CABLE MANAGEMENT** as shown.



3. Bundle the cables using the supplied **TWISTER HOLDER**.
   (This feature is not available for all models.)

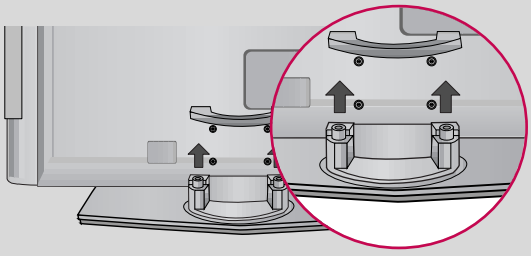


NOTE

- Do not hold the **CABLE MANAGEMENT** when moving the product.
  - If the product is dropped, you may be injured or the product may be broken.

How to remove the CABLE MANAGEMENT

- Hold the **CABLE MANAGEMENT** with both hands and pull it backward.

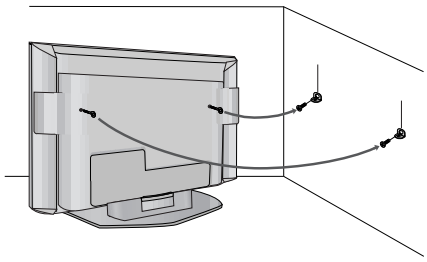


ATTACHING THE TV TO A WALL

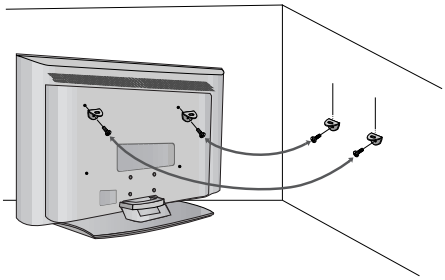
- This feature is not available for all models.
- Here shown may be somewhat different from your TV.

We recommend that you set up the TV close to a wall so it cannot fall over if pushed backwards. Additionally, we recommend that the TV be attached to a wall so it cannot be pulled in a forward direction, potentially causing injury or damaging the product.
Caution: Please make sure that children don't climb on or hang from the TV.

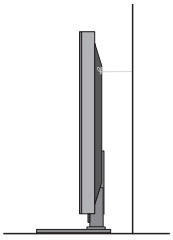
Plasma TV Model



LCD TV Model



- Insert the eye-bolts (or TV brackets and bolts) to tighten the product to the wall as shown in the picture.
  * If your product has the bolts in the eye-bolts position before inserting the eye-bolts, loosen the bolts.
  Secure the wall brackets with the bolts (not provided as parts of the product, must purchase separately) to the wall. Match the height of the bracket that is mounted on the wall to the holes in the product.
  Ensure the eye-bolts or brackets are tightened securely.



- Use a sturdy rope (not provided as parts of the product, must purchase separately) to tie the product. It is safer to tie the rope so it becomes horizontal between the wall and the product.

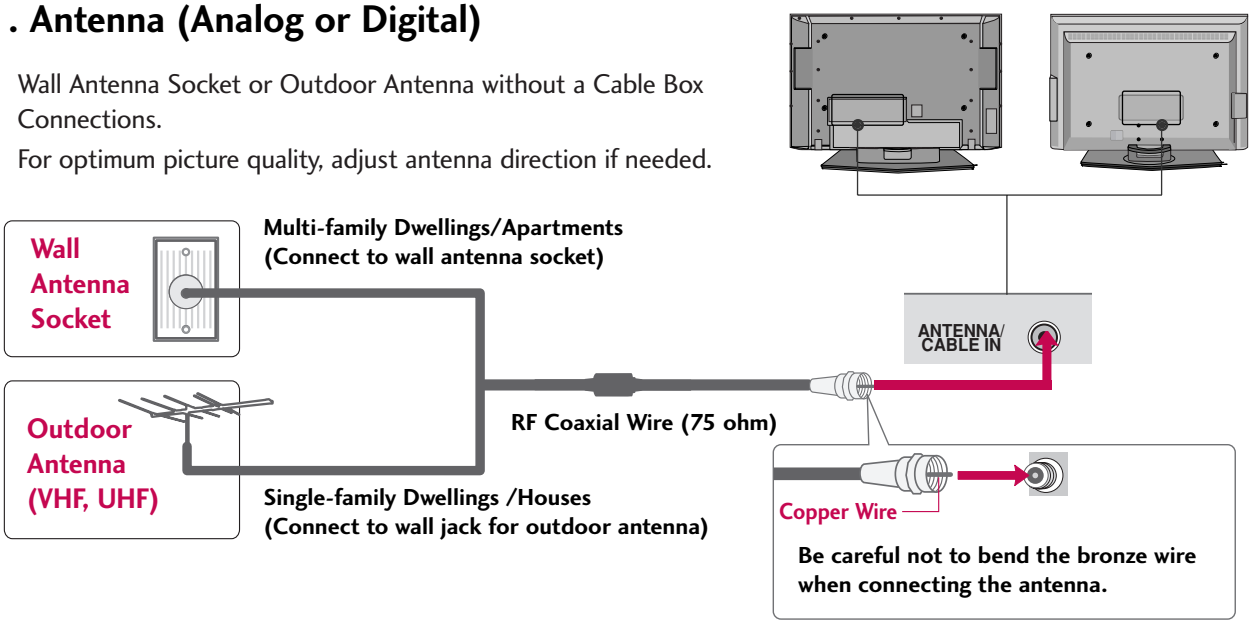
ANTENNA OR CABLE CONNECTION

■ Here shown may be somewhat different from your TV.

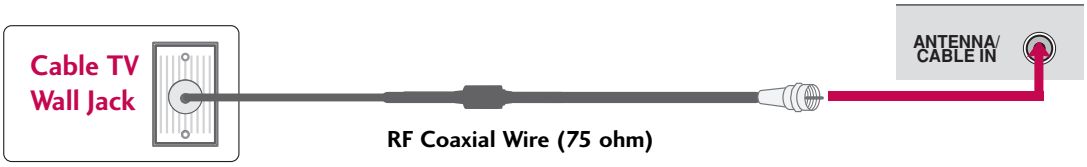
1. Antenna (Analog or Digital)

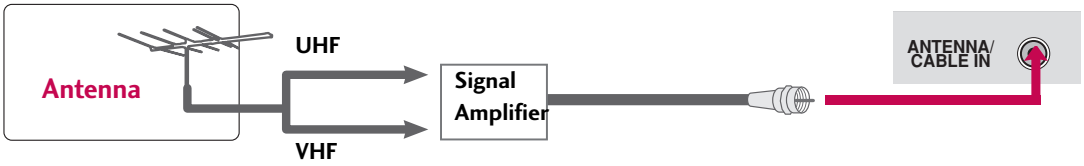
Wall Antenna Socket or Outdoor Antenna without a Cable Box Connections.

For optimum picture quality, adjust antenna direction if needed.



2. Cable





- To improve the picture quality in a poor signal area, please purchase a signal amplifier and install properly.
- If the antenna needs to be split for two TV's, install a 2-Way Signal Splitter.
- If the antenna is not installed properly, contact your dealer for assistance.

NOTE ▶ The TV will let you know when the analog, cable, and digital channel scans are complete.

EXTERNAL EQUIPMENT SETUP

- To prevent the equipment damage, never plug in any power cords until you have finished connecting all equipment.
- This part of EXTERNAL EQUIPMENT SETUP mainly use picture for LCD TV model.

HD RECEIVER SETUP

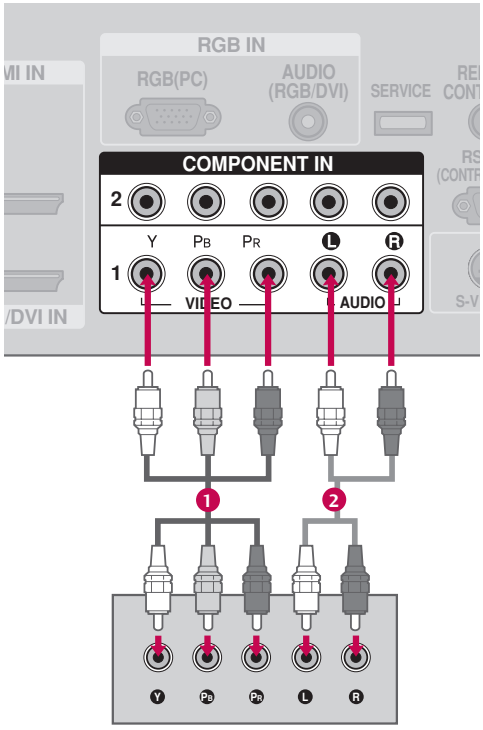
This TV can receive Digital Over-the-air/Cable signals without an external digital set-top box. However, if you do receive digital signals from a digital set-top box or other digital external device, refer to the figure as shown below.

When connecting Component cable

1. How to connect

1. Connect the video outputs (Y, PB, PR) of the digital set top box to the **COMPONENT IN VIDEO 1** jacks on the set. Match the jack colors (Y = green, PB = blue, and PR = red).

2. Connect the audio output of the digital set-top box to the **COMPONENT IN AUDIO 1** jacks on the set.



2. How to use

- Turn on the digital set-top box.
  (Refer to the owner's manual for the digital set-top box. operation)
- Select **Component 1** input source by using the **INPUT** button on the remote control.
- If connected to **COMPONENT IN2** input, select **Component 2** input source.

Signal	Component 1/2	HDMI1/2
480i	Yes	No
480p	Yes	Yes
720p	Yes	Yes
1080i	Yes	Yes
1080p	Yes	Yes

Y, CB/PB, CR/PR

Resolution	Horizontal Frequency(KHz)	Vertical Frequency(Hz)
720x480i	15.73 15.73	59.94 60.00
720x480p	31.47 31.50	59.94 60.00
1280x720p	44.96 45.00	59.94 60.00
1920x1080i	33.72 33.75	59.94 60.00
1920x1080p	26.97 27.00 33.71 33.75 67.432 67.50	23.976 24.00 29.97 30.00 59.94 60.00

When connecting HDMI cable

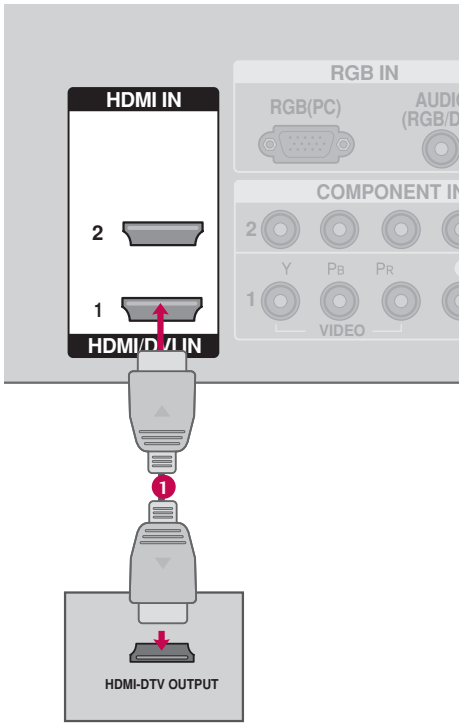
1. How to connect

1. Connect the digital set-top box to **HDMI/DVI IN 1** or **HDMI IN 2** jack on the set.

2. No separated audio connection is necessary.
   HDMI supports both audio and video.

2. How to use

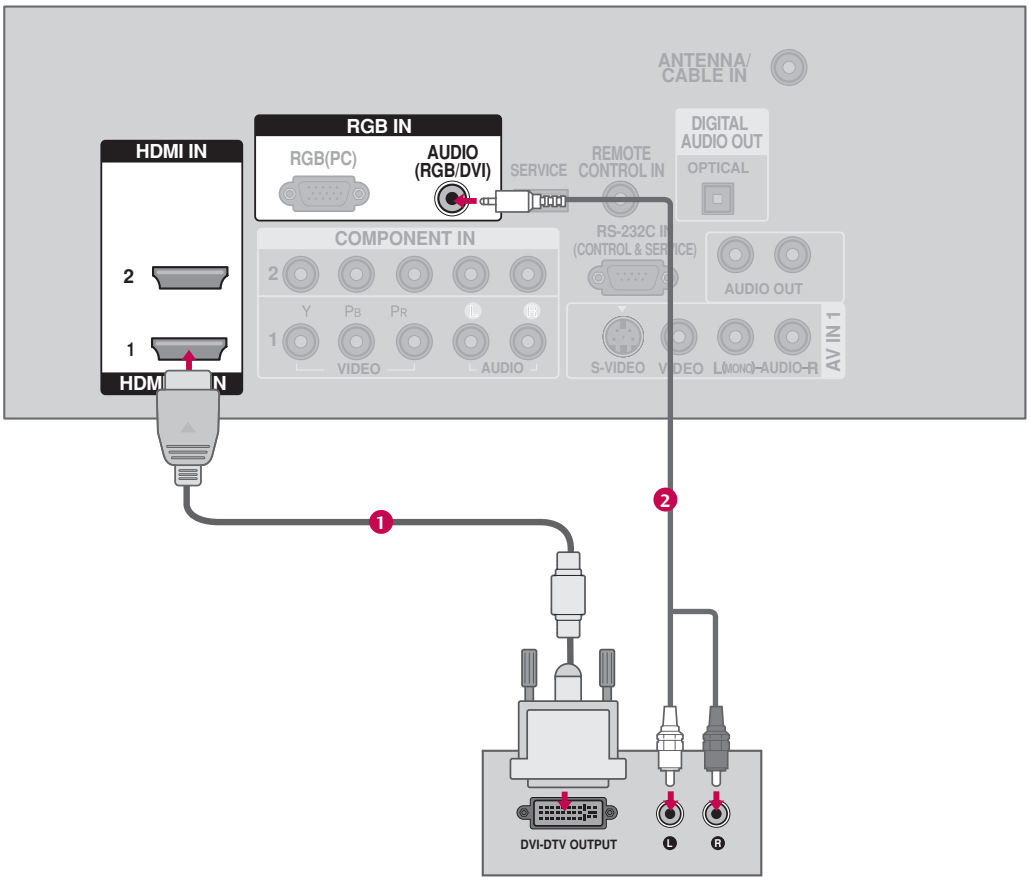
- Turn on the digital set-top box.
  (Refer to the owner's manual for the digital set-top box.)
- Select **HDMI1** or **HDMI2** input source by using the **INPUT** button on the remote control.



HDMI1/DVI-DTV, HDMI2-DTV mode

Resolution	Horizontal Frequency(KHz)	Vertical Frequency(Hz)
720x480p	31.47 31.50	59.94 60.00
1280x720p	44.96 45.00	59.94 60.00
1920x1080i	33.72 33.75	59.94 60.00
1920x1080p	26.97 27.00 33.71 33.75 67.432 67.50	23.976 24.00 29.97 30.00 59.939 60.00

When connecting HDMI to DVI cable



1. How to connect

1. Connect the DVI output of the digital set-top box to the **HDMI/DVI IN 1** jack on the set.
2. Connect the audio output of the digital set-top box to the **AUDIO (RGB/DVI)** jack on the set.

2. How to use

- Turn on the digital set-top box. (Refer to the owner's manual for the digital set-top box.)
- Select **HDMI1** input source by using the **INPUT** button on the remote control.

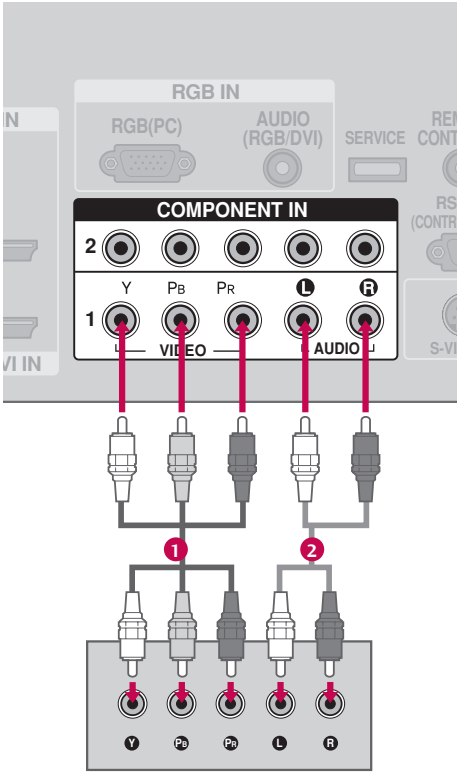
DVD SETUP

When connecting Component cable

1. How to connect

1. Connect the video outputs (Y, PB, PR) of the DVD to the **COMPONENT IN VIDEO1** jacks on the set.
   Match the jack colors
   (Y = green, PB = blue, and PR = red).

2. Connect the audio outputs of the DVD to the **COMPONENT IN AUDIO1** jacks on the set.



2. How to use

- Turn on the DVD player, insert a DVD.
- Select **Component 1** input source by using the **INPUT** button on the remote control.
- If connected to **COMPONENT IN 2** input, select **Component 2** input source.
- Refer to the DVD player's manual for operating instructions.

Component Input ports

To get better picture quality, connect a DVD player to the component input ports as shown below.

Component ports on the TV	Y	PB	PR
Video output ports on DVD player	Y	PB	PR
	Y	B-Y	R-Y
	Y	Cb	Cr
	Y	Pb	Pr

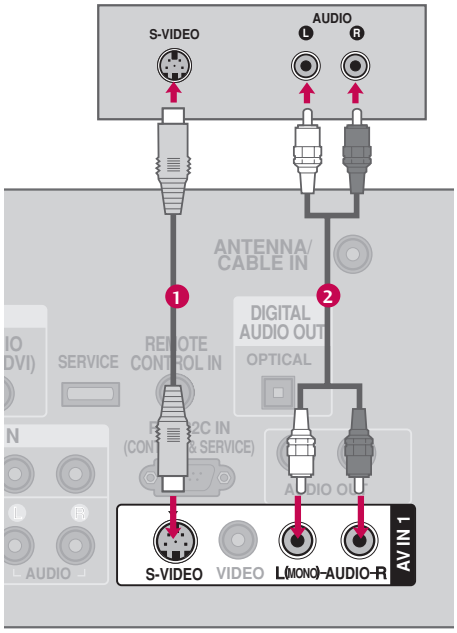
When connecting with an S-Video cable

1. How to connect

1. Connect the S-VIDEO output of the DVD to the **S-VIDEO** input on the set.
2. Connect the audio outputs of the DVD to the **AUDIO** input jacks on the set.

2. How to use

- Turn on the DVD player, insert a DVD.
- Select **AV1** input source by using the **INPUT** button on the remote control.
- If connected to **AV IN2**, select **AV2** input source.
- Refer to the DVD player's manual for operating instructions.



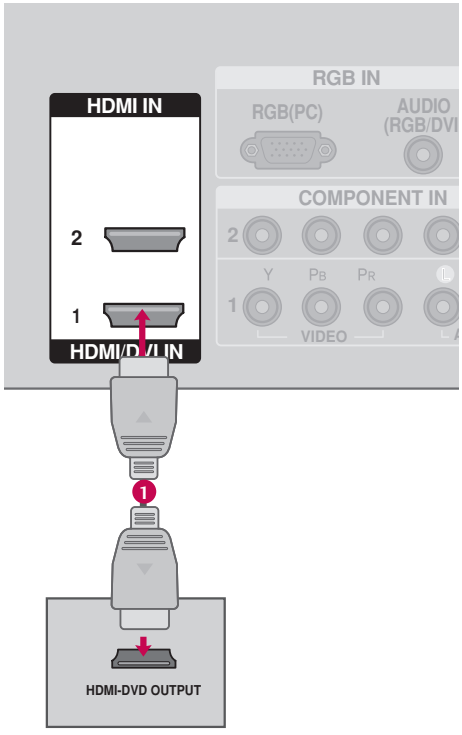
When connecting HDMI cable

1. How to connect

1. Connect the HDMI output of the DVD to the **HDMI/DVI IN 1** or **HDMI IN 2** jack on the set.
2. No separated audio connection is necessary.
   HDMI supports both audio and video.

2. How to use

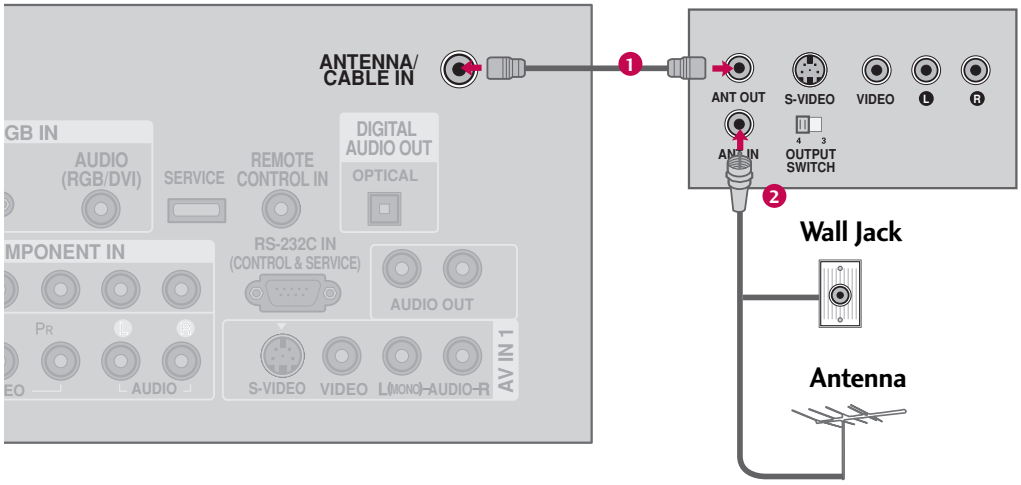
- Select **HDMI1** or **HDMI2** input source by using the **INPUT** button on the remote control.
- Refer to the DVD player's manual for operating instructions.



VCR SETUP

- To avoid picture noise (interference), leave an adequate distance between the VCR and TV.
- Use the ISM feature in the Option menu to avoid having a fixed image remain on the screen for a long period of time (Only Plasma TV model). If the 4:3 picture format is used; the fixed images on the sides of the screen may remain visible on the screen. This phenomenon is common to all manufactures and in consequence the manufactures warranty does not cover the product bearing this phenomenon.

When connecting with an antenna



1. How to connect

1. Connect the RF antenna out socket of the VCR to the **ANTENNA/CABLE IN** socket on the set.
2. Connect the antenna cable to the RF antenna in socket of the VCR.

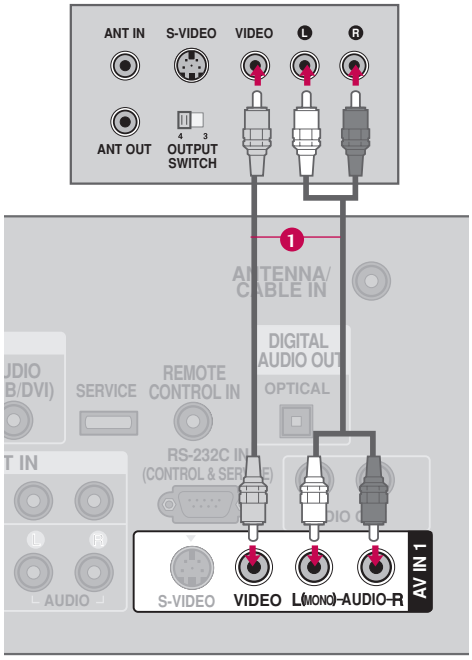
2. How to use

- Set VCR output switch to 3 or 4 and then tune TV to the same channel number.
- Insert a video tape into the VCR and press PLAY on the VCR. (Refer to the VCR owner's manual.)

When connecting with a RCA cable

1. How to connect

1. Connect the **AUDIO/VIDEO** jacks between TV and VCR. Match the jack colors (Video = yellow, Audio Left = white, and Audio Right = red)



2. How to use

- Insert a video tape into the VCR and press PLAY on the VCR. (Refer to the VCR owner's manual.)
- Select **AV1** input source by using the **INPUT** button on the remote control.
- If connected to **AV IN2**, select **AV2** input source.

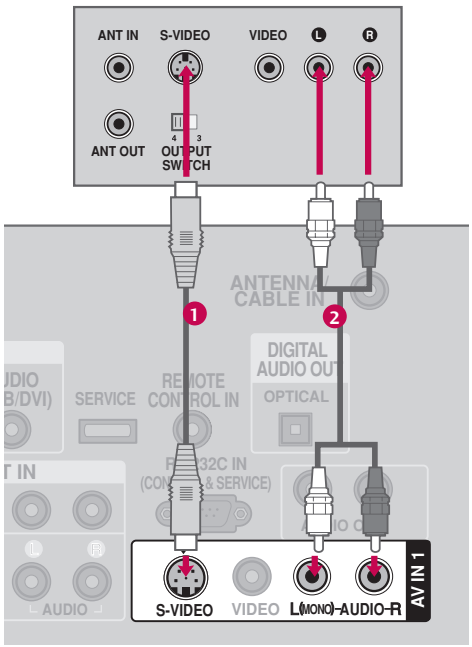
NOTE

▶ If you have a mono VCR, connect the audio cable from the VCR to the **AUDIO L/MONO** jack of the set.

When connecting with an S-Video cable

1. How to connect

1. Connect the S-VIDEO output of the VCR to the **S-VIDEO** input on the set.
2. Connect the audio outputs of the VCR to the **AUDIO** input jacks on the set.



2. How to use

- Insert a video tape into the VCR and press PLAY on the VCR. (Refer to the VCR owner's manual.)
- Select **AV1** input source by using the **INPUT** button on the remote control.
- If connected to **AV IN2**, select **AV2** input source.

NOTE

▶ The picture quality is improved: compared to normal composite (RCA cable) input.

CAUTION

▶ Do not connect to both Video and S-Video at the same time. In the event that you connect both Video and the S-Video cables, only the S-Video will work.

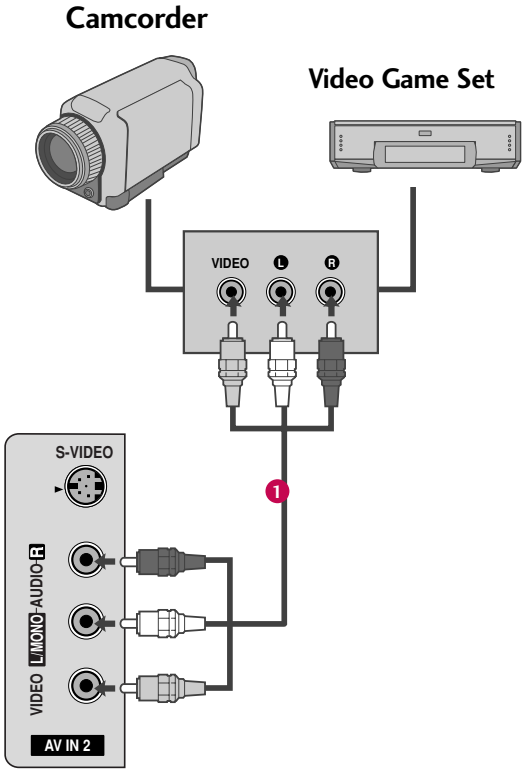
OTHER A/V SOURCE SETUP

1. How to connect

1 Connect the **AUDIO/VIDEO** jacks between TV and external equipment. Match the jack colors.
(Video = yellow, Audio Left = white, and Audio Right = red)

2. How to use

- Select **AV2** input source by using the **INPUT** button on the remote control.
- If connected to **AV IN1** input, select **AV1** input source.
- Operate the corresponding external equipment.



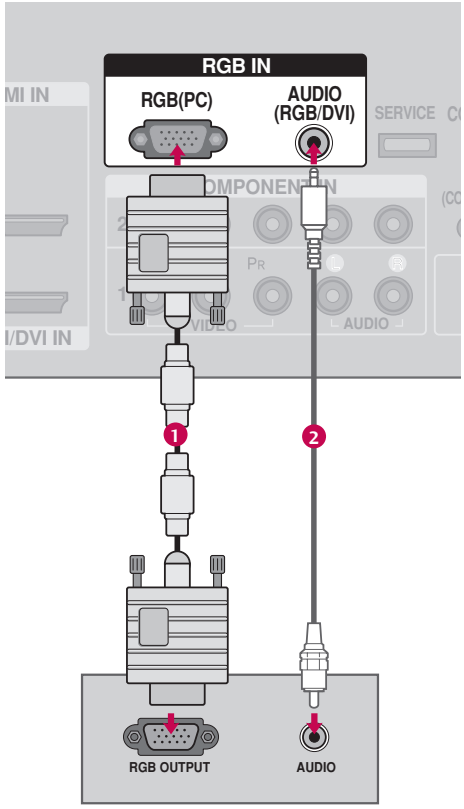
PC SETUP

This TV provides Plug and Play capability, meaning that the PC adjusts automatically to the TV's settings.

When connecting D-sub 15 pin cable

1. How to connect

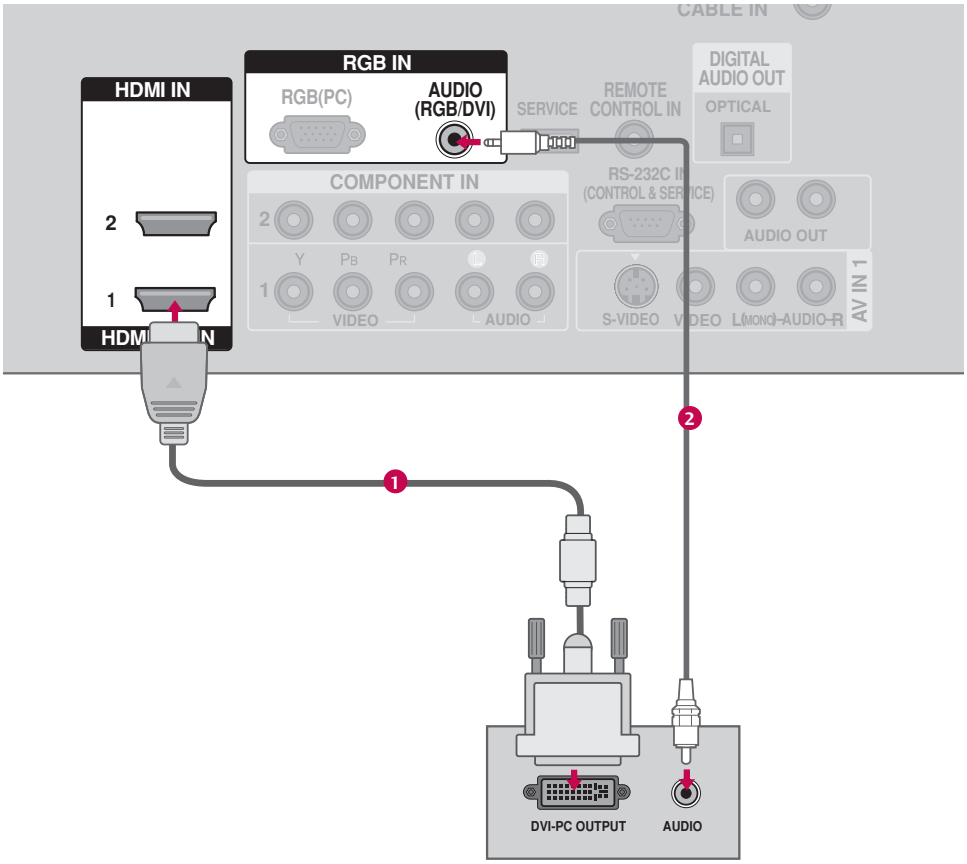
1. Connect the RGB output of the PC to the **RGB (PC)** jack on the set.
2. Connect the PC audio output to the **AUDIO (RGB/DVI)** jack on the set.



2. How to use

- Turn on the PC and the TV.
- Select **RGB-PC** input source by using the **INPUT** button on the remote control.

When connecting HDMI to DVI cable



1. How to connect

1. Connect the DVI output of the PC to the **HDMI/DVI IN 1** jack on the set.

2. Connect the PC audio output to the **AUDIO (RGB/DVI)** jack on the set.

2. How to use

- Turn on the PC and the TV.
- Select **HDMI1** input source by using the **INPUT** button on the remote control.

NOTES

- For LCD TV: To get the the best picture quality, adjust the PC graphics card to 1366x768.
- For Plasma TV TV: To get the the best picture quality, adjust the PC graphics card to 1360x768.
- Depending on the graphics card, DOS mode may not work if a HDMI to DVI Cable is in use.
- Check the image on your TV. There may be noise associated with the resolution, vertical pattern, contrast or brightness in PC mode. If noise is present, change the PC output to another resolution, change the refresh rate to another rate or adjust the brightness and contrast on the VIDEO menu until the picture is clear. If the refresh rate of the PC graphic card can not be changed, change the PC graphic card or consult the manufacturer of the PC graphic card.
- Avoid keeping a fixed image on the screen for a long period of time. The fixed image may become permanently imprinted on the screen.
- The synchronization input form for Horizontal and Vertical frequencies is separate.

Supported Display Specifications

RGB-PC, HDMI1/DVI-PC mode

Resolution	Horizontal Frequency(KHz)	Vertical Frequency(Hz)
640x350	31.469	70.08
720x400	31.469	70.08
640x480	31.469	59.94
800x600	37.879	60.31
1024x768	48.363	60.00
1280x768	47.776	59.87
1360x768	47.720	59.799
1366x768	47.130	59.65

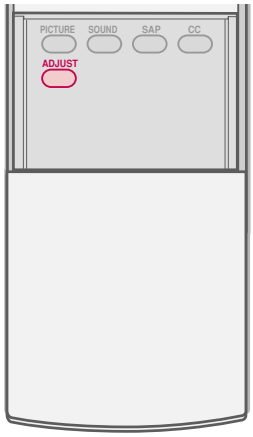
* RGB-PC mode only

* LCD TV only

NOTE

- Depending on graphic card and signal status, there can be some shaking to find best picture in a little time.

Screen Setup for PC mode



Overview

When the RGB input of the set is connected to a PC Output, Select RGB-PC with using the **INPUT** button on the remote control.

When you change the resolution, select the proper resolution in present input to see the best picture appearance.

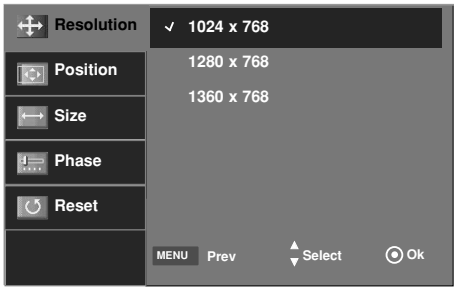
Adjustment for screen Resolution, Position, Size, and Phase

1. Press the **ADJUST** button and then use ▲ or ▼ button to select **Resolution**, **Position**, **Size**, or **Phase**.

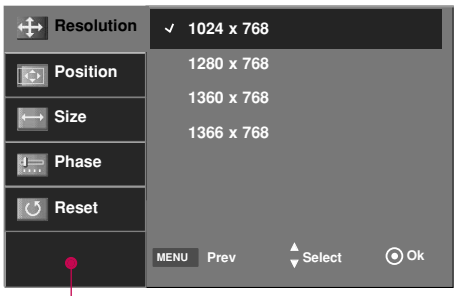
2. Press the **ENTER** button and then use ▲ ▼ ◀ ▶ button to make appropriate adjustments.
   - The **Phase** adjustment range is **-16 ~ +16**.
   - The **Size** adjustment range is **-30 ~ +30**.

3. Press the **ENTER** button.

For Plasma TV



For LCD TV



1 2 3

Resolution This function allows you select resolution of XGA/WXGA.

Position This function is to adjust picture to left/right and up/down as you prefer.

Size This function is to minimize any vertical bars or stripes visible on the screen background. And the horizontal screen size will also change.

Phase This function allows you to remove any horizontal noise and clear or sharpen the image of characters.

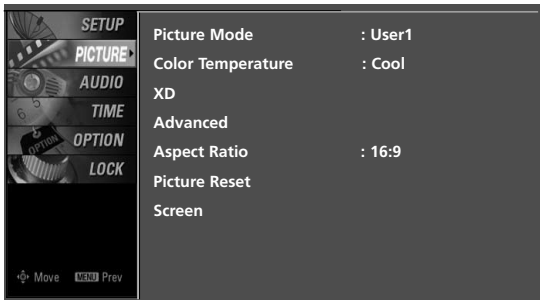
Initializing (Reset to original factory values)

To initialize the adjusted values.

1. Press the **ADJUST** button and then use ▲ or ▼ button to select **Reset**.
2. Press the **ENTER** button and then use ◀ or ▶ button to select **Yes**.
3. Press the **ENTER** button.

1 2 3

■ You can also use the **PICTURE** menu to adjust **Screen**.



AUDIO OUT SETUP

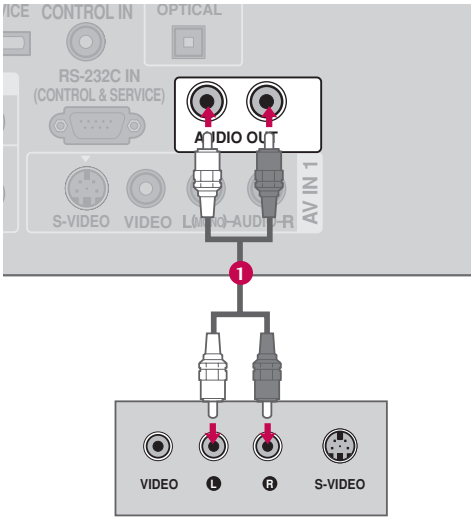
Send the TV's audio to external audio equipment via the Audio Output port.

Analog

1. How to connect

1. Connect audio outputs to the TV's **AUDIO OUT** jacks.

2. Set the "TV Speaker option - Off" in the AUDIO menu. (▶ **p.59**). See the external audio equipment instruction manual for operation.



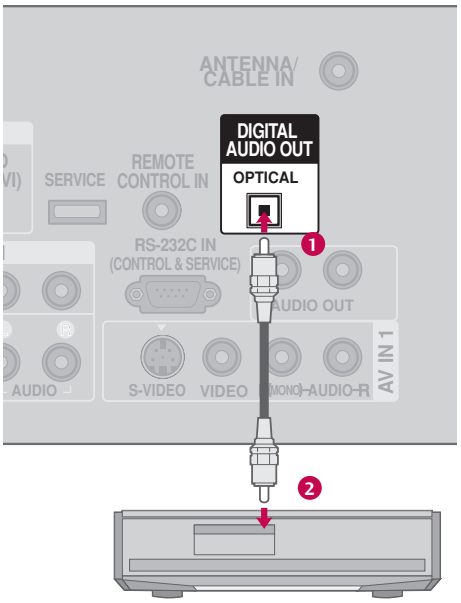
Digital

1. How to connect

1. Connect one end of the optical cable to the TV's **DIGITAL AUDIO OUT OPTICAL**.

2. Connect the other end of the optical cable to the digital audio input on the audio equipment.

3. Set the "TV Speaker option - Off" in the AUDIO menu. (▶ **p.59**). See the external audio equipment instruction manual for operation.



NOTE

- When connecting with external audio equipments, such as amplifiers or speakers, please turn the TV speakers off. (▶ **p.59**)

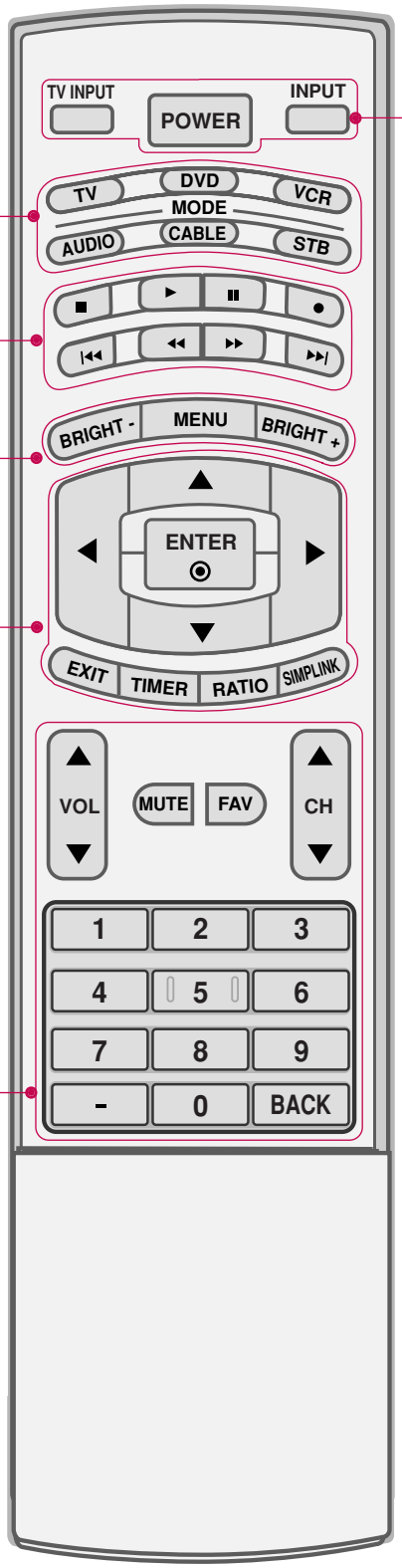
CAUTION

- Do not look into the optical output port. Looking at the laser beam may damage your vision.
- Block the SPDIF out (optical) about the contents with ACP(Audio Copy Protection) function.

WATCHING TV / CHANNEL CONTROL

REMOTE CONTROL FUNCTIONS

When using the remote control, aim it at the remote control sensor on the TV.



MODE Select the remote's operating mode. TV, DVD, VCR, AUDIO, CABLE, or STB.

VCR/DVD control buttons Control video cassette recorders or DVD players.

MENU Displays the main menu.

BRIGHT -/ + Adjust the brightness on screen.

THUMBSTICK (Up/Down/Left Right/ENTER) Navigate the on-screen menus and adjust the system settings to your preference.

EXIT Clear all on-screen displays and return to TV viewing from any menu.

TIMER Select the amount of time before your TV turns off automatically. ▶ p.70

RATIO Change the aspect ratio. ▶ p.44

SIMPLINK See a list of AV devices connected to TV. When you toggle this button, the SimpLink menu appears at the screen. ▶ p.41

VOLUME UP /DOWN Increase/decrease the sound level.

MUTE Switch the sound on or off. ▶ p.34

FAV Scroll through the programmed Favorite channels. ▶ p.38

CHANNEL UP/DOWN Select available channels.

NUMBER button

— (DASH) Used to enter a program number for multiple program channels such as 2-1, 2-2, etc.

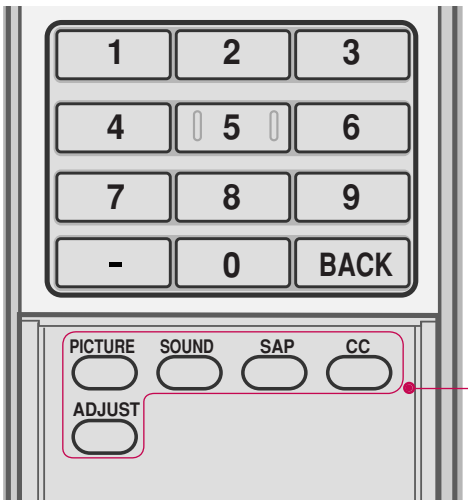
BACK Tune to the last channel viewed.

POWER Turns your TV or any other programmed equipment on or off, depending on the mode.

TV INPUT In AV 1-2, Component 1-2, RGB-PC, HDMI1, and HDMI2 input sources, screen returns to the last TV channel.

INPUT External input modes rotate in regular sequence: Antenna, Cable, AV1-2, Component 1-2, RGB-PC, HDMI1, and HDMI2.
(AV 1-2, Component 1-2, RGB-PC, HDMI1, and HDMI2 input sources are linked automatically, only if a device is connected.)

Inside the Sliding Cover



PICTURE Selects the factory preset picture depend on the viewing environment. ▶ p.45

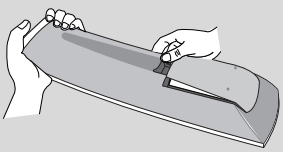
SOUND Selects the factory preset sound for type of program. ▶ p.56

SAP
- Analog mode: Selects MTS sound (Mono, Stereo, or a SAP) ▶ p.60
- DTV mode: Changes the audio language.

CC Select a closed caption. ▶ p.63

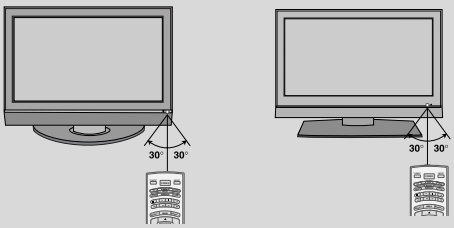
ADJUST Adjust the screen resolution, position, size and phase. ▶ p.29-30

Installing Batteries



- Open the battery compartment cover on the back side and install the batteries matching correct polarity (+ with +, - with -).
- Install two 1.5V AA batteries. Don't mix old or used batteries with new ones.
- Close cover.

Remote control effective range



- Use a remote control up to 7 meters distance and 30 degree (left/right) within the receiving unit scope.
- Dispose of used batteries in a recycle bin to preserve environment.

TURNING ON TV

1. First, connect power cord correctly.
   At this moment, the TV switches to standby mode.
   - In standby mode to turn TV on, press the ⏻/I , **INPUT**, **CH (▲ or ▼)** button on the TV or press the **POWER**, **INPUT**, **TV INPUT**, **CH(▲ or ▼)**, **Number (0~9)** button on the remote control.
2. Select the viewing source by using the **TV INPUT**, **INPUT** button on the remote control.
   - This TV is programmed to remember which power state it was last set to, even if the power cord is out.
3. When finished using the TV, press the **POWER** button on the remote control. The TV reverts to standby mode.

NOTE

▶ If you intend to be away on vacation, disconnect the power plug from the wall power outlet.

CHANNEL SELECTION

1. Press the **CH (▲ or ▼)** or **NUMBER** buttons to select a channel number.

VOLUME ADJUSTMENT

Adjust the volume to suit your personal preference.

1. Press the **VOL (▲ or ▼)** button to adjust the volume.
2. If you want to switch the sound off, press the **MUTE** button.
3. You can cancel the Mute function by pressing the **MUTE** or **VOL (▲ or ▼)** button.

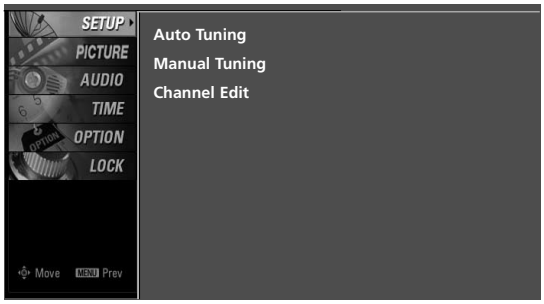
ON-SCREEN MENUS SELECTION

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

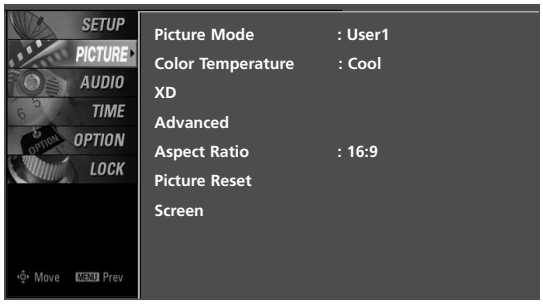
1. Press the **MENU** button and then use ▲ or ▼ button to select the each menu.

2. Press the ▶ button and then use ▲ ▼ ◀ ▶ button to display the available menus.

SETUP

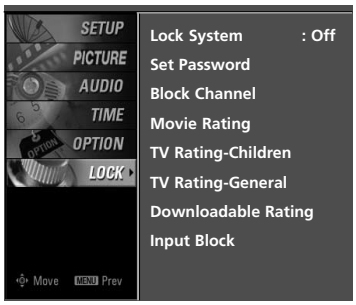


PICTURE

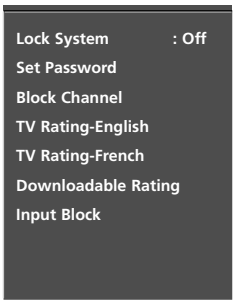


LOCK

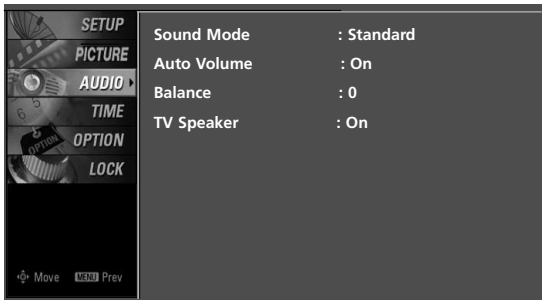
For USA



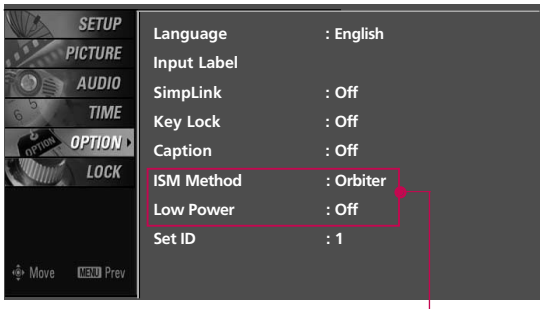
For Canada



AUDIO



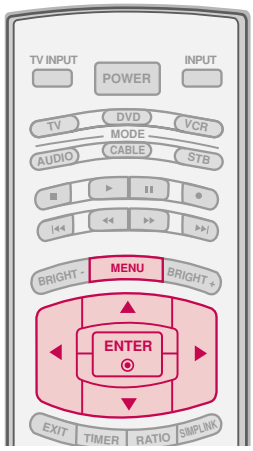
OPTION



Only Plasma TV model

TIME

CHANNEL SETUP



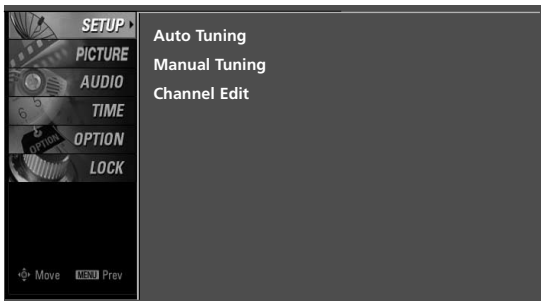
Auto Scan (Auto Tuning)

Automatically finds all channels available through antenna or cable inputs, and stores them in memory on the channel list.

Run Auto Tuning again after any Antenna/Cable connection changes.

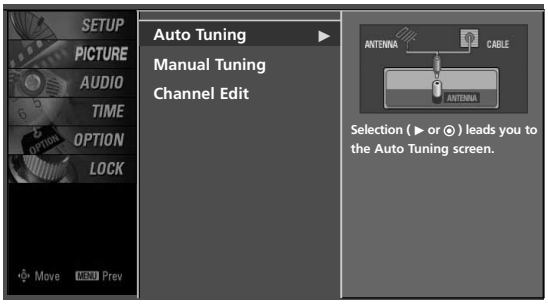
A password is required to gain access to Auto Tuning menu if the Lock System is turned on.

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



1

2. Press the ▶ button and then use ▲ or ▼ button to select **Auto Tuning**.

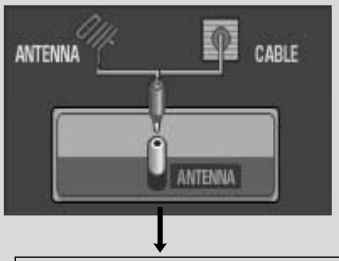


2

3. Press the **ENTER** button to begin the channel search. Allow **Auto Tuning** to complete the channel search cycle for **ANTENNA** and **CABLE**.

3

NOTE

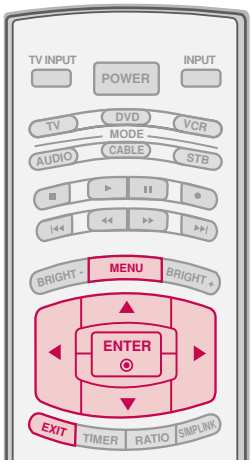


DTV (Digital DTV antenna)
TV (Analog TV antenna)
CADTV (Digital CADTV cable)
CATV (Analog CATV cable)

Add/Delete Channel (Manual Tuning)

A password is required to gain access to Manual Tuning menu if the Lock System is turned on.

If selecting DTV or CADTV input signal, you can view the on-screen signal strength monitor to see the quality of the signal being received.



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

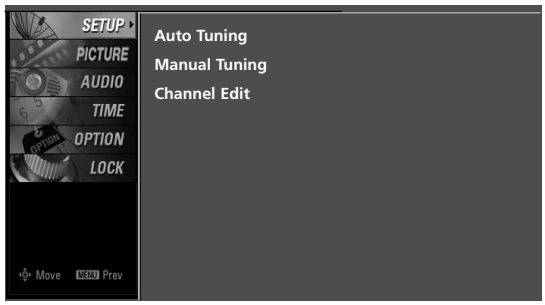
2. Press the ▶ button and then use ▲ or ▼ button to select **Manual Tuning**.

3. Press the ▶ button and then use ▲ or ▼ button to select **TV**, **DTV**, **CATV**, and **CADTV**.

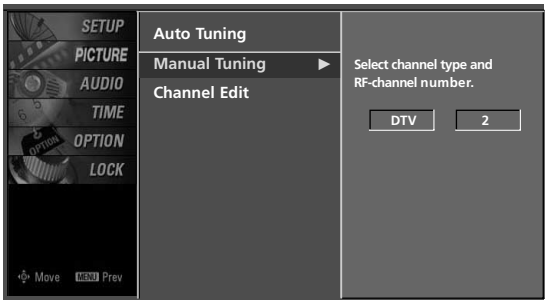
4. Press the ▶ button and then use ▲ or ▼ button to select channel you want to add or delete.

5. Press the **ENTER** button to add or delete the channel.

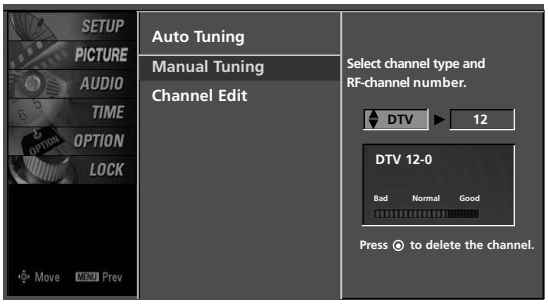
6. Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.



1



2



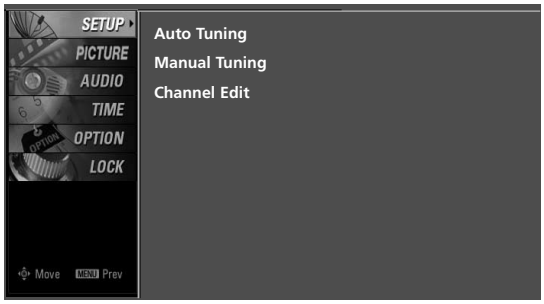
3 4 5

Channel Editing

From the default channel list created from the Auto Tuning channel search, you can create two different types of channel lists in memory: “custom list” and “favorite channel list”.

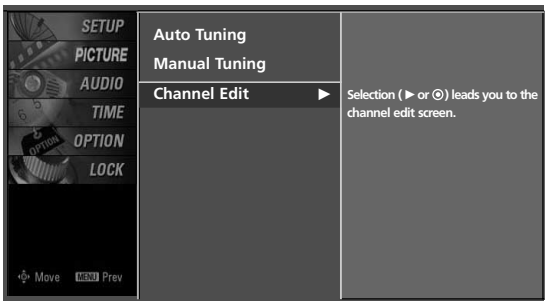
A custom list can be created by toggling each channel on or off with ENTER button. The channels in the Custom List are displayed in black and the channels deleted from the Custom List are displayed in gray. Once a channel is highlighted you can add or delete the channel by referring to the small window at the top-left corner of the screen.

You can create your own Favorite List. Use the FAV button on the remote control when a channel is highlighted and then add or delete the channel to/from your Favorite List.



1

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

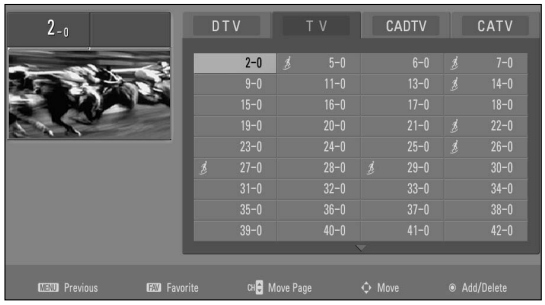


2

2. Press the ▶ button and then use ▲ or ▼ button to select **Channel Edit**.

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

4. Use ▲ ▼ ◀ ▶ button to select a channel and then use the ENTER button to add or delete it. Press FAV button to add the channel to the Favorite List. The surfing icon will appear in front of that channel number.

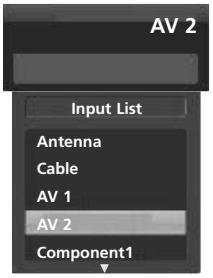


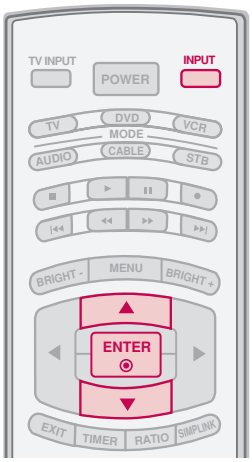
3 4

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

INPUT LIST

Press the **INPUT** button to display external device that is connected to the unit, on screen.
Press the **ENTER** button to change the input to the active external device. Use the ▲ or ▼ button to select the input source.





1 If all external input sources are connected:

Antenna → Cable → AV1 → AV2 → Component1 → Component2 → RGB-PC → HDMI1 → HDMI2 → Antenna

2 If no external input sources are not connected:

Antenna ⟷ Cable

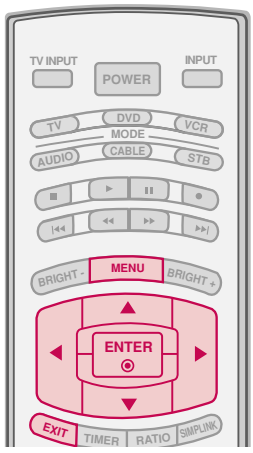
3 If there is any external input source connected:
(ex: When connected only to AV 2)

Antenna → Cable → AV2 → Antenna

Antenna : Select it when watching the DTV/TV.
Cable: Select it when watching the CADTV/CATV.
AV 1-2 : Select it when watching the VCR or external equipment.
Component 1-2 : Select it when using the DVD or the Digital set-top box depend on connector.
RGB-PC : Select it when using PC depend on connector.
HDMI 1-2 : Select it when using DVD, PC or Digital set-top box depend on connector.

This operates only for the devices with the SIMPLINK logo. Please check the SIMPLINK logo.

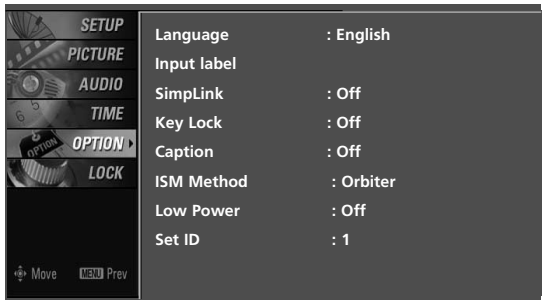
This allows you to control and play other AV devices connected to the display through HDMI cable without additional cables and settings.



SimpLink Preparations

1. Connect the HDMI/DVI IN 1 or HDMI IN 2 terminal of the TV to the rear terminal (HDMI output) of the Simplink device with the HDMI cable.

   After connecting the HDMI jack for the home theater with simplink function in the above method, connect the DIGITAL AUDIO OUT OPTICAL on the back of the TV to the DIGITAL AUDIO IN terminal on the back of the simplink device with the Optical cable.

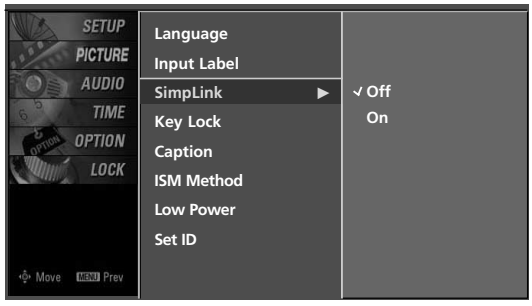


2

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

3. Press the ▶ button and then use ▲ or ▼ button to select **SimpLink**.

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



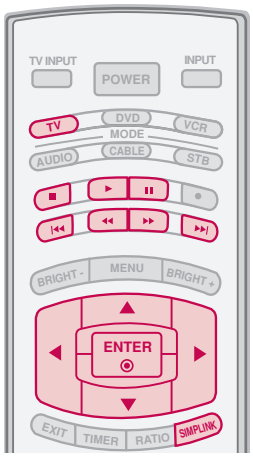
3 4

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

NOTE

- ▶ When operating the external device with SimpLink, press the TV button among the MODE button on the remote control.
- ▶ When you switch the Input source with the INPUT button on the remote control, you can stop the operation of device worked by SimpLink.
- ▶ When you select or operate the media device with home theater function, the speaker automatically switches to home theater speaker (HT speaker).

SimpLink Functions

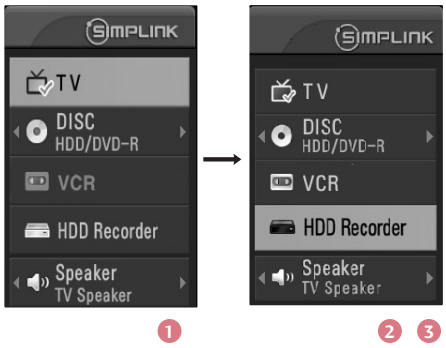


- **Direct Play:** After connecting AV devices to TV, you can directly control the devices and play media without additional settings.
- **Select AV device:** Enables you to select one of AV devices connected to TV and play it.
- **Disc playback:** Control connected AV devices by pressing the ▶ , ■ , ❚❚ , ◀◀ , ▶▶ , ⏮ , ⏭ , ▲ ▼ ◀ ▶, **ENTER** buttons and buttons for play, stop, pause, fast reverse, fast forward, chapter skip.
- **Power off all devices:** When you power off TV, all connected devices are turned off. (This option only applied when the devices are stoped.)
- **Switch audio-out:** Offers an easy way to switch audio-out.

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

Note: To operate SIMPLINK, the HDMI cable over 1.2 Version with *CEC function should be used. (*CEC: Consumer Electronics Control).

1. After selecting the **TV** button of the MODE on the remote control, press the **SIMPLINK** button.
2. Use ▲ ▼ ◀ ▶ button to select the desired device and then press the **ENTER** button.
3. Control connected AV devices by pressing the ▶ , ❚❚ , ■ , ⏮ , ⏭ , ◀◀ , ▶▶ , ▲▼◀ ▶, **ENTER** buttons.



SimpLink Menu

1. **TV viewing**: Switch to the previous TV channel regardless of the current mode.
2. **DISC playback**: Select and play discs. When multiple discs are available, the titles of discs are conveniently displayed at the bottom of the screen.
3. **VCR playback**: Play and control the connected VCR.
4. **HDD Recordings playback**: Play and control recordings stored in HDD.
5. **Audio Out to HT speaker/Audio Out to TV**: Select HT speaker or TV speaker for Audio Out.

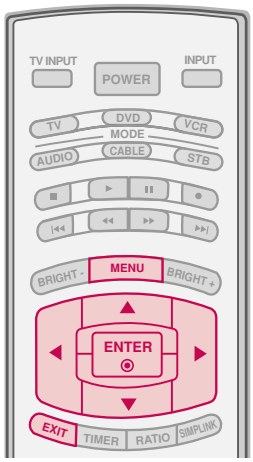
▶ Selected Device

▶ When no device is connected (displayed in gray)

▶ When a device is connected (displayed in bright color)

INPUT LABEL

Sets a label to each input source which is not in use when you press the INPUT button.



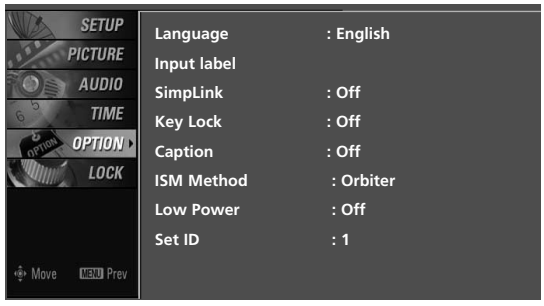
1. Press the MENU button and then use ▲ or ▼ button to select the **OPTION** menu.

2. Press the ▶ button and then use ▲ or ▼ button to select **Input Label**.

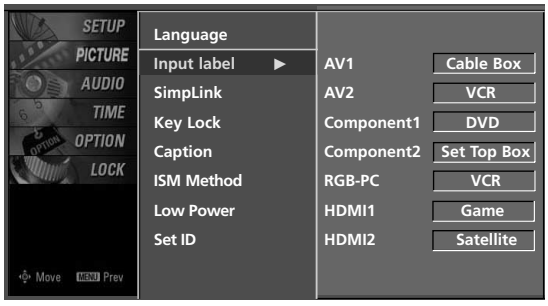
3. Press the ▶ button and then use ▲ or ▼ button to select the source: AV1, AV2, Component1, Component2, RGB-PC, HDMI1, or HDMI2.

4. Press the ◀ or ▶ button to select the label.

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



1



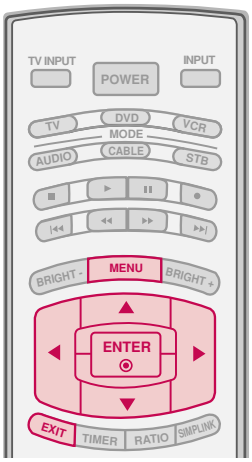
2 3 4

KEY LOCK

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

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

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

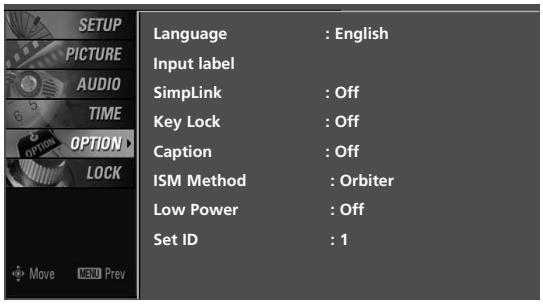


1. Press the **MENU** button and then use ▲ or ▼ button to select the **OPTION** menu.

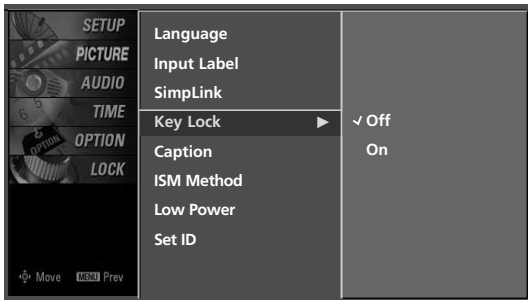
2. Press the ▶ button and then use ▲ or ▼ button to select **Key Lock**.

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.

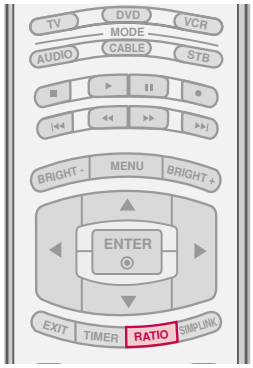


1



2 3

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. 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 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 **PICTURE** menu.

Set by program

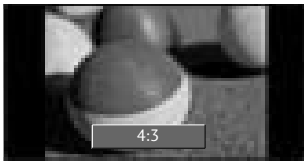
Selects the proper picture proportion to match the source's image.

(4:3 → 4:3)

(16:9 → 16:9)

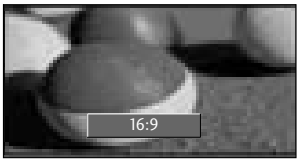
4:3

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



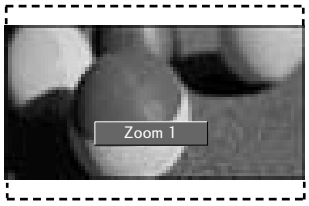
16:9

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



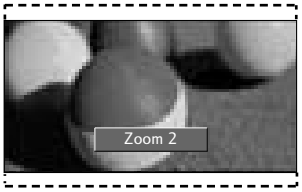
Zoom 1

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.



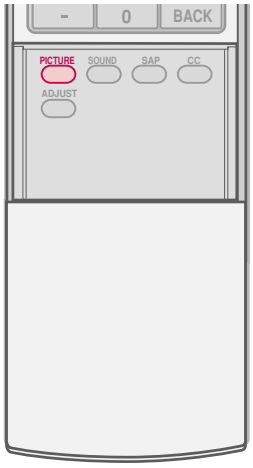
Just Scan

Following selection will lead to you view the picture of best quality without loss of original picture in high resolution image.

Notes: If there are noise in original picture, you can see the noise at the edge.

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

PRESET PICTURE SETTINGS



Picture Mode - Preset

Picture Mode adjusts the TV for the best picture appearance. Select the preset value in the Picture Mode menu based on the program category.

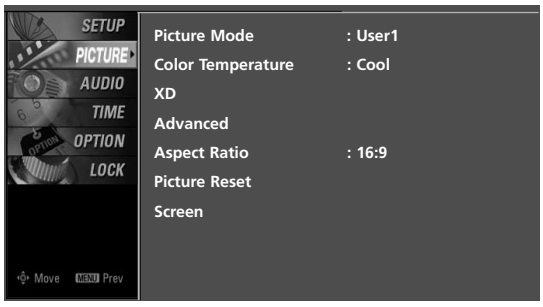
Dynamic, **Standard**, **Mild** Settings are preset for the optimum picture quality at the factory and are not adjustable.

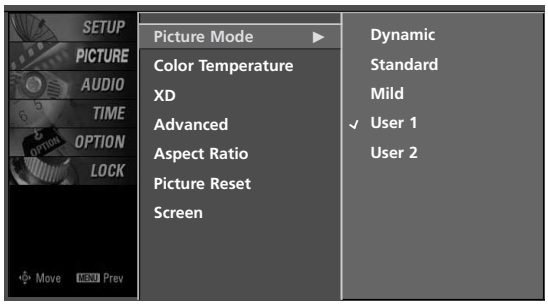
In the **User1** and **User2** modes only, user can directly adjust the contrast, brightness, color, sharpness, tint, backlight.

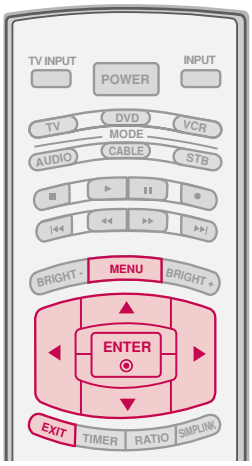
1. Press the **PICTURE** button repeatedly to select the picture appearance setup option as below :
   Dynamic, **Standard**, **Mild**, **User1** (your own settings), and **User2** (your own settings).

2. Press the **EXIT** button to save and return to TV viewing.

■ You can also use the PICTURE menu to adjust **Picture Mode**.







Color Tone - Preset

Choose one of three automatic color adjustments. Set to warm to enhance hotter colors such as red, or set to cool to see less intense colors with more blue.

When selecting Picture Mode options (Dynamic, Standard and Mild), **Color Temperature** is automatically change.

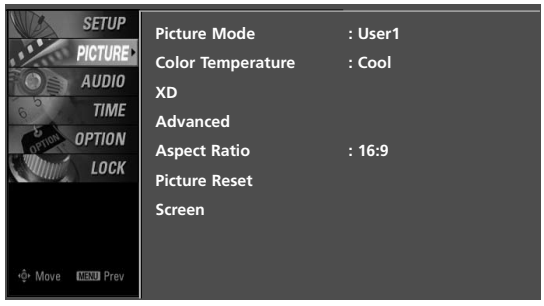
When selecting Picture Mode options (User 1 and User 2), you can choose the **Color Temperature**.

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

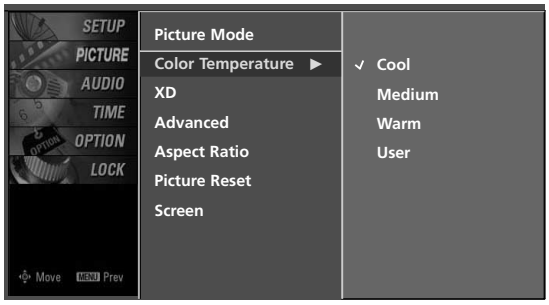
2. Press the ▶ button and then use ▲ or ▼ button to select **Color Temperature**.

3. Press the ▶ button and then use ▲ or ▼ button to select either **Cool**, **Medium**, **Warm** or **User**.

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



1

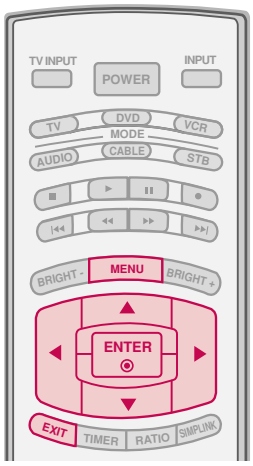


2 3

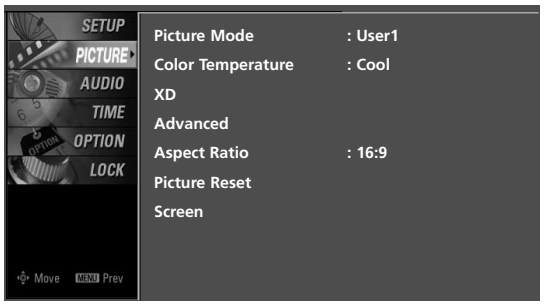
MANUAL PICTURE ADJUSTMENT

Picture Mode - User Mode

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



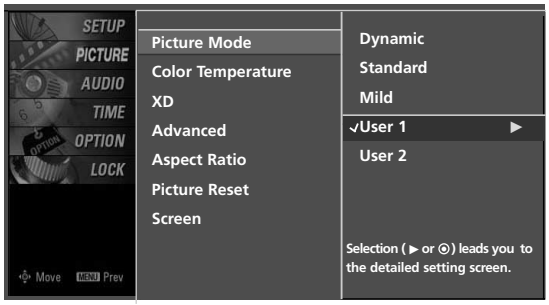
1. Press the **MENU** button and then use ▲ or ▼ button to select the **PICTURE** menu.



1

2. Press the ▶ button and then use ▲ or ▼ button to select **Picture Mode**.

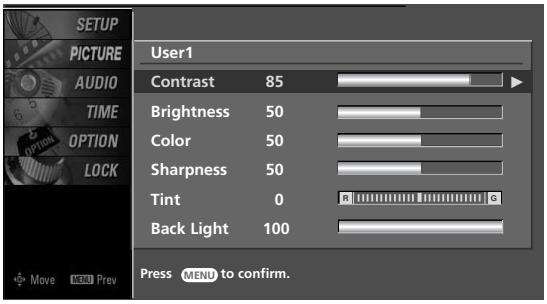
3. Press the ▶ button and then use ▲ or ▼ button to select **User 1** or **User2**.



2 3

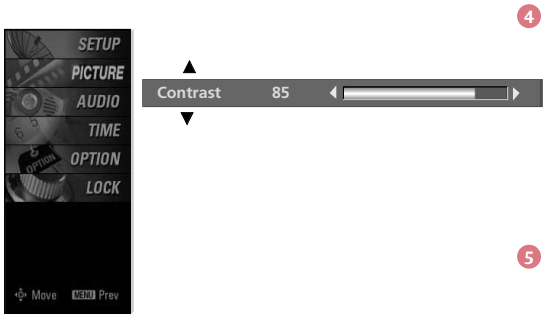
4. Press the ▶ button and then use ▲ or ▼ button to select the desired picture option (**Contrast**, **Brightness**, **Color**, **Sharpness**, **Tint**, or **Back Light** (LCD TV only)).

   ■ **Back Light** (LCD TV only)
   To control the brightness of the screen, adjust the brightness of LCD panel.



4

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

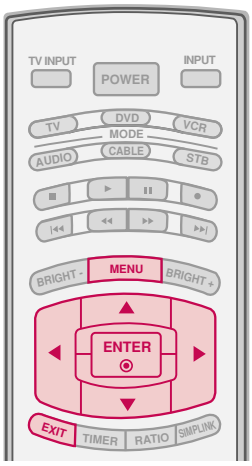


5

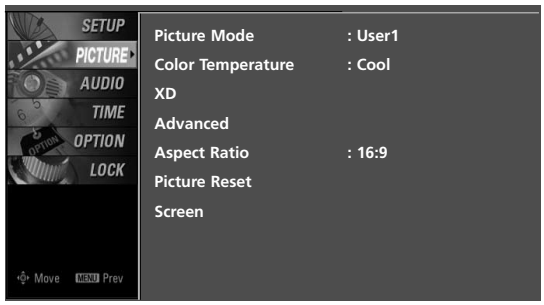
6. Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.

Color Tone - User Mode

You can also adjust the detailed settings (Red, Green, Blue) by selecting the **Color Temperature-User** menu.
When selecting Picture Mode options (User 1 and User 2), you can choose the **Color Temperature**.



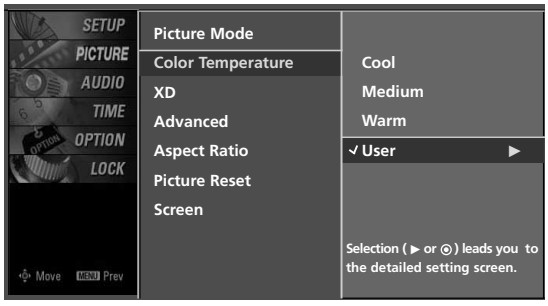
1. Press the **MENU** button and then use ▲ or ▼ button to select the **PICTURE** menu.



1

2. Press the ▶ button and then use ▲ or ▼ button to select **Color Temperature**.

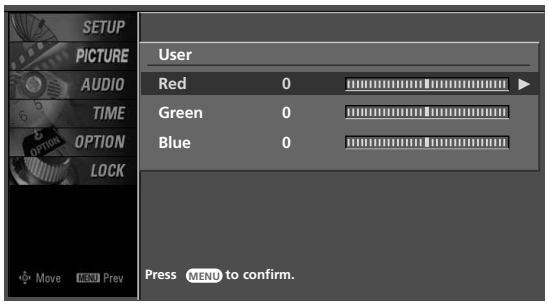
3. Press the ▶ button and then use ▲ or ▼ button to select **User**.



2 3

4. Press the ▶ button and then use ▶ or ▶ button to make appropriate adjustments.

   - The adjustment range of **Red**, **Green**, or **Blue** is -20~ +20.

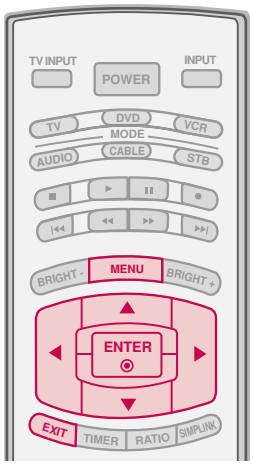


4

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

5

XD - PICTURE IMPROVEMENT TECHNOLOGY



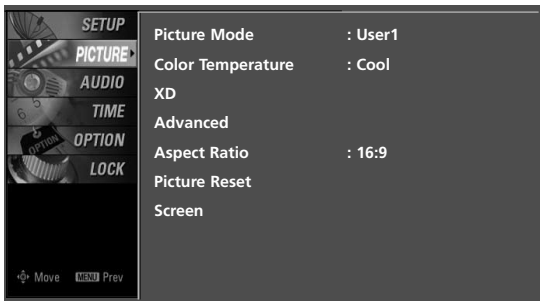
XD is LG Electronic's unique picture improving technology to display a real HD source through an advanced digital signal processing algorithm.

When selecting Picture Mode options (Dynamic, Standard, and Mild), XD is automatically changed to Auto.

When selecting Picture Mode options (User 1 and User 2), you can choose the Auto / Manual.

When selecting the Manual, you can adjust the XD Contrast, XD color and XD Noise.

It's not available to use this function in RGB-PC input source.

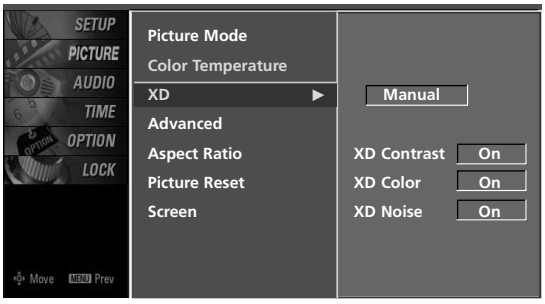


1

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

2 Press the ▶ button and then use ▲ or ▼ button to select **XD**.

3 Press the ▶ button and then use ◀ or ▶ button to select **Auto** or **Manual**.



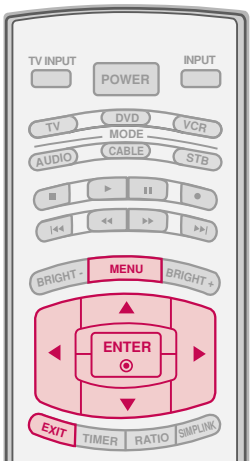
2 3

Selecting the Manual

1. Press the ▼ button and then use ▲ or ▼ button to select **XD Contrast**, **XD Color** or **XD Noise**.
   - **XD Contrast:** Optimizing the contrast automatically according to the brightness of the reflection.
   - **XD Color:** Adjusting the colors of the reflection automatically to reproduce as closely as possible to the natural colors.
   - **XD Noise:** Removing the noise up to the point where it does not damage the original picture.
2. Use the ◀ 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.

ADVANCED - CINEMA 3:2 PULL DOWN MODE



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 TV (Analog TV/CATV, Digital DTV/CADTV), AV1, AV2, Component 480i/1080i, and HDMI 1080i mode.

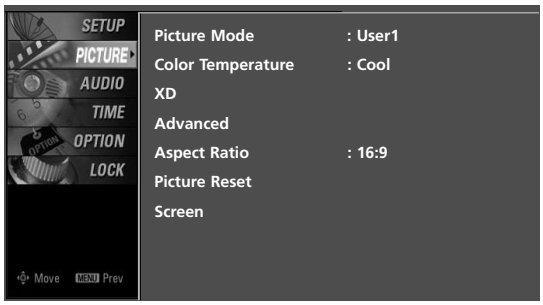
1. Press the **MENU** button and then use ▲ or ▼ button to select the **PICTURE** menu.

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

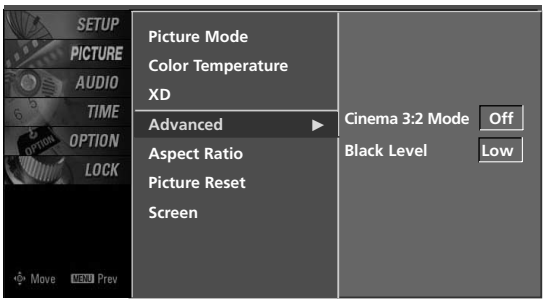
3. Press the ▶ button and then use ▲ or ▼ button to select **Cinema 3:2 Mode**.

4. 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.

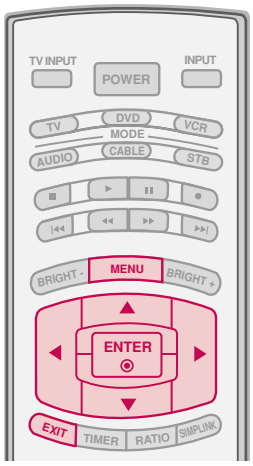


1



2 3 4

ADVANCED - BLACK (DARKNESS) 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, or HDMI2 mode.

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

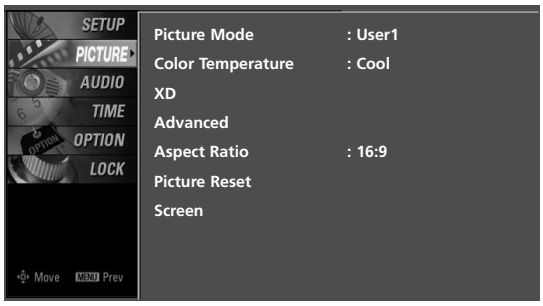
2. Press the ▶ button and then use ▲ or ▼ button to select **Advanced**.

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

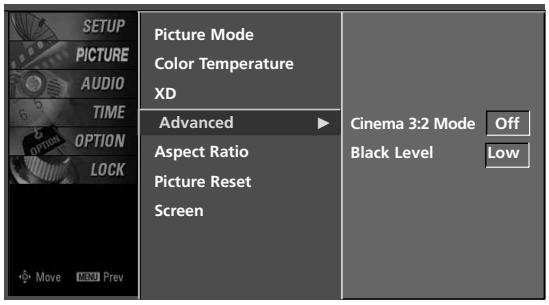
4. Use ◀ or ▶ button to select **Low** or **High**.

   - **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.



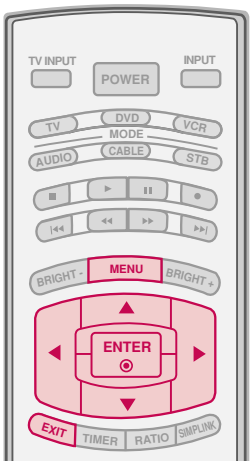
1



2 3 4

PICTURE RESET

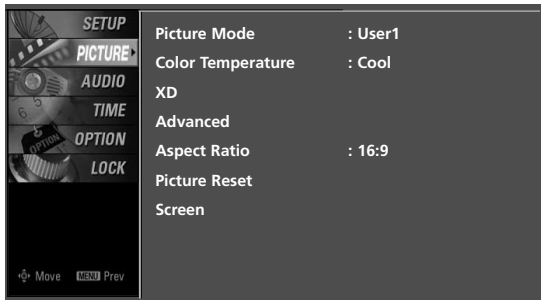
Use to quickly reset all the Picture menu options to their original factory preset values.



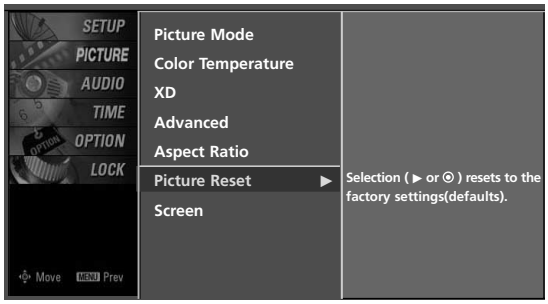
1. Press the **MENU** button and then use ▲ or ▼ button to select the **PICTURE** menu.

2. Press the ▶ button and then use ▲ or ▼ button to select **Picture Reset**.

3. Press the ▶ button to reset the Picture menu options to original values.



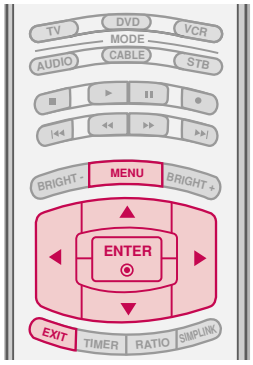
1



2 3

IMAGE STICKING MINIMIZATION (ISM) METHOD - *Plasma TV only*

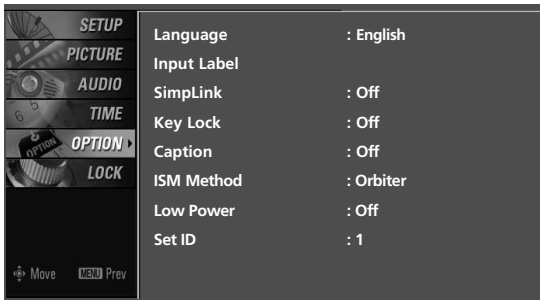
A frozen still picture from a PC/video game displayed on the screen for prolonged periods will result in a ghost image. Use our unique method to minimize any fixed image on the screen.



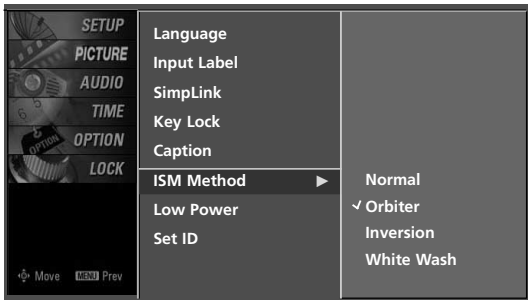
1. Press the **MENU** button and then use ▲ or ▼ button to select the **OPTION** menu.

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**, **Orbiter**, **Inversion**, or **White Wash**.



1



2 3

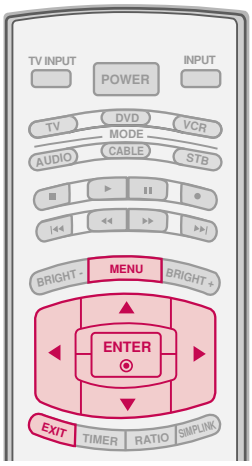
- **Normal**
  If image sticking is never a problem, ISM is not necessary - set to Normal.
- **Orbiter**
  Orbiter may help prevent ghost images. However, it is best not to allow any fixed image to remain on the screen. To avoid a ghost image on the screen, the image will move once per 2 minutes: Left ➞ Right ➞ Upside ➞ Downside ➞ Right ➞ Left ➞ Downside ➞ Upside.
- **Inversion**
  Inversion will automatically invert the plasma display panel color every 30 minutes.
- **White Wash**
  White Wash removes ghost images from the screen.
  Use sparingly. Watch the TV normally for a while before using this feature to see if the ghost image disappears on its own.

NOTE

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

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

LOW - POWER PICTURE MODE - *Plasma TV only*



Low power reduces the plasma display power consumption.

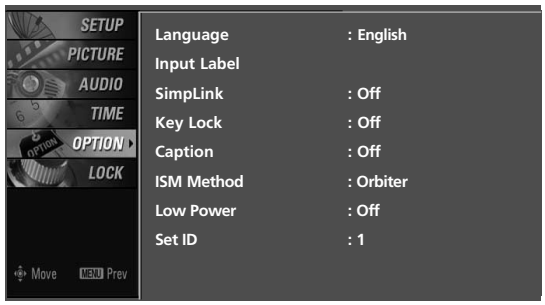
1. Press the **MENU** button and then use ▲ or ▼ button to select the **OPTION** menu.

2. Press the ▶ button and then use ▲ or ▼ button to select **Low Power**.

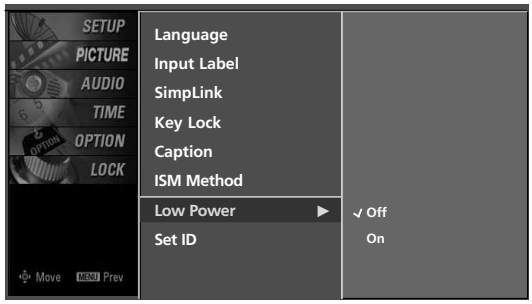
3. Press the ▶ button and then use ▲ or ▼ button to select **On** or **Off**.

   ■ 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.



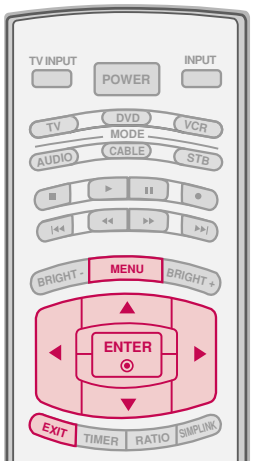
1



2 3

SOUND & LANGUAGE CONTROL

AUTO VOLUME LEVELLER (AUTO VOLUME)



Scans for changes in sound levels during commercials, then adjusts the sound to match the specified audio level.

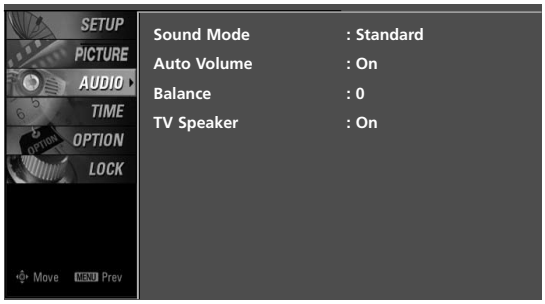
Auto Volume makes sure that the volume level remains consistent whether you are watching a commercial or a regular TV program.

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

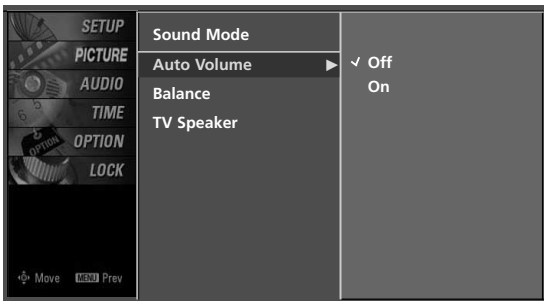
2. Press the ▶ button and then use ▲ or ▼ button to select **Auto Volume**.

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.

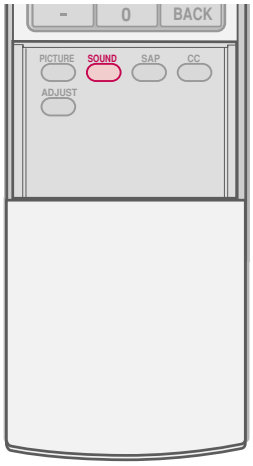


1



2 3

PRESET SOUND SETTINGS (SOUND MODE)



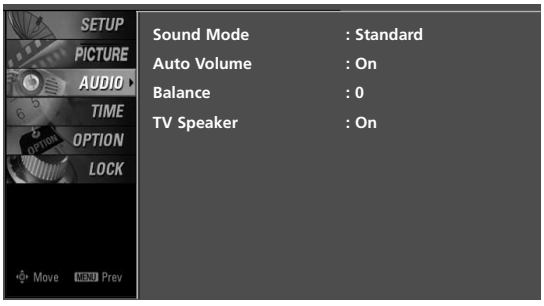
Sound Mode lets you enjoy the best sound without any special adjustment because the TV sets the appropriate sound options based on the program content.

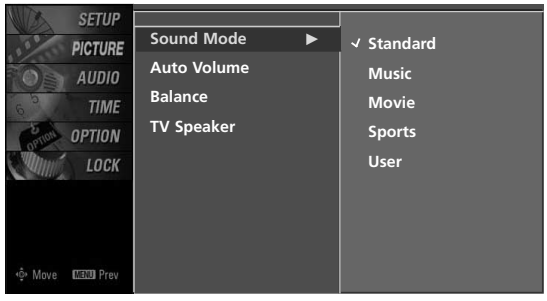
Standard, **Music**, **Movie**, and **Sports** are preset for good sound quality at the factory and are not adjustable.

1. Press the **SOUND** button repeatedly to select the appropriate sound setup as below:
   Standard, **Music**, **Movie**, **Sports**, and **User** (your own settings).

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

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

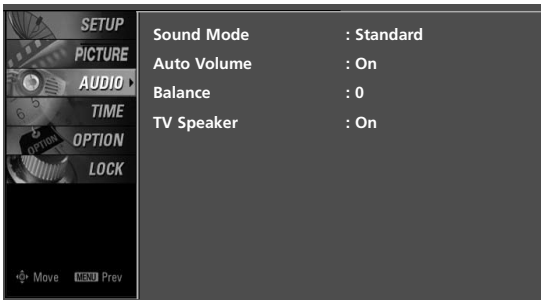




SOUND SETTING ADJUSTMENT - USER MODE

Adjust the sound to suit your taste and room situations.

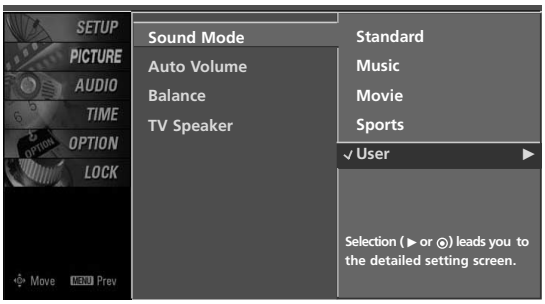
1. Press the **MENU** button and then use ▲ or ▼ button to select the **AUDIO** menu.



1

2. Press the ▶ button and then use ▲ or ▼ button to select **Sound Mode**.

3. Press the ▶ button and then use ▲ or ▼ button to select **User**.



2 3

4. Press the ▶ button and then use ▲ or ▼ button to select the desired sound option (**Treble**, **Bass**, or **Front Surround**).

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

4

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**.

5

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

SRS TruSurround XT

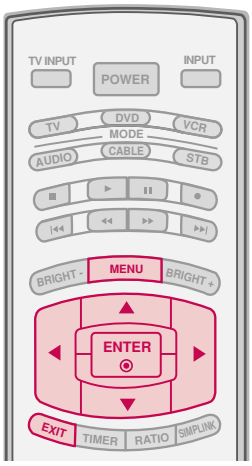
Takes advantage of any multi-channel format without needing to add extra speakers or equipment. Dialog clarity, bass enrichment, and the addition of stereo audio enhancement produces an immersive sound experience from standard stereo material.

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.

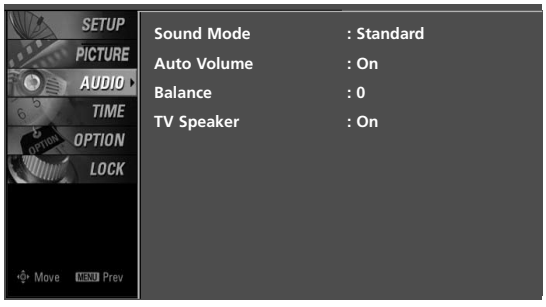


1. Press the **MENU** button and then use ▲ or ▼ button to select the **AUDIO** menu.

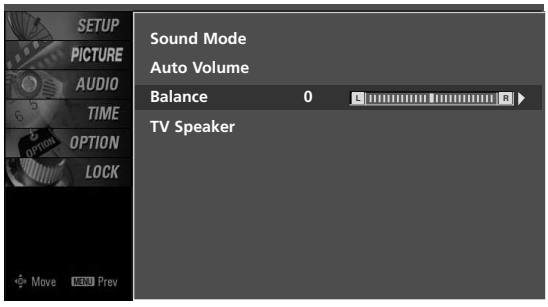
2. Press the ▶ button and then use ▲ or ▼ button to select **Balance**.

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

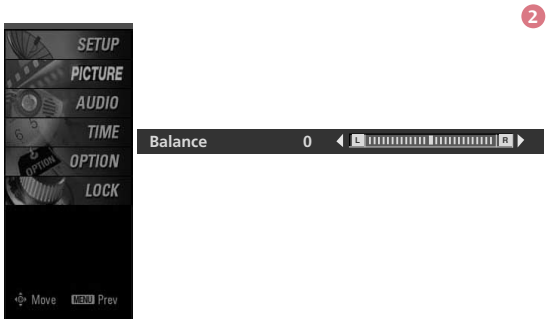
4. Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.



1



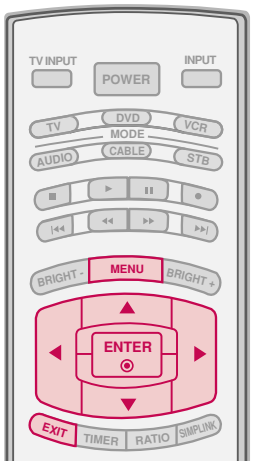
2



3

TV SPEAKERS ON/OFF SETUP

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

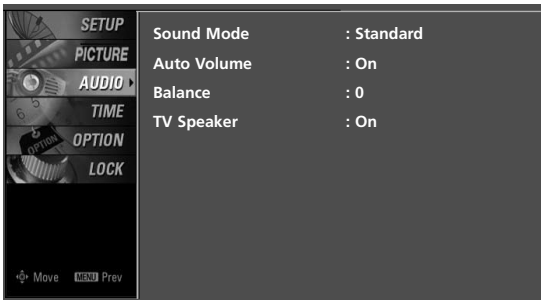


1. Press the **MENU** button and then use ▲ or ▼ button to select the **AUDIO** menu.

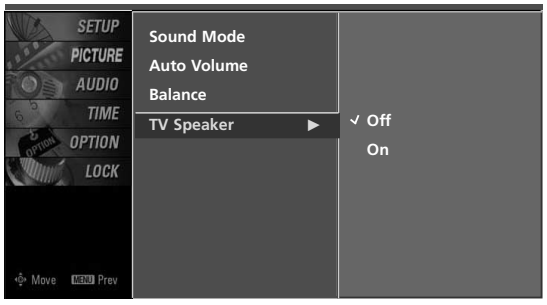
2. Press the ▶ button and then use ▲ or ▼ button to select **TV Speaker**.

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.

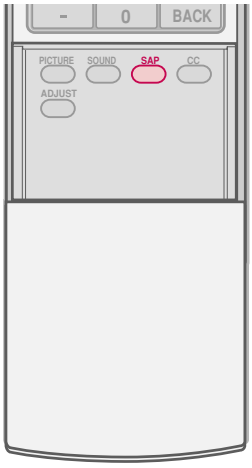


1



2 3

STEREO/SAP BROADCASTS 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.

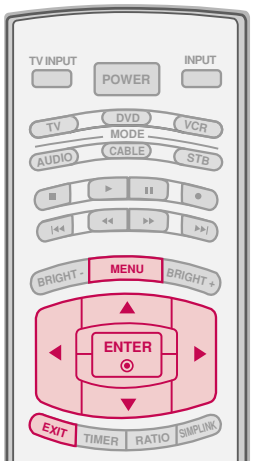
1. Use the **SAP** button to select your desired MTS mode in analog signal. Each time you press the **SAP** button, **Mono**, **Stereo**, or **SAP** appear in turn.

   ■ 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.

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.



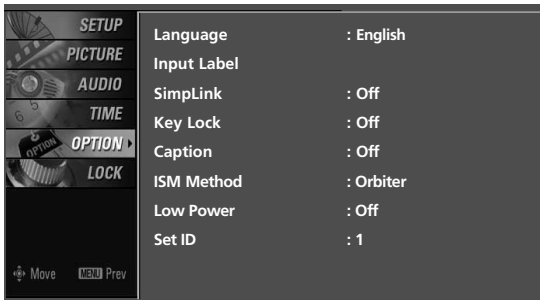
1. Press the **MENU** button and then use ▲ or ▼ button to select the **OPTION** menu.

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

3. Press the ▶ button and then use ▲ or ▼ button to select **Audio**.

4. Use ◀ or ▶ button to select: **English**, **Spanish**, or **French**.

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



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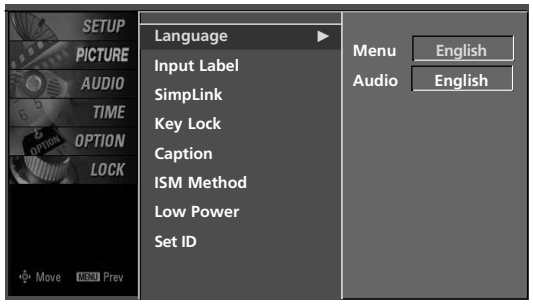

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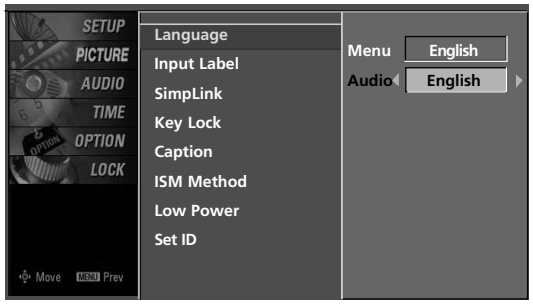
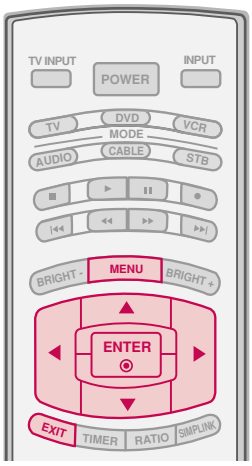


4

ON-SCREEN MENUS LANGUAGE SELECTION



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

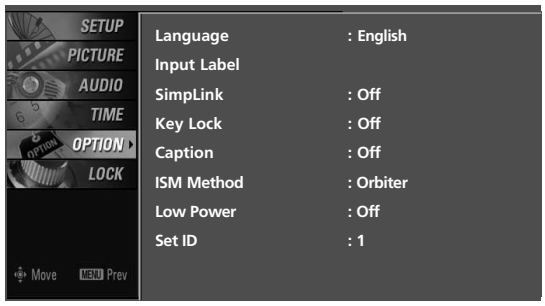
1. Press the **MENU** button and then use ▲ or ▼ button to select the **OPTION** menu.

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

3. Press the ▶ button and then use ▲ or ▼ button to select **Menu.**

4. Use ◀ or ▶ button to select your desired language. From this point on, the on-screen menus will be shown in the selected language.

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



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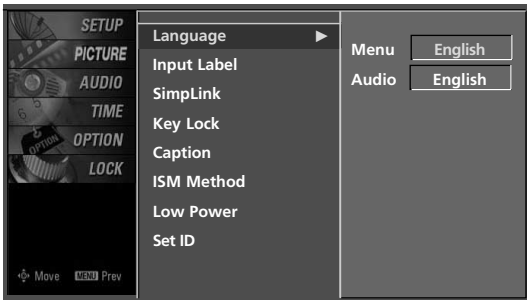

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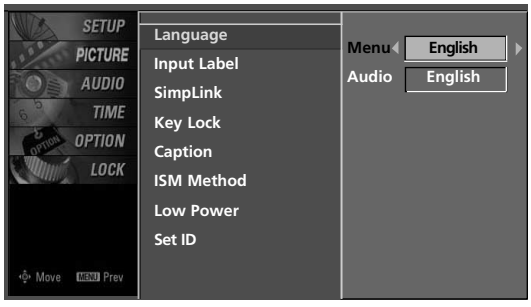
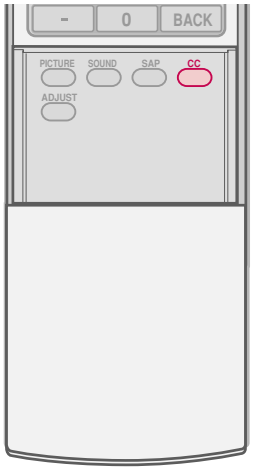


4

CAPTION MODE



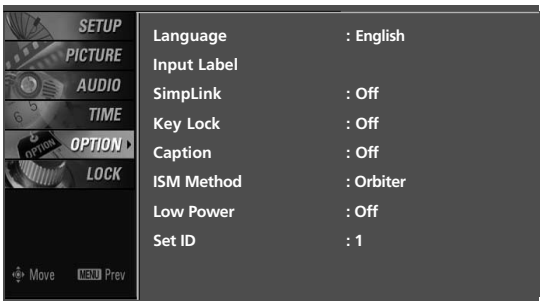
Caption must be provided to help people with hearing loss watch TV.

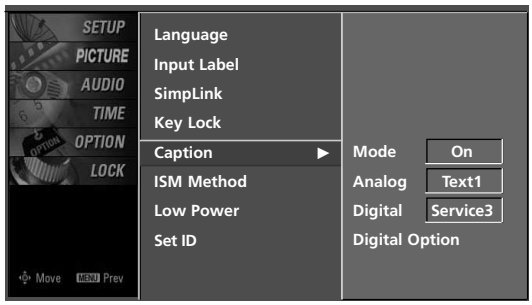
1. Use the **CC** button to select Caption **On** or **Off**.

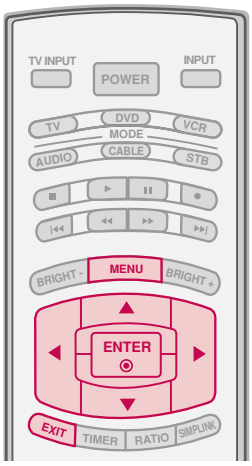
   ■ When selecting **Off**, Sub-menus for Analog, DTV, and Digital Option become disabled.

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

■ You can also adjust **Caption** in the OPTION menu.







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.

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.

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

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.**

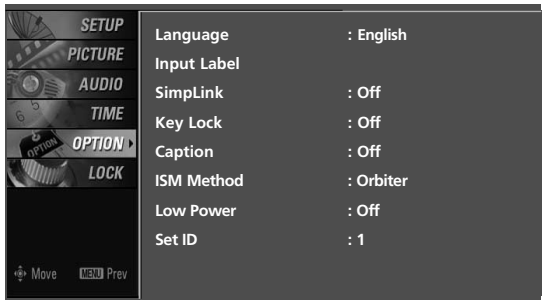
3. Press the ▶ button and then use ▲ or ▼ button to select **Analog.**

4. Use ◀ or ▶ button to select **CC1**, **CC2**, **CC3**, **CC4**, **Text1**, **Text2**, **Text3** or **Text4**

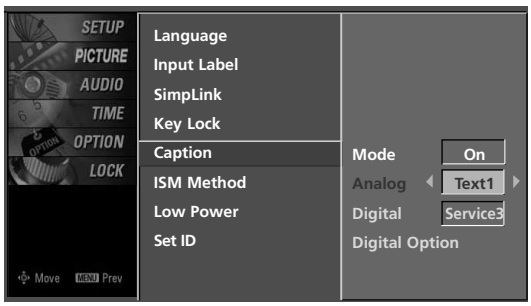
   ■ **CAPTION**
   The term for the words that scroll across the bottom of the TV screen; usually the audio portion of the program provided for the hearing impaired.

   ■ **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.

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



1



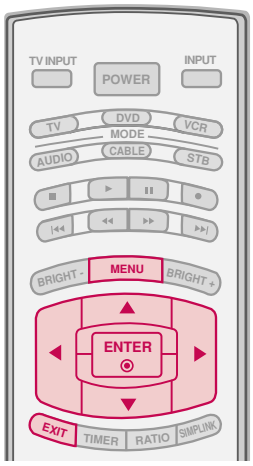
2 3 4

Digital Broadcasting System Captions

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

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

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



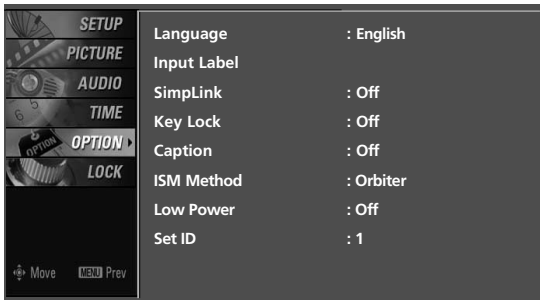
1. Press the **MENU** button and then use ▲ or ▼ button to select the **OPTION** menu.

2. Press the ▶ button and then use ▲ or ▼ button to select **Caption**.

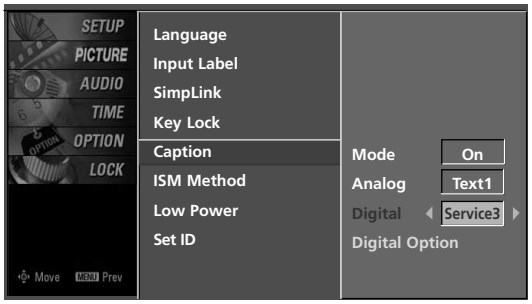
3. Press the ▶ button and then use ▲ or ▼ button to select **Digital**.

4. Use ◀ or ▶ button to select **Service1** ~ **Service6**.

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



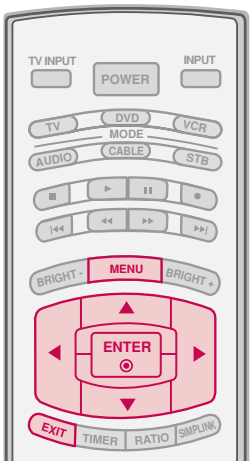
1



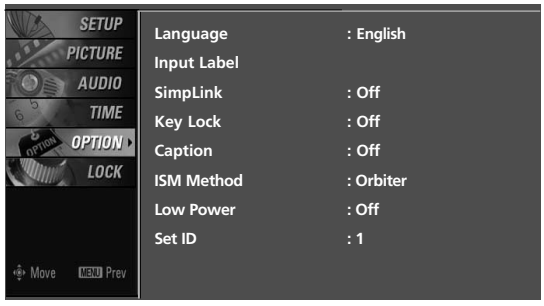
2 3 4

Caption Option

Customize the DTV/CADTV captions that appear on your screen.
This function in only available when Caption Mode is set On.



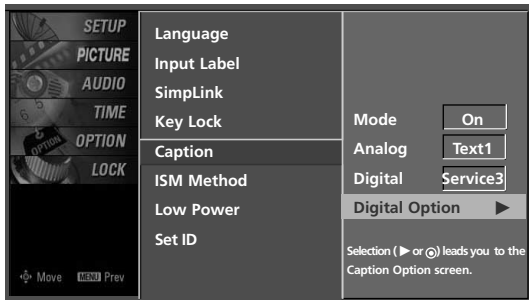
1. Press the **MENU** button and then use ▲ or ▼ button to select the **OPTION** menu.



1

2. Press the ▶ button and then use ▲ or ▼ button to select **Caption**.

3. Press the ▶ button and then use ▲ or ▼ button to select **Digital Option**.

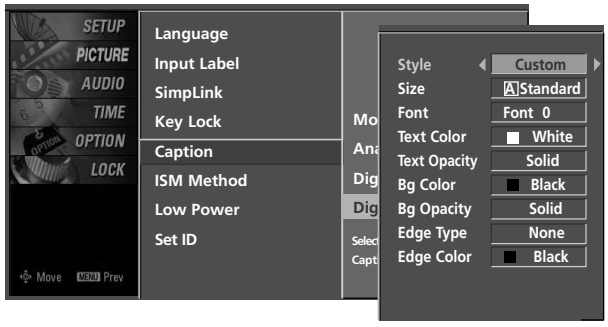


2 3

4. Press the ▶ button and then use ◀ or ▶ button to select **Custom**.

5. 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.



4 5

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

TIME SETTING

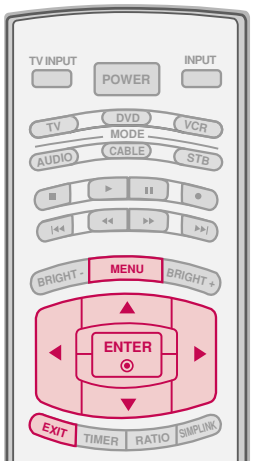
CLOCK SETTING

Auto Clock Setup

The time is set automatically from a digital channel signal.

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

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

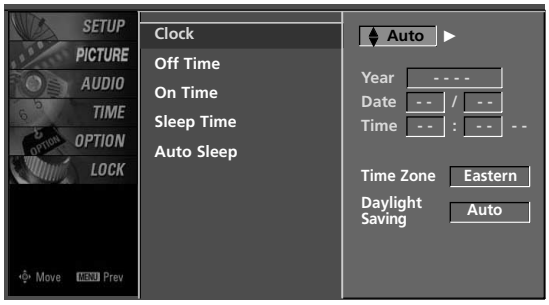


1. Press the **MENU** button and then use ▲ or ▼ button to select the **TIME** menu.

1

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

3. Press the ▶ button and then use ▲ or ▼ button to select **Auto**.



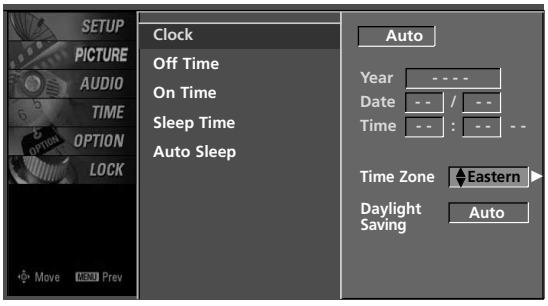
2 3

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.

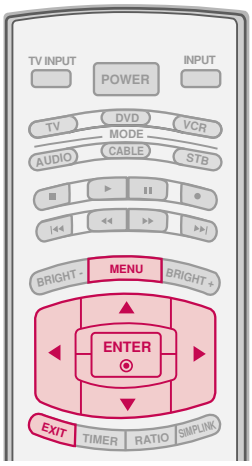


4 5

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

Manual Clock Setup

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



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

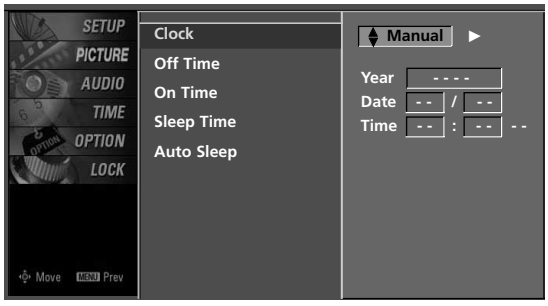
2. Press the ▶ button and then use ▲ or ▼ button to select **Clock**.

3. Press the ▶ button and then use ▲ or ▼ button to select **Manual**.

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

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

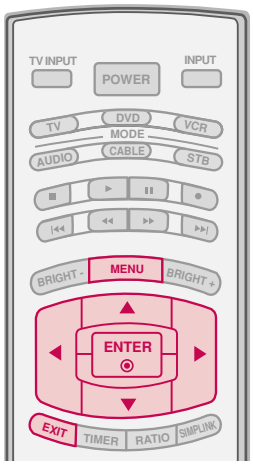
1



2 3

AUTO ON/OFF TIMER 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.

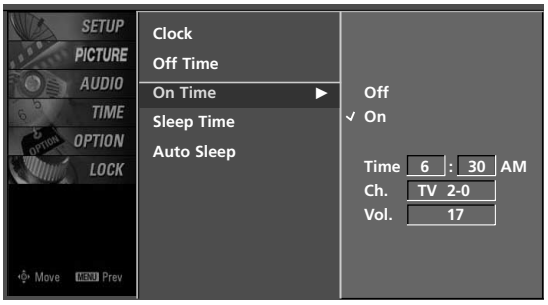


1. Press the **MENU** button and then use ▲ or ▼ button to select the **TIME** menu.

1

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

3. Press the ▶ button and then use ▲ or ▼ button to select **On**.
   - To cancel the **On/Off time** function, select **Off**.



2 3 4 5 6

4. Press the ▶ button and then use ▲ or ▼ button to the hour.

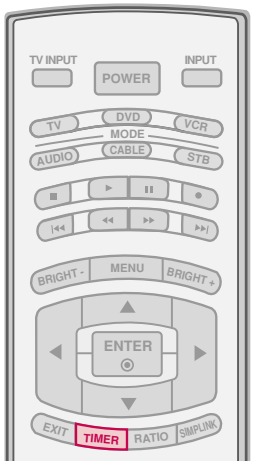
5. Press the ▶ button and then use ▲ or ▼ button to the minutes.

6. **Only On Time**
   Press the ▶ button and then use ▲ or ▼ button to select the channel at turn-on.

   Press the ▶ button and then use ▲ or ▼ button to 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.

SLEEP TIME SETTING



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

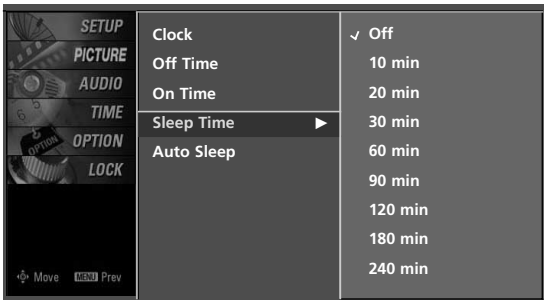
1. Press the **TIMER** button repeatedly to select the number of minutes. First the **Off** option appears on the screen, followed by the following sleep time options: 10, 20, 30, 60, 90, 120, 180, and 240 minutes.

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.

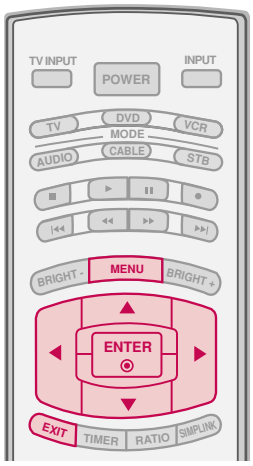
4. To cancel the Sleep Time, press the **TIMER** button repeatedly to select **Off**.

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



AUTO SHUT-OFF SETTING

TV will be automatically turned off, in case of no signal for 10 minutes.



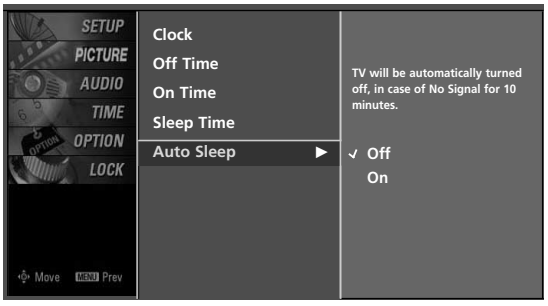
1. Press the **MENU** button and then use ▲ or ▼ button to select the **TIME** menu.

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

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

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)

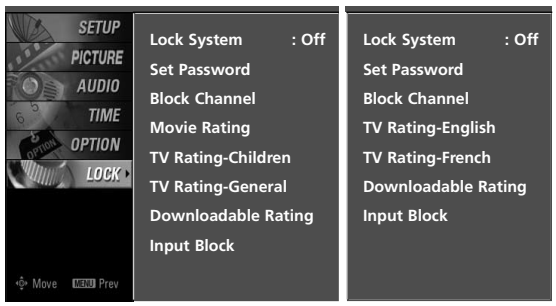
SET PASSWORD & LOCK SYSTEM

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. 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”.



Set Password

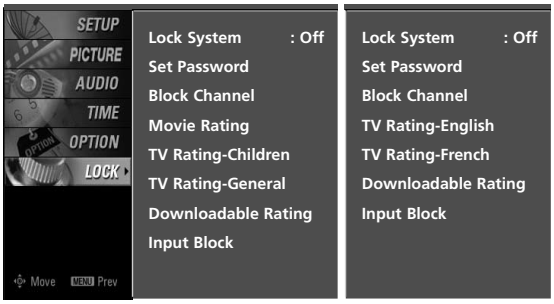
Change the password by inputting a new password twice.

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

For USA | For Canada



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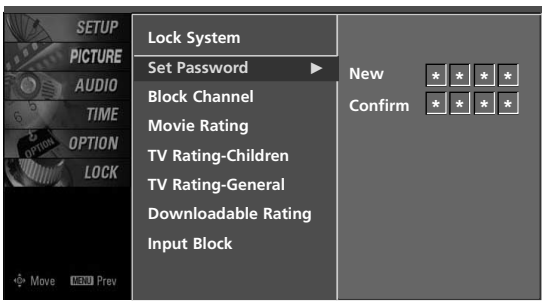


2

Lock System

Enables or disables the blocking scheme you set up previously.

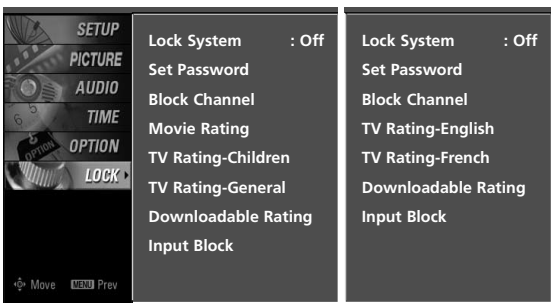
1. After inputting the password, use the ▲ or ▼ button to choose **Lock System**.

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

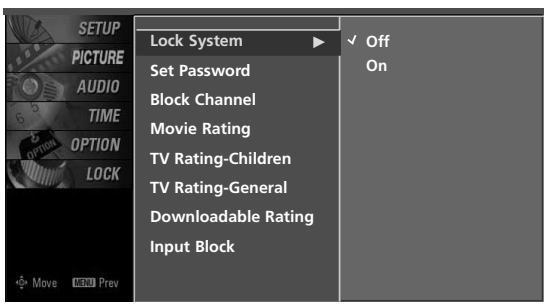
   ■ When you select **On**, the Lock System is enable.

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

For USA | For Canada



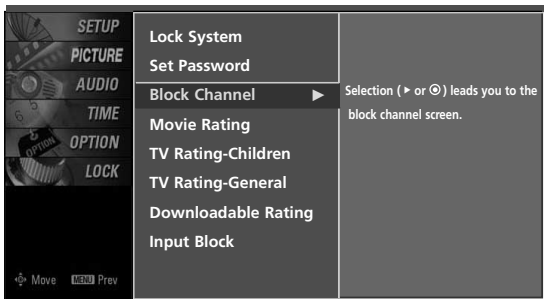
1



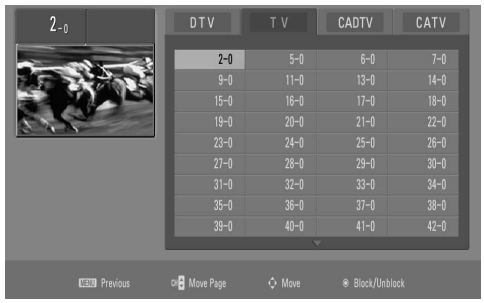
2

CHANNEL BLOCKING

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



1



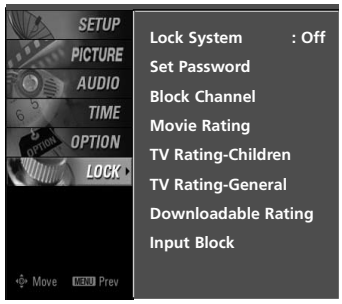
2 3

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.

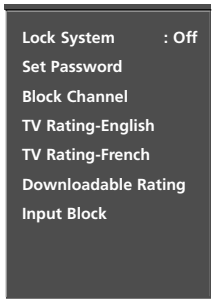
EXTERNAL INPUT BLOCKING

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

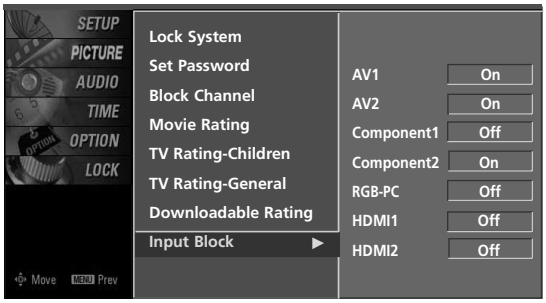
For USA



For Canada



1



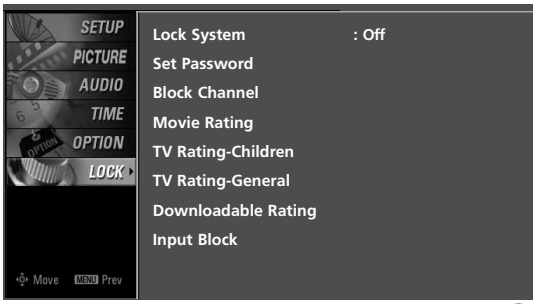
2 3

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. 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.

MOVIE & TV RATING

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.

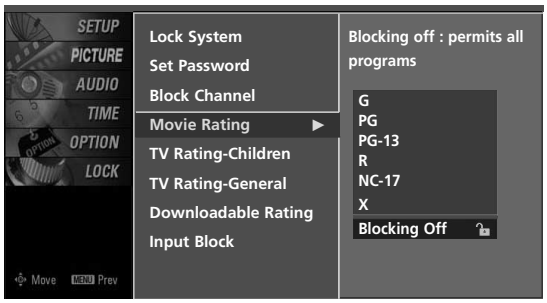


1

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.



2

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

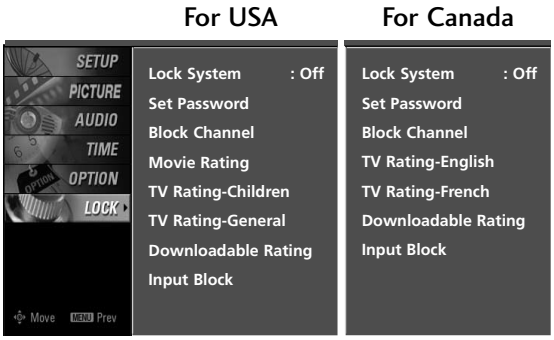
Downloadable Rating

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

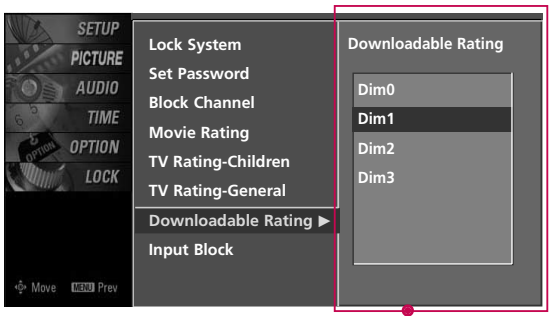
2. Press the ▶ button and then use the ▲ or ▼ button to select **Dim0**, **Dim1**, **Dim2**, or **Dim3**.

3. Press the ▶ button and then use the ▲ or ▼ button to select **D1L1**, **D1L2**, or **D1L3**.

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



1



2

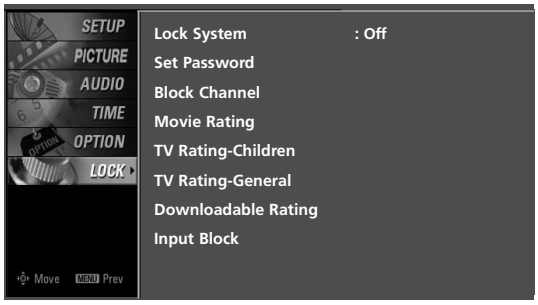
▶ Based on rating table, your TV's OSD (On Screen Display) may differ slightly from what is shown in this manual.

NOTE

- ▶ This function may become available in the future and will be available only for digital channel signal.
- ▶ This function operates only when TV has received Region5 Rating data.

TV Rating Children - *for USA only*

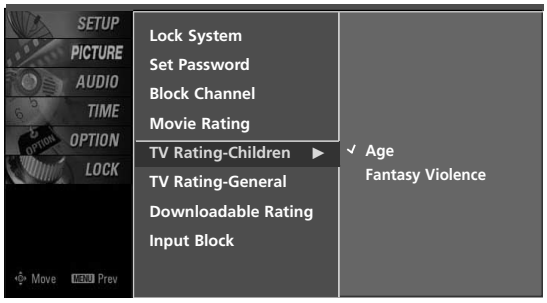
Prevents children from watching certain children's TV programs, according to the ratings limit set. The children rating does not apply to other TV programs. Unless you block certain TV programs intended for mature audiences in the TV Rating - sub menu, your children can view those programs.



1

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)

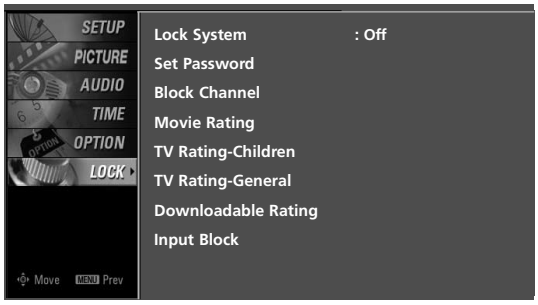


2

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*

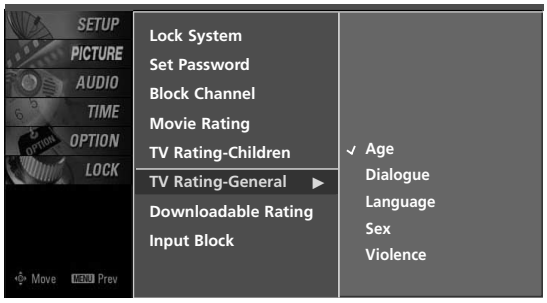
Based on the ratings, blocks certain TV programs that you and your family do not want to view.



1

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)



2

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*

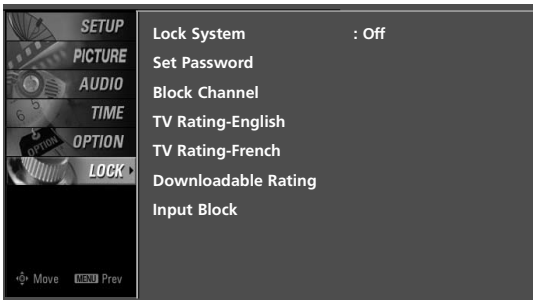
Selecting canadian english language rating system.

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

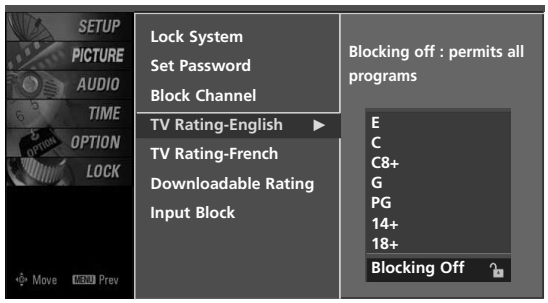
2. Press the ▶ button and then use the ▲ or ▼ button to select **E**, **C**, **C8+**, **G**, **PG**, **14+**, **18+**, or **Blocking Off**.

   - 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.



1



2

TV Rating French - *for CANADA only*

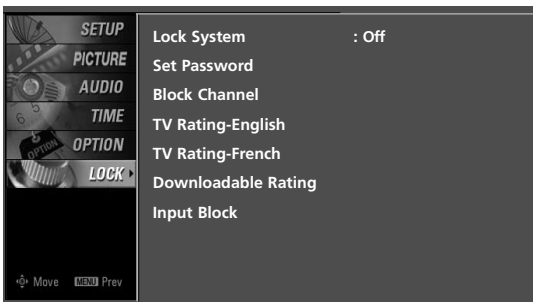
Selecting canadian french language rating system.

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

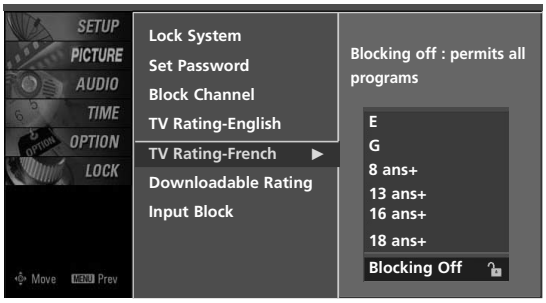
2. Press the ▶ button and then use the ▲ or ▼ button to select **E**, **G**, **8ans+**, **13ans+**, **16ans+**, **18ans+**, or **Blocking off**.

   - 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.



1



2

TROUBLESHOOTING

The operation does not work normally.	
The remote control doesn't work	■ Check to see if there is any object between the product and the remote control causing obstruction. Ensure you are pointing the remote control directly at the TV. ■ Ensure that the batteries are installed with correct polarity (+ to +, - to -). ■ Ensure that the correct remote operating mode is set: TV, VCR etc. ■ Install new batteries.
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).

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.

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

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

MODELS		**42PC5D** (42PC5D-UL) **42PC5DC** (42PC5DC-UL)	**50PC5D** (50PC5D-UL) **50PC5DC** (50PC5DC-UL)
Dimensions (Width x Height x Depth)	Including stand	41.3 x 30.2 x 12.2 inches 1048.0 x 766.0 x 310.0 mm	48.9 x 34.9 x 14.6 inches 1242.0 x 887.6 x 370.0 mm
	Excluding stand	41.3 x 28.1 x 3.3 inches 1048.0 x 713.0 x 83.5 mm	48.9 x 32.6 x 3.5 inches 1242.0 x 827.2 x 88.0 mm
Weight	including stand excluding stand	61.7 pounds / 28.0 kg 54.2 pounds / 24.6 kg	86.6 pounds / 39.3 kg 76.3 pounds / 34.6 kg
Power requirement Television System Program Coverage External Antenna Impedance		AC100-240V ~ 50/60Hz NTSC-M, ATSC, 64 & 256 QAM VHF 2-13, UHF 14-69, CATV 1-135, DTV 2-69, CADTV 1-135 75 ohm	
Environment condition	Operating Temperature Operating Humidity	32 ~ 104˚F (0 ~ 40˚C) Less than 80%	
	Storage Temperature Storage Humidity	-4 ~ 140˚F (-20 ~ 60˚C) Less than 85%	

APPENDIX

MODELS		**32LC7D** (32LC7D-UK) **32LC7DC** (32LC7DC-UK)	**37LC7D** (37LC7D-UK)	**42LC7D** (42LC7D-UK)
Dimensions (Width x Height x Depth)	Including stand	31.8 x 23.9x 9.8 inches 806.6 x 606.5 x 249.0mm	36.5 x 27.3 x 11.0 inches 927.0 x 692.8 x 280.5 mm	40.7 x 29.5 x 11.3 inches 1033.4 x 750.0 x 287.6 mm
	Excluding stand	31.8 x 21.7 x 3.1 inches 806.6 x 552.3 x 79.0 mm	36.5 x24.8 x 3.5 inches 927.0 x 630.0 x 88.0 mm	40.7 x 27.0x 3.5 inches 1033.4 x 686.8 x 88.5 mm
Weight	including stand excluding stand	30.2 pounds / 13.7 kg 24.7 pounds / 11.2 kg	44.1 pounds / 20.0 kg 35.3 pounds / 16.0 kg	54.9 pounds / 24.9 kg 45.0 pounds / 20.4 kg
Power requirement Television System Program Coverage External Antenna Impedance		AC100-240V ~ 50/60Hz NTSC-M, ATSC, 64 & 256 QAM VHF 2-13, UHF 14-69, CATV 1-135, DTV 2-69, CADTV 1-135 75 ohm		
Environment condition	Operating Temperature Operating Humidity	32 ~ 104˚F (0 ~ 40˚C) Less than 80%		
	Storage Temperature Storage Humidity	-4 ~ 140˚F (-20 ~ 60˚C) Less than 85%		

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.

Remote Control Code

VCR

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

Cable Box

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

HDSTB

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

Audio

Brand	Codes
AIWA	014 028 070 096 125 129 139 229 230
AKAI	163
ANAM	003 014 017 023 059 106 189 216 217 235 236
BURMECTER	252
CARVER	086
CLARION	199
DAEWOO	027 053 060 084 102 148 198 221
DENON	015 075 130 143
FANTASIA	071
FINEARTS	022
FISHER	089 099
LG(GOLDSTAR)	001 021 024 029 087 107 108 110 190 191 192 210 211 212 239
HAITAI	034 035 188 222
HARMAN/KARDON	068
JVC	004 013 141
KEC	185 186 187
KOHEL	030
NAD	045 046
KENWOOD	038 050 067 089 170 171 197 206 215 222
INKEL	037 058 062 069 078 079 095 121 122 149 150 151 152 153 154 155

Brand	Codes
	157 158 159 160 189 207 222 224 225 226 227 243 247
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
LXI	103
MAGNAVOX	111
MARANTZ	002 018 020 025 034 041 081 090 097 112
MCINTOSH	049
MCS	104
MEMOREX	107
NAD	046
ONKYO	013 040 041 047 048 056 057 132 133 140
OPTIMUS	158
PANASONIC	007 033 064 113 142 220 241 251
PENNEY	104
PHILIPS	026 112 143
PIONEER	039 042 043 063 065 091 093 094 115 123 127 250
QUASAR	113
RCA	080

Brand	Codes
RCX	092
REALISTIC	103 106
SAMSUNG	124 145 146 182 193 194 195 203 204 244 245 246
SANSUI	011 135 138 144
SANYO	019 083 234
SCOTT	106 186
SHARP	031 032 051 052 072 082 117 119 156 184 199 200 206 209
SHERWOOD	005 006 158
SONY	044 045 109 114 118 126 248 249
TAEKWANG	012 020 073 074 076 077 105 161 162 163 164 165 166 167 168 169 205 231 233 242
TEAC	010 085 106 136 185 187 237
TECHNICS	101 113 128 134 147 218
TOSHIBA	137
THE	061
VICTOR	088 131
WARDS	089
YAMAHA	054 055 066 092 199

DVD

Brand	Codes
APEX DIGITAL	022
DENON	020 014
GE	005 006
HARMAN KARDON	027
JVC	012
LG	001 010 016 025
MAGNAVOX	013
MARANTZ	024

Brand	Codes
MITSUBISHI	002
NAD	023
ONKYO	008 017
PANASONIC	003 009
PHILIPS	013
PIONEER	004 026
PROCEED	021
PROSCAN	005 006

Brand	Codes
RCA	005 006
SAMSUNG	011 015
SONY	007
THOMPSON	005 006
TOSHIBA	019 008
YAMAHA	009 018
ZENITH	010 016 025

IR CODES

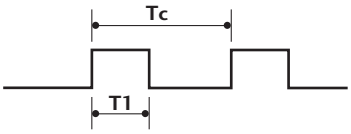
1. How to Connect

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

2. Remote Control IR Codes

■ Output waveform

Single pulse, modulated with 37.917KHz signal at 455KHz



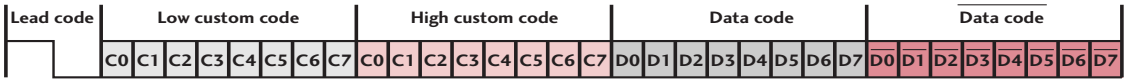
Carrier frequency

FCAR = 1/TC = fOSC/12

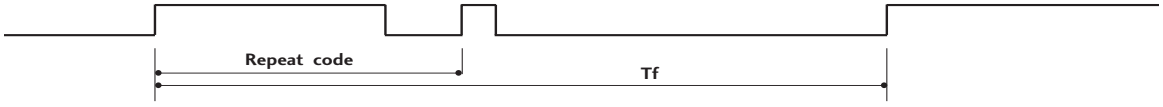
Duty ratio = T1/TC = 1/3

■ Configuration of frame

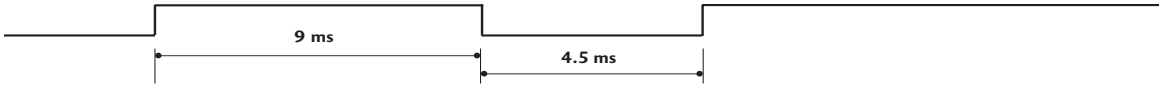
1st frame



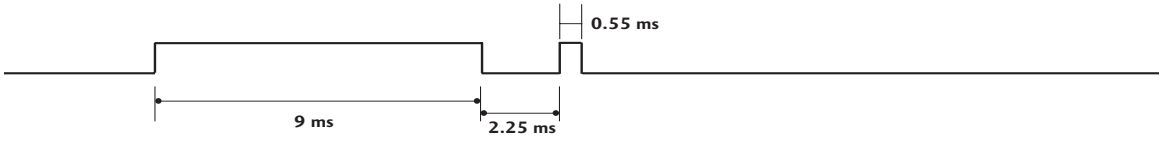
Repeat frame



■ Lead code

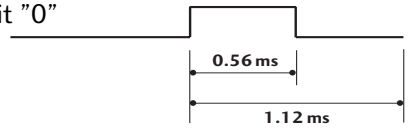


■ Repeat code

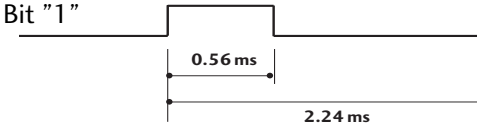


■ Bit description

Bit "0"

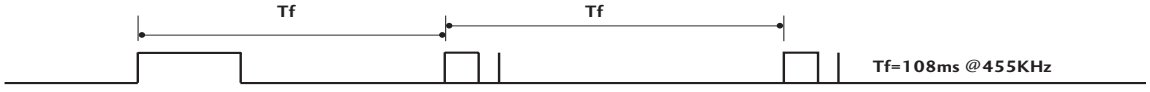


Bit "1"



■ Frame interval: Tf

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



Code (Hexa)	Function	Note
0F	TV INPUT	Remote control Button
0B	INPUT	Remote control Button
08	POWER	Remote control Button (Power On/Off)
79	RATIO	Remote control Button
0E	TIMER	Remote control Button
10-19	Number Key 0-9	Remote control Button
4C	- (Dash)	Remote control Button
1A	BACK	Remote control Button
09	MUTE	Remote control Button
02	VOL ▲	Remote control Button
03	VOL ▼	Remote control Button
00	CH ▲	Remote control Button
01	CH ▼	Remote control Button
1E	FAV	Remote control Button
7E	SIMPLINK	Remote control Button
39	CC	Remote control Button
40	▲	Remote control Button
41	▼	Remote control Button
07	◀	Remote control Button
06	▶	Remote control Button
44	ENTER	Remote control Button
43	MENU	Remote control Button
52	SOUND	Remote control Button
4D	PICTURE	Remote control Button
5B	EXIT	Remote control Button
0A	SAP	Remote control Button
CB	ADJUST	Remote control Button
E1	BRIGHT -	Remote control Button
E0	BRIGHT +	Remote control Button
D6	TV	Discrete IR Code (TV Input Selection)
C4	POWER ON	Discrete IR Code (Only Power On)
C5	POWER OFF	Discrete IR Code (Only Power Off)
5A	AV1	Discrete IR Code (AV1 Input Selection)
D0	AV2	Discrete IR Code (AV2 Input Selection)

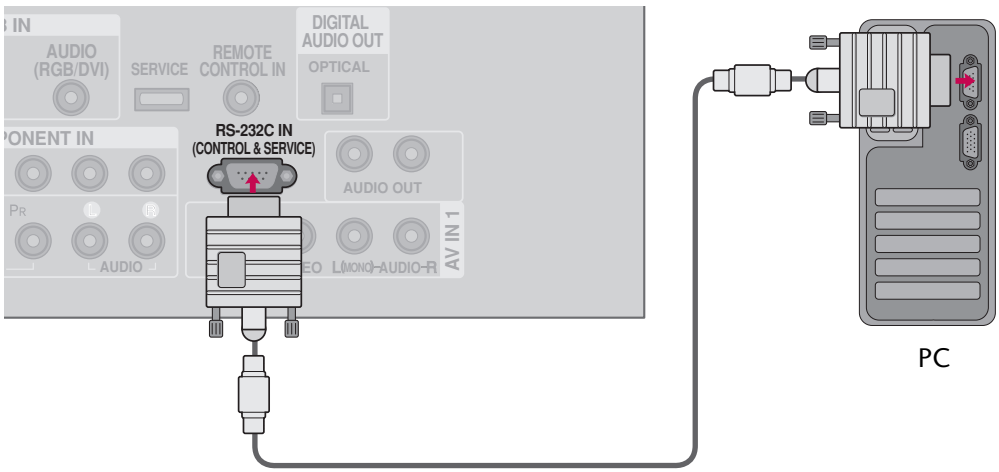
Code (Hexa)	Function	Note
BF	COMPONENT1	Discrete IR Code (Component1 Input Selection)
D4	COMPONENT2	Discrete IR Code (Component2 Input Selection)
D5	RGB-PC	Discrete IR Code (RGB-PC Input Selection)
CE	HDMI1	Discrete IR Code (HDMI1 Input Selection)
CC	HDMI2	Discrete IR Code (HDMI2 Input Selection)
76	Ratio 4:3	Discrete IR Code (Only 4:3 Mode)
77	Ratio 16:9	Discrete IR Code (Only 16:9 Mode)
AF	Ratio Zoom	Discrete IR Code (Only Zoom1 Mode)

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.

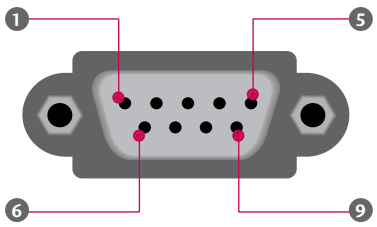
■ Note: RS-232C on this unit is intended to be used with third party RS-232 control hardware and software. The instructions below are provided to help with programming software or to test functionality using telenet software.

RS-232C Setup



Type of Connector; D-Sub 9-Pin Male

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



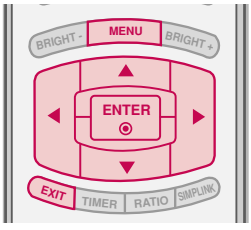
RS-232C Configurations

Either cable below can be used.

7-Wire Configuration (Serial female-female NULL modem 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	

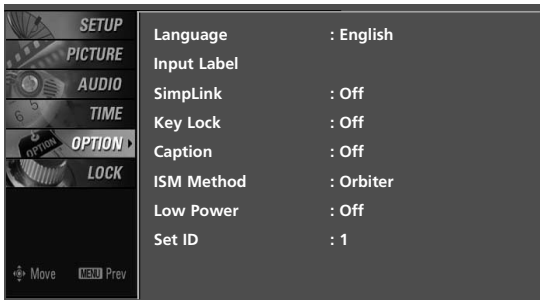
3-Wire Configurations (Not standard)			
	PC	TV	
RXD	2	3	TXD
TXD	3	2	RXD
GND	5	5	GND
DTR	4	6	DTR
DSR	6	4	DSR
RTS	7	7	RTS
CTS	8	8	CTS
	D-Sub 9	D-Sub 9	

Set ID



Use this function to specify a TV ID number.
Refer to 'Real Data Mapping1'. ▶ **p.93.**

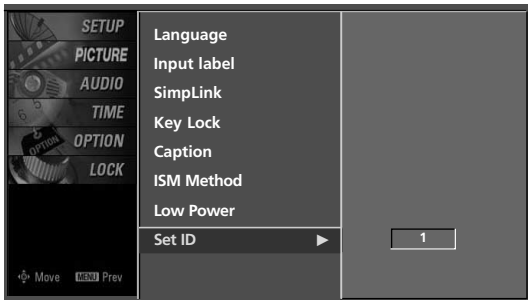
1. Press the **MENU** button and then use ▲ or ▼ button to select the **OPTION** menu.



1

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.



2 3

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.

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

Command Reference List

	COMMAND1	COMMAND2	DATA (Hexadecimal)		COMMAND1	COMMAND2	DATA (Hexadecimal)
01. Power	k	a	0 ~ 1	15. Treble	k	r	0 ~ 64
02. Input Select	k	b	(▶ p.92)	16. Bass	k	s	0 ~ 64
03. Input Select	x	b	(▶ p.92)	17. Balance	k	t	0 ~ 64
04. Aspect Ratio	k	c	(▶ p.92)	18. Color Temperature	k	u	0 ~ 3
05. Screen Mute	k	d	0 ~ 1	19. Red Adjustment	k	v	0 ~ C8
06. Volume Mute	k	e	0 ~ 1	20. Green Adjustment	k	w	0 ~ C8
07. Volume Control	k	f	0 ~ 64	21. Blue Adjustment	k	$	0 ~ C8
08. Contrast	k	g	0 ~ 64	22. ISM Method	j	p	(▶ p.94)
09. Brightness	k	h	0 ~ 64	23. Low Power	j	q	0 ~ 1
10. Color	k	i	0 ~ 64	25. Channel Add/Del	m	b	0 ~ 1
11. Tint	k	j	0 ~ 64	26. Key	m	c	(▶ p.95)
12. Sharpness	k	k	0 ~ 64	27. Back Light	m	g	0 ~ 64
13. OSD Select	k	l	0 ~ 1				
14. Remote Control Lock Mode	k	m	0 ~ 1				

LCD TV Model Only

Plasma TV Model Only

	COMMAND1	COMMAND2	DATA0 (Hexadecimal)	DATA1 (Hexadecimal)	DATA2 (Hexadecimal)	DATA3 (Hexadecimal)	DATA4 (Hexadecimal)	DATA5 (Hexadecimal)
24. Channel Tuning	m	a	physical program high	major program low	major low	minor high	minor low	attribute

Transmission / Receiving Protocol

Transmission

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

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

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

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

[DATA]: To transmit the command data.
Transmit the 'FF' data to read status of command.

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

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

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

OK Acknowledgement

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

The TV transmits ACK (acknowledgement) based on this format when receiving normal data. At this time, if the data is data read mode, it indicates present status data. If the data is data write mode, it returns the data of the PC computer.

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

[Command 2]: Use as command.

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

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

[OK]: Use the large character.

Error Acknowledgement

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

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

Data1: Illegal Code
Data2: Not supported function
Data3: Wait more time

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

[Command 2]: Use as command.

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

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

[NG]: Use the large character

01. Power (Command: k a)

To control Power On/Off of the TV.

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

Data 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.
* 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: k 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 7: RGB-PC Data 8: HDMI1
Data 9: HDMI2

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

* If you select input source, we recommend "**command x b**".

03. Input Select (Command: x b)

To select input source for TV.

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

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

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

04. Aspect Ratio (Command: k c)

To adjust the screen format.

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

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

Data 1: 4:3 5: Zoom 2
2: 16:9 6: Set by program
4: Zoom 1 9: Just scan
⋮
Reserved

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

05. Screen Mute (Command: k 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]

06. 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 0: Volume mute on (Volume off)
Data 1: Volume mute off (Volume on)

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

07. 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: 0 ~ Max: 64 (*transmit by Hexadecimal code)

*Refer to 'Real data mapping 1'. See page 93.

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

08. 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: 0 ~ Max: 64 (*transmit by Hexadecimal code)

*Refer to 'Real data mapping 1'. See page 93.

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

09. 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: 0 ~ Max: 64 (*transmit by Hexadecimal code)

*Refer to 'Real data mapping 1'. See page 93.

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

10. 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: 0 ~ Max: 64 (*transmit by Hexadecimal code)

*Refer to 'Real data mapping 1' as shown below.

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

11. 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: 0 ~ Green: 64 (*transmit by Hexadecimal code)

*Refer to 'Real data mapping 1' as shown below.

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

12. 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: 0 ~ Max: 64 (*transmit by Hexadecimal code)

*Refer to 'Real data mapping 1' as shown below.

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

13. OSD Select (Command: k 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]

14. 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 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.

15. 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: 0 ~ Max: 64 (*transmit by Hexadecimal code)

*Refer to 'Real data mapping 1' as shown.

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

16. 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: 0 ~ Max: 64 (*transmit by Hexadecimal code)

*Refer to 'Real data mapping 1' as shown below.

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

17. 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: 0 ~ Max: 64 (*transmit by Hexadecimal code)

*Refer to 'Real data mapping 1' as shown below.

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

18. Color Temperature (Command: k u)

To adjust color temperature.

You can also adjust color temperature in the Picture menu.

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

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

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

19. Red Adjustment (Command: k 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' as shown below.

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

20. Green Adjustment (Command: k w)

To adjust green in color temperature.

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

Data Min: 0 ~ Max: C8

*Refer to 'Real data mapping 2' as shown below.

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

*Real data mapping 1	*Real data mapping 2
0: Step 0	0: -20
⋮	5: -19
A: Step 10 (SET ID 10)	A: -18
⋮	⋮
F: Step 15 (SET ID 15)	5F: -1
10: Step 16 (SET ID 16)	64: 0
⋮	69: +1
63: Step 99 (SET ID 99)	⋮
64: Step 100	C3: +19
	C8: +20

21. Blue Adjustment (Command: k $)

To adjust blue in color temperature.

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

Data Min: 0 ~ Max: C8

*Refer to 'Real data mapping 2'. See page 93.

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

22. ISM Method (Command: j p)

(Only Plasma TV model)

To avoid having a fixed image remain on screen.

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

Data 1: Inversion 2: Orbiter

4: White Wash 8: Normal

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

23. Low Power (Command: j q)

(Only Plasma TV model)

To control the low power function on/off.

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

Data 0: Low Power off

1: Low Power on

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

24. Channel Tuning (Command: m a)

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

Transmission [m][a][ ][Set ID][ ][Data0][ ][Data1][ ][Data2][ ][Data3][ ][Data4][ ][Data5][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 0: Physical Channel Number

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

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

Data1 & 2: Major Channel Number

Data1: High byte Data2: Low byte

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

Data3 & 4: 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 0 = Physical of 35 = 23
   Data 1 & 2 = No Major = 00 00
   Data 3 & 4 = No Minor = 00 00
   Data 5 = 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 0 = Don't know Physical = 00
   Data 1 & 2 = Major is 30 = 00 1E
   Data 3 & 4 = Minor is 3 = 00 03
   Data 5 = 0010 0010 in binary = 22
   Total = ma 00 00 00 1E 00 03 22

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

25. 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]

26. Key (Command: m c)

To send IR remote key code.

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

Data Key code: Refer to page 88.

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

27. Back Light (Command: m g)

(Only LCD TV model)

To adjust screen back light.

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

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

*Refer to 'Real data mapping 1'. See page 93.

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

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