# LG

**Life's Good**

# LCD TV
# OWNER'S MANUAL

**LCD TV MODELS**

**26LC7D**
**26LC7DC**
**32LC4D**
**42LC4D**

**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.

**WARNING / CAUTION**

RISK OF ELECTRIC SHOCK
DO NOT OPEN

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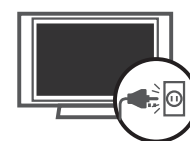
6. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

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.

S3125A

**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.

**Power Supply**
**Short-circuit Breaker**
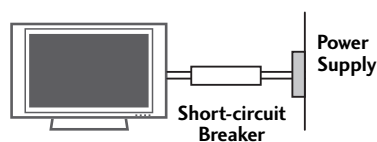
**17** DISCONNECTING DEVICE FROM MAINS
Mains plug is the disconnecting device. The plug must remain readily operable.

# CONTENTS

## TIME SETTING

## PARENTAL CONTROL / RATINGS

## APPENDIX

# INTRODUCTION

## FEATURE OF THIS TV

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

**HDTV** — 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.

**SIMPLINK** — 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.

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

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

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

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.
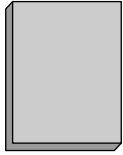
Owner's Manual

CD Manual
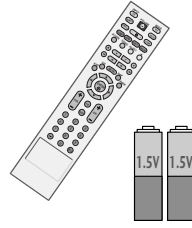
Remote Control, Batteries

1.5V 1.5V
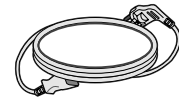
Power Cord
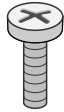
2- TV Bracket Bolts
(Refer to p.13)
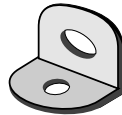
2- TV Brackets,
2- Wall Brackets
(Refer to p.13)

Cable Management

Twist Holder
Arrange the wires with the twist holder.

75ohm Round Cable

**Option Extras**
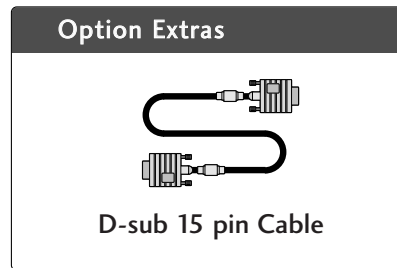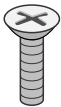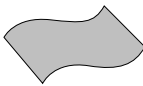
D-sub 15 pin Cable

**For 26/32 inches**

4-Bolts for stand assembly
(Refer to p.14)

**For 26/42 inches**

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.

# PREPARATION

## 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).

### Front Panel Controls (26 inches)
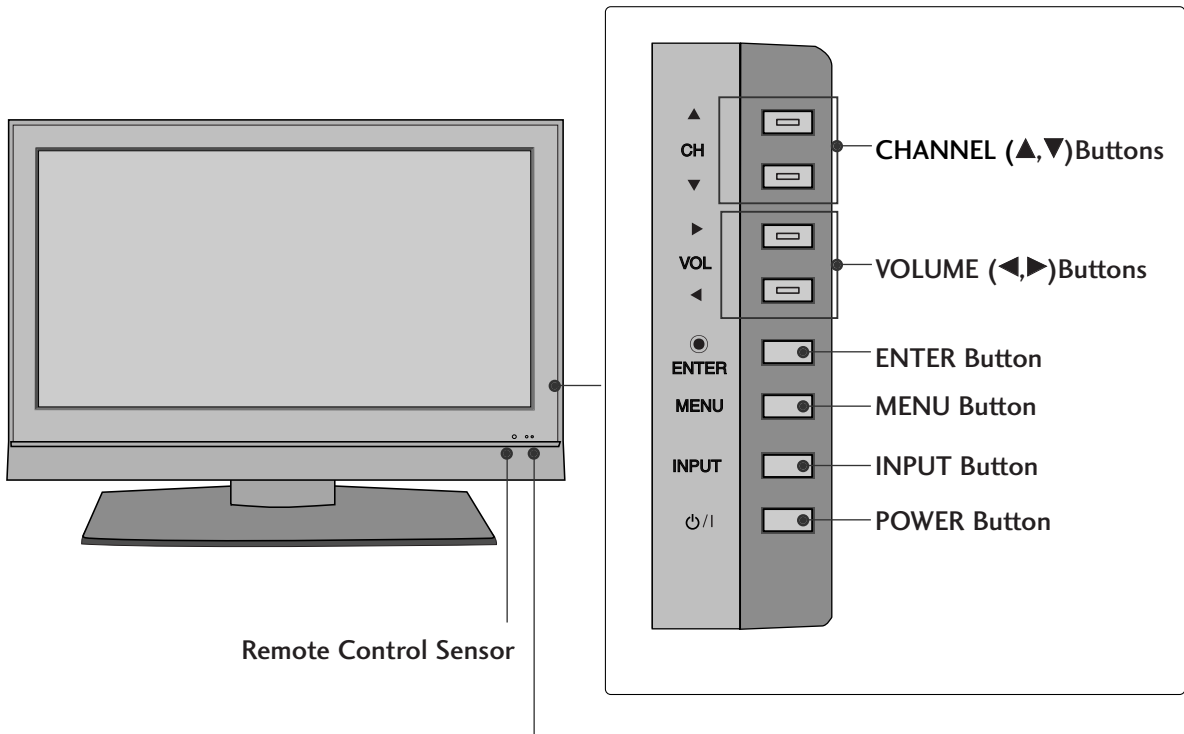
CHANNEL (▲,▼)Buttons

VOLUME (◄,►)Buttons

ENTER Button

MENU Button

INPUT Button

POWER Button

Remote Control Sensor

**Power/Standby Indicator**

Illuminates red in standby mode.
When the TV is turned on, the indicator blinks green and
then illuminates green before the picture is displayed.

# Front Panel Controls (32/42 inches)
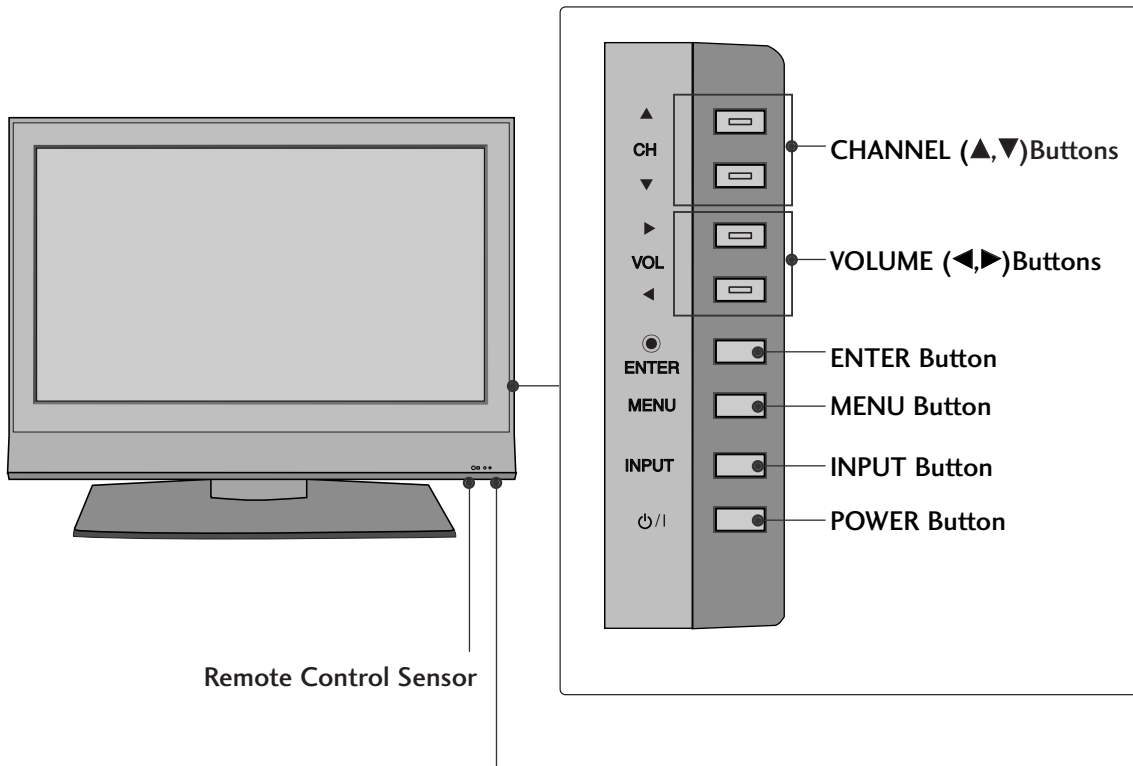
CHANNEL (▲,▼)Buttons

VOLUME (◄,►)Buttons

ENTER Button

MENU Button

INPUT Button

POWER Button

Remote Control Sensor

**Power/Standby Indicator**

Illuminates red in standby mode.
When the TV is turned on, the indicator blinks green and
then illuminates green before the picture is displayed.

# PREPARATION

## BACK PANEL INFORMATION

■ Here shown may be somewhat different from your TV.

### Back Connection Panel
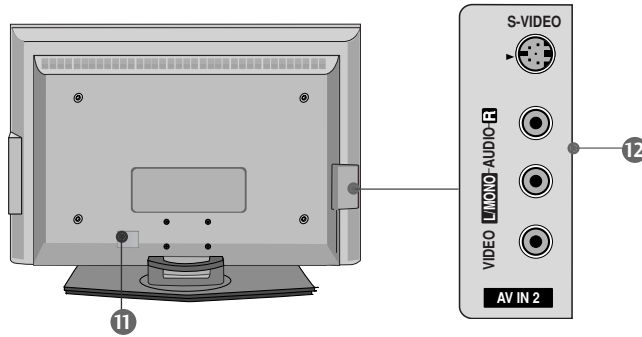
**26/32 inches model**
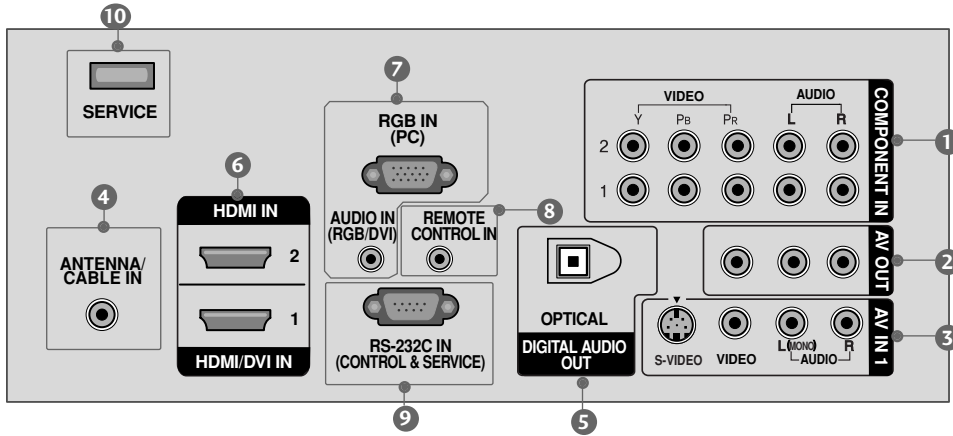
**42 inches model**
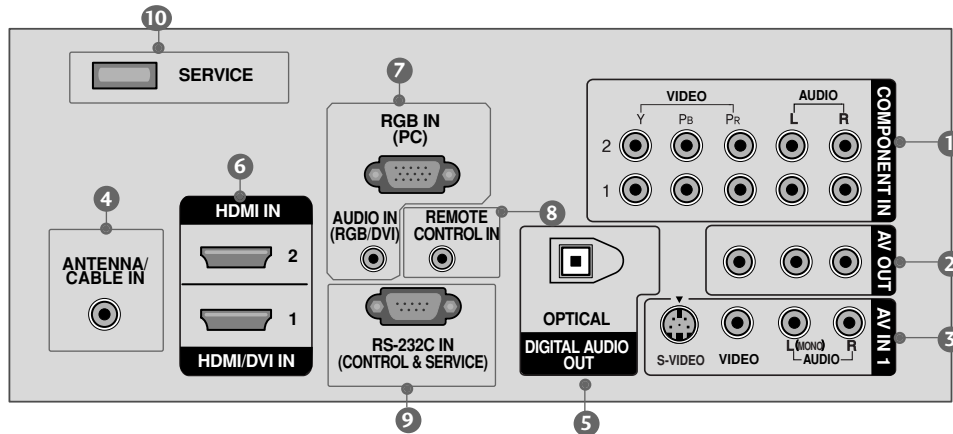
**➊ COMPONENT IN**

Connect a component video/audio device to these jacks.

**➋ AV OUT**

Connect a second TV or monitor.

**➌ AV (Audio/Video) IN 1**

Connect audio/video output from an external device to these jacks.

**S-VIDEO**

Connect S-Video out from an S-VIDEO device.

**➍ ANTENNA/CABLE IN**

Connect over-the air signals to this jack.

Connect cable signals to this jack.

**➎ DIGITAL AUDIO OUT**

Connect digital audio from various types of equipment.

Note: In standby mode, these ports do not work.

**➏ HDMI/DVI IN 1, HDMI IN 2**

Connect a HDMI (DVI) connection to either input.

**➐ RGB IN (PC)**

Connect the output from a PC.

**AUDIO IN (RGB/DVI)**

Connect the audio from a PC or DTV.

**➑ Remote Control Port**

Connect a wired remote control.

**➒ RS-232C IN (CONTROL & SERVICE) PORT**

For external control devices.

**➓ SERVICE**

**⓫ Power Cord Socket**

For operation with AC power.

Caution: Never attempt to operate the TV on DC power.

**⓬ AV (Audio/Video) IN 2**

Connect audio/video output from an external device to these jacks.

**S-VIDEO**

Connect S-Video out from an S-VIDEO device.

# BACK COVER FOR WIRE ARRANGEMENT

■ Here shown may be somewhat different from your TV.

**1** Connect the cables as necessary.
To connect an additional equipment, see the
**EXTERNAL EQUIPMENT SETUP** section.
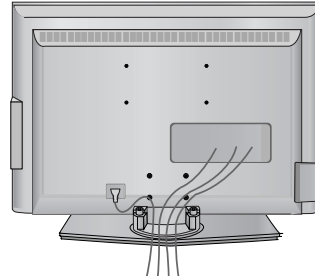
**2** Install the **CABLE MANAGEMENT** as shown.
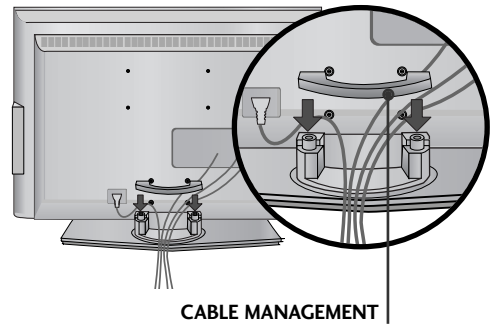
CABLE MANAGEMENT

**3** Bundle the cables using the supplied **TWIST HOLDER**.

TWIST HOLDER
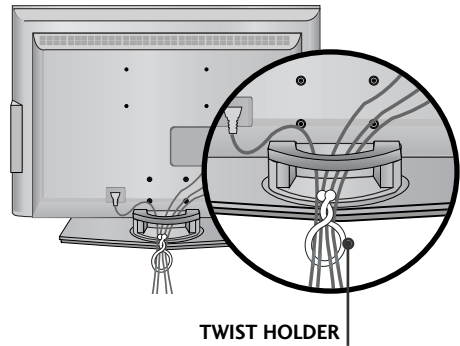
## ❶ NOTE

▶ 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.
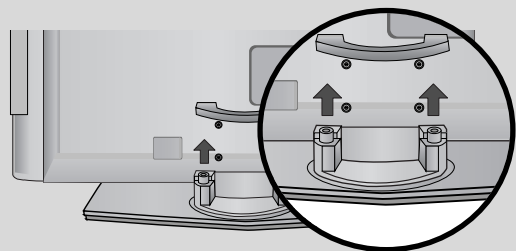
# ATTACHING THE TV TO A WALL

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.
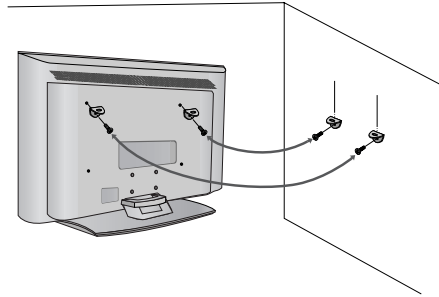
■ Insert the TV brackets and bolts to tighten the product to the wall as shown in the picture.
  * Secure the wall brackets with the bolts (not provided as parts of the product, must purchase separately) on
    the wall. Match the height of the bracket that is mounted on the wall to the holes in the product.
    Ensure the eye-bolts or brackets are tightened securely.
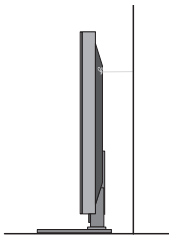
■ Use a sturdy rope (not provided as parts of the product, must pur-
  chase separately) to tie the product. It is safer to tie the rope so it
  becomes horizontal between the wall and the product.

## STAND INSTALLATION (Only 26/32 inches LCD TV models)

1 Carefully place the product screen side down on a cushioned surface that will protect product and screen from damage.
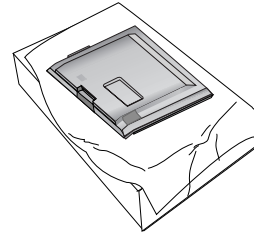
2 Assemble the product stand with the product as shown.
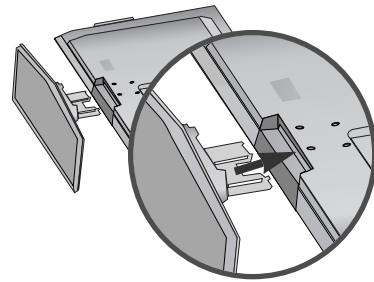
3 Securely install the 4 bolts provided.
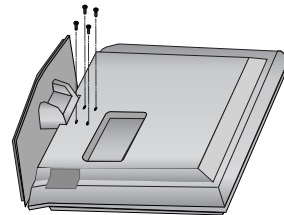
# VESA WALL MOUNTING

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

**26/32 inches**

200 mm

100 mm

**42 inches**

600 mm

400 mm

---
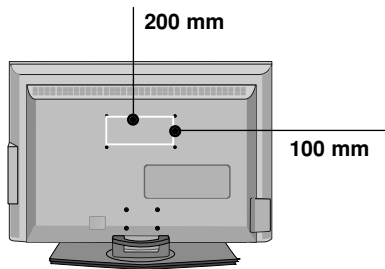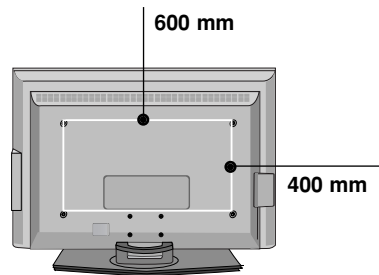
## ❶ NOTE

▶ 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 4inches on all four sides from the wall.

4 inches

4 inches

4 inches

4 inches

---
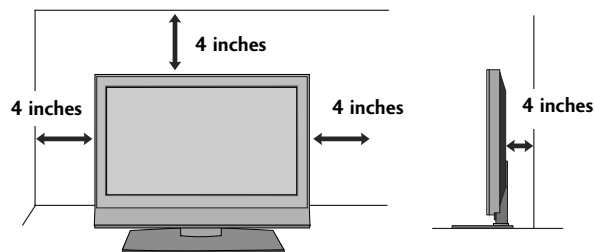
⚠ **CAUTION**    Ensure adequate ventilation by following the clearance recommendations.

# PREPARATION

## ANTENNA OR CABLE CONNECTION

### 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.

**Wall Antenna Socket**

**Multi-family Dwellings/Apartments (Connect to wall antenna socket)**

**Outdoor Antenna (VHF, UHF)**

**Single-family Dwellings /Houses (Connect to wall jack for outdoor antenna)**

**RF Coaxial Wire (75 ohm)**

ANTENNA/ CABLE IN

**Copper Wire**

**Be careful not to bend the bronze wire when connecting the antenna.**

### 2. Cable

**Cable TV Wall Jack**

**RF Coaxial Wire (75 ohm)**

ANTENNA/ CABLE IN
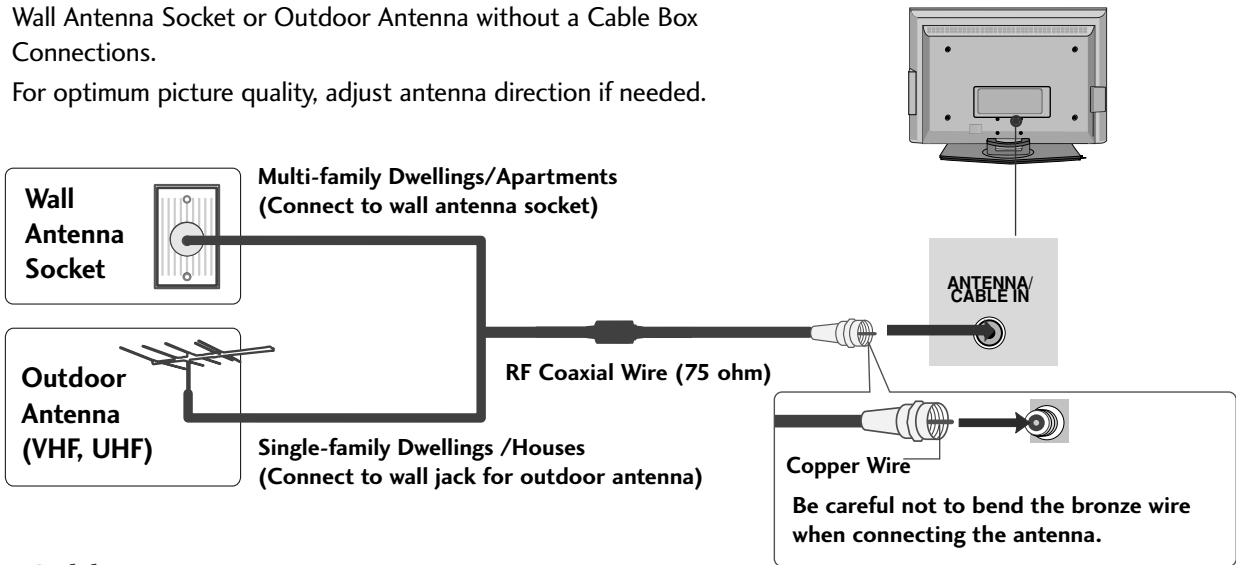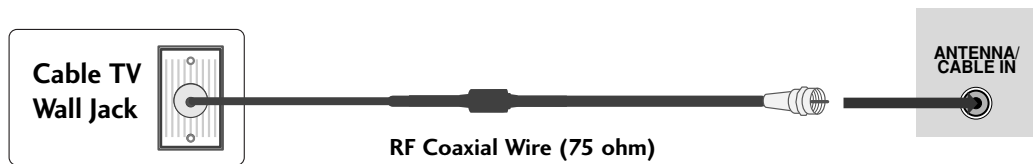
### 3. Using both cable and antenna

**Antenna**

**RF Coaxial Wire (75 ohm)**

**Cable TV Wall Jack**

**RF Coaxial Wire (75 ohm)**

**Diplexer (Signal Combiner)**

ANTENNA/ CABLE IN

**Antenna**

**UHF**

**Signal Amplifier**

**VHF**

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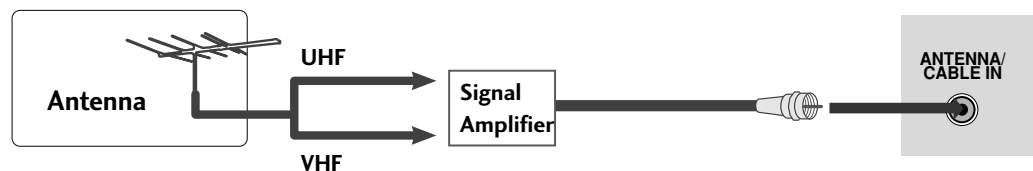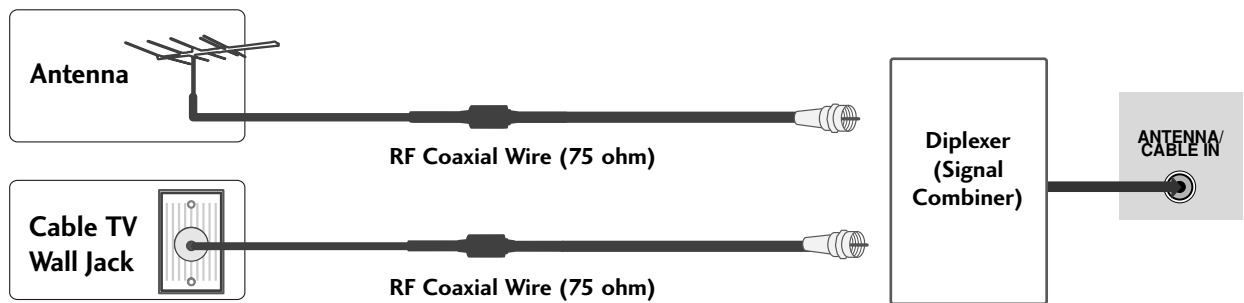
- To improve the picture quality in a poor signal area, please purchase a signal amplifier and install properly.
- If the antenna needs to be split for two TV's, install a 2-Way Signal Splitter.
- If the antenna is not installed properly, contact your dealer for assistance.

**❶ 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 the 42 inches models.

## 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, P$_B$, P$_R$) of the digital set top box to the **COMPONENT IN VIDEO 1** jacks on the set. Match the jack colors
(Y = green, P$_B$ = blue, and P$_R$ = red).

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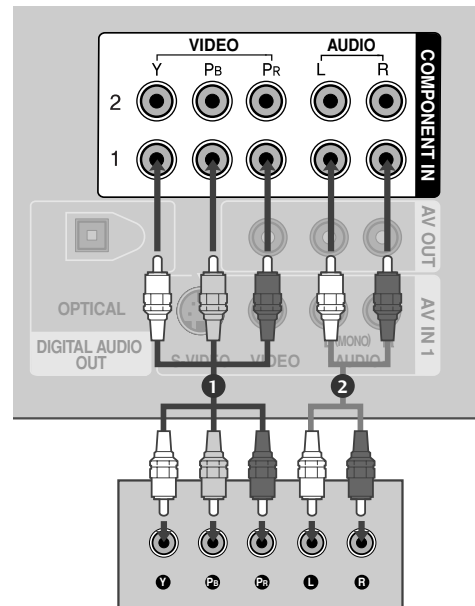
### 2. How to use

■ 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/DVI, HDMI2 |
|--------|---------------|------------------|
| 480i | Yes | No |
| 480p | Yes | Yes |
| 720p | Yes | Yes |
| 1080i | Yes | Yes |
| 1080p | Yes | Yes |

# EXTERNAL EQUIPMENT SETUP

## 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/DVI** or **HDMI2** input source by using the **INPUT** button on the remote control.

**❗ NOTE**

▶ When connected, the TV will tell a connected device what resolution it supports and the resolution it prefers. If the device supports this Auto HDMI function, the player output resolution will be automatically set to 720p.

▶ If the device does not support Auto HDMI, you need to set the output resolution appropriately.

SERVICE

RGB IN
(PC)

AUDIO IN        REMOTE
(RGB/DVI)      CONTROL

HDMI IN

ANTENNA/
CABLE IN                    2

1

HDMI DVI IN

RS-232C IN
(CONTROL & SERVICE)

①

HDMI-DTV OUTPUT

# When connecting HDMI to DVI cable
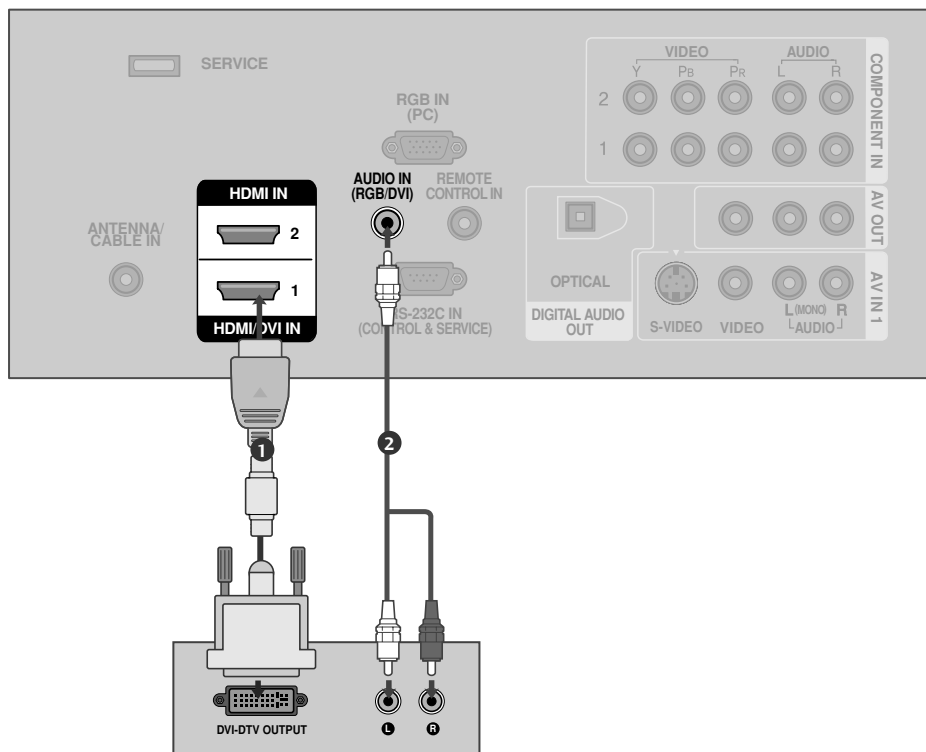


## 1. How to connect

**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 IN (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/DVI** input source by using the **INPUT** button on the remote control.

# EXTERNAL EQUIPMENT SETUP

## DVD SETUP

### When connecting Component cable

#### 1. How to connect

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

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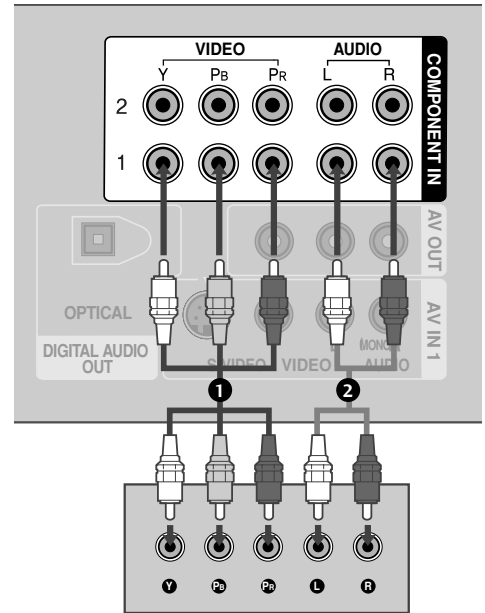
#### 2. How to use

- 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 | P$_B$ | P$_R$ |
|---|---|---|---|

| | Y | P$_B$ | P$_R$ |
|---|---|---|---|
| Video output ports on DVD player | Y | B-Y | R-Y |
| | Y | Cb | Cr |
| | Y | Pb | Pr |

20

# 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.
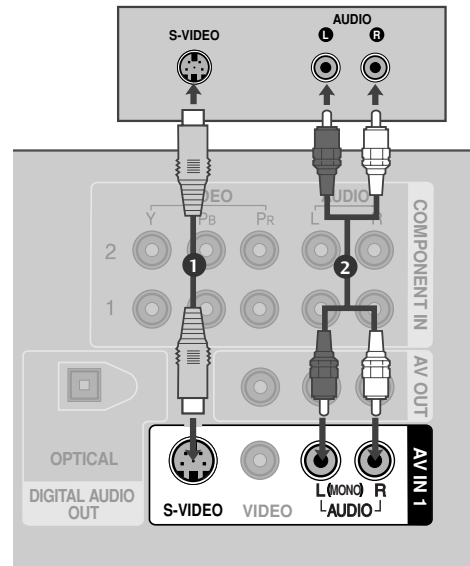
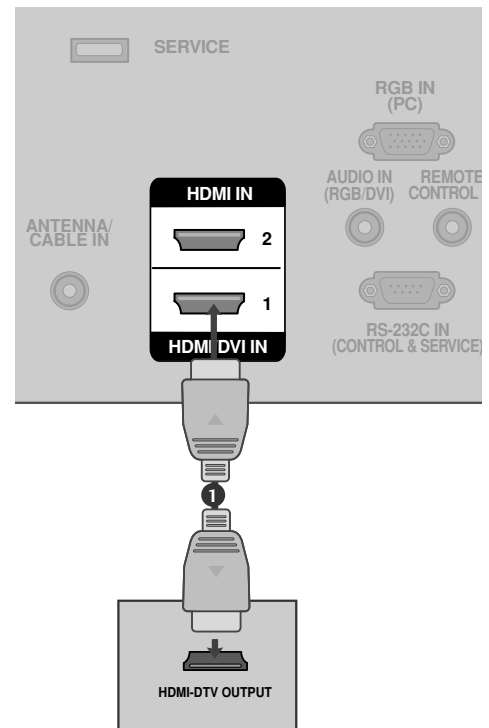# When connecting HDMI cable

## 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/DVI** or **HDMI2** input source with using the **INPUT** button on the remote control.

■ Refer to the DVD player's manual for operating instructions.

> 🛈 **NOTE**
>
> ▶ When connected, the TV will tell a connected device what resolution it supports and the resolution it prefers. If the device supports this Auto HDMI function, the player output resolution will be automatically set to 720p.
>
> ▶ If the device does not support Auto HDMI, you need to set the output resolution appropriately.
>
> To get the best picture quality, adjust the output resolution of the DVD to 720p.
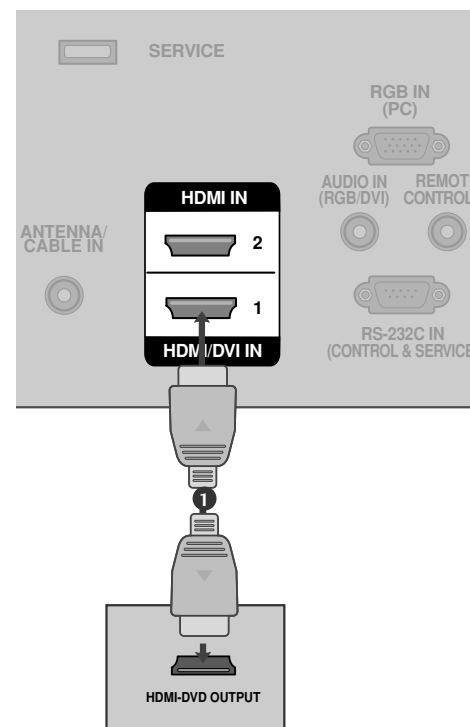
# EXTERNAL EQUIPMENT SETUP

## VCR SETUP

■ To avoid picture noise (interference), leave an adequate distance between the VCR and TV.

■ 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
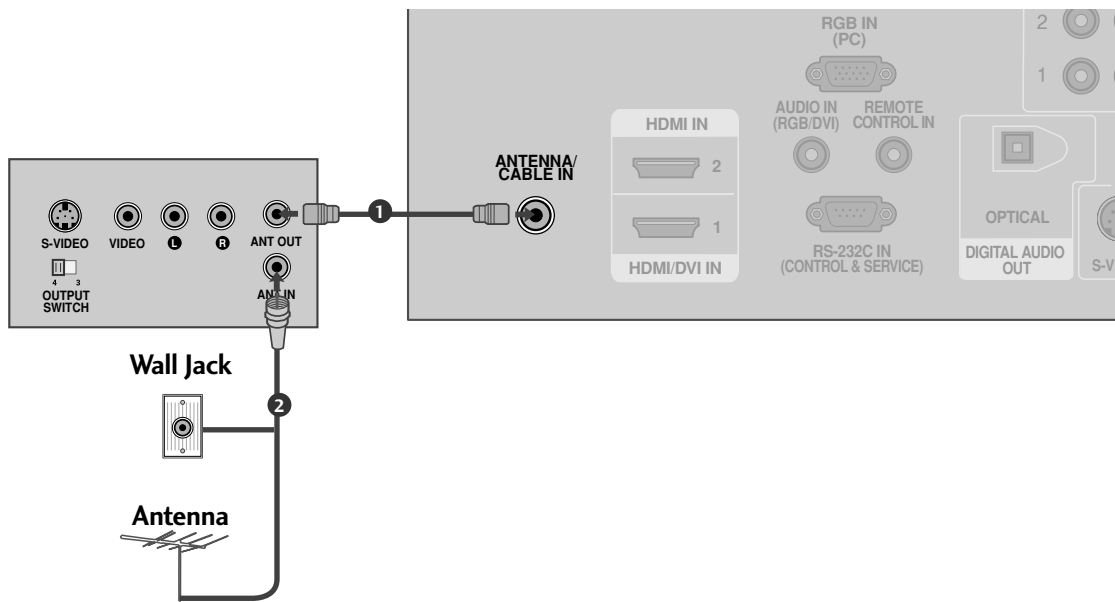


### 1. How to connect

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.
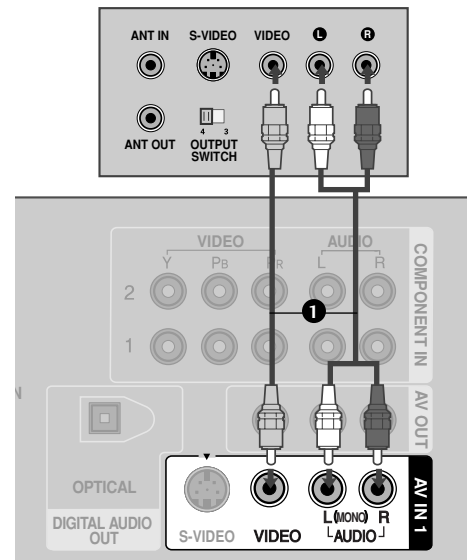
**! NOTE**

▶ 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.
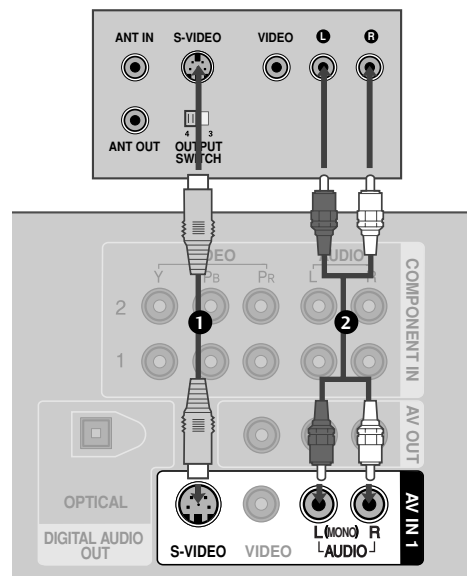
**⚠ CAUTION**

▶ 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.

# EXTERNAL EQUIPMENT SETUP

## 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.

**Camcorder**

**Video Game Set**

VIDEO  L  R

S-VIDEO

VIDEO  L/MONO-AUDIO-R

AV IN 2

**24**
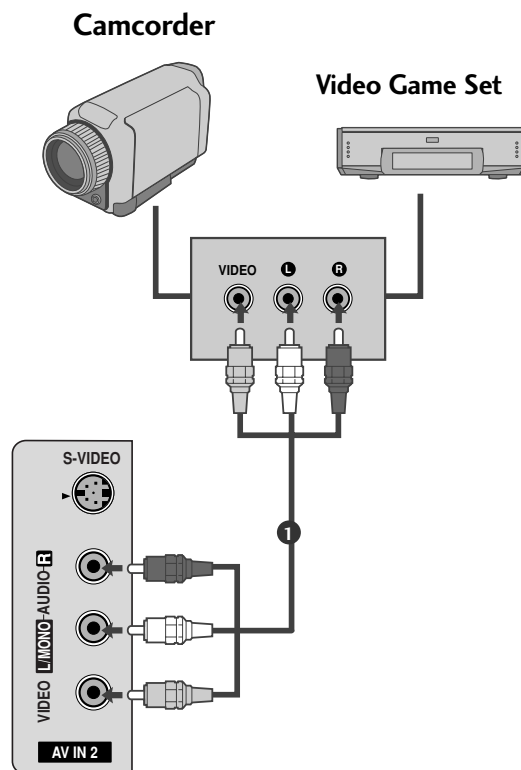
# PC SETUP

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

## When connecting D-sub 15pin cable

### 1. How to connect

**①** Connect the RGB output of the PC to the **RGB IN (PC)** jack on the set.

**②** Connect the PC audio output to the **AUDIO IN (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.
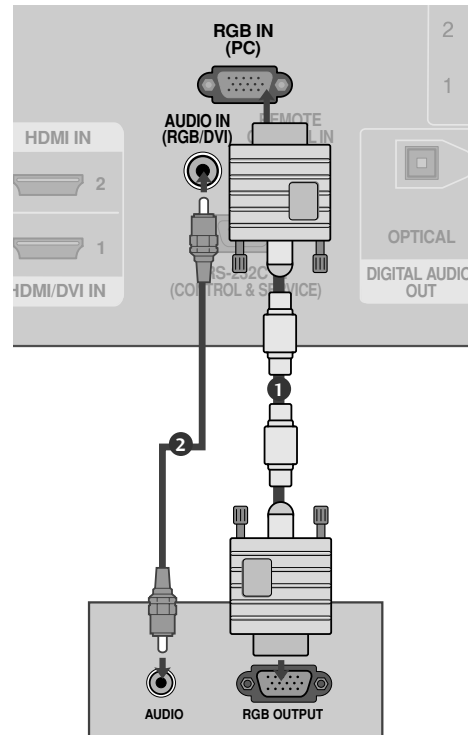
## When connecting HDMI to DVI cable

### 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 IN (RGB/DVI)** jack on the set.

### 2. How to use

■ Turn on the PC and the TV.

■ Select **HDMI1/DVI** input source by using the **INPUT** button on the remote control.
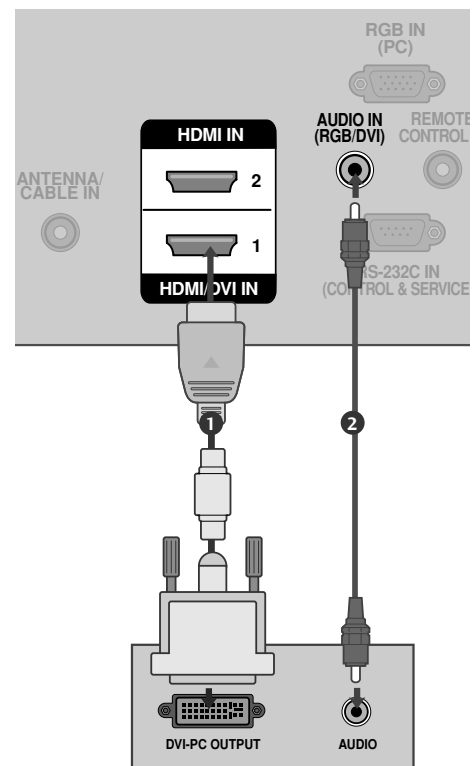
# EXTERNAL EQUIPMENT SETUP

## ❶ NOTES

▶ To get the the best picture quality, adjust the PC graphics card to 1024x768, 60Hz.

▶ Depending on the graphics card, DOS mode may not work if a HDMI to DVI Cable is in use.

▶ If the video doesn't fit the screen, try pressing the ADJUST button to adjust the screen position of TV.

▶ 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: 640x350, 720X400

**HDMI1/DVI-DTV, HDMI2-DTV mode**

| Resolution | Horizontal Frequency(KHz) | Vertical Frequency(Hz) |
|---|---|---|
| 720x480 | 31.469 | 59.94 |
| | 31.500 | 60.00 |
| 1280x720 | 44.960 | 59.94 |
| | 45.000 | 60.00 |
| 1920x1080i | 33.720 | 59.94 |
| | 33.750 | 60.00 |
| 1920x1080p | 27.000 | 24.00 |
| | 33.750 | 30.00 |

26

# Screen Setup for PC mode

## Overview

When the RGB input of the set is connected to a PC output, select the RGB-PC as the main input mode.

When HDMI/DVI connect to PC output and select HDMI/DVI input, this function is used.

After connecting RGB-PC or HDMI/DVI to PC input and checking the screen quality.

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**.
In HDMI/DVI-PC mode, **Phase** is not available.

■ The **Size** adjustment range is **-30 ~ +30**.
In HDMI/DVI-PC mode, **Size** is not available.

**3** Press the **ENTER** button.

## 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.

| Resolution | ✓ 1024 x 768 |
|---|---|
| Position | 1280 x 768 |
| Size | 1360 x 768 |
| Phase | 1366 x 768 |
| Reset | |

**MENU** Close   **Move**   **Ok**
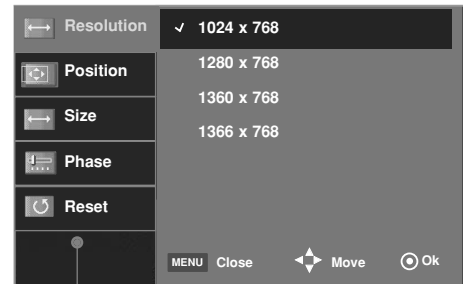
**① ② ③**

| | |
|---|---|
| **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. |

| Resolution | |
|---|---|
| Position | |
| Size | **Initialize Settings** |
| Phase | |
| Reset | **Yes**    **No** |

**MENU** Close   **Move**   **Ok**

**① ② ③**

## AV OUT SETUP

The TV has a special signal output capability which allows you to hook up the second TV or monitor.

### 1. How to connect

**1** Connect the second TV or monitor to the TV's **AV OUT** jacks.

**2** See the Operating Manual of the second TV or monitor for further details regarding that device's input settings.

### ❶ NOTE

▶ Component1-2, RGB-PC, HDMI1/DVI, HDMI2, DTV input sources cannot be used for AV out.
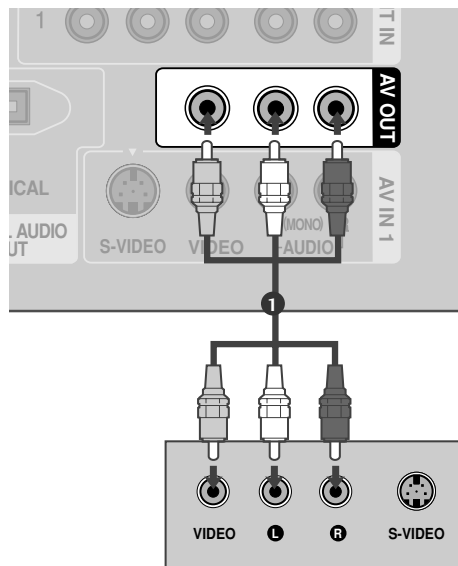
# DIGITAL AUDIO OUTPUT

Send the TV's audio to external audio equipment via the Digital Audio Output (Optical) port.

## 1. How to connect

**1** Connect one end of an optical cable to the TV Digital Audio (Optical) Output port.

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

**3** Set the "TV Speaker option - Off" in the AUDIO menu. (▶ **p.55**). 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.55**)

### ⚠ CAUTION

▶ Do not look into the optical output port. Looking at the laser beam may damage your vision.
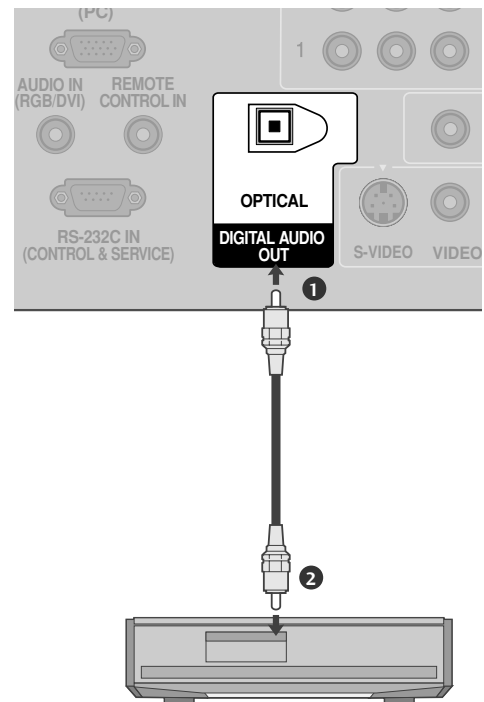
## REMOTE CONTROL FUNCTIONS

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

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

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

**INPUT** External input modes rotate in regular sequence: TV, AV1-2, Component 1-2, RGB-PC, HDMI1/DVI and HDMI2.

(AV 1-2, Component 1-2, RGB-PC, HDMI1/DVI, and HDMI2 input sources are linked automatically, only if a device is connected.)

**RATIO** Change the aspect ratio. ▶ **p.42**

**– ☼ +** Adjusts brightness on screen.

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

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

**VOLUME UP /DOWN** Increase/decrease the sound level.

**FAV** Scroll through the programmed Favorite channels. ▶ **p.36**

**MUTE** Switch the sound on or off. ▶ **p.32**

**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.
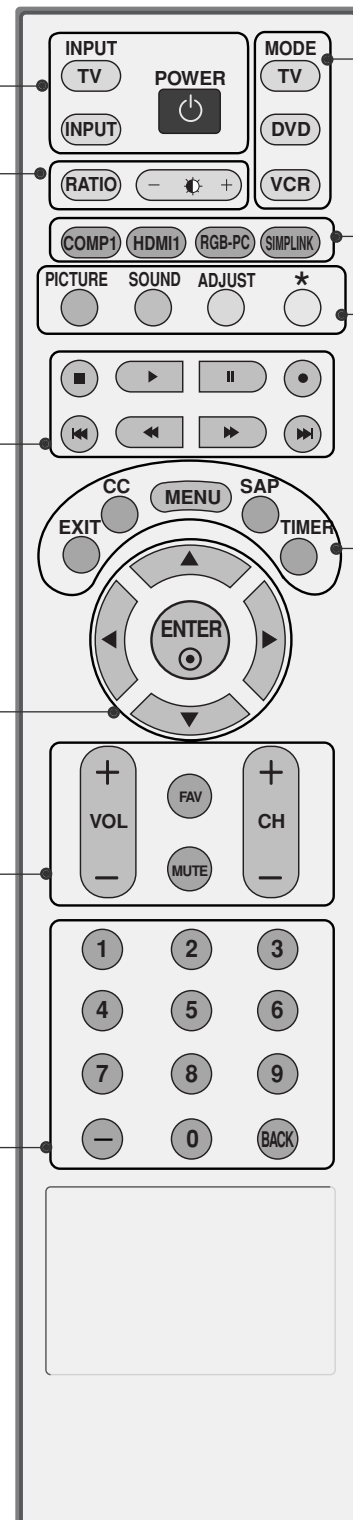
**MODE** Select the remote's operating mode: TV, DVD, VCR.

**COMP1** Directly, select Component1 input.

**HDMI 1** Directly, select HDMI1/DVI input.

**RGB-PC** Directly, select RGB-PC input.

**SIMPLINK** See a list of AV devices connected to TV. When you toggle this button, the SimpLink menu appears at the screen. ▶ **p.40**

**PICTURE** Selects the factory preset picture depend on the viewing environment. ▶ **p.44**

**SOUND** Selects the factory preset sound for type of program. ▶ **p.52**

**ADJUST** Adjust the screen resolution, position, size and phase. ▶ **p.27**

✳ Not functional

**EXIT** Clears all on-screen displays and returns to TV viewing from any menu.

**CC** Select a closed caption. ▶ **p.59** (*In DTV/CADTV mode ▶ **p.60**)

**MENU** Displays the main menu.

**SAP** ○ Analog mode: Selects MTS sound (Mono, Stereo, or a SAP) ▶ **p.56**
   ○ DTV mode: Changes the audio language.

**TIMER** Select the amount of time before your TV turns off automatically. ▶ **p.65**

## Installing Batteries
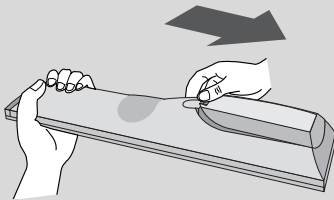
■ Open the battery compartment cover on the back side and install the batteries matching correct polarity (+ with +, - with -).

■ Install two 1.5V AA batteries. Don't mix old or used batteries with new ones.

■ Close cover.

## Remote control effective range

30° 30°    30° 30°
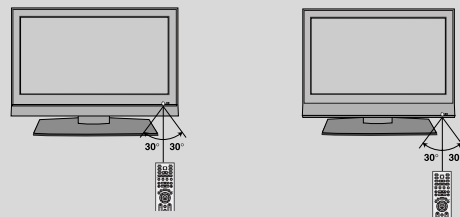
■ Use a remote control up to 7 meters distance and 30 degree (left/right) within the receiving unit scope.

■ 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 ⏻/| , **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.
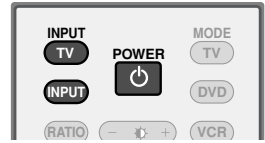
### ❗ NOTE

▶ 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

| SETUP › | EZ Scan |
| VIDEO | Manual Scan |
| AUDIO | Channel Edit |
| TIME | DTV Signal |
| OPTION | Input Source |
| LOCK | Input Label |
| | Set ID |

Move  MENU Prev

## VIDEO

| SETUP | EZ Picture |
| VIDEO › | Color Temperature |
| AUDIO | XD |
| TIME | Advanced |
| OPTION | Video Reset |
| LOCK | |

Move  MENU Prev

## LOCK

### For USA

| SETUP | Lock System |
| VIDEO | Set Password |
| AUDIO | Block Channel |
| TIME | Movie Rating |
| OPTION | TV Rating-Children |
| LOCK › | TV Rating-General |
| | Input Block |

Move  MENU Prev

### For Canada

Lock System
Set Password
Block Channel
TV Rating-English
TV Rating-French
Input Block

## AUDIO

| SETUP | Audio Language |
| VIDEO | EZ Sound |
| AUDIO › | Balance |
| TIME | TV Speaker |
| OPTION | |
| LOCK | |

Move  MENU Prev

## OPTION

| SETUP | Aspect Ratio |
| VIDEO | Caption/Text |
| AUDIO | Caption Option |
| TIME | Language |
| OPTION › | SimpLink |
| LOCK | |

Move  MENU Prev

## TIME

| SETUP | Auto Clock |
| VIDEO | Manual Clock |
| AUDIO | Off Timer |
| TIME › | On Timer |
| OPTION | Sleep Timer |
| LOCK | Auto Off |

Move  MENU Prev

# CHANNEL SEARCH

## Auto Scan (EZ Scan)

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

Run EZ Scan again after any Antenna/Cable connection changes.

A password is required to gain access to EZ Scan menu if the Lock System is turned on.

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 **EZ Scan**.

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



SETUP ›
VIDEO
AUDIO
TIME
OPTION
LOCK

EZ Scan
Manual Scan
Channel Edit
DTV Signal
Input Source
Input Label
Set ID

◀◎▶ Move    MENU Prev

❶

SETUP
VIDEO
AUDIO
TIME
OPTION
LOCK

EZ Scan        ▶
Manual Scan
Channel Edit
DTV Signal
Input Source
Input Label
Set ID

Selection ( ▶ or ◉ ) leads you to the EZ scan screen.

◀◎▶ Move    MENU Prev

❷

SETUP
VIDEO
AUDIO
TIME
OPTION
LOCK

EZ Scan
Manual Scan
Channel Edit
DTV Signal
Input Source
Input Label
Set ID

Selection ( ▶ or ◉ ) leads you to the EZ scan screen.

**Processing EZ scan...**

**TV Ch.20**
**0 channel(s) found**

**Press ◉ to stop the current scan and start DIGITAL ANTENNA channel scan.**

◉ Next        MENU Previous

◀◎▶ Move    MENU Prev

❸

**34**

# Add/Delete Channel (Manual Scan)

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

**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 Scan**.

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

SETUP ›
VIDEO
AUDIO
TIME
OPTION
LOCK

EZ Scan
Manual Scan
Channel Edit
DTV Signal
Input Source
Input Label
Set ID

Move  MENU Prev

**1**

SETUP
VIDEO
AUDIO
TIME
OPTION
LOCK

EZ Scan
Manual Scan          ▶
Channel Edit
DTV Signal
Input Source
Input Label
Set ID

Select channel type and RF-channel number.

| TV | 2 |

Move  MENU Prev

**2**

SETUP
VIDEO
AUDIO
TIME
OPTION
LOCK

EZ Scan
Manual Scan
Channel Edit
DTV Signal
Input Source
Input Label
Set ID

Select channel type and RF-channel number.

TV ▶ 2

TV 2-0

Press ⊙ to delete the channel.

Move  MENU Prev

**3 4 5**
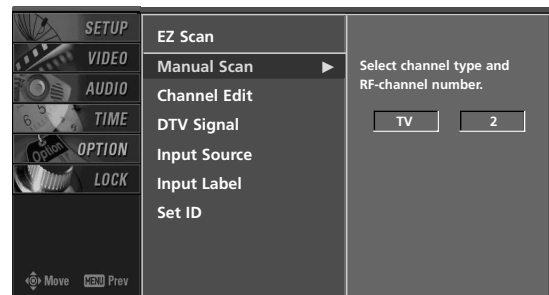
## Channel Editing

There are two different ways in order to add or delete scanned channels. One is "Custom List" and the other is "Favorite List" in the channel list. Both of them are available after EZ Scan on the SETUP menu.

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 high-lighted 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.
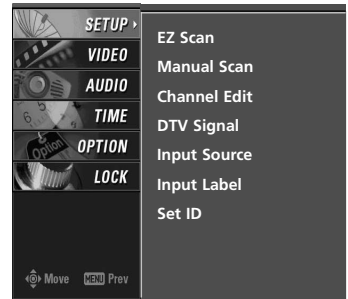
**1** Press the **MENU** button and then use ▲ or ▼ button to select the **SETUP** menu.
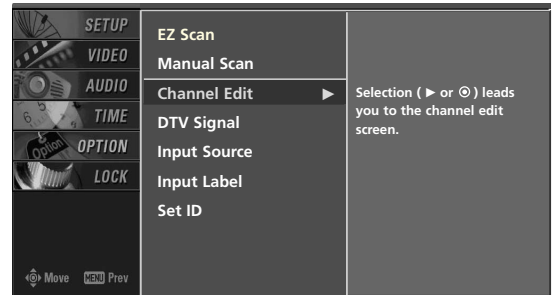
**2** Press the ► button and then use ▲ or ▼ button to select **Channel Edit**.

**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 heart-mark will appear in front of that channel number.
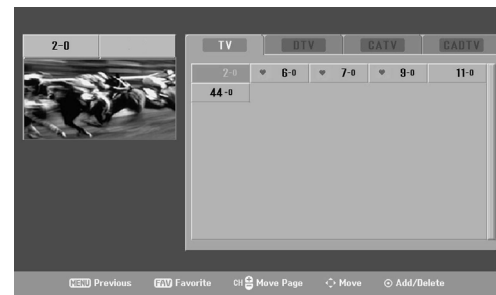
**5** Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.

# DTV SIGNAL STRENGTH

This feature displays the DTV signal levels being received and indicates whether you need to adjust your antenna or digital cable input. The higher the signal strength, the less likely you are to experience picture degradation.

DTV Signal: This function is only available when the input signal is DTV or CADTV.

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

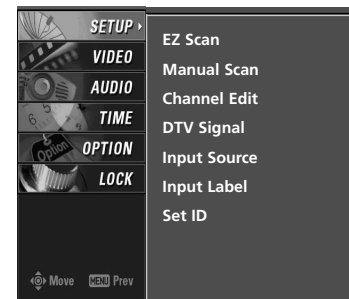② Press the ▶ button and then use ▲ or ▼ button to select **DTV Signal.**

③ View the on-screen signal strength monitor to see the quality of the signal being received.

④ Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.
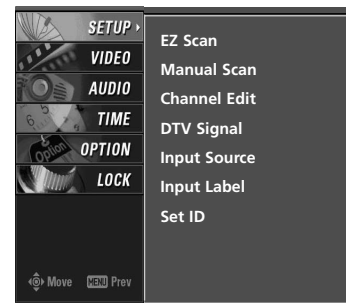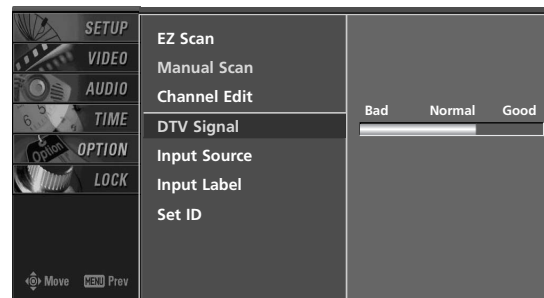
# WATCHING TV / CHANNEL CONTROL

## INPUT SOURCE SELECTION

Changes the picture source so you can watch your off-air TV, cable TV, VCR, DVD, or any other devices that are connected to your TV.
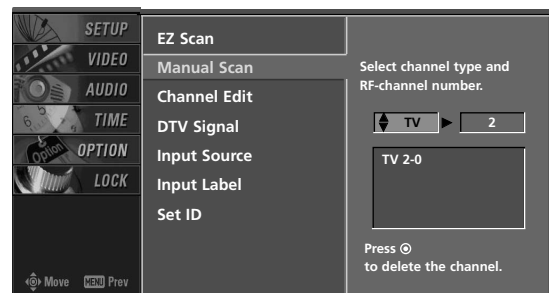
**1** Press the **MENU** button and then use ▲ or ▼ button to select the **SETUP** menu.

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

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

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

| SETUP ‣ | EZ Scan |
|---|---|
| VIDEO | Manual Scan |
| AUDIO | Channel Edit |
| TIME | DTV Signal |
| OPTION | Input Source |
| LOCK | Input Label |
| | Set ID |

Move  MENU Prev

**1**

| SETUP | EZ Scan | | ✓ TV |
|---|---|---|---|
| VIDEO | Manual Scan | | AV1 |
| AUDIO | Channel Edit | | AV2 |
| TIME | DTV Signal | | Component1 |
| OPTION | Input Source | ► | Component2 |
| LOCK | Input Label | | RGB-PC |
| | Set ID | | HDMI1/DVI |
| | | | HDMI2 |

Move  MENU Prev

**2** **3**

38

# 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 **SETUP** 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/DVI** 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.

| SETUP ▸ | EZ Scan |
|---|---|
| VIDEO | Manual Scan |
| AUDIO | Channel Edit |
| TIME | DTV Signal |
| OPTION | Input Source |
| LOCK | Input Label |
| | Set ID |

◀◎▶ Move  MENU Prev

①

| SETUP | EZ Scan | | AV1 | Cable Box |
|---|---|---|---|---|
| VIDEO | Manual Scan | | AV2 | VCR |
| AUDIO | Channel Edit | | Component1 | DVD |
| TIME | DTV Signal | | Component2 | Set Top Box |
| OPTION | Input Source | | RGB-PC | PC |
| LOCK | Input Label | ▶ | HDMI1/DVI | Game |
| | Set ID | | HDMI2 | Satellite |

◀◎▶ Move  MENU Prev

② ③ ④

**39**

# SIMPLINK

**This operates only for the devices with the** ⓢɪᴍᴘʟɪɴᴋ **logo.**
**Please check the** ⓢɪᴍᴘʟɪɴᴋ **logo.**
**This allows you to control and play other AV devices**
**connected to the display through HDMI cable without**
**additional cables and settings.**
**If you do not want SimpLink menu, select Off.**

## SimpLink Preparations

**❶** 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 OUT terminal on the back
of the simplink device with the Optical cable.

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

**❸** Press the ► button and then use ▲ or ▼ button to
select **SimpLink**.

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

**❺** Press **EXIT** button to return to TV viewing or press
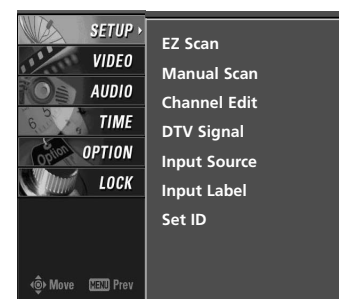**MENU** button to return to the previous menu.
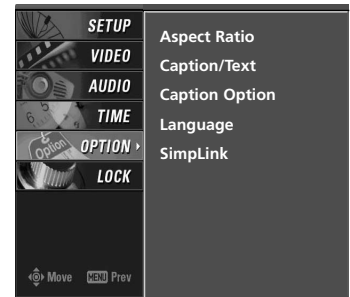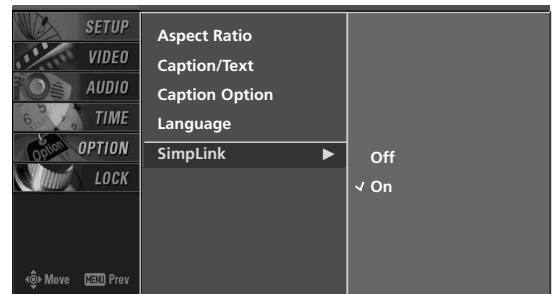
**❗ NOTE**

► 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 oper-
ation 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.

■ **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)

# SimpLink Menu
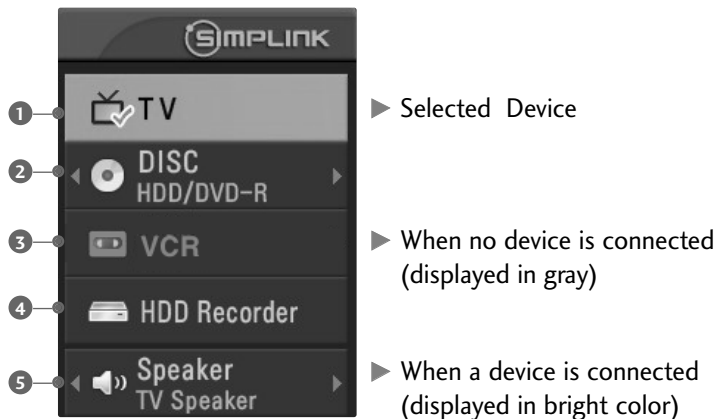


- **1** **TV viewing**: Switch to the previous TV channel regardless of the current mode.
- **2** **DISC playback**: Select and play discs. When multiple discs are available, the titles of discs are conveniently displayed at the bottom of the screen.
- **3** **VCR playback**: Play and control the connected 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.

# PICTURE CONTROL

## PICTURE SIZE (ASPECT RATIO) CONTROL

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

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

### ❗ NOTE

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

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

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

### Set by program
Selects the proper picture proportion to match the source's image.

(4:3 ➡ 4:3)

Set By Program

(16:9 ➡ 16:9)

Set By Program

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

4:3

## 16:9

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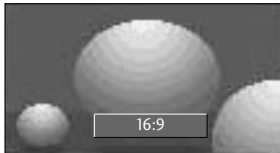


## Horizon

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



## Zoom 1

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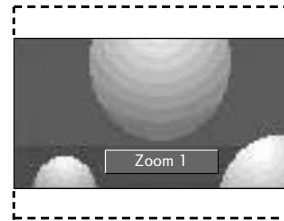


## Zoom 2

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



PICTURE CONTROL

**43**
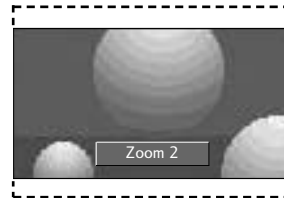
## PRESET PICTURE SETTINGS

### EZ Picture - Preset

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

**Daylight**, **Normal**, **Night Time** 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.
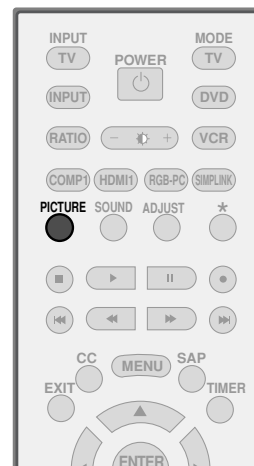
**1** Press the **PICTURE** button repeatedly to select the picture appearance setup option as below :
**Daylight**, **Normal**, **Night Time**, **User1**, and **User2** (your own settings).

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

■ You can also use the **VIDEO** menu to adjust **EZ Picture**.

| SETUP | EZ Picture |
| VIDEO | Color Temperature |
| AUDIO | XD |
| TIME | Advanced |
| OPTION | Video Reset |
| LOCK | |

Move  MENU Prev

| SETUP | EZ Picture ▶ | ✓ Daylight |
| VIDEO | Color Temperature | Normal |
| AUDIO | XD | Night Time |
| TIME | Advanced | User1 |
| OPTION | Video Reset | User2 |
| LOCK | | |

Move  MENU Prev
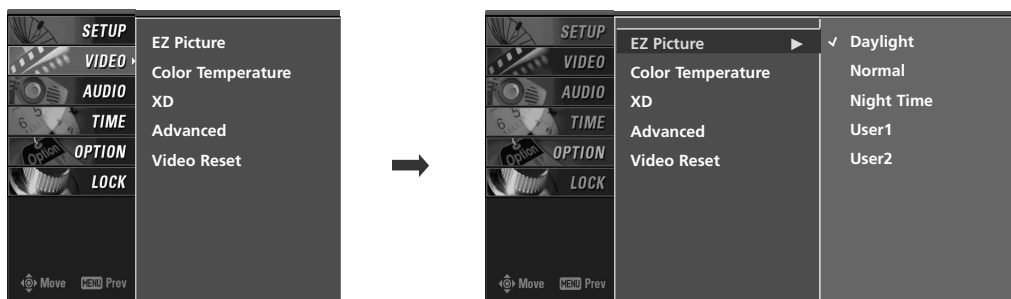
# Color Tone - Preset

**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.**

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

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

|  | SETUP | EZ Picture |
| --- | --- | --- |
|  | VIDEO ► | Color Temperature |
|  | AUDIO | XD |
|  | TIME | Advanced |
|  | OPTION | Video Reset |
|  | LOCK |  |

◄◎► Move  MENU Prev

**❶**

| SETUP | EZ Picture |  |
| --- | --- | --- |
| VIDEO | Color Temperature ► | ✓ Cool |
| AUDIO | XD | Medium |
| TIME | Advanced | Warm |
| OPTION | Video Reset | User |
| LOCK |  |  |

◄◎► Move  MENU Prev

**❷ ❸**
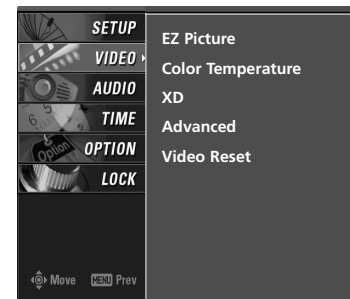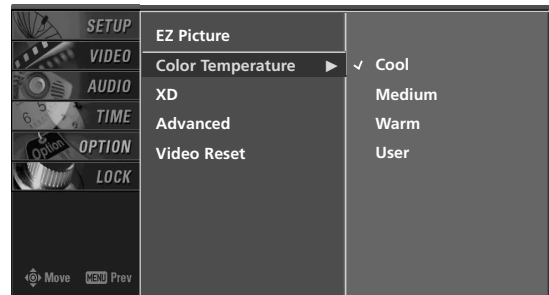
## MANUAL PICTURE ADJUSTMENT

### EZ Picture - 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 **VIDEO** menu.

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

**3** Press the ▶ button and then use ▲ or ▼ button to select **User 1** or **User 2**.

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

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

**6** Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.
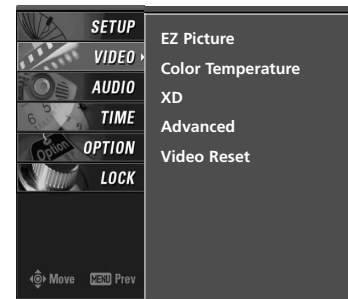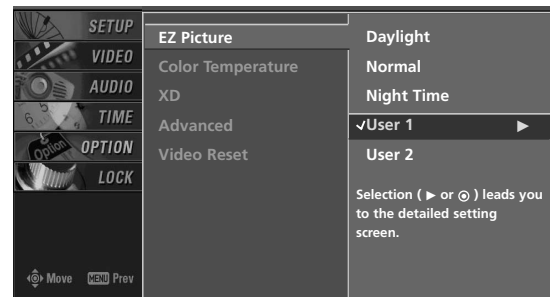
# Color Tone - User Mode

You can also adjust the detailed settings (Red, Green, Blue) by selecting the **Color Temperature-User** menu.

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

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

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

**4** Press the ► button and then use ▲ or ▼ button to select **Red**, **Green**, or **Blue**.

**5** Press the ► button and then use ◄ or ► button to make appropriate adjustments.

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

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

| SETUP | EZ Picture |
|---|---|
| VIDEO ► | Color Temperature |
| AUDIO | XD |
| TIME | Advanced |
| OPTION | Video Reset |
| LOCK | |

◄◎► Move  MENU Prev                                    **1**

| SETUP | EZ Picture | |
|---|---|---|
| VIDEO | Color Temperature | Cool |
| AUDIO | XD | Medium |
| TIME | Advanced | Warm |
| OPTION | Video Reset | ✓ User ► |
| LOCK | | |

Selection ( ► or ◎ ) leads you to the detailed setting screen.

◄◎► Move  MENU Prev                               **2**  **3**

| SETUP | | |
|---|---|---|
| VIDEO | User | |
| AUDIO | Red | 0 ▶ |
| TIME | Green | 0 |
| OPTION | Blue | 0 |
| LOCK | | |

Press **MENU** to confirm.

◄◎► Move  MENU Prev                                    **4**

| SETUP | | |
|---|---|---|
| VIDEO | Red | 0 ◄ ► |
| AUDIO | ▼ | |
| TIME | | |
| OPTION | | |
| LOCK | | |

◄◎► Move  MENU Prev                          **5**   **47**
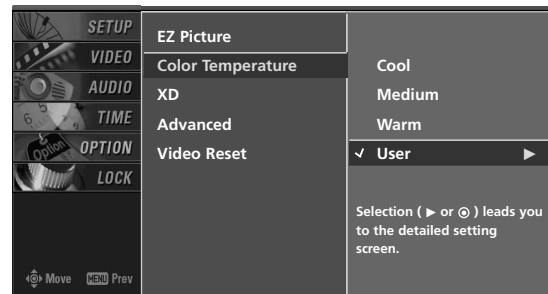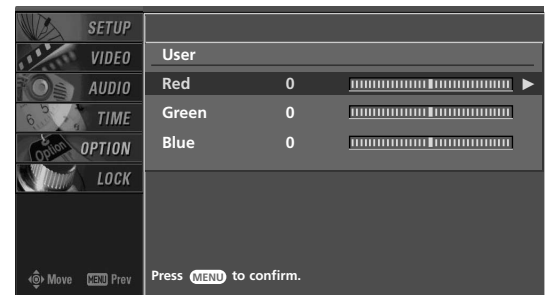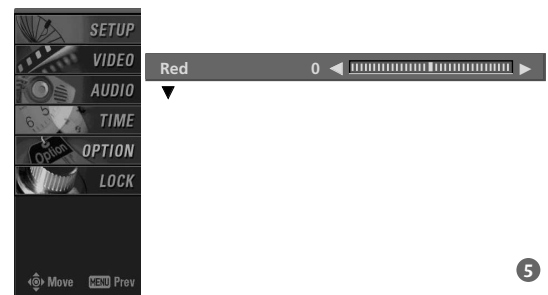
# PICTURE CONTROL

## 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 EZ Picture options (Daylight, Normal and Night time), XD is automatically changed to Auto.

When selecting EZ Picture 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.
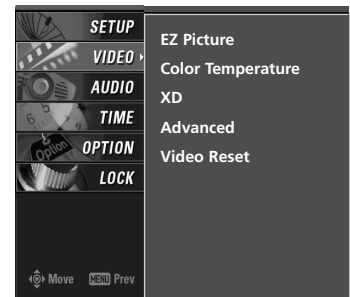
### Selecting the Manual

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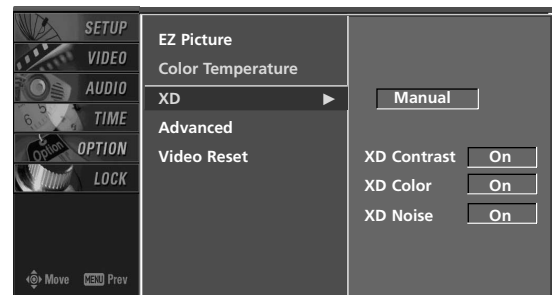
**4** Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.

# 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 Analog, AV1, AV2, and Component 480i mode.

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

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

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

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

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

# PICTURE CONTROL

## 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/DVI, or HDMI2mode.

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

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

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

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

# PICTURE RESET

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

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

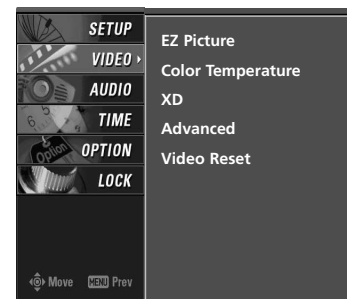2 Press the ▶ button and then use ▲ or ▼ button to select **Video Reset**.

3 Press the ▶ button to reset the Video menu options to original values.
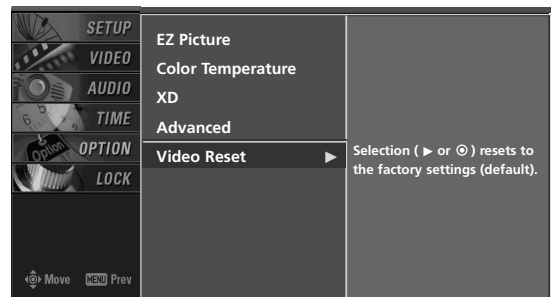
# SOUND & LANGUAGE CONTROL

## PRESET SOUND SETTINGS (EZ SOUND)

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

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

When you select the Stadium or Theater, the AUDIO menu-Balance option is disabled and the Balance option is set to 0 automatically.

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

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

■ You can also adjust **EZ Sound** in the **AUDIO** menu.
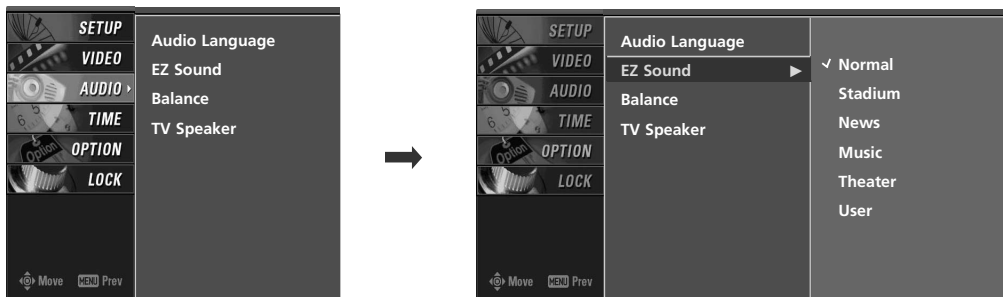
# SOUND SETTING ADJUSTMENT - USER MODE

**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.

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

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

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

**5** Press the ► button and then use ◄ or ► button to make appropriate adjustments.

### Selecting the Front surround

Press the ► button and then use ◄ or ► button to select **Off** or **SRS** (Sound Retrieval System) **TruSurround XT**.

- When SRS (Sound Retrieval System) TruSurround XT is selected, **Balance** is disable and set to 0.
- When **Off** is selected, **Balance** is restored to the original value set the user.

**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.



SETUP
VIDEO
AUDIO ▸
TIME
OPTION
LOCK

Audio Language
EZ Sound
Balance
TV Speaker

◉ Move  MENU Prev

**①**

SETUP
VIDEO
AUDIO
TIME
OPTION
LOCK

Audio Language
EZ Sound
Balance
TV Speaker

Normal
Stadium
News
Music
Theater
✓ User  ►

Selection ( ► or ◉ ) leads you to the detailed setting screen.

◉ Move  MENU Prev

**② ③**

SETUP
VIDEO
AUDIO
TIME
OPTION
LOCK

User
Treble        50  ►
Bass          50
Front Surround      Off

◉ Move  MENU Prev    Press MENU to confirm.

**④**

SETUP
VIDEO
AUDIO
TIME
OPTION
LOCK

Front Surround  ◄      Off      ►

◉ Move  MENU Prev

**⑤**

# SOUND &LANGUAGE CONTROL

## 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.
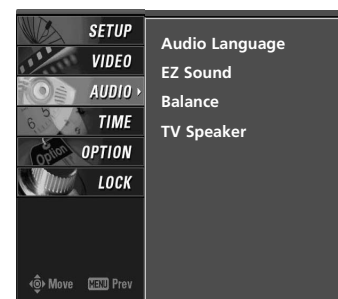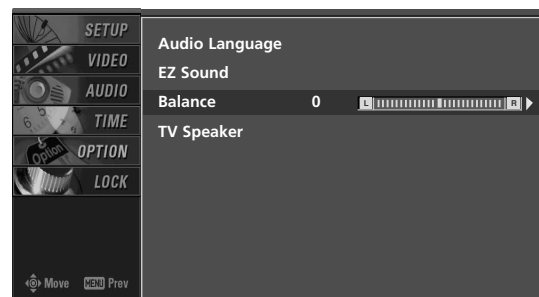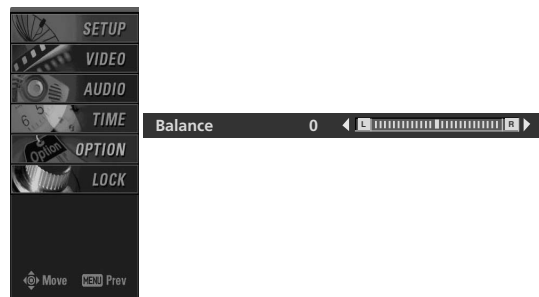
# TV SPEAKERS ON/OFF SETUP

**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.

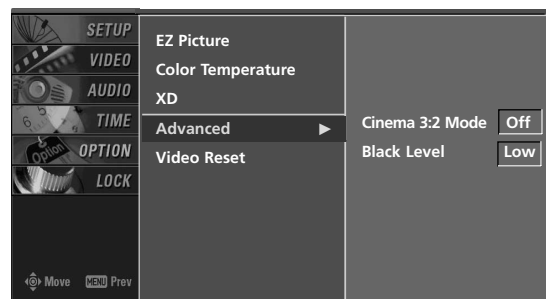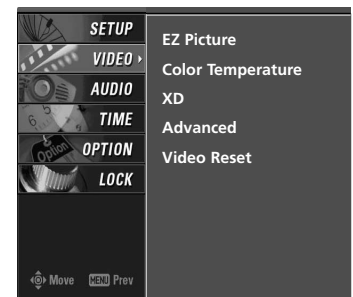② Press the ► button and then use ▲ or ▼ button to select **TV Speaker**.

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.
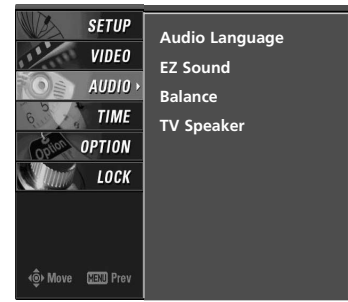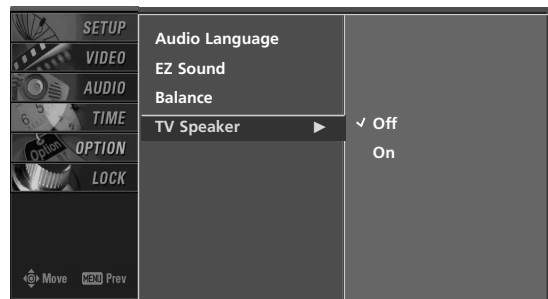
SOUND & LANGUAGE CONTROL

# 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.

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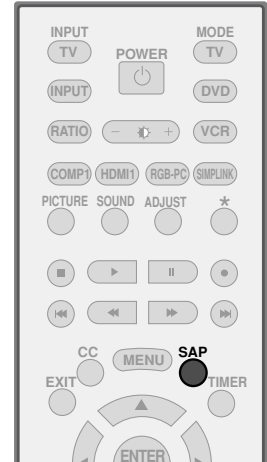
**1** Use the **SAP** button to select your desired MTS mode in analog signal. Each time you press the **SAP** button, **Mono**, **Stereo**, or **SAP** appear in turn.

■ 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 **AUDIO** menu.

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

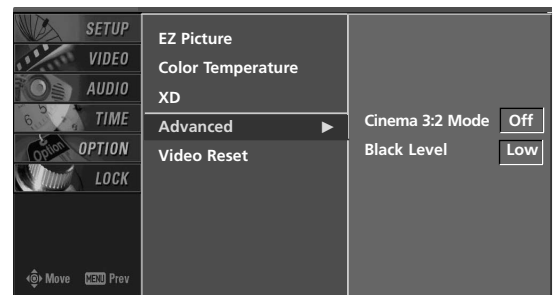③ Press the ▶ button and then use ▲ or ▼ button to select : **English**, **Spanish**, or **French**.

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

| | SETUP | Audio Language |
|---|---|---|
| | VIDEO | EZ Sound |
| | AUDIO ▸ | Balance |
| | TIME | TV Speaker |
| | OPTION | |
| | LOCK | |

◀◉▶ Move  MENU Prev

①

| | SETUP | Audio Language ▶ | ✓ English |
|---|---|---|---|
| | VIDEO | EZ Sound | Spanish |
| | AUDIO | Balance | French |
| | TIME | TV Speaker | |
| | OPTION | | |
| | LOCK | | |

◀◉▶ Move  MENU Prev

② ③
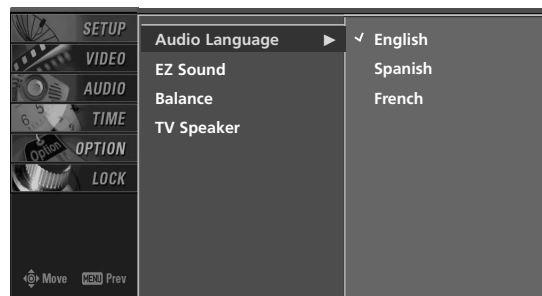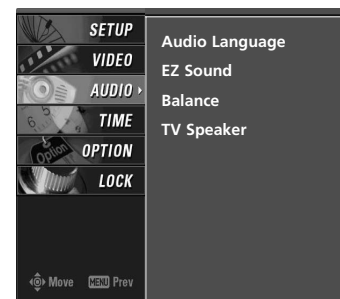
# ON-SCREEN MENUS LANGUAGE SELECTION

**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 your desired language.
From this point on, the on-screen menus will be shown in the selected language.

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

SETUP
VIDEO
AUDIO
TIME
OPTION ▸
LOCK

Aspect Ratio
Caption/Text
Caption Option
Language
SimpLink

◈ Move  MENU Prev

❶

SETUP
VIDEO
AUDIO
TIME
OPTION
LOCK

Aspect Ratio
Caption/Text
Caption Option
Language          ▶
SimpLink

✓ English
Español (Spanish)
Français (French)

◈ Move  MENU Prev

❷ ❸

# CAPTION / TEXT

## Analog Broadcasting System Captions

Select a caption mode for displaying captioning information if provided on a program. Analog caption displays information at any position on the screen and is usually the program's dialog.

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

Caption/Text, if provided by the broadcaster, would be available for both digital and analog channels on the Antenna/Cable.

This TV is programmed to memorize the caption/text mode which was last set when you turn the power off.

When you select the CC1 ~ Text4, Caption option must be disabled.
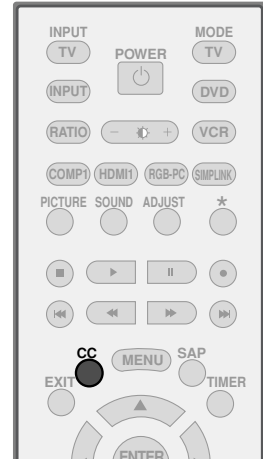
**1** Use the **CC** button repeatedly to select Caption **Off**, **CC1**, **CC2**, **CC3**, **CC4**, **Text1**, **Text2**, **Text3** or **Text4**.

■ **CAPTION**

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

■ **TEXT**

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

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

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

| SETUP | Aspect Ratio |
|-------|--------------|
| VIDEO | Caption/Text |
| AUDIO | Caption Option |
| TIME | Language |
| OPTION ▸ | SimpLink |
| LOCK | |

⟶

| SETUP | Aspect Ratio | ✓ Off |
|-------|--------------|-------|
| VIDEO | Caption/Text ▶ | CC1 |
| AUDIO | Caption Option | CC2 |
| TIME | Language | CC3 |
| OPTION | SimpLink | CC4 |
| LOCK | | Text1 |
| | | Text2 |
| | | Text3 |
| | | Text4 |
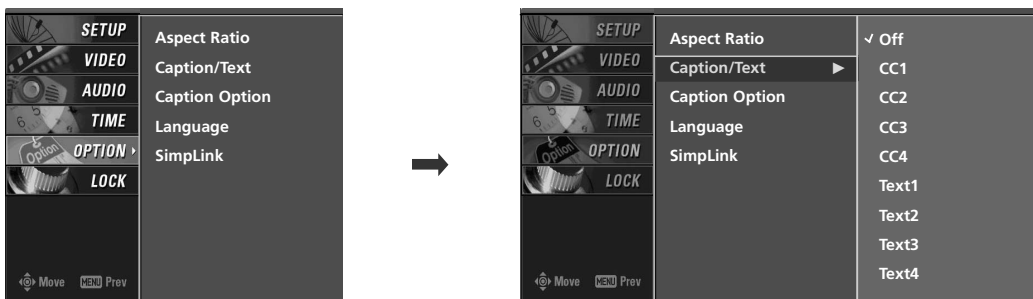
## Digital Broadcasting System Captions

**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.**

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

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

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

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

# CAPTION OPTION

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

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

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

③ Press the ▶ button and then use ◄ or ▶ button to select **Custom**.

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

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

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

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

| SETUP | Aspect Ratio |
|---|---|
| VIDEO | Caption/Text |
| AUDIO | Caption Option |
| TIME | Language |
| OPTION ▶ | SimpLink |
| LOCK | |

◆ Move  MENU Prev

❶

| SETUP | Aspect Ratio | Style | Custom |
|---|---|---|---|
| VIDEO | Caption/Text | Size | A Standard |
| AUDIO | Caption Option ▶ | Font | Font 0 |
| TIME | Language | Text Color | ■ White |
| OPTION | SimpLink | Text Opacity | Solid |
| LOCK | | Bg Color | ■ Black |
| | | Bg Opacity | Solid |
| | | Edge Type | None |
| | | Edge Color | ■ Black |

◆ Move  MENU Prev

❷ ❸ ❹
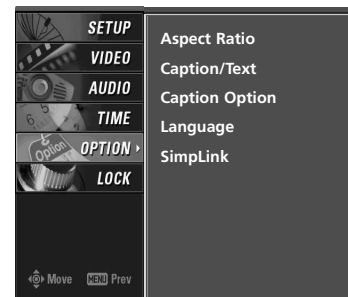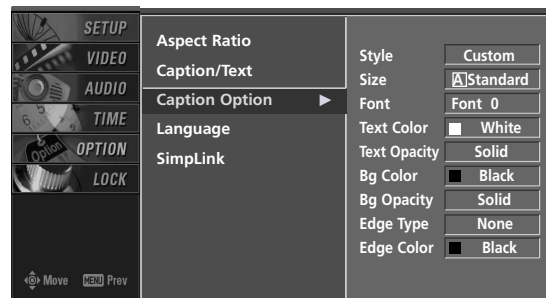
# TIME SETTING

## 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.**

**The factory default value of the Auto Clock is Off, because a clock information sent each broadcasting station is different.**

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

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

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

**4** Press the ► button and then use ▲ or ▼ button to select your viewing area time zone:

U.S.A : **Eastern**, **Central**, **Mountain**, **Pacific**, **Alaska** or **Hawaii**.

Canada : **Eastern**, **Central**, **Mountain**, **Pacific**, **New F.land** or **Atlantic**.

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

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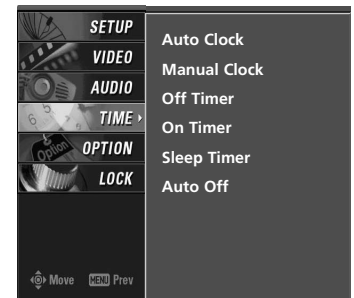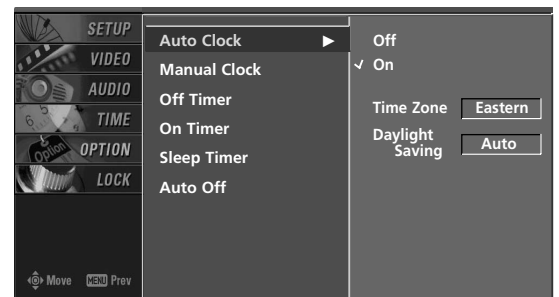
# Manual Clock Setup

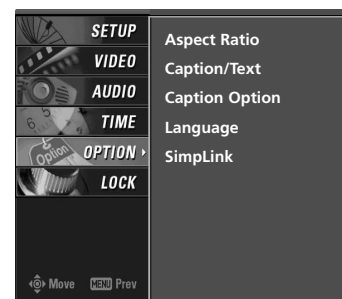If the current time setting is wrong, reset the clock manually.

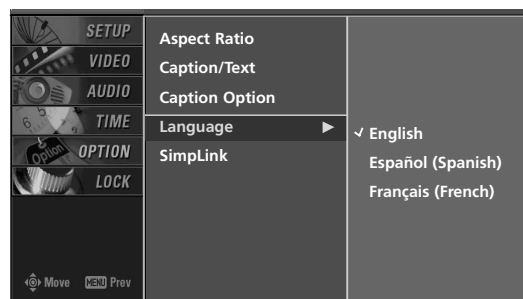1 Press the **MENU** button and then use ▲ or ▼ button to select the **TIME** menu.

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

3 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.

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

| SETUP | Auto Clock |
| VIDEO | Manual Clock |
| AUDIO | Off Timer |
| TIME › | On Timer |
| OPTION | Sleep Timer |
| LOCK | Auto Off |

◀◎▶ Move   MENU Prev

❶

| SETUP | Auto Clock | |
| VIDEO | Manual Clock | ▶ |
| AUDIO | Off Timer | |
| TIME | On Timer | |
| OPTION | Sleep Timer | |
| LOCK | Auto Off | |

Year    - - - -
Date   - - / - -
Time   - - : - -  - -

◀◎▶ Move   MENU Prev

❷ ❸
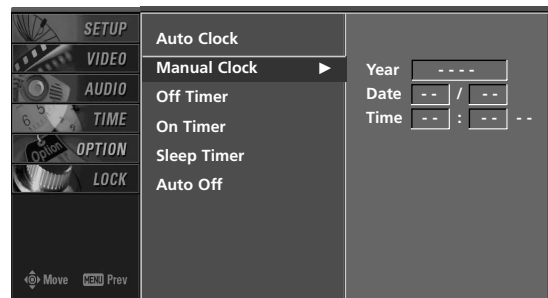
## AUTO ON/OFF TIMER SETTING

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

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

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

If you do not press any button within 2 hours after the TV turns on with the On Timer function, the TV will automatically revert to standby mode.
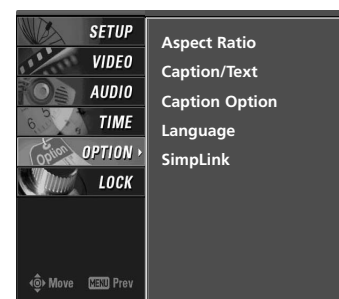
**1** Press the **MENU** button and then use ▲ or ▼ button to select the **TIME** menu.

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

**3** Press the ► button and then use ▲ or ▼ button to select **On**.
  ■ To cancel the **On/Off timer** function, select **Off**.

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

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

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

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

**7** Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.
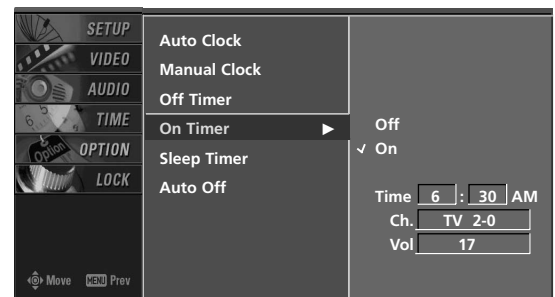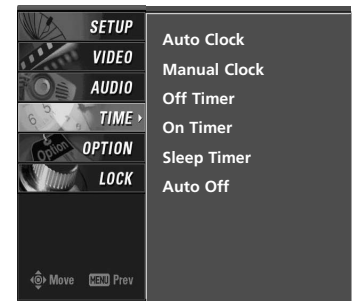
# SLEEP TIMER SETTING

**The Sleep Timer turns the TV off at the preset time.**
**Note that this setting is cleared when the TV is turned off.**
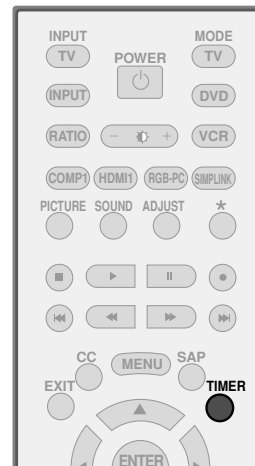
**1** Press the **TIMER** button repeatedly to select the number of minutes. First the **Off** option appears on the screen, followed by the following sleep timer options : 10, 20, 30, 60, 90, 120, 180, and 240 minutes.

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

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

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

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

| SETUP | Auto Clock |
|---|---|
| VIDEO | Manual Clock |
| AUDIO | Off Timer |
| TIME ▸ | On Timer |
| OPTION | Sleep Timer |
| LOCK | Auto Off |

| SETUP | Auto Clock | ✓ Off |
|---|---|---|
| VIDEO | Manual Clock | 10 min |
| AUDIO | Off Timer | 20 min |
| TIME | On Timer | 30 min |
| OPTION | Sleep Timer ▶ | 60 min |
| LOCK | Auto Off | 90 min |
| | | 120 min |
| | | 180 min |
| | | 240 min |
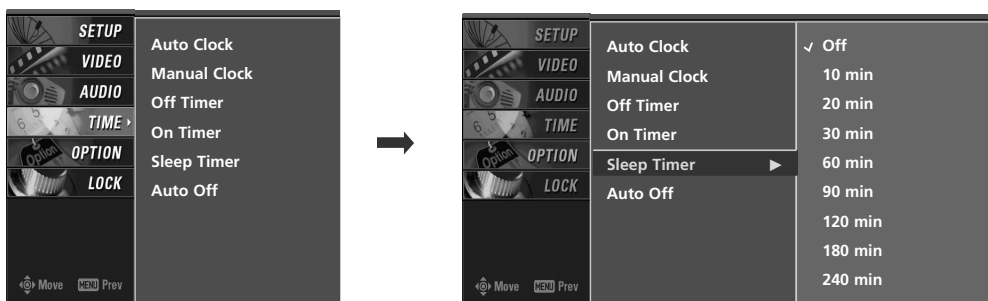
# AUTO SHUT-OFF SETTING

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

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

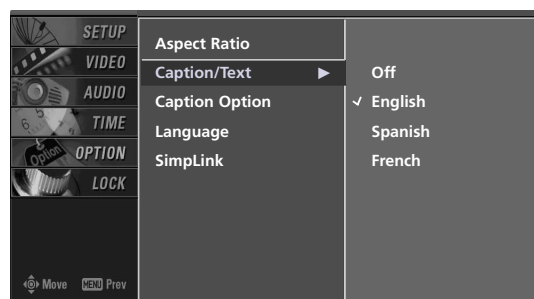**2** Press the ► button and then use ▲ or ▼ button to select **Auto Off**.

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

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

SETUP
VIDEO
AUDIO
TIME ›
OPTION
LOCK

Auto Clock
Manual Clock
Off Timer
On Timer
Sleep Timer
Auto Off

◀◉▶ Move    MENU Prev

**❶**

SETUP
VIDEO
AUDIO
TIME
OPTION
LOCK

Auto Clock
Manual Clock
Off Timer
On Timer
Sleep Timer
Auto Off        ►

TV will be automatically turned off, in case of No Signal for 10 minutes.

✓ Off
   On

◀◉▶ Move    MENU Prev

**❷** **❸**
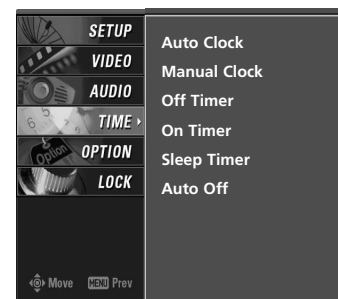
# PARENTAL CONTROL / RATINGS

**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".

**Enter Password**

| * | * | * | * |
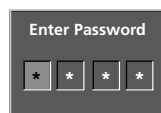
# PARENTAL CONTROL /RATINGS

## Set Password

**Change the password by inputting a new password twice.**

**For USA**  **For Canada**

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

**2** Press the ► button and then choose any 4 digits for your new password.
As soon as the 4 digits are entered, re-enter the same 4 digits on the **Confirm**.
Then your changed password has been memorized.

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

### ❗ NOTE

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

## Lock System

**Enables or disables the blocking scheme you set up previously.**

**For USA**  **For Canada**

**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.
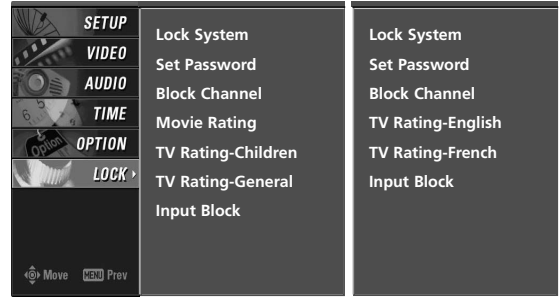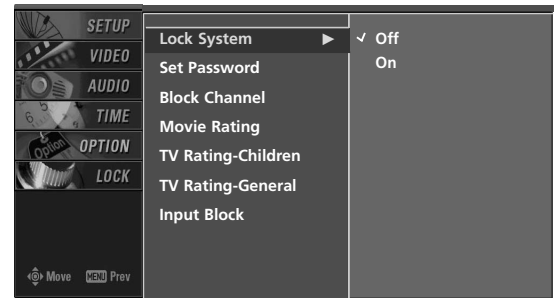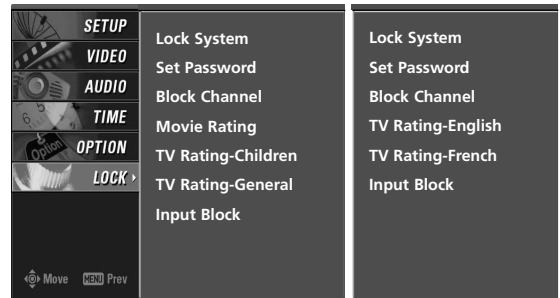
# CHANNEL BLOCKING

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

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

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

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

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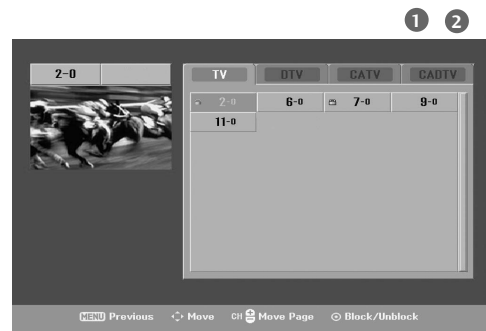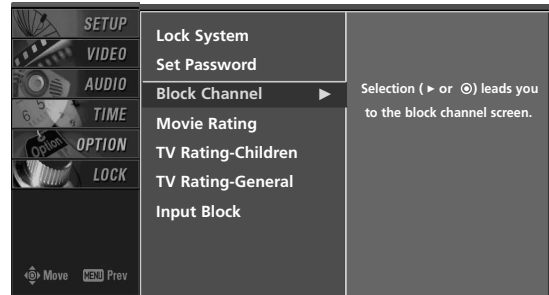
# EXTERNAL INPUT BLOCKING

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

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

**2** Press the ► button and then use the ◄ or ► button to select a source.

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

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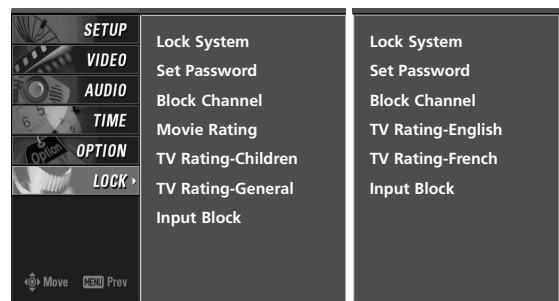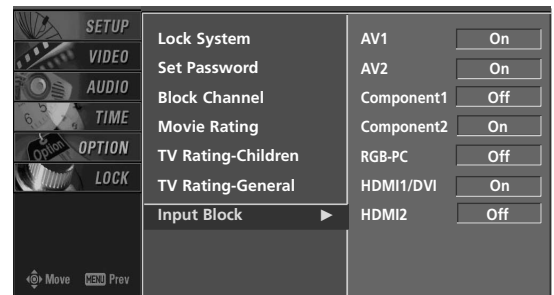
## MOVIE & TV RATING

### Movie Rating (MPAA) *- for USA only*
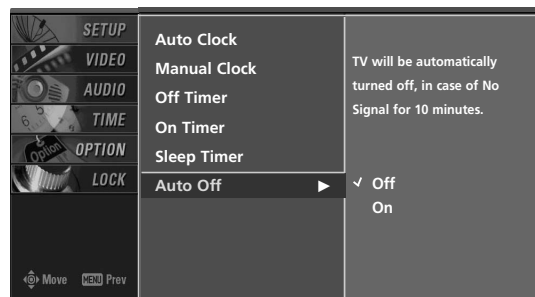
Blocks movies according to the movie ratings limits speci-
fied, so children cannot view certain movies. You can set
the ratings limit by blocking out all the movies with the
ratings above a specified level. Keep in mind that the
movie ratings limit only applies to movies shown on TV,
not TV programs, such as soap operas.

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

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

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

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

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

**SETUP**
**VIDEO**
**AUDIO**
**TIME**
**OPTION**
**LOCK** ›

Lock System
Set Password
Block Channel
Movie Rating
TV Rating-Children
TV Rating-General
Input Block

◄◉► Move  MENU Prev

❶

**SETUP**
**VIDEO**
**AUDIO**
**TIME**
**OPTION**
**LOCK**

Lock System
Set Password
Block Channel
Movie Rating        ►
TV Rating-Children
TV Rating-General
Input Block

◄◉► Move  MENU Prev

Blocking off : permits all
programs

G
PG
PG-13
R
NC-17
X
Blocking Off

❷
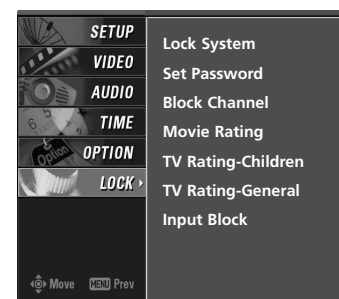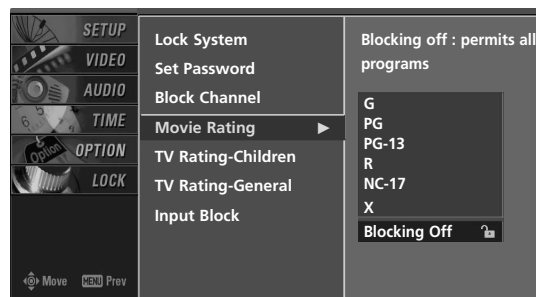
# TV Rating Children *- for USA only*

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

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

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

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

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

### SETUP / VIDEO / AUDIO / TIME / OPTION / LOCK ▶
Lock System
Set Password
Block Channel
Movie Rating
TV Rating-Children
TV Rating-General
Input Block

◆ Move  MENU Prev

**❶**

### SETUP / VIDEO / AUDIO / TIME / OPTION / LOCK
Lock System
Set Password
Block Channel
Movie Rating
TV Rating-Children ▶      √ Age
TV Rating-General            Fantasy Violence
Input Block

◆ Move  MENU Prev

**❷**
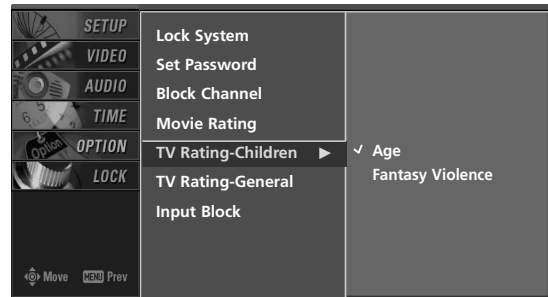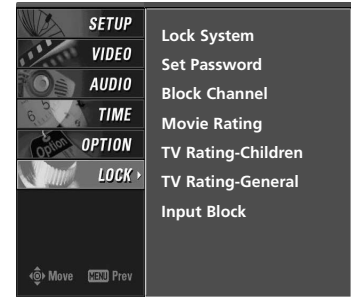
# TV Rating General *- for USA only*

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

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

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

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

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

### SETUP / VIDEO / AUDIO / TIME / OPTION / LOCK ▶
Lock System
Set Password
Block Channel
Movie Rating
TV Rating-Children
TV Rating-General
Input Block

◆ Move  MENU Prev

**❶**

### SETUP / VIDEO / AUDIO / TIME / OPTION / LOCK
Lock System
Set Password
Block Channel
Movie Rating
TV Rating-Children      √ Age
TV Rating-General ▶        Dialogue
Input Block                Language
                          Sex
                          Violence

◆ Move  MENU Prev

**❷**
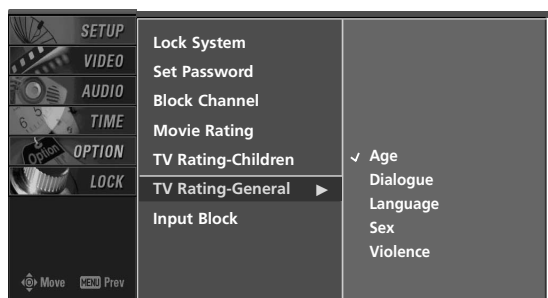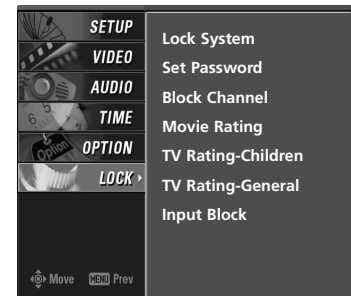
# PARENTAL CONTROL /RATINGS

## 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.

---
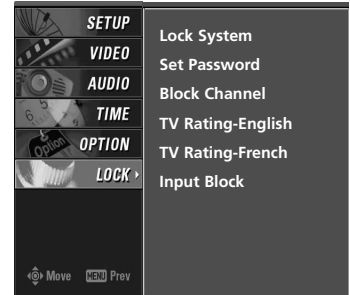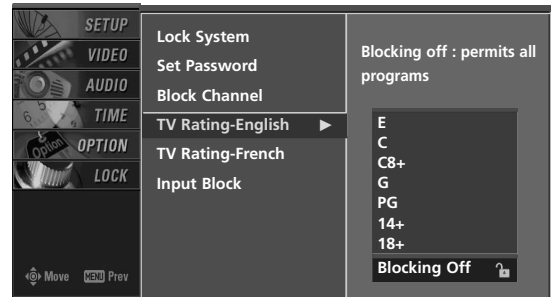
## TV Rating French *- for CANADA only*

**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.
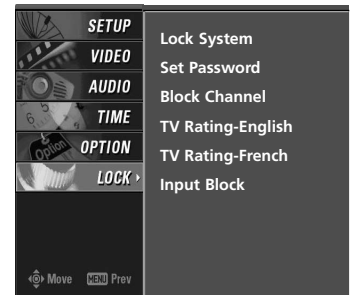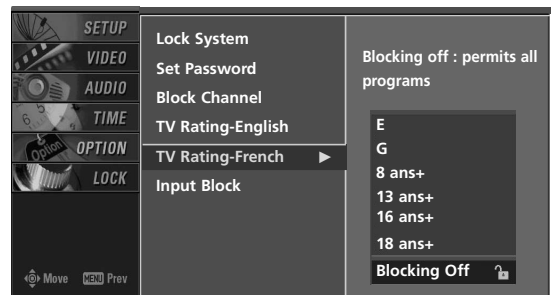
# APPENDIX

## TROUBLESHOOTING

| The operation does not work normally. | |
|---|---|
| The remote control doesn't work | ■ Check to see if there is any object between the product and the remote control causing obstruction. Ensure you are pointing the remote control directly at the TV.<br>■ Ensure that the batteries are installed with correct polarity (+ to +, - to -).<br>■ Ensure that the correct remote operating mode is set: TV, VCR etc.<br>■ Install new batteries. |
| Power is suddenly turned off | ■ Is the sleep timer set?<br>■ Check the power control settings. Power interrupted.<br>■ 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.<br>■ Try another channel. The problem may be with the broadcast.<br>■ Is the power cord inserted into wall power outlet?<br>■ Check your antenna direction and/or location.<br>■ 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.<br>■ Keep a sufficient distance between the product and the VCR.<br>■ Try another channel. The problem may be with the broadcast.<br>■ Are the video cables installed properly?<br>■ 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.<br>■ Station signal is weak, reorient antenna to receive weaker station.<br>■ Check for sources of possible interference. |
| Lines or streaks in pictures | ■ Check antenna (Change the direction of the antenna). |

# APPENDIX

| The audio function does not work. | |
|---|---|
| Picture OK & No sound | ■ Press the VOL or VOLUME button.<br>■ Sound muted? Press MUTE button.<br>■ Try another channel. The problem may be with the broadcast.<br>■ 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.<br>■ 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.<br>■ 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.

# APPENDIX

## PRODUCT SPECIFICATIONS

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

| MODELS | | 26LC7D (26LC7D-UB) 26LC7DC (26LC7DC-UB) | 32LC4D (32LC4D-UA) | 42LC4D (42LC4D-UA) |
|---|---|---|---|---|
| Dimensions (Width x Height x Depth) | Including stand | 26.6 x 20.9x 8.7 inches 676.5 x 531.0 x 221.0mm | 31.8 x 23.8x 9.8 inches 806.8 x 605.6 x 249.0mm | 40.7 x 29.5 x 11.3 inches 1032.7 x 750.0 x 287.6 mm |
| | Excluding stand | 26.6 x 18.8 x 3.3 inches 676.5 x 478.7 x 84.0 mm | 31.8 x 21.6 x 3.1 inches 806.8 x 548.6 x 79.0 mm | 40.7 x 27.0x 3.5 inches 1032.7 x 685.5 x 88.5 mm |
| Weight | including stand | 21.2 pounds / 9.62 kg | 30.4 pounds / 13.8kg | 54.0 pounds / 24.5 kg |
| | excluding stand | 19.0 pounds / 8.62 kg | 24.9 pounds / 11.3 kg | 44.1 pounds / 20.0 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 | | | | Brand | Codes | | | | Brand | Codes | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AIWA | 034 | | | | MAGNAVOX | 031 | 033 | 034 | 041 | SAMSUNG | 032 | 040 | 102 | 104 |
| AKAI | 016 | 043 | 046 | 124 | | 067 | 068 | | | | 105 | 107 | 109 | 112 |
| | 125 | 146 | | | MARANTZ | 012 | 031 | 033 | 067 | | 113 | 115 | 120 | 122 |
| AMPRO | 072 | | | | | 069 | | | | | 125 | | | |
| ANAM | 031 | 033 | 103 | | MARTA | 101 | | | | SANSUI | 022 | 043 | 048 | 135 |
| AUDIO DYNAMICS | 012 | 023 | 039 | 043 | MATSUI | 027 | 030 | | | SANYO | 003 | 007 | 010 | 014 |
| BROKSONIC | 035 | 037 | 129 | | MEI | 031 | 033 | | | | 102 | 134 | | |
| CANON | 028 | 031 | 033 | | MEMOREX | 003 | 010 | 014 | 031 | SCOTT | 017 | 037 | 112 | 129 |
| CAPEHART | 108 | | | | | 033 | 034 | 053 | 072 | | 131 | | | |
| CRAIG | 003 | 040 | 135 | | | 101 | 102 | 134 | 139 | SEARS | 003 | 008 | 009 | 010 |
| CURTIS MATHES | 031 | 033 | 041 | | MGA | 045 | 046 | 059 | | | 013 | 014 | 017 | 020 |
| DAEWOO | 005 | 007 | 010 | 064 | MINOLTA | 013 | 020 | | | | 031 | 042 | 073 | 081 |
| | 065 | 108 | 110 | 111 | MITSUBISHI | 013 | 020 | 045 | 046 | | 101 | | | |
| | 112 | 116 | 117 | 119 | | 049 | 051 | 059 | 061 | SHARP | 031 | 054 | 149 | |
| DAYTRON | 108 | | | | | 151 | | | | SHINTOM | 024 | | | |
| DBX | 012 | 023 | 039 | 043 | MTC | 034 | 040 | | | SONY | 003 | 009 | 031 | 052 |
| DYNATECH | 034 | 053 | | | MULTITECH | 024 | 034 | | | | 056 | 057 | 058 | 076 |
| ELECTROHOME | 059 | | | | NEC | 012 | 023 | 039 | 043 | | 077 | 078 | 149 | |
| EMERSON | 006 | 017 | 025 | 027 | | 048 | | | | SOUNDESIGN | 034 | | | |
| | 029 | 031 | 034 | 035 | NORDMENDE | 043 | | | | STS | 013 | | | |
| | 036 | 037 | 046 | 101 | OPTONICA | 053 | 054 | | | SYLVANIA | 031 | 033 | 034 | 059 |
| | 129 | 131 | 138 | 153 | PANASONIC | 066 | 070 | 074 | 083 | | 067 | | | |
| FISHER | 003 | 008 | 009 | 010 | | 133 | 140 | 145 | | SYMPHONIC | 034 | | | |
| FUNAI | 034 | | | | | | | | | TANDY | 010 | 034 | | |
| GE | 031 | 033 | 063 | 072 | PENTAX | 013 | 020 | 031 | 033 | TATUNG | 039 | 043 | | |
| | 107 | 109 | 144 | 147 | | 063 | | | | TEAC | 034 | 039 | 043 | |
| GO VIDEO | 132 | 136 | | | PHILCO | 031 | 034 | 067 | | TECHNICS | 031 | 033 | 070 | |
| HARMAN KARDON | | 012 | 045 | | PHILIPS | 031 | 033 | 034 | 054 | TEKNIKA | 019 | 031 | 033 | 034 |
| HITACHI | 004 | 018 | 026 | 034 | | 067 | 071 | 101 | | | 101 | | | |
| | 043 | 063 | 137 | 150 | PILOT | 101 | | | | THOMAS | 034 | | | |
| INSTANTREPLAY | 031 | 033 | | | PIONEER | 013 | 021 | 048 | | TMK | 006 | | | |
| JCL | 031 | 033 | | | PORTLAND | 108 | | | | TOSHIBA | 008 | 013 | 042 | 047 |
| JCPENNY | 012 | 013 | 015 | 033 | PULSAR | 072 | | | | | 059 | 082 | 112 | 131 |
| | 040 | 066 | 101 | | QUARTZ | 011 | 014 | | | TOTEVISION | 040 | 101 | | |
| JENSEN | 043 | | | | QUASAR | 033 | 066 | 075 | 145 | UNITECH | 040 | | | |
| JVC | 012 | 031 | 033 | 043 | RCA | 013 | 020 | 033 | 034 | VECTOR RESEARCH | 012 | | | |
| | 048 | 050 | 055 | 060 | | 040 | 041 | 062 | 063 | VICTOR | 048 | | | |
| | 130 | 150 | 152 | | | 107 | 109 | 140 | 144 | VIDEO CONCEPTS | 012 | 034 | 046 | |
| KENWOOD | 014 | 034 | 039 | 043 | | 145 | 147 | | | VIDEOSONIC | 040 | | | |
| | 047 | 048 | | | REALISTIC | 003 | 008 | 010 | 014 | WARDS | 003 | 013 | 017 | 024 |
| LG (GOLDSTAR) | 001 | 012 | 013 | 020 | | 031 | 033 | 034 | 040 | | 031 | 033 | 034 | 040 |
| | 101 | 106 | 114 | 123 | | 053 | 054 | 101 | | | 053 | 054 | 131 | |
| LLOYD | 034 | | | | RICO | 058 | | | | YAMAHA | 012 | 034 | 039 | 043 |
| LXI | 003 | 009 | 013 | 014 | RUNCO | 148 | | | | ZENITH | 034 | 048 | 056 | |
| | 017 | 034 | 101 | 106 | SALORA | 014 | | | | | 058 | 072 | 080 | 101 |
| MAGIN | 040 | | | | | | | | | | | | | |

# DVD

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

# APPENDIX

## IR CODES

### 1. How to Connect

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

### 2. Remote Control IR Codes

■ **Output waveform**

Single pulse, modulated with 37.917KHz signal at 455KHz
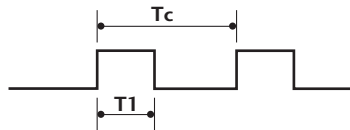
Carrier frequency

FCAR = 1/TC = fOSC/12
Duty ratio = T1/TC = 1/3

■ **Configuration of frame**

1st frame

| Lead code | Low custom code | High custom code | Data code | Data code |
|---|---|---|---|---|
| | C0 C1 C2 C3 C4 C5 C6 C7 | C0 C1 C2 C3 C4 C5 C6 C7 | D0 D1 D2 D3 D4 D5 D6 D7 | D0 D1 D2 D3 D4 D5 D6 D7 |

Repeat frame

Repeat code

Tf

■ **Lead code**

9 ms

4.5 ms

■ **Repeat code**

0.55 ms

9 ms

2.25 ms
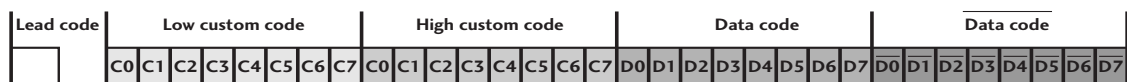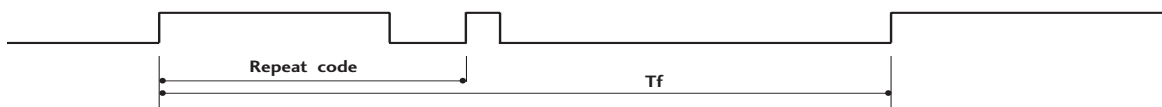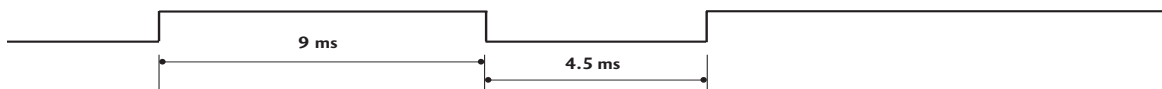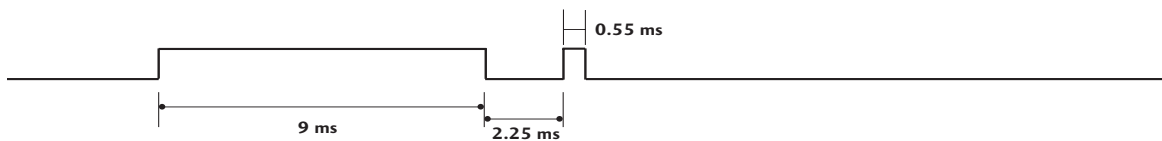
■ **Bit description**

Bit "0"

0.56 ms

1.12 ms

Bit "1"

0.56 ms

2.24 ms
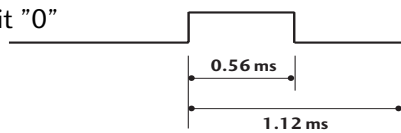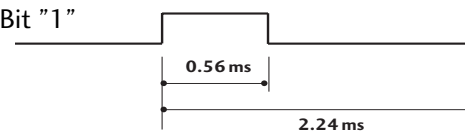
■ **Frame interval: Tf**

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

Tf

Tf

Tf=108ms @455KHz
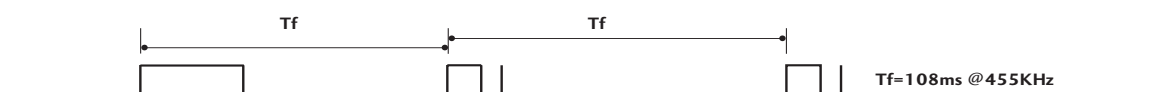
| Code (Hexa) | Function | Note | Code (Hexa) | Function | Note |
|---|---|---|---|---|---|
| 0F | TV INPUT | Remote control Button | BF | COMPONENT1 | Discrete IR Code (Component1 Input Selection) |
| 0B | INPUT | Remote control Button | | | |
| 08 | POWER | Remote control Button (Power On/Off) | D4 | COMPONENT2 | Discrete IR Code (Component2 Input Selection) |
| 79 | RATIO | Remote control Button | | | |
| 0E | TIMER | Remote control Button | D5 | RGB-PC | Discrete IR Code (RGB-PC Input Selection) |
| 10-19 | Number Key 0-9 | Remote control Button | | | |
| 4C | - (Dash) | Remote control Button | CE | HDMI1/DVI | Discrete IR Code (HDMI1/DVI Input Selection) |
| 1A | BACK | Remote control Button | | | |
| 09 | MUTE | Remote control Button | CC | HDMI2 | Discrete IR Code (HDMI2 Input Selection) |
| 02 | VOL + | Remote control Button | | | |
| 03 | VOL - | Remote control Button | 76 | Ratio 4:3 | Discrete IR Code (Only 4:3 Mode) |
| 00 | CH + | Remote control Button | | | |
| 01 | CH - | Remote control Button | 77 | Ratio 16:9 | Discrete IR Code (Only 16:9 Mode) |
| 1E | FAV | Remote control Button | | | |
| 7E | SIMPLINK | Remote control Button | AF | Ratio Zoom | Discrete IR Code (Only Zoom1 Mode) |
| 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 | − ☼ | Remote control Button | | | |
| E0 | ☼ + | 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) | | | |

# EXTERNAL CONTROL THROUTH 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 functionallity using telenet software.

## RS-232C Setup

SERVICE

VIDEO          AUDIO
Y    PB    PR    L    R

COMPONENT IN

RGB IN
(PC)

HDMI IN

AUDIO    REMOTE
(RGB/DVI)  CONTROL IN

AV OUT

2

1

OPTICAL

AV IN 1

HDMI/DVI IN

RS-232C IN
(CONTROL & SERVICE)

DIGITAL AUDIO
OUT

S-VIDEO    VIDEO

L(MONO) R
AUDIO

PC
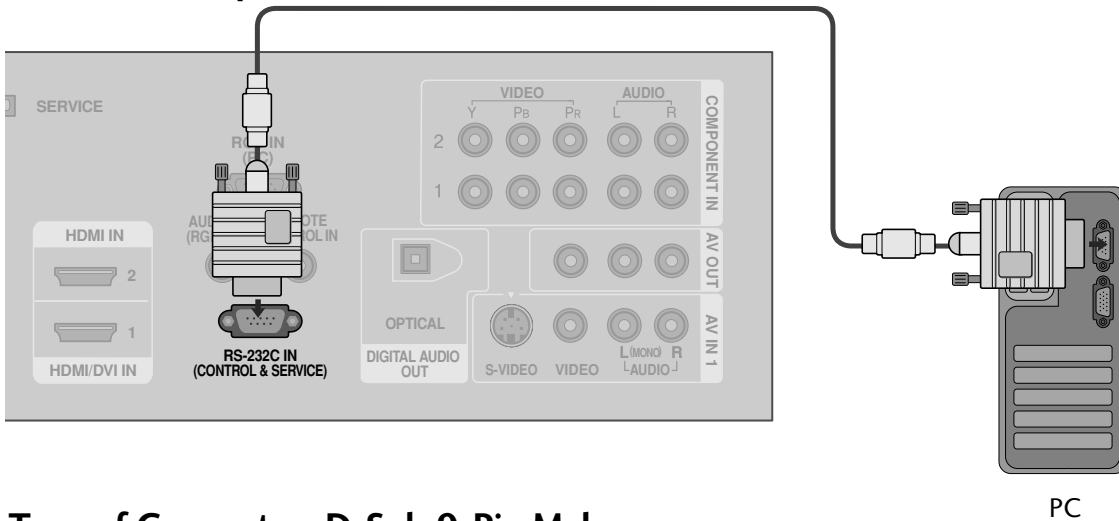
## Type of Connector; D-Sub 9-Pin Male

| 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 |
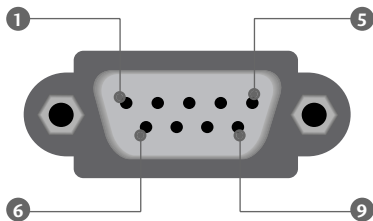
## RS-232C Configurations

**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 | |
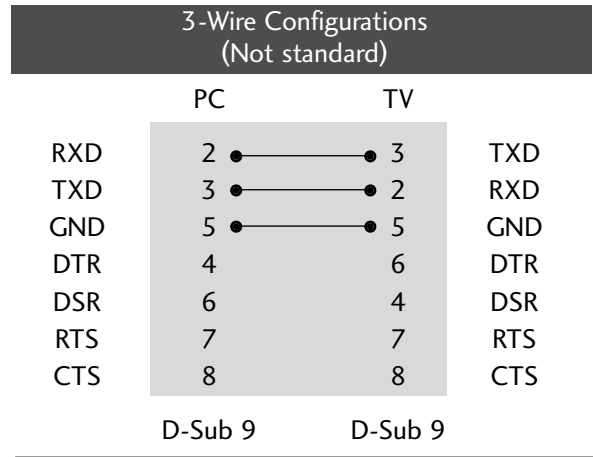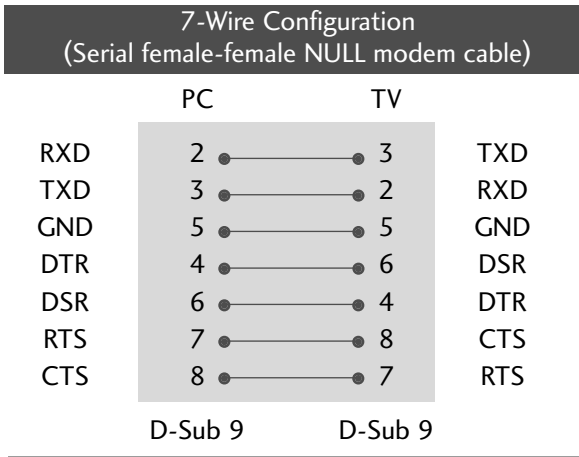
## Set ID

Use this function to specify a TV ID number.
Refer to 'Real Data Mapping'. ▶ **p.85**.

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

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

3. Press the ▶ button and then use ▲ or ▼ button to adjust **Set ID** to choose the desired TV ID number. The adjustment range of Set ID is 1~99.

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

```
        CC   MENU   SAP
EXIT                TIMER
              ▲
         ◄  ENTER  ►
              ⊙
              ▼
```

```
SETUP ›     EZ Scan
VIDEO       Manual Scan
AUDIO       Channel Edit
TIME        DTV Signal
OPTION      Input Source
LOCK        Input Label
            Set ID

⊙ Move  MENU Prev
```
❶

```
SETUP      EZ Scan
VIDEO      Manual Scan
AUDIO      Channel Edit
TIME       DTV Signal
OPTION     Input Source
LOCK       Input Label
           Set ID        ▶      │ 1 │

⊙ Move  MENU Prev
```
❷ ❸
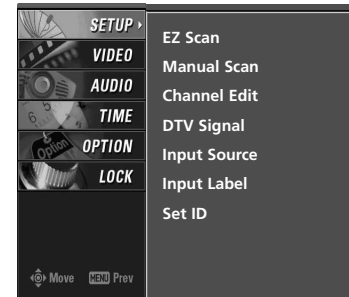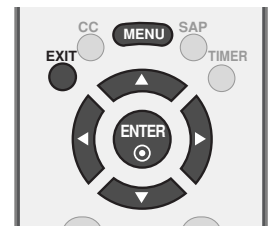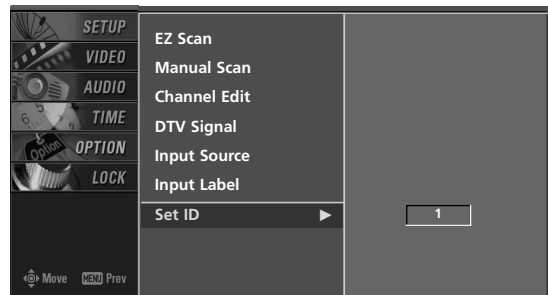
## Communication Parameters

- 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 | 11. Sharpness | k | k | 0 ~ 64 |
| 02. Input Select | k | b | 0 ~ 9 | 12. OSD Select | k | l | 0 ~ 1 |
| 03. Aspect Ratio | k | c | (▶ p.85) | 13. Remote Control Lock Mode | k | m | 0 ~ 1 |
| 04. Screen Mute | k | d | 0 ~ 1 | | | | |
| 05. Volume Mute | k | e | 0 ~ 1 | 14. Treble | k | r | 0 ~ 64 |
| 06. Volume Control | k | f | 0 ~ 64 | 15. Bass | k | s | 0 ~ 64 |
| 07. Contrast | k | g | 0 ~ 64 | 16. Balance | k | t | 0 ~ 64 |
| 08. Brightness | k | h | 0 ~ 64 | 17. Color Temperature | k | u | 0 ~ 3 |
| 09. Color | k | i | 0 ~ 64 | | | | |
| 10. Tint | k | j | 0 ~ 64 | | | | |

| | COMMAND1 | COMMAND2 | DATA0 (Hexadecimal) | DATA1 (Hexadecimal) | DATA2 (Hexadecimal) | DATA3 (Hexadecimal) | DATA4 (Hexadecimal) | DATA5 (Hexadecimal) |
|---|---|---|---|---|---|---|---|---|
| 18. Channel Tuning | m | a | physical program high | major program low | major low | minor high | minor low | attribute |
| 19. Channel Add/Del | m | b | 0 ~ 1 | | | | | |
| 20. Key | m | c | (▶ p.87) | | | | | |
| 21. Input Select | x | b | (▶ p.87) | | | | | |

# Transmission / Receiving  Protocol

## Transmission

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

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

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

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

[DATA] : To transmit command data.

Transmit 'FF' data to read status of command.

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

[Cr] : Carriage Return

ASCII code '0x0D'

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

## OK Acknowledgement

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

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

* 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 characket, if set ID is 10, it will send the '0', 'a'.

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

[OK] : Use the large character.

* In this model, TV will send the echo, CR, LF with acknowledgement message.

* When it send the power on acknowledgement message, it wil be like below.

ex) ka 01 01 (CR) (LF) a 01 OK 01 x (CR) (LF)

## 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 characket, if set ID is 10, it will send the '0', 'a'.

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

[NG] : Use the large character

* In this model, TV will send the echo, CR, LF with acknowledgement message.

* When it send the power on acknowledgement message, it wil be like below.

ex) ka 01 01 (CR) (LF) a 01 NG 01 x (CR) (LF)

## 01. Power (Command2:a)

To control Power On/Off of the TV.

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

Data 0 : Power Off      Data 1 : Power On

*Acknowledgement* [a][ ][Set ID][ ][OK/NG][Data][x]

* In a like manner, if other functions transmit 'FF' data based on this format, Acknowledgement data feedback presents status about each function.

* In this model, TV will send the Acknowledge after power on processing completion.

* There might be a time delay between command and acknowledgement.

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

To select input source for the TV.

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

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

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

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

To adjust the screen format.

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

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

| Date 1: 4:3 | 5: Zoom 2 |
|---|---|
| 2: 16:9 | 6: Set by program |
| 3: Horizon | |
| 4: Zoom 1 | |

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

## 04. Screen Mute (Command2:d)

To select screen mute on/off.

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

Data 0 : Screen mute off (Picture on)

Data 1 : Screen mute on (Picture off)

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

## 05. Volume Mute (Command2:e)

To control volume mute on/off.

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

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

Data 0 : Volume mute on (Volume off)

Data 1 : Volume mute off (Volume on)

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

## 06. Volume Control (Command2:f)

To adjust volume.

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

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

Data Min : 0 ~ Max : 64

Refer to 'Real data mapping' as shown below.

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

## 07. Contrast (Command2:g)

To adjust screen contrast.

You can also adjust contrast in the Video menu.

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

Data Min : 0 ~ Max : 64

Refer to 'Real data mapping' as shown below.

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

## 08. Brightness (Command2:h)

To adjust screen brightness.

You can also adjust brightness in the Video menu.

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

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

Refer to 'Real data mapping' as shown below.

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

## 09. Color (Command2:i)

To adjust the screen color.

You can also adjust color in the Video menu.

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

Data Min : 0 ~ Max : 64

Refer to 'Real data mapping' as shown below.

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

*Real data mapping
 0 : Step 0
 ⋮
 A : Step 10 (SET ID 10)
 ⋮
 F : Step 15 (SET ID 15)
10 : Step 16 (SET ID 16)
 ⋮
63 : Step 99 (SET ID 99)
64 : Step 100
* Tint : R50 ~ G50
* Balance : L50 ~ R50

# APPENDIX

### 10. Tint (Command2:j)

To adjust the screen tint.

You can also adjust tint in the Video menu.

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

Data Red : 0 ~ Green : 64

*Refer to 'Real data mapping'. ▶ p.85.

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

### 11. Sharpness (Command2:k)

To adjust the screen sharpness.

You can also adjust sharpness in the Video menu.

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

Data Min: 0 ~ Max: 64

*Refer to 'Real data mapping'. ▶ p.85.

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

### 12. OSD Select (Command2:l)

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

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

Data 0: OSD off          Data 1: OSD on

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

### 13. Remote Control Lock Mode (Command2:m)

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

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

Data 0: Lock off          Data 1: Lock on

*Acknowledgement* [m][ ][Set ID][ ][OK/NG][Data][x]

If you're not using the remote control and front panel controls on the TV, use this mode. When main power is on/off, remote control lock is released.

### 14. Treble (Command2:r)

To adjust treble.

You can also adjust treble in the Audio menu.

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

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

*Refer to 'Real data mapping'. ▶ p.85.

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

### 15. Bass (Command2:s)

To adjust bass.

You can also adjust bass in the Audio menu.

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

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

*Refer to 'Real data mapping'. ▶ p.85.

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

### 16. Balance (Command2:t)

To adjust balance.

You can also adjust balance in the Audio menu.

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

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

*Refer to 'Real data mapping'. ▶ p.85.

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

### 17. Color Temperature (Command2:u)

To adjust color temperature.

You can also adjust color temperature in the Video menu.

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

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

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

### 18. 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.

| 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 | 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]

### 19. 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]

### 20. Key (Command: m c)

To send IR remote key code.

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

Data Key code: Refer to page 81.

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

### 21. Input select(Command: x b) (Main Picture Input)

To select input source for TV.

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

Data 00 : DTV (Antenna)        Data 40 : Component 1

Data 01 : DTV (Cable)          Data 41 : Component 2

Data 10 : Analog (Antenna)     Data 60 : RGB PC

Data 11 : Analog (Cable)       Data 90 : HDMI1/DVI

Data 20 : AV1                  Data 91 : HDMI2

Data 21 : AV2

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

**LG Electronics Inc.**