LG
Life's Good



LCD TV
OWNER'S MANUAL

32LH250H
37LH250H
42LH250H
32LH255H
37LH255H
42LH255H

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 attched on the back cover and quote this information to your dealer when you require service.

Model:

Serial:

ENERGY STAR

This product qualifies for ENERGY STAR in the "factory default (Home Use)" setting.

Changing the factory default settings or enabling other features may increase power consumption that could exceed the limits necessary to quality for ENERGY STAR.

1-800-243-0000	USA, Consumer User
1-888-865-3026	USA, Commercial User
1-888-542-2623	CANADA

LG Customer Information Center

P/NO : SAC34026002 (0908-REV02)



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



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



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

WARNING/CAUTION

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

NOTE TO CABLE/TV INSTALLER

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

WARNING / CAUTION

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

FCC NOTICE

Class B digital device

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

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

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause (harmful) interference, and (2) this device must accept any interference received, including interference that may cause undesired operation (of the device).

Any changes or modifications in construction of this device which are 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

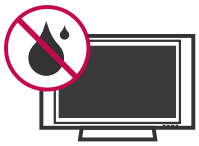
SAFETY INSTRUCTIONS

IMPORTANT SAFETY INSTRUCTIONS

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



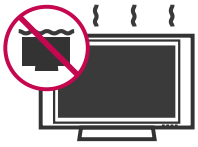
1. Do not use this apparatus near water.



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.



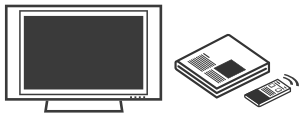
5. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong, The wide blade or the third prong are provided for your safety. If the provided plug does not fit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



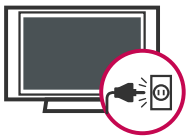
7. Only use attachments/accessories specified by the manufacturer.



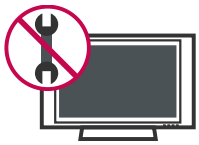
8. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.



9. Unplug this apparatus during lighting storms or when unused for long periods of time.



10. 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 been exposed to rain or moisture, does not operate normally, or has been dropped.



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

12 When mounting a TV on the wall, make sure not to install the TV by the hanging power and signal cables on the back of the TV.

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

14 CAUTION concerning the Power Cord :
It is recommend that appliances 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 connect too many appliances to the same AC power outlet as this could result in fire or electric shock.
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.
Do not make the TV with the power cord plugged in. Do not use a damaged or loose power cord. Be sure do grasp the plug when unplugging the power cord. Do not pull on the power cord to unplug the TV.



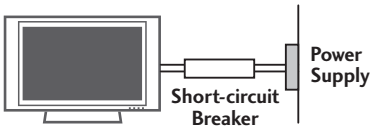
15 WARNING - To reduce the risk of fire or electrical shock, do not expose this product to rain, moisture or other liquids. Do not touch the TV with wet hands. Do not install this product near flammable objects such as gasoline or candles or expose the TV to direct air conditioning.



16 Do not expose to dripping or splashing and do not place objects filled with liquids, such as vases, cups, etc. on or over the apparatus (e.g. on shelves above the unit).



17 GROUNDING
Ensure that you connect the earth ground wire to prevent possible electric shock. (i.e. a TV with a three-prong grounded AC plug must be connected to a three-prong grouned AC outlet) 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.



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

19 ANTENNAS

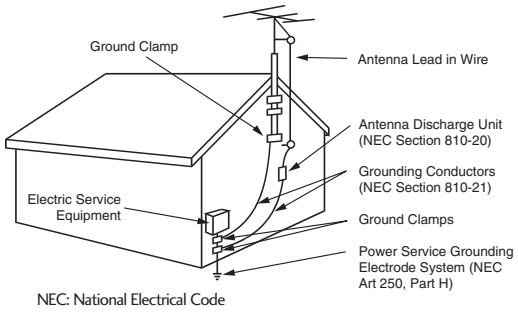
Outdoor antenna grounding

If an outdoor antenna is installed, follow the precautions below. An outdoor antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can come in contact with such power lines or circuits as death or serious injury can occur.

Be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges.

Section 810 of the National Electrical Code (NEC) in the U.S.A. provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes and requirements for the grounding electrode.

Antenna grounding according to the National Electrical Code, ANSI/NFPA 70



NEC: National Electrical Code

20 Cleaning

When cleaning, unplug the power cord and scrub gently with a soft cloth to prevent scratching. Do not spray water or other liquids directly on the TV as electric shock may occur. Do not clean with chemicals such as alcohol, thinners or benzene.

21 Moving

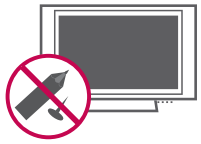
Make sure the product is turned off, unplugged and all cables have been removed. It may take 2 or more people to carry larger TVs. Do not press against or put stress on the front panel of the TV.

22 Ventilation

Install your TV where there is proper ventilation. Do not install in a confined space such as a bookcase. Do not cover the product with cloth or other materials (e.g.) plastic while plugged in. Do not install in excessively dusty places.

23 If you smell smoke or other odors coming from the TV or hear strange sounds, unplug the power cord contact an authorized service center.

24 Do not press strongly upon the panel with a hand or sharp object such as nail, pencil or pen, or make a scratch on it.



25 Keep the product away from direct sunlight.

26 **For LCD TV**

If the TV feels cold to the touch, there may be a small “flicker” when it is turned on. This is normal, there is nothing wrong with TV.

Some minute dot defects may be visible on the screen, appearing as tiny red, green, or blue spots. However, they have no adverse effect on the monitor’s performance.

Avoid touching the LCD screen or holding your finger(s) against it for long periods of time. Doing so may produce some temporary distortion effects on the screen.

ON DISPOSAL

(Only Hg lamp used LCD TV)

The fluorescent lamp used in this product contains a small amount of mercury. Do not dispose of this product with general household waste. Disposal of this product must be carried out in accordance to the regulations of your local authority.

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FEATURES OF THIS TV

HDMI™, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC."

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

View videos and photos and listen to music on your TV through USB 2.0 ('videos' dependent on model).

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

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.

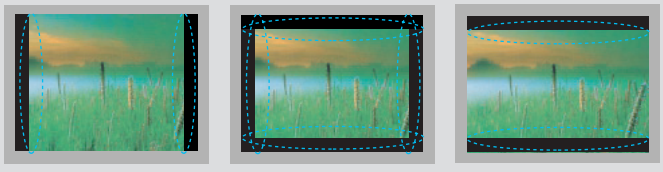
Automatically enhances and amplifies the sound of human voice frequency range to help keep dialogue audible when background noise swells.

LG TV include a unique invisible speaker system, tuned by renowned audio expert, Mr. Mark Levinson. Speakers are embedded in strategic spots behind the front cabinet and use minute vibrations to turn the entire front bezel into the speaker system. The result is a clean, polished look, and enhanced audio by increasing the "sweet spot", giving a wider and richer sound field.

Matches the original frame rate of the film for a more film-like experience

IMPORTANT INFORMATION TO PREVENT "IMAGE BURN / BURN-IN" ON YOUR TV SCREEN

- When a fixed image (e.g. logos, screen menus, video game, and computer display) is displayed on the TV for an extended period, it can become permanently imprinted on the screen. This phenomenon is known as "image burn" or "burn-in." Image burn is not covered under the manufacturer's warranty.
- In order to prevent image burn, avoid displaying a fixed image on your TV screen for a prolonged period (2 or more hours for LCD, 1 or more hours for Plasma).
- Image burn can also occur on the letterboxed areas of your TV if you use the 4:3 aspect ratio setting for an extended period.

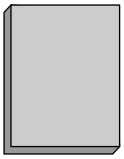


PREPERATION

ACCESSORIES

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

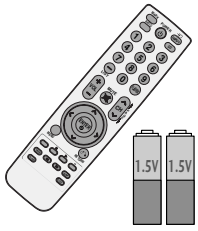
The accessories included may differ from the images below.



Owner's Manual



CD Manual

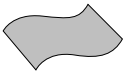


Remote Control, Batteries



Power Cord

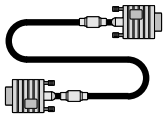
Not included with all models



Polishing Cloth

* Wipe spots on the exterior only with the polishing cloth.
* Do not wipe roughly when removing stain. Excessive pressure may cause scratch or discoloration.

Option Extras



D-sub 15 pin Cable

When using the VGA (D-sub 15 pin cable) PC connection, the user must use shielded signal interface cables with ferrite cores to maintain standards compliance.



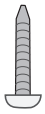
x 4

Bolts for stand assembly
(Refer to P.12)

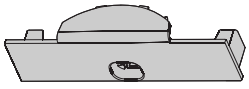


x 2

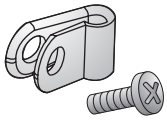
Torx plus
Star head screw
(Refer to P.12)



Screw for stand fixing
(Refer to P.17)



Protection Cover
(Refer to P.13)



Protective Bracket and Bolt for Power Cord
(This feature is not available for all models.)
(Refer to P.15)



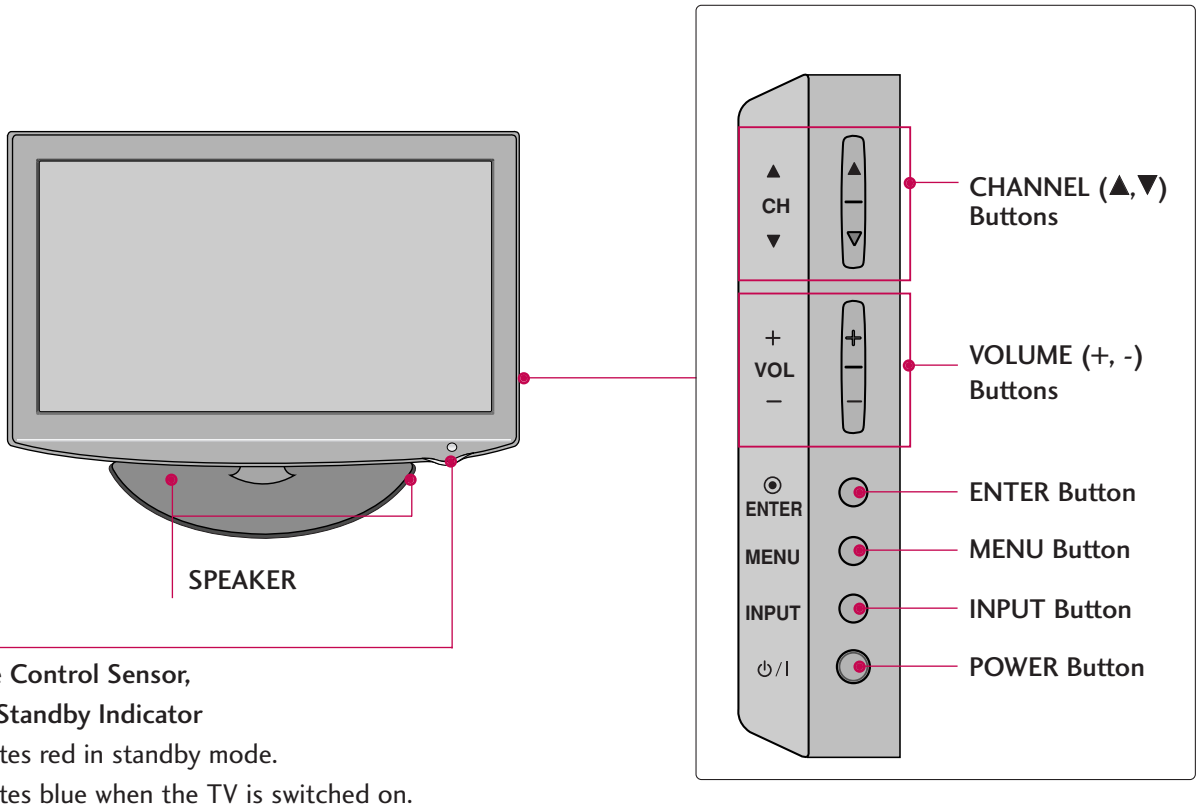
Cable Holder
(Refer to P.15)



Plug in type holder
(Refer to P.15)

FRONT PANEL INFORMATION

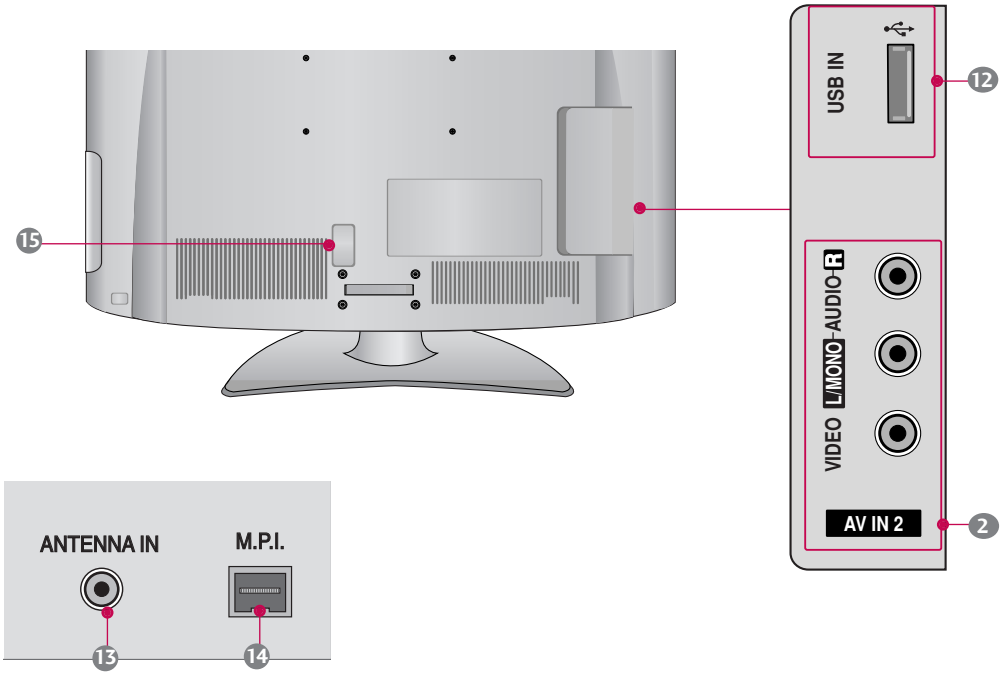
■ Image shown may differ from your TV.

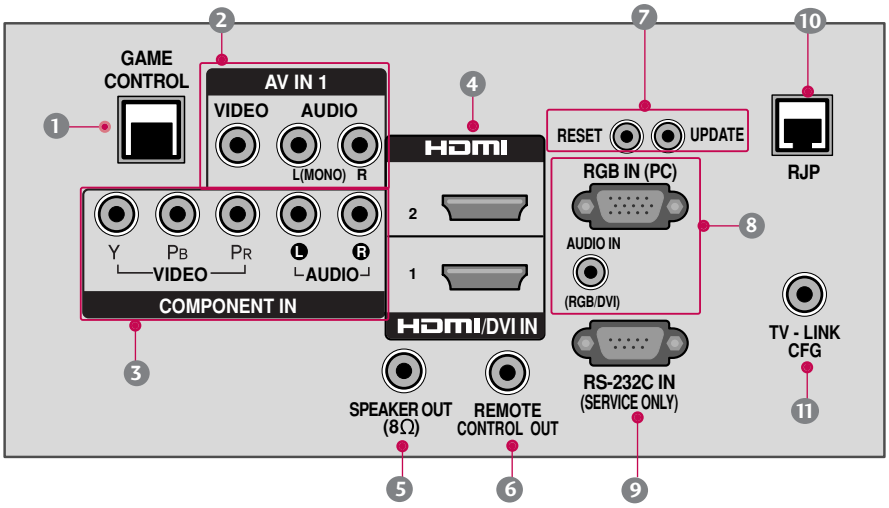


Remote Control Sensor,
Power/Standby Indicator
Illuminates red in standby mode.
Illuminates blue when the TV is switched on.

BACK PANEL INFORMATION

- Image shown may differ from your TV.





❶ **GAME CONTROL**
Control port

❷ **AV (Audio/Video) IN**
Analog composite connection. Supports standard definition video only (480i).
Used for PC/DTV audio input jack.

❸ **COMPONENT IN**
Analog Connection.
Supports HD.
Uses a red, green, and blue cable for video & a red and white cable for audio.

❹ **HDMI/DVI IN**
Digital Connection. Supports HD video and Digital audio.
Accepts DVI video using an adapter or HDMI to DVI cable (not included)

❺ **SPEAKER OUT 8Ω**
Connect to external speaker input.

❻ **REMOTE CONTROL OUT**
IR output for controlling an auxiliary device.

❼ **UPDATE**
Enables/disables software downloads and debug mode.
RESET
Performs a hardware reset.

❽ **RGB IN (PC)**
Analog PC Connection. Uses a D-sub 15 pin cable (VGA cable).
AUDIO IN (RGB/DVI)
1/8" headphone jack for analog PC audio input.

❾ **RS-232C IN (SERVICE ONLY)**
Used for software updates.

❿ **RJP (REMOTE JACK PACK PORT)**
Connect to remote jack pack control output port.

⓫ **TV - LINK CFG**
Used for FTG Configuration

⓬ **USB IN**
Used for viewing photos and listening to MP3s.

⓭ **ANTENNA IN**
Connect over-the air signals to this jack.

⓮ **M.P. I.**
Control port.

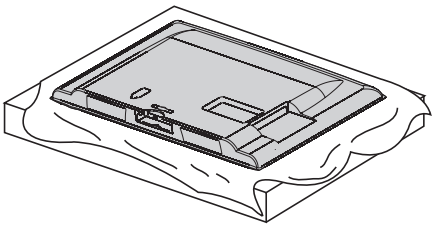
⓯ **Power Cord Socket**
For operation with AC power.
Caution: Never attempt to operate the TV on DC power.

STAND INSTRUCTION

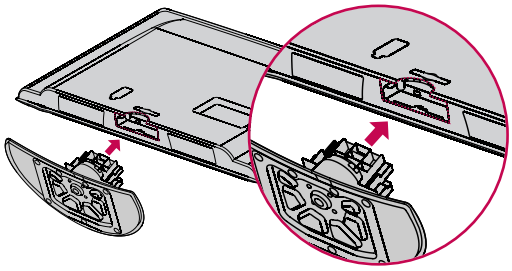
■ Image shown may differ from your TV.

INSTALLATION

1 Carefully place the TV screen side down on a cushioned surface to protect the screen from damage.



2 Assemble the TV as shown.



3


x 4

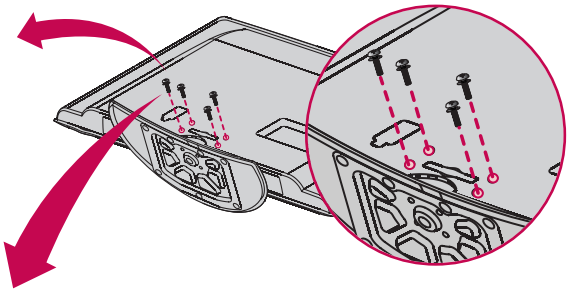
Tighten the stand with the four screws (provided as parts of the TV).

or


x 2


x 2

Tighten the two of these four screws and the two Torx plus star head screws (provided as parts of the TV) to secure the TV. Tighten the two Torx plus star head screws with a star head driver bit (not provided as parts of the TV).

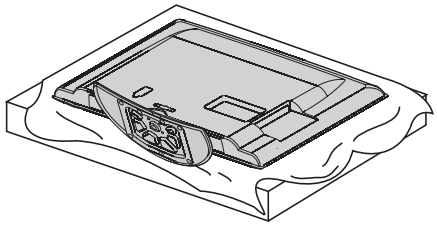


NOTE

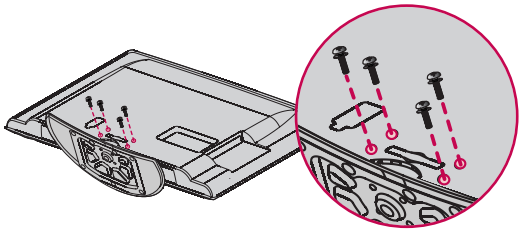
▶ When assembling the desk type stand, make sure the bolt is fully tightened (If not tightened fully, the TV can tilt forward after the product installation). Do not over tighten.

DETACHMENT

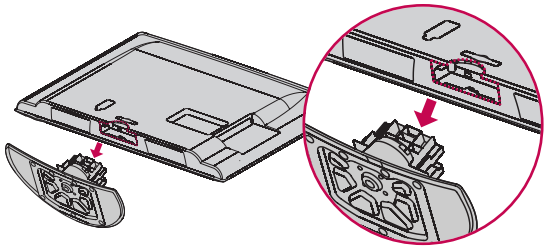
1. Carefully place the TV screen side down on a cushioned surface to protect the screen from damage.



2. Loose the bolts from TV.



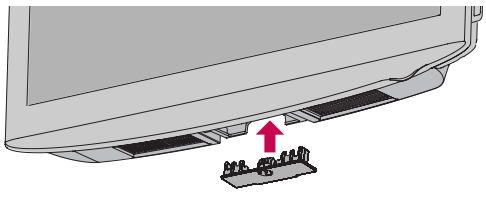
3. Detach the stand from TV.



PROTECTION COVER

After removing the stand, install the included **protection cover** over the hole for the stand.

Press the **PROTECTION COVER** into the TV until you hear it click.



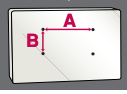
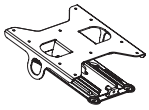
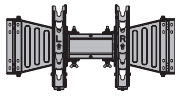
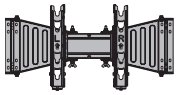
VESA WALL MOUNTING

Install your wall mount on a solid wall perpendicular to the floor. When attaching to other building materials, please contact your nearest installer.

If installed on a ceiling or slanted wall, it may fall and result in severe personal injury.

We recommend that you use an LG brand wall mount when mounting the TV to a wall.

LG recommends that wall mounting be performed by a qualified professional installer.

Model	VESA (A * B) 	Standard Screw	Quantity	Wall Mounting Bracket (sold separately)
32LH250H, 32LH255H	200 * 100	M4	4	 RW230  AW-47LG30M
37LH250H, 37LH255H 42LH250H, 42LH255H	200 * 200	M6	4	 AW-47LG30M

NOTE

- Screw length needed depends on the wall mount used. For further information, refer to the instructions included with the mount.
- Standard dimensions for wall mount kits are shown in the table.
- When purchasing our wall mount kit, a detailed installation manual and all parts necessary for assembly are provided.
- Do not use screws longer then the standard dimension, as they may cause damage to the inside to the TV.
- For wall mounts that do not comply with the VESA standard screw specifications, the length of the screws may differ depending on their specifications.
- Do not use screws that do not comply with the VESA standard screw specifications.
  Do not use fasten the screws too strongly, this may damage the TV or cause the TV to a fall, leading to personal injury. LG is not liable for these kinds of accidents.
- LG is not liable for TV damage or personal injury when a non-VESA or non specified wall mount is used or the consumer fails to follow the TV installation instructions.

⚠ CAUTION ▶ Do not install your wall mount kit while your TV is turned on. It may result in personal injury due to electric shock.

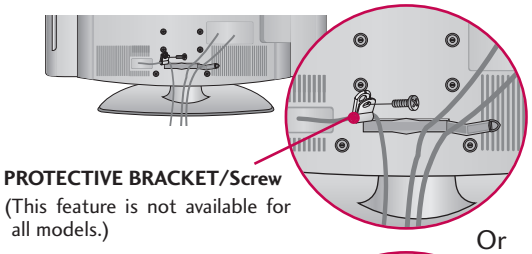
CABLE MANAGEMENT

■ Image shown may differ from your TV.

1 Connect the cables as necessary.

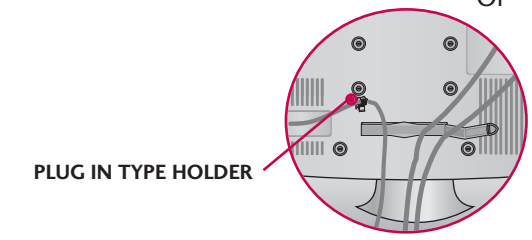
To connect additional equipment, see the **EXTERNAL EQUIPMENT SETUP** section.

Secure the power cable with the **PROTECTIVE BRACKET/Screw** or the **Plug in type Holder. It will help prevent the power cable from being removed by accident.**



PROTECTIVE BRACKET/Screw
(This feature is not available for all models.)

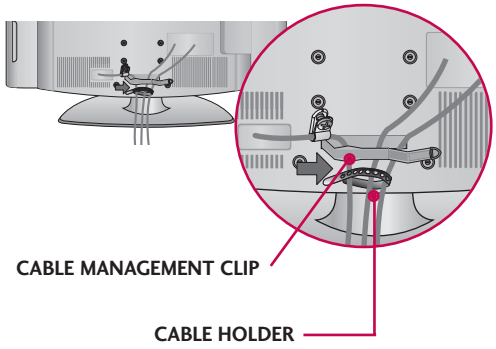
Or



PLUG IN TYPE HOLDER

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

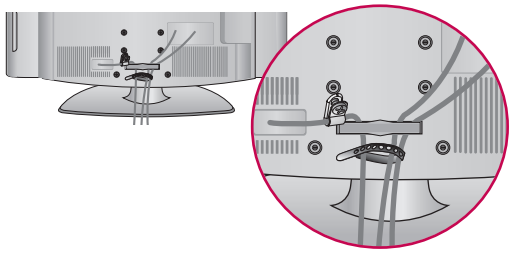
If your TV has the **CABLE HOLDER**, install it as shown and bundle the cables.



CABLE MANAGEMENT CLIP

CABLE HOLDER

3 Put the cables inside the **CABLE MANAGEMENT CLIP** and snap it closed.



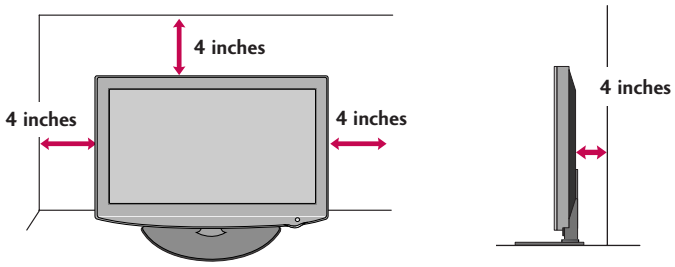
NOTE

- Do not hold the **CABLE MANAGEMENT CLIP** when moving the TV.
  - If the TV is dropped, you may be injured or the product may be broken.
- With some TVs, the **PLUG IN TYPE HOLDER** and the **CABLE HOLDER** are included. If these holders are inserted into the hole provided on back of the TV, they cannot be removed.

DESKTOP PEDESTAL INSTALLATION

- Image shown may differ from your TV.

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

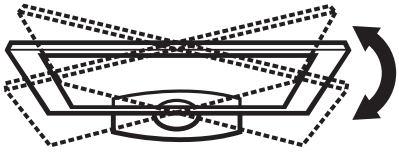


⚠ CAUTION

- Ensure adequate ventilation by following the clearance recommendations.
- Do not mount near or above any type of heat source.

SWIVEL STAND

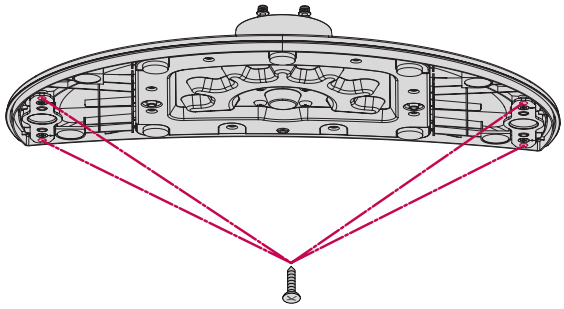
After installing the TV, you can adjust the TV set manually to the left or right direction by 90 degrees to suit your viewing position.



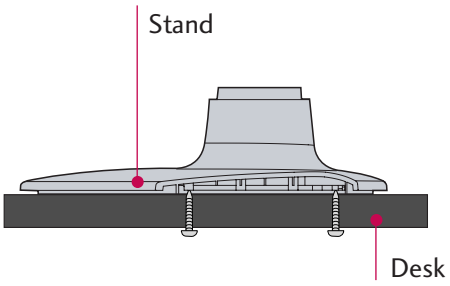
ATTACHING THE TV TO A DESK

■ Image shown may differ from your TV.

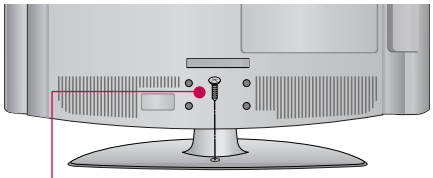
The TV must be attached to a desk so it cannot be pulled in a forward/backward direction, potentially causing injury or damaging the product.



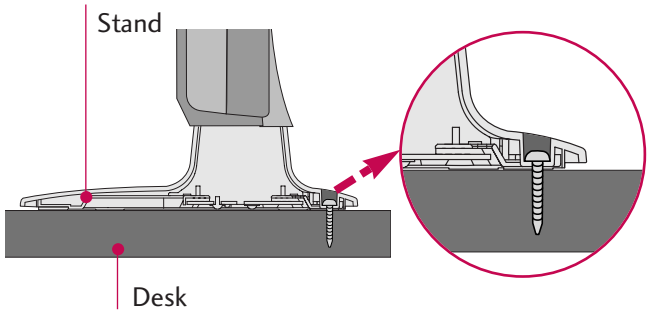
4-Screws
(not provided as parts of the product)



▶ Screw: M5 x L *(*L: Table depth + 8~10 mm)*
ex) Table depth: 15mm, Screw: M5 x 25



1-Screw
(provided as parts of the product)



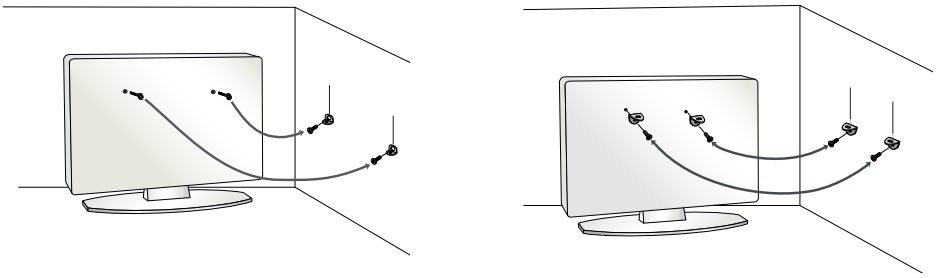
⚠ WARNING

▶ To prevent TV from falling over, the TV should be securely attached to the floor/wall per installation instructions. Tipping, shaking, or rocking the machine may cause injury.

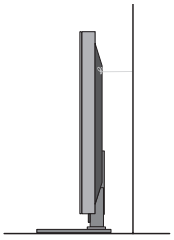
SECURING THE TV TO THE WALL TO PREVENT FALLING WHEN THE TV IS USED ON A STAND

- You should purchase necessary components to prevent the TV from tipping over (when not using a wall mount).
- Image shown may differ from your TV.

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



- Insert the eye-bolts (or TV brackets and bolts) to tighten the product to the wall as shown in the picture.
  * If your product has the bolts in the eye-bolts position before inserting the eye-bolts, loosen the bolts.
  * Insert the eye-bolts or TV brackets/bolts and tighten them securely in the upper holes.
  Secure the wall brackets with the bolts (sold separately) to the wall. Match the height of the bracket that is mounted on the wall to the holes in the product.
  Ensure the eye-bolts or brackets are tightened securely.



- Use a sturdy rope (sold separately) to tie the product. It is safer to tie the rope so it becomes horizontal between the wall and the product.

NOTE

- Use a platform or cabinet strong enough and large enough to support the size and weight of the TV.
- To use the TV safely make sure that the height of the bracket on the wall and the one on the TV are the same.

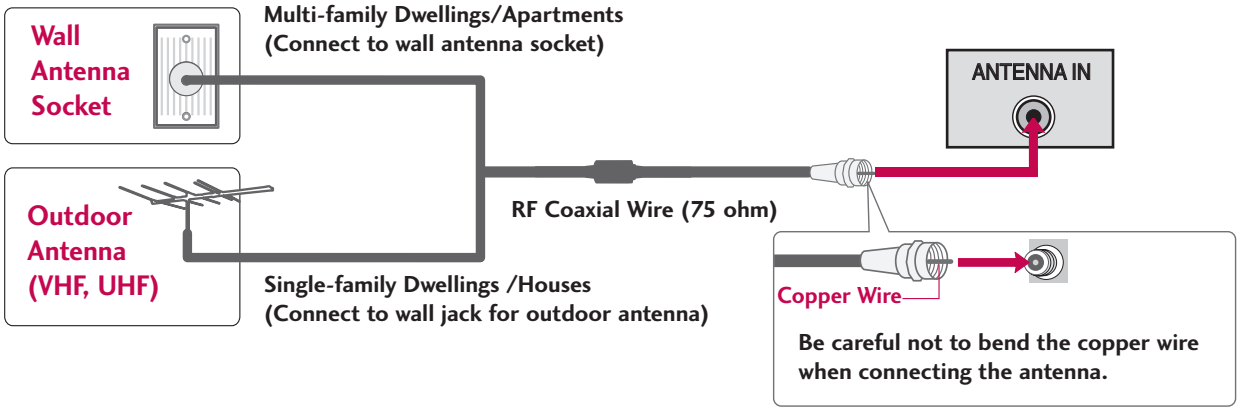
■ To prevent damage do not connect to the power outlet until all connections are made between the devices.

ANTENNA OR CABLE CONNECTION

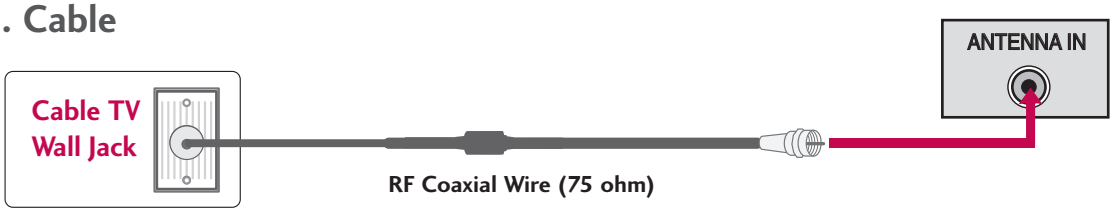
1. Antenna (Analog or Digital)

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

For optimum picture quality, adjust the direction if needed.



2. Cable



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

EXTERNAL EQUIPMENT SETUP

- To prevent the equipment damage, never plug in any power cords until you have finished connecting all equipment.
- Image shown may differ from your TV.

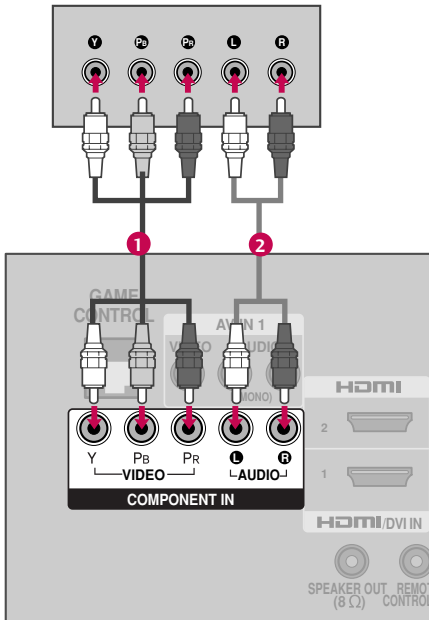
HD RECEIVER SETUP

This TV can receive Digital Over-the-air or Digital 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.

Component Connection

1. How to connect

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



2. How to use

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

Supported Resolutions

Signal	Component	HDMI
480i	Yes	No
480p	Yes	Yes
720p	Yes	Yes
1080i	Yes	Yes
1080p	Yes	Yes

Y, CB/PB, CR/PR

Resolution	Horizontal Frequency(KHz)	Vertical Frequency(Hz)
720x480i	15.73	59.94
	15.73	60.00
720x480p	31.47	59.94
	31.50	60.00
1280x720p	44.96	59.94
	45.00	60.00
1920x1080i	33.72	59.94
	33.75	60.00
1920x1080p	67.43	59.94
	67.50	60.00
	27.00	24.00
	26.97	23.976
	33.75	30.00
	33.71	29.97

HDMI Connection

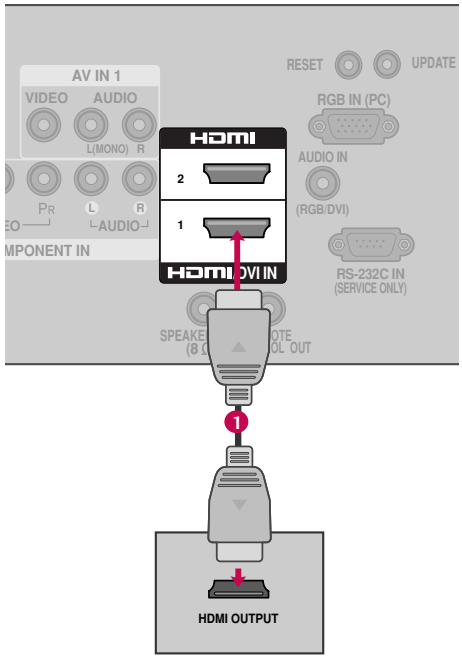
1. How to connect

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

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

2. How to use

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



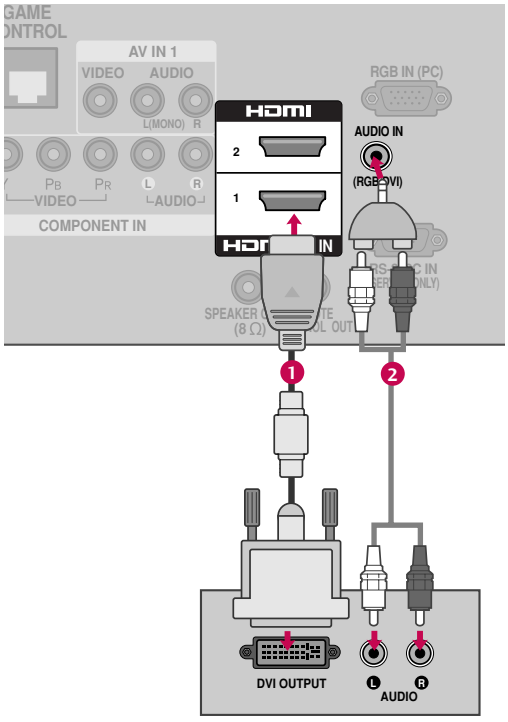
HDMI-DTV

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

DVI to HDMI Connection

1. How to connect

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



2. How to use

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

NOTE

- A DVI to HDMI cable or adapter is required for this connection. DVI doesn't support audio, so a separate audio connection is necessary.

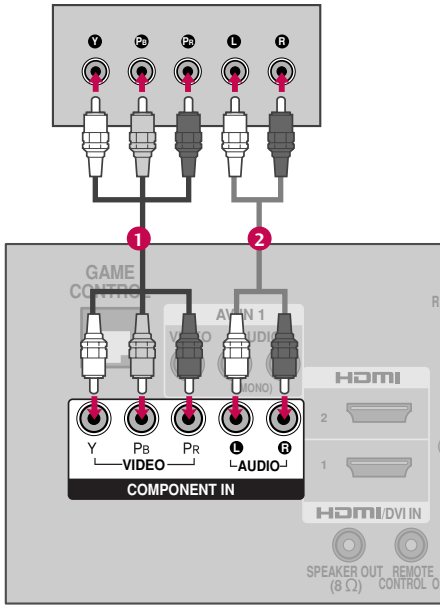
DVD SETUP

Component Connection

1. How to connect

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

2. Connect the audio outputs of the DVD to the **COMPONENT IN AUDIO** jacks on the TV.



2. How to use

- Turn on the DVD player, insert a DVD.
- Select the **Component** input source on the TV using the **INPUT** button on the remote control.
- Refer to the DVD player's manual for operating instructions.

Component Input ports

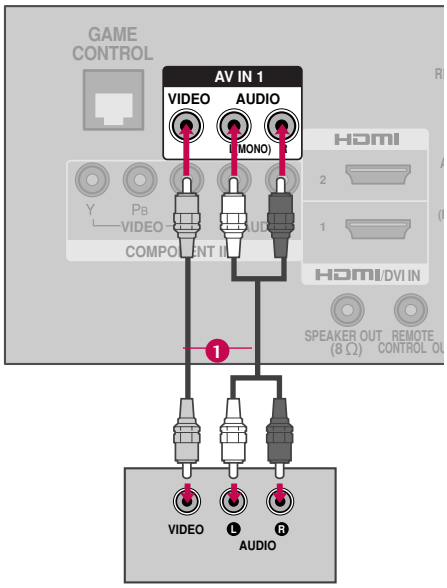
To get better picture quality, connect a DVD player to the component input ports as shown below.

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

Composite (RCA) Connection

1. How to connect

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



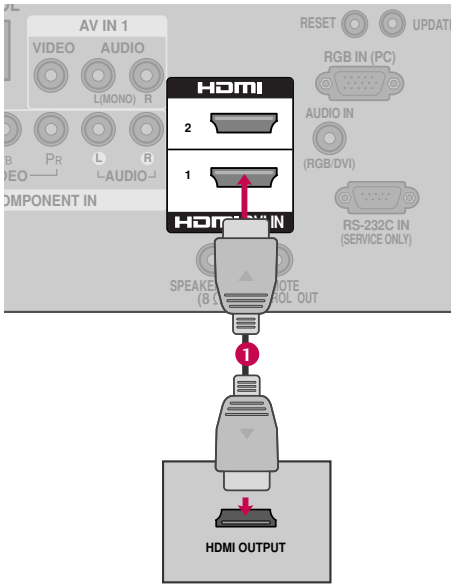
2. How to use

- Turn on the DVD player, insert a DVD.
- Select the or **AV1** input source on the TV using the **INPUT** button on the remote control.
- If connected to **AV IN 2**, select **AV2** input source on the TV.
- Refer to the DVD player's manual for operating instructions.

HDMI Connection

1. How to connect

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



2. How to use

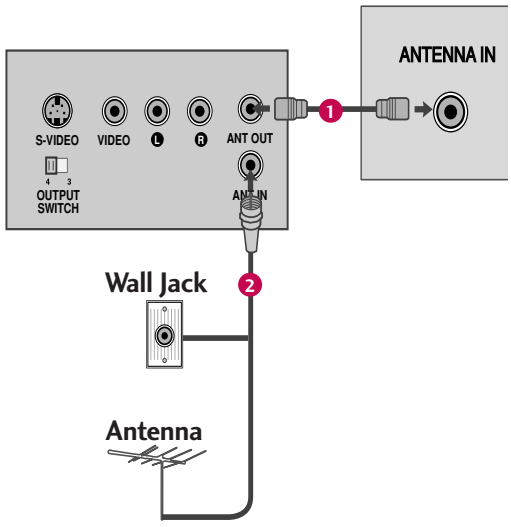
- Select the **HDMI1** or **HDMI2** input source on the TV using the **INPUT** button on the remote control.
- Refer to the DVD player's manual for operating instructions.

VCR SETUP

Antenna Connection

1. How to connect

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



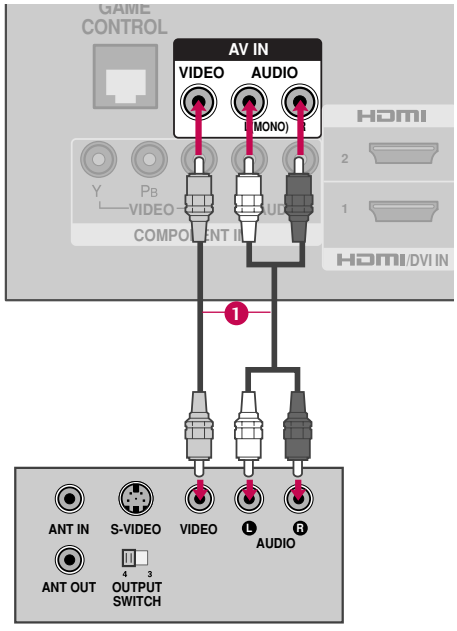
2. How to use

- 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.)

Composite (RCA) Connection

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 the **AV1** input source on the TV using the **INPUT** button on the remote control.
- If connected to **AV IN 2**, select **AV2** input source on the TV.

NOTE

- If you have a mono VCR, connect the audio cable from the VCR to the **AUDIO (L/MONO)** jack of the TV.

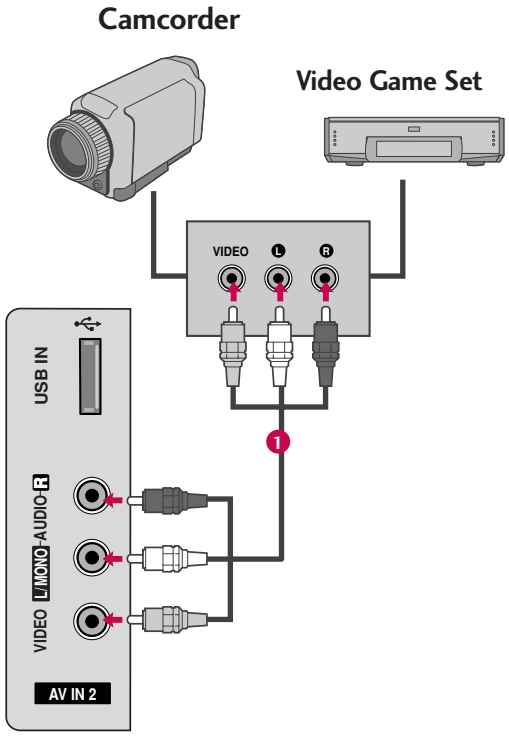
OTHER A/V SOURCE SETUP

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 the **AV2** input source on the TV using the **INPUT** button on the remote control.
- If connected to **AV IN 1** input, select the **AV1** input source on the TV.
- Operate the corresponding external equipment.



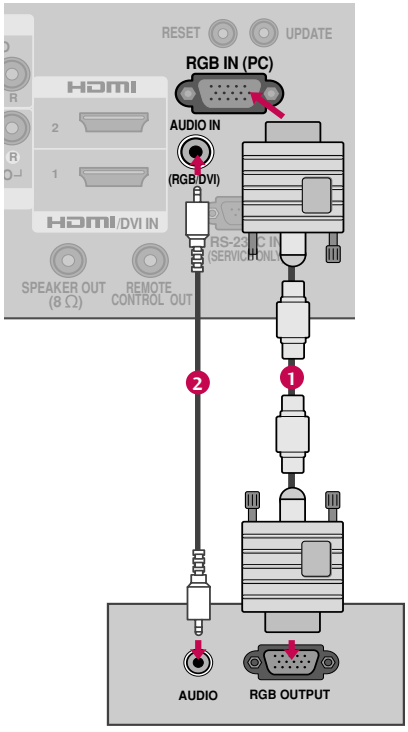
PC SETUP

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

VGA (D-Sub 15 pin) Connection

1. How to connect

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



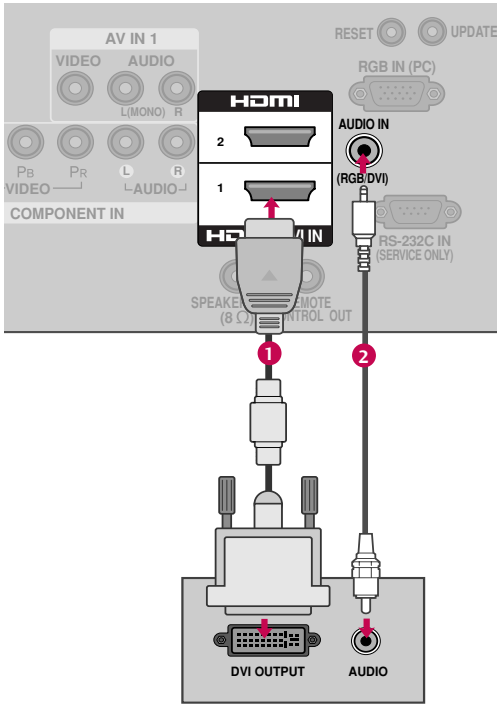
2. How to use

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

DVI to HDMI Connection

1. How to connect

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



2. How to use

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

Supported Display Specifications (RGB-PC, HDMI-PC)

Resolution	Horizontal Frequency(KHz)	Vertical Frequency(Hz)
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

NOTES

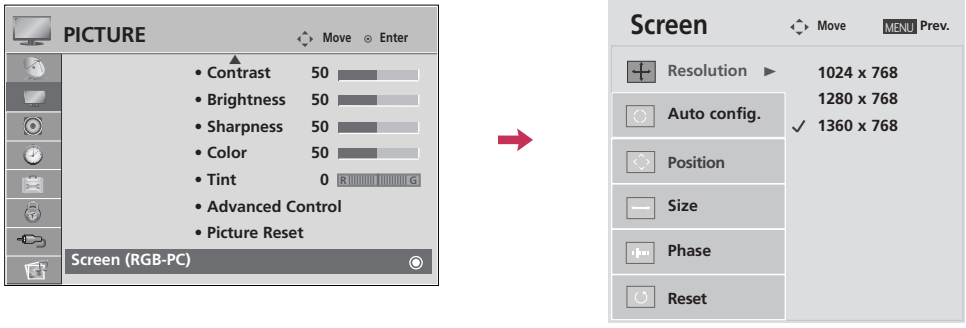
- To get the best picture quality, adjust the PC graphics card to 1360x768, 60Hz.
- Depending on the graphics card, DOS mode may not work if a HDMI to DVI Cable is in use.
- In PC mode, there may be noise associated with the resolution, vertical pattern, contrast or brightness. If noise is present, change the PC output to another resolution, change the refresh rate to another rate or adjust the brightness and contrast on the PICTURE menu until the picture is clear.

  When you use too long RGB-PC cable, there might be a noise on the screen.
- Avoid keeping a fixed image on the screen for a long period of time. The fixed image could become permanently imprinted on the screen.
- The synchronization input form for Horizontal and Vertical frequencies is separate.
- Depending on the graphics card, some resolution settings may not allow the image to be positioned on the screen properly.

Screen Setup for PC mode

Selecting Resolution

You can choose the resolution in RGB-PC mode.
The **Position**, **Phase**, and **Size** can also be adjusted.



1 MENU Select **PICTURE**.

2 ENTER Select **Screen (RGB-PC)**.

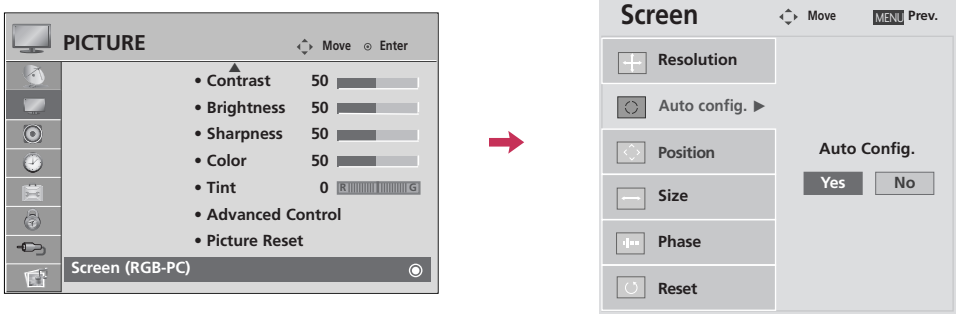
3 ENTER Select **Resolution**.

4 ENTER Select the desired resolution.

5 ENTER

Auto Configure

Automatically adjusts picture position and minimizes image instability. After adjustment, if the image is still not correct, try using the manual settings or a different resolution or refresh rate on the PC.



1 MENU Select **PICTURE**.

2 ENTER Select **Screen (RGB-PC)**.

3 ENTER Select **Auto config.**.

4 ENTER Select **Yes**.

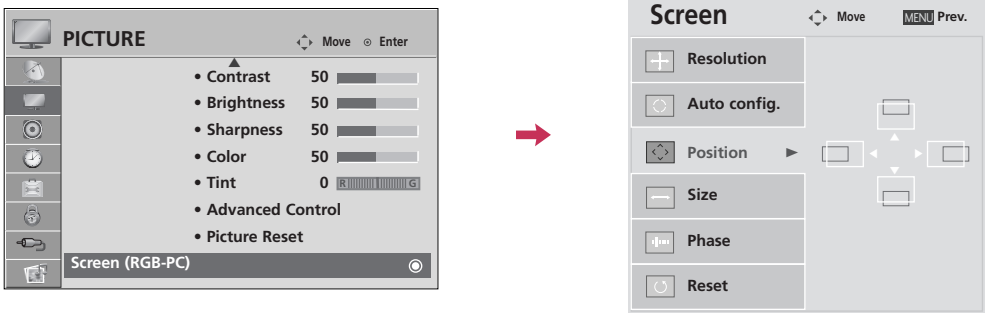
5 ENTER Start Auto Configuration.

- If the position of the image is still not correct, try Auto adjustment again.
- If picture needs to be adjusted again after Auto adjustment in RGB-PC, you can adjust the **Position**, **Size** or **Phase**.

Adjustment for screen Position, Size, and Phase

If the picture is not clear after auto adjustment and especially if characters are still trembling, adjust the picture phase manually.

This feature operates only in RGB-PC mode.



1 MENU Select **PICTURE**.

2 ENTER Select **Screen (RGB-PC)**.

3 ENTER Select **Position**, **Size**, or **Phase**.

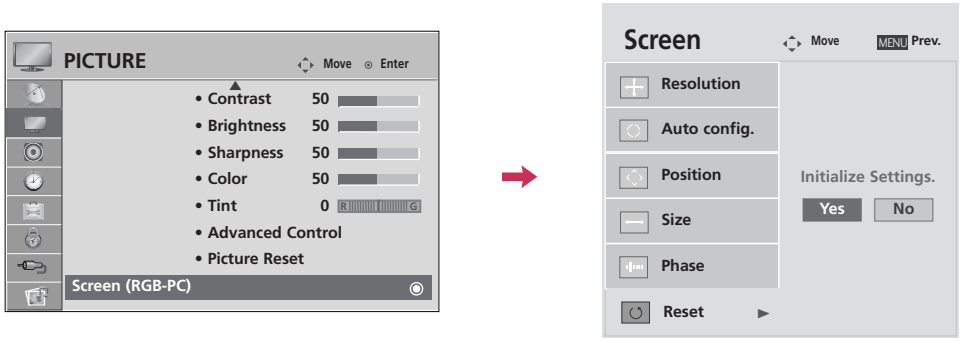
4 ENTER Make appropriate adjustments.

5 ENTER

- **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.

Screen Reset (Reset to original factory values)

Returns **Position**, **Size**, and **Phase** to the default factory settings.
This feature operates only in RGB-PC mode.



1 MENU — Select **PICTURE**.

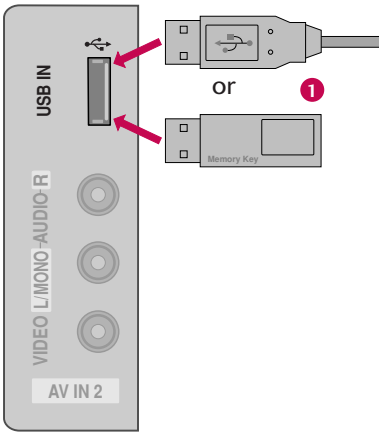
2 ENTER — Select **Screen (RGB-PC)**.

3 ENTER — Select **Reset**.

4 ENTER — Select **Yes**.

5 ENTER

USB CONNECTION



1. How to connect

1 Connect the USB device to the **USB IN** jack on the side of TV.

2. How to use

■ After connecting the **USB IN** jack, you use the USB function. (▶ **p.43**)

WATCHING TV / CHANNEL CONTROL

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.

MARK Use to mark or unmark a photo/music.

RATIO Change the aspect ratio.

INPUT Rotates through inputs.
Also switches the TV on from standby.

CC Select a closed caption.

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

MENU Displays the main menu or clears all on-screen displays and return to TV viewing.

RETURN Allows the user to move return one step in an interactive application or other user interaction function.

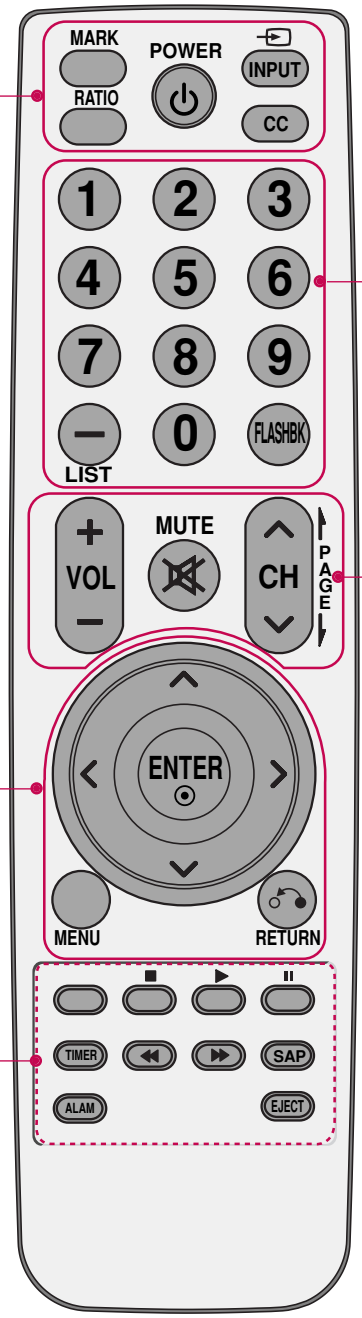
VCR/DVD control buttons Control video cassette recorders or DVD players.

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

ALAM Set the time that the TV will automatically turn itself on.

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

EJECT Eject the USB device.



NUMBER button

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

LIST Displays the channel table.

FLASHBK Tunes to the last channel viewed.

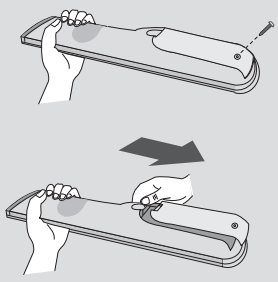
VOLUME UP /DOWN Increase/decrease the sound level.

MUTE Switch the sound on or off.

CHANNEL UP/DOWN Select available channels.

PAGE UP/DOWN Move from one full set of screen information to the next one.

Installing Batteries



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

TURNING ON TV

1. First, connect power cord correctly.
   At this moment, the TV switches to standby mode.
   - In standby mode to turn TV on, press the ⏻/I button on the TV or press the **POWER** button on the remote control.
2. Select the viewing source by using the **INPUT** button on the remote control.
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.

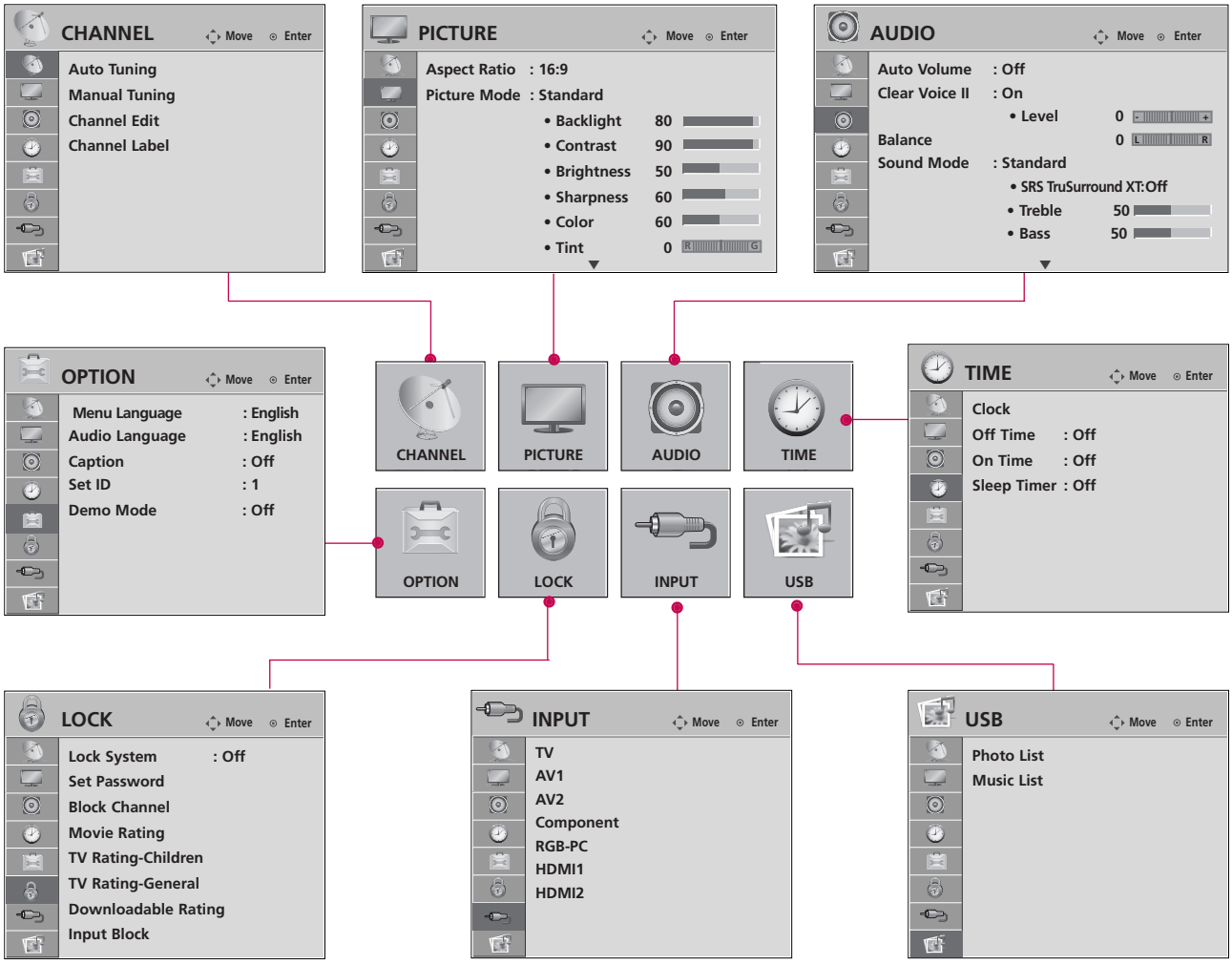
VOLUME ADJUSTMENT

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 that shown in this manual.



1 MENU Display each menu.

2 ENTER Select a menu item.

3 ENTER Enter to the pop up menu.

4 MENU Return to TV viewing.

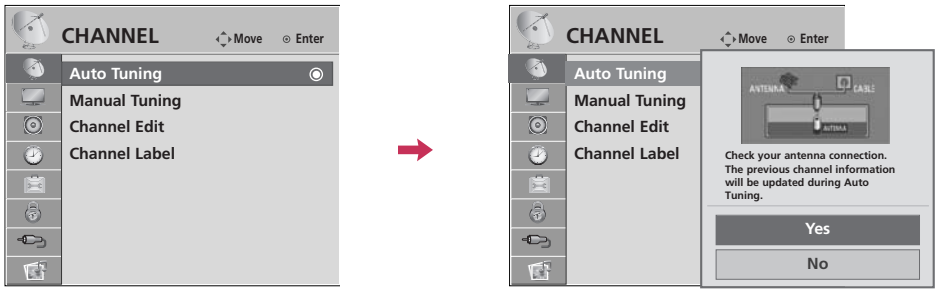
CHANNEL SETUP

Auto Scan (Auto Tuning)

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

Run this function if you change your residence or move the TV. Also, make sure to run this function with the antenna connected during TV broadcasting hours.

Auto Tuning memorizes only the channels available at the time.



1 MENU Select **CHANNEL**.

2 ENTER Select **Auto Tuning**.

3 ENTER Select **Yes**.

4 ENTER Run **Auto tuning**.

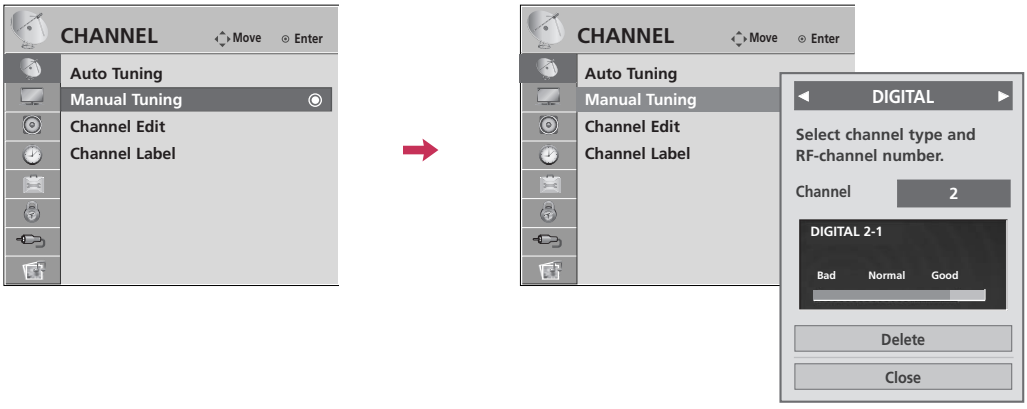
5 RETURN Return to the previous menu.

MENU Return to TV viewing.

- The TV will ask for a password if parental control has been activated (LOCK Menu). Use the password you set up in the LOCK Menu to allow a channel search.
- When setting the Auto tuning or Manual tuning, the number of maximum channel you can store is 740.
  It is subject to change depending on the broadcasting signal environment.
- Automatically finds all channels available through antenna or cable inputs, and stores them in memory on the channel list.

Add/Delete Channel (Manual Tuning)

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



1 MENU Select **CHANNEL**.

2 ENTER Select **Manual Tuning**.

3 ENTER Select **DIGITAL** or **ANALOG**.

4 Select channel you want to add or delete.

5 ENTER Select **Add** or **Delete**.

6 RETURN Return to the previous menu.

MENU Return to TV viewing.

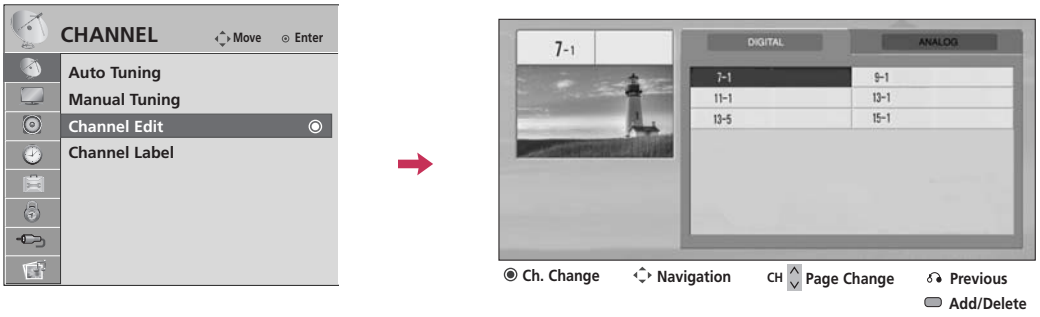
- The TV will ask for a password if parental control has been activated (LOCK Menu). Use the password you set up in the LOCK Menu to allow a channel search.
- When setting the Auto tuning or Manual tuning, the number of maximum channel you can store is 1000.
  It is subject to change depending on the broadcasting signal environment.

Channel Editing

The channels in the Channel Edit List are displayed in black and the channels deleted from the Channel Edit List are displayed in blue.

When a channel number is deleted, it means that you will be unable to select it using CH ∧ ∨ button during TV viewing.

If you wish to select the deleted channel, directly enter the channel number with the NUMBER buttons or select it in the **Channel Edit** menu.



1 MENU Select **CHANNEL**.

2 ENTER Select **Channel Edit**.

3 ENTER Select a channel.

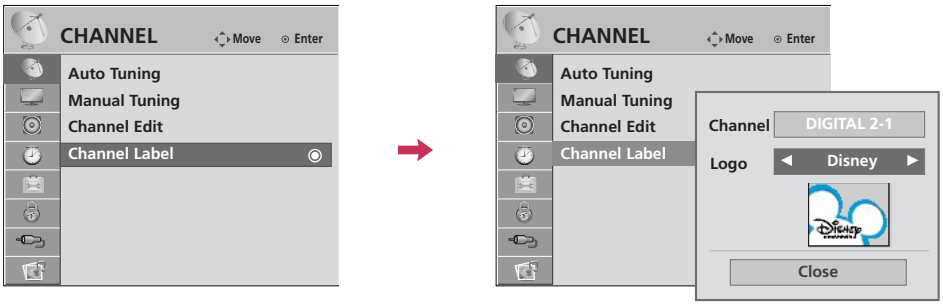
4 Select channel you want to add or delete.

5 MENU Return to the previous menu.

RETURN Return to TV viewing.

CHANNEL LABEL

Choose preset labels for your channels.
If a channel label is provided on the signal from the broadcasting station, the TV displays a short name for a channel even if you didn't preset a label for the channel.



1 MENU Select **CHANNEL**.

2 ENTER Select **Channel Label**.

3 ENTER Select Channel.

4 Select a channel to set logo.

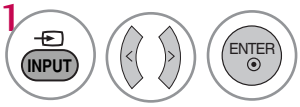
5 Select the appropriate logo for the channel.

6 RETURN Return to the previous menu.

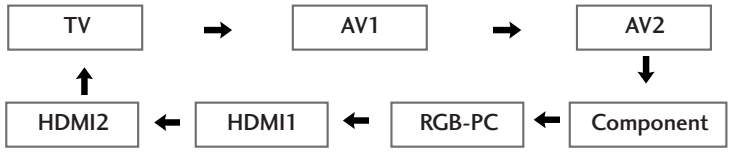
MENU Return to TV viewing.

INPUT LIST



1 

Select the desired input source.



- **TV**: Select it to watch over-the-air, cable and digital cable broadcasts.
- **AV1-2**: Select them to watch a VCR or other external equipment.
- **Component**: Select them to watch DVD or a Digital set-top box.
- **RGB-PC**: Select it to view PC input.
- **HDMI1-2**: Select them to watch high definition devices.

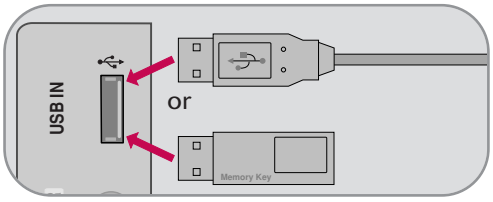
USB

■ Image shown may differ from your TV.

ENTRY MODES

When you connect a USB device, this pop up menu is displayed automatically.
When the Pop Up menu does not appear, you can select Photo List or Music List in the USB menu.
On a USB device, you can not add a new folder or delete an existing folder.

1 Connect the USB device to the **USB IN** jacks on the side of TV.



■ This TV Supports on JPG and MP3.

When removing the USB device
Press the EJECT button before removing the USB device.

2 Select **PHOTO LIST** or **MUSIC LIST**.



3 ENTER

Precautions when using the USB device

- Only a USB storage device is recognizable.
- If the USB storage device is connected through a USB hub, the device is not recognizable.
- A USB storage device using an automatic recognition program may not be recognized.
- A USB storage device which uses its own driver may not be recognized.
- The recognition speed of a USB storage device may depend on each device.
- In case of a card reader, up to four memory cards are concurrently recognizable.
- Please do not turn off the TV or unplug the USB device when the connected USB storage device is working. When such device is suddenly separated or unplugged, the stored files or the USB storage device may be damaged.
- Only use a USB storage device which has normal music, image or movie files.
- Please connect power to a USB storage device (over 0.5A) which requires an external power supply. If not, the device may not be recognized.
- Please connect a USB storage device with cable is offered by USB maker. If connected with cable is not offered by USB maker or an excessively long cable, the device may not be recognized.
- Some USB storage devices may not be supported or operate properly.
- File alignment method of USB storage device is similar to Window XP and filename can recognize up to 100 English characters.
- Please backup important files because data on the USB device may be damaged. Data management is the consumer's responsibility and as a result, the manufacturer does not cover data damage.
- Please use only a USB storage device which was formatted as a FAT32, NTFS file system provided with the Windows operating system. In case of a storage device formatted as a different utility programme which is not supported by Windows, it may not be recognized.
- Data in a USB storage device cannot be deleted in the NTFS file system.
- If your USB memory device has multiple partitions, or if you use a USB multi-card reader, you can use up to 4 partitions or USB memory devices.
- The recommended capacity is 1TB or less for a USB external hard disk and 32GB or less for USB memory.
- Any device with more than the recommended capacity may not work properly.
- If a USB external hard disk with a "Energy Saving" function does not work, turn the hard disk off and on again to make it work properly. Refer to the user manual of the application USB external hard disk.
- When using a USB HDD via the USB extensing cable, connect a support electric power source.

PHOTO LIST

You can only view .JPG files from USB storage devices.
The On-Screen Display on your model may be slightly different.

Supported photo file: *.JPG

- You can play JPG files only.
- Only baseline scan is supported among JPG.
- Available JPG size: 64 pixel (width) x 64 pixel (height) - 15360 pixel (width) x 8640 pixel (height)

Screen Components

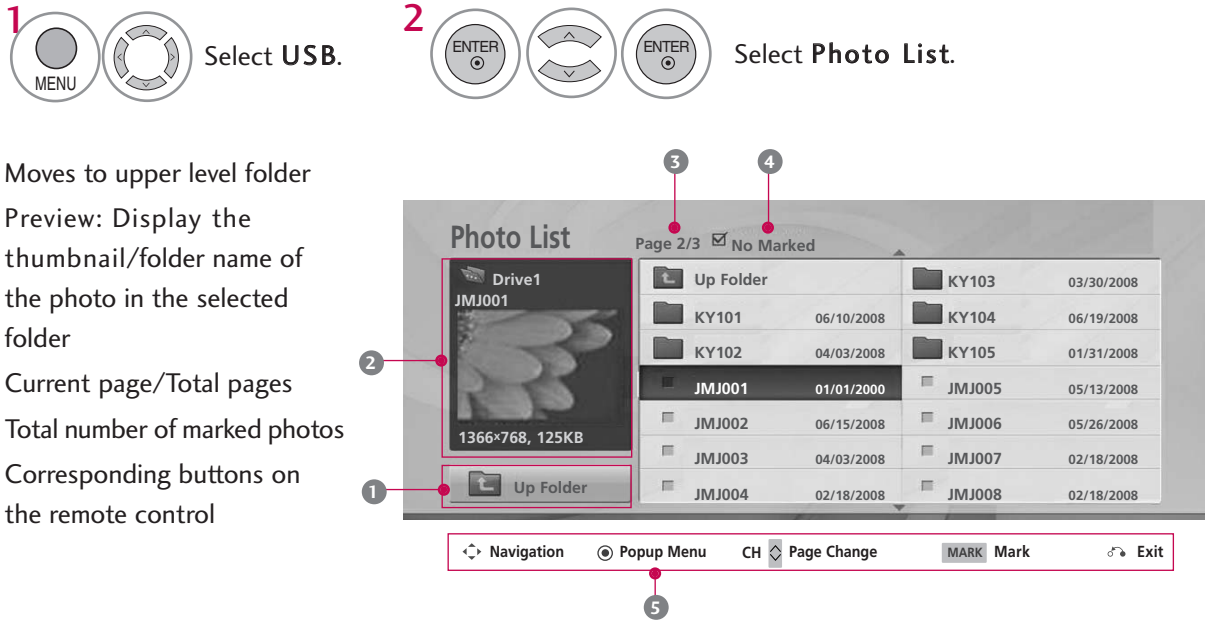
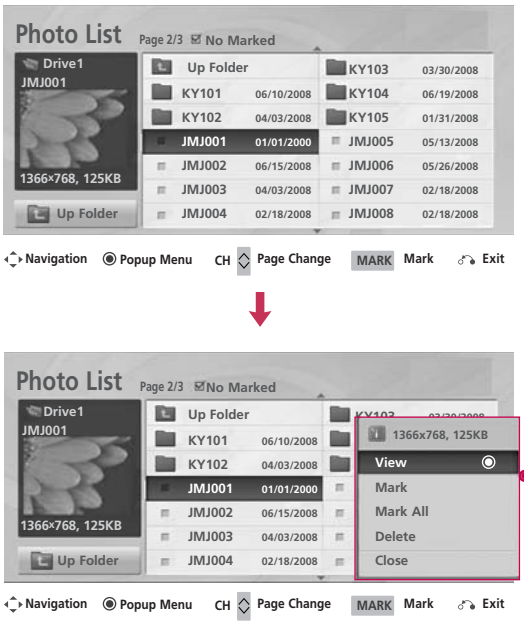


Photo Selection and Popup Menu



When you select a file (not folder), this PopUp menu is displayed.

- **View**: Display the selected item.
- **Mark**: Use to mark or unmark a photo.
- **Mark All**: Mark all photos on the screen.
- **Unmark All**: Deselect all marked photos.
- **Delete** or **Delete Marked**: Delete the selected photo item.
- **Close**: Close the pop-up menu.

1 Select the target folder or drive.

2 Select the desired photos.

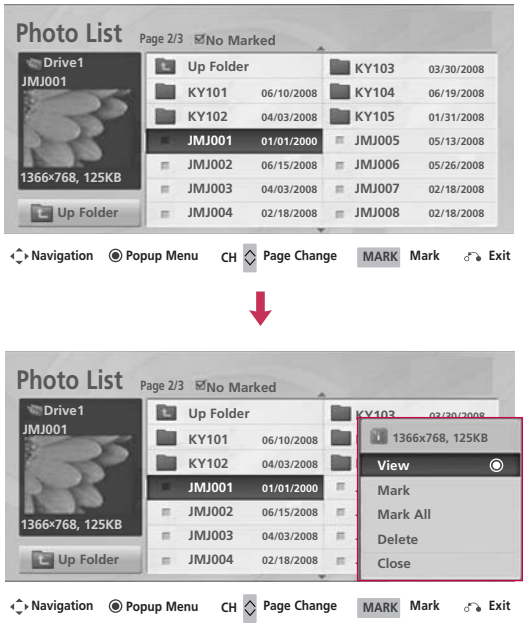
3 Show the Popup menu.

4 Select the desired Popup menu.

- Use the **CH** ∧ ∨ button to navigate in the photo page.
- Use the **MARK** button to mark or unmark a photo. When one or more photos are marked, you can view individual photos or a slide show of the marked photos. If no photos are marked, you can view all photos individually or all photos in the folder in a slide show.

Full Screen Menu

You can change the Photo List view so that it fills the screen. More operations are available in full screen mode.





The aspect ratio of a photo may change the size of the photo displayed on the screen in full size.
Press the **RETURN** button to move to the previous menu screen.

1 Select the target folder or drive.

2 Select the desired photos.

3 Show the Popup menu.

4 Select **View**.

5 The selected photo is displayed in full size.

■ Use the **CH** ∧ ∨ button to navigate in the photo page.



6 Select the **Slideshow**, **BGM**, **(Rotate)**, **Delete**, **Option**, or **Hide.**

- Use < > button to select the previous or next photo.
- Use ∧ ∨ < > button to select and control the menu on the full-sized screen.

▶ **Slideshow**: Selected photos are displayed during the slide show. If no photo is selected, all photos in the current folder are displayed during slide show.
- Set the time interval of the slide show in **Option**.

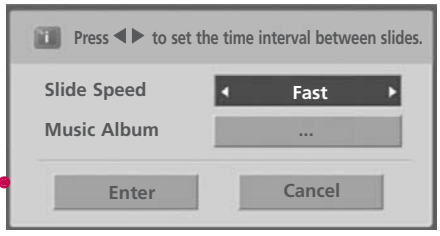
▶ **BGM**: Listen to music while viewing photos in full size.
- Set the BGM device and album in **Option**.

▶ **(Rotate)**: Rotate photos.
- Rotates the photo 90°, 180°, 270°, 360° clockwise.

▶ **Delete**: Delete photos.

▶ **Option**: Set values for **Slide Speed** and **Music Album**.
- Use ∧ ∨ < > button and **ENTER** button to set values. Then go to Enter and press **ENTER** to save the settings.
- You cannot change **Music Album** while BGM is playing.

▶ **Hide** : Hide the menu on the full-sized screen.
- To see the menu again on the full-sized screen, press **ENTER** button to display.

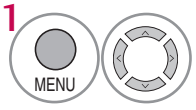


MUSIC LIST

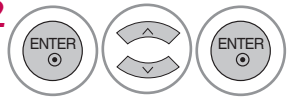
You can use the Music List menu to play MP3 files from a USB storage device.
This TV cannot play back copy-protected files.
The On-Screen Display on your model may be slightly different.

Supported music file: *.MP3
Bit rate range 32 Kbps - 320 Kbps
- Sampling rate (Sampling Frequency)
  MPEG1 layer 3: 32 kHz, 44.1 kHz, 48 kHz
  MPEG2 layer 3: 16 kHz, 22.05 kHz, 24 kHz
  MPEG2.5 layer 3: 8 kHz, 11.025 kHz, 12 kHz

Screen Components

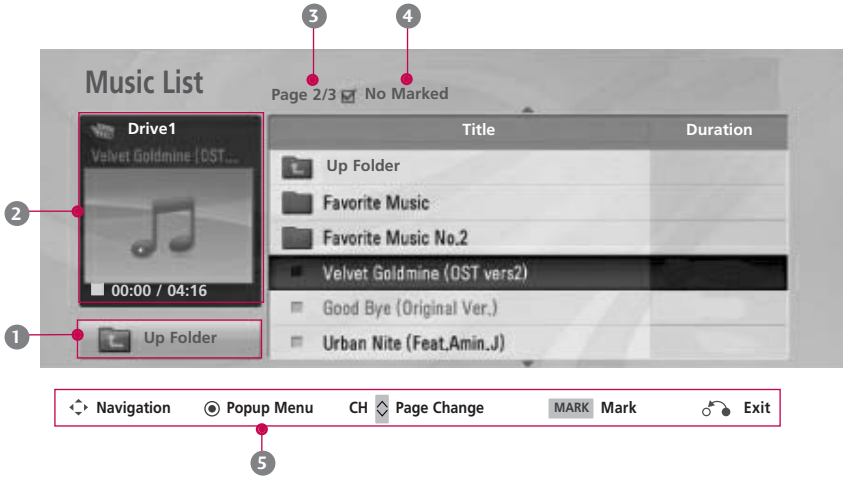
1 

Select **USB**.

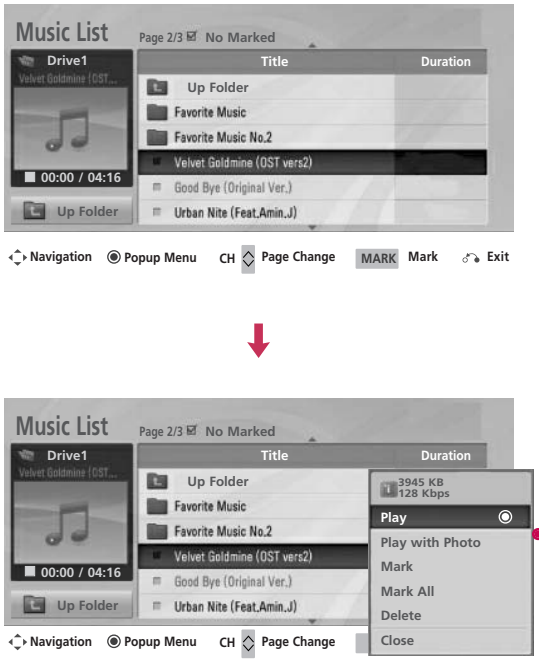
2 

Select **Music List**.

1. Moves to upper level folder
2. Preview: If any album jacket for the file exists, this jacket is displayed.
3. Current page/Total pages
4. Total number of marked musics
5. Corresponding buttons on the remote control



Music Selection and Popup Menu



▶ **Play** (During stop): Play the selected file.
Once a song finishes playing, the next selected one will be played. When there are no selected files to play, the next one in the current folder will be played. If you go to a different folder and press the **ENTER** button, the current song in playback will stop.

▶ **Play Marked**: Play the selected files. Once a file finishes playing, the next selected one will be played automatically.

▶ **Stop Play** (During playback): Stop the playing files.

▶ **Play with Photo**: Start playing the selected files and then move to the Photo List.

▶ **Mark:** Use to mark or unmark a music.

▶ **Mark All**: Mark all files in the folder.

▶ **Unmark All**: Deselect all marked files.

▶ **Delete** or **Delete Marked**: Delete the selected files.

▶ **Close**: Close the pop-up menu.

1 Select the target folder or drive.

2 Select the desired musics.

3 Show the Popup menu.

4 Select the desired Popup menu.

5 Return to TV viewing.

- Use the **CH** ∧ ∨ button to navigate in the music page.
- Use the **MARK** button to mark or unmark a music file. If no music is marked, all the music in the folder will be played in sequence. When one or more music files are marked, the marked music files will be played in sequence. If you want to listen to only one song repeatedly, just mark that one file and play.

- The play information box (as shown below) will automatically move across the screen when there is no user input to prevent a fixed image remaining on the screen for a extended period of time.



NOTE

- When music is playing, ♪ is displayed in front of the music play time.
- A damaged or corrupted music file that does not play displays 00:00 as the play time.
- A music downloaded from a paid service with copyright protection does not start but displays inappropriate information in playtime.
- Press **ENTER**, ■ or **RETURN** button to stop the screen saver.

PICTURE CONTROL

PICTURE SIZE (ASPECT RATIO) CONTROL

This feature lets you choose the way an analog picture with a 4:3 aspect ratio is displayed on your TV.

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



1 Press the **RATIO** button repeatedly to select the picture options
: **Set By Program, 4:3, 16:9, Zoom, Just Scan.**

2 Return to TV viewing.

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

Set by program

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

(4:3➞ 4:3)



(16:9➞ 16:9)



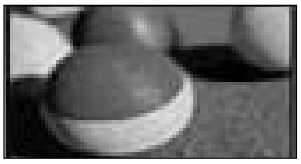
4:3

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



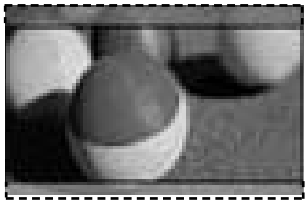
16:9

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



Zoom

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



Just Scan

Normally the edges of video signals are cropped 1-2%. Just Scan turns off this cropping and shows the complete video.

Notes: If there is noise on the edges of the original signal, it will be visible when Just Scan is activated.

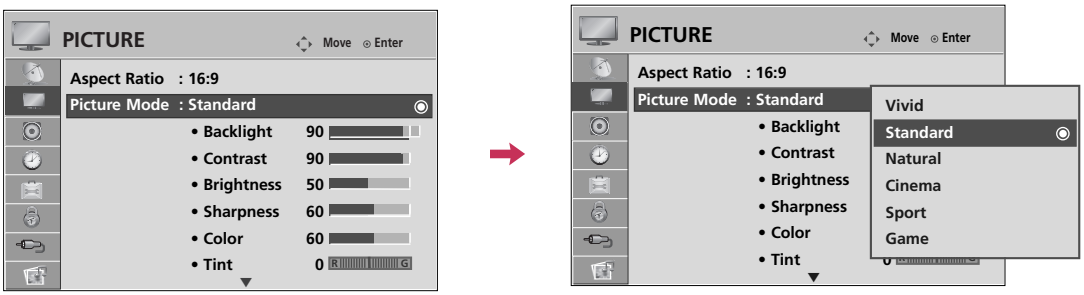
Just Scan operates only with DTV/CADTV/HDMI-DTV/DVI-DTV (720p/1080i/1080p), Component(720p/1080i) input sources.



PRESET PICTURE SETTINGS

Picture Mode - Preset

There are factory presets for picture settings available in the user menus. You can use a preset, change each setting manually.



1 MENU Select **PICTURE**.

2 ENTER Select **Picture Mode**.

3 ENTER Select **Vivid**, **Standard**, **Natural**, **Cinema**, **Sport** or **Game**.

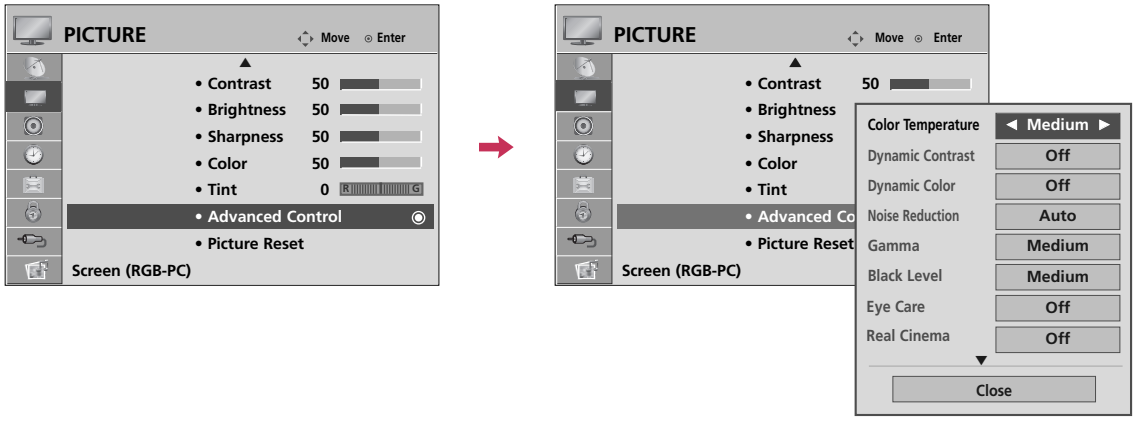
4 RETURN Return to the previous menu.

MENU Return to TV viewing.

- **Vivid**, **Standard**, **Natural**, **Cinema**, **Sport**, and **Game** Settings are preset for the optimum picture quality at the factory and are not adjustable.
- **Vivid**: This is the mode to maximize the effect of the video in the retail store. Strengthen the contrast, brightness, color and sharpness for vivid picture.
- **Standard**: This is the mode to realize optimum viewing condition for the general user.
- **Natural**: This is the mode to display the most natural screen status.
- **Cinema**: This mode optimizes video for watching movies.
- **Sport**: This is the video mode to emphasize dynamic video and primary color (e.g, white, uniform, grass, sky blue etc.) by realizing the optimal screen for sports.
- **Game**: This is the mode to realize fast response speed in a fast gaming screen.

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 MENU Select **PICTURE**.

2 ENTER Select **Advanced Control**.

3 ENTER Select **Color Temperature**.

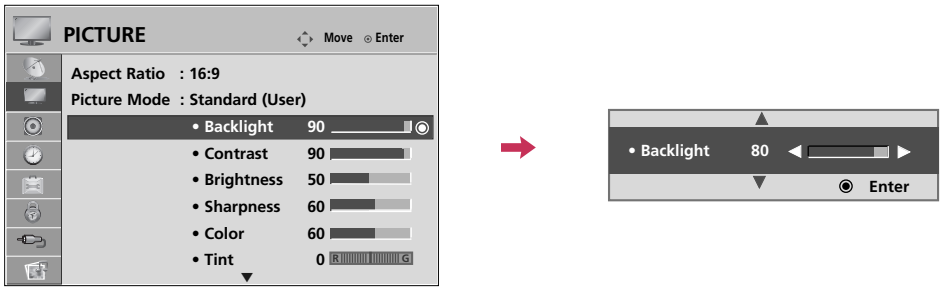
4 Select your desired options.

5 RETURN Return to the previous menu.

MENU Return to TV viewing.

MANUAL PICTURE ADJUSTMENT - USER MODE

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



1 MENU Select **PICTURE**.

2 ENTER Select **Picture Mode**.

3 ENTER Select **Vivid**, **Standard**, **Natural**, **Cinema**, **Sport** or **Game**.

4 ENTER Select **Backlight, Contrast, Brightness, Sharpness, Color,** or **Tint.**

5 ENTER Make appropriate adjustments.

6 RETURN Return to the previous menu.

MENU Return to TV viewing.

PICTURE IMPROVEMENT TECHNOLOGY

Dynamic Contrast: Optimizes the contrast automatically according to the brightness of the reflection.

Dynamic Color: Adjusts the color of the reflection automatically to reproduce as close as possible natural colors.

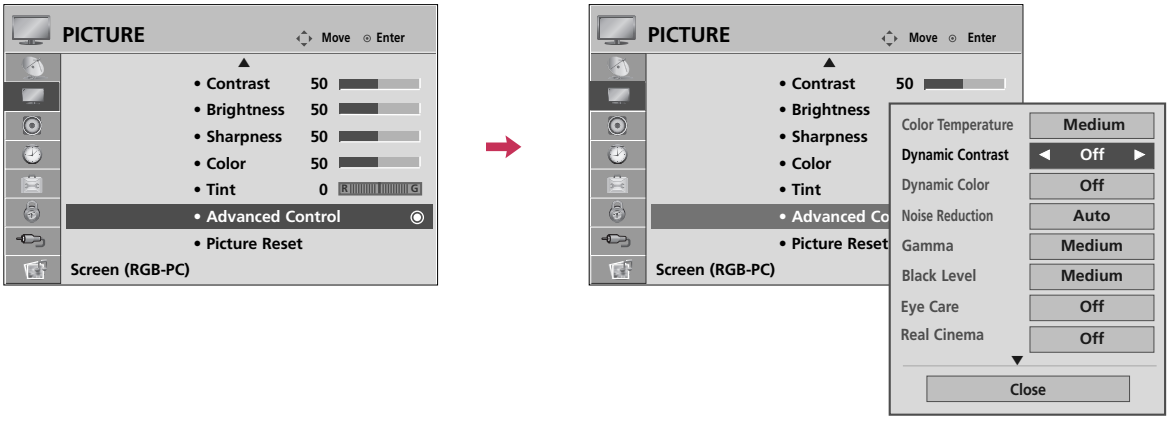
Noise Reduction: Removes interference up to the point where it does not damage the original picture.

Gamma: High gamma values display whitish images and low gamma values display high contrast images.

Color Gamut: Maximize the utilization of color to increase color quality.

Edge Enhancer: Show clearer and distinctive yet natural edges in of the video. This function is enabled in "**Picture Mode - Cinema**".

xvYCC: This is the function to express richer color. This feature represents rich color as much as conventional video signal. This function is enabled in "**Picture mode - Cinema**" when xvYCC signal is inputted through HDMI.



1 MENU Select **PICTURE**.

2 ENTER Select **Advanced Control**.

3 ENTER Select **Dynamic Contrast**, **Dynamic Color**, **Noise Reduction**, **Gamma**, **Color Gamut**, **Edge Enhancer**, or **xvYcc**.

4 Select your desired options.

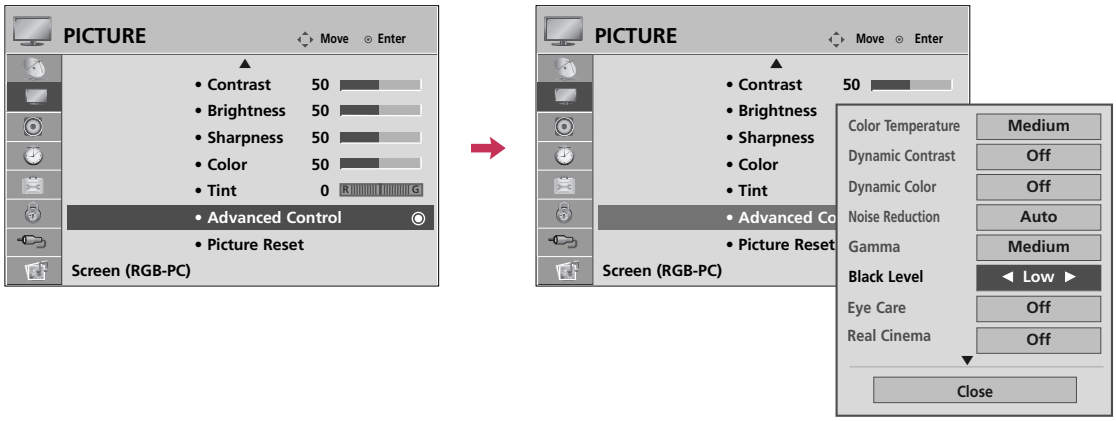
5 RETURN Return to the previous menu.

MENU Return to TV viewing.

ADVANCED CONTROL - BLACK (DARKNESS) LEVEL

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

This function enables to select 'Low' or 'High' in the following mode: AV (NTSC-M), HDMI or Component. Otherwise, 'Black level' is set to 'Auto'.



1 MENU Select **PICTURE**.

2 ENTER Select **Advanced Control**.

3 ENTER Select **Black Level**.

4 Select **Low** or **High**.

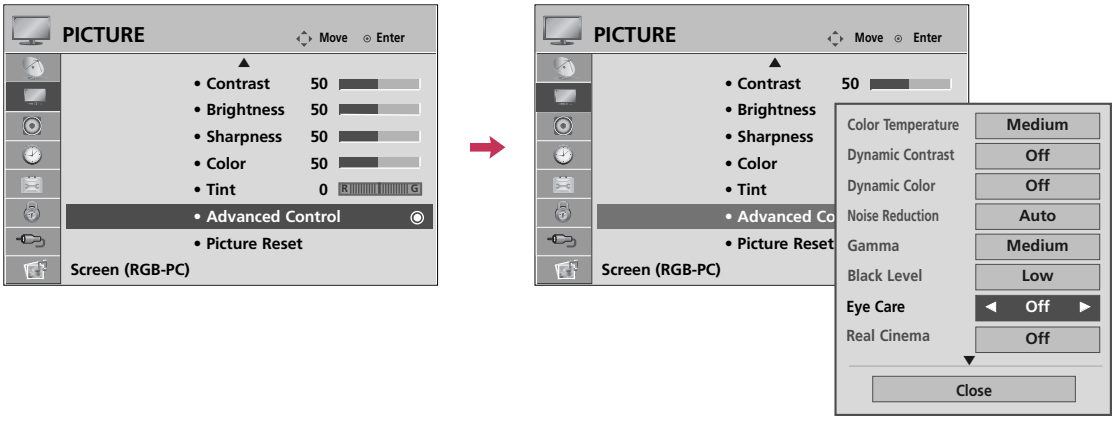
5 RETURN Return to the previous menu.

MENU Return to TV viewing.

- **Low**: The reflection of the screen gets darker.
- **High**: The reflection of the screen gets brighter.

ADVANCED CONTROL - EYE CARE

Dims extremely bright pictures.
This feature is disabled in "**Picture Mode-Vivid, Cinema**".



1 MENU Select **PICTURE**.

2 ENTER Select **Advanced Control**.

3 ENTER Select **Eye Care**.

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

5 RETURN Return to the previous menu.

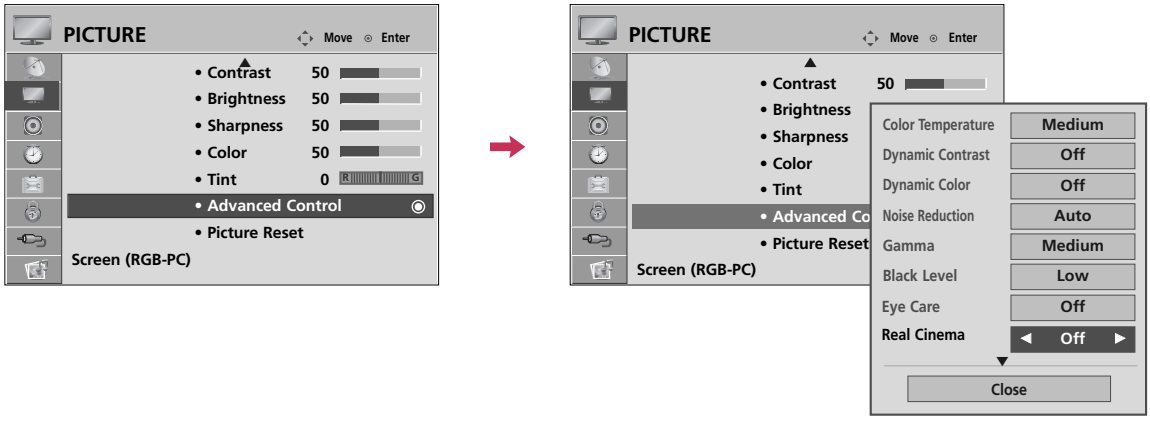
MENU Return to TV viewing.

ADVANCED CONTROL - REAL CINEMA

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

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

This feature operates only in TV (Analog TV, Digital DTV), AV1, AV2, Component 480i/1080i, and HDMI 1080i mode.



1 MENU Select **PICTURE**.

2 ENTER Select **Advanced Control**.

3 ENTER Select **Real Cinema**.

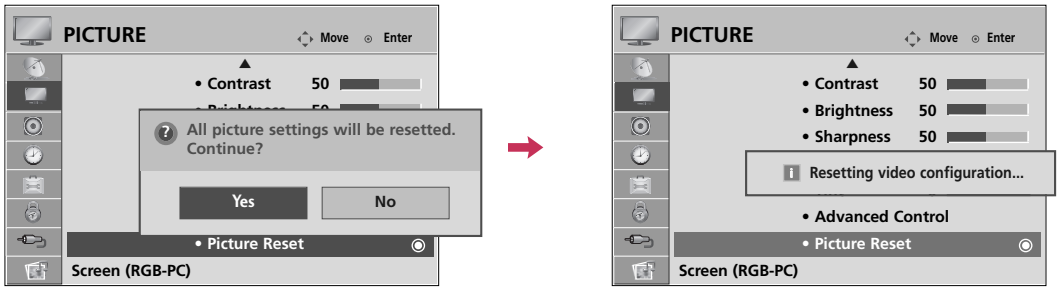
4 Select **On** or **Off**.

5 RETURN Return to the previous menu.

MENU Return to TV viewing.

PICTURE RESET

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



1 MENU — Select **PICTURE**.

2 ENTER — Select **Picture Reset**.

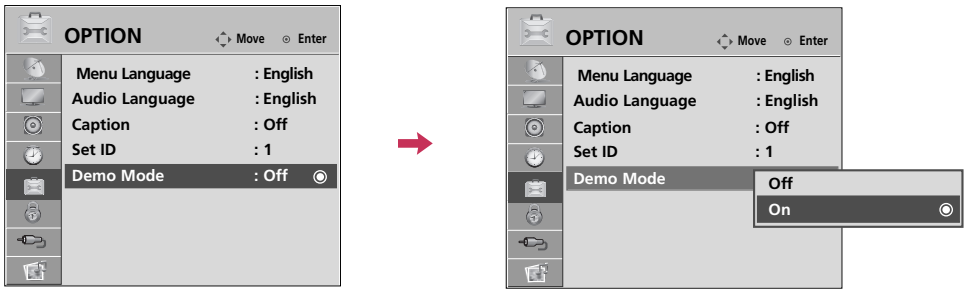
3 ENTER — Select **Yes**.

4 ENTER — Initialize the adjusted value.

5 MENU — Return to TV viewing.

DEMO MODE

Displays a slide show to explain the various feature of this TV.



1 MENU — Select **OPTION**.

2 ENTER — Select **Demo Mode**.

3 ENTER — Select **On** to show the various feature of the TV.

4 MENU — Return to TV viewing.

After a while, **Demo Mode** starts.

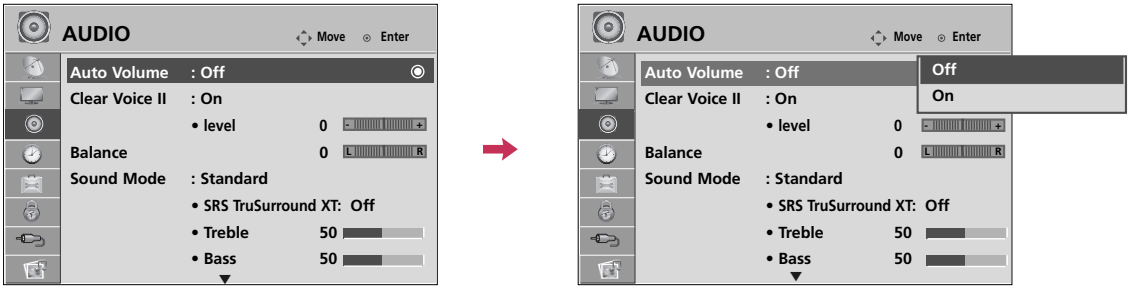
If you want to stop the demo, press any button (Except VOL +, - and MUTE button).

SOUND & LANGUAGE CONTROL

AUTO VOLUME LEVELER (AUTO VOLUME)

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

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



1 MENU Select **AUDIO**.

2 ENTER Select **Auto Volume**.

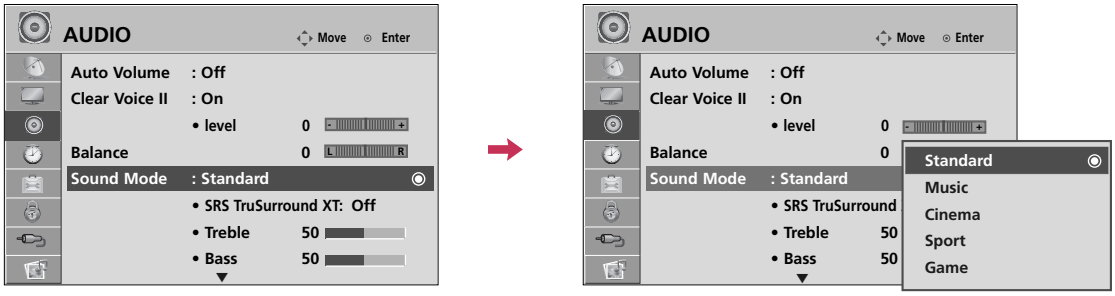
3 ENTER Select **On** or **Off**.

4 RETURN Return to the previous menu.

MENU Return to TV viewing.

PRESET SOUND SETTINGS (SOUND MODE)

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



1 MENU Select **AUDIO**.

2 ENTER Select **Sound Mode**.

3 ENTER Select **Standard**, **Music**, **Cinema**, **Sport**, or **Game**.

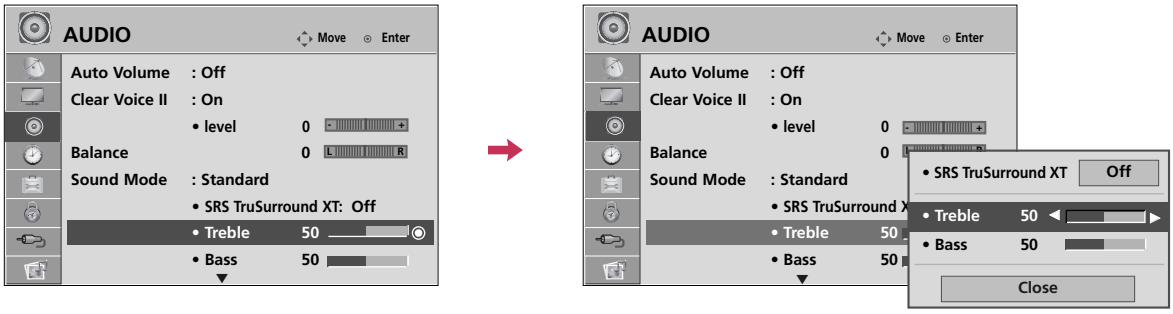
4 RETURN Return to the previous menu.

MENU Return to TV viewing.

- **Standard**, **Music**, **Cinema**, **Sport**, and **Game** are preset for optimum sound quality at the factory.
- **Standard**: Offers standard-quality sound.
- **Music**: Optimizes sound for listening to music.
- **Cinema**: Optimizes sound for watching movies.
- **Sport**: Optimizes sound for watching sports events.
- **Game**: Optimizes sound for playing games.

SOUND SETTING ADJUSTMENT - USER MODE

Adjust the sound to suit your taste and room situations.



1 MENU Select **AUDIO**.

2 ENTER Select **Sound Mode**.

3 ENTER Select **Standard**, **Music**, **Cinema**, **Sport**, or **Game**.

4 ENTER Select **Treble** or **Bass**.

5 ENTER Make appropriate adjustments.

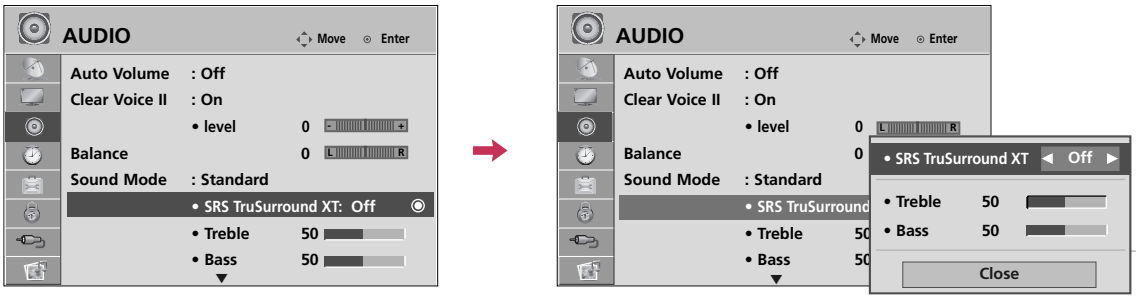
6 RETURN Return to the previous menu.

MENU Return to TV viewing.

- If sound quality or volume is not at the level you want, it is recommended to use a separate home theater system or amp to cope with different user environments.
- If you select "**Clear Voice II-On**", **SRS TruSurround XT** feature will not work.

SRS TRUSURROUND XT

TruSurround XT is a patented SRS technology that solves the problem of playing 5.1 multichannel content over two speakers.



1 MENU Select **AUDIO**.

2 ENTER Select **SRS TruSurround XT**.

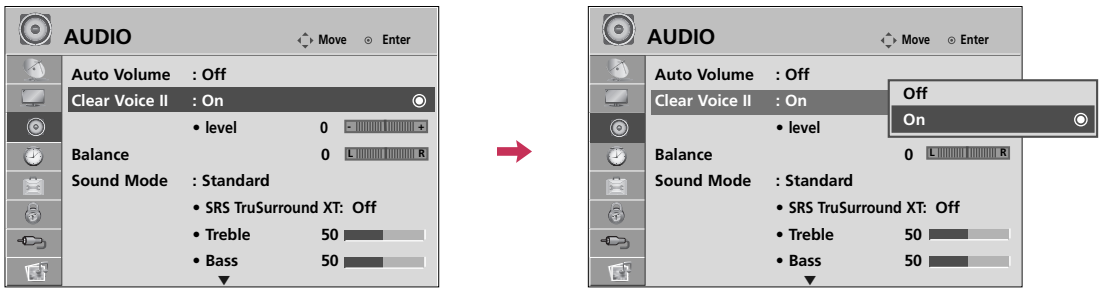
3 ENTER Select **On** or **Off**.

4 RETURN Return to the previous menu.

MENU Return to TV viewing.

CLEAR VOICE II

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



1 MENU Select **AUDIO**.

2 ENTER Select **Clear Voice II**.

3 ENTER Select **On** or **Off**.

Adjustment for Clear Voice Level With selecting **On**

4 ENTER Select **Level**.

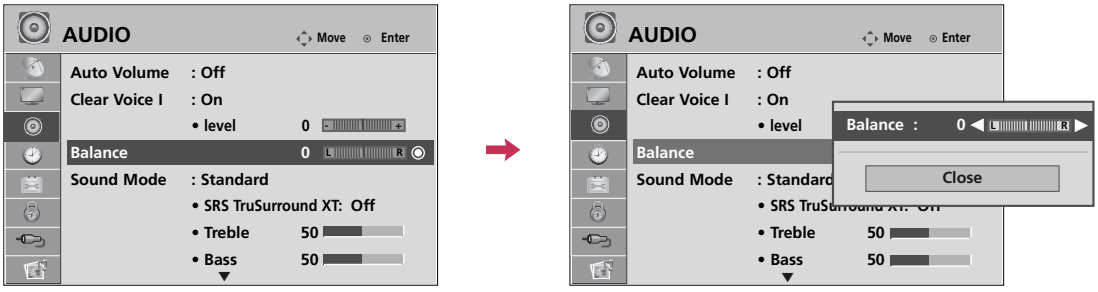
5 ENTER Make appropriate adjustments.

6 RETURN Return to the previous menu.

MENU Return to TV viewing.

BALANCE

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



1 MENU Select **AUDIO**.

2 ENTER Select **Balance**.

3 ENTER Make appropriate adjustments.

4 RETURN Return to the previous menu.

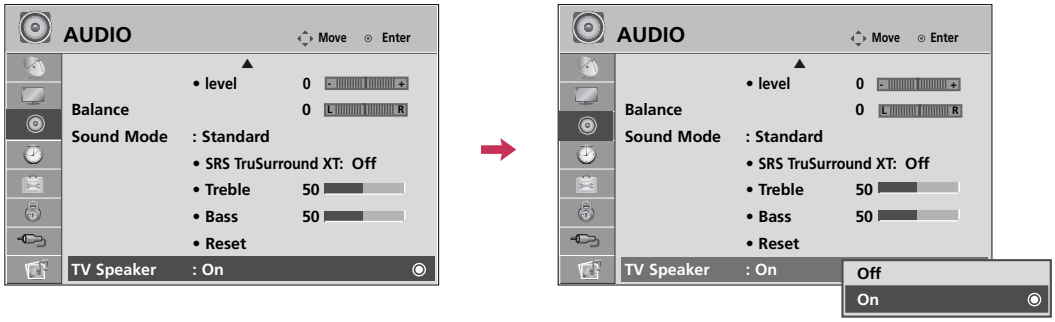
MENU Return to TV viewing.

TV SPEAKERS ON/OFF SETUP

Turn the TV speakers off if using external audio equipment.

In **AV**, **Component**, **RGB** and **HDMI** with HDMI to DVI cable, the TV speaker can be operational even when there is no video signal.

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



1 MENU — Select **AUDIO**.

2 ENTER — Select **TV Speaker**.

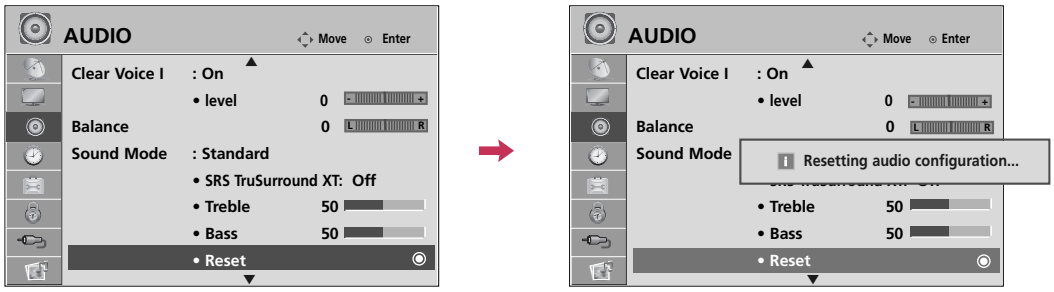
3 ENTER — Select **On** or **Off**.

4 RETURN — Return to the previous menu.

MENU — Return to TV viewing.

AUDIO RESET

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



1 MENU Select **AUDIO**.

2 ENTER Select **Reset**.

3 ENTER Initialize the adjusted value.

4 MENU Return to TV viewing.

STEREO/SAP BROADCAST SETUP

For Analog only: This TV can receive MTS stereo programs and any SAP (Secondary Audio Program) that accompanies the stereo program if the station transmits an additional sound signal. Mono sound is automatically used if the broadcast is only in Mono.



1 SAP

Each time you press the **SAP** button, **Mono**, **Stereo**, or **SAP** appear in turn.

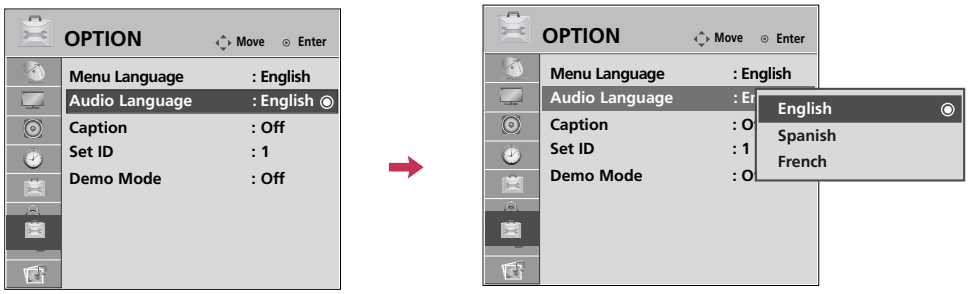
2 RETURN

Return to TV viewing.

■ If other languages available on the digital signal, select them with the **SAP** button.

AUDIO LANGUAGE

Other languages may be available if a digital signal is provided by the broadcasting station.
This feature operates only in DTV mode.



1 MENU Select **OPTION**.

2 ENTER Select **Audio Language**.

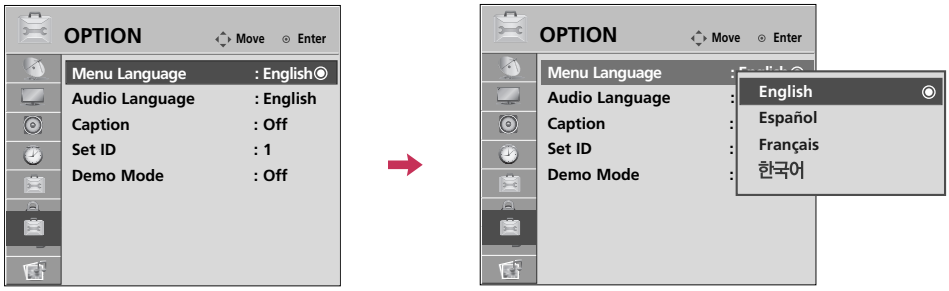
3 ENTER Select your desired language.

4 RETURN Return to the previous menu.

MENU Return to TV viewing.

ON-SCREEN MENUS LANGUAGE SELECTION

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



1 MENU Select **OPTION**.

2 ENTER Select **Menu Language**.

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

4 RETURN Return to the previous menu.

MENU Return to TV viewing.

CAPTION MODE

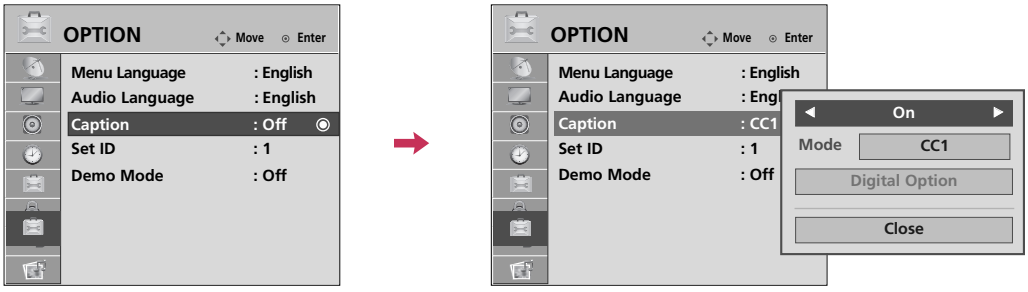
Caption must be provided to help people with hearing loss watch TV.
This feature operates only in TV, AV1-2 mode.

1 CC Select Caption **On** or **Off**.

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

Analog Broadcasting System Captions

Captions provided to help people with hearing loss watch TV. Select a caption mode for displaying captioning information if provided on a program. Analog caption displays information at any position on the screen and is usually the program's dialog. Caption/Text, if provided by the broadcaster, would be available for both digital and analog channels on the Antenna/Cable. This TV is programmed to memorize the caption/text mode which was last set when you turned the power off. This function is only available when Caption Mode is set On.



1 MENU Select **OPTION**.

2 ENTER Select **Caption**.

3 ENTER Select **On**.

4 Select **CC1-4** or **Text1-4**.

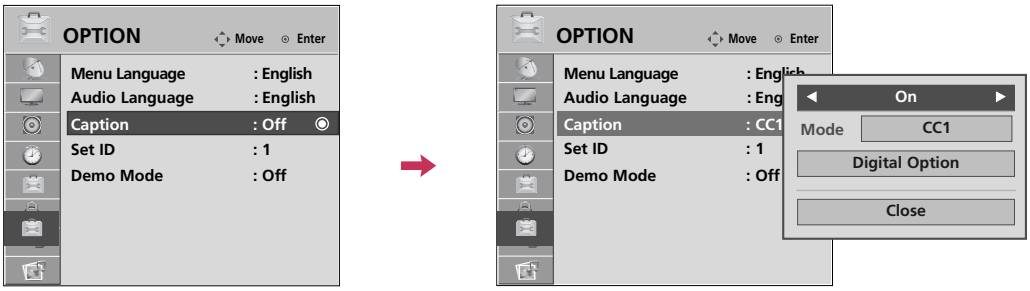
5 RETURN Return to the previous menu.

MENU Return to TV viewing.

- **CAPTION**
  The term for the words that scroll across the bottom of the TV screen; usually the audio portion of the program provided for the hearing impaired.
- **TEXT**
  The term for the words that appear in a large black frame and almost cover the entire screen; usually messages provided by the broadcaster.

Digital Broadcasting System Captions

Choose the language you want the DTV Captions to appear in.
Other Languages can be chosen for digital sources only if they are included on the program.
This function in only available when **Caption** Mode is set **On**.



1 MENU Select **OPTION**.

2 ENTER Select **Caption**.

3 ENTER Select **On**.

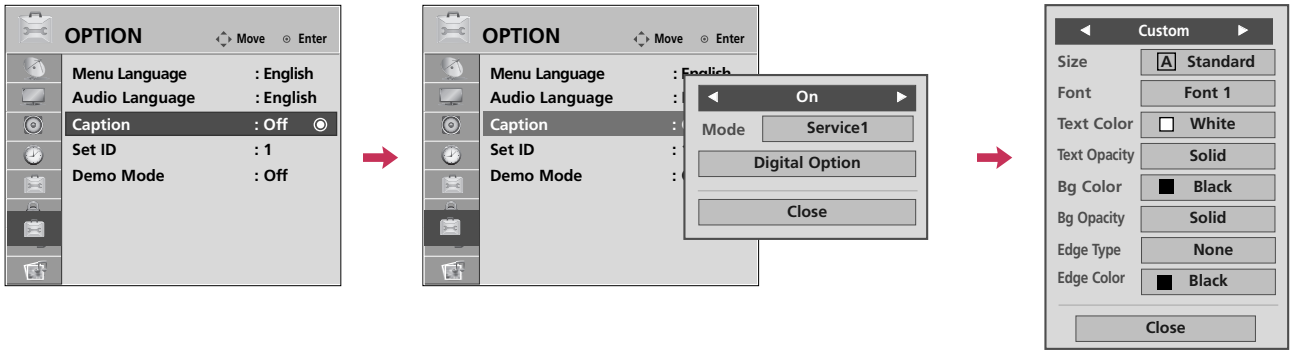
4 Select **CC1**-**4**, **Text1**-**4**, or **Service1** - **6**.

5 RETURN Return to the previous menu.

MENU Return to TV viewing.

Caption Option

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



1 MENU Select **OPTION**.

2 ENTER Select **Caption**.

3 ENTER Select **On**.

4 Select **Digital Option**.

5 ENTER Select **Custom**.

6 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.

7 RETURN Return to the previous menu.

MENU Return to TV viewing.

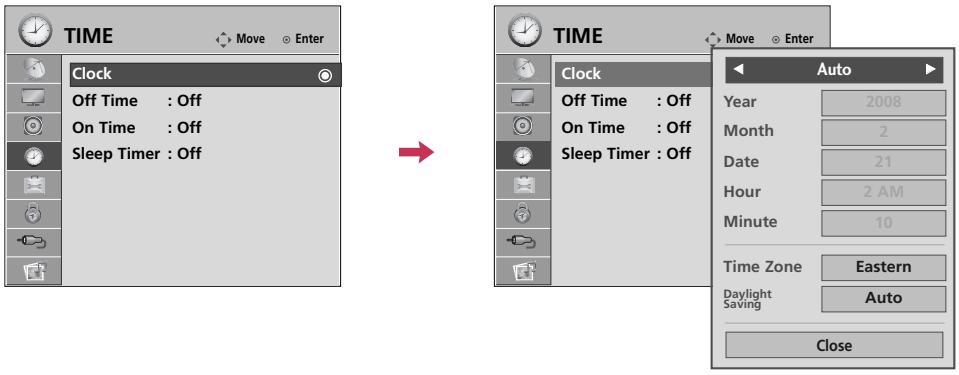
- **Size**: Set the word size.
- **Font**: Select a typeface for the text.
- **Text Color**: Choose a color for the text.
- **Text Opacity**: Specify the opacity for the text color.
- **Bg (Background) Color**: Select a background color.
- **Bg (Background) Opacity**: Select the opacity for the background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

TIME SETTING

CLOCK SETTING

Auto Clock Setup

The time is set automatically from a digital channel signal.
The digital channel signal includes information for the current time provided by the broadcasting station.
Set the clock manually if the current time is set incorrectly by the auto clock function.



1 MENU Select **TIME**.

2 ENTER Select **Clock**.

3 ENTER Select **Auto**.

4 Select your viewing area time zone.
: **Eastern**, **Central**, **Mountain**, **Pacific**, **Alaska**, or **Hawaii**.

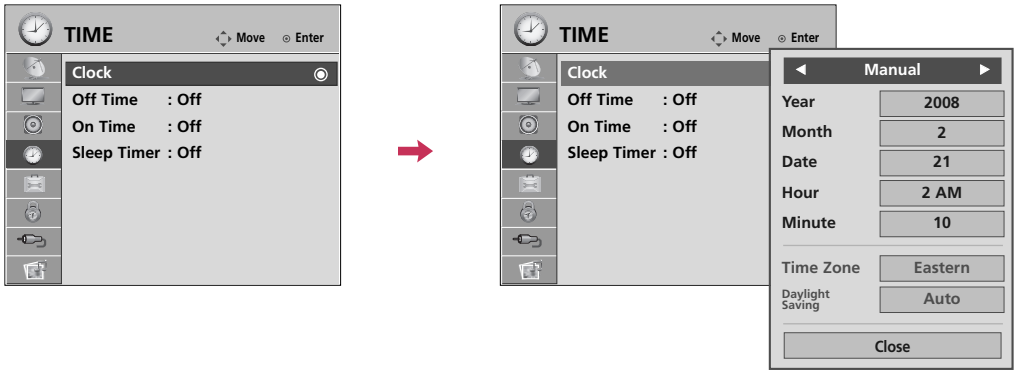
5 Select **Auto**, **Off**, or **On** (depending on whether or not your viewing area observes Daylight Saving time).

6 RETURN Return to the previous menu.

MENU Return to TV viewing.

Manual Clock Setup

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



1 MENU Select **TIME**.

2 ENTER Select **Clock**.

3 ENTER Select **Manual**.

4 Select the Year, Month, Date, Hour, or Minute option.

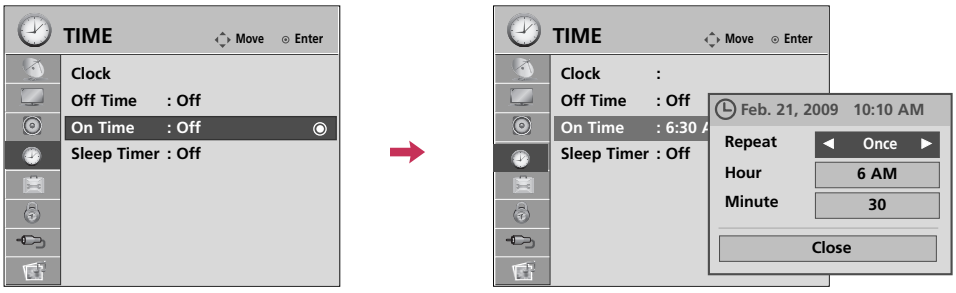
5 Set the Year, Month, Date, Hour, or Minute option.

6 RETURN Return to the previous menu.

MENU Return to TV viewing.

AUTO ON/OFF TIME SETTING

This function operates only if the current time has been set.
The **Off Time** function overrides the **On Time** function if they are both set to the same time.
The TV must be in standby mode for the **On Time** to work.



1 MENU Select **TIME**.

2 ENTER Select **Off Time** or **On Time**.

3 ENTER Select **Repeat**.

4 Select **Off**, **Once**, **Daily**, **Mon.~Fri.**, **Mon.~Sat.**, **Sat.~ Sun.**, or **Sun.**.

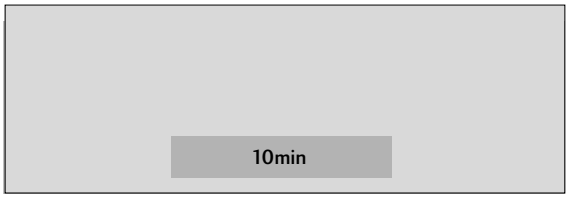
5 Select and set **Hour** or **Minute**.

6 RETURN Return to the previous menu.

MENU Return to TV viewing.

SLEEP TIMER SETTING

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



1 Press the **TIMER** button repeatedly to select the number of minutes.
Sleep timer options: Off, 10, 20, 30, 60, 90, 120, 180, and 240 minutes.

2 Return to TV viewing.

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

PARENTAL CONTROL / RATINGS

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

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

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

V-Chip rating and categories

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

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

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

SET PASSWORD & LOCK SYSTEM

Setting up Your Password

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



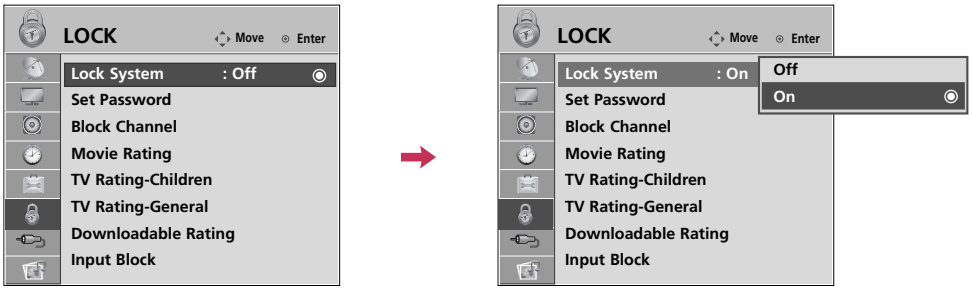
1 MENU ENTER Select **LOCK**.

2 Input the password.

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

Lock System

Enables or disables the blocking scheme you set up previously.



1 MENU, ENTER Select **LOCK**.

2 Input the password.

3 Select **Lock System**.

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

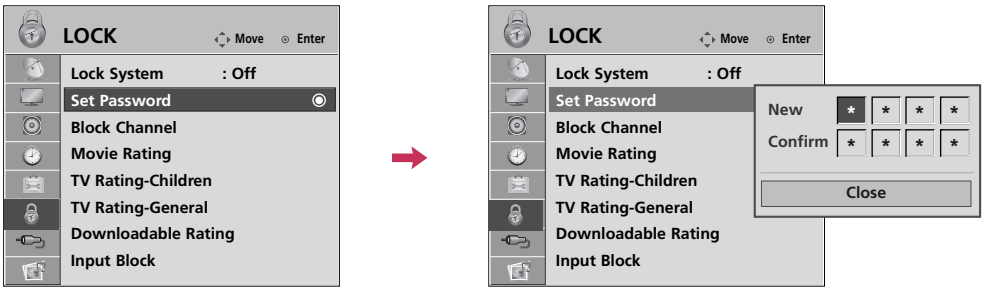
5 RETURN Return to the previous menu.

MENU Return to TV viewing.

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

Set Password

Change the password by inputting a new password twice.



1 MENU ENTER Select **LOCK**.

2 Input the password.

3 Select **Set password**.

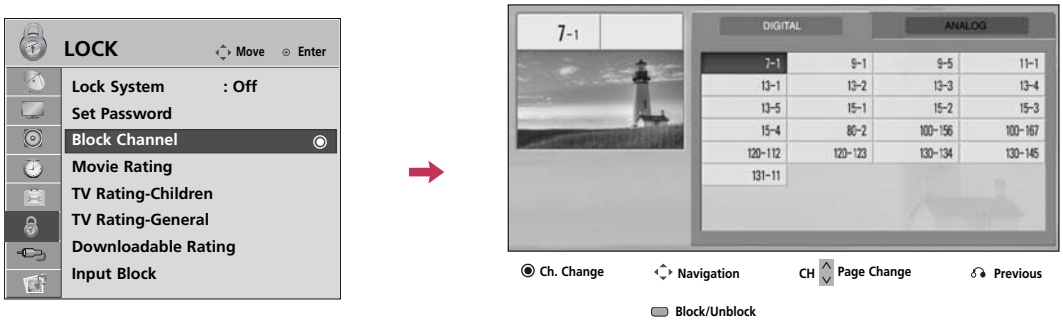
4 ENTER Choose any 4 digits for your new password.
As soon as the 4 digits are entered, re-enter the same 4 digits on the **Confirm**.

5 RETURN Return to the previous menu.

MENU Return to TV viewing.

CHANNEL BLOCKING

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



1 MENU ENTER Select **LOCK**.

2 Input the password.

3 Select **Block Channel**.

4 ENTER Select a channel to block or unblock.

5 Block or unblock a channel.

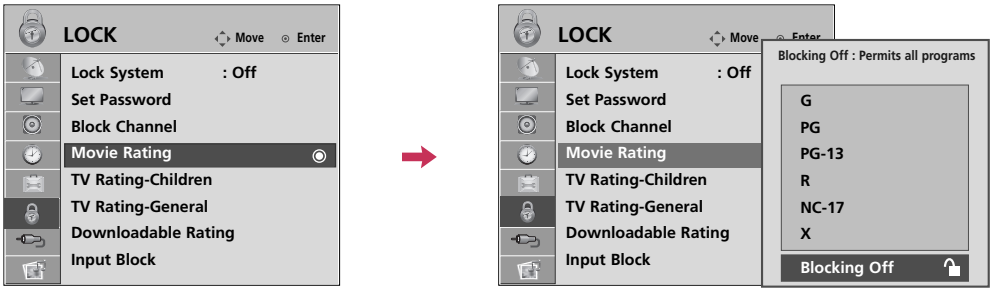
6 MENU Return to the previous menu.

RETURN Return to TV viewing.

MOVIE & TV RATING

Movie Rating (MPAA)

Blocks movies according to the movie ratings limits specified, so children cannot view certain movies. You can set the ratings limit by blocking out all the movies with the ratings above a specified level. Keep in mind that the movie ratings limit only applies to movies shown on TV, not TV programs, such as soap operas.



1 MENU ENTER Select **LOCK**.

2 Input the password.

3 Select **Movie Rating**.

4 ENTER Select **G**, **PG**, **PG-13**, **R**, **NC-17**, **X**, or **Blocking Off**.

5 RETURN Return to the previous menu.

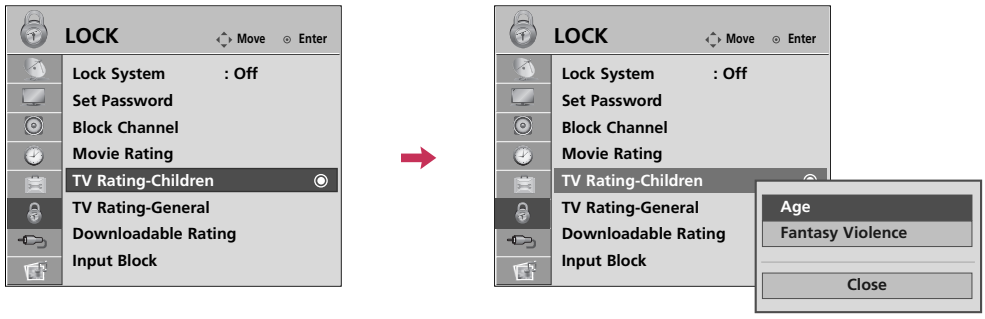
MENU Return to TV viewing.

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

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

TV Rating Children

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 MENU ENTER Select **LOCK**.

2 Input the password.

3 Select **TV Rating-Children**.

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

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

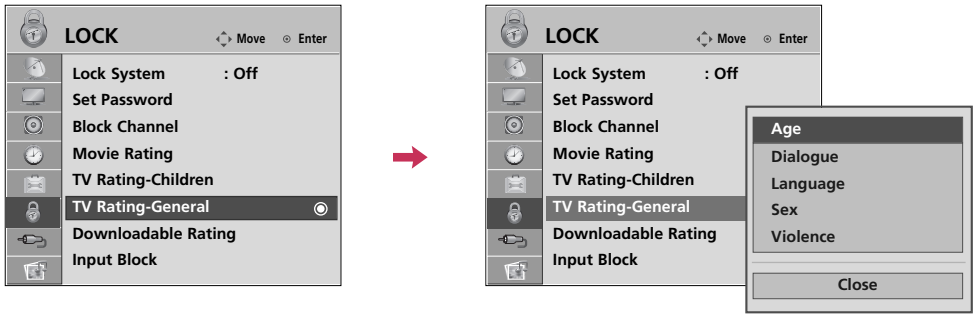
5 ENTER Select block options.

6 RETURN Return to the previous menu.

MENU Return to TV viewing.

TV Rating General

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



1 MENU ENTER Select **LOCK**.

2 Input the password.

3 Select **TV Rating-General**.

4 ENTER Select **Age**, **Dialogue**, **Language**, **Sex** or **Violence**.

5 Select block options.

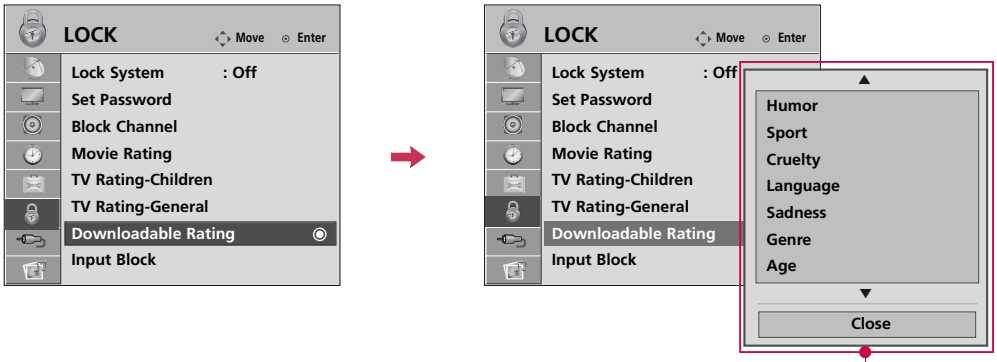
6 RETURN Return to the previous menu.

MENU Return to TV viewing.

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

DOWNLOADABLE RATING

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



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

1 MENU ENTER Select **LOCK**.

2 Input the password.

3 Select **Downloadable Rating**.

4 ENTER Select desired **Downloadable Rating** option.

5 ENTER Select desired option and block it.

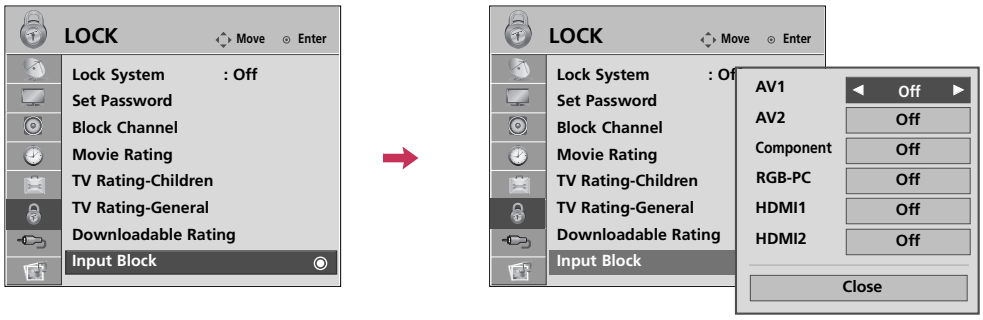
6 RETURN Return to the previous menu.

MENU Return to TV viewing.

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

EXTERNAL INPUT BLOCKING

Enables you to block an input.



1 MENU ENTER Select **LOCK**.

2 Input the password.

3 Select **Input Block**.

4 ENTER Select input source.

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

6 RETURN Return to the previous menu.

MENU Return to TV viewing.

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. ■ Ensure that the batteries are installed with correct polarity (+ to +, - to -). ■ Ensure that the correct remote operating mode is set: TV, VCR etc. ■ Install new batteries. *This feature is not available for all models.
Power is suddenly turned off	■ Is the sleep timer set? ■ Check the power control settings. Power interrupted. ■ TV will be automatically turned off, in case of no signal for 15 minutes.

The video does not work.	
No picture &No sound	■ Check whether the product is turned on. ■ Try another channel. The problem may be with the broadcast. ■ Is the power cord inserted into wall power outlet? ■ Check your antenna direction and/or location. ■ Test the wall power outlet, plug another product's power cord into the outlet where the product's power cord was plugged in.
Picture appears slowly after switching on	■ This is normal, the image is muted during the product startup process. Please contact your service center, if the picture has not appeared after five minutes.
No or poor color or poor picture	■ Adjust Color in menu option. ■ Keep a sufficient distance between the product and the VCR. ■ Try another channel. The problem may be with the broadcast. ■ Are the video cables installed properly? ■ Activate any function to restore the brightness of the picture.
Horizontal/vertical bars or picture shaking	■ Check for local interference such as an electrical appliance or power tool.
Poor reception on some channels	■ Station or cable product experiencing problems, tune to another station. ■ Station signal is weak, reorient antenna to receive weaker station. ■ Check for sources of possible interference.
Lines or streaks in pictures	■ Check antenna (Change the direction of the antenna).
No picture when connecting HDMI	■ Check HDMI cable over version 1.3. The HDMI cables don't support HDMI version 1.3, it cause flickers or no screen display. In this case use the latest cables that support HDMI version 1.3.

APPENDIX

The audio does not work.	
Picture OK & No sound	■ Press the VOL or VOLUME button. ■ Sound muted? Press MUTE button. ■ Try another channel. The problem may be with the broadcast. ■ Are the audio cables installed properly?
No output from one of the speakers	■ Adjust Balance in menu option.
Unusual sound from inside the product	■ A change in ambient humidity or temperature may result in an unusual noise when the product is turned on or off and does not indicate a fault with the product.
No sound when connecting HDMI or USB	■ Check HDMI cable over version 1.3. ■ Check USB cable over version 2.0. ■ Use normal MP3 file. *This feature is not available for all models.

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

Power	
No Power	■ See troubleshooting flow chart.

Erratic Operation	
Installer menu setup	■ Adjust Installer menu settings as required.

Software Problems	
Cannot direct enter channel number or “No Signal” appears	■ After 2-5-5 + MENU, only channels included in TV controller will appear. If channel is available it can be added to channel scan, rescan channels. If it is not available, the ‘No Signal’ message appears on the TV screen.

NOTE

► For other problems not caused by the TV, refer to other devices’ operating guides.

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.

⚠ WARNING

▶ Do not use window/glass cleaner or anything with ammonia to clean the screen.

Cleaning the Cabinet

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

Extended Absence

⚠ CAUTION

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

PRODUCT SPECIFICATIONS

MODEL		**32LH250H** (32LH250H-UA) **32LH255H** (32LH255H-UA)	**37LH250H** (37LH250H-UA) **37LH255H** (37LH255H-UA)	**42LH250H** (42LH250H-UA) **42LH255H** (42LH255H-UA)
Dimensions (Width x Height x Depth)	With stand	31.6 x 22.9 x 8.8 inches 805.0 x 583.0 x 223.8 mm	36.2 x 25.9 x 11.6 inches 922.0 x 659.0 x 297.0 mm	40.4 x 28.1 x 11.6 inches 1028.0 x 715.4 x 297.0 mm
	Without stand	31.6 x 20.7 x 4.2 inches 805.0 x 528.2 x 108.9 mm	36.2 x 23.4 x 3.4 inches 922.0 x 595.0 x 88.0 mm	40.4 x 25.7 x 3.4 inches 1028.0 x 655.0 x 88.7 mm
Weight	With stand Without stand	27.7 pounds / 12.6 kg 25.1 pounds / 11.4 kg	33.0 pounds / 15.0 kg 29.1 pounds / 13.2 kg	41.0 pounds / 18.6 kg 37.0 pounds / 16.8 kg
Power requirement		AC100-240V ~ 50/60Hz		
Television System		NTSC-M, ATSC, 64 & 256 QAM		
Program Coverage		VHF 2-13, UHF 14-69, CATV 1-135, DTV 2-69, CADTV 1-135		
External Antenna Impedance		75 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%		

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

IR CODES

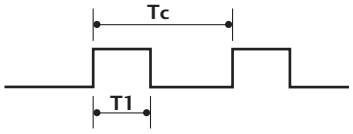
1. How to Connect

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

2. Remote Control IR Codes

■ **Output waveform**

Single pulse, modulated with 37.917KHz signal at 455KHz



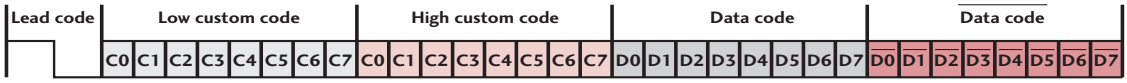
Carrier frequency

FCAR = 1/TC = fOSC/12

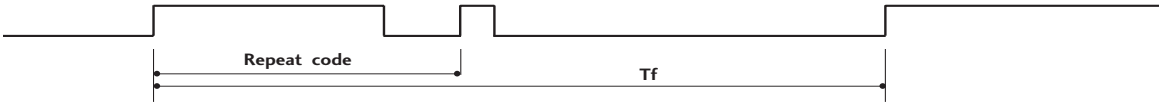
Duty ratio = T1/TC = 1/3

■ **Configuration of frame**

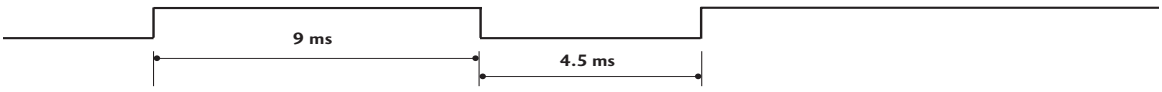
1st frame



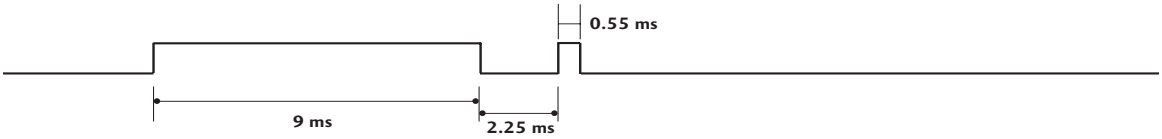
Repeat frame



■ **Lead code**

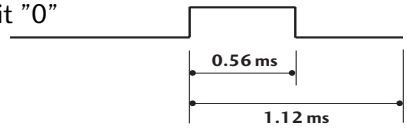


■ **Repeat code**

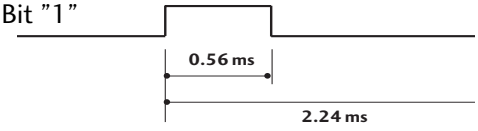


■ **Bit description**

Bit "0"

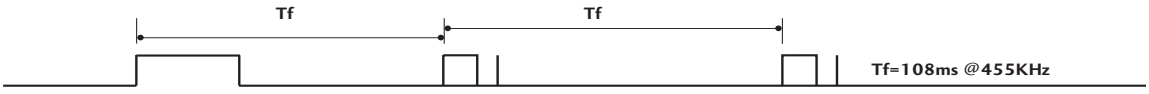


Bit "1"



■ **Frame interval: Tf**

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



Code (Hexa)	Function	Note
08	POWER	Remote control Button (Power On/Off)
0B	INPUT	Remote control Button
1E	MARK	Remote control Button
79	RATIO	Remote control Button
39	CC	Remote control Button
10-19	Number Key 0-9	Remote control Button
4C	- (Dash)/LIST	Remote control Button
1A	FLASHBK	Remote control Button
02	VOL +	Remote control Button
03	VOL -	Remote control Button
00	CH ∧	Remote control Button
01	CH ∨	Remote control Button
0A	SAP	Remote control Button
0E	TIMER	Remote control Button
09	MUTE	Remote control Button
43	MENU	Remote control Button
5B	RETURN	Remote control Button
E8	ALAM	Remote control Button
CA	EJECT	Remote control Button
40	∧	Remote control Button
41	∨	Remote control Button
07	<	Remote control Button
06	>	Remote control Button
44	ENTER	Remote control Button
72	RED	Remote control Button
71	■ (GREEN)	Remote control Button
63	▶ (YELLOW)	Remote control Button
61	❙❙ (BLUE)	Remote control Button
8F	◀◀	Remote control Button
8E	▶▶	Remote control Button

Code (Hexa)	Function	Note
D6	TV	Discrete IR Code (TV Input Selection)
5A	AV1	Discrete IR Code (AV1 Input Selection)
D0	AV2	Discrete IR Code (AV2 Input Selection)
BF	COMPONENT	Discrete IR Code (COMPONENT Input Selection)
D5	RGB-PC	Discrete IR Code (RGB Input Selection)
CE	HDMI1	Discrete IR Code (HDMI1 Input Selection)
CC	HDMI2	Discrete IR Code (HDMI2 Input Selection)
76	Ratio 4:3	Discrete IR Code (Only 4:3 Mode)
77	Ratio 16:9	Discrete IR Code (Only 16:9 Mode)
AF	Ratio Zoom	Discrete IR Code (Only Zoom1 Mode)
C4	POWER ON	Discrete IR Code (Only Power On)
C5	POWER OFF	Discrete IR Code (Only Power Off)

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Version 2, June 1991

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Version 2.1, February 1999

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

   If such an object file uses only numerical parameters, data structure layouts and accessories, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executable containing this object code plus portions of the library will still fall under Section 6.)

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

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   b) Use a suitable shared library mechanism for linking with the library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.
   c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6, above, for a charge no more than the cost of performing this distribution.
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Version 1.1

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COMMERCIAL MODE SETUP GUIDE

Note: All features shown within this guide may not be available on all models.

EXPERIENCED INSTALLER

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B-LAN Setup
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For Customer Support/Service, please call:

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RECORD Model and SERIAL NUMBER
The model and serial number of this TV is located on the back of the cabinet. For future reference, we suggest that you record those numbers here:

Model No._____Serial No. _____



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



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



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

WARNING:
TO PREVENT FIRE OR SHOCK HAZARDS, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.

POWER CORD POLARIZATION:
This product is equipped with a 3-wire grounding-type alternating current line plug. This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the three-wire ground type plug.

NOTE TO CABLE/TV INSTALLER:
This reminder is provided to call the cable TV 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.

REGULATORY INFORMATION:
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 when the equipment is operated in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, 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 into 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.

CAUTION:
Do not attempt to modify this product in any way without written authorization from LG Electronics U.S.A., Inc. Unauthorized modification could void the user’s authority to operate this product.

COMPLIANCE:
The responsible party for this product’s compliance is: LG Electronics U.S.A., Inc.
1000 Sylvan Avenue, Englewood Cliffs, NJ 07632, USA • Phone: 1-201-816-2000.

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206-4118

IMPORTANT SAFETY INSTRUCTIONS

SAFETY INSTRUCTIONS

Important safeguards for you and your new product

This product has been manufactured and tested with safety in mind. However, improper use can result in potential electrical shock or fire hazards. To avoid defeating the safeguards that have been built into the new product, please read and observe the following safety points when installing and using the new product, and save them for future reference.

Observing the simple precautions discussed in this installation and operating guide can help get many years of enjoyment and safe operation that are built into the new product.

This product complies with all applicable U.S. Federal safety requirements, and those of the Canadian Standards Association

1. Read Instructions

All the safety and operating instructions should be read before the product is operated.

2. Follow Instructions

All operating and use instructions should be followed.

3. Retain Instructions

The safety and operating instructions should be retained for future reference.

4. Heed Warnings

All warnings on the product and in the operating instructions should be adhered to.

5. Cleaning

Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

6. Water and Moisture

Do not use this product near water for example, near a bath tub, wash bowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool.

7. Accessories, Carts, and Stands

Do not place this product on a slippery or tilted surface, or on an unstable cart, stand, tripod, bracket, or table. The product may slide or fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.



PORTABLE CART WARNING

8. Transporting Product

A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.

9. Attachments

Do not use attachments not recommended by the product manufacturer as they may cause hazards.

10. Ventilation

Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.

11. Power Sources

This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company. For products intended to operate from battery power, or other sources, refer to the operating instructions.

12. Power Cord Polarization (Some models)

This product is equipped with a three-wire grounding type alternating-current power plug. This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the three-wire ground-type plug.

13. Power Cord Protection

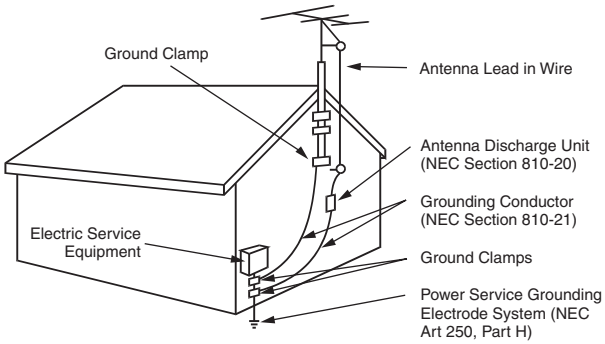
Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.

(Continued from previous page)

14. Outdoor Antenna Grounding

If an outside antenna or cable system is connected to the product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code (U.S.A.), ANSI/ NFPA 70 provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

Example of Grounding According to National Electrical Code Instructions



NEC - National Electrical Code

15. Lightning

For added protection for this product (receiver) during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the product due to lightning and power-line surges.

16. Power Lines

An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.

17. Overloading

Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.

18. Object and Liquid Entry

Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.

19. Servicing

Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

20. Damage Requiring Service

Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:

a. If the power-supply cord or plug is damaged.

b. If liquid has been spilled, or objects have fallen into the product.

c. If the product has been exposed to rain or water.

d. If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.

e. If the product has been dropped or the cabinet has been damaged.

f. If the product exhibits a distinct change in performance.

21. Replacement Parts

When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.

22. Safety Check

Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.

23. Wall or Ceiling Mounting

The product should be mounted to a wall or ceiling only as recommended by the manufacturer. The product may slide or fall, causing serious injury to a child or adult, and serious damage to the product.

24. Heat

The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

Use this page as a reference to find pages or sections to go to and set up the TV features.
Go to page 7 to begin the Commercial Mode Master TV setup.

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Notes

- See the Installer's menus to set up the operational features of the TV. The Installer's section content is intended to be used primarily by qualified TV electronics technicians.
- Reference is made to installer remote controls used for menu operation within the manual. The remote information is provided for reference only. The typical installer remote control shown for reference in this manual may be different than the actual remote control supplied with the TV.
- For any additional information, contact your LG representative.

Note: Design and specifications are subject to change without prior notice.

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Installation and Setup Checklist

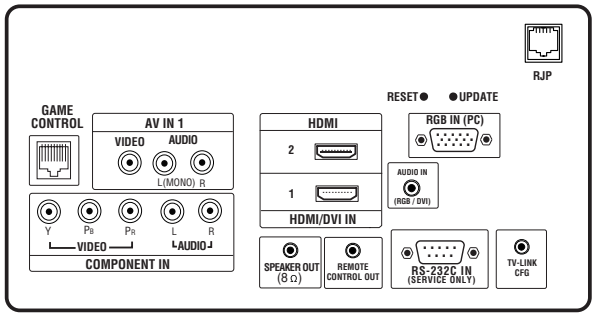
__ Unpack TV and all accessories.
__ Install batteries in remote control.
__ Install TV on Vesa Mount or Stand.
Note: It may be advisable to make all hard-wire connections before installing on Vesa mount or stand, as appropriate.

Hardware Connections

__ Install any additional hardware as appropriate to your institution, LAN etc.

Hardwire Connections

__ Make all connections to rear Jack Pack and RF antenna on MPI card.
__ Make all connections to signal, interactive resources and Aux sources as appropriate.



Installer Menu Items Setup

__ Configure all relevant Installer menu items as required of your institution.

TV Menus Configuration

Configure TV features for the end user.

__ Channel
__ Picture
__ Audio
__ Option
__ Time
__ Lock
__ Choose on screen menu language. (English is the default language.)

Commercial Mode Setup

__ Commercial Mode Setup, see next page.

Software Installation

__ Install or configure any software as applicable; PPV etc.

Additional Features Setup

See page 5, Table of Contents.

__ Select viewing source on TV.

Commercial Mode Setup for Master TV

This page provides an overview of a Master TV configuration.

Note 1: Disconnect all Aux inputs. Under certain conditions, Auto Tuning (Channel search) is disabled if there is an Aux input active.

Commercial Mode Setup Procedure

1. Set Installer Menu Items

(Enter TV Installer Menu, see Installer menus for detailed instructions.)

a. Set Installer menu item **117 FACT DEFAULT**, to **001** and press **ENTER** on Installer remote. (This clears all installer menu custom settings, channel labels / icons etc. and reloads the factory default settings.)

b. Set Item **003 BAND/AFC.**
- **Broadcast**: set to **000**. - **HRC**: set to **002**
- **CATV**: set to **001.** - **IRC**: set to **003**

c. Set item **028 CH OVERIDE** to **001**. This allows access to channel search, Auto Tuning and Channel List/Edit options in the Channel Menu.

d. Set other particular installer items that affect your TV programming network. Enable/Disable Aux sources, set a **Start Channel** etc.

e. After all required installer menu item settings have been adjusted, press ENTER on the remote to remove Installer Menu.

2. Set Up TV Features

(Channel, Picture, Audio, Lock, Time, Option, Digital Captions etc. See TV Clonable options list and TV menus pages.)

3. Run Auto Tuning (Channel Search)

(Search for all available channels.) Go to the Channel Menu and access the Auto Tuning option, follow onscreen instructions.

a. Edit Channel Scan. In the Channel Menu, access Channel Edit option.

- Add/Delete channels per your system requirements.
  Note: Physical channel numbers are used to identify Virtual channels.
- Add familiar channel trademarks/logos like ABC, CBS, NBC etc. to the Channel-Time onscreen display. In the Channel menu, select the Channel Label option. Add identifiable labels (logos) for the end user to readily know what common networks are available.

4. Transfer TV Setup to Internal TV Controller: 2-5-5 + Menu Mode

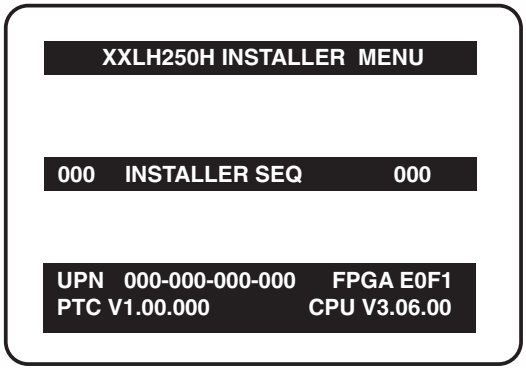
After the TV channel scan has been edited and channel label icons added, enter the Installer menu. Once in the Installer menu, press 2-5-5 and MENU on the remote. This transfers the TV setup to the internal controller box.

5. Add Custom Channel Labels for Analog Channels: 2-5-4 + Menu Mode

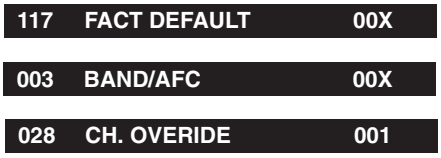
Enter Installer menu, press 2-5-4 and MENU. Add your own custom text labels to channel onscreen displays. Note: Digital Channels often have a broadcaster generated label. (See 2-5-4+Menu pages.)
When finished, to exit 2-5-4+Menu mode, press **MENU**.

Verify TV Setup

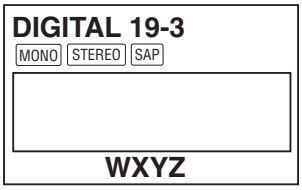
At this point, verify that the channel lineup, channel icons and custom labels are correct. Make sure the TV features are set per your requirements. Set item **028 Ch Overide** to **000** to lock the channel scan. After the preceding has been completed, the Master TV setup is ready to be copied to a Clone Programmer, see cloning options pages.



Typical TV Installer Menu



Adjust the settings for these Installer Menu Items



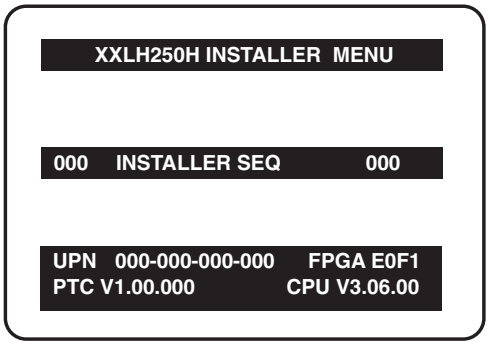
Custom Text Label 'WXYZ' created in 2-5-4 + Menu (Add Channel Label) Mode



Set 093 RJP Available to 001 if using a remote jack pack



After Master TV setup has been completed, set item 028 Ch Overide to 000.



Typical Installer Menu

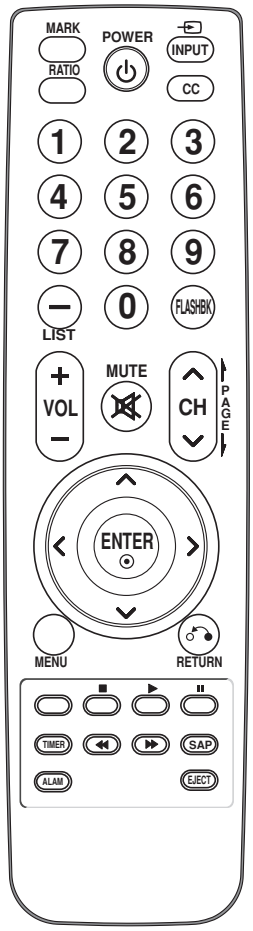
This is the commercial mode setup guide only.

Operating Installer Menu

To set up the controls for the TV you will need to know how to enter the TV Installer menu and make changes to the default values as required. If necessary, familiarize yourself with the TV Installer menu and how to make and save changes in the menu.

LG Installer Remote

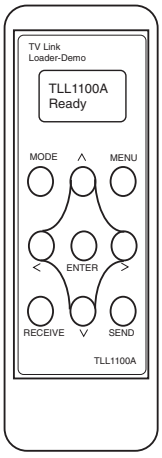
You will need an **LG Installer remote** control similar to the one shown to the right. The installer remote must have a "Source" button or its equivalent. The remote shown in this manual has "INPUT" -- this button serves the purpose of a Source button.



The TV's clonable features need to be set up. This is a critical step. If the Master TV display panel's clonable features like adding channel icons or channel labels are not done correctly, then the cloned TVs will all have problems. Refer to the Owner's Manual for other TV features: Video, Audio, Closed Captions, V-Chip, etc.

TLL-1100A Clone Programmer

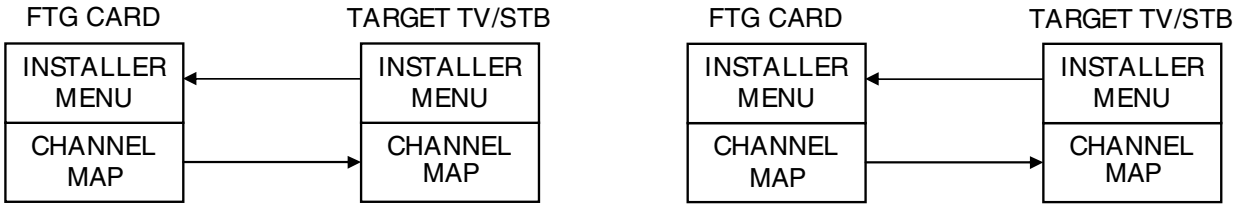
The TLL is a very simple cloner to use. It can be set up to clone a master TV setup and transfer it into a target TV. Cloning is accomplished using the TV/Cloner MPI ports for communication. Be sure the Master TV is set up completely. Cloning is only possible when the TV is tuned to an Aux source or Analog channel, not a digital channel.



Outlined below is the FTG (Free-To-Guest) setup for individual TV control

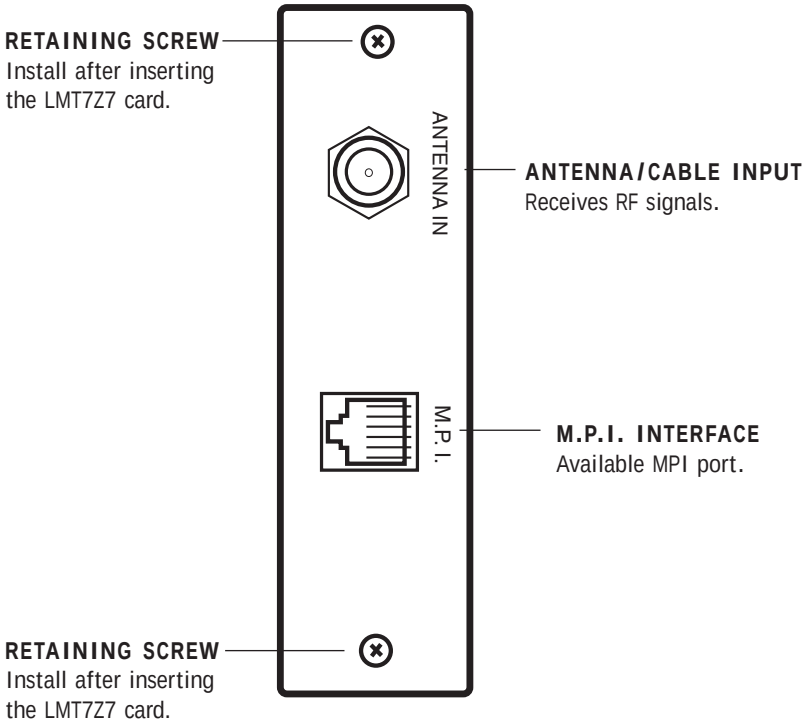
1. Set up commercial features of TV/STB. Enter Installer Menu and set all desired items as required. (i.e. Tuning Band, Start Channel etc.) Refer to the Installation and Setup Guide of the TV/STB.
2. Load the FTG Configuration Application program onto the PC that will be used to configure the FTG card.
3. Install FTG card into TV/STB's MPI card slot and connect PC. (See below)
4. Execute the FTG Configuration Application and create a configuration file.
5. Build a Channel Map and 'Write' it to FTG card. (Converts card from pass-through to FTG mode.)
6. If necessary, make changes to Installer Menu items using FTG Installer Menu Configuration utility and 'Write' them to FTG card.
7. Save the configuration file (*.rml) for future use.
8. Tune TV/STB to a Logical Channel in the Channel Map.

LMT7Z7 Configured Card in FTG Mode of Operation



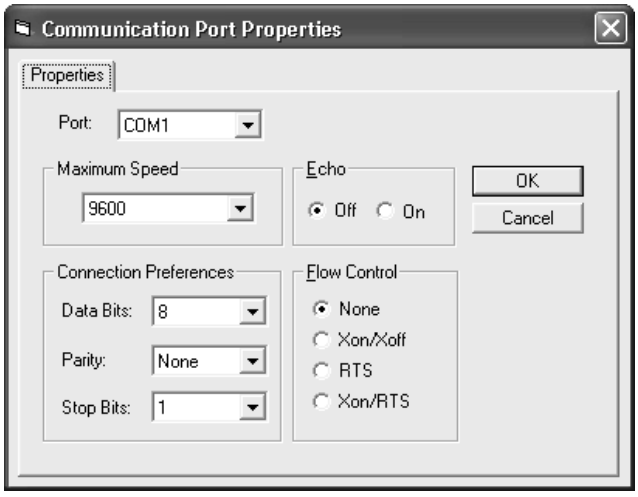
Different Model TV/STB Function
Card only copies Installer Menu items
and then installs Channel Map.

Same Model TV/STB Function
Card installs both Installer Menu items
and Channel Map.

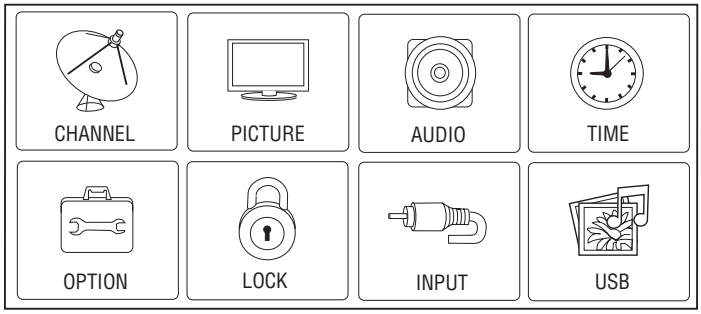


FTG Card Mode of Operation Contd.

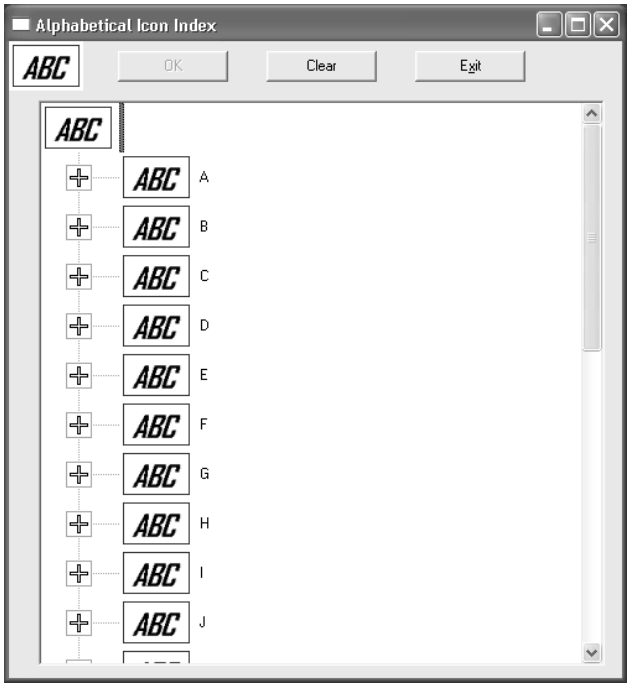
It is easy to determine the operating mode of the TV/STB. By pressing Menu, if the Setup or TV menu appears, the Z7 card is in pass-through mode. If the End User 'Function' menu appears, the TV/STB is in FTG mode.



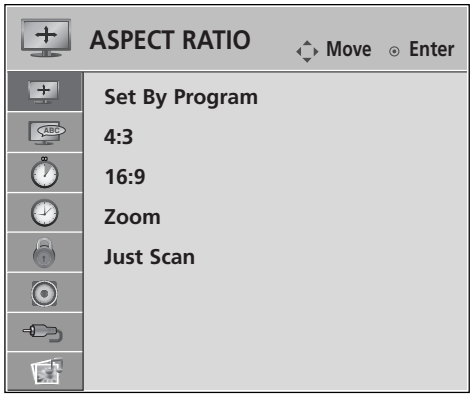
Communications Setup Menu
Sets up the communications link between the FTG Configuration Application and the Z7 card installed in a TV/STB.



Typical TV/STB Setup Menu
Shows that the Z7 card is in pass-through mode. This menu can also be accessed by turning IR remote access 'On' in the FTG Configuration Application, while the TV/STB is in FTG mode.



Network Icon Selection Menu
Select channel icons like ABC, NBC etc., to add to the channel OSDs to identify common networks for the end user.



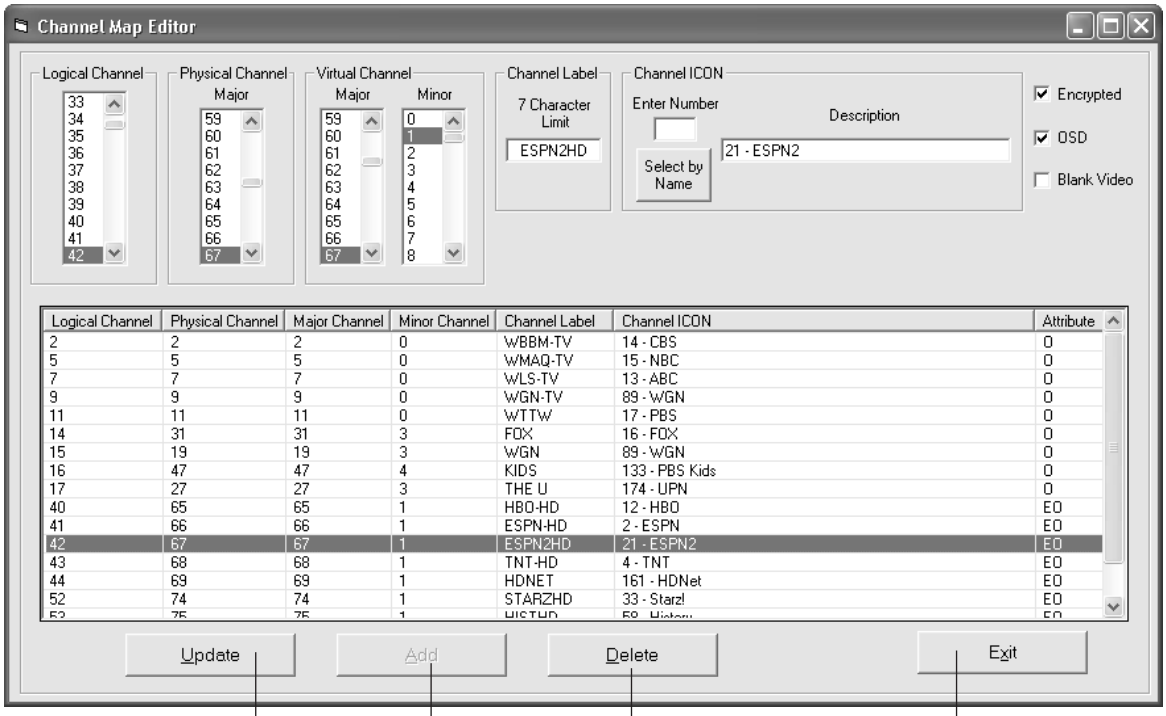
End User 'Aspect Ratio' or Function Menu
Shows that the Z7 card is in FTG mode. While this menu is present on-screen, the only way the Installer menu can be accessed is by the FTG Configuration Application.

Creating/copying a channel map into LMT7Z7 card will convert the card from pass-through mode to FTG mode. When 'Aspect Ratio' menu is present, card is in FTG mode.

LOGICAL CHANNEL NUMBERS
Channels appear in numerical order. Select logical, Major and Minor numbers on menu.

CUSTOM CHANNEL LABELS/ICONS
Set custom labels and select icons on menu.

SET CHANNEL ATTRIBUTES
Set encrypted, OSD on or off or blank video only.



EXIT
Exits menu and returns to logical channel listing.

DELETE
Removes channel from lineup.

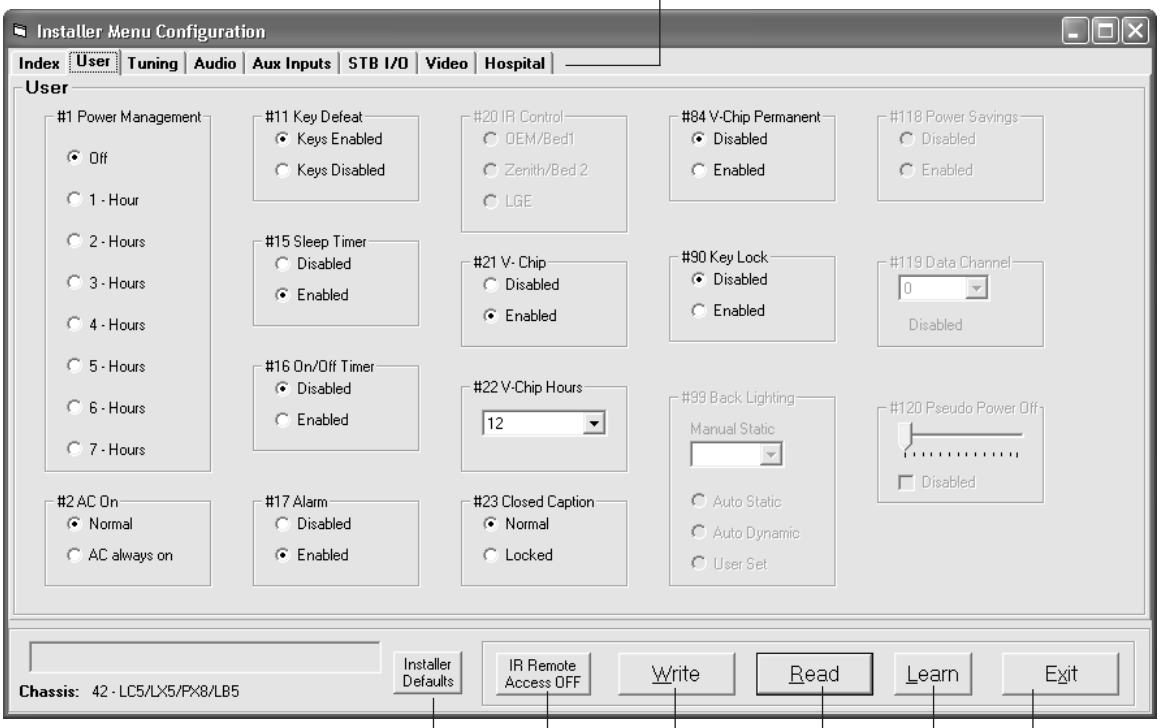
ADD
After inputting a new channel's data, press to add channel to list.

UPDATE
After editing a channel's data, press to include the changes in the channel list.

CHANNEL MAP EDITOR
Shows both channel data and logical channel lineup.

CONFIGURATION SETTINGS
Select tabs for Installer submneu items to set up TV/STB.

HOSPITAL GRADE TV/STB ITEMS
Set hospital only items on Installer menu for Hospital grade TV/STBs.



INSTALLER DEFAULTS
Press to reset TV/STB to Installer menu defaults.

IR REMOTE ACCESS
Toggle IR remote access to On to get access to TV/STB feature menus or Installer menu.

WRITE
Press to transfer the FTG Installer menu values to the FTG card and TV/STB.

READ
Press to transfer the Installer menu values on the FTG card to the PC FTG Configuration Application.

EXIT
Returns to logical channel map menu.

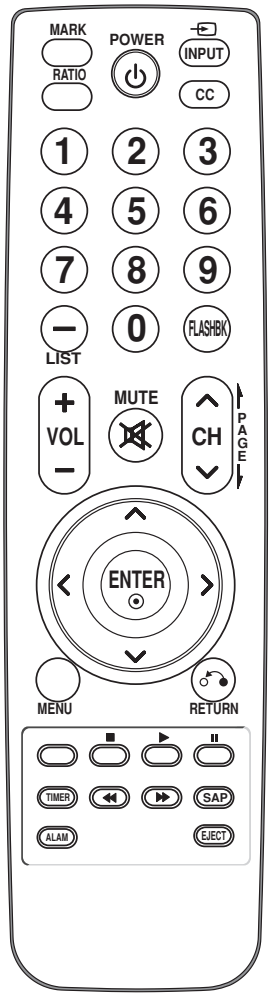
LEARN
Press to transfer the installer menu settings on the TV/STB to the FTG card and PC FTG Configuration Application.

LMT7Z7 Configured Card in FTG Mode of Operation

Error Messages

Problem	Probable Cause	Solution
Cannot contact target.	FTG application already open.	Close extra FTG application on computer.
	Cable(s) not connected.	Check and connect communication cables.
	TV off.	Turn TV on.
	Wrong Communication port.	Select correct Comm port on computer.

Typical Installer Remote Control

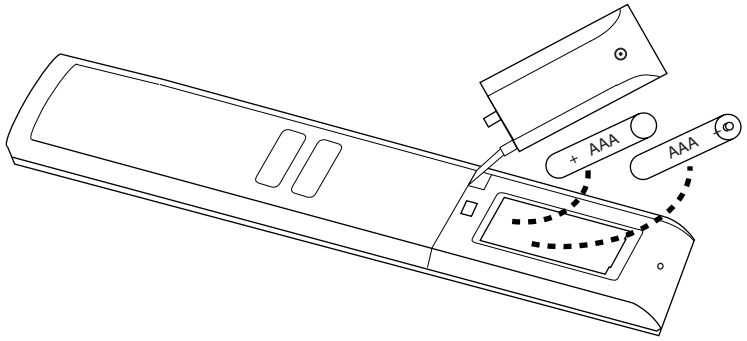


LG Installer Remote Control

The remote control is supplied with and dedicated to operate the TV. Some DVD and VCR controls may be available for some LG DVD/VCR products.

See next page for typical key functions in TV mode and DVD/VCR control.

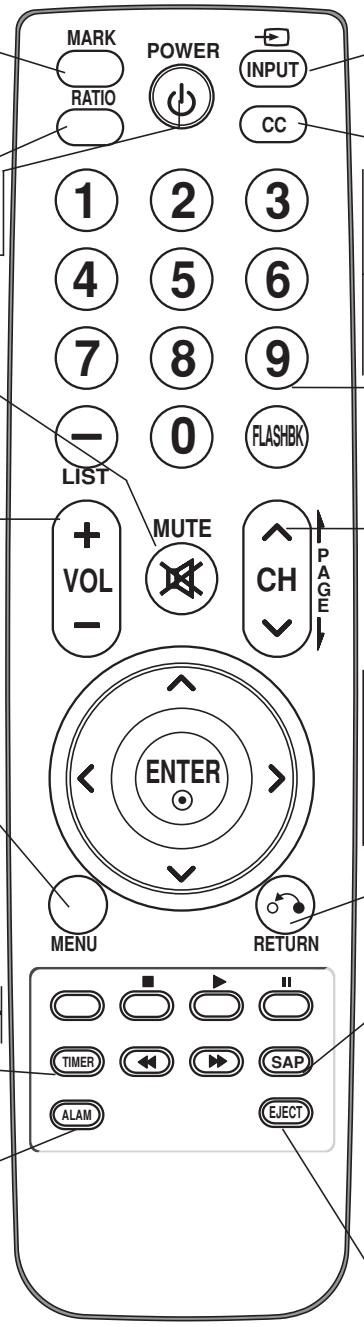
Follow the instructions provided in the Installer menu pages to access the Installer menus.



Installing Batteries in Installer Remote Control

- Remove the battery compartment cover on the back side by loose the bolt on the battery compartment cover, pressing the arrow tab and sliding the cover downward. Install batteries matching correct polarity as shown (+ with + and - with -).
- Install two high-quality alkaline 1.5V AAA batteries. Never mix old or used batteries with new ones. Replace cover.

Remote Control Key Functions: This typical LG TV remote control is shown for reference. Follow the instructions provided on the Installer menu pages to access the Installer menu.



MARK
Use to mark or unmark a photo/music.

RATIO
Adjusts the picture aspect ratio.

POWER
Turns TV On or Off.

MUTE
Switches the sound On or Off.

VOLUME UP/DOWN
Increases/decreases the sound level.

MENU
Displays the main menu on the screen.
Enters or exits the on-screen menu system

VCR/DVD BUTTONS
Control some video cassette recorders or DVD players. ("RECORD" is not functional in DVD mode.) Set up for VCR recording: Once, Regularly, Weekly, Off. ("RECORD" button only).

TIMER
Sets the amount of time before the TV automatically turns itself Off.

ALARM
Sets the time that the TV will automatically turn itself On.

INPUT
Selects RGB, HDMI,DVI, HDMI2, Component Input, AV1 and AV2 sources.

CC
Selects a closed caption option:
Off, CC1 ~ 4, Text1 ~ 4, Service 1 ~6.

NUMBER Buttons (0 - 9) DASH
Use to enter a program number or channels. Dash is used for sub channel numbers such as 2-1, 2-2, 9-1, 9-2, 100-3, 100-4 etc.

FLASHBACK
Returns to the previously tuned channel.

CHANNEL UP/DOWN
Selects available channels found with Auto Tuning. Moves to next available page in electronic program guide.

THUMBSTICK
Up/Down/Left/Right/ENTER
Use to navigate on-screen menus / adjust the TV settings to your requirements.

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

SAP
Selects MTS sound:
Mono, Stereo, and SAP in Analog mode.
Changes the audio language in DTV mode, if additional languages are available.

SAP Notes
- If SAP is selected and no SAP is provided, sound may not be heard on channel.
- Each analog channel may have its own SAP setting.
- Digital channels will reset to default audio language with a power Off/On.

EJECT
Clears all on-screen displays and returns

Rear Connections Panel

RESET
Press RESET to re-initialize the TV.

HDMI/DVI PORT
Connect to output jacks from HDMI / DVI device.

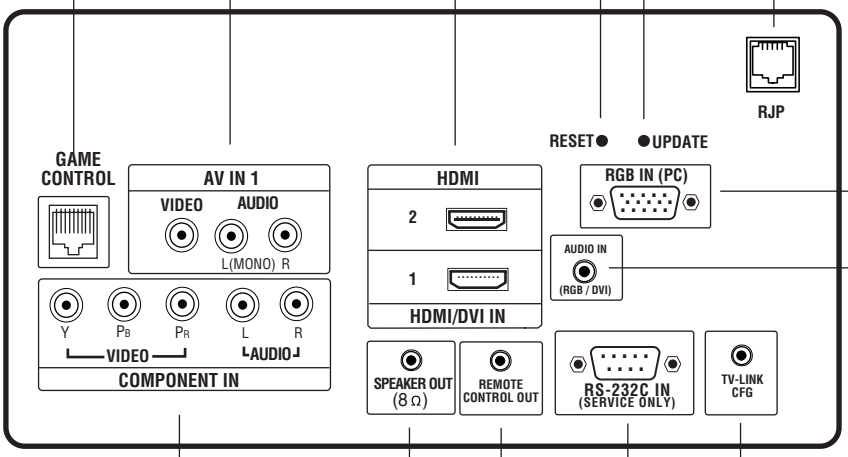
AUDIO/VIDEO IN 1
Connect to output jacks on audio/video device.

LAN
Connect to control network.

UPDATE
Restricted to software updates.

REMOTE JACK PACK PORT
Connect to remote jack pack control output port.

RGB IN (PC)
Connection for RGB hookup from PC.



COMPONENT IN
Connect to output jacks on component device.

SPEAKER OUT 8-OHM
Connect to external speaker input.

REMOTE CONTROL OUT
Connect to remote control device.

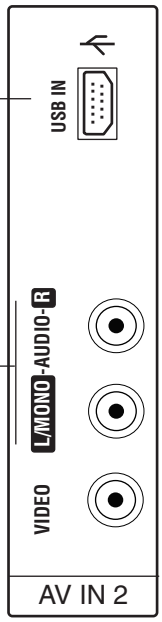
AUDIO IN (RGB / DVI)
Audio connection for either RGB or DVI device.

TV-LINK
Use for FTG downloads.

RS-232C IN
Used for downloading software updates, etc.

USB IN
Insert USB device for software updates and usable for Picture/Music entertainment.

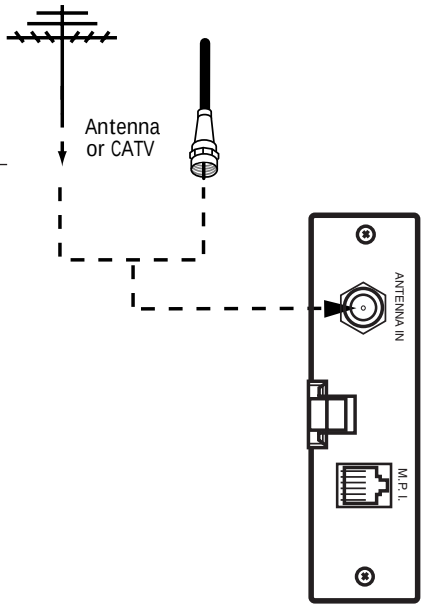
L/MONO-AUDIO-R IN
Connect to audio output jacks from external device. For mono audio output, connect to Left audio input.



VIDEO IN
Connect to video output port on external device.

RF Antenna Connection

RF ANTENNA
Connect to Antenna / Cable input on MPI card.



Remote Jack Pack (RJP) / TV Connections after Commercial Mode Setup and Cloning Master TV Setup Procedures

Make these connections after commercial mode setup and cloning procedures are complete

Remote Jack Pack Setup

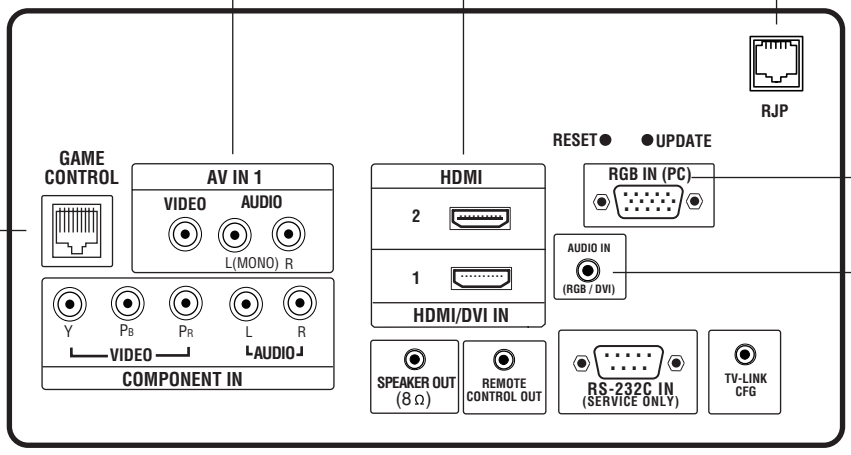
- RJP Available? If you will use a remote jack pack in your system, set installer item 093 RJP Available to 001 so the RJP function is enabled. Note: Make RJP connections first then set 093 to 001.

093	RJP AVAILABLE	001

HDMI/DVI PORTS
Connect to output jack(s) from HDMI / DVI RJP.

AUDIO/VIDEO IN 1
Connect to composite Video/Audio output jacks on RJP.

REMOTE JACK PACK PORT
Connect to control output port on RJP.



RGB IN (PC)
Connection for RGB hookup from RJP.

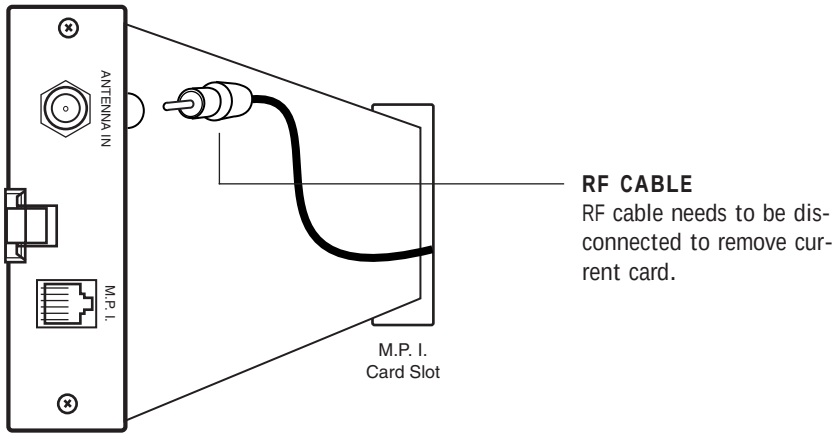
AUDIO IN (RGB / DVI)
RGB/DVI Audio input from RJP.

LAN
Connect to control network.

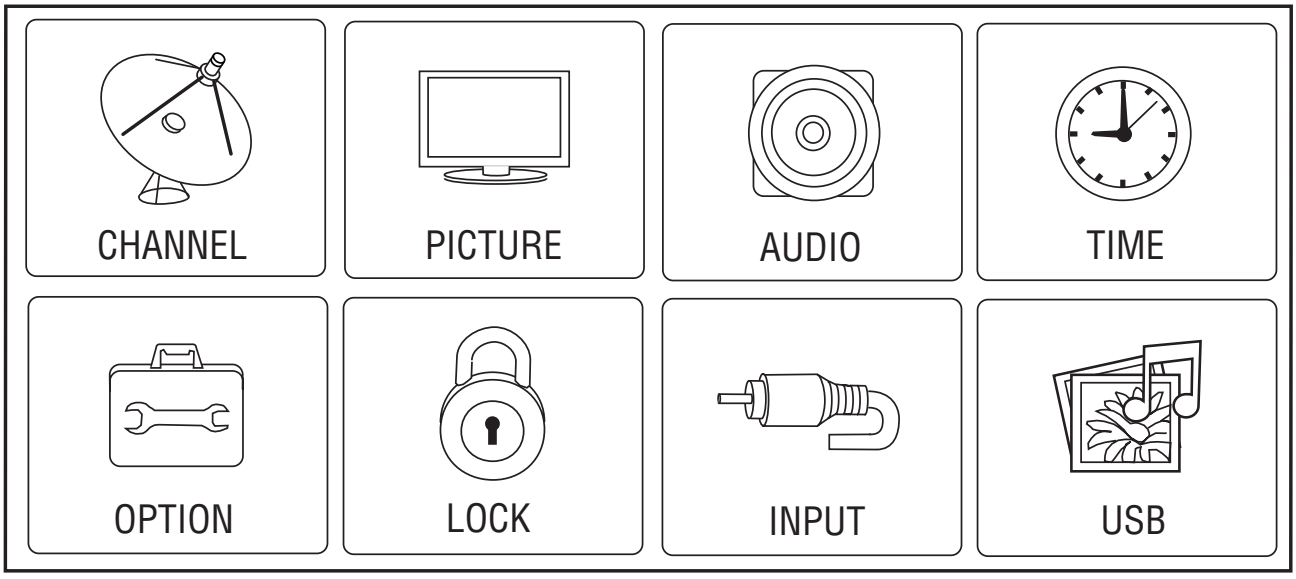
The MPI card is equipped with an RF jack for antenna/cable signal source connection.
The MPI card slot is also available for installing a PPV (Pay-Per-View) card.

MPI Card Removal / PPV Card Installation

1. Remove the two MPI card retainer screws.
2. Pull out current MPI card far enough so that the RF cable can be detached from the old card.
2. Detach RF cable.
3. Place new PPV card into slot and slide it in far enough to reconnect RF cable.
4. Insert card all the way into the slot making sure it is fully seated into back plane connector.
5. Replace the two card retainer screws.



The onscreen menus control the basic TV features



Main TV Menus

The Main TV setup menus control the features of the TV. Set the TV features to the desired configuration for the end user.
Use the USB port to upgrade TV software.

Connections for the TLL-1100A Clone Programmer to Learn the TV Master TV Setup

On Master TV

Set up all Master TV features on the menus and do a Channel Search. Add Channel and Aux labels etc. See previous page. Insert MPI cable into TV MPI port.

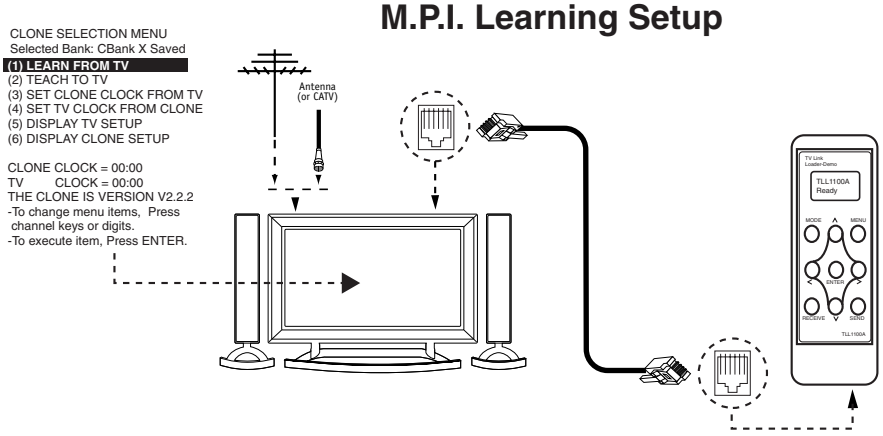
On TLL-1100A

1. Turn On the TLL-1100A.
2. Use the Mode button to select Clone Mode.
3. Use the Left/Right arrow to select the CBank (1 - 8) to store the master setup in.
4. Plug the other end of the MPI cable into the MPI port on the bottom of the TLL.
5. With the Installer remote control, select item 1 on TLL menu.
6. Press Enter, to transfer the Master setup into CBankX on the TLL. The TLL will copy the master setup.
7. When learning is done, disconnect MPI cable from Master TV.
8. Reconnect TV power cord. Power the TV On and the master setup should be resident on the TV.

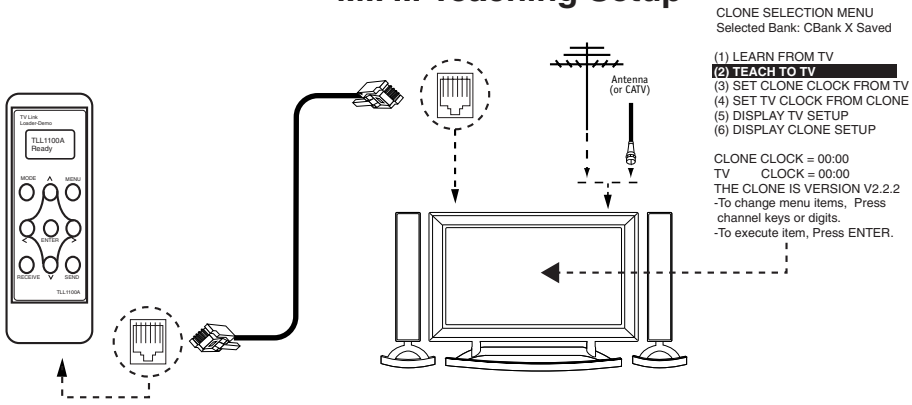
On Target TV

1. Connect MPI cable from the TLL to the MPI port on the Target TV. Assure that the correct CBank(X) is selected on TLL..
2. With the Installer remote control select item 2, to Teach the target TV the master TV setup.
3. Press Enter to begin teaching.
4. When Teaching is done, disconnect MPI cable and power the TV Off. Unplug TV power cord.
5. Reconnect TV power cord. Power the TV On and the master setup should be resident on the TV.

M.P.I. Learning Setup



M.P.I. Teaching Setup

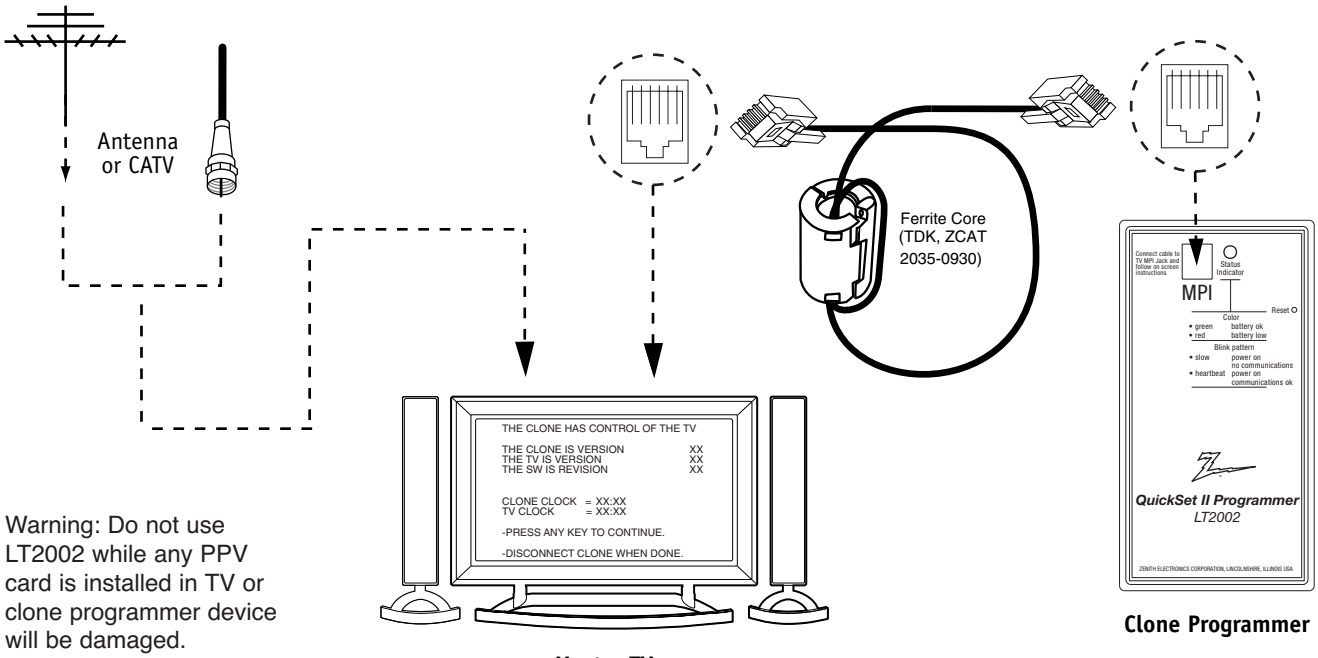


Warning: Do not use the TLL-1100A while any PPV card is installed in TV or clone programmer device will be damaged.

Notes: *It is assumed that the TV is connected to a signal source, the TV source selected is Antenna (RF) In, the signal is from an Analog channel, not a digital channel, all equipment is connected to power and turned on and the TLL Cloner main menu is displayed on the TV screen, see above.*

► If an analog channel is not available, tune TV to an Aux source lik AV-1 for cloning purposes.

Connections for the LT2002 Clone Programmer to Learn the TV Master TV Setup



Master TV

Clone Programmer

Warning: Do not use LT2002 while any PPV card is installed in TV or clone programmer device will be damaged.

Notes: *It is assumed that the TV is connected to a signal source, the source selected is Antenna (RF) In, the signal is from an Analog channel, not a digital channel, all equipment is connected to power and turned on and the LT2002 Clone Programmer main menu (THE CLONE HAS CONTROL OF THE TV) menu is displayed on the TV screen, see above and next page.*

► If an analog channel is not available, tune TV to an Aux source lik AV-1 for cloning purposes.

Before you begin cloning...

- The Master TV should be connected to a good, stable signal from an over-the-air antenna or cable service Analog channel and connected to power. (See above.)
- Teaching and Learning is only possible between identical model devices. (However, the LT2002 Clone programmer can store up to 3 different 'master' setups.)

WARNING: Copying a blank or incorrect memory into a TV, STB or other device will cause the TV, STB or other device to operate erratically or become inoperable.

- Use an Installer's remote to operate Learning and Teaching menus.
- Make sure that the batteries in the Clone programmer are fresh.
- If batteries are removed, the Clone Clock time will be lost.
- Decide if you want to set the time from the Clone programmer or copy the time to the Clone programmer; from a compatible TV which has the clock set to the current time.
- Setting the time and transferring it to the Clone or other device is a separate procedure.
- Follow the connection diagram above to connect the Clone to a Master TV TV display panel. After learning is complete, to another identical TV TV display panel to "teach" it the master setup.
- See the Clone Troubleshooting section to resolve problems.

Turn to the next page to continue Cloning Setup.

Learning the Master TV Setup

Instructions for the Clone Programmer to Learn the Master TV Setup

Use MPI Cable to Connect LT2002 Clone Programmer to Master TV MPI Port

If there is a good connection, "THE CLONE HAS CONTROL OF TV" message will appear. Press any key on the Installer remote.

Learn Setup from Master TV

Press 1 to select the "LEARN FROM TV" option, then press ON/OFF, POWER, or ENTER to go to the Memory Bank Selection Menu. Pick the Memory "Bank" you want to store the master TV's setup in by pressing either Channel key repeatedly to choose Memory 1, 2 or 3. (If you choose a Memory "Bank" that has a master device's setup programmed into it, that setup will be overwritten by the new master TV's setup.) Once the Clone memory bank is selected, press ON/OFF, POWER, or ENTER. The Clone memory bank you have selected will be shown. Press ON/OFF or POWER to begin copying the master TV's setup.

Set the Clock (Optional)

Set the time on a Master TV's Clock. (If the time has already been copied from a TV into the Clone programmer, you can set a master TV's clock by copying the time from the Clone programmer.) The Clone Programmer can copy the current time to both a master TV and to the Clone's internal clock; accurate to within one minute. (Another reason that the Clone programmer should be equipped with fresh, high-quality alkaline batteries, is for it to keep the time as accurately as possible.)

Since the Clone Programmer's time cannot be set directly, the current time needs to be copied from a Zenith/LG TV equipped with M.P.I. input capability.

After the time is copied to the Clone programmer, the current time can then be transferred to another TV. (This can be a master TV, or another TV which has already had the features set up.)

```
THE CLONE HAS CONTROL OF THE TV

THE CLONE IS VERSION          XX
THE TV IS VERSION             XX
THE SW IS REVISION            XX


CLONE CLOCK=          XX:XX
TV       CLOCK=       XX:XX

-PRESS ANY KEY TO CONTINUE.

-DISCONNECT CLONE WHEN DONE.
```

This menu should appear by itself after the LT2002 is connected to the TV MPI port.

```
CLONE SELECTION MENU

(1) LEARN FROM TV
(2) TEACH TO TV
(3) SET CLONE CLOCK FROM TV
(4) SET TV CLOCK FROM CLONE
(5) DISPLAY TV SETUP
(6) DISPLAY CLONE SETUP



-TO CHANGE MENU ITEMS,  PRESS
 CHANNEL KEYS OR DIGITS.
-TO EXECUTE ITEM, PRESS ON/OFF,
 POWER, OR ENTER
```

This menu should appear after any key is pressed on the Installer remote.

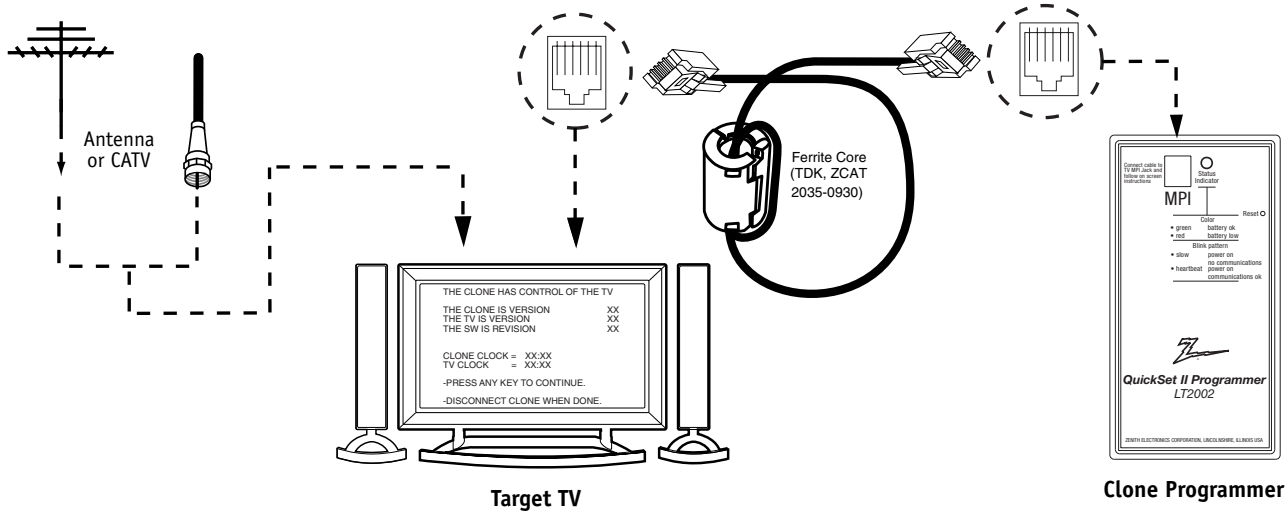
LT2002 Clone Programmer Communication Problems

• A slow flashing green light indicates there are communication problems between the TV and the LT2002 clone programmer. If this is the case, check for a damaged cable, poor contacts, or other connection troubles.

• If the status indicator is red, the programmer batteries are low and should be replaced. Install 4 high-quality alkaline AA batteries.

Teaching the Master Setup to Another TV

Connections for the LT2002 to Teach another TV the Master Setup



Target TV **Clone Programmer**

► If an analog channel is not available, tune TV to an Aux source lik AV-1 for cloning purposes.

Teach Master TV's Setup to the target TV

After learning is complete, remove the M.P.I. cable from the master TV and connect it to the target TV that you want to copy the master TV's setup into. With "THE CLONE HAS CONTROL OF TV" message displayed, press 2 or use either Channel key to go to the "TEACH TO TV" option, press ON/OFF, POWER, or ENTER. Select the LT2002 memory that the new setup is in. Press On/Off to transfer the new setup and other information to the new TV. Teaching usually takes 2-3 minutes. After the "TEACHING COMPLETE" message is displayed, press any key to return to the Clone menu, then press ON/OFF, POWER, or ENTER. If finished, detach M.P.I. cable from the target, newly-cloned TV.

Disconnect TV Power for 15 Seconds

Unplug the AC power cord of the newly-cloned TV from the power outlet for about 15 seconds to activate the newly-copied setup.

CLONE SELECTION MENU

(1) LEARN FROM TV
(2) TEACH TO TV
(3) SET CLONE CLOCK FROM TV
(4) SET TV CLOCK FROM CLONE
(5) DISPLAY TV SETUP
(6) DISPLAY CLONE SETUP

-TO CHANGE MENU ITEMS, PRESS CHANNEL KEYS OR DIGITS.
-TO EXECUTE ITEM, PRESS ON/OFF, POWER, OR ENTER

This menu should appear after any key is pressed on the Installer remote.

TEACHING IN PROGRESS,

PLEASE WAIT

This display will appear during Teaching function.

TEACHING COMPLETE

This display will appear after Teaching is complete.

Warning: Do not use LT2002 while any PPV card is installed in TV or clone programmer will be damaged.

Reset Clone After Static Shock

After replacing exhausted batteries, or if the programmer behaves strangely after a static shock, use a paper clip or similar instrument inserted through the small hole marked "RESET" to activate the internal reset switch and restore normal operation. After a reset, check the real-time clock setting. It may be necessary to reset the Clone Programmer clock from a TV containing the correct time.

Note

The LT2002 programmer is designed to be used with TVs containing the 221-01006 and later processors. Use with earlier TV sets may give unpredictable results. Processors used before the 221-01006-04 have a limited screen display capability. They cannot display entire screens as shown in the quick setup instructions accompanying the LT2002 clone programmer. Use the printed menu illustrations on the quick setup sheet supplied with the Clone as an aid to making your programming choices. (Although the menus are not all displayed, the clone functions all operate normally.)

Clone Programmer Troubleshooting

Problem	Possible Cause(s)	Possible Solution(s)
Clone Programmer		
Clone copies Setup in less than 30 seconds	• Not enough time to copy entire TV setup.	- Press Reset on clone programmer, redo teach/learn. (Teach/Learn should take a minimum of 1 minute.)
Remote does not operate clone.	• Wrong Installer remote.	- Only use an LG Installer remote to operate clone programmer with TV.
LED does not blink.	• M.P.I. cord not connected. • TV not turned on. • Weak batteries.	- Connect M.P.I. cord properly, assure good connection. - TV must be powered On for clone to work. - Install 4 fresh AA high-quality alkaline batteries.
Clone menu hard to read.	• Weak signal.	- Connect TV to a reliable Analog channel signal source.
No time set.	• Time not available.	- Set time on a TV, copy time to Clone Programmer.
Clone not working.	• Clone programmer problem.	- Try a different LT2002 Clone programmer. - Reset Clone Programmer.
Clone Scans Channels more than once.	• Clone should only scan channels once.	- Retry cloning again.
Master and Other TVs		
Cloning did not work.	• Procedure interrupted. • Different TV models. • Step(s) omitted or not performed.	- Wait until procedure complete message is displayed. - Cloning is only possible with identical model TVs. - Reread pages 7-8-9 to be sure all tasks were performed.
Clone time disappeared.	• Batteries were removed.	- Batteries must remain installed to retain time settings.
New Setup not present.	• TV not reset.	- Disconnect newly-cloned unit from power for 5 seconds.

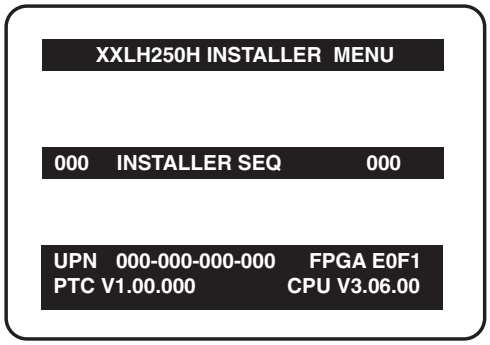
- *After cloning operations are complete, just unplug the LT2002 from the TV.*
- *If the TV does not display a picture on the TV (blank screen) after a few seconds, just change channels.*

Use the Installer's Menu to set up or change operational settings.
See more detailed descriptions of the Installer menu items on the following pages...

Accessing the Installer's Menu

Make sure TV is on. Installer's menu items can be accessed by using an installer's remote control. Just press MENU repeatedly until the TV seems to stop responding, then press 9, 8, 7, 6, then ENTER to access the Installer's menu. To remove the Installer's menu, press ENTER again. *Any changes you make will be stored in nonvolatile memory.*

The Installer's menu opens with item 000 INSTALLER SEQ 000. Use the Up/Down arrow keys to sequence through the available menu items. Or, access an item directly by keying in the line number, then pressing MENU. For example, to access the Sleep Timer option which is item 015, press 0-1-5, then MENU. To change a setting, use the Left/Right arrow keys. Or, enter a value directly.



Typical Installer Menu

Using the Installer's Menu

Items 000 ~ 118 are immediately accessible only upon entering the Installer's Menu. Their numbers, descriptions, ranges, factory default settings, and a place for listing any changes made on-site are given below and on the following pages. Installer menu items not relevant to this TV series are not present on the Installer menu, therefore some numbers are missing. Items 006, 012, 013 etc., will not appear.

Installer Menu Items 000 through 034

Menu Item	Function	Value Range	Default Value	Brief Description of Function and Comments
000	INSTALLER SEQ	0 ~ 3	0	Leave default set to 0.
001	POWER MANAGE	0 ~ 7	0	Sets number of hours of no activity before auto shut Off.
002	AC ON	0 / 1	0	Set to 1 to enable auto turn On at power up.
003	BAND/AFC	0 ~ 3	1	Selects Tuning Band: 0=Broadcast, 1=CATV, 2=HRC, 3=IRC
004	STRT CHANNEL	0 ~ 127, 255	255	Channel at turn-on (Set to 255 to tune in last channel before power Off).
005	CHAN LOCK	0 / 1	0	If set to 1, cannot tune from current channel.
007	STRT VOLUME	0 ~ 63, 255	255	Sets Volume level at TV turn-on (Set 255 to retain last volume level).
008	MIN VOLUME	0 ~ 63	0	Sets minimum allowable volume setting.
009	MAX VOLUME	0 ~ 63	63	Sets maximum allowable volume setting.
010	MUTE DISABLE	0 / 1	0	Set to 1 to disable mute function.
011	KEY DEFEAT	0 / 1	0	Set to 1 to disable menu navigation keys on display panel.
015	SLEEP TIMER	0 / 1	1	Set to 1 to enable Sleep Timer.
016	EN TIMER	0 / 1	0	Set to 1 to enable On/Off Timers.
017	ALARM	0 / 1	1	Set to 1 to enable Alarm.
021	V-CHIP	0 / 1	1	Set to 1 to enable V-Chip functions.
022	MAX BLK HRS	0 ~ 99	12	Sets number of V-Chip (Parental Control) blocking hours.
023	CAPTION LOCK	0 / 1	0	Set to 1 to retain caption setting at power Off.
028	CH. OVERIDE	0 / 1	1	If set to 0, limits direct access to favorite channels.
029	OLD OCV	0 / 1	0	Set to 1 to change M.P.I. operation to OCV.
030	ACK MASK	0 / 1	0	If set to 1, changes M.P.I. for some OCV boxes.
031	POLL RATE	20 ~ 169	94	Selects poll rate for M.P.I.
032	TIMING PULSE	186 ~ 227	207	Sets baud rate for M.P.I.
034	CAMPORT EN	0 / 1	1	Set to 1 to enable Video 2 input.

Installer Menu Items 035 through 118

Menu Item	Function	Value Range	Default Value	Brief Description of Function and Comments
035	COMPPORT EN.	0 / 1	1	Set to 0 to disable HDMI 1. Set to 1 enable HDMI 1
038	YPrPb EN.	0 / 1	1	Set to 1 to enable display panel Component Video 1 input jacks.
039	REAR AUX EN	0 / 1	1	Set to 1 to enable display panel Video 1 input jack.
040	AUTO CAMPORT	0 / 1	1	Set to 1 to automatically switch to Camport. If set to 1, STRT AUX SRCE cannot be set to 2.
046	STRT AUX SRCE	1 ~ 6, 255	6	Sets the starting AUX source.
047	AUX STATUS	0 / 1	0	Set to 1 for M.P.I. AUX source to be reported as a channel number instead of Channel 0.
053	DIS. CH-TIME	0 / 1	0	Set to 1 to disable Channel-Time display.
069	EN. CH-T COL.	0 / 1	1	Set to 1 to enable custom color for the Channel-Time display.
070	FOR. CH-TIME	0 ~ 7	2	Chooses custom foreground color for the Channel-Time display.
071	BCK. CH-TIME	0 ~ 7	2	Chooses custom background color for the Channel-Time display.
073	CH NOT AVBLE	0 / 1	0	If set to 1 and channel override is 0, “NOT AVAILABLE” message is displayed when directly accessing a channel not in the favorite channel list.
075	REVERT CH	0 / 1	0	If set to 1 and loss of M.P.I. communication occurs, TV tunes to Start Channel.
078	UPN MSB	0 ~ 255	0	User programmable number, most significant byte.
079	UPN MSB-1	0 ~ 255	0	User programmable number, most significant byte - 1.
080	UPN MSB-2	0 ~ 255	0	User programmable number, most significant byte - 2.
081	UPN LSB	0 ~ 255	0	User programmable number, least significant byte.
082	CHKSM ERROR	0 / 1	1	Enforces rigid M.P.I. checksum.
083	HANDSHK TIME	0 ~ 5	5	Relaxes M.P.I. timing to be compatible with PC based Windows-controlled systems.
084	PERMANENT BLK	0 / 1	0	Removes block hours setting for Parental Control and makes block permanent.
087	REAR RGB EN.	0 / 2 / 18	2	Set to 0 to disable RGB1. Set to 2 to enable for PC and Auto Configure always enabled. Set to 18 to enable for PC and Auto Configure one time only after AC ON.
088	EN NOISE MUTE	0 / 1	1	If set to 1, mutes audio if no signal is present.
090	KEY LOCK	0 / 1	0	If set to 1, keyboard is locked out, IR is still functional.
091	YPrPB2 EN	0 / 1	1	Set to 1 to enable HDMI-2 input.
093	RJP AVAILABLE	0 1 2 5 6	0	Set to 0 to disable. Set to 1, 2, 5 or 6 for HDMI or DVI mode. (See detailed descriptions.)
094	SAP MENU EN	0 / 1	1	Set to 0 to disable feature on Function menu. Set to 1 to enable feature on Function menu.
096	DEF. ASP. RATIO	0 ~ 4	2	Sets default aspect ratio at power up. See detailed descriptions and item 106.
098	START GEM CH	0 ~ 135, 255	255	Sets the stating Gem channel, 255=last channel at power Off.
099	BACK LIGHTING	1 ~ 100 101 ~ 200, 255	200	Sets the brilliance of the TV picture backlighting. Settings above 101 control dynamic back lighting and disable power saving mode..
102	ATSC BAND	0 ~ 4	4	Selects ATSC band.
103	ATSC TUNE MODE	0 / 1	1	Default 01 for physical channel scan. Set to 0 for Virtual Channel scan.
104	START MINOR CH	0 ~ 255	0	Selects Minor start channel. Set 0 for NTSC. Not 0, sets Minor channel number.
106	ASP RATIO LOCK	0 / 1	0	To retain set aspect ratio on power cycle, set to 1. Set to 0 for default ratio on power cycle.
116	VIDEO MUTE EN	0 / 1	0	Set to 0 for normal, set to 1 for Blank.
117	FACT DEFAULT	0 / 1	0	0=Normal. 1=Loads presets of all above settings.
118	POWER SAVING	1, 3, 7	3	Set to 1 to be powered at b-Lan module. Set to 3 to bo powered at b-Lan module only when TV is powered on. Set to 7 to be not powered at b-Lan module.

Note 1: Dependent on item 093 RJP Available setting.

Detailed Descriptions of Installer Menu Items

000 - INSTALLER SEQUENCE
Specifies entry sequence to the Installer Menu.

0 = 9876	1 = 4321
2 = 1478	3 = 3698

001 - POWER MANAGE (Power Management)
Determines hours of no activity before automatic shutoff. The POWER MANAGE function is for saving energy. If set to 0, Power Manage is Off. Settings range from 0 ~ 7, with 1 ~ 7 representing the hours that the unit will remain On, unless there has been activity from either the control panel or remote control.

002 - AC ON (AC Power Switchable)
If set to 1, allows the TV to turn On just by applying AC power. Pressing the On button is not necessary. This is desirable if the TV is plugged into a cable box or a power outlet controlled by a wall switch. Use ADJ Left/Right arrow to choose 0 or 1 where 0 is the default is Off, and 1 is On.
NOTE: If set to 1 (On), the TV does not respond to On/Off commands from either the remote or the display control panel, and the SLEEP TIMER is also nonfunctional.

003 - BAND/AFC (Band/Automatic Frequency Control)
There are 4 possible settings for this option:

0 = Broadcast	1 = CATV
2 = HRC	3 = IRC

If some channels were not found by Auto Tuning (Channel Search), select the appropriate Band setting here and add the channels using the Channel Edit option in the Channel Menu.

004 - STRT CHANNEL (Start Channel)
If active, this function allows you to determine the initial channel number when the TV is turned On. This feature is useful for an in-house information channel, since the TV would always select that channel when it is turned On. Setting this to 255 causes the last channel viewed when the TV was turned Off, to be the tuned to channel when the TV is turned On again. Note: For a digital Start Channel, always remember to set item 104 to the Minor Start Channel number.

255 = Last channel	1 ~ 125 = Ch X	0 = Aux
126 Map to Channel 3.	127 Map to Channel 4.	

005 - CHAN LOCK (Channel Lock)
CHAN LOCK is ideal if the system must always be on the same channel. Changing channels with Channel Up/Down or keypad numbers is impossible. Channel Lock is inactive if set to 0 (default).

Generally, this feature is used in connection with START CHANNEL (Installer item 004) where the start channel may, for example, be set to 3 or 4. If the start channel is 3, then the TV will remain locked on Channel 3.

NOTE: For Items 007, 008 and 009
For legacy reasons, the scale used is 0 - 63. The PTC software will translate this to the 0 - 100 scale used by the TV.

To translate a TV volume level to the installer menu value, use the following formula:

$$\text{Installer Value} = \frac{\text{TV Value} \times 63}{100}$$

Enter only the whole number (disregard fractions).

007 - STRT VOLUME (Start Volume)
This function allows the Installer to determine the initial volume level setting when the TV is turned On. This feature is useful for an in-house information channel, since the TV would always select that volume level when it is turned On. The range of values are 0 - 63, 255. If 255 is selected, the current volume level will be retained in memory when the TV is turned Off; at turn On, the volume level will be automatically set at the previous or last level.

008 - MIN VOLUME (Minimum Volume)
This function determines the minimum volume level allowable with the VOLUME (VOL) Up/Down control. In this way, for example, someone cannot set the volume too low to hear. The value range is from 0 to 63 — change values with ADJ Left/Right arrow. The factory default is 0, which provides the full range of volume control, if item 009 MAX VOLUME is also set to 63. It may be best to set the same value on every TV.
NOTE: The minimum volume level cannot have a value setting higher than the MAX VOLUME level (described below).

009 - MAX VOLUME (Maximum Volume)
This function determines the maximum volume level allowable with the VOLUME (VOL) Up/Down controls. In this way, for example, someone can not set the volume level high enough to disturb others. The value range is 0 to 63, with 63 as the default, which gives the user the full range of volume control, if item 008 MIN VOLUME is also set at 0. Change values with ADJ Left/Right arrow keys. It may be best to set the same value on every TV.
NOTE: The maximum volume level cannot have a value setting lower than the MIN VOLUME level (described previously).

010 - MUTE DISABLE
Enables or disables sound mute function. If set to 1, sound cannot be muted. If set to 0, sound can be muted.

011 - KEY DEFEAT (Keyboard Defeat)
If set to 1, key defeat prevents the end user from accessing the on-screen menus with the display front panel—MENU, SELECT, and Left / Right arrow keys do not function. If set to 0, those keys do function.
NOTE: The menus can always be accessed by pressing MENU on the remote.

015 - SLEEP TIMER
If set to 1, the SLEEP TIMER feature may be used. If set to 0, the Sleep Timer is not available.

016 - EN TIMER (Enable On/Off Timers) *
If set to 1, Timer function is available to user and enabled continuously. Set to 0 to disable On/Off Timers. (Clock must be set in order to use Timers.)

017 - ALARM *
Gives the installer the option of making the Alarm function available to the end user. If set to 1, Alarm function is available to end user. Set to 0 to disable the Alarm function.
NOTE: Clock must be set before the Alarm function will work.

021 - V-CHIP (Parental Control) *
Set to 1 to activate V-Chip (Parental Control); have it available to end user to filter and control or otherwise restrict programming content that can appear. Set to 0 to turn V-Chip feature Off, not available to user; no programming restrictions can be set.

022 - MAX BLK HRS (Maximum Block Hours) *
Sets hours from 0 to 99 for the maximum V-Chip (Parental Control) block hours. Default setting is for 12 blocking hours.

023 - CAPTION LOCK
Set to 1 to restore previous caption On/Off state after turn Off. If set to 0, captions are always Off at turn On.

028 - CH. OVERIDE (Channel Override)
If set to 1, the user can select channels with either Channel up/down or by direct keypad entry. If set to 0, only those channels that are entered for scanning can be selected.

029 - OLD OCV (On Command Video™)
Set to 1 for operation with systems from On Command Corporation.

030 - ACK MASK
M.P.I. Communication Parameter. Leave at default setting unless changed by Pay-Per-View provider. When set to 1, changes M.P.I. for some OCV boxes.

*** Only affects Function Menu if enabled by some PPV providers.**

031 - POLL RATE
M.P.I. Communication Parameter. Selects Poll Rate for M.P.I. Leave at default setting unless changed by Pay-Per-View provider. Step size of 16 ms.

032 - TIMING PULSE
M.P.I. Communication Parameter. Leave at default setting unless changed by Pay-Per-View provider. Sets baud rate. Step size of 4.3 uS.

034 - CAMPORT EN. (Camera Port Enable)
Set to 1 to enable Video 2 input on display panel. If set to 0, Video 2 input on display panel is not functional.
NOTE: S-Video overrides Video jack.

035 - COMPPORT EN. (Computer Port Enable)
Enable/disables display panel HDMI1 input jack. Set to 0 to disable HDMI 1. set to 1 to enable HDMI 1.
NOTE: The setting above is ignored if Installer item 093 RJP AVAILABLE, is set to 1.

038 - YPrPb EN. (Rear Component Video Enable)
Set to 1 to enable display panel rear Component Video input jacks.
Set to 0 to disable display panel rear Component Video input jacks.

039 - REAR AUX EN. (Rear Aux Enable)
Set to 1 to enable display panel rear AUX (Video 1) input.
Set to 0 to disable display panel rear AUX (Video 1) input.
Note: S-Video overrides Video.

040 - AUTO CAMPORT
Set to 1 to automatically switch to Camport when equipment is connected to front Video input.
Set to 0 to disable front Video automatic source selection.
NOTE: If set to 1, 093 RJP Available is automatically set to 0.

046 - STRT AUX SRCE (Start Aux Source)
Sets the starting AUX source. At power up, TV will tune to starting Aux source if item 004 Start Channel is set to 0.
If item 093 RJP Available is set to 0 and item
040 Auto Camport is set to 0:

1 = Video 1	4 = RGB	255 = Last Aux
2 = Video 2	5 = HDMI 2	
3 = HDMI 1	6 = Component	

If item 093 RJP Available is set at 1:
2 = Video 2 5 = HDMI 2 6 = Component

If item 040 Auto Camport is set to 1:

1 = Video 1	5 = HDMI 2
3 = HDMI 1	6 = Component
4 = RGB	

Detailed Descriptions of Installer Menu Items

047 - AUX STATUS
Set to 1 for M.P.I. AUX source to be reported as a channel number instead of channel 0. Set to 0 to disable AUX identification change. Controls M.P.I. status channel response for AUX inputs.

053 - DIS. CH-TIME (Disable Channel-Time)
Set to 1 to disable the Channel-Time display, Channel-Time display will not appear.
Set to 0 to enable the Channel-Time display.

069 - EN. CH-T COL. (Enable Channel-Time Custom Color)
Set to 1 to enable custom color for the Channel-Time display.
Set to 0 to disable custom color for the Channel-Time display.

070 - FOR. CH-TIME (Channel-Time Display Foreground Color)
Set according to Color Chart.

0 = Black	3 = Yellow	6 = Cyan
1 = Red	4 = Blue	7 = White
2 = Green	5 = Violet	

NOTE: If foreground and background color are the same, menu background is transparent.

071 - BCK. CH-TIME (Channel-Time Display Background Color)
Set according to Color Chart.

0 = Black	3 = Yellow	6 = Cyan
1 = Red	4 = Blue	7 = White
2 = Green	5 = Violet	

NOTE: If foreground and background color are the same, menu background is transparent.

073 - CH NOT AVBLE (Channel Not Available)
If set to 1 and item 028 CHANNEL OVERRIDE is set to 0, "NOT AVAILABLE" message is displayed when directly accessing a channel not in the channel scan list available in memory.

075 - REVERT CH (Revert to Start Channel)
If set to 1 and loss of M.P.I. communication occurs, TV automatically tunes to the specified Start Channel.

078 - UPN MSB (UPN Most Significant Byte)
User programmable number, most significant byte readable by M.P.I. command. Note: Not linked to serial number.

079 - UPN MSB-1 (UPN Most Significant Byte-1)
User programmable number, most significant byte-1 readable by M.P.I. command. Not linked to serial number.

080 - UPN MSB-2 (UPN Most Significant Byte-2)
User programmable number, most significant byte-2 readable by M.P.I. command. Not linked to serial number.

081 - UPN LSB (UPN Least Significant Byte)
User programmable number, least significant byte readable by M.P.I. command. Not linked to serial number.

082 - CHKSM ERROR (Checksum Error)
Enforces rigid M.P.I. checksum validation.
Set to 1 for validation.
Set to 0 to disable (does not check checksum on M.P.I. async port). SPI is always checked.

083 - HANDSHK TIME (Handshake Time)
Adds an additional delay to the handshake time which is 64 msec, thus relaxing M.P.I. timing requirements to be compatible with PC based Windows controlled systems, range is 0 - 5.
(Timeout = 25.5MS + [25.5 MS* Handshake time]).

084 - PERMANENT BLK (Permanent Block)
Allows Lock (Parental Control) blocking schemes to be permanent by disabling the blocking hours function.
Set to 1 to install Parental Control restrictions permanently.
Set to 0 for user-specified hours control of blocking schemes.

087 - REAR RGB EN. (Rear RGB Enable)
Controls access to rear RGB input on TV.
Set to 0 to disable RGB input.
Set to 2 to enable for PC and Auto Configure always enabled.
Set to 18 for Auto Configure one time only with power cord removal and reinsertion.

088 - EN NOISE MUTE (Enable Noise Mute)
If set to 1, audio mutes if no signal is present.

090 - KEY LOCK
If set to 1, display panel keyboard is locked out, not available to end user. IR receiver remains functional.

091 - YPrPb2 EN. (HDMI2 Enable)
Set to 0 to disable display panel HDMI2 input.
Set to 1 to enable DTV mode. Set to 2 to enable PC mode.

093 -RJP AVAILABLE (Remote Jack Pack Available)
0 = Remote jack pack is not available or disabled.
1 = Legacy Model RJPs: HDMI Mode
Enables RJP when an HDMI cable is inserted into RJP. Video is from HDMI. Audio stream is expected from HDMI source. If no audio is present, no audio will be heard.

2 = Legacy Model RJPs: DVI Mode
Enables RJP when an HDMI cable is inserted into RJP. Video is from HDMI however, Audio is from selected audio source, based on the RJP's audio hierarchical priority.

5 = Scaler Model RJPs: HDMI Mode
Enables RJP when an HDMI cable is inserted into RJP. Video is from HDMI. Audio stream is expected from HDMI source. If no audio is present, no audio will be heard.

6 = Scaler Model RJPs: DVI Mode
Enables RJP when an HDMI cable is inserted into RJP.
Video is from HDMI however, Audio is from selected audio source, based on the RJP 's audio hierarchical priority.

Notes:
See Reference section, RJP Input Hierarchy and RJP Models page.
If set to 1, 2, 5 or 6, item 040 Auto Camport is automatically set to 0.
Settings 1, 2, 5 and 6 allow the lodge staff to customize each TV 's RJP setup based on customer requirements.

094 - SAP MENU EN (2nd Audio Program)
Set to 1 to enable SAP feature on Function menu, if Function menu is available.
Set to 0 to disable SAP feature on Function menu, if Function menu is available.

096 - DEF. ASP. RATIO (Default Aspect Ratio)
Selects default aspect ratio at power up, see settings below.

Set to 0 for "Set By System".
Set to 1 for 4:3.
Set to 2 for 16:9 (Factory Default).
Set to 3 for 'Just Scan'
Set to 4 for Zoom

099 - BACK LIGHTING
Sets the TV screen brightness at power up, see settings below.
Default setting is 200.
1 - 100 Static Backlighting.
(1 = Dimmest picture, 100 = Brightest picture.)
101 - 200 Dynamic Backlighting.
(101 = Dimmest picture, 200 = Brightest picture.) If settings are above 101, the TV automatically controls backlighting depending upon the picture level of the current program.
set to 255, to disable power saving mode.

102 - ATSC BAND
Sets up TV to receive different types of incoming signals:
0=Broadcast, 1=CATV, 2=HRC, 3=IRC, 4=Same as NTSC.

103 - ATSC TUNE MODE
Sets ATSC tuning mode: Default set to 1 for Physical channel scan.
Set to 0 for Virtual Channel scan.

104 - START MINOR CHANNEL
Sets XX-XX minor start channel number at power up: 0=NTSC. If not 0, number selected is the Minor start channel number.

106 - ASP RATIO LOCK (Aspect Ratio Lock)
Set to 1 to retain previous aspect ratio with power Off.
Set to 0 to retain default aspect ratio with power Off. See item 96 Default Aspect Ratio above.

116 - VIDEO MUTE EN (Video Mute Enable)
Set to 0 for normal.
Set to 1 for blank.

117 - FACT DEFAULT (Factory Default)
Set to 0 for normal.
Set to 1 to load presets to all of the previous item settings.
WARNING: Setting this to 1 will reload the factory defaults and clear the channel list including erasing any assigned Channel Icons and custom channel Labels.

118 - Power Saving

Default is set to 3. When TV is in Standby mode, MPI card slot is powered by Standby power supply and embedded BLAN is not powered. When TV is in Power On mode, MPI card slot is powered by main 12V power supply and embedded BLAN is powered. Note, TV must be powered on in order to communicate with the embedded BLAN module for configuration and control.

1 = MPI card slot Standby mode power provided from Standby power supply and embedded BLAN is always powered on.
3 = MPI card slot Standby mode power provided from Standby power supply and embedded BLAN only powered on when TV is powered on.
7 = MPI card slot Standby mode power provided from Standby power supply and embedded BLAN always powered off.

IMPORTANT INSTALLER SETUP INFORMATION! PLEASE READ THE FOLLOWING...

To set up a master TV you will need to know how to enter the TV Installer menu and make changes to the default values as required. If necessary, familiarize yourself with the TV Installer menu and how to make and save changes in the menu, before attempting to clone the TV Master TV setup.

You will also need an **LG Installer remote control** similar to the one shown in the front of this manual. The installer remote must have a "Source" button or its equivalent. The remote shown in this manual has a "INPUT" button -- this button serves the purpose of a Source button.

Finally, the TV's clonable features need to be set up. This is a critical step. If the Master TV display panel's clonable features like adding channel icons or channel labels, digital font options etc., are not correctly added, then the cloned TVs will all have problems.

As the cloning procedure is being performed, specific steps need to be done at the indicated times to achieve the desired result. Be sure to do each task as indicated. If a procedure or step is left out or not performed completely, cloning may not work. At each step, pay attention to assure the TV screen shows the proper message when cloning. If the message indicated does not appear, there is a problem with that step and cloning may not be successful. Cloning is only possible when the signal source is an Analog channel, not a digital channel.

Making a Master TV

Detailed Instructions

The following describes the procedure for preparing a Master TV for cloning and the procedure for adding Channel Icons and/or Labels.

Note 1: Disconnect all Aux inputs. Under certain conditions, Auto Tuning Channel Search is disabled if there is an Aux input active.

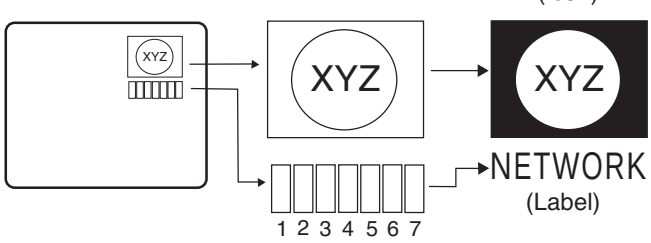
Note 2: Under certain conditions, changes to the input mode of the RGB inputs will not take effect until the power is cycled (TV is turned Off and On). To avoid confusion, disconnect all RGB inputs before entering the Installer menu.

1. Enter the TV installer menu.
   a. Reset the internal controller to factory default by accessing installer menu item 117 FACT DEFAULT, set it to 1 and press "ENTER". The value will change back to 0 after the TV's internal controller has been restored to factory default condition. This step will ensure that the TV channel memory will be the active channel list. Check the Status LED. If it is blinking rapidly then the TV channel map is in use.
   b. Within the Installer menu, set the Installer menu items to the configuration required of your institution.
   c. It is important to set the tuning band at this time, see Installer menu item 03 BAND/AFC.
   d. Set Installer menu item 28 – CH OVERIDE to 001 to allow access to the Auto Tuning and Ch. Edit features in the Channel Menu. Exit the Installer menu.
2. Access the Master TV menus and set the clonable options on the menus to the desired configuration. Refer to the **Clonable Menu Features** Chart in this manual.
3. Run Auto Tuning to find analog and digital channels.
4. Enter the Channel Edit menu and edit the channel lineup to include the Free-To-Guest Channels only.
5. Assign ICONs to the channels using the Channel Label Menu.
   Note: You can add Channel ICONS typically network logos like ABC, NBC, PBS etc. in this step. Or, in Step 7, add Channel ICONS or labels for channels without Icons.
6. Transfer the TV setup: Enter the TV installer menu. Press '2', '5', '5', 'MENU' to start the transfer of the TV's setup to the internal controller. Once the transfer is complete, the system will exit the Installer menu. Check the Status LED inside the TV. It should be blinking slowly (1 blink per second).
7. Edit/Add Channel ICONs and Channel Labels as needed.
   Enter Installer menu. With menu displayed, press 2-5-4 + MENU. See next page for detailed instructions:
   - Editing/Adding Channel ICON and Labels on Master TV
   - Changing a Channel's ICON on Master TV
   - Changing/Adding Channel Labels on Master TV
   - Changing Source Labels on Master TV
8. Verify Master TV setup and feature configuration:
   • Did you add Channel ICONS?
   • Did you add Channel Labels?
   • Did you add Source Labels?
   • Did you adjust all TV menu options as required?
   After verifying master setup, enter the TV Installer menu and set Installer menu item 28 CH OVERIDE to 000. Press ENTER to remove and exit the Installer menu.

Adding Channel Icons and Labels in the 2-5-4 + Menu Mode

Editing/Adding Channel ICONs and/or Labels

If there is no pre-assigned ICON, you can make a custom channel label of up to 7 characters to help in identifying the channel or network. At your option, channel labels can also be added in addition to a pre-assigned ICON. You may also add labels for the Aux input sources to clearly identify the devices that are connected to the Aux inputs.



Editing and adding the labels can only be done if there are channels entered into the TV's channel map either by using the method described in item 6 (page 18), by cloning or by the use of the master remote control from the PPV provider.
Note: A blank letter space is available between 'Z' and 'I'.

To Do Channel Editing/Labeling, Proceed as Follows

1. Enter TV Installer menu.
2. Once the installer menu appears, press '2', '5', '4', 'MENU'. This enters the channel label editing mode. Add your channel icons and channel labels in this menu, see below. (You can do this more than once.)
3. To exit the menu when done press "MENU".

Changing a Channel's ICON on Master TV

1. With Channel Up/Down, select the channel you want to change the Icon for.
2. With the Right or Left ADJ arrow, select the thin letter 'I' on the channel ID display.
3. With the Up or Down arrow, select the desired ICON you want to appear to identify the channel. (If you know the ICON number, enter the number followed by Enter / Select.)
4. Proceed with Changing/Adding Labels or go to the next channel.

Changing/Adding Channel Labels on Master TV

1. Channel Up/Down to select the desired channel.
2. Press the Right or Left ADJ arrow repeatedly until the numbers 1 to 7 show up. The number shows the position of the character that can be changed. Number 1 is the first character, number 2 the second character and so on.
3. With the Up or Down arrow, select the desired character.
4. Proceed to the next number position or use Channel Up/Down to go to the next channel.

Changing Source Labels on Master TV

1. Press "INPUT" to select the desired Aux input source; A/V 1, A/V 2, HDMI Component, RGB etc.
2. Press the Right or Left arrow repeatedly until the numbers 0 to 9 shows up. The number shows the position of the character that can be changed.
3. Use the Up or Down arrows to select the desired character.
4. Press "INPUT" for the next Aux source or proceed with Changing Icon or Changing/Adding Labels. Press Ch Up/Down to return to channels.

Installer Remote Control Key Functions for Master TV Channel Editing/Labeling Menu

- **CHANNEL Up/Down** - Tunes in the next channel in scan.
- **Left/Right Arrows** - Select the item to change. If "I" is shown, the ICON can be changed. If a number is shown, it indicates the position of the character that can be changed.
- **Up/Down Arrows** - Select the ICON or the character to be displayed. Tip: Arrows can be held down for fast scrolling.
- **0 – 9** - Use to enter the index number of the ICON, if known.
- **ENTER/SELECT** - Changes the ICON after the number has been entered.
- **INPUT** - Changes the Aux input label. ("Source" on the remote shown in this manual is INPUT.)
- **MENU** - Exits the editing process.

Clonable Menu Features

Menu /Sub Menu Features

Installer Menu
- Installer Item settings

Channel
- Auto Tuning (Channel Lineup)
- Channel Edit
- Channel label

Picture
- Aspect Ratio
- Picture Mode
- Advanced Control

Audio
- Auto Volume
- Clear Voice
- Sound Mode
- Balance

Audio Contd.
- Treble
- Bass
- SRS TruSoundXT
- TV Speaker

Option
- Language
- Caption
- Caption Mode
- DTV Captions Style - Style
- DTV Captions Style - Size
- DTV Captions Style - Font
- DTV Captions Style - Text Color
- DTV Captions Style - Text Opacity
- DTV Captions Style - BG Color
- DTV Captions Style - BG Opacity
- DTV Captions Style - Edge Type
- DTV Captions Style - Edge Color

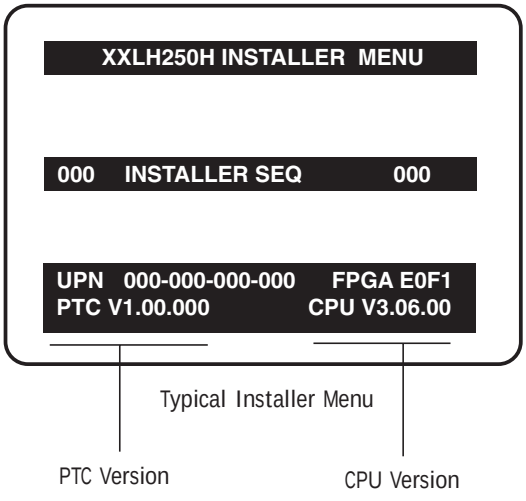
Lock
- Movie Rating
- TV Rating – Children Age
- TV Rating – Children Fantasy Violence
- TV Rating – General Age
- Input Block

Time
- Auto Clock
- Manual Clock
- Off Time
- On Time
- Auto Off

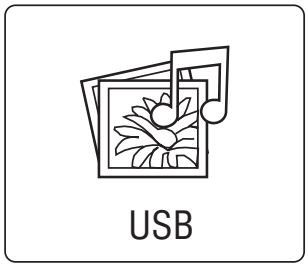
Notes
- Picture Menu and other menu settings shown above are not clonable on all TVs. End user has access to Picture, Sound and Ratio on user remote control.
- Menu options vary between Analog / Digital channels and Aux Sources.

Procedure for Checking Software Version

The software version of the TV may be checked by accessing the Installer Menu.
To do this, press MENU repeatedly until the menu display ceases to respond to MENU key presses.
Then, press "9", "8", "7", "6", "ENTER". Press ENTER again to remove Installer Menu from screen.



USB Menu features Picture Slideshow with or without Music accompaniment

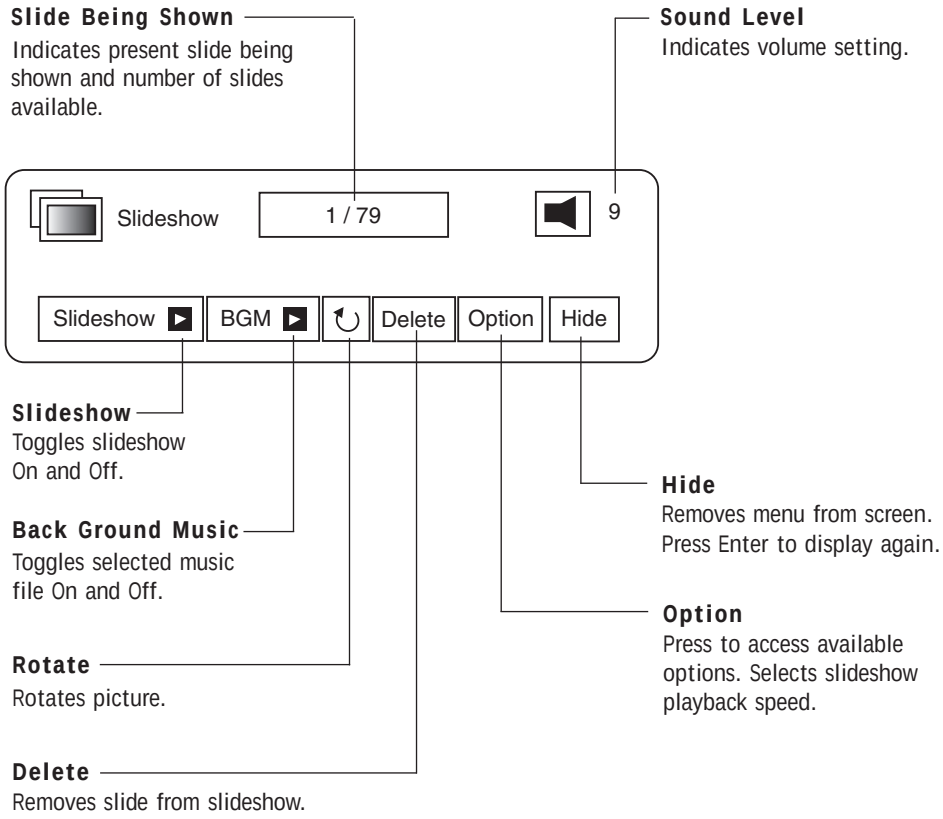


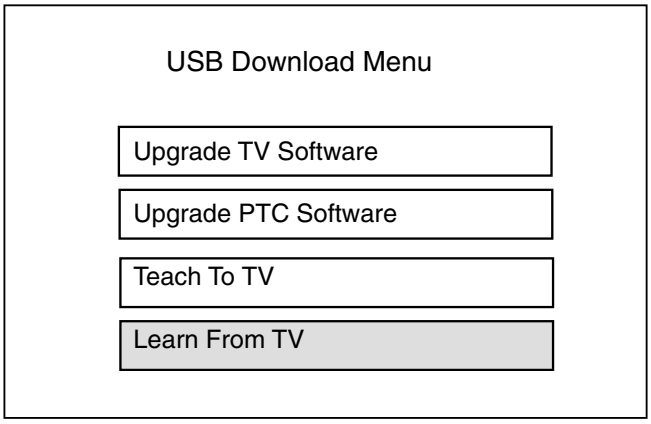
USB Device Setup
On the USB device, load Photo and Music files e.g. MP3. Insert USB device into USB port on TV side jack panel. Press Menu and select USB option, press Enter.
Note: Windows .wma files are not usable.

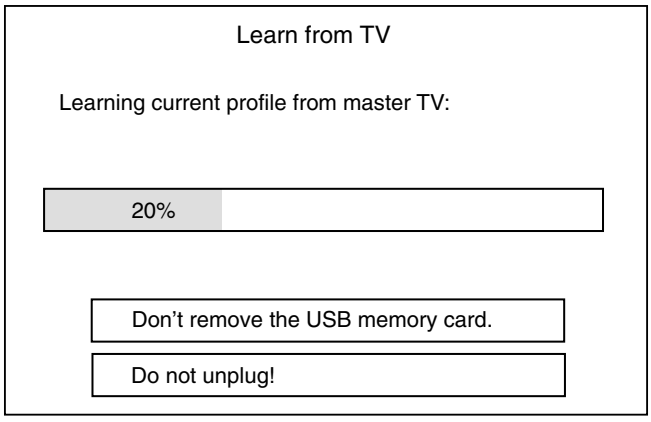
View Pictures
Select USB Icon and press Enter. Select Photo List option and press Enter. Select Folder photos are in. Press Enter. When photo list appears, choose Photo and press Enter.

View Picture with Music
Select USB Icon and press Enter. Select Music Folder option. Select Music List and select Play with Photo. Select music MP3 file and press Enter.

Listen to Music MP3 Files
Select USB Icon and press Enter. Select Music List option and press Enter. Select Folder with Music MP3 files. Press Enter. Adjust Volume to comfortable listening level.







On Master TV, Create Profile and Learn

1. Set up all Master TV features on the menus and do a Channel Search.Add Channel and Aux Labels etc. Tune in an analog channel.
2. Plug USB memory card into the USB In port on Master TV.
3. Press Menu key to open Main menu. Highlight the Option icon.
4. Press the Left arrow key once, the Option icon on left side of menu will be highlighted.
5. Press number key '7 'a total of 7 times.
6. Access the "Learn From TV " option.

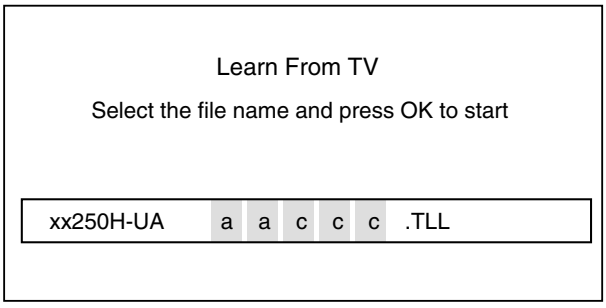
a. First, Expert Download Menu page will not show the "Learn From TV ". In order to make "Learn From TV available, key in the password which is used to enter Installer Menu. Example 9-8-7-6.

b. By pressing up/down arrow keys (if there is other menus), place the cursor on Learn From TV, then press Enter Key.

7. Using Up/Down arrow key,highlight "Learn From TV ", then press Enter.
8. To identify the profile from others, you can change the last 5 digits. Key in a custom file name, then press the Enter key.
9. The Learning status will be shown on progress bar. As soon as learning the current profile is complete, a message will appear on screen indicating the learning process is done.
10. Remove the USB memory card.

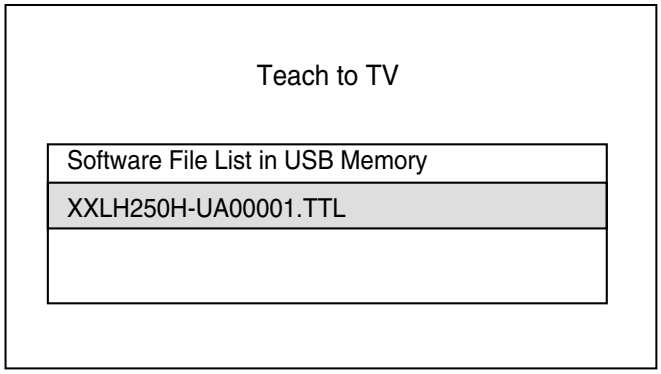
Optional: Edit / Change File Name

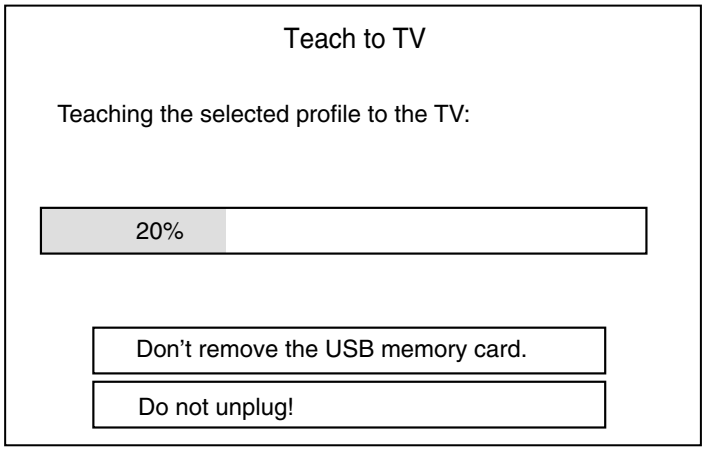
If necessary, the file name can be edited or changed.



Notes

- Do not remove TV power cord or USB memory card while Learning, doing so might harm your USB memory card.
- Do not remove TV power cord or USB memory card while Teaching,doing so may cause the T V t malfunction.
- You are allowed to edit the file name, however, a file with edited contents will not be recognized.
- Since clock data is copied into USB memory card as numeric data,the time difference between teaching and learning is not automatically adjusted. Either set the clock manually, or use Auto Clock set on TV main menu.





On Target TV, Teach Master TV Profile

1. Plug USB memory card with Master TV Profile setup into Target TV USB input port.
2. Press Menu key to open Main menu and then highlight the Option Menu icon.
3. Press the Left arrow key once, this will highlight the Option icon on left side of menu.
4. Press number key '7 ', a total of 7 times.
5. Using the Up/Down arrow key, select 'Teach to TV', then press Enter key.
6. Use Up/Down arrow keys to navigate through profiles. Select the profile that you want to install by highlighting it and pressing the Enter key.
7. Teaching progress will be shown on the progress bar. As soon as teaching is done, a message will appear indicating that the teaching process has been completed.
8. When Teaching is done, remove the USB memory card and unplug TV power cord.
9. Reconnect TV power cord. Power the TV On and the master setup should be resident on the TV.

TV Camport Auto Sense Operation

The CAMPORT Auto Sense function is enabled when:
1. Installer Menu Item 34, CAMPORT EN is set to 1 AND
2. Installer Menu Item 40, AUTO CAMPORT is enabled (1).

Selectable= Can be accessed with INPUT key, direct access, etc.
Auto Sense= Switches to this input when connector is inserted.
The camport (Side Video) has the highest priority and will override any commands including tuning to the Start Channel.

CAMPORT (Front Video) Functionality Control

Item 34 CAMPORT EN	Item 40 AUTO CAMPORT	Front Video Operation
0	0	Disabled
0	1	Disabled
1	0	Selectable
1	1	Auto Sense

CAMPORT Operation (Stand-Alone)

When Camport Auto Sense is enabled as above, the TV's source will switch to the side video aux source whenever a plug is inserted into any of the side video panel inputs (either composite Video or S-Video).

When the plug is removed, the TV will switch back to the previous channel or input source that the TV was using before the plug was inserted. However, if any direct access to an RF channel or Aux channel is requested while the camport is active, then, when the camport plug is removed, the TV will switch to the last requested channel. Source changes using any Source Keys (INPUT) are ignored. Channel Up/Channel Down and Flashback Commands are not direct access tuning commands and they are also ignored.

Previous State Before Inserting CAMPORT	Operation While CAMPORT Is Active	State Upon Removal Of CAMPORT
Aux or RF Channel	None	Previous Aux or RF Channel
Aux or RF Channel	Direct Access	Last Requested RF or Aux Channel
Aux or RF Channel	Ch Up/Down, Flashback and TV/AV Keys	Previous Aux or RF Channel

CAMPORT Operation (PPV)

The operation will be similar to that of the Stand-Alone mode. However, the PPV providers may send different commands to the TV for the same user commands. For instance, some providers will always send a direct tune command when it receives a channel up/down or a flashback command while other PPV providers will just send a key command.

Previous State Before Inserting CAMPORT	Operation While CAMPORT Is Active	State Upon Removal Of CAMPORT
Aux or RF Channel	None	Previous Aux or RF Channel
Aux or RF Channel	Direct Access	Last Requested RF or Aux Channel
Aux or RF Channel	Ch Up/Down, Flashback and TV/AV Keys	Last Requested Channel if PPV translates it to direct access tuning command. Otherwise, goes to Previous Aux or RF Channel

DIRECT ACCESS Tuning		TV		ENABLE		MPI DATA		MPI DATA			START AUX SOURCE ASSIGNMENT
				Installer Menu		MPI DATA STATUS TYPE 0x41 SOURCES ENABLED (R/W)		DATA STATUS TYPE 0xD2 CURRENT AV SOURCE (R)		DATA STATUS TYPE 0X0D AUX SOURCE (R)	
OLD_OCV =0	OLD_OCV= 1	Source Input	Source Mode	Number	Labeling	Value	Labeling	Value	Labeling		
130	90	Video2 (Side)	CV/SVIDEO	34	CAMPORT_EN	0x01	Video Front (Camport)	0	Video Front (Camport)	0 (VIDE0)	2
131	91	Video1 (Rear)	CV/SVIDEO	39	REAR_AUX_EN	0x02	Rear Video (Aux)	1	Rear Video (Aux)	0 (VIDE0)	1
132	92	HDMI2	DTV	91	YPrPb2 EN = 1	0x04	S-Video Rear	2	S-Video Rear	0 (VIDE0)	5
			PC	91	YPrPb2 EN = 2	0x04	S-Video Rear	2	S-Video Rear	2 (COMPUTER)	5
133	93	HDMI1/DVI	DTV	35	COMPPORT EN = 1	0x08	Front Computer	3	Front Computer	0 (VIDE0)	3
			PC	35	COMPPORT EN = 2	0x08	Front Computer	3	Front Computer	2 (COMPUTER)	3
134	94	RGB	PC	87	REAR RGB EN = 2	0x10	SVGA Rear Computer	4	SVGA Rear Computer	2 (COMPUTER)	4
136	96	Component		38	YPrPb EN	0x40	Y/UV Component	6	Rear Y/PrPb Componen video	0 (VIDE0)	6
137	97	USB		121	USB Options	0x80	Y/C Front Video	6	Front t S-Video	2 (Comp)	NA

Troubleshooting

Some quick and easy tips to resolving problems

Symptoms	Possible Cause(s)	Possible Solution(s)
Software Problems		
Cannot direct enter channel number or "No Signal" appears.	Channel not included in channel scan in TV controller.	After 2-5-5 + MENU, only channels included in TV controller will appear. If channel is available it can be added to channel scan. If it is not available, the 'No Signal' message appears on the TV screen.

Troubleshooting

Some quick and easy tips to resolving problems

Symptoms	Possible Cause(s)	Possible Solution(s)	
Power			
No Power.	See troubleshooting flow chart.		
Display Panel Picture			
No Picture.	• Display panel is turned off.	-Turn TV on. -Power failure?	
	• Antenna/Cable not connected.	-Connect Antenna/Cable signal to TV.	(See Owners manual)
	• Connections incorrect.	-Check connections on TV.	(See Owners manual)
	• M.P.I. not connected.	-If applicable, connect M.P.I. cable to M.P.I. device.	
	• Encrypted program.	-Try another channel.	
	• Wrong tuning band.	-Adjust Installer menu settings.	
Erratic Operation			
Installer menu setup.	• Wrong Installer menu settings.	-Adjust Installer menu settings as required.	
Remote Control			
Remote doesn't work.	• Remote not in TV mode.	-Use Mode key to select TV; puts remote into TV mode.	
	• Not aimed at IR remote sensor.	-Point remote at TV's IR receiver on TV.	
	• Remote too far from IR sensor.	-Move remote closer to TV's IR receiver or darken room.	
	• IR path to TV's receiver obstructed.	-Remove obstructions.	
	• Weak batteries.	-Replace batteries.	
	• Wrong battery polarity.	-Check that "+" and "-" match in battery compartment.	
	• Too much light in room.	-Dim room light.	
	• Wrong Installer remote control.	-Requires compatible Installer remote, contact your LG dealer.	
Picture Reception			
Normal picture, poor or no sound.	• Audio muted.	-Press MUTE or use Volume Up key to increase sound level.	
	• Broadcast problem.	-Try a different channel.	

Note: For other problems not caused by the TV, refer to other devices' operating guide.

Warning: Do not use LT2002 while any PPV card is installed in TV or clone programmer will be damaged.

Reset Clone After Static Shock

After replacing exhausted batteries, or if the programmer behaves strangely after a static shock, use a paper clip or similar instrument inserted through the small hole marked "RESET" to activate the internal reset switch and restore normal operation. After a reset, check the real-time clock setting. It may be necessary to reset the Clone Programmer clock from a TV containing the correct time.

Note

The LT2002 programmer is designed to be used with TVs containing the 221-01006 and later processors. Use with earlier TV sets may give unpredictable results. Processors used before the 221-01006-04 have a limited screen display capability. They cannot display entire screens as shown in the quick setup instructions accompanying the LT2002 clone programmer. Use the printed menu illustrations on the quick setup sheet supplied with the Clone as an aid to making your programming choices. (Although the menus are not all displayed, the clone functions all operate normally.)

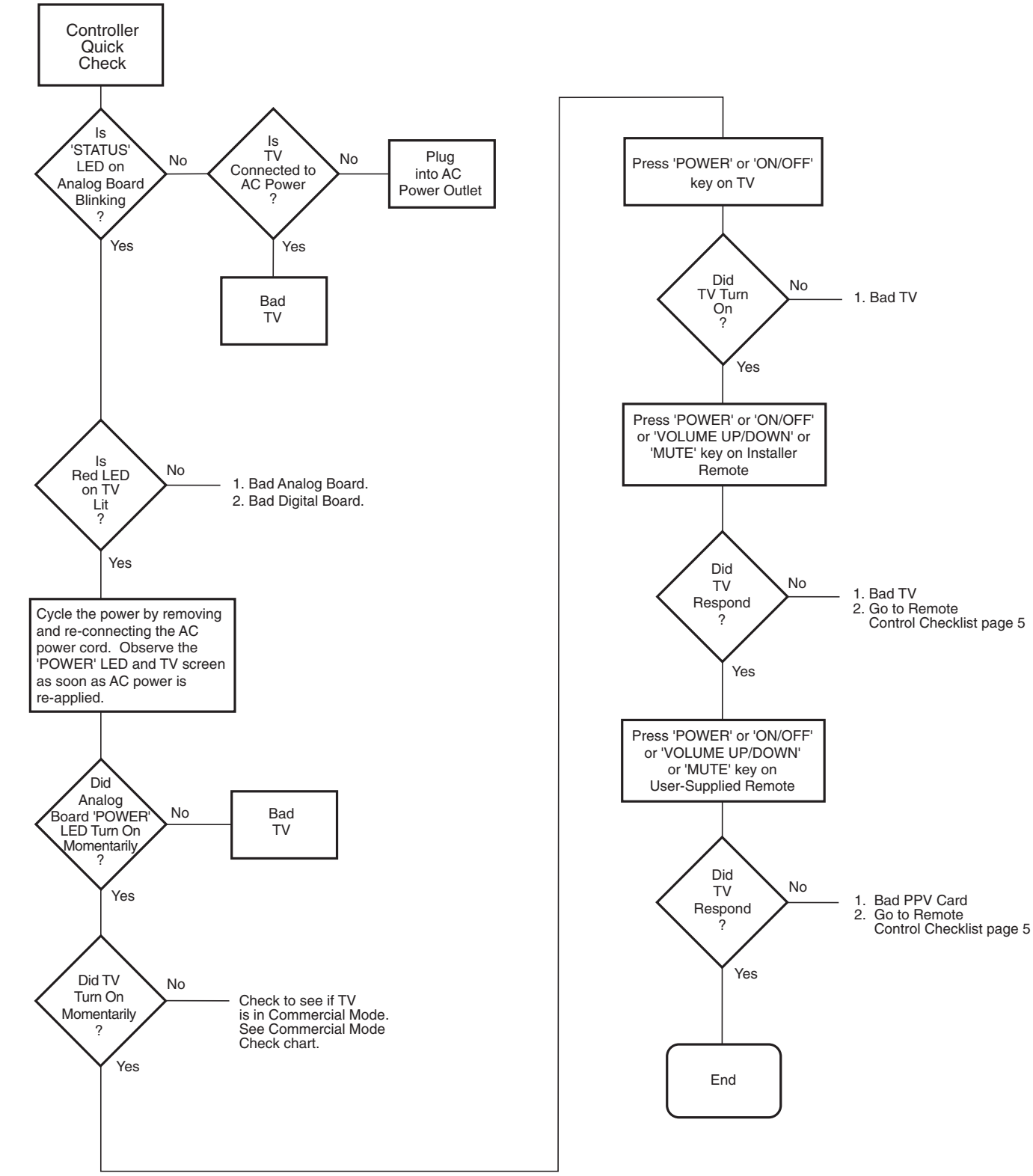
Clone Programmer Troubleshooting

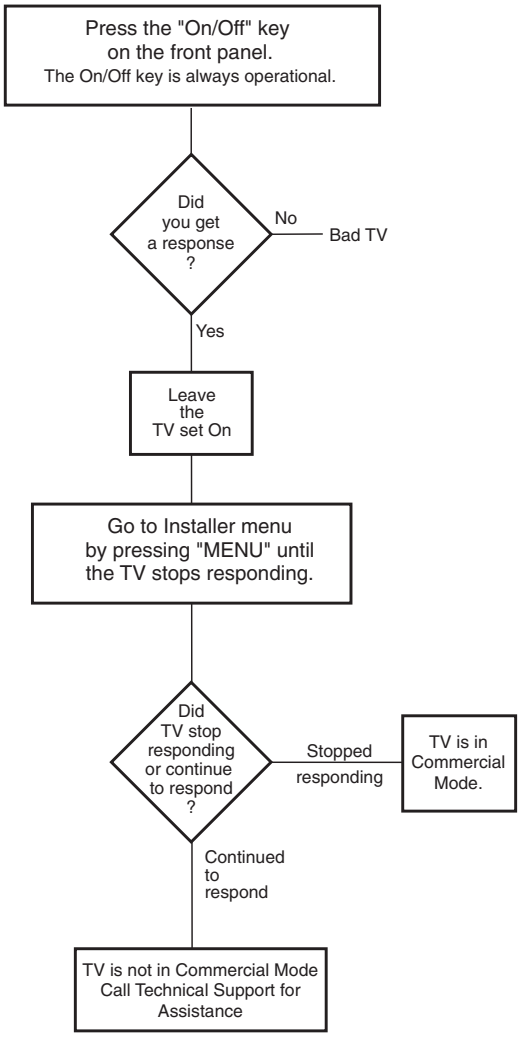
Problem	Possible Cause(s)	Possible Solution(s)
Clone Programmer		
Clone copies Setup in less than 30 seconds	• Not enough time to copy entire TV setup.	- Press Reset on clone programmer, redo teach/learn. (Teach/Learn should take a minimum of 1 minute.)
Remote does not operate clone.	• Wrong Installer remote.	- Only use an LG Installer remote to operate clone programmer with TV.
LED does not blink.	• M.P.I. cord not connected. • TV not turned on. • Weak batteries.	- Connect M.P.I. cord properly, assure good connection. - TV must be powered On for clone to work. - Install 4 fresh AA high-quality alkaline batteries.
Clone menu hard to read.	• Weak signal.	- Connect TV to a reliable Analog channel signal source.
No time set.	• Time not available.	- Set time on a TV, copy time to Clone Programmer.
Clone not working.	• Clone programmer problem.	- Try a different LT2002 Clone programmer. - Reset Clone Programmer.
Clone Scans Channels more than once.	• Clone should only scan channels once.	- Retry cloning again.
Master and Other TVs		
Cloning did not work.	• Procedure interrupted. • Different TV models. • Step(s) omitted or not performed.	- Wait until procedure complete message is displayed. - Cloning is only possible with identical model TVs. - Reread pages 7-8-9 to be sure all tasks were performed.
Clone time disappeared.	• Batteries were removed.	- Batteries must remain installed to retain time settings.
New Setup not present.	• TV not reset.	- Disconnect newly-cloned unit from power for 5 seconds.

• After cloning operations are complete, just unplug the LT2002 from the TV.

• If the TV does not display a picture on the TV (blank screen) after a few seconds, just change channels.

Troubleshooting Flow Chart




Press the "On/Off" key
on the front panel.
The On/Off key is always operational.
Did
you get
a response
?
No
Bad TV
Yes
Leave
the
TV set On
Go to Installer menu
by pressing "MENU" until
the TV stops responding.
Did
TV stop
responding
or continue
to respond
?
Stopped
responding
TV is in
Commercial
Mode.
Continued
to
respond
TV is not in Commercial Mode
Call Technical Support for
Assistance

Glossary of Terms

A list of definitions for some of the words found in this guide

75 OHM RF CABLE
The wire that comes from an off-air antenna or cable service provider. The end looks like a hex-shaped nut with a wire sticking through the middle. It screws onto the Antenna/Cable threaded jack on the back of the TV.

300 TO 75 OHM ADAPTER
A small device that connects a two-wire 300 ohm antenna to a 75 ohm RF jack. They are usually about an inch long with two screws on one end and a round opening with a wire sticking out on the other end.

A/V CABLES
Audio/Video cables. Three cables bunched together—right audio (red), left audio (white), and video (yellow). A/V cables are used for stereo playback of videocassettes and for higher quality picture and sound from other A/V devices.

A/V DEVICE
Any device that produces video or sound (VCR, DVD, cable box, or television).

AMPLIFIER
An electronic device that amplifies sound from a television, CD player, VCR, DVD, or other Audio/Video device.

ANTENNA
The physical receiver of television signals sent over the air. A large metal piece of equipment does not always have to be visible to be using an antenna.

B-LAN
TV is controlled by external network.

CABLE
Cable service box. Refers to the descrambler box cable subscribers use to receive cable programming signals.

CATV
Programming provided by a cable service.

DIGITAL TELEVISION
High-resolution, cinema-quality television signals transmitted digitally.

DVI
Digital Video Interface
Accommodates analog and digital interfaces with a single connector.

COMPOSITE VIDEO
Typical video jack, uses one wire for transporting three-color video signals.

COMPONENT VIDEO
Uses three wires for transporting three-color video signals. The end result is usually better video quality.

DELETED
Lets you remove channels from the list that the end user can scroll through using CH (Channel) Up/Down.

HDMI
High-definition multi-media interface.

HDTV
High-definition television. Refers to television signals that have higher resolution than ordinary analog TV signals.

HDSTB
High-definition set top box. Refers to a tuner device that receives high-definition television signals which have higher resolution than ordinary analog TV signals.

INPUT
Refers to the input jack that receives a signal from a TV, VCR, DVD Player or other Audio/Video device.

JACK
An input or output connector on the back of a TV, VCR, DVD Player or other Audio/Video device.

MONO SOUND
Mono (monaural) sound is one channel of sound. On more than one speaker, all the speakers play the same audio.

OUTPUT
Refers to the output jack that sends a signal out of a VCR, DVD, or other A/V device.

PHYSICAL CHANNEL NUMBER
The actual channel number. Analog channels use the physical channel number and digital channels can use a virtual channel number.

RGB (Red, Green, Blue)
Connection input or output port available for producing a video image using three separate colors: Red, Green, and Blue.

RS-232
Serial communication port through which firmware is downloaded.

2ND AUDIO PROGRAMMING/SAP
Second Audio Programming (SAP) is another, separate audio channel available with some programming. Choosing SAP often refers to listening to audio in another language, such as Spanish or French.

SIGNAL
Picture and sound traveling through a cable, or over the air, to the TV.

STEREO SOUND
Stereo (Stereophonic) sound refers to audio that's divided into right and left sides.

TUNER
Device that picks up the broadcast signal and turns it into picture and sound.

VIRTUAL CHANNEL NUMBER
A re-mapped channel number analog channels use the actual channel number. but digital channels use a virtual(or false) channel number.

XDS
Extended Data Service: Additional program information included on the signal provided at the discretion of the broadcaster.

Note 1
Refer to www.atsc.org for further information.

B-LAN Setup and Overview

Power to the B-LAN module is controlled by Installer Menu Item 118 Power savings. By default, value 003, the B-LAN module is only powered on when the TV is powered on. There are two bits in the Power Savings item to control power to the B-LAN module, one for power during TV Standby mode and one for power during TV Power On mode. When the bit is 0, the B-LAN module is powered. When the bit is 1, the B-LAN module is not powered (Power Savings is Enabled).

Power Saving	TV Standby State		TV Power On State	
	BLAN Power	MPI Slot Power	BLAN Power	MPI Slot Power
1	On	Standby	On	Main
3	Off	Standby	On	Main
7	Off	Standby	Off	Main

The B-LAN module is internal to the TV. It allows the Hotel/Institution headend equipment to communicate with the TV for configuration and control. This communication is via the institution'r RF distribution system. The control device at the headend (ex FMA-LG101) can control multiple TVs. When the TV is first installed, it must be powered on in order for the headend to be able to communicate with the B-LAN. At this point, if it is desired for the BLAN to always be powered on, particularly during Standby mode, the BLAN Standby Power Saving mode setting should be downloaded as Disabled. The new settings will not be active until the BLAN actually downloads the configuration data to the PTC and the PTC is reset.

If it known that the application requires only using the MPI card slot and not the embedded BLAN, the installer can go into the Installer Settings menu and enable the BLAN Power Savings mode, in both Standby and TV power on.

RJP Model List

Legacy Models	Scaler Models
RJP-101M	Not Support PCB
RJP-101ML	Not Support PCB
RJP-110F	RJP-210F
RJP-110FW	RJP-210FW
RJP-110W	RJP-210W
RJP-110WBR	RJP-210WBR
RJP-110S	RJP-210S
RJP-120G	RJP-220G
RJP-120T	RJP-220T
RJP-201B	RJP-301B
RJP-202B	RJP-302B

RJP Input Hierarchy

Priority	Video	Audio
1st. (Highest)	HDMI / DVI	3.5mm Mini Jack
2nd.	RGB	L / R Audio In
3rd.	Composite	HDMI / DVI
4th. (Lowest)	TV (RF or Aux)	TV (RF or Aux)

LG Electronics Inc.