

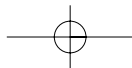
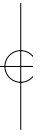
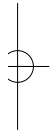
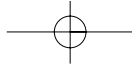


## LCD TV | PLASMA TV OWNER'S MANUAL

LCD TV MODELS	PLASMA TV MODELS
---------------	------------------

32LB9RT	42PB4RT
32LB9RTB	42PB4RTH
32LB9RTE	50PB4RT
42LB9RT	50PB4RTH
42LB9RTB	
42LB9RTE	

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



# WARNING

## IMPORTANT SAFETY INSTRUCTIONS

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

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

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

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



- 1 Do not use this apparatus near water.



- 2 Clean only with dry cloth.



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



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



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



# WARNING

## IMPORTANT SAFETY INSTRUCTIONS

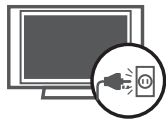
- 6 Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.



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



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



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



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

- 11 Do not allow a impact shock or any objects to fall into the product, and do not drop onto the screen with something. (You may be injured or the product can be damaged.)

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



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

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



- 14** Outdoor Use Marking :  
**WARNING - To Reduce The Risk Of Fire Or Electric Shock, Do Not Expose This Appliance To Rain Or Moisture**



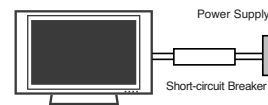
- 15** Wet Location Marking : Apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on or over apparatus.



**16 GROUNDING**

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

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



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

# CONTENTS

<b>WARNING</b> .....	1
<b>FEATURES OF THIS TV</b> .....	6
<b>ACCESSORIES</b> .....	7


## PREPARATION

Time Machine Home Menu .....	8
Front Panel Controls .....	9
Back Panel Information .....	11
Stand Installation .....	13
Attaching the TV to a Desk .....	13
Attaching the TV to a Wall .....	14
Back Cover for Wire Arrangement .....	15
Desktop Pedestal Installation .....	17
Wall Mount: Horizontal installation .....	17
Antenna Connection .....	18

## EXTERNAL EQUIPMENT SETUP

HD Receiver Setup .....	19
DVD Setup .....	22
VCR Setup .....	25
Other A/V Source Setup .....	28
AV Output Setup .....	29
External Stereo Setup .....	29
USB in Setup .....	30
PC Setup .....	31
- Screen Setup for PC Mode .....	34

## WATCHING TV / SETUP CONTROL

Remote Control Key Functions .....	38
Turning on the TV .....	40
Channel Selection .....	40
Volume Adjustment .....	40
On Screen Menus Selection and Adjustment .....	41
Auto Channel Tuning .....	42
Manual tuning: Adding/Deleting Channels .....	43
Fine Tuning Adjustment .....	44
Booster .....	45
Favorite Channels Setup .....	46
Input Source Selection .....	47
Key lock .....	48
 SIMPLINK .....	49

## TIME MACHINE

Time Control (Pause & Replay of Live TV) .....	52
Format hard disk .....	55
Instant Recording .....	56
Manual Record .....	58
Schedule List .....	59
Record Quality .....	59
To use the USB device .....	60
Recorded TV Program List .....	62
USB Backup .....	65
Photo List .....	68
Music List .....	72
Movie List .....	75
Subtitle .....	77
DivX Registration Code .....	78

## PICTURE CONTROL

Watching PIP(Picture-in-Picture) .....	79
Picture Size (Aspect Ratio)Control .....	81
Preset Picture Settings	
- Picture Mode-Preset.....	83
- Auto Color Temperature Control(Warm/Medium/Cool) .	84
Manual Picture Adjustment	
- Picture Mode-User option.....	85
- Color Temperature - User option.....	86
<b>XD</b> - Picture Improvement Technology.....	87
<b>XD</b> Demo .....	88
Advanced - Cinema.....	89
Advanced - Black(Darkness) Level.....	90
Picture Reset .....	91
Image Sticking Minimization(ISM) Method .....	92
Low-Power Picture Mode.....	93

## SOUND & LANGUAGE CONTROL

Auto Volume Leveler .....	94
Preset Sound Settings - Sound Mode .....	95
Sound Setting Adjustment - User Mode .....	96
Balance .....	97
TV Speakers On/Off Setup .....	98
On-Screen Menu Language Selection .....	99

## TIME SETTING

Clock Setup .....	100
Auto On/Off Timer Setting.....	101
Sleep Timer Setting .....	102
Auto Shut-off Setting .....	103

## CAPTION/TEXT

Closed Captions .....	104
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## APPENDIX

Troubleshooting.....	105
Maintenance .....	107
Product Specifications.....	108
Programming the Remote Control .....	110
IR Codes .....	112
External Control Device Setup .....	114

# FEATURES OF THIS TV

## What is a Plasma TV ?

Using plasma is the best way to achieve flat panel displays with excellent image quality and large screen sizes that are easily viewable. The Plasma TV can be thought of as a descendant of the neon lamp and or a series of fluorescent lamps.

## How does it work?

Plasma TV is an array of cells, known as pixels, which are comprised of three sub-pixels, corresponding to the colors red, green, and blue. Gas in a plasma state is used to react with phosphors in each sub-pixel to produce colored light (red, green, or blue). These phosphors are the same types used in Cathode Ray Tube (CRT) devices such as televisions and common computer monitors.

Plasma TV offers a rich, dynamic display because each sub-pixel is individually controlled by advanced electronics to produce over 16 million different colors. This means that you get perfect images that are easily viewable in a display that is fewer than five inches thick.

## 160° - Wide angle range of vision

Your flat panel plasma screen offers an exceptionally broad viewing angle of over 160 degrees. This means that the display is clear and visible to viewers anywhere in the room.

## Wide Screen

The wide screen offers a theater-like experience in your own home.

## Multimedia

Connect your plasma display to a PC and use it for conferencing, games, and Internet browsing. The Picture-in-Picture feature allows you to view your PC and video images simultaneously.

## Versatile

The light weight and thin size makes it easy to install your plasma display in a variety of locations where conventional TVs do not fit.

## The Plasma TV Manufacturing Process: a few minute colored dots may be present on the Plasma TV screen

The Plasma TV is composed of 0.9 to 2.2 million cells. A few cell defects will normally occur in the Plasma TV manufacturing process. Several tiny, minute colored dots visible on the screen should be acceptable. This also occurs in other Plasma TV manufacturers' products. The tiny dots appearing does not mean that this Plasma TV is defective. Thus a few cell defects are not sufficient cause for the Plasma TV to be exchanged or returned. Our production technology minimizes these cell defects during the manufacture and operation of this product.

## 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.

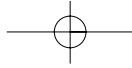
Some minute dot defects may be visible on the screen, appearing as tiny red, green, or blue spots. However, they have no adverse effect on the monitor's performance.

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

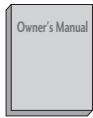
- The fluorescent lamp used in this product contains a small amount of mercury.
- Do not dispose of this product with general household waste.
- Disposal of this product must be carried out in accordance to the regulations of your local authority.



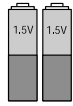


# ACCESSORIES

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



Owner's Manual



Batteries



Power Cord



Remote Control



PREPARATION



### RF Adapter (Some models)

You must connect it to the antenna wire after fixing in Antenna Input. This adapter is only supplied in Argentina.

#### Plasma TV models

\* This feature is not available for all models.



2-Wall brackets



2-eye-bolts



Polishing Cloth  
Polish the screen with the cloth

\*Slightly wipe stained spot on the exterior only with the cleansing cloths for the product exterior if there is stain or fingerprint on surface of the exterior.

Do not wipe roughly when removing stain. Please be cautious of that excessive power may cause scratch or discoloration.

#### LCD TV models

\* This feature is not available for all models.



Twister Holder  
Arrange the wires with the twister holder.



2- TV Bracket Bolts



2- TV Brackets,  
2- Wall Brackets



3- Ring



Cable Management

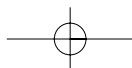
#### 32" only



1-bolts for stand fixing  
Refer to p. 13



4-bolts for stand assembly  
Refer to p. 13



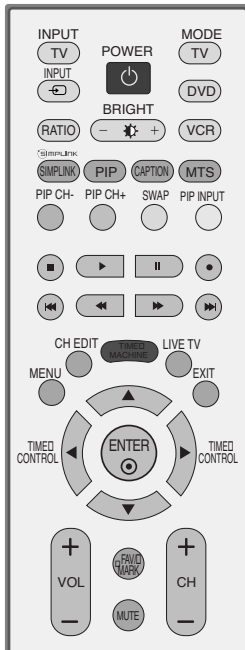
# PREPARATION

## TIME MACHINE HOME MENU

This menu is a contents guide.

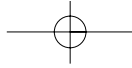
In Home Menu, you enter the Recorded list of TIME MACHINE, Manual Record of TIME MACHINE, Schedule List, Photo List, Music List, Movie List or TV Menu.

PREPARATION



▶ p.52

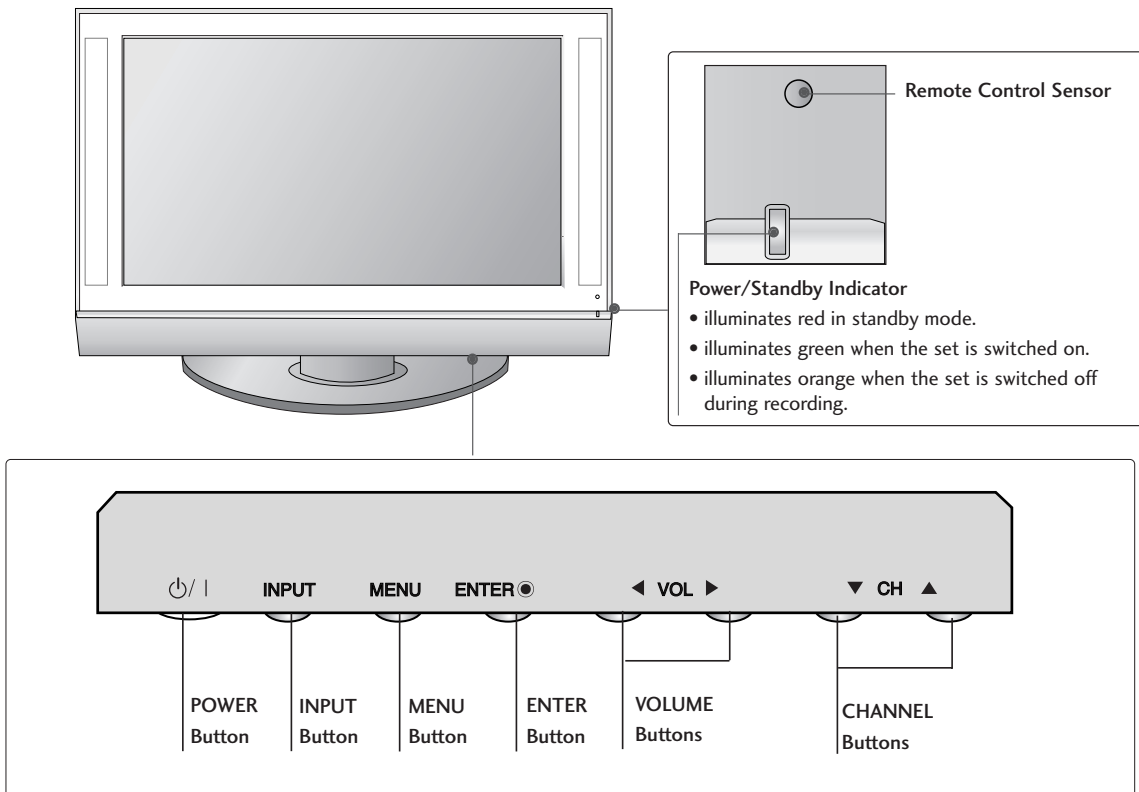
▶ p.68~76



## FRONT PANEL CONTROLS

- This is a simplified representation of the front panel. Here shown may be somewhat different from your TV.
- If your product has a protection film attached, remove the film and then wipe the product with a polishing cloth.

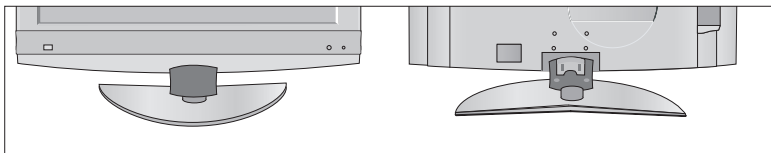
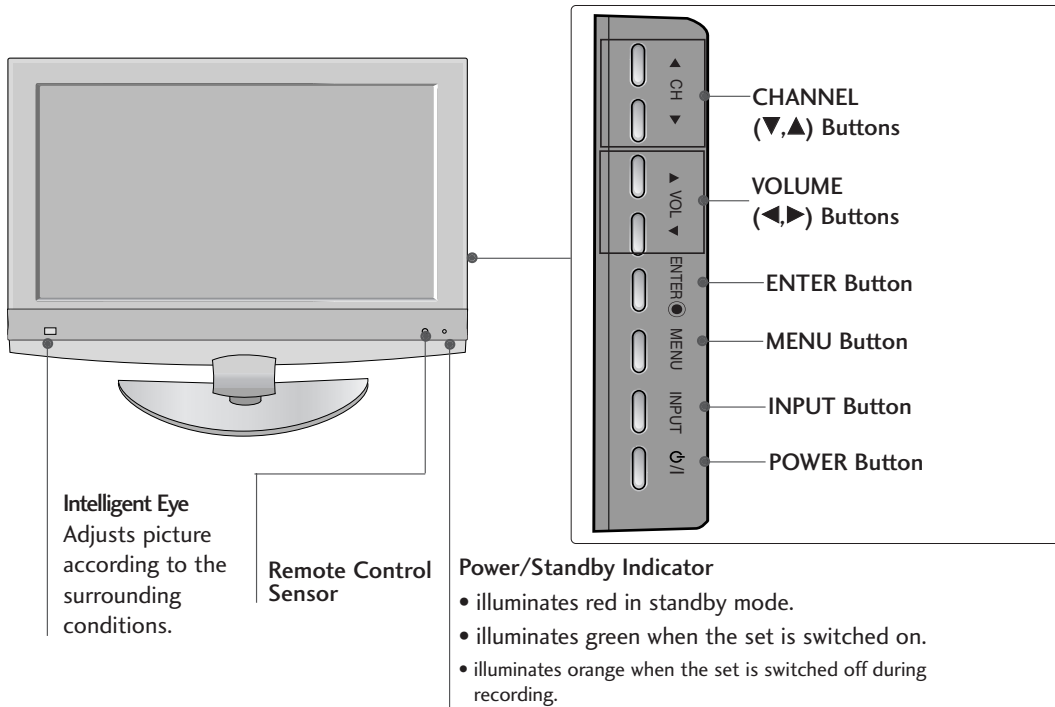
### Plasma TV Models



# PREPARATION

## LCD TV Models

PREPARATION



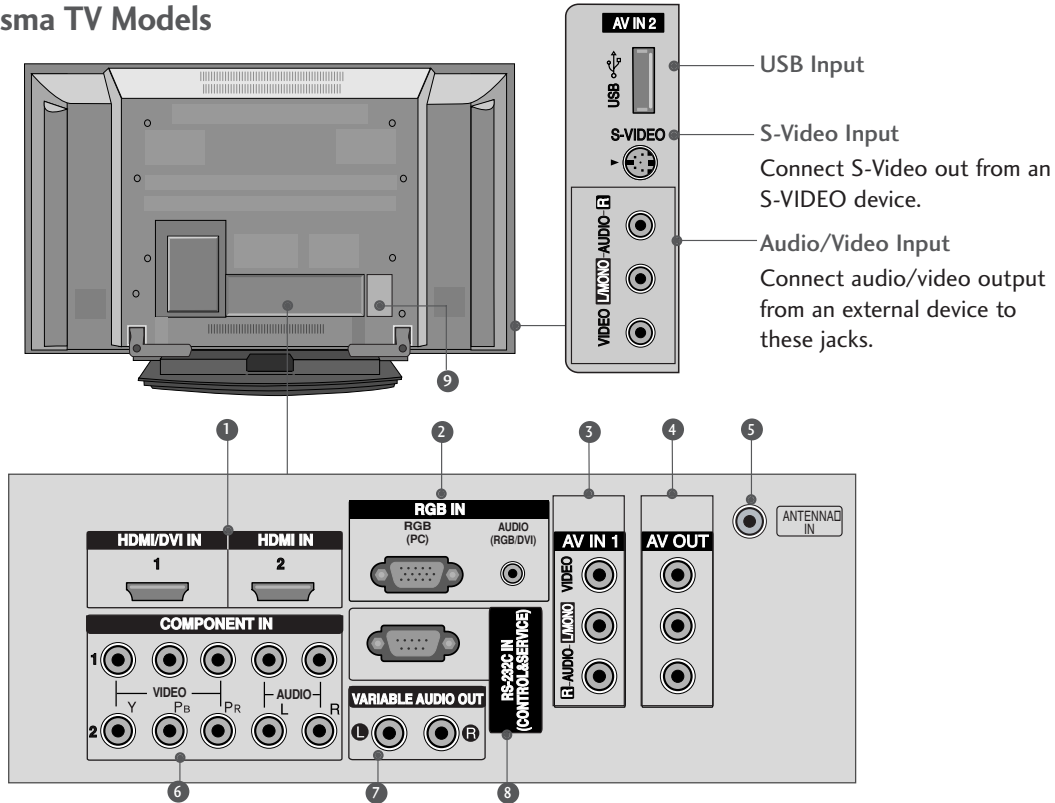
**<Only 32/42LB9RTE>**

Pull stand ring to the front to disassemble if easily and same way in the backside. Assemble the ring of the color you desired in stand.

## BACK PANEL INFORMATION

- This is a simplified representation of the back panel. Here shown may be somewhat different from your TV.

### Plasma TV Models



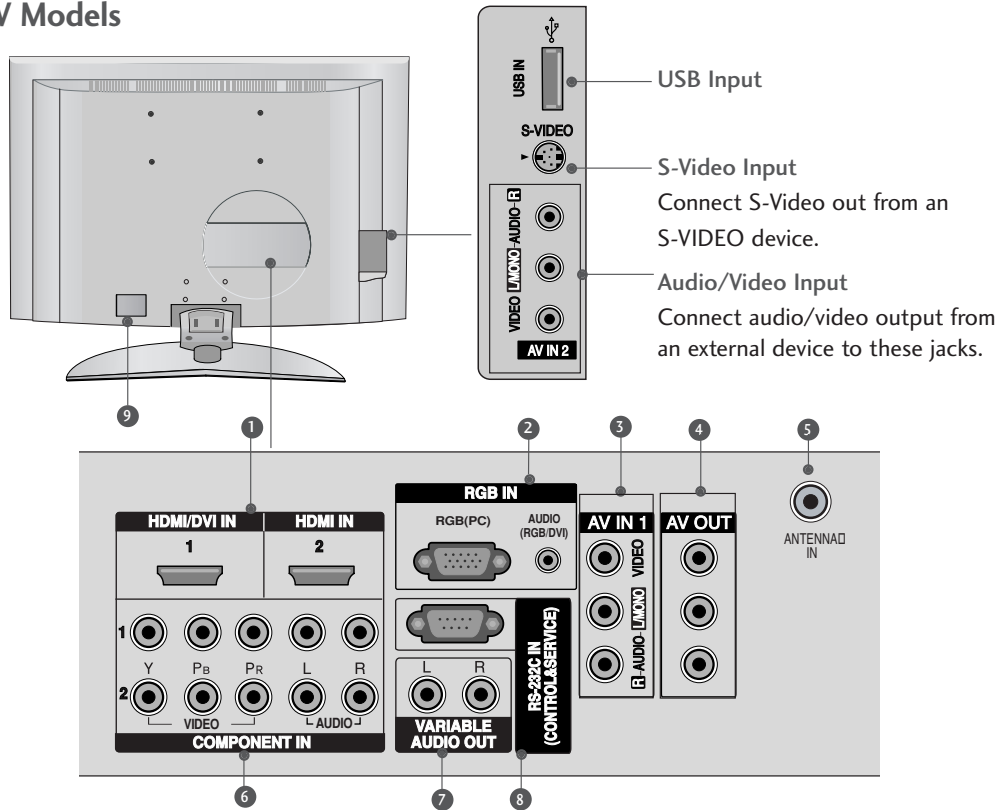
- HDMI/DVI1, HDMI2 Input**  
Connect a HDMI signal to HDMI IN.  
Or DVI(VIDEO)signal to HDMI/DVI port with DVI to HDMI cable.
- RGB/Audio Input**  
Connect the monitor output from a PC to the appropriate input port.
- Audio/Video Input (AV IN 1)**  
Connect audio/video output from an external device to these jacks.
- AV Output**  
Connect second TV or monitor to the AV OUT socket on the set.
- Antenna Input**  
Connect over-the-air signals to this jack.
- Component Input 1/2**  
Connect a component video/audio device to these jacks.
- Variable Audio Output**  
Connect an external amplifier or add a subwoofer to your surround sound system.
- RS-232C Input(CONTROL&SERVICE)Port**  
Connect the serial port of the control devices to the RS-232C jack.
- Power Cord Socket**  
This TV operates on an AC power. The voltage is indicated on the Specifications page. Never attempt to operate the TV on DC power.

## PREPARATION

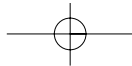
- This is the back panel of model 32LB9RT\*.

### LCD TV Models

PREPARATION

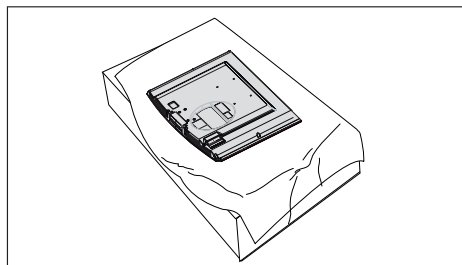


- HDMI/DVI1, HDMI2 Input**  
Connect a HDMI signal to HDMI IN.  
Or DVI(VIDEO)signal to HDMI/DVI port with DVI to HDMI cable.
- RGB/Audio Input**  
Connect the monitor output from a PC to the appropriate input port.
- Audio/Video Input (AV IN 1)**  
Connect audio/video output from an external device to these jacks.
- AV Output**  
Connect second TV or monitor to the AV OUT socket on the set.
- Antenna Input**  
Connect over-the-air signals to this jack.
- Component Input 1/2**  
Connect a component video/audio device to these jacks.
- Variable Audio Output**  
Connect an external amplifier or add a subwoofer to your surround sound system.
- RS-232C Input(CONTROL&SERVICE)Port**  
Connect the serial port of the control devices to the RS-232C jack.
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This TV operates on an AC power. The voltage is indicated on the Specifications page. Never attempt to operate the TV on DC power.

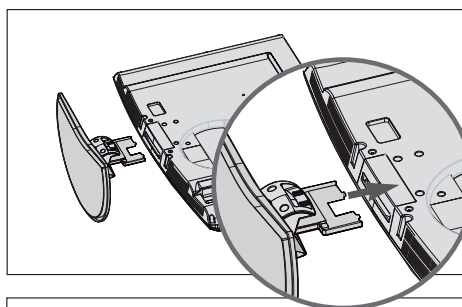


## STAND INSTALLATION (Only 32LB9RT\*)

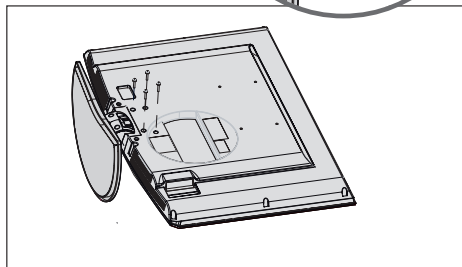
- 1 Carefully place the product screen side down on a cushioned surface that will protect product and screen from damage.



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



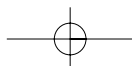
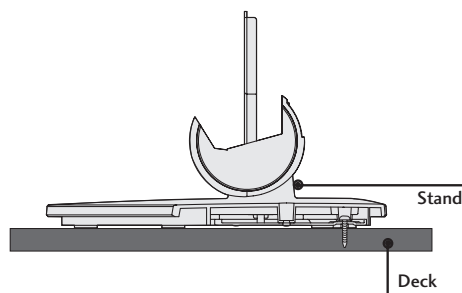
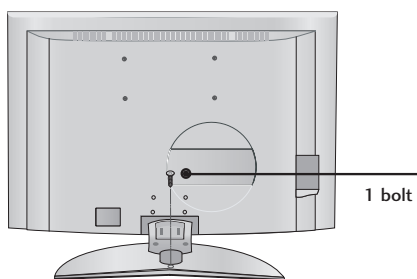
- 3 Install the 4 bolts securely, in the back of the product in the holes provided.



PREPARATION

## ATTACHING THE TV TO A DESK (Only 32LB9RT\*)

If you wish to attach the TV to a desk, it must be securely fastened to the desk using a metal screw (as shown below). Failure to securely attach the TV may result in the TV falling, which may cause damage to the TV and serious personal injury.



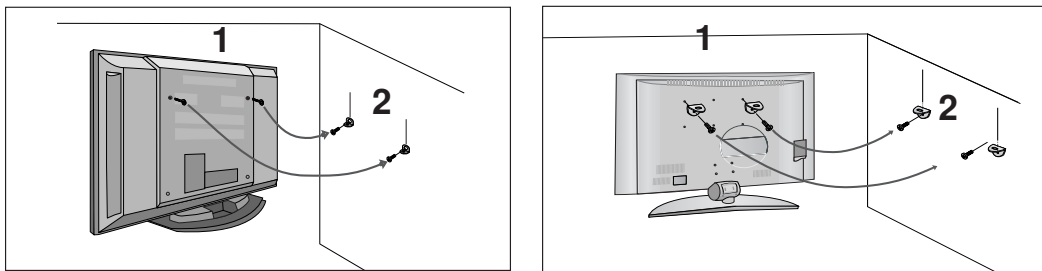
## PREPARATION

### ATTACHING THE TV TO A WALL

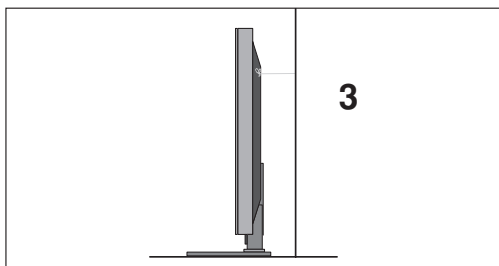
\* This feature is not available for all models.

- Set it up close to the wall so the product doesn't fall over when it is pushed backwards.
- The instructions shown below is a safer way to set up the product, which is to fix it on the wall so the product doesn't fall over when it is pulled in the forward direction. It will prevent the product from falling forward and hurting people. It will also prevent the product from damage caused by fall. Please make sure that children don't climb on or hang from the product.

PREPARATION



- 1 Use the eye-bolts or TV brackets/bolts to fix 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.
- 2 Secure the wall brackets with the bolts (not provided as parts of the product, must purchase separately) on the wall. Match the height of the bracket that is mounted on the wall.

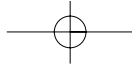


- 3 Use a sturdy rope (not provided as parts of the product, must purchase separately) to tie the product. It is safer to tie the rope so it becomes horizontal between the wall and the product.

#### ! NOTE

- ▶ When moving the product to another place undo the ropes first.
- ▶ Use a product holder or a cabinet that is big and strong enough for the size and weight of the product.
- ▶ To use the product safely make sure that the height of the bracket that is mounted on the wall is same as that of the product.



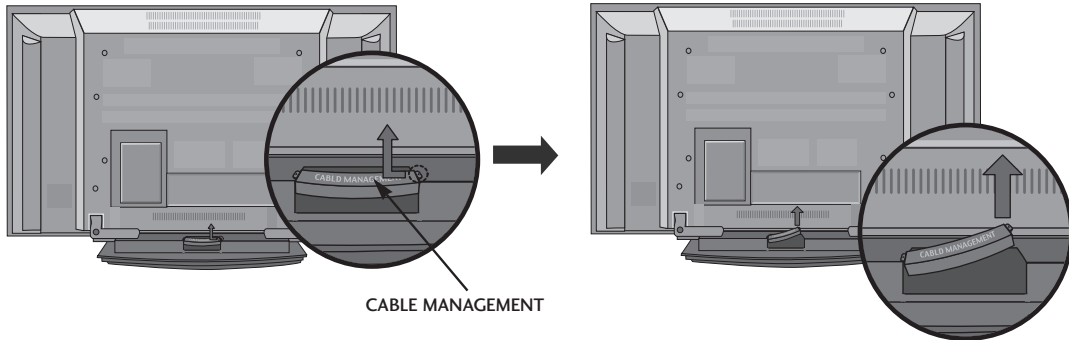


## BACK COVER FOR WIRE ARRANGEMENT

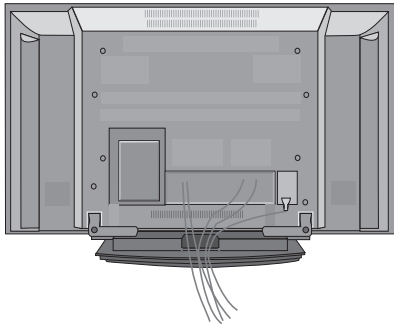
### Plasma TV models

PREPARATION

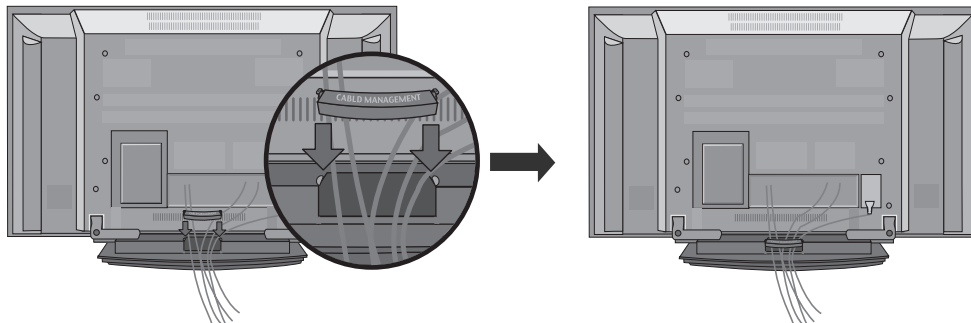
- 1 Hold the **CABLE MANAGEMENT** with hands and push it as shown.



- 2 Connect the cables as necessary.  
To connect an additional equipment, see the **External equipment Setup** section.



- 3 Reinstall the **CABLE MANAGEMENT** as shown.



## PREPARATION

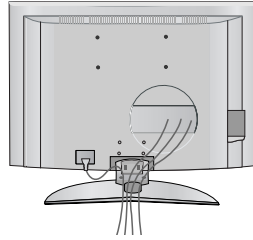
- Here shown may be somewhat different from your TV.

### LCD TV models

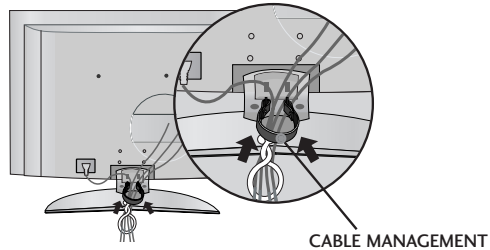
PREPARATION

- 1 Connect the cables as necessary.

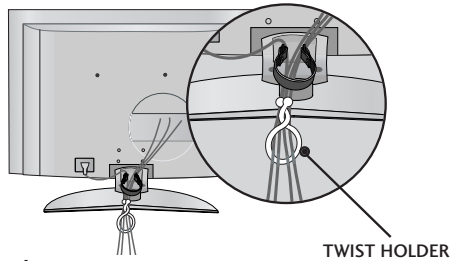
To connect an additional equipment, see the **External equipment Connections** section.



- 2 Install the **CABLE MANAGEMENT** as shown. (Insert it as pushing the loops on the both sides of the cable management.)



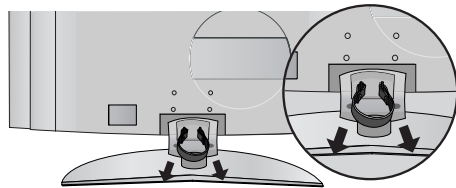
- 3 Bundle the cables using the supplied twist holder. (This feature is not available for all models.)



### How to remove the cable management

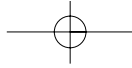
Hold the **CABLE MANAGEMENT** with both hands and pull it out.

(Pull it out as holding the loops on the both sides of the cable management.)



#### ! NOTE

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

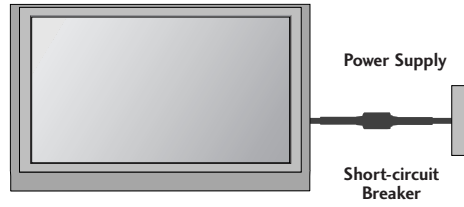


- The TV can be installed in various ways such as on a wall, or on a desktop etc.
- The TV is designed to be mounted horizontally.

## GROUNDING

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

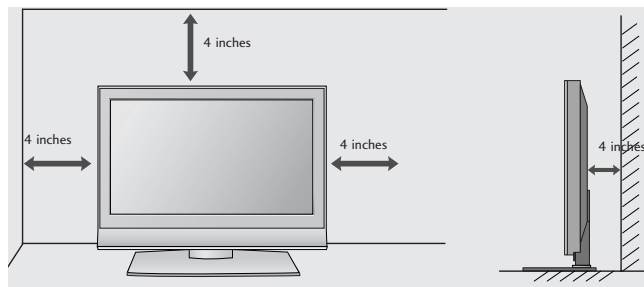
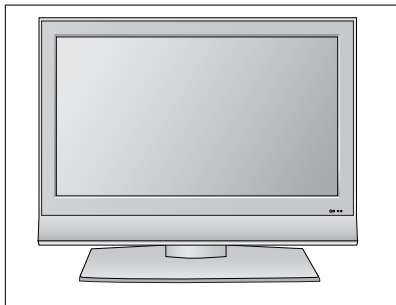
Do not try to ground the unit by connecting it to telephone wires, lightening rods, or gas pipes.



PREPARATION

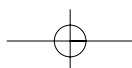
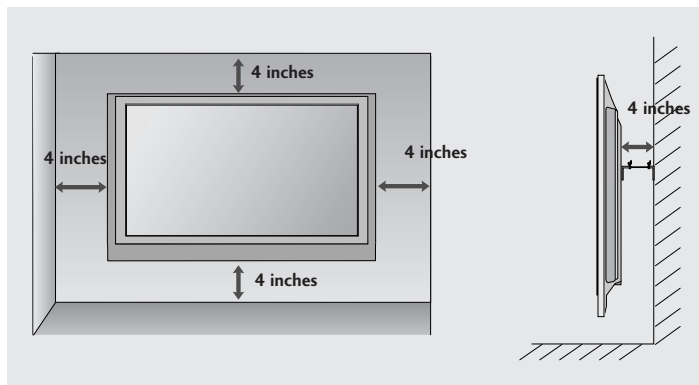
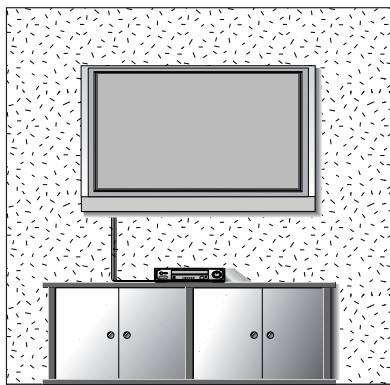
## DESKTOP PEDESTAL INSTALLATION

For proper ventilation, allow a clearance of 4" on each side and from the wall.



## WALL MOUNT: HORIZONTAL INSTALLATION

For proper ventilation, allow a clearance of 4" on each side and from the wall. Detailed installation instructions are available from your dealer, see the optional Tilt Wall Mounting Bracket Installation and Setup Guide.



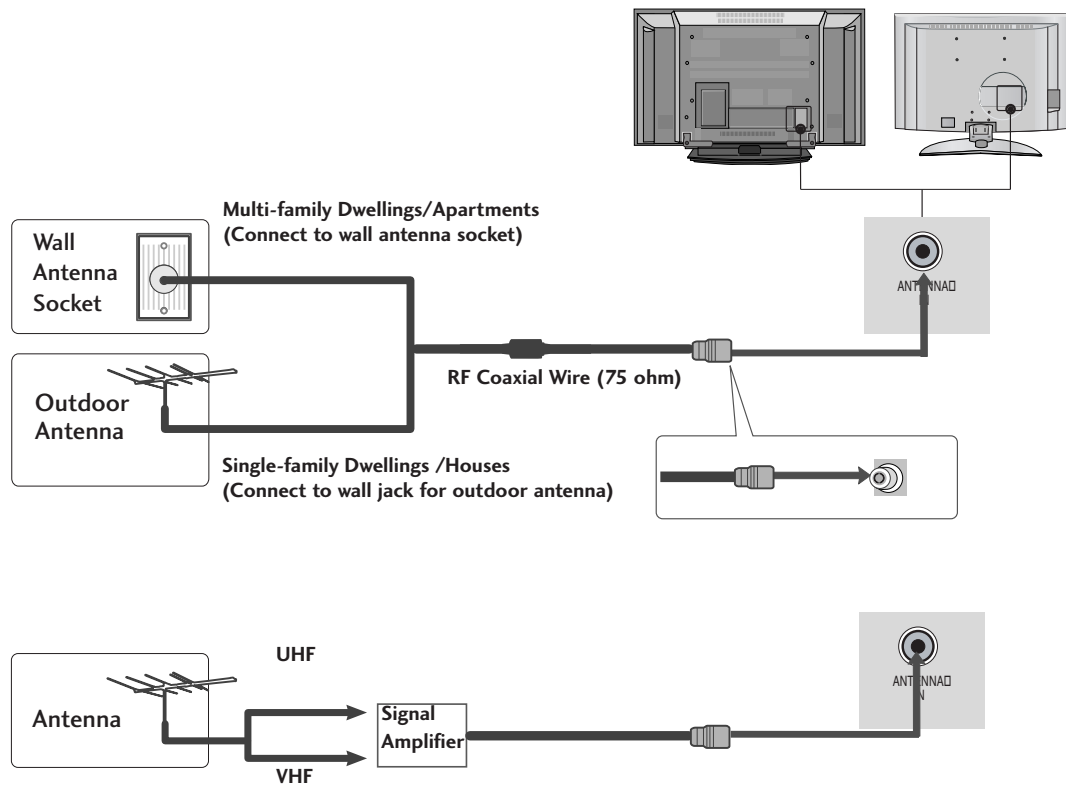
## PREPARATION

- To prevent the equipment damage, never plug in any power cords until you have finished connecting all equipment.

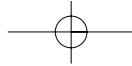
## ANTENNA CONNECTION

- For optimum picture quality, adjust antenna direction.
- An antenna cable and converter are not supplied.

PREPARATION



- In poor signal areas, to get better picture quality, install a signal amplifier to the antenna as shown to the right.
- If signal needs to be split for two TVs, use an antenna signal splitter for connection.



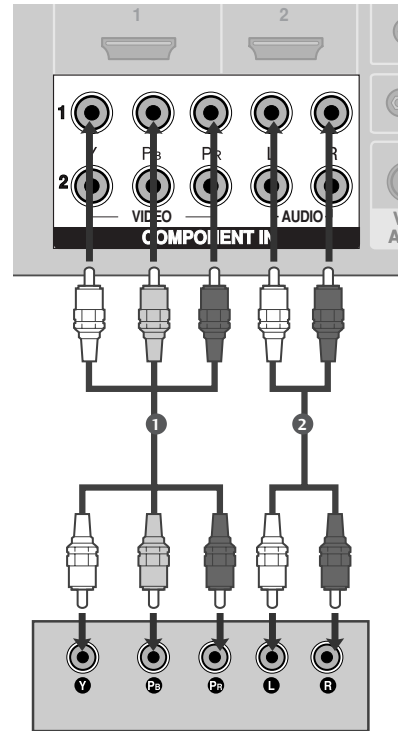
# EXTERNAL EQUIPMENT SETUP

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

## HD RECEIVER SETUP

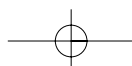
### When connecting with a component cable

- 1 Connect the video outputs (Y, Pb, Pr) of the digital set top box to the **COMPONENT IN VIDEO** jacks on the set.
- 2 Connect the audio output of the digital set-top box to the **COMPONENT IN AUDIO** jacks on the set.
- 3 Turn on the digital set-top box.  
(Refer to the owner's manual for the digital set-top box.)
- 4 Select **Component1** input source with using the **INPUT** button on the remote control.  
If connected to **COMPONENT IN 2**, select **Component2** input source.



EXTERNAL EQUIPMENT SETUP

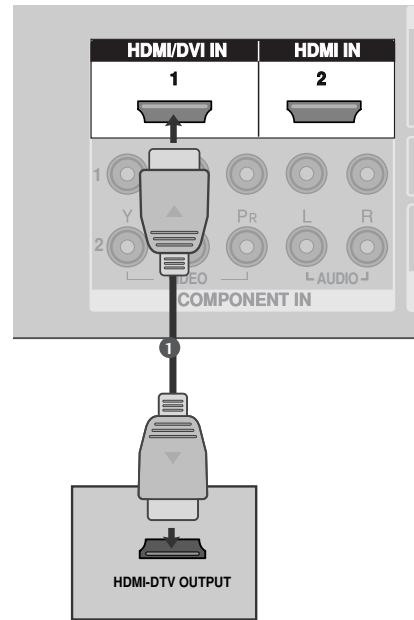
Signal	Component 1/2	HDMI1/DVI, HDMI2
480i	Yes	No
480p	Yes	Yes
720p/1080i	Yes	Yes
1080p(50/60Hz)	Yes	Yes

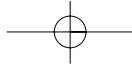


## EXTERNAL EQUIPMENT SETUP

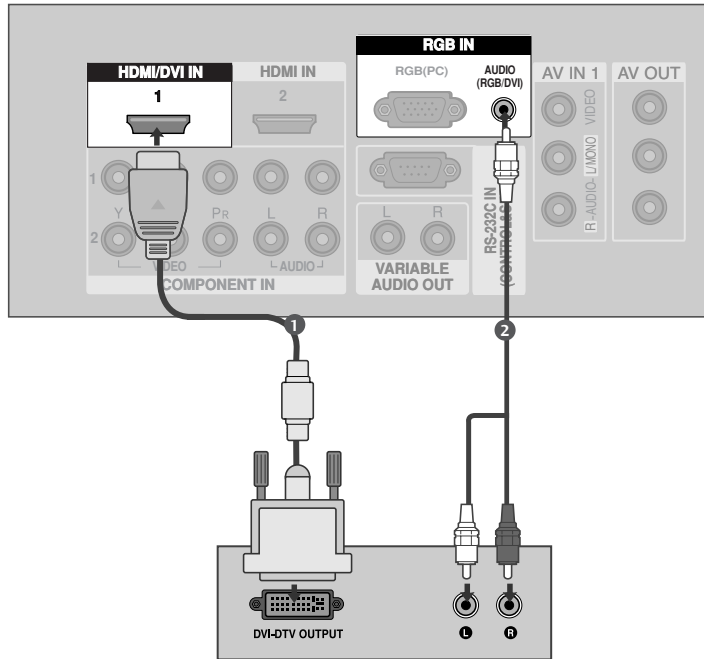
### When connecting with a HDMI cable

- 1 Connect the HDMI output of the digital set-top box to the **HDMI/DVI IN 1** or **HDMI IN 2** jack on the set.
- 2 Select **HDMI1/DVI** or **HDMI2** input source with using the **INPUT** button on the remote control.
- 3 Turn on the digital set-top box.  
(Refer to the owner's manual for the digital set-top box.)

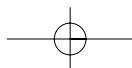


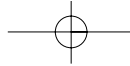


## When connecting with a HDMI to DVI cable



- 1 Connect the DVI output of the digital set-top box to the **HDMI/DVI IN 1** jack on the set.  
.....
- 2 Connect the audio output of the digital set-top box to the **AUDIO (RGB/DVI)** jack on the set.  
.....
- 3 Turn on the digital set-top box. (Refer to the owner's manual for the digital set-top box.)  
.....
- 4 Select **HDMI1/DVI** input source with using the **INPUT** button on the remote control.



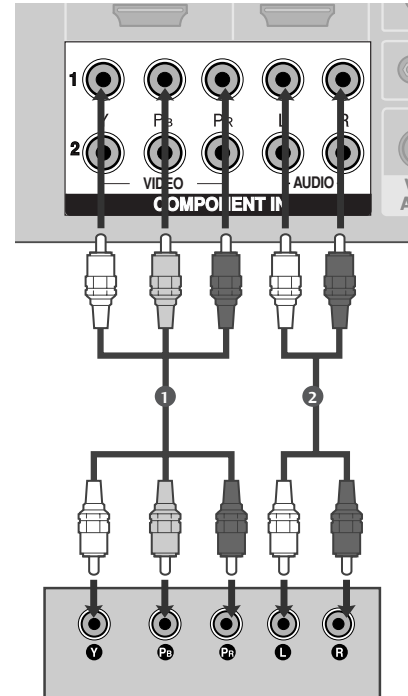


# EXTERNAL EQUIPMENT SETUP

## DVD SETUP

### When connecting with a component cable

- 1 Connect the video outputs (Y, Pb, Pr) of the DVD to the **COMPONENT IN VIDEO** jacks on the set.
- 2 Connect the audio outputs of the DVD to the **COMPONENT IN AUDIO** jacks on the set.
- 3 Turn on the DVD player, insert a DVD.
- 4 Select **Component1** input source with using the **INPUT** button on the remote control.  
If connected to **COMPONENT IN2**, select **Component2** input source.
- 5 Refer to the DVD player's manual for operating instructions.

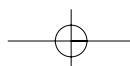


EXTERNAL EQUIPMENT SETUP

#### Component Input ports

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

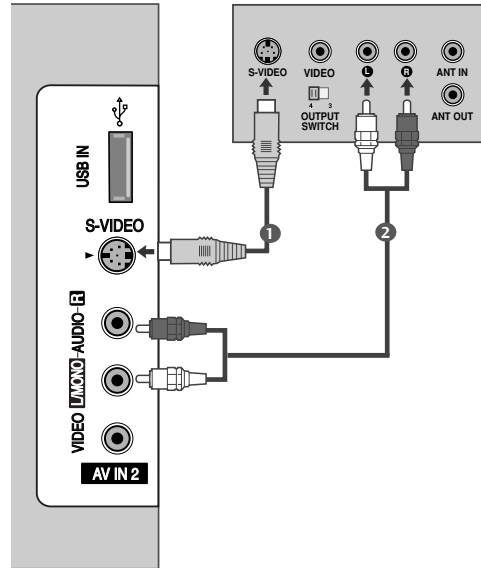
Component ports on the TV	Y	Pb	Pr
Video output ports on DVD player	Y	Pb	Pr
	Y	B-Y	R-Y
	Y	Cb	Cr
	Y	Pb	Pr





## When connecting with an S-Video cable

- 1 Connect the S-VIDEO output of the DVD to the **S-VIDEO** input on the set.
- 2 Connect the audio outputs of the DVD to the **AUDIO** input jacks on the set.
- 3 Turn on the DVD player, insert a DVD.
- 4 Select **AV2** input source with using the **INPUT** button on the remote control.
- 5 Refer to the DVD player's manual for operating instructions.



EXTERNAL EQUIPMENT SETUP

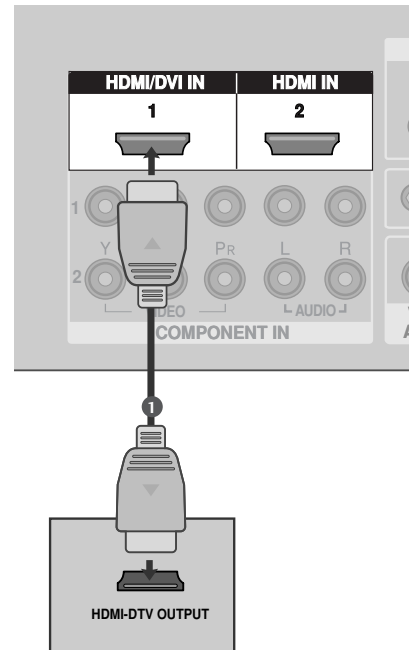
## EXTERNAL EQUIPMENT SETUP

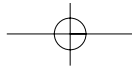
### When connecting HDMI cable

- 1 Connect the HDMI output of the DVD to the **HDMI/DVI IN 1** or **HDMI IN 2** jack on the set.
- 2 Select **HDMI1/DVI** or **HDMI2** input source with using the **INPUT** button on the remote control.
- 3 Refer to the DVD player's manual for operating instructions.

#### NOTE

- ▶ TV can receive the video and audio signal simultaneously with using a HDMI cable.
- ▶ If the DVD does not support Auto HDMI, you need to set the output resolution appropriately.

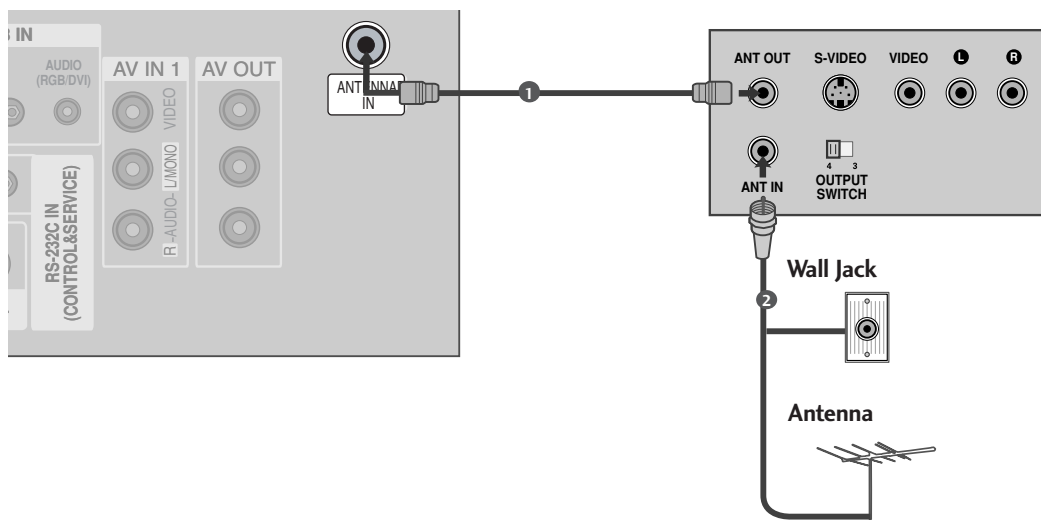




## VCR SETUP

- To avoid picture noise (interference), leave an adequate distance between the VCR and TV.
- Typically a frozen still picture from a VCR. If the 4:3 picture format is used; the fixed images on the sides of the screen may remain visible on the screen.

### When connecting with an antenna



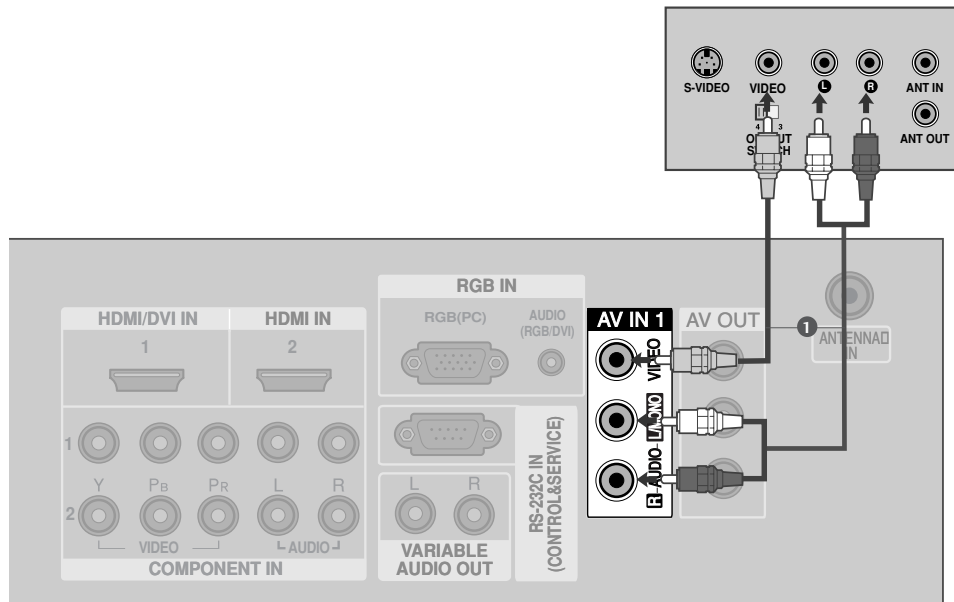
EXTERNAL EQUIPMENT SETUP

- 1 Connect the **ANT OUT** socket of the VCR to the **ANTENNA IN** socket on the set.
- 2 Connect the antenna cable to the **ANT IN** socket of the VCR.
- 3 Press the **PLAY** button on the VCR and match the appropriate program between the TV and VCR for viewing.

## EXTERNAL EQUIPMENT SETUP

### When connecting with a RCA cable

EXTERNAL EQUIPMENT SETUP



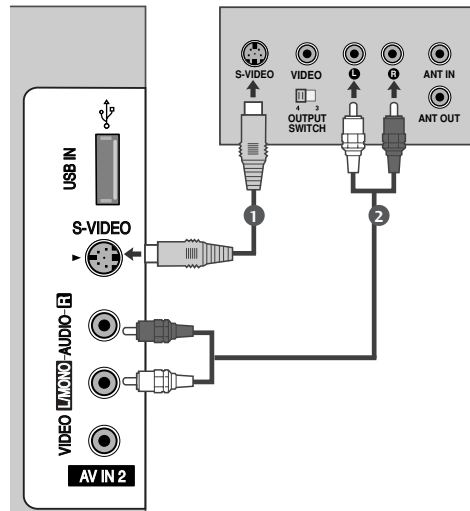
- 1 Connect the **AUDIO/VIDEO** jacks between TV and VCR. Match the jack colors (Video = yellow, Audio Left = white, and Audio Right = red)
- 2 Insert a video tape into the VCR and press PLAY on the VCR. (Refer to the VCR owner's manual.)
- 3 Select **AV1** input source using the **INPUT** button on the remote control. If connected to **AV IN2**, select **AV2** input source.

#### NOTE

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

## When connecting with an S-Video cable

- 1 Connect the S-VIDEO output of the VCR to the **S-VIDEO** input on the set. The picture quality is improved; compared to normal composite (RCA cable) input.
- 2 Connect the audio outputs of the VCR to the **AUDIO** input jacks on the set.
- 3 Insert a video tape into the VCR and press **PLAY** on the VCR. (Refer to the VCR owner's manual.)
- 4 Select **AV2** input source with using the **INPUT** button on the remote control.



EXTERNAL EQUIPMENT SETUP

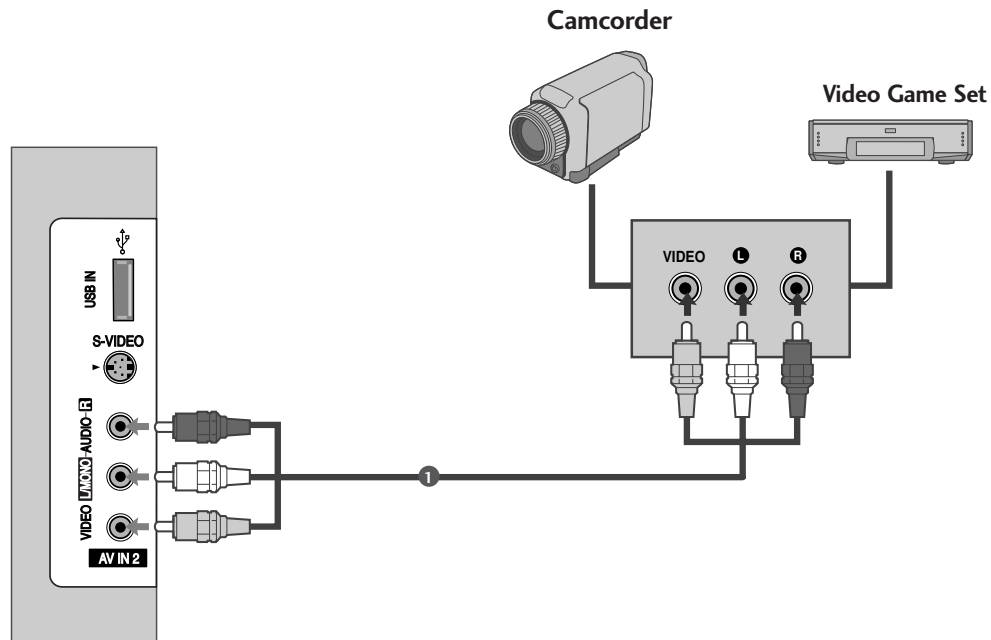
### ! NOTE

- ▶ If both S-VIDEO and VIDEO sockets have been connected to the S-VHS VCR simultaneously, only the S-VIDEO can be received.

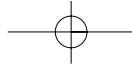
## EXTERNAL EQUIPMENT SETUP

### OTHER A/V SOURCE SETUP

EXTERNAL EQUIPMENT SETUP



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



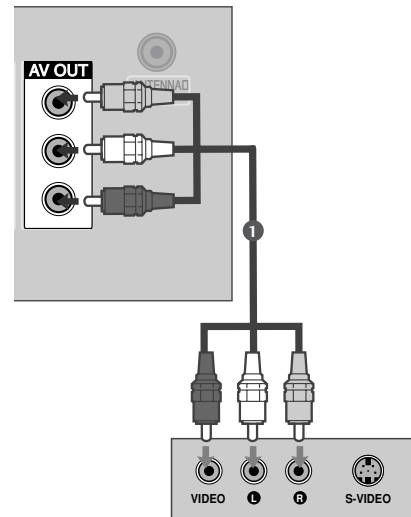
## AV OUTPUT SETUP

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

- 1 Connect the second TV or monitor to the TV's **AV OUT** jacks.
- 2 See the Operating Manual of the second TV or monitor for further details regarding that device's input settings.

### NOTE

- ▶ Component, RGB, HDMI input sources cannot be used for AV out.
- ▶ We recommend to use the AV OUT jacks for VCR recording.



EXTERNAL EQUIPMENT SETUP

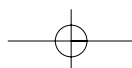
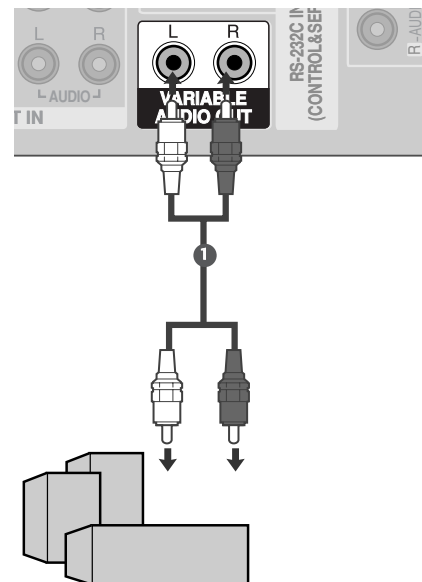
## EXTERNAL STEREO SETUP

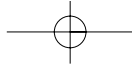
Use to connected either an external amplifier, or add a sub-woofer to your surround sound system.

- 1 Connect the input jack of the stereo amplifier to the **VARIABLE AUDIO OUT** jacks on the set.
- 2 Set up your speakers through your analog stereo amplifier, according to the instructions provided with the amplifier.

### NOTE

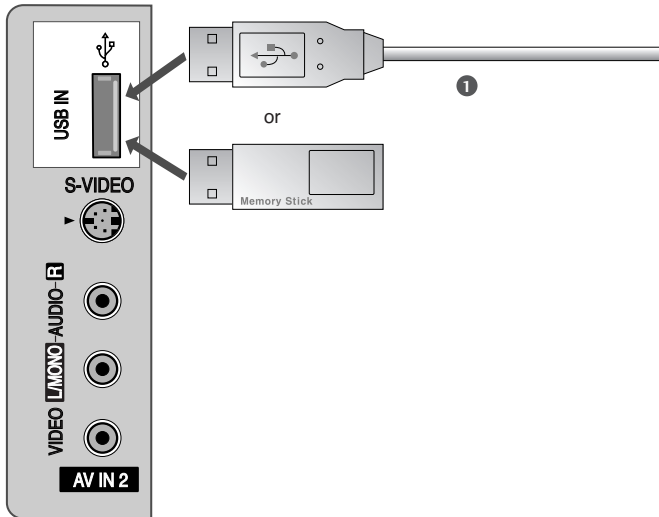
- ▶ When connecting with external audio equipments, such as amplifiers or speakers, please turn the TV speakers off. (▶ p.98)





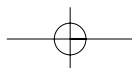
# EXTERNAL EQUIPMENT SETUP

## USB IN SETUP

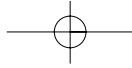


EXTERNAL EQUIPMENT SETUP

- 1 Connect the USB device to the **USB IN** jacks on the side of TV.
- 2 After connecting the **USB IN** jacks, you use the **TIME MACHINE** function. (► p.60)



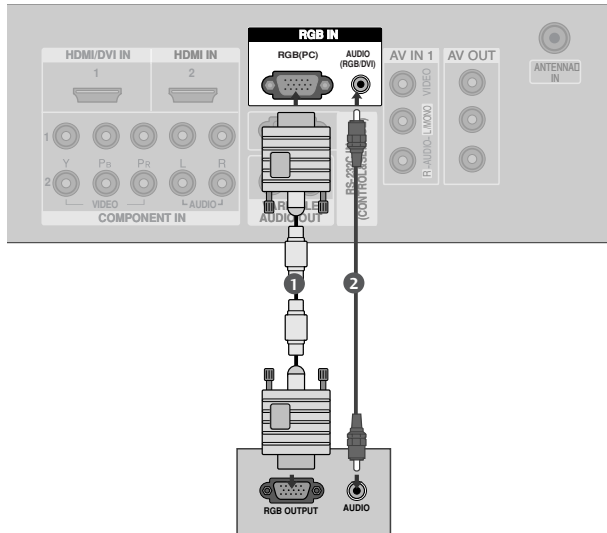




## PC SETUP

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

### When connecting with a D-sub 15 pin cable

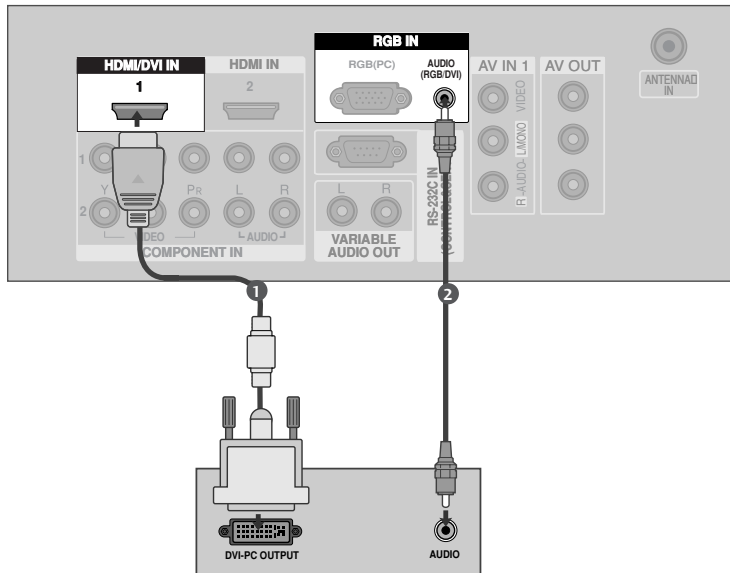


- 1 Connect the RGB output of the PC to the **RGB (PC)** jack on the set.  
.....
- 2 Connect the PC audio output to the **AUDIO (RGB/DVI)** jack on the set.  
.....
- 3 Turn on the PC and the set.  
.....
- 4 Select **RGB** input source with using the **INPUT** button on the remote control.

## EXTERNAL EQUIPMENT SETUP

### When connecting with a HDMI to DVI cable

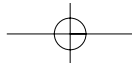
EXTERNAL EQUIPMENT SETUP



- 1 Connect the DVI output of the PC to the **HDMI/DVI IN 1** jack on the set.
- 2 Connect the PC audio output to the **AUDIO (RGB/DVI)** jack on the set.
- 3 Turn on the PC and the set.
- 4 Select **HDMI1/DVI** input source with using the **INPUT** button on the remote control.

#### ! NOTE

- ▶ If the PC has a DVI output and no HDMI output, a separated audio connection is necessary.
- ▶ If the PC does not support Auto DVI, you need to set the output resolution appropriately.

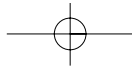


### Supported Display Resolution (RGB/HDMI[PC]mode)

Resolution	Horizontal Frequency(kHz)	Vertical Frequency(Hz)
720x400	31.468	70.08
640x480	31.469 37.500	59.94 75.00
800x600	37.879 46.875	60.31 75.00
1024x768	48.363 56.476 60.023	60.00 70.06 75.02
1280x768	47.776	59.87
1360x768	47.712	60.01
1366x768	47.700	60.00

#### ! NOTE

- ▶ To enjoy vivid picture and sound, connect a PC to the set.
- ▶ Avoid keeping a fixed image on the set's screen for a long period of time. The fixed image may become permanently imprinted on the screen; use a screen saver when possible.
- ▶ Connect PC to the RGB (PC) or HDMI IN (or HDMI/DVI IN) port of the set; change the resolution output of PC accordingly.
- ▶ There might be noise according to some resolution, vertical pattern, contrast or brightness in PC mode. Change the PC mode into another resolution or change the refresh rate into another rate or adjust the brightness and contrast on the menu until the picture is clean. If the refresh rate of the PC graphic card can not be changed, change the PC graphic card or consult it to the manufacturer of the PC graphic card.
- ▶ The synchronization input waveform for Horizontal and Vertical frequencies are separate.
- ▶ We recommend using 1366x768, 60Hz (LCD TV models) / 1024x768, 60Hz (42 inch PLASMA TV models) / 1360x768, 60Hz (50 inch PLASMA TV models) for the PC mode, they provide the best picture quality.
- ▶ Connect the signal cable from the monitor output port of the PC to the RGB (PC/DTV) port of the set or the signal cable from the HDMI output port of the PC to the HDMI IN (or HDMI/DVI IN) port on the set.
- ▶ Connect the audio cable from the PC to the Audio input on the set. (Audio cables are not included with the set).
- ▶ If using a sound card, adjust PC sound as required.
- ▶ This set uses a VESA Plug and Play Solution. The set provides EDID data to the PC system with a DDC protocol. The PC adjusts automatically when using this set.
- ▶ DDC protocol is preset for RGB (Analog RGB), HDMI (Digital RGB) mode.
- ▶ If required, adjust the settings for Plug and Play functionally.
- ▶ If graphic card on the PC does not output analog and digital RGB simultaneously, connect only one of either RGB or HDMI IN (or HDMI/DVI IN) to display the PC on the set.
- ▶ If graphic card on the PC does output analog and digital RGB simultaneously, set the set to either RGB or HDMI; (the other mode is set to Plug and Play automatically by the set.)
- ▶ DOS mode may not work depending on video card if you use a HDMI to DVI cable.
- ▶ When you use too long RGB-PC cable, there might be a noise on the screen. We recommend using under 5m of the cable. It provides the best picture quality.

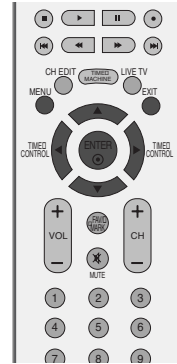


# EXTERNAL EQUIPMENT SETUP

## Screen Setup for PC mode

### Auto Configure (RGB mode only)

Automatically adjusts picture position and minimizes image shaking. After adjustment, if the image is still not correct, your set is functioning properly but needs further adjustment.

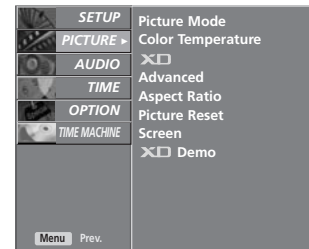


#### Auto configure

This function is for the automatic adjustment of the screen position, clock, and phase. The displayed image will unstable for a few seconds while the auto configuration is in progress.

EXTERNAL EQUIPMENT SETUP

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



2 Press the **▶** button and then use **▲ / ▼** button to select **Screen**.



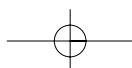
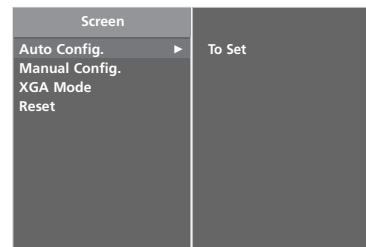
3 Press the **▶** button and then use **▲ / ▼** button to select **Auto Config..**

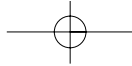
4 Press the **▶** button to start **Auto Config..**

- When **Auto config.** has finished, **OK** will be shown on screen.
- If the position of the image is still not correct, try **Auto adjustment** again.

- If picture needs to be adjusted more after **Auto adjustment** in RGB, you can adjust the **Manual Config..**

5 Press the **EXIT** button to return to TV viewing.





## Adjustment for screen Phase, Clock, Position

If the picture isn't clear after auto adjustment and especially if characters are still trembling, adjust the picture phase manually.

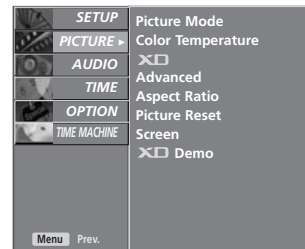
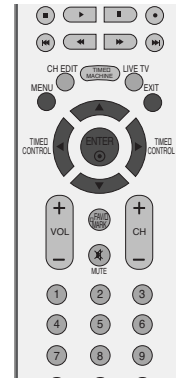
To correct the screen size, adjust **Clock**.

This function works in the following mode : RGB, COMPONENT (480i/480p/720p/1080i/1080p), HDMI (480p/720p/1080i/1080p).

It's not available to use Phase, Clock function in COMPONENT (480i/480p/720p/1080i/1080p), HDMI (480p/720p/1080i/1080p).

**Clock** 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.



1

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

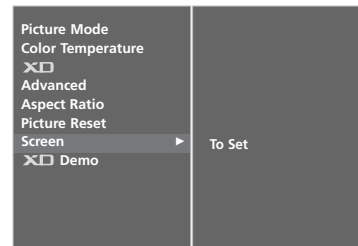
2 Press the ► button and then use ▲ / ▼ button to select **Screen**.

3 Press the ► button and then use ▲ / ▼ button to select **Manual Config..**

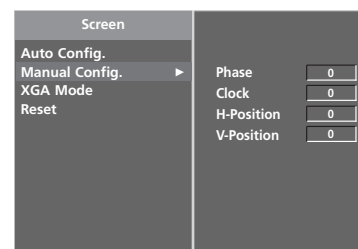
4 Press the ► button and then use ▲ / ▼ button to select **Phase, Clock, H-Position** or **V-Position**.

5 Press the ◀ / ▶ button to make appropriate adjustments.

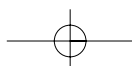
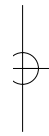
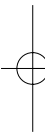
6 Press the **EXIT** button to return to TV viewing.

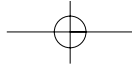


2



3 4 5





# EXTERNAL EQUIPMENT SETUP

## Selecting Wide XGA mode

To see a normal picture, match the resolution of RGB mode and selection of XGA mode.

This function works in the following mode: RGB-PC mode.

EXTERNAL EQUIPMENT SETUP

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

---

- 2 Press the ► button and then use ▲ / ▼ button to select **Screen**.

---

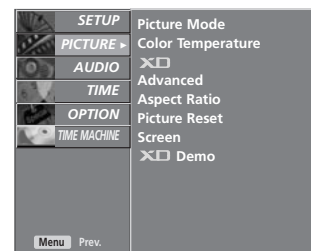
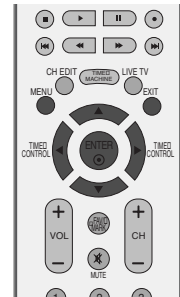
- 3 Press the ► button and then use ▲ / ▼ button to select **XGA Mode**.

---

- 4 Press the ► button and then use ▲ / ▼ button to select the desired XGA resolution.

---

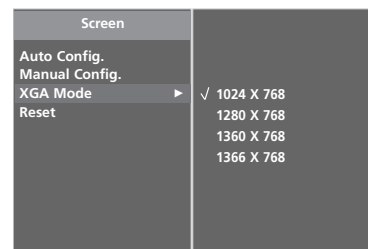
- 5 Press the **EXIT** button to return to TV viewing.



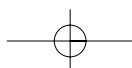
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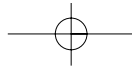


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3 4

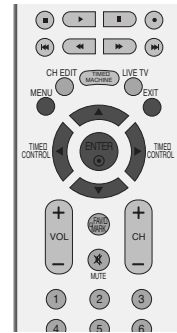




## Initializing (Reset to original factory settings)

This function operates in current mode.

To initialize the adjusted value



EXTERNAL EQUIPMENT SETUP

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

---

- 2 Press the ► button and then use ▲ / ▼ button to select **Screen**.

---

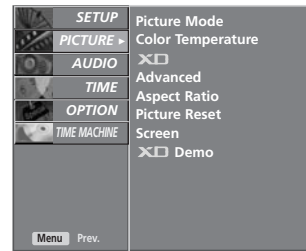
- 3 Press the ► button and then use ▲ / ▼ button to select **Reset**.

---

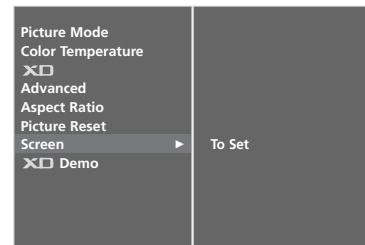
- 4 Press the ► button.

---

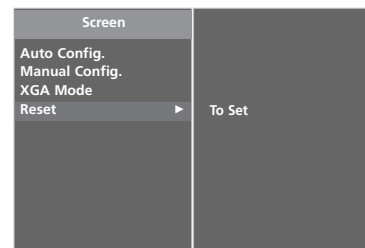
- 5 Press the EXIT button to return to TV viewing.



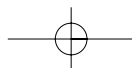
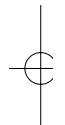
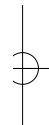
1



2



3 4



# WATCHING TV / SETUP CONTROL

## REMOTE CONTROL KEY FUNCTIONS

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

**WATCHING TV / SETUP CONTROL**

**POWER** Switches the set on from standby or off to standby.

**TV INPUT** Returns to the TV viewing from any mode. Switches the set on from standby.

**INPUT** If you press the button once, the input source OSD will appear on screen as shown. Press the ▲ / ▼ button and then ENTER button to select the desired input source (TV, AV1, AV2, Component1, Component2, RGB, HDMI1/DVI or HDMI2).

**RATIO** Selects your desired picture format.

**Brightness adjustment** Adjusts screen brightness. It returns to the default settings brightness by changing mode source.

**1** **PIP** Switches the sub picture PIP, DW mode.

**PIP CH - / +** Selects a channel for the sub picture.

**SWAP** Exchanges the main/sub images in PIP/DW.

**PIP INPUT** Selects the input source for the sub picture in PIP/DW picture mode.

**SIZE** Adjusts the sub picture size.

**POSITION** Moves the sub picture.

**TIME CONTROL/VCR/DVD control buttons** Controls some video cassette recorders or DVD players when you have already selected DVD or VCR mode button. Control connected AV devices by pressing the ▲ / ▼ / ◀ / ▶, ENTER buttons and buttons for play, stop, pause, fast reverse, fast forward, chapter skip. (The ● button does not provide such functions.) Use for TIME CONTROL record or trick play.

**MENU** Selects a menu.

**CH EDIT** Memorizes or erases selected channel.

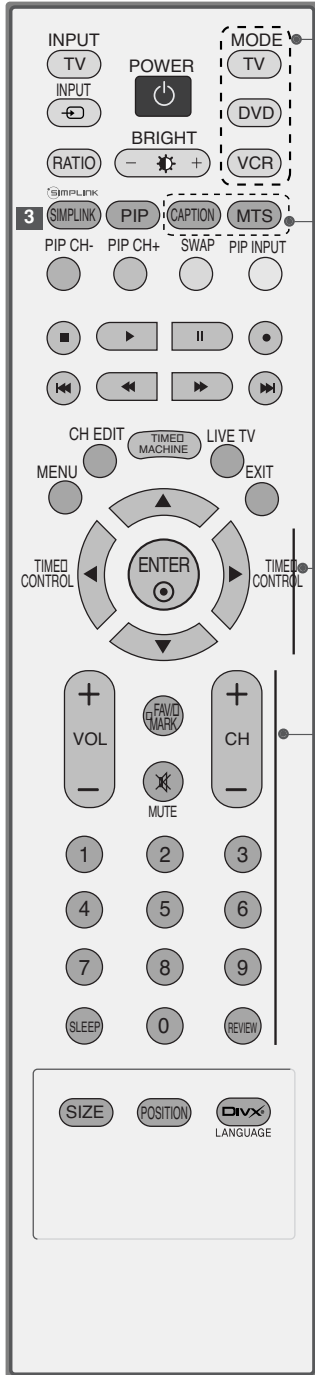
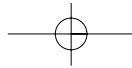
**TIME MACHINE** Brings up the Home menu.

**LIVE TV** In Delayed mode, the screen returns to Live program from TV, AV1, AV2 and Component1, Component2 modes.

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

**2** **DivX** Selects a DivX Audio Language or Subtitle Language.





**MODE** Selects the remote operating modes.

**3 SIMPLINK** See a list of AV devices connected to TV. When you toggle this button, the Simplink menu appears at the screen. (▶ p.50)

**CAPTION** Selects CAPTION mode.

**MTS** Selects the MTS sound: **Mono**, **Stereo**, or **SAP**.

**THUMBSTICK** Allows you to navigate the on-screen menus and adjust the system settings to your preference.  
(Up/Down/Left Right) Adjusts the Time machine function.  
(TIME CONTROL)

**ENTER** Accepts your selection or displays the current mode.

**VOLUME UP/DOWN** Adjusts the volume.

**FAV** Displays the selected favorite channel.

**MARK** Check and un-check channels in the recorded TV menu.

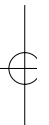
**MUTE** Switches the sound on or off.

**CHANNEL UP/DOWN** Selects a channels.

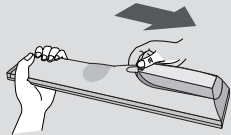
**0~9 number buttons** Selects a channels.

**SLEEP** Sets the sleep timer.

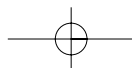
**REVIEW** Returns to the previously viewed channel.

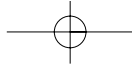


**Installing Batteries**



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



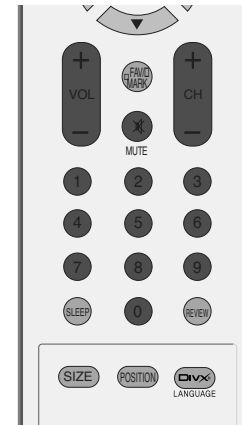
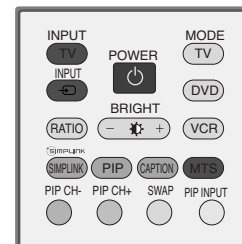


## WATCHING TV / SETUP CONTROL

### TURNING ON THE TV

If your TV will be turned on, you will be able to use its features.

- 1 First, connect power cord correctly.  
At this moment, the TV switches to standby mode.
  - In standby mode to turn TV on, press the  $\phi/|$  , **INPUT**, **CH  $\blacktriangle$  /  $\blacktriangledown$**  button on the TV or press the **POWER**, **TV**, **INPUT**, **CH + / -**, **Number(0~9)** button on the remote control and then the TV will switch on.

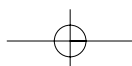


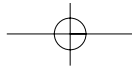
### CHANNEL SELECTION

- 1 Press the **CH + / -** or **NUMBER** buttons to select a channel number.

### VOLUME ADJUSTMENT

- 1 Press the **VOL + / -** 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**, **VOL + / -** or **MTS** button.

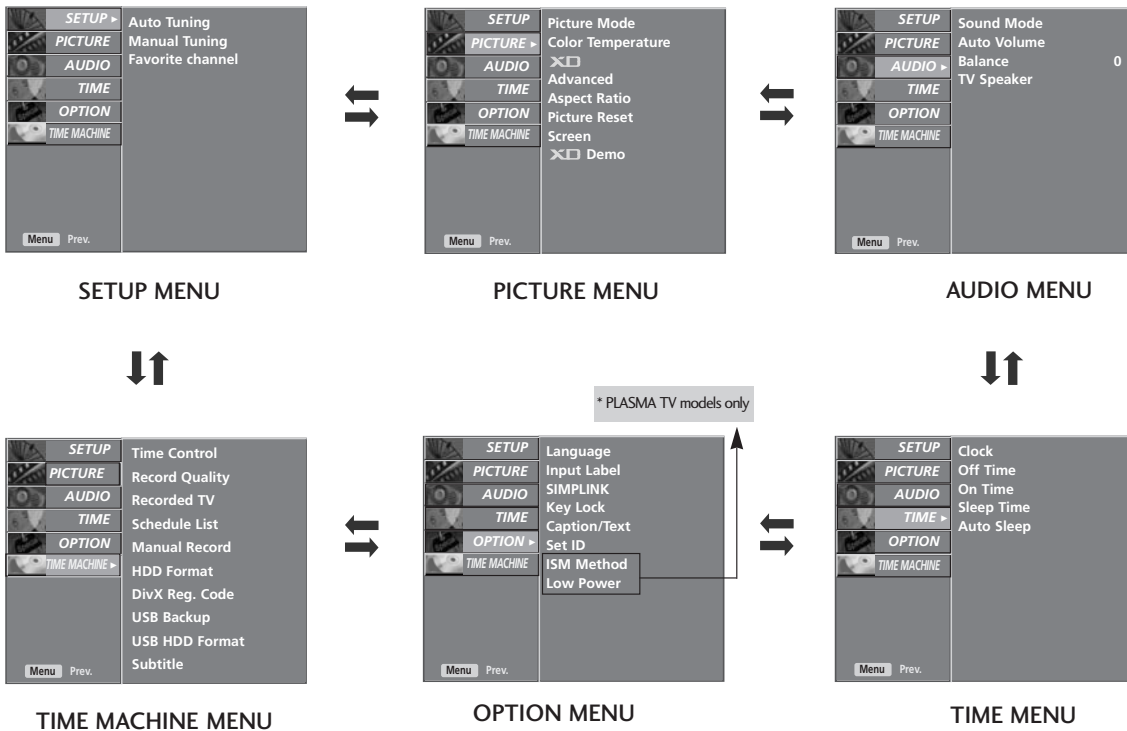




# ON SCREEN MENUS SELECTION AND ADJUSTMENT

Your TV's OSD (On Screen Display) may differ slightly from what is shown in this manual.  
The OSD mainly use pictures for the Plasma TV models.

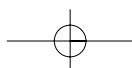
- 1 Press the **MENU** button and then ▲ / ▼ button to display each menu.
- 2 Press the ► button and then ▲ / ▼ button to select a menu item.
- 3 Change the setting of an item in the sub or pull-down menu with ◀ / ▶ button.  
You can move to the higher level menu by pressing the **ENTER** or **MENU** button.

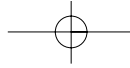


WATCHING TV / SETUP CONTROL

## ! NOTE

- ▶ The OSD (On Screen Display) function enables you to adjust the screen status conveniently since it provides graphical presentation.
- ▶ In this manual, the OSD (On Screen Display) may be different from your TV's because it is just example to help the TV operation.
- ▶ It's not available to use **SETUP** menu on playing recorded program and playing movie.





# WATCHING TV / SETUP CONTROL

## AUTO CHANNEL TUNING

Auto Tuning should be used to memorize all the active channels in your area before you are able to use the TV.

There are two ways of storing channels in the TV's memory. You can use either.

One is called **AUTO TUNING** and the other is called **MANUAL TUNING**.

In **AUTO TUNING** mode, the TV will memorize the channels in ascending numerical order. If there are additional channels you want to add or delete, you can manually add or delete those channels with Manual Tuning.

It's not available to use this function on recording program.



WATCHING TV / SETUP CONTROL

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

---

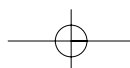
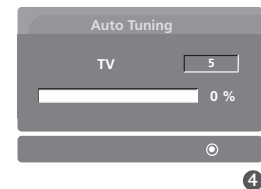
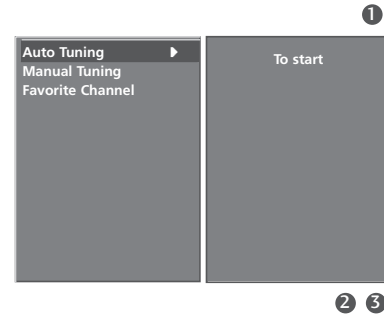
- 2 Press the **▶** button and then use **▲** or **▼** button to select **Auto Tuning**.

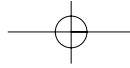
---

- 3 Press the **▶** button. **Auto Tuning** starts the channel search.

---

- 4 If you want to stop auto tuning, press the **ENTER** button.  
Only the channels found up to at that time are memorized.





## MANUAL TUNING: ADDING/DELETING CHANNELS

You can add or delete channels from the channel scan manually.

- 1 Use the **CH+/-** or **NUMBER** buttons to select the channel number you want to add or delete.

---

- 2 Press the **CH EDIT** button.

---

- 3 Press the **CH EDIT** button to select **Memory** or **Erase**.

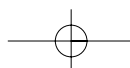
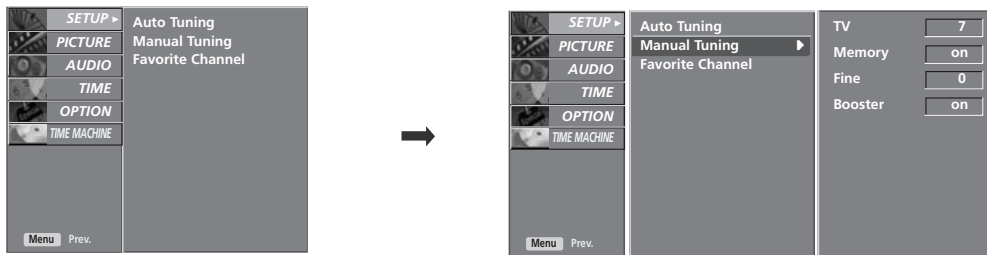
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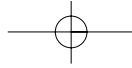
- 4 Press the **ENTER** button.



WATCHING TV / SETUP CONTROL

■ You can also use the **SETUP** menu to adjust **Manual Tuning**.

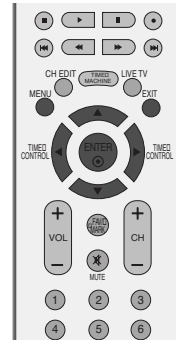




# WATCHING TV / SETUP CONTROL

## FINE TUNING ADJUSTMENT

Normally fine tuning is only necessary if reception is poor.  
 To remove fine tuning from a channel, reprogram the finely-tuned channel with Auto Tuning or Manual Tuning.  
 If a finely-tuned channel is memorized, the color of the channel number changes to yellow.



WATCHING TV / SETUP CONTROL

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

---

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

---

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

---

- 4 Press the ◀ or ▶ button to adjust the picture to your preference.

---

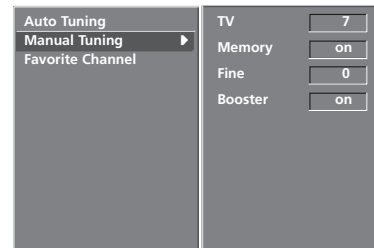
- 5 Press the **ENTER** button to store it.

---

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



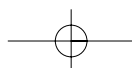
1

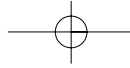


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3 4 5

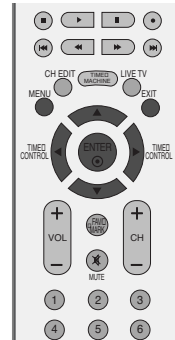




# BOOSTER

In some models, **Booster** is an optional function. Only a set with **Booster** can perform this function.

If the reception is poor at the fringe area of TV signal, select **Booster to On**.



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

---

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

---

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

---

- 4 Press the **◀** or **▶** button to select **On** or **Off**.

---

- 5 Press the **ENTER** button to store it.

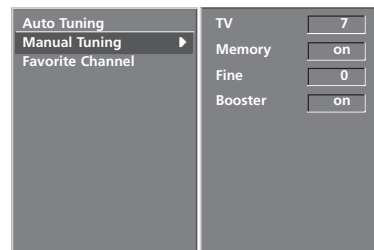
---

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

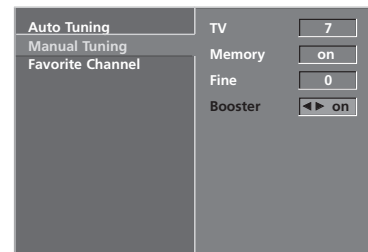
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1

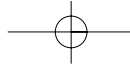


2



3 4 5

WATCHING TV / SETUP CONTROL



# WATCHING TV / SETUP CONTROL

## FAVORITE CHANNELS SETUP

This function lets you select your favorite channels directly.

Repeatedly press the **FAV** button to select stored favorite channels.

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

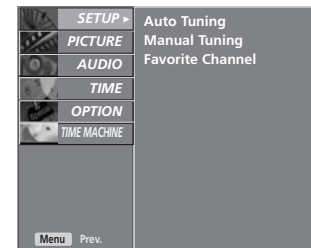
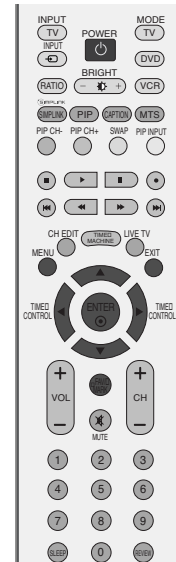
**2** Press the **▶** button and then **▲ / ▼** button to select **Favorite Channel**.

**3** Press the **▶** button and then use **▲** or **▼** button to select the first favorite channel position.

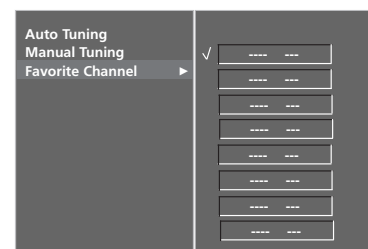
**4** Use the **◀** or **▶** button to set the desired channel number for first favorite channel.

**5** Repeat steps 3 to 5 to memorize other favorite channels.  
 ■ You can store up to 8 channels.

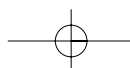
**6** Press the **EXIT** button to return to TV viewing or press the **MENU** button to return to the previous menu.



**1**



**2 3 4 5**





# INPUT SOURCE SELECTION

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

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

---

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

---

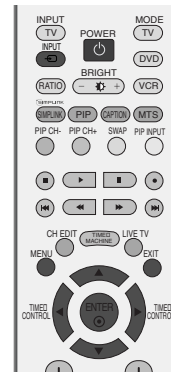
- 3 Press the **▶** button and then use **▲** / **▼** button to select the source: AV1, AV2, Component1, Component2, RGB, HDMI1/DVI or HDMI2.

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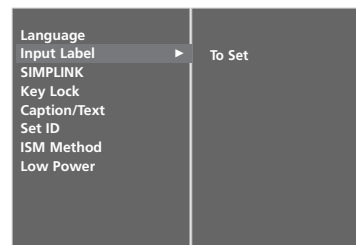
- 4 Press the **▶** button and then use **▲** or **▼** button to select the label.

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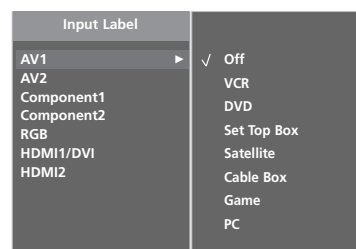
- 5 Press **EXIT** button to return to normal TV viewing.



1



2



3 4

WATCHING TV / SETUP CONTROL

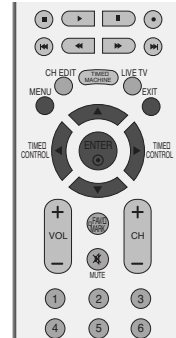
# WATCHING TV / SETUP CONTROL

## KEY LOCK

The TV can be set so that the remote control is needed to control it.

This feature can be used to prevent unauthorized viewing.

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

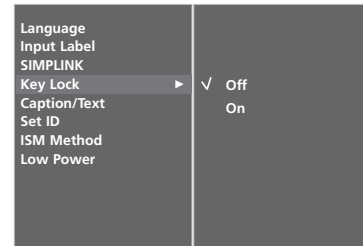


**1** Press the **MENU** button and then **▲ / ▼** button to select the **OPTION** menu.

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

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

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



**1**

**2 3**

### ! NOTE

- ▶ In **Key Lock 'On'**, if the set is turned off, press the **⏻ / I**, **INPUT**, **CH ▲ / ▼** button on the set or **POWER**, **INPUT**, **TV**, **CH +/-** or **NUMBER** buttons on the remote control then the set will be turned on.
- ▶ With the **Key Lock On**, the display **🔒 Key Lock On** appears on the screen if any button on the front panel is pressed while viewing the set.

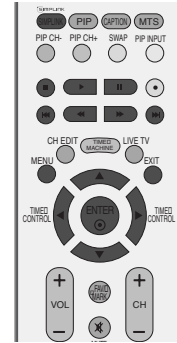


This operates only for the devices with the SIMPLINK logo. Please check the SIMPLINK logo.

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

If you do not want SIMPLINK menu, select "Off".

It's not available to use this function on recording program and playing movie.

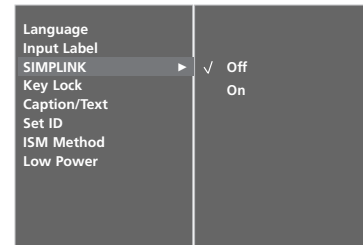


1 Press the **MENU** button and then ▲ / ▼ button to select the **OPTION** menu.

2 Press the ► button and then ▲ / ▼ button to select **SIMPLINK**.

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

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



WATCHING TV / SETUP CONTROL

## WATCHING TV / SETUP CONTROL

### SIMPLINK Functions

**Disc playback:** Control connected AV devices by pressing the ▲ / ▼ / ◀ / ▶, ENTER buttons and buttons for play, stop, pause, fast reverse, fast forward, chapter skip. (The ⏻ button does not provide such functions)

**Direct Play:** After connecting AV devices to TV, you can directly control the devices and play media without additional settings.

**Select AV device:** Enables you to select one of AV devices connected to TV and play it.

**Power off all devices:** When you power off TV, all connected devices are turned off.

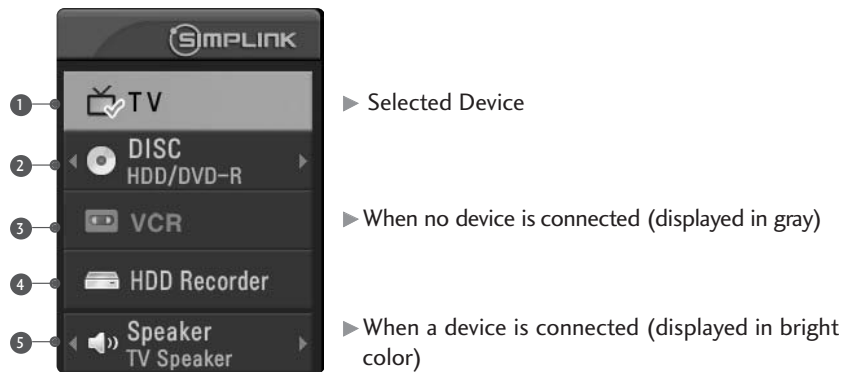
**Switch audio-out :** Offers an easy way to switch audio-out.

\* A device, which is connected to TV through HDMI cable but does not support Simplink, does not provide this function.

### SIMPLINK Menu

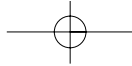
Press the ▲ / ▼ / ◀ / ▶ button and then ENTER button to select the desired SIMPLINK source.

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

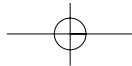


Note: To operate SIMPLINK, the HDMI cable over 1.2 version with \*CEC function should be used.  
(\*CEC: Consumer Electronics Control)

Version 1.2 is the cable connected to No. 13 Pin and is the line to exchange information between units.

**NOTE**

- ▶ Connect the HDMI/DVI IN or HDMI IN terminal of the TV to the rear terminal (HDMI terminal) of the SIMPLINK device with the HDMI cable.
- ▶ After connecting the HDMI terminal for the home theater with SIMPLINK function in the above method, connect the VARIABLE AUDIO OUT terminal on the back of the TV to the VARIABLE AUDIO IN terminal on the back of the SIMPLINK device with the VARIABLE AUDIO OUT cable.
- ▶ When operating the external device with SIMPLINK, press the TV button among the MODE button on the remote controller.
- ▶ When you switch the Input source with the INPUT button on the remote controller, you can stop the operation of device controlled by SIMPLINK.
- ▶ When you select or operate the media device with home theater function, the speaker automatically switches to home theater speaker (HT speaker).
- ▶ If the SIMPLINK is operated, the keys such as stop / play / pause / fast reverse / fast forward / chapter skip are used for driving the SIMPLINK device, but not used for the TIME MACHINE feature.



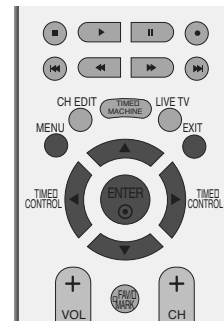
# TIME MACHINE

## TIME CONTROL (PAUSE & REPLAY OF LIVE TV)

This function allows the unit to automatically record live TV and make it available for reviewing at any time.

With Time control turned on, you may pause and rewind normal TV viewing at any time without missing any of the live broadcast.

(Time control and Recording functions might not work if the signal strength is weak.)



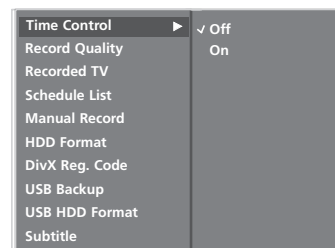
1

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

2 Press the ► button and then use ▲ / ▼ button to select the **Time Control**.

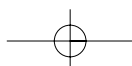
3 Press the ► button and then use ▲ / ▼ button to select **On** or **Off**.

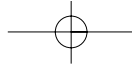
4 Press the **EXIT** button to return to normal TV viewing.



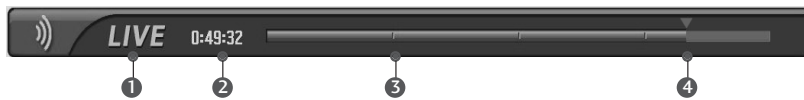
2 3

TIME MACHINE





## Using the Time Control function



### 1 After selecting the **Time Control On**, press the **ENTER** button.

- As soon as Time Control starts, a progress bar indicating the current recording status is displayed in the bottom of the screen.
- Press the **EXIT** button to hide the 'Progress Bar' or press the **ENTER** button to display the 'Progress Bar'.
- This function is preserved even change a program on progressing the Time control.

#### The 'Progress Bar'?

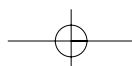
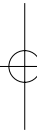
This function indicates a possible TIME MACHINE reshowing section, a current on-screen and real live broadcasting position.

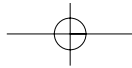
- ① Status of current displayed video.
- ② Current save time.
- ③ 15 minute intervals from Time Control start time. (Total - one hour).
- ④ Indicates current Time Control position.

### 2 When finishing the Time control function, enter the **TIME MACHINE** menu and turn **Time Control Off**.

#### ! NOTE

- ▶ **TIME MACHINE** : A device which records and plays broadcast program contents onto a hard disk in set or SET TOP BOX.
- ▶ In order to save hard-disk space, nothing is saved when there is no signal.
- ▶ The total storage space of the hard-disk is 80 GB. 4 GB minimum is reserved for Time Control.
- ▶ When turning power on, it may take up to a maximum of 3 minutes to initialize the HDD.
- ▶ The Recording function will not initiate for a copy-protected program.
- ▶ Because an analog broadcast is transferred to a digital signal, video that contains rapid movement may show "cross stripes". This happens when the analog signal is compressed and then restored in the digital signal. The unit will attempt to reduce this excessive picture noise.
- ▶ When using the PIP/DW mode, Time Control is stopped.
- ▶ Time Control is available in TV, AV1, AV2, Component(480i/480p/720p/1080i) mode.
- ▶ Time Control is not available for Audio only channels.
- ▶ Maximum recording file size is up to 16GB (4Hr).





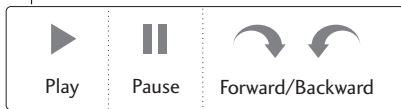
# TIME MACHINE

## Using the Time Control function, play

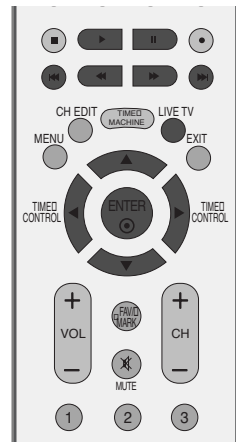
- When in time Control, the following options are available.



Indicates that the current broadcast and displayed video differ.



- When pressing the ● button delaying Time Control, Time Control is dumped. And delayed time is recording.

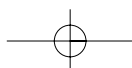


## Using the remote control

You can shift playback to any point within the recorded program.

TIME MACHINE

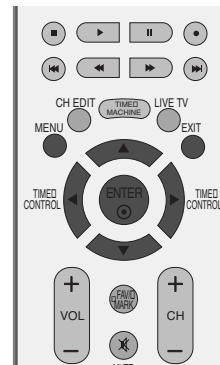
◀ / ▶	<p>When playing,</p> <p>repeatedly, press the <b>REW</b>(◀◀) button to speed up ◀◀ → ◀◀◀◀ → ◀◀◀◀◀◀ → ◀◀◀◀◀◀◀◀.</p> <p>repeatedly, press the <b>FF</b>(▶▶) button to speed up ▶▶ → ▶▶▶▶ → ▶▶▶▶▶▶ → ▶▶▶▶▶▶▶▶.</p> <ul style="list-style-type: none"> <li>Pressing these buttons repeatedly increases the fast forward/reverse speed.</li> </ul>
◀◀ / ▶▶	<ul style="list-style-type: none"> <li>Press the ▶▶  button to jump about 20 seconds forward.</li> <li>Pressing the  ◀◀ button to jump about 8 seconds backward.</li> </ul>
	<p>During playback, press the <b>Pause</b>(  ) button.</p> <ul style="list-style-type: none"> <li>Still screen is displayed.</li> <li>Repeatedly press the <b>Pause</b>(  ) button to advance frame by frame.</li> <li>Press the <b>Pause</b>(  ) button and then use the <b>FF</b>(▶▶) button for slow motion (the ▶  icon is displayed.)</li> <li>Press the <b>Pause</b>(  ) button and then use the <b>REW</b>(◀◀) button for slow motion (the ◀  icon is displayed.)</li> </ul>
◀ / ▶	<ul style="list-style-type: none"> <li>When using the ◀ or ▶ button during playback a cursor indicating the position can be viewed on the screen.</li> </ul>
<b>PLAY</b> (▶)	<p>Press the <b>PLAY</b>(▶) button to return to normal playback.</p>
<b>LIVE TV</b>	<p>If you want to return to the current live broadcast, press the <b>LIVE TV</b> button.</p>





## FORMAT HARD DISK

Erases all programs and initializes the hard disk.  
It's available to use this function on Time Control off.



- 1 Press the **MENU** button and then use ▲ / ▼ button to select the **TIME MACHINE** menu.
- 2 Press the ► button and then use ▲ / ▼ button to select **HDD Format**.
- 3 Press the ► button to start **HDD Format**.



1

- if you press the ► button, this message is displayed.
 

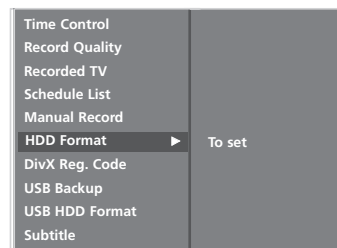
Do you want to format HDD?

Yes      No
- if you select Yes, this message is displayed.
 

HDD formatting is started.
- When completing, this message is displayed.
 

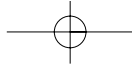
HDD formatting is completed.

- 4 Press the **EXIT** button to return to normal TV viewing.



2 3

TIME MACHINE




# TIME MACHINE

## INSTANT RECORDING



Use this function to record the programme you are watching on the main screen.

### Instant Record

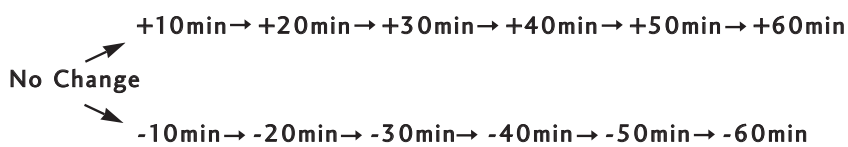
This function records the currently displayed program.

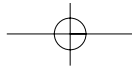
- 1 Select the program you wish to record and then press the ● button.  
During recording  is displayed. Use this feature to record up to 2 hours of programming.

- 2 If you want to stop recording, press the ■ button.

- While recording, if you press the ■ button less than 10 seconds after recording started, this message is displayed.  Recording is not completed. Recording time must exceed 10 seconds.
- If you press the ■ button more than 10 seconds after recording started, this message is displayed.  Recording is completed.

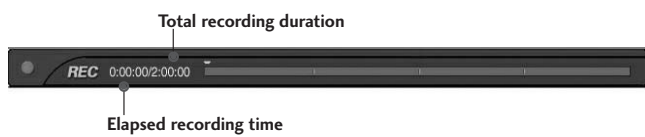
- 3 You can increase or decrease recording time by pressing the ● button while recording. After pressing the ● button, press the ◀ / ▶ buttons repeatedly to increase or decrease the recording time. Each time you press ◀ / ▶ button the recording duration changes as shown below.





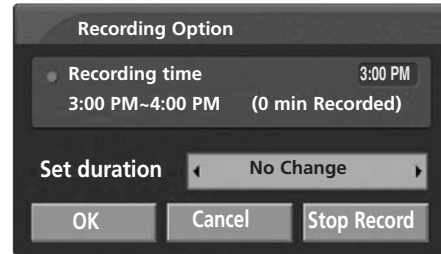
The extra recording time added to existing setting equals the final recording time.

- 4 After adjusting the recording time, select **ENTER**. The Status bar will be displayed.



- Press the **EXIT** button to hide the Status bar. Press the **ENTER** button to display the Status bar.

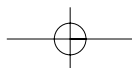
- 5 Recording stops when the selected duration is reached or when you press the **■** button. Although recording has stopped, the Time control feature remains active.

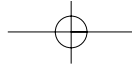


### ! NOTE

- ▶ When recording, if the available storage space becomes low, the recording will be automatically stopped.
- ▶ Recordings of less than 10 seconds will not be saved.
- ▶ To save disk space while recording broadcasts, no data will be saved if there is no signal.
- ▶ The recording function will not initiate for a copy-protected program.
- ▶ The displayed time may differ slightly from the actual time.
- ▶ In there is no signal or a film source is being viewed, the displayed time may differ slightly from the actual time.
- ▶ Time control recording is not possible with copy-protected programs.

- ▶ When a poor quality external source is recorded (old VHS tape for example) the quality of the recording will not be as good as it could be.
- ▶ Programs are stored separately according to the color system that they are using. e.g. PAL/NTSC.
- ▶ Manual Recording available time is maximum 4 hours and minimum 5 minutes.





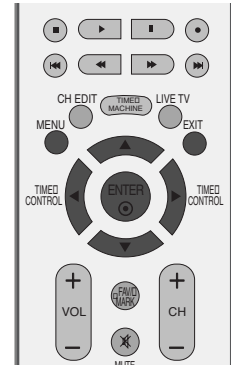
# TIME MACHINE

## MANUAL RECORD

This function is easy to register to reserved recording.

This function is also available in TIME MACHINE menu.

When Manual Record, it's stored the default sound of the set.

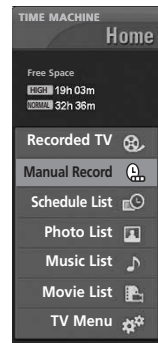


- 1 Press the **TIME MACHINE** button to display **Home** menu. Use the **▲ / ▼** button to select the **Manual Record** and then use the **ENTER** or **▶** button.

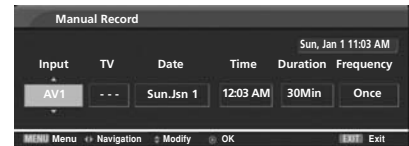
- 2 **Manual Record** screen is displayed as shown below. Use the **▲ / ▼ / ◀ / ▶** button to set the **Input, TV/CATV, Date, Time, Duration, Frequency**.

- ▶ **Input** : Select the input source from the TV, AV1, AV2, Component1/2(480i).
- ▶ **TV/CATV** : Select either the current channel or a scanned channel.
- ▶ **Date** : You can select a date up to one month in the future.
- ▶ **Time /Duration** : Ensure you have set correctly.
- ▶ **Frequency** : Choose among Once, Daily and Weekly.

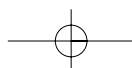
- 3 After setting the **Manual Record**, press the **ENTER** button.

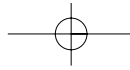


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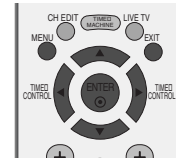




## SCHEDULE LIST

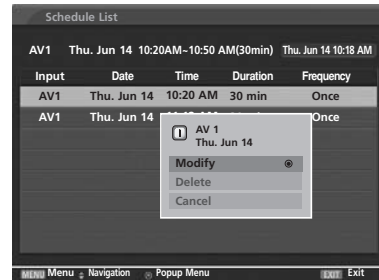
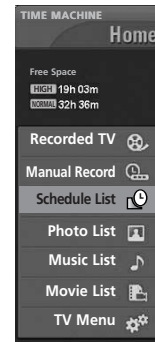
This function is used to show scheduled recordings.  
 This function is also available in TIME MACHINE menu.

You can store up to 8 programs.



- 1 Press the **TIME MACHINE** button to display **Home** menu. Use the ▲ / ▼ button to select the **Schedule List** and then use the **ENTER** or ► button.
- 2 **Schedule List** screen is displayed as shown below. Use the ▲ / ▼ button to select recorded program.
- 3 Press the **ENTER** button to open the Pop-up Menu.

- ▶ **Modify** : Modify the schedule list.
- ▶ **Delete** : Delete the schedule list.



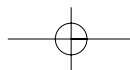
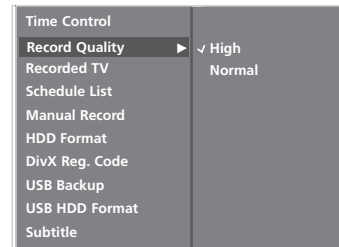
TIME MACHINE

## RECORD QUALITY

When recording analogue broadcasts and external input signals, the Record Quality can be selected.

This function is not available while a recording is taking place.

- 1 Press the **MENU** button and then use ▲ / ▼ button to select the **TIME MACHINE** menu.
- 2 Press the ► button and then use ▲ / ▼ button to select **Record Quality**.
- 3 Press the ► button and then use ▲ / ▼ button to select **High** or **Normal**.
- 4 Press the **EXIT** button to return to normal TV viewing.



# TIME MACHINE

## TO USE THE USB DEVICE

### 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 programme may not be recognized.
- ▶ A USB storage device which uses its own driver may not be recognized.
- ▶ In case of a card reader, up to four memory cards are concurrently recognizable.
- ▶ The recognition speed of a USB storage device may depend on each device.
- ▶ 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.
- ▶ Please do not connect the USB storage device which was artificially maneuvered on the PC. The device may cause the product to malfunction or fail to be played. Never forget to use only a USB storage device which has normal music files or image files.
- ▶ Please use only a USB storage device which was formatted as a FAT32 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.
- ▶ Please connect power to a USB storage device 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 operated smoothly.
- ▶ If the name of a folder or file is too long, it will not be displayed or recognized.
- ▶ Please backup the important file because a data of USB device may be damaged. Data management is consumer's responsibility and in consequence the manufactures does not cover the product bearing data damage.
- ▶ Supported maximum external HDD size is up to 400GB.
- ▶ Supported maximum USB memory stick size is up to 32GB.

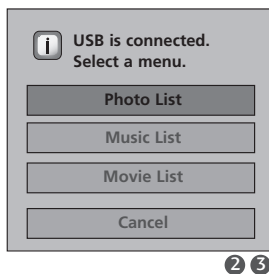
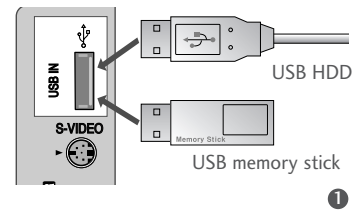
TIME MACHINE

### When connecting the USB device

Enjoy the recorded media, photo, music and Movie stored in the USB device. When you connect a USB device, this screen is displayed, automatically.

In USB device, you can not add a new folder or delete the existing folder.

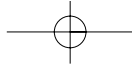
- 1 Connect the USB device to the **USB IN** jacks on the side of TV.
- 2 Press the **▲ / ▼** button to select the desired item.
- 3 Press the **ENTER** button.



For the case when the USB which contains photo, music, and movie files is connected

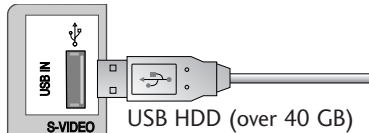


For the case when the USB which defaulted to backup use of the record list



## To use the recorded list with USB storage device

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



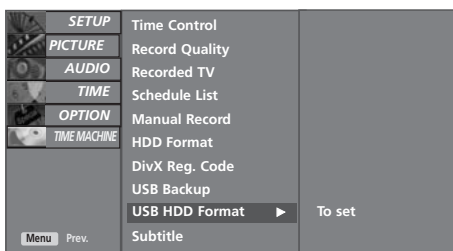
- Only USB HDD that are over 40 GB and 1 partition can be used for USB Backup.

- 2 To use the USB storage device (over 40 GB) for USB Backup, execute the "USB HDD Format"

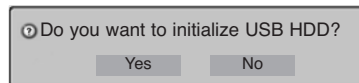
- It initializes the HDD connected to the USB as disk mode for backup.
- It is activated only when the USB HDD available for backup is connected.
- When "USB HDD Format" is executed, all the data stored in the USB storage device is deleted.
- While performing "USB HDD Format", do not remove the USB storage device.

It may cause error on the TV and the storage device.

- 1 Press the **MENU** button and then use **▲ / ▼** button to select the **TIME MACHINE** menu.
- 2 Press the **▶** button and then use **▲ / ▼** button to select **USB HDD Format**.
- 3 Press the **▶** button to start **USB HDD Format**.



- if you press the **▶** button, this message is displayed.



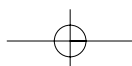
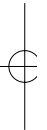
When 'Yes' is selected, a pop-up notice appears containing a message to initialize the connected USB HDD.

When initialization is complete, a pop-up notice of completion is displayed and the connected USB HDD is available for backup.

- Depending on the capacity of the USB storage device, the initialization time may vary.
- The initialized USB storage device only operates in the "Recorded List".
- The initialized USB storage device is not recognized by the PC.
- When a USB storage device of less than 40 GB is connected, the "USB HDD Format" is not activated.
- Supported maximum external HDD size for back-up is up to 400GB.

### ! NOTE

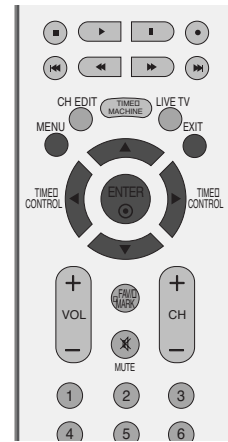
- ▶ When attempting to access the USB Backup of the TIME MACHINE menu after the initialization, an alert message is displayed and access is blocked because there are no backed up items.
- ▶ When even a single backed up file exists through 'Copy to USB HDD' from the 'Recorded TV' of the TIME MACHINE menu, the access to USB Back is allowed.



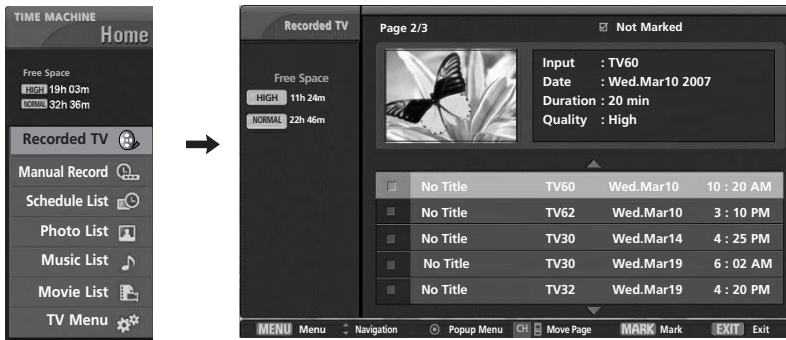
# TIME MACHINE

## RECORDED TV PROGRAM LIST

You can view the recorded programme list at a glance. This function is also available in TIME MACHINE menu.



- 1 Press the **TIME MACHINE** button to display **HOME** menu. Use the **▲** / **▼** button to select **Recorded TV** and then use the **ENTER** or **▶** button.



TIME MACHINE

## Screen Components

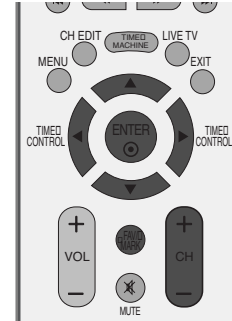
- 1 Usable HDD space
- 2 Current page/Total pages
- 3 Marked title or program
- 4 Corresponding buttons on the remote control



## Recorded program Selection and Popup Menu

The recorded program stored in the internal HDD or the USB storage device can be played.

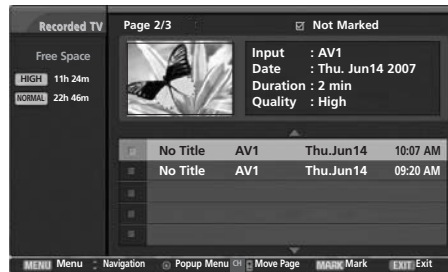
The preview recorded list is shown in the preview page.



1 Use the **CH +/-** button for page up/down navigation.

2 Use the **MARK** button to delete from the list. A  is displayed next to the preview window if an item is marked.

3 Use **▲ / ▼** button to navigation the appropriate Recorded program, then press the **ENTER** button to open the Pop-up Menu.



TIME MACHINE

- ▶ **Play** : Begin playback of selected recorded program.
- ▶ **Mark All** : mark all recorded programs on the screen.
- ▶ **Unmark All** : Change marked recorded programs to unmarked recorded programs.
- ▶ **Delete** : Delete the selected recorded programs.
- ▶ **Rename** : Edit recorded program title.
- ▶ **Copy to USB HDD** : Copies the recorded program in the internal HDD to the USB storage device. It is activated only when a USB HDD available for backup is connected.

<HDD Backup process screen>

**i** USB backup is started.  
Copying to USB HDD. (1/1)

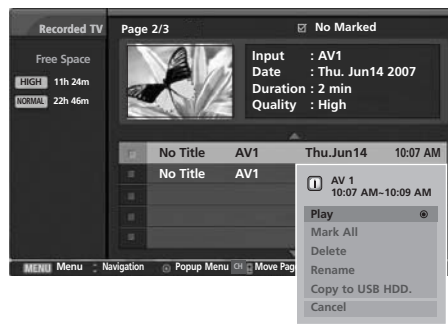
75%

**EXIT** Close ■ Stop

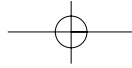
■ if you press the **■** button, this message is displayed.

**i** Do you really want to cancel the backup?

Yes No



2 3



## TIME MACHINE

- When 'Yes' is selected, the backup is cancelled and is converted back to input mode. If more than two files are transferred, the transferred file is stored, and the backup operations on the files in progress of transferring and scheduled for backup are cancelled.
- When 'No' is selected, returns to the backup process screen.




While backup is being performed in the background, the status of the copy progress can be checked by pressing the 'ENTER' button.

► **Cancel** : Close the Pop-up menu.

TIME MACHINE

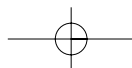
4 Repeatedly, press **EXIT** button to return to TV viewing or press **TIME MACHINE** button to return to the **Home** menu.

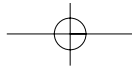
- If the HDD has a problem performing a recording related function, this message is displayed.
- If the temperature is below zero (0°), a warning message is displayed and you will not be able to use the **TIME MACHINE** functions.

 HDD initialization is in progress.

 Cannot operate DVR at low temperature.

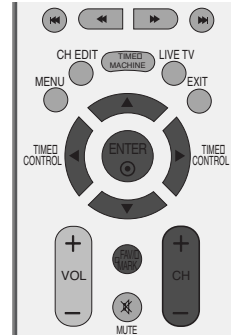
4



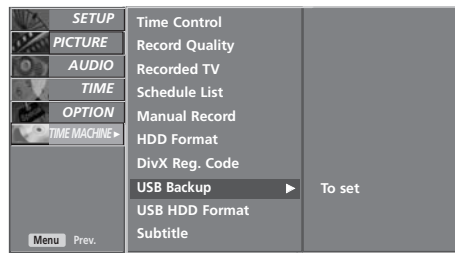


## USB BACKUP

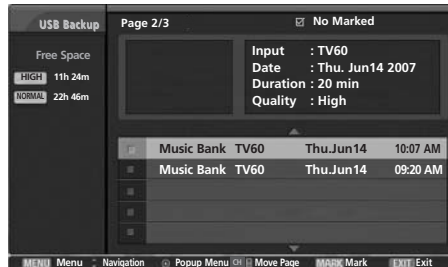
- When the Recorded List is stored exceeding the capacity of the internal HDD, the USB backup feature allows the backup of Recorded List of the internal HDD to the external HDD for backup connected through USB.
- To use USB backup function, be sure to initialize the USB HDD using TIME MACHINE menu- USB HDD format.
- To use USB Backup, USB HDD is necessary more than 40 GB, 1 partition disk, and FAT32 system.
- It only supports file backup features; therefore, playback of the Recorded List directly from the current OSD is not allowed. In order to play the recorded contents, the files must be moved to the internal HDD through the 'Copy to Recorded List' from the popup menu.
- View the list of the backed up recorded program by using the 'Copy to USB HDD' from the 'Recorded TV'.
- It moves to the external HDD list for backup connected by USB.



- 1 Press the **MENU** button and then use **▲ / ▼** button to select the **TIME MACHINE** menu.
- 2 Press the **▶** button and then use **▲ / ▼** button to select **USB Backup**.
- 3 Press the **▶** button to start **USB Backup**.
- 4 **USB Backup** screen is displayed as shown. Use the **CH +/-** button to navigation in the recorded program.  
  
Use **MARK** button to mark or unmark a recorded program.  
  
Use **▲ / ▼** button to navigation the appropriate recorded program, then press the **ENTER** button to show up the pop-up menu.

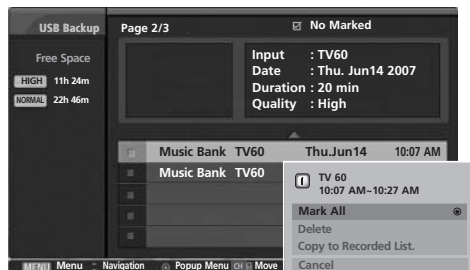


1 2 3



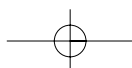
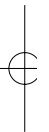
4

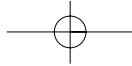
- ▶ **Mark All** : mark all recorded programs on the screen.
- ▶ **Unmark All** : Change marked recorded programs to unmarked recorded programs.
- ▶ **Delete** : Delete the selected recorded programs.



4

TIME MACHINE

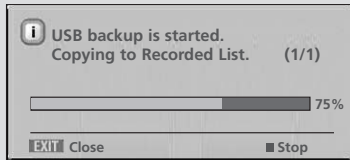




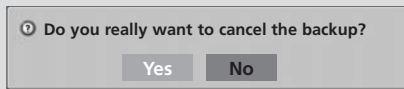
# TIME MACHINE

- ▶ **Copy to Recorded List** :Restores the Recorded Program to the internal HDD.

<HDD Backup process screen>



- if you press the **EXIT** button, this message is displayed.



- When 'Yes' is selected, the backup is cancelled and is converted back to input mode. If more than two files are transferred, the transferred file is stored, and the backup operations on the files in progress of transferring and scheduled for backup are cancelled.
- When 'No' is selected, returns to the backup process screen.



While backup is being performed in the background, the status of the copy progress can be checked by pressing the 'ENTER' button.

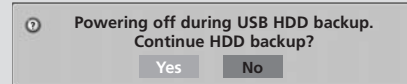
- ▶ **Cancel** : Close the pop-up menu.

- 5 Repeatedly, press **EXIT** button to return to TV viewing or press the **TIME MACHINE** button to return to the **Home** menu.

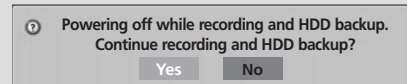
## CAUTION

- ▶ If you turn the power off on Copying or recording, this message is displayed as shown below.

<Copying>



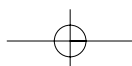
<Copying and recording>

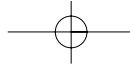


- ▶ If you selects No, Copying stops and then power is off.
- ▶ If you selects Yes, Copying continues and the power is turned off.
- ▶ If you press the **EXIT** button to disappear this message.

## NOTE

- ▶ When even a single back up file exists in the initialized USB HDD (from the USB HDD Format menu) through 'Copy to USB HDD' from the 'Recorded TV', the access to the USB Backup is allowed.
- ▶ If Manual or Instant Record operates while a recorded program is transferring from USB HDD to Recorded TV, Copying will pause.  
Then, press the **ENTER** button, and '--%' will be displayed in Record message, and after recording is completed, Copying will continue again.
- ▶ Playback is not available while recording along with USB Backup.

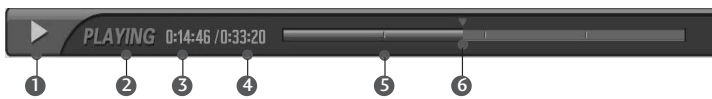




## Playing recorded programs

- You can play the selected program in the recorded program list.

- 1 Play a recorded program.
- 2 While playing, You will see a playback screen as shown below.
  - Initially, an icon showing the current playback mode is displayed . Press the **ENTER** button to display the progress bar
  - To stop displaying the recorded programs icon, press the **EXIT** button.



### The 'Progress Bar'?

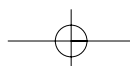
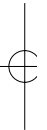
This function indicates a possible TIME MACHINE reshoving section, a current on-screen and real on-broadcasting position, a section of section-recording.

- 1 Indicates movement of recorded program.
- 2 Indicates status of recorded program.
- 3 Indicates elapsed playback time.
- 4 Indicates total playback time.
- 5 Indicates a quarter of program runtime.
- 6 Indicates current playback position.

## Using the remote control

You can shift playback to any point within playing the recorded program.

	<p>When playing,</p> <p>repeatedly, press the <b>REW</b>(◀◀) button to speed up ◀◀ → ◀◀◀◀ → ◀◀◀◀◀◀ → ◀◀◀◀◀◀◀◀ → ◀◀◀◀◀◀◀◀◀◀◀.</p> <p>repeatedly, press the <b>FF</b>(▶▶) button to speed up ▶▶ → ▶▶▶▶ → ▶▶▶▶▶▶ → ▶▶▶▶▶▶▶▶ → ▶▶▶▶▶▶▶▶▶▶.</p> <ul style="list-style-type: none"> <li>▪ Pressing these buttons repeatedly increases the fast forward/reverse speed.</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Press the <b>▶▶▶▶</b> button to jump about 20 seconds forward.</li> <li>▪ Pressing the <b>◀◀◀◀</b> button to jump about 8 seconds backward.</li> </ul>
	<p>During playback, press the <b>Pause(II)</b> button.</p> <ul style="list-style-type: none"> <li>▪ Still screen is displayed.</li> <li>▪ Repeatedly press the <b>Pause(II)</b> button to advance frame by frame.</li> <li>▪ Press the <b>Pause(II)</b> button and then use the <b>FF</b>(▶▶) button for slow motion (the  icon is displayed.)</li> <li>▪ Press the <b>Pause(II)</b> button and then use the <b>REW</b>(◀◀) button for slow motion (the  icon is displayed.)</li> </ul>
	<ul style="list-style-type: none"> <li>▪ When using the ◀ or ▶ button during playback a cursor indicating the position can be viewed on the screen.</li> </ul>
	<p>Press the <b>PLAY</b>(▶) button to return to normal playback.</p>
	<p>Press the <b>LIVE TV</b> button to jump at the front of the program.</p>
	<ul style="list-style-type: none"> <li>▪ If you press the <b>STOP</b>(■) button, you can watch set.</li> </ul>



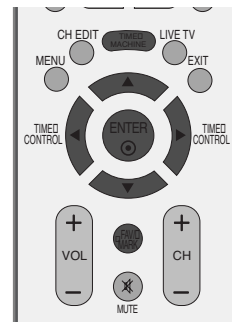
# TIME MACHINE

## PHOTO LIST

It's available to playback the photo file(\*.jpg) in the USB device.

The On Screen Display may be different from your set. Images are an example to assist with the TV operation.

Supports up to four drives.



**PHOTO(\*.JPEG) supporting file**

Baseline: width<=4800, height is no limit

- You can play JPEG files only.
- Only baseline scan is supported among JPEG.
- Non-supported files are displayed in the form of icon.

TIME MACHINE

### Screen Components

■ Press the **TIME MACHINE** button and then use ▲ / ▼ button to select the **Photo List** menu.

TIME MACHINE Home

Free Space  
19h 03m  
32h 36m

Recorded TV

Manual Record

Schedule List

**Photo List**

Music List

Movie List

TV Menu

➔

**Photo List** Page 2/3 Not Marked

USB Device

**Drive1**

UP Folder

Folder

File 1. jpg

File 2. jpg

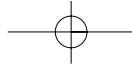
File 3. jpg

File 4. jpg

File 5. jpg

MENU Menu Navigation OK Move Page MARK Mark EXIT Exit

- ① Displays the selected drive
- ② Moves to upper level file
- ③ Current page/Total pages
- ④ Total number of marked thumbnail photos
- ⑤ Corresponding buttons on the remote control



## Photo Selection and PopUp Menu

As shown, up to 6 thumbnail photos are listed per page.

1 Use ▲ / ▼ / ◀ / ▶ buttons to select the target folder or drive then press **ENTER**.

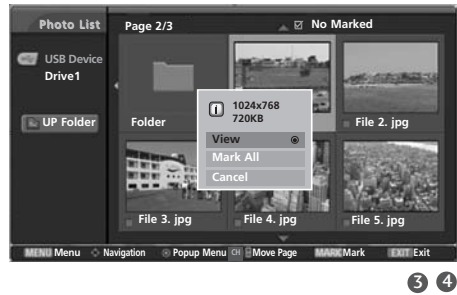
2 Use the **CH +/-** button to navigation in the thumbnail photo page.

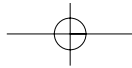
3 Use the **MARK** button to mark or unmark a photo. When one or more photos are marked, you can view individual photos or a slide show of the marked photos. If no photos are marked, you can view all photos individually or all photos in the folder in a slide show.

4 Use ▲ / ▼ / ◀ / ▶ button to navigation the appropriate thumbnail photos, then press the **ENTER** button to show the PopUp menu.

- ▶ **View** : Display the selected item.
- ▶ **Mark All** : Mark all photos on the screen.
- ▶ **View Marked**: Display the marked photos.
- ▶ **Unmark All** : Deselect all marked photos.
- ▶ **Cancel** : Close the pop-up menu.

5 Repeatedly, press **EXIT** button to return to TV viewing or press the **TIME MACHINE** button to return to the **Home** menu.





# TIME MACHINE

## Set up the menu in Full-Sized Screen

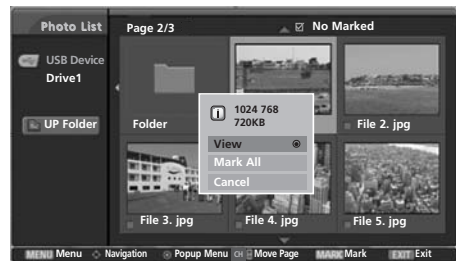
You can change the settings to display photos stored on a USB device, on a full-sized screen. Detailed operations are available on full-sized photo view screen.

- 1 Use ▲ / ▼ / ◀ / ▶ buttons to select the target folder or drive then press **ENTER**.
- 2 Use the **CH +/-** button to navigation the thumbnail photo page.
- 3 Use ▲ / ▼ / ◀ / ▶ button to navigation the appropriate thumbnail photos, then press the **ENTER** button to show the PopUp menu.
- 4 Use ▲ / ▼ button to Move to the **View** menu, then press the **ENTER** button.
- 5 The selected photo is displayed in full size.

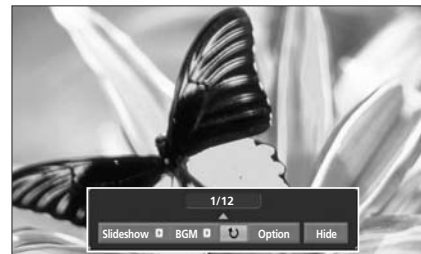
- ▶ **Slide Show** : When no picture is selected, all photos in the current folder are displayed during slide show. When selected, the selected photos are displayed during slide show. To start slide show, press **ENTER** button on **Slideshow** .
  - Set the time interval of the slide show in **Option**.
- ▶ **BGM** : Listen to music while viewing photos in full size. To start BGM, press **ENTER** button on **BGM** .
  - Set the BGM device and album in **Option** .
- ▶ **⌛ (Rotate)** : Rotate photos.
  - Rotates the photo 90° clockwise upon **ENTER** button on **⌛ (Rotate)**.



1 2

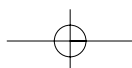


3 4

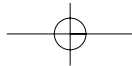


The aspect ratio of a photo may change the size of the photo displayed on the screen in full size.

5







► **Option** : Set values for **Slide Speed** and **Music folder**.

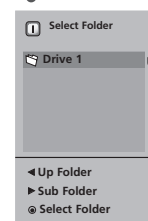
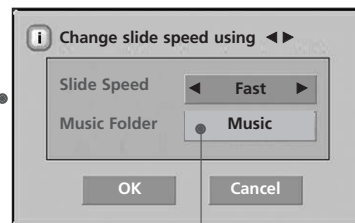
Use ◀ / ▶ button to select **Option** and press **ENTER** button.

- Use ◀ / ▶ button and **ENTER** button to set values. Then go to **Ok** and press **ENTER** to save the settings.
- You cannot change **Music Folder** while BGM is playing.

► **Hide** : Hide the menu on the full-sized screen. Use

◀ / ▶ button to select **Hide** and press **ENTER** button.

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



- 5 Use ◀ / ▶ button to select the previous or next photo. Use ▲ / ▼ / ◀ / ▶ button to select and control the menu on the full-sized screen.

- 6 Use **EXIT** button to go back to the photo list from the full-sized screen.

- 7 Repeatedly, press **EXIT** button to return to TV viewing or press the **TIME MACHINE** button to return to the **Home** menu.

! **NOTE**

- If it is Progressive JPEG format, some photos may be not decoded.

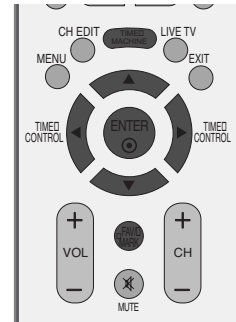
# TIME MACHINE

## MUSIC LIST

Purchased music files(\*.MP3) may contain copyright restrictions. Playback of these files may not be supported by this model. Music file on your USB device can be played by this unit.

The On Screen Display may be different from your set. Images are an example to assist with the TV operation.

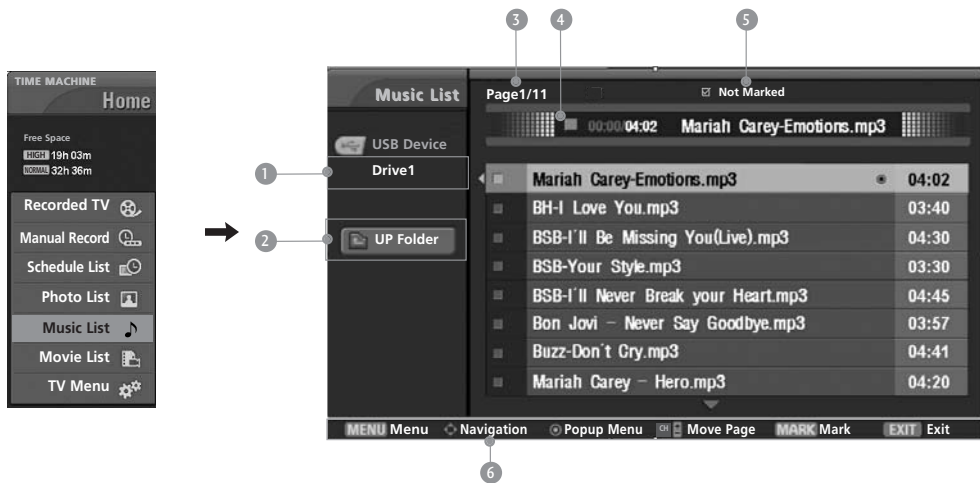
Supports up to four drives.



**MUSIC(\*.MP3) supporting file**  
 Bitrate range 8Kbps ~ 320Kbps  
 •Sampling rate  
 MPEG1 : 32000, 44100, 48000Hz  
 MPEG2 : 16000, 24000, 22050Hz  
 MPEG2.5 : 8000, 11025, 12000Hz

### Screen Components

■ Press the **TIME MACHINE** button and then use ▲ / ▼ button to select the **Music List** menu.



- ① Displays the selected drive
- ② Moves to upper level file
- ③ Current page/Total pages
- ④ Current playing time/Total playing time
- ⑤ Total number of marked musics
- ⑥ Corresponding buttons on the remote control

TIME MACHINE

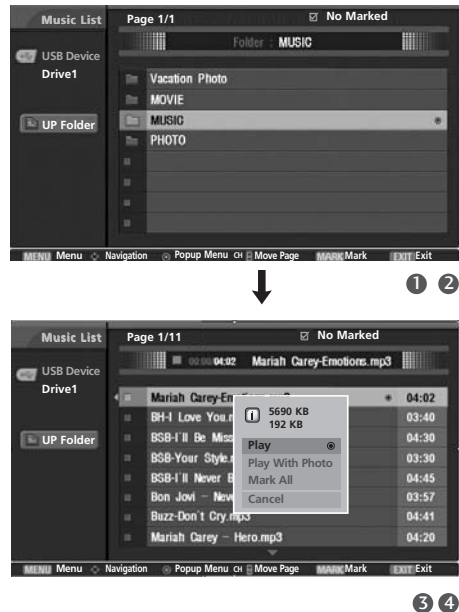
## Music Selection and PopUp Menu

As shown, up to 8 music titles are listed per page.

- 1 Use ▲ / ▼ / ◀ / ▶ buttons to select the target folder or drive then press **ENTER**.
- 2 Use the **CH +/-** button to navigation in the music titles page.
- 3 Use **MARK** button to mark or unmark a music. When one or more music files are marked, the marked musics will be played in sequence. For example, if you want to listen to only one music repeatedly, just mark the music only and play it. If no music is marked, all the music in the folder will be played in sequence.
- 4 Use ▲ / ▼ button to navigation the appropriate musics, then press the **ENTER** button to show up the pop-up menu.

- ▶ **Play** (During stop) : Play the selected musics. Once a music finishes playing, the next selected one will be played. When there are no selected musics 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 music in playback will stop.
- ▶ **Play Marked** : Play the selected musics. Once a music finishes playing, the next selected one will be played automatically.
- ▶ **Stop Play** (During playback) : Stop the playing musics.
- ▶ **Play With Photo** : Start playing the selected musics and then move to the Photo List.
- ▶ **Mark All** : Mark all musics in the folder.
- ▶ **Unmark All** : Deselect all marked musics.
- ▶ **Cancel** : Close the pop-up menu.

- 5 Repeatedly, press **EXIT** button to return to TV viewing or press the **TIME MACHINE** button to return to the **Home** menu.




TIME MACHINE

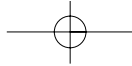
## TIME MACHINE

- If you don't press any button for a while during the playing, the play information box (as shown in the below) will float as a screen saver.
- The 'Screen Saver'?  
Screen saver is to prevent screen pixel damage due to an fixed image remaining on the screen for a extended period of time.



### NOTE

- ▶ When music is playing,  is displayed in front of the music title.
- ▶ A damaged or corrupted music does not play but displays 00:00 in playtime.
- ▶ A music downloaded from a paid service with copyright protection does not start but displays inappropriate information in playtime.
- ▶ If you press **ENTER**, **EXIT** buttons, screen saver is stopped.
- ▶ The **PLAY(▶)**, **Pause(II)**, **■**, **I◀◀**, **▶▶I** buttons on the remote control are also available in this mode.



## MOVIE LIST

The movie list is activated once USB is detected. It is used when playing movie files on TV.

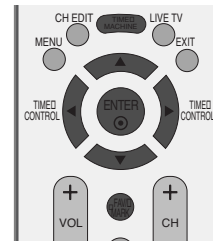
Displays the movies in the USB folder and supports Play.

Allows playback of all movies in the folder and user desired files.

Editing such as delete and add is not allowed.

It is a movie list that displays folder information and Divx file.

Supports up to four drives.



### MOVIE(\*.avi/\*.Divx) supporting file

Video format : DivX3. xx, DivX4. xx, DivX5. xx, XVID 1.1.1, XVID 1.1.2, XVID 1.1.3, 3IV1, 3IV2, FVFW, DMK2, RMP4, DIV3, DIV4, DIV5, DIV6, MP43, COL1, AP41, nAVI, DX50

Audio format : AC3, PCM, MP2, MP3

Sampling frequency : within 8~48 khz (MP3)

Bit rate : within 8~320 kbps (MP3)

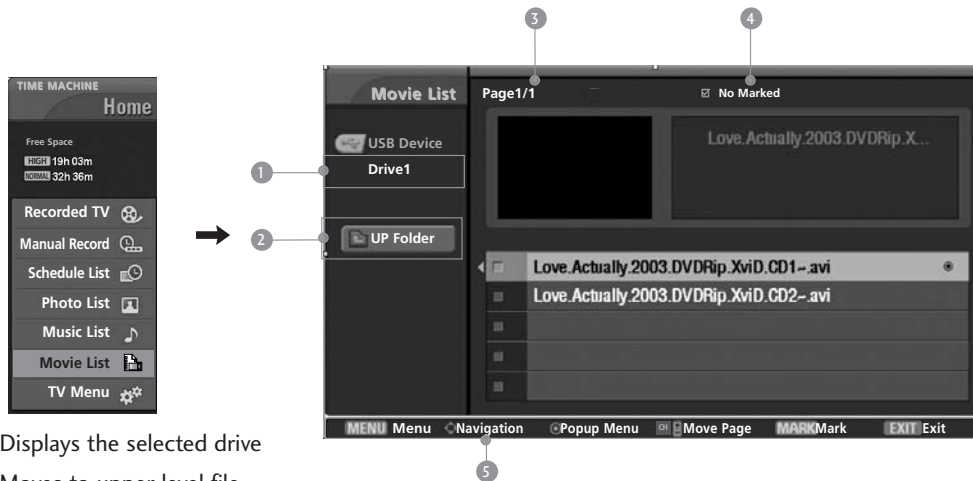
Subtitle format : \*.smi/ \*.srt/ \*.sub(microsub, svsub)/ \*.ass/ \*.txt(subtext, dvdss)

- DivX may not be played depending on its types or recording methods.
- If the video and audio structure of recorded file is not interleaved, either video or audio is outputted.
- Max bitrate of playable DivX is 4 M.
- Maximum FPS (Frame Per Second) can be reached only at SD level. FPS is 25 FPS (720\*576) or 30 FPS (720\*480) depending on Resolution.
- Files of 25 FPS or 30 FPS of higher may not be played properly.
- If the file is recorded with GMC, the unit supports only 1 point of recorded level.  
(GMC is the acronym for Global Motion Compensation, a technique used to compensate MPEG Video files.)

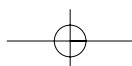
TIME MACHINE

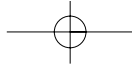
## Screen Components

- Press the **TIME MACHINE** button and then use **▲ / ▼** button to select the **Movie List** menu.



- 1 Displays the selected drive
- 2 Moves to upper level file
- 3 Current page/Total pages
- 4 Total number of marked movies
- 5 Corresponding buttons on the remote control





# TIME MACHINE

## Movie Selection and PopUp Menu

- 1 Use ▲ / ▼ / ◀ / ▶ buttons to select the target folder or drive then press **ENTER**.

---

- 2 Use the **CH +/-** button to navigation in the movie titles page.

---

- 3 Use **MARK** button to mark or unmark a movie. When one or more movie files are marked, the marked movies will be played in sequence.

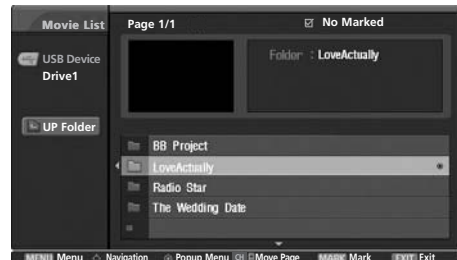
---

- 4 Use ▲ / ▼ button to navigation the appropriate movies, then press the **ENTER** button to show up the pop-up menu.
 

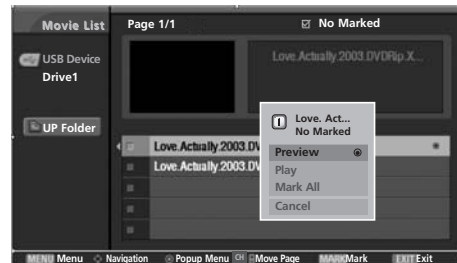
- ▶ **Preview**: Displays the preview video of the current file.
  - ▶ **Play**: Play the selected movie.  
Divx Play is executed while screen changes.
  - ▶ **Mark All**: Mark all Movie in the folder.
  - ▶ **Unmark All**: Deselect all marked Movies.
  - ▶ **Cancel**: Close the pop-up menu.

---

- 5 Repeatedly, press **EXIT** button to return to TV viewing or press the **TIME MACHINE** button to return to the **Home** menu.



1 2



3 4

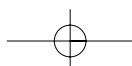
**NOTE**  
▶ In the case of files not supported, a message regarding non-supported file is displayed.

## DivX Audio Language & Subtitle Language

▶ When DivX is playing, if you press the **DivX** button, this message is displayed.

Press the ▲ / ▼ / ◀ / ▶ button to select the desired option.  
Supports up to Mpeg, Mp3, PCM, AC3 file.


TIME MACHINE



## SUBTITLE

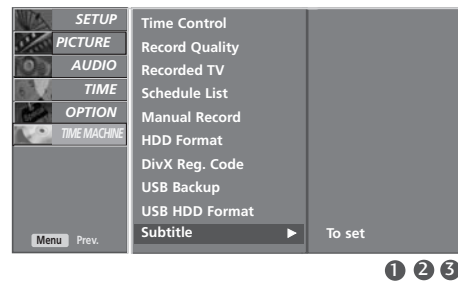
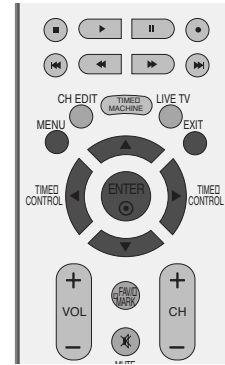
Turns the subtitle control during movie play.  
It's available to identical with the name of movie file.

- 1 Press the **MENU** button and then use ▲ / ▼ button to select the **TIME MACHINE** menu.
- 2 Press the ► button and then use ▲ / ▼ button to select **Subtitle**.
- 3 Press the ► button to start **Subtitle**.
- 4 Press the ▲ / ▼ / ◀ / ▶ button to select the desired subtitle option.



- **Control** : Turns the position of the subtitle on and off during movie play.
- **Language** : Changes the Language Group of the subtitle during movie play.
- **Sync** : Adjusts the time synchronization of the subtitle from -10 secs ~ +10 secs by steps of 1 secs during movie play.
- **Position** : Changes the position of the subtitle either up or down during movie play.

- 5 Press the **EXIT** button to return to Movie playing.



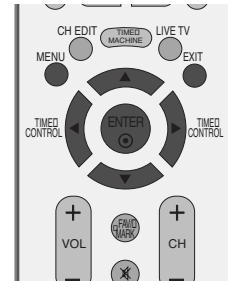
TIME MACHINE

# TIME MACHINE

## DIVX REGISTRATION CODE

Confirm the DivX registration code number of the TV. Using the registration number, movies can be rented or purchased at [www.divx.com/vod](http://www.divx.com/vod).

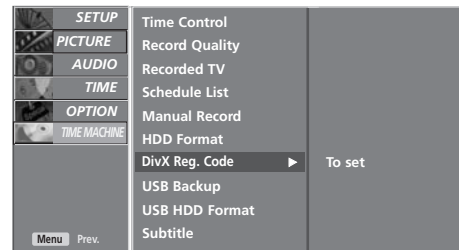
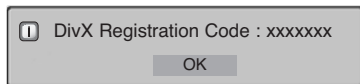
With a DivX registration code from other TV, playback of rented or purchased DivX file is not allowed. (Only DivX files matched with the registration code of the purchased TV are playable.)



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

2 Press the ► button and then use ▲ / ▼ button to select **DivX Reg. Code**.

3 Press the ► button to start **DivX Reg. Code**.



1 2 3

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

TIME MACHINE

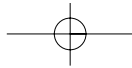


- Official DivX<sup>®</sup> Certified Product.
- Plays all version of DivX<sup>®</sup> video (including DivX<sup>®</sup> 6) with standard playback of DivX<sup>®</sup> media files.
- "DivX, DivX Certified, and associated logos are trademarks of DivX, and are under license."



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



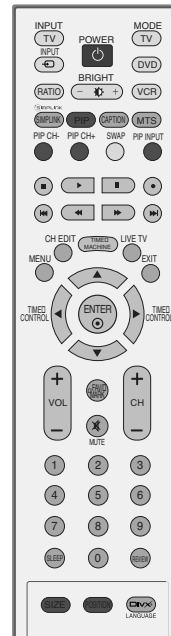


# PICTURE CONTROL

## WATCHING PIP(PICTURE-IN-PICTURE)

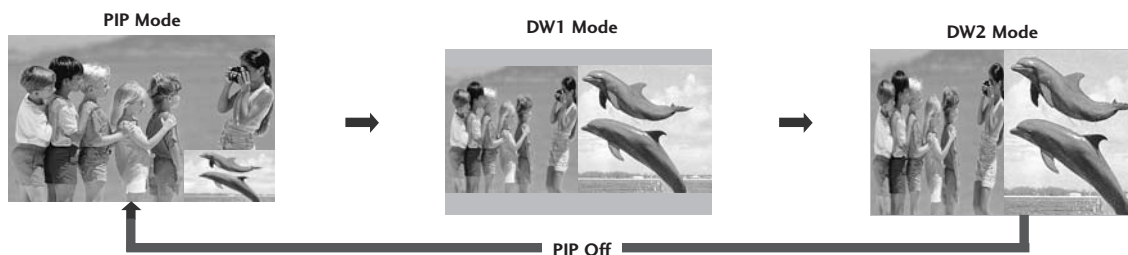
PIP lets you view 2 different inputs (sources) on your TV screen at the same time. One source will be large, and the other source will show a smaller inset image.

It's not available to use this function on recording program and playing movie.



### Watching PIP/Double Window

Press the **PIP** button to access the sub picture. Each press of PIP changes the PIP options.

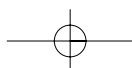


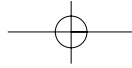
PICTURE CONTROL

### Channel Selection for Sub Picture

Press the **PIP CH +/-** button to select a channel for the sub picture.

The selected program number is displayed just below the channel number of main picture.





# PICTURE CONTROL

## Input Source Selection for Sub Picture

Press the **PIP INPUT** button to select the input source for the sub picture.

Each press of **PIP INPUT** button is pressed, each input source for the sub picture is displayed.

Main Picture Source	Available Sub Picture Sources
TV	All
AV1	All (Except AV1)
AV2	All (Except AV2)
Component1	All (Except Component1)
Component2	All (Except Component2)
RGB	All (Except RGB)
HDMI1/DVI	All (Except HDMI1/DVI, HDMI2)
HDMI2	All (Except HDMI1/DVI, HDMI2)

## Sub Picture Size Adjustment (PIP mode only)

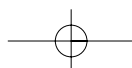
Press the **SIZE** button to adjust the sub picture size.

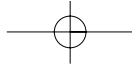
With **SIZE** button in PIP mode, sub picture is adjusted.

## Moving the Sub Picture (PIP mode only)

Press the **POSITION** button.

Repeatedly press the **POSITION** button then sub picture moves.





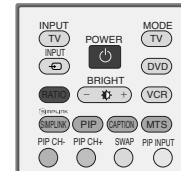
## PICTURE SIZE (ASPECT RATIO) CONTROL

You can watch the screen in various picture formats; **16:9**, **4:3**, and **Zoom1/2**.

If a fixed image is displayed on the screen for a long time, that fixed image may become imprinted on the screen and remain visible.

You can adjust the enlarge proportion using ▲ / ▼ button.

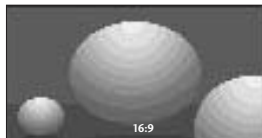
This function works in the following signal.



- 1 Press the **RATIO** button repeatedly to select the desired picture format.  
You can also adjust **Aspect Ratio** in the **PICTURE** menu.

### • 16:9

Following selection will lead you to adjust the picture horizontally, in a linear proportion, to fill the entire screen (useful for viewing 4:3 formatted DVDs).



### • 4:3

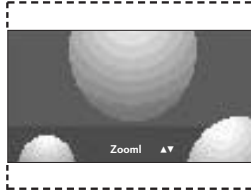
Following selection will lead you to view a picture with an original 4:3 aspect ratio, with gray bars appearing at both the left and right sides.



## PICTURE CONTROL

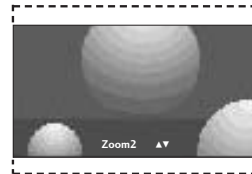
### • Zoom1

Following selection will lead you to view the picture without any alteration, while filling the entire screen. However, the top and bottom portions of the picture will be cropped.



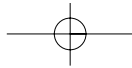
### • Zoom2

Choose Zoom2 when you want the picture to be altered, both horizontally extended and vertically cropped. The picture taking a halfway trade off between alteration and screen coverage.



### ! NOTE

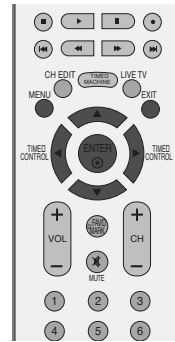
- ▶ You can only select **16:9 (Wide)**, **4:3**, **Zoom 1/2** in TV, AV1/2, Component, HDMI mode.
- ▶ You can only select **16:9 (Wide)**, **4:3**, in RGB/HDMI-PC mode only.
- ▶ You can select **4:3**, **16:9**, **Zoom1**, **Zoom2** in Recorded TV, Movie List, Play back mode only.
- ▶ In Time Control Delay/Recording Delay function, TV displays the aspect ratio of previous input mode.
- ▶ It's available 16:9 when viewing a jpeg file in photo list.



# PRESET PICTURE SETTINGS

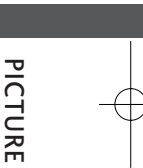
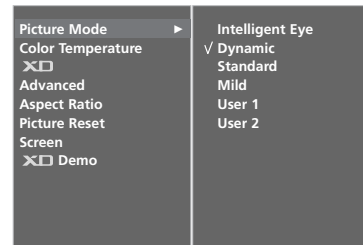
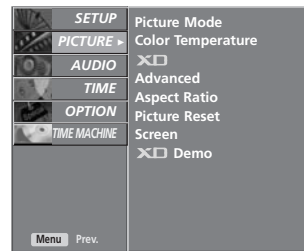
## Picture Mode-Preset

- Intelligent Eye** Adjusts picture according to the surrounding conditions. (LCD TV models only)
- Dynamic** Select this option to display with a sharp image.
- Standard** The most general and natural screen display status.
- Mild** Select this option to display with a mild image.
- User 1/2** Select this option to use the user-defined setting.

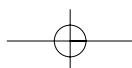
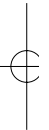


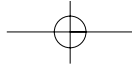
- 1 Press the **MENU** button and then **▲ / ▼** button to select the **PICTURE** menu.
- 2 Press the **▶** button and then **▲ / ▼** button to select **Picture Mode**.
- 3 Press the **▶** button and then **▲ / ▼** button to select **Intelligent Eye** (LCD TV models only), **Dynamic**, **Standard**, **Mild**, **User 1** or **User 2**.
- 4 Press the **EXIT** button to return to normal TV viewing.

- Picture Mode adjusts the TV for the best picture appearance. Select the preset value in the **Picture Mode** menu based on the program category.
- Intelligent Eye (LCD TV models only), Dynamic, Standard and Mild are programmed for optimum picture reproduction at the factory and cannot be changed.
- When the Intelligent eye function is on, the most suitable picture is automatically adjusted according to the surrounding conditions. (LCD TV models only)



PICTURE CONTROL





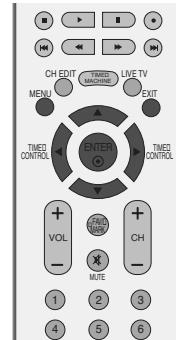
# PICTURE CONTROL

## Auto Color Temperature Control(Warm/Medium/Cool)

To initialize values (reset to default settings), select the Cool option.

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.

It's available to use this function in "User1/2" of Picture mode only.

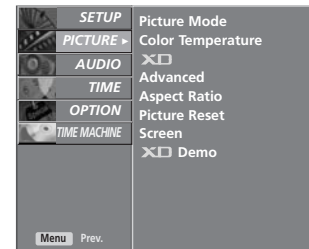


1 Press the **MENU** button and then **▲ / ▼** button to select the **PICTURE** menu.

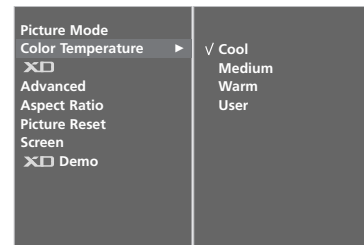
2 Press the **▶** button and then **▲ / ▼** button to select **Color Temperature**.

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

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

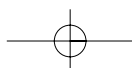


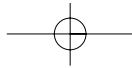
1



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PICTURE CONTROL

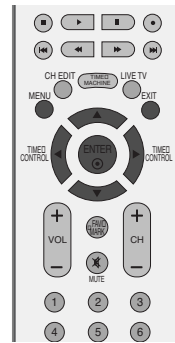




# MANUAL PICTURE ADJUSTMENT

## Picture Mode-User option

- Contrast** Adjusts the difference between the light and dark levels in the picture.
- Brightness** Increases or decreases amount of white in the your picture.
- Color** Adjusts intensity of all colors.
- Sharpness** Adjusts the level of crispness in the edges between the light and dark areas of the picture. The lower the level, the softer the image.
- Tint** Adjusts the balance between red and green levels.



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

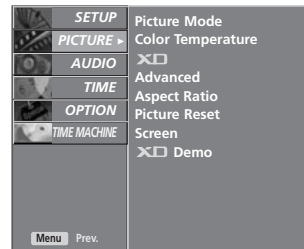
2 Press the **▶** button and then **▲ / ▼** button to select **Picture Mode**.

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

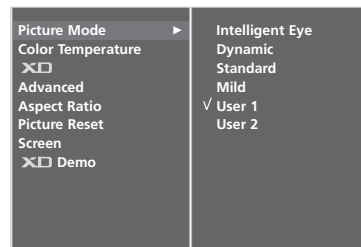
4 Press the **▶** button and then **▲ / ▼** button to select the desired picture option (**Contrast**, **Brightness**, **Color**, **Sharpness** and **Tint**).

5 Press the **◀ / ▶** button to make appropriate adjustments.

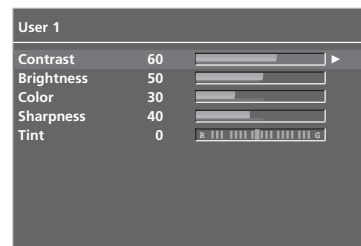
6 Press the **EXIT** button to return to normal TV viewing.



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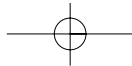


4 5

### ! NOTE

- ▶ You can't adjust color, sharpness and tint in the RGB/HDMI-PC mode to the levels you prefer.

PICTURE CONTROL

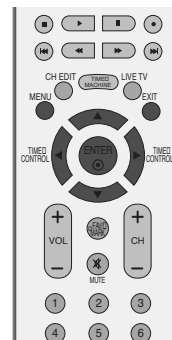


# PICTURE CONTROL

## Color Temperature - User option

To adjust red, green, blue to any color temperature you prefer.

It's available to use this function in "User1/2" of **Picture mode** only.



- 1 Press the **MENU** button and then **▲ / ▼** button to select the **PICTURE** menu.

---

- 2 Press the **▶** button and then **▲ / ▼** button to select **Color Temperature**.

---

- 3 Press the **▶** button and then **▲ / ▼** button to select **User**.

---

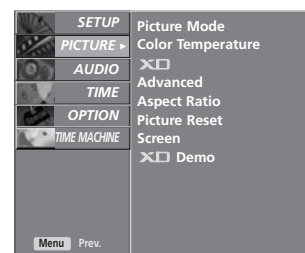
- 4 Press the **▶** button and then **▲ / ▼** button to select **Red, Green** or **Blue**.

---

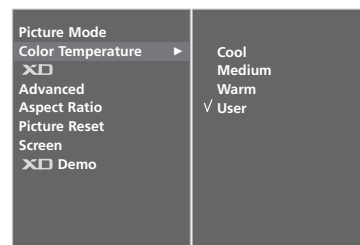
- 5 Press the **◀ / ▶** button to make appropriate adjustments.

---

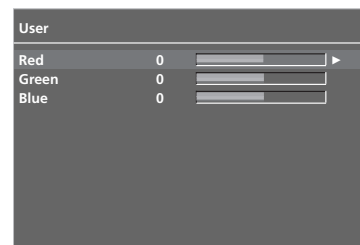
- 6 Press the **EXIT** button to return to normal TV viewing.



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## XD - PICTURE IMPROVEMENT TECHNOLOGY

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

It's not available to use this function in RGB/HDMI-PC mode.

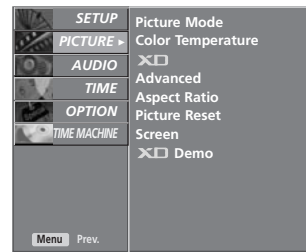
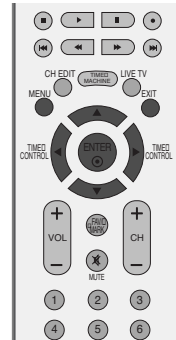
- 1 Press the MENU button and then ▲ / ▼ button to select the PICTURE menu.
- 2 Press the ► button and then ▲ / ▼ button to select XD.
- 3 Press the ► button and then ▲ / ▼ button to select Auto or Manual.
- 4 Press the EXIT button to return to TV viewing.

### \* Selecting the Manual

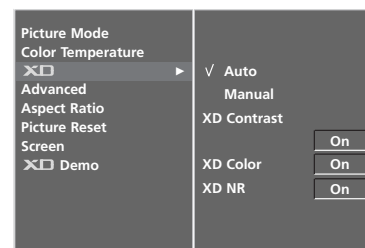
This menu is activated after selecting the User1 or User2 of Picture Mode.

- 1 Press the ► button and then ▲ / ▼ button to select XD Contrast, XD Color or XD NR.
- 2 Press the ► button and then ◀ / ▶ button to select On or Off.
- 3 Press the EXIT button to return to normal TV viewing.

- **XD Contrast** : Optimizing the contrast automatically according to the brightness of the reflection.
- **XD Color** : Adjusting the colors of the reflection automatically to reproduce as closely as possible to the natural colors.
- **XD NR** : Removing the noise up to the point where it does not damage the original picture.



1



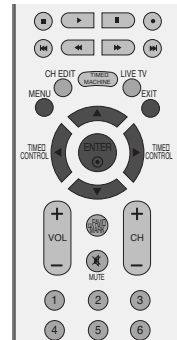
2 3

# PICTURE CONTROL

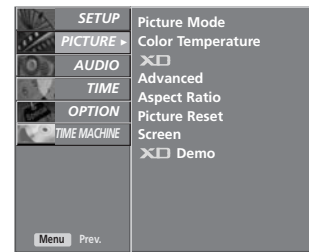
## XD DEMO

Use it to see the difference between XD Demo on and XD Demo off.

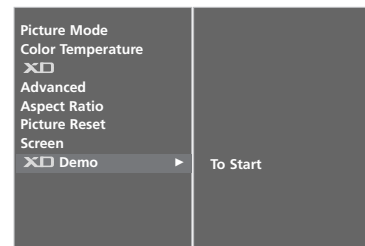
It's not available to use this function in RGB/HDMI-PC mode.



- 1 Press the MENU button and then ▲ / ▼ button to select the PICTURE menu.
- 2 Press the ► button and then ▲ / ▼ button to select XD Demo.
- 3 Press the ► button to begin XD Demo.
- 4 To stop XD Demo, press the MENU button.



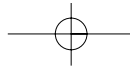
1



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### • XD Demo

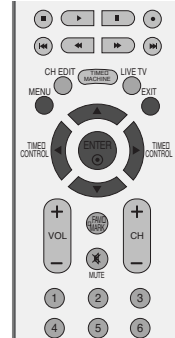




## ADVANCED - CINEMA

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

This feature operates only in Analog TV, AV and Component 480i mode.



- 1 Press the **MENU** button and then ▲ / ▼ button to select the **PICTURE** menu.

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- 2 Press the ► button and then ▲ / ▼ button to select **Advanced**.

---

- 3 Press the ► button and then ▲ / ▼ button to select **Cinema**.

---

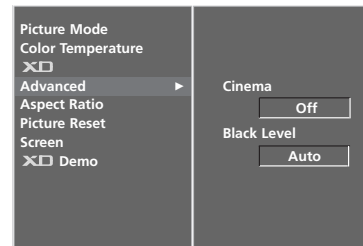
- 4 Press the ► button and then ◀ / ▶ button to select **On** or **Off**.

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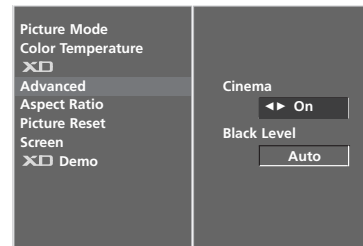
- 5 Press the **EXIT** button to return to normal TV viewing.



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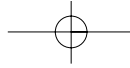


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4

PICTURE CONTROL

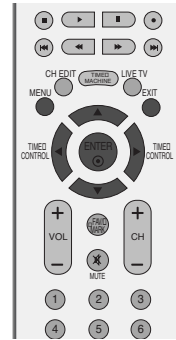


# PICTURE CONTROL

## ADVANCED - BLACK(DARKNESS) LEVEL

When you watch the movie, this function adjusts the set to the best picture appearance. Adjusting the contrast and the brightness of the screen using the black level of the screen.

This function works in the following mode: AV (NTSC-M) or HDMI.



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

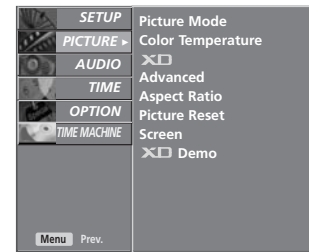
2 Press the ► button and then ▲ / ▼ button to select **Advanced**.

3 Press the ► button and then ▲ / ▼ button to select **Black Level**.

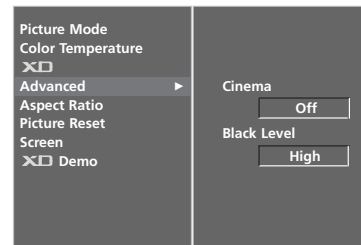
4 Press the ► button and then ◀ / ▶ button to select **Low** or **High**.

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

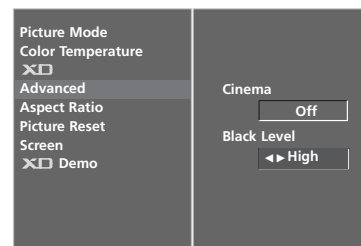
5 Press the **EXIT** button to return to normal TV viewing.



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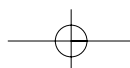


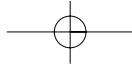
4

### NOTE

■ **Auto**

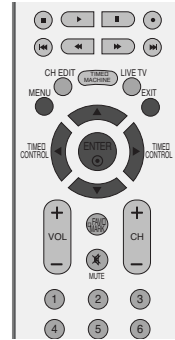
Realizing the black level of the screen and set it to High or Low automatically.





# PICTURE RESET

Returns to the default settings Picture Mode, Color Temperature, XD, Advanced, Aspect Ratio at the factory.

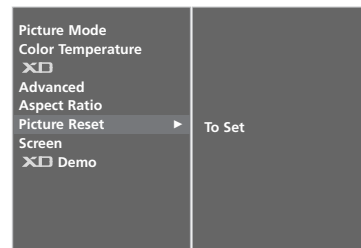
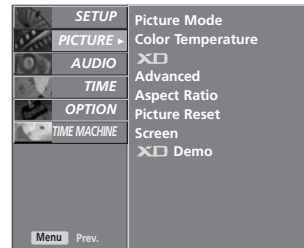


1 Press the **MENU** button and then **▲ / ▼** button to select the **PICTURE** menu.

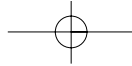
2 Press the **▶** button and then **▲ / ▼** button to select **Picture Reset**.

3 Press the **▶** button to initialize the adjusted value.

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



PICTURE CONTROL



## PICTURE CONTROL

### IMAGE STICKING MINIMIZATION(ISM) METHOD

A frozen or still picture from a PC/video game displayed on the screen for prolonged periods will result in a ghost image remaining even when you change the image. Avoid allowing a fixed image to remain on the set's screen for a long period of time.

It's not available to use this function in LCD models.

#### White wash

White wash removes permanent images from the screen.

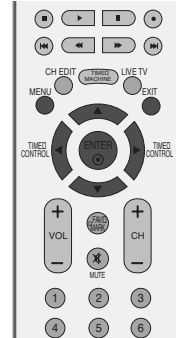
Note: An excessive permanent image may be impossible to clear entirely with White Wash.

#### Orbiter

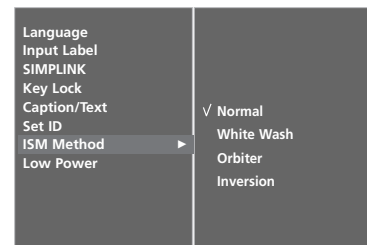
Orbiter may help prevent ghost images. However, it is best not to allow any fixed image to remain on the screen. To avoid a permanent image on the screen, the screen will move every 2 minutes.

#### Inversion

This is the function to invert the panel color of the screen. The panel color is automatically inverted every 30 minutes.

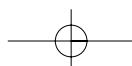


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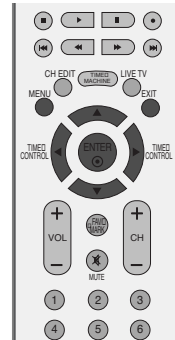
- 1 Press the **MENU** button and then **▲ / ▼** button to select the **OPTION** menu.
- 2 Press the **▶** button and then **▲ / ▼** button to select **ISM Method**.
- 3 Press the **▶** button and then **▲ / ▼** button to select either **Normal**, **White Wash**, **Orbiter** or **Inversion**. If you unnecessary to set this function, set **Normal**.
- 4 Press the **EXIT** button to return to TV viewing.



## LOW-POWER PICTURE MODE

This is the function to reduce the power consumption of the set.

It's not available to use this function in LCD models.

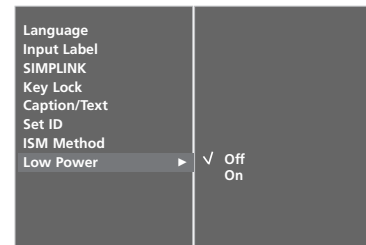


**1** Press the **MENU** button and then **▲ / ▼** button to select the **OPTION** menu.

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

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

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

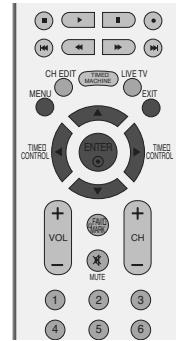


PICTURE CONTROL

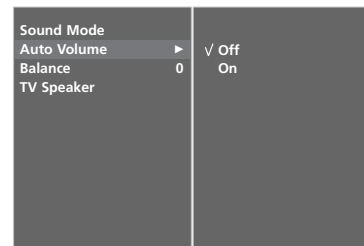
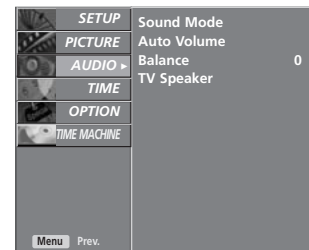
# SOUND & LANGUAGE CONTROL

## AUTO VOLUME LEVELER

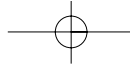
Auto Volume automatically keeps on an equal volume level even if you change programs.



- 1 Press the **MENU** button and then **▲ / ▼** button to select the **AUDIO** menu.
- 2 Press the **▶** button and then **▲ / ▼** button to select **Auto Volume**.
- 3 Press the **▶** button and then **▲ / ▼** button to select **On** or **Off**.
- 4 Press the **EXIT** button to return to normal TV viewing.





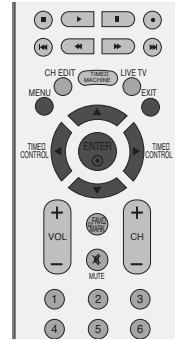


## PRESET SOUND SETTINGS-SOUND MODE

You can select your preferred sound setting; SRS TSXT, Standard, Music, Movie or Sports and you can also adjust the sound frequency of the equalizer.

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

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



**SRS TSXT** Select this option to sound realistic.

**Standard** The most commanding and natural audio.

**Music** Select this option to enjoy the original sound when listening to the music.

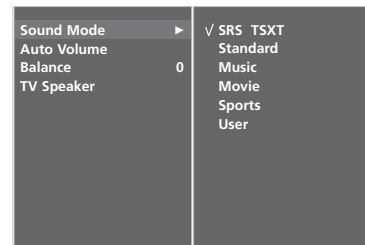
**Movie** Select this option to enjoy sublime sound.

**Sports** Select this option to watch sports broadcasting.

**User** Select this option to use the user-defined audio settings.



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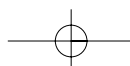
1 Press the **MENU** button and then **▲ / ▼** button to select the **AUDIO** menu.

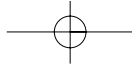
2 Press the **▶** button and then **▲ / ▼** button to select **Sound Mode**.

3 Press the **▶** button and then **▲ / ▼** button to select **SRS TSXT, Standard, Music, Movie, Sports** or **User**.

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

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

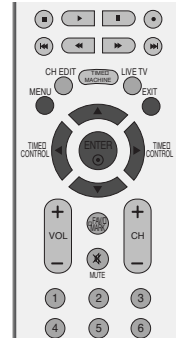




# SOUND & LANGUAGE CONTROL

## SOUND SETTING ADJUSTMENT -USER MODE

Adjust the sound equalizer.



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

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

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

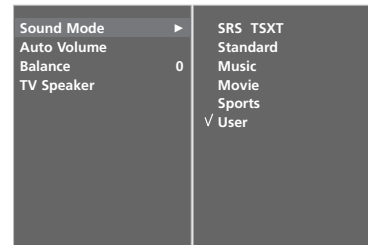
4 Press the **▶** button.

5 Select a sound band by pressing the **▲ / ▼** button. Make appropriate sound level with the **◀ / ▶** button.

6 Press the **EXIT** button to return to normal TV viewing.



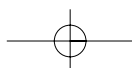
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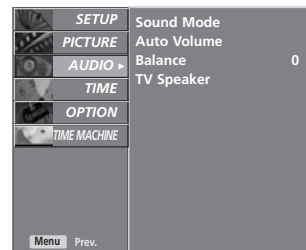
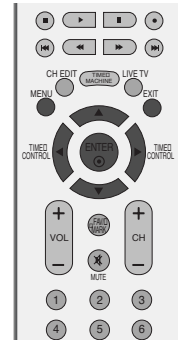
5



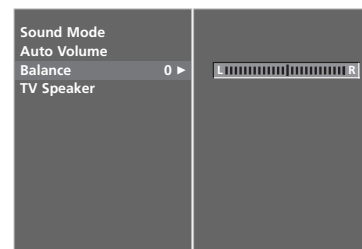
## BALANCE

You can adjust the sound balance of speaker to the levels you prefer.

- 1 Press the **MENU** button and then **▲ / ▼** button to select the **AUDIO** menu.
- 2 Press the **▶** button and then **▲ / ▼** button to select **Balance**.
- 3 Press the **▶** button and then **◀ / ▶** button to make desired adjustment.
- 4 Press the **EXIT** button to return to normal TV viewing.



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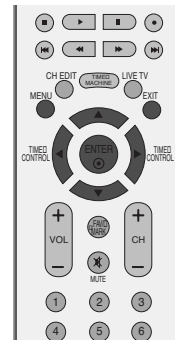
## SOUND & LANGUAGE CONTROL

### TV SPEAKER ON/OFF SETUP

You can adjust the internal speaker status.

In AV, COMPONENT, RGB and HDMI mode, internal speaker audio can be outputted even though there is no video signal.

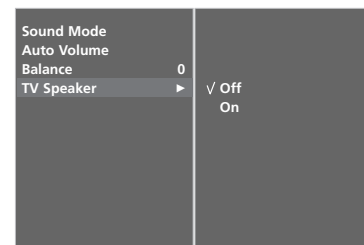
If you want to use your external hi-fi stereo system, turn off the internal speakers of the set.



- 1 Press the **MENU** button and then **▲ / ▼** button to select the **AUDIO** menu.
- 2 Press the **▶** button and then **▲ / ▼** button to select **TV Speaker**.
- 3 Press the **▶** button and then **▲ / ▼** button to select **On** or **Off**.
- 4 Press the **EXIT** button to return to normal TV viewing.



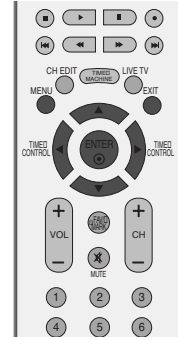
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## ON-SCREEN MENU LANGUAGE SELECTION

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



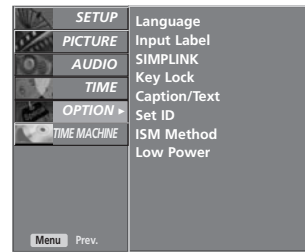
**1** Press the **MENU** button and then use **▲ / ▼** button to select the **OPTION** menu.

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

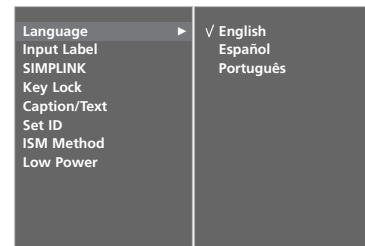
**3** Press the **▶** button and then use **▲ / ▼** button to select your desired language.

**4** Press the **ENTER** button.

**5** Press the **EXIT** button to return to normal TV viewing.



**1**

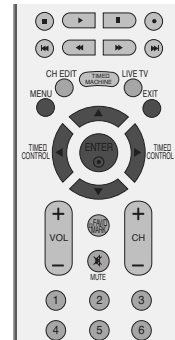


**2 3**

# TIME SETTING

## CLOCK SETUP

You must set the time correctly before using on/off time function and reservation recording function.



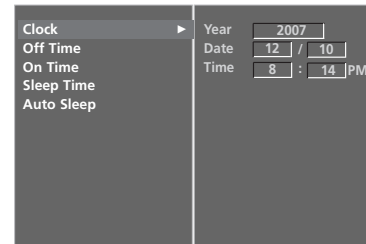
1 Press the **MENU** button and then **▲ / ▼** button to select the **TIME** menu.

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

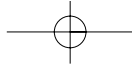
3 Press the **▶** button and then **◀** or **▶** button to select either the year, date, or time option.

4 Once selected, use the **▲** or **▼** button to set the year, date, and time options.

5 Press the **EXIT** button to return to normal TV viewing.



2 3 4



## AUTO ON/OFF TIMER SETTING

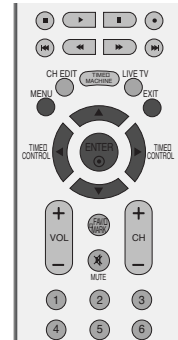
The Off Time automatically switches the set to standby at the preset time.

Two hours after the set is switched on by the on time function it will automatically switch back to standby mode unless a button has been pressed.

Once the on time/off time is set, these functions operate daily at the preset time.

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

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



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

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

3 Press the **▶** button and then **▲ / ▼** button to select **On**.  
 • To cancel **On/Off Time** function, select **Off**.

4 Press the **▶** button and then **▲ / ▼** button to set the hour.

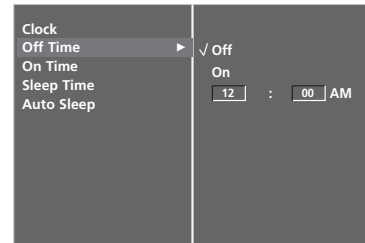
5 Press the **▶** button and then **▲ / ▼** button to set the minutes.

6 **For only On Time function**  
 • **Vol.:** Press the **▶** button and then **▲ / ▼** button to adjust volume level at turn-on.  
 • **Ch.:** Press the **▶** button and then **▲ / ▼** button to select the channel.

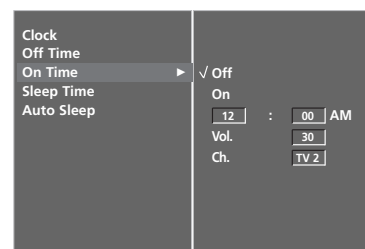
7 Press the **EXIT** button to return to normal TV viewing.



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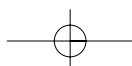


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TIME SETTING



# TIME SETTING

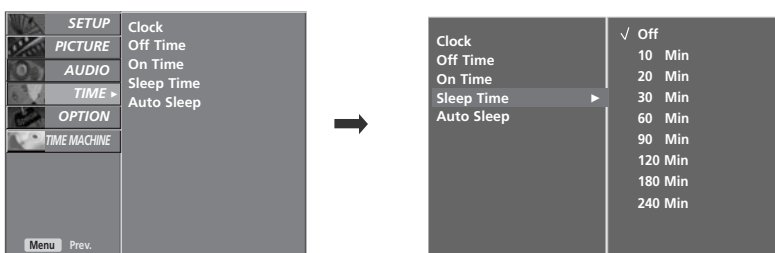
## SLEEP TIMER SETTING

You don't have to remember to switch the set off before you go to sleep. The sleep timer automatically switches the set to standby after the preset time has elapsed.



- 1 Press the **SLEEP** button repeatedly to select the number of minutes. The display ' - - -Min ' will appear on the screen, followed by 10, 20, 30, 60, 90, 120, 180 and 240.
- 2 When the number of minutes you want is displayed on the screen, the timer begins to count down from the number of minutes selected.

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



TIME SETTING

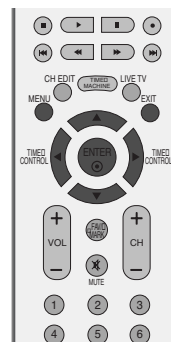
### ! NOTE

- ▶ To view the remaining sleep time, press the **SLEEP** button once.
- ▶ To cancel the sleep time, repeatedly press the **SLEEP** button until the display ' - - -Min ' appears.
- ▶ When you switch the set off, the set releases the preset sleep time.



## AUTO SHUT-OFF SETTING

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



- 1 Press the **MENU** button and then **▲ / ▼** button to select the **TIME** menu.
- 2 Press the **▶** button and then **▲ / ▼** button to select **Auto Sleep**.
- 3 Press the **▶** button and then **▲ / ▼** button to select **On** or **Off**.
- 4 Press the **EXIT** button to return to normal TV viewing.



TIME SETTING

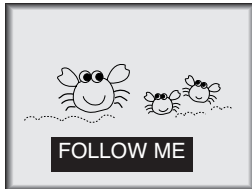
# CAPTION/TEXT

## CLOSED CAPTIONS

Closed captioning is a process which converts the audio portion of a television program into written words which then appear as subtitles on the television screen. Closed captions allow viewers to read the dialogue and narration of television programs.

### Using Closed Captions

Captions are the subtitles of the dialogue and narration of television programs. For prerecorded programs, program dialogue can be arranged into captions in advance. Its possible to caption a live program by using a process called real-time captioning, which creates captions instantly. Real-time captioning is normally done by professional reporters using a machine shorthand system and computer for translation into English.



Captioning is an effective system for the hearing-impaired, and it can also aid in teaching language skills.

- The picture at left shows a typical caption.

### Caption Tips

- Not all TV broadcasts include closed caption signals.
- Sometimes TV stations broadcast four different caption signals on the same channel. By selecting Mode1 to Mode2, you can choose which signal you view. Mode1 is usually the signal with the captions, while another mode might show demonstration or programming information.
- Your TV might not receive caption signals normally in the following situations.

1. Poor reception conditions are encountered:



#### • IGNITION:

Picture may flutter, drift, suffer from black spots, or horizontal streaking. Usually caused by interference from automobile ignition systems, neon lamps, electrical drills, and other electrical appliances.



#### • GHOSTS:

Ghosts are caused when the TV signal splits and follows two paths. One is the direct path and the other is reflected off tall buildings, hills or other objects. Changing the direction or position of the antenna may improve reception.



#### • SNOW:

If your receiver is located at the weak, fringe area of a TV signal, your picture may be marred by small dots. It may be necessary to install a special antenna to improve the picture.

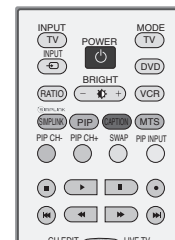
2. An old, bad, or illegally recorded tape is being played.
3. Strong, random signals from a car or airplane interfere with the TV signal.
4. The signal from the antenna is weak.
5. The program wasn't captioned when it was produced, transmitted, or taped.

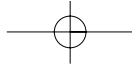
CAPTION/TEXT

- 1 Use the **CAPTION** button repeatedly to select your caption Mode 1, Mode 2, Text1, Text2, or Off.

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

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





## 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.
- Are batteries installed with correct polarity (+ to +, - to -)?
- Correct remote operating mode set: TV, VCR etc.?
- Install new batteries.

#### Power is suddenly turned off

- Is the sleep timer set?
- Check the power control settings. Power interrupted
- No broadcast on station tuned with Auto off activated.

### The video function does not work.

#### No picture & No sound

- Check whether the product is turned on.
- Try another channel. The problem may be with the broadcast.
- Is the power cord inserted into wall power outlet?
- Check your antenna direction and/or location.
- Test the wall power outlet, plug another product's power cord into the outlet where the product's power cord was plugged in.

#### Picture appears slowly after switching on

- This is normal, the image is muted during the product startup process. Please contact your service center, if the picture has not appeared after five minutes.

#### No or poor color or poor picture

- Adjust Color in menu option.
- Keep a sufficient distance between the product and the VCR.
- Try another channel. The problem may be with the broadcast.
- Are the video cables installed properly?
- Activate any function to restore the brightness of the picture.

#### Horizontal/vertical bars or picture shaking

- Check for local interference such as an electrical appliance or power tool.

#### Poor reception on some channels

- Station or cable product experiencing problems, tune to another station.
- Station signal is weak, reorient antenna to receive weaker station.
- Check for sources of possible interference.

#### Lines or streaks in pictures

- Check antenna (Change the direction of the antenna).

# APPENDIX

## TROUBLESHOOTING

The audio function does not work.	
<b>Picture OK &amp; No sound</b>	<ul style="list-style-type: none"> <li>■ Press the <b>VOL(or Volume)</b> button.</li> <li>■ Sound muted? Press <b>MUTE</b> button.</li> <li>■ Try another channel. The problem may be with the broadcast.</li> <li>■ Are the audio cables installed properly?</li> </ul>
<b>No output from one of the speakers</b>	<ul style="list-style-type: none"> <li>■ Adjust Balance in menu option.</li> </ul>
<b>Unusual sound from inside the product</b>	<ul style="list-style-type: none"> <li>■ 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.</li> </ul>

There is a problem in PC mode. (Only PC mode applied)	
<b>The signal is out of range.</b>	<ul style="list-style-type: none"> <li>■ Adjust resolution, horizontal frequency, or vertical frequency.</li> <li>■ Check the input source.</li> </ul>
<b>Vertical bar or stripe on background &amp; Horizontal Noise &amp; Incorrect position</b>	<ul style="list-style-type: none"> <li>■ Work the Auto configure or adjust clock, phase, or H/V position.</li> </ul>
<b>Screen color is unstable or single color</b>	<ul style="list-style-type: none"> <li>■ Check the signal cable.</li> <li>■ Reinstall the PC video card.</li> </ul>

## MAINTENANCE

Early malfunctions can be prevented. Careful and regular cleaning can extend the amount of time you will have your new TV. Be sure to turn the power off and unplug the power cord before you begin any cleaning.

### Cleaning the Screen

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

### Cleaning the Cabinet

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

### Extended Absence

#### CAUTION

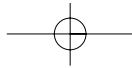
- ▶ If you expect to leave your TV dormant for a long time (such as a vacation), it's a good idea to unplug the power cord to protect against possible damage from lightning or power surges.

# APPENDIX

## PRODUCT SPECIFICATIONS

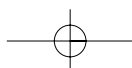
MODELS			32LB9RT*/42LB9RT*
<b>32LB9RT</b> <b>32LB9RTB</b> <b>32LB9RTE</b> 32LB9RT-MD 32LB9RTB-MB 32LB9RTE-MB	Dimensions (Width x Height x Depth)	with stand	805.8 x 619.7 x 283.9 mm 31.7 x 24.4 x 11.2 inches
		without stand	805.8 x 554.1 x 79.0 mm 31.7 x 21.8 x 3.1 inches
	Weight	with stand	32.6 pounds / 14.8 kg
		without stand	27.8 pounds / 12.6 kg
<b>42LB9RT</b> <b>42LB9RTB</b> <b>42LB9RTE</b> 42LB9RT-MD 42LB9RTB-MB 42LB9RTE-MB	Dimensions (Width x Height x Depth)	with stand	1030.8 x 779.8 x 333.2 mm 40.6 x 30.7 x 13.1 inches
		without stand	1030.8 x 693 x 88.5 mm 40.6 x 27.3 x 3.5 inches
	Weight	with stand	57.3 pounds / 26.8 kg
		without stand	50.5 pounds / 22.9 kg
Power requirement Television System Program Coverage External Antenna Impedance			AC100-240V -50/60Hz NTSC, PAL-M/N VHF 2 ~ 13, UHF 14 ~ 69, CATV 1 ~ 125 75 ohm
Environment condition		Operating Temperature	32 ~ 104°F (0 ~ 40°C)
		Operating Humidity	Less than 80%
		Storage Temperature	-4 ~ 140°F (-20 ~ 60°C)
		Storage Humidity	Less than 85%

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



MODELS		42PB4RT*/50PB4RT*	
<b>42PB4RT</b> <b>42PB4RTH</b> 42PB4RT-MA 42PB4RTH-MA	Dimensions (Width x Height x Depth)	with stand	1130.0 x 766.7 x 310.4 mm 44.5 x 30.2 x 12.2 inches
		without stand	1130.0 x 715.0 x 85.0 mm 44.5 x 28.1 x 3.3 inches
	Weight	with stand	68.6 pounds / 31.1 kg
		without stand	60.9 pounds / 27.6 kg
<b>50PB4RT</b> 50PB4RT-MA	Dimensions (Width x Height x Depth)	with stand	1308.0 x 906.5 x 370.0 mm 51.5 x 35.7 x 14.6 inches
		without stand	1308.0 x 845.0 x 89.5 mm 51.5 x 33.2 x 3.5 inches
	Weight	with stand	94.1 pounds / 42.7 kg
		without stand	83.8 pounds / 38.0 kg
<b>50PB4RTH</b> 50PB4RTH-MA	Dimensions (Width x Height x Depth)	with stand	1308.0 x 906.5 x 370.0 mm 51.5 x 35.7 x 14.6 inches
		without stand	1308.0 x 845.0 x 89.5 mm 51.5 x 33.2 x 3.5 inches
	Weight	with stand	112.9 pounds / 51.2 kg
		without stand	98.8 pounds / 44.8 kg
Power requirement Television System Program Coverage External Antenna Impedance			AC100-240V -50/60Hz NTSC, PAL-M/N VHF 2 ~ 13, UHF 14 ~ 69, CATV 1 ~ 125 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.



## APPENDIX

### PROGRAMMING THE REMOTE CONTROL

The remote is a multi-brand or a universal remote. It can be programmed to operate most remote-controllable devices of other manufacturers.

Note that the remote may not control all models of other brands.

#### Programming a code into a remote mode

- 1 Test your remote control.  
To find out whether your remote control can operate the component without programming, turn on the component such as a VCR and press the corresponding mode button (such as a **DVD** or **VCR**) on the remote control, while pointing at the component. Test the **POWER** and **CH + / -** buttons to see if the component responds properly. If not, the remote requires programming to operate the device.
- 2 Turn on the component to be programmed, then press the corresponding mode button (such as a **DVD** or **VCR**) on the remote control. The remote control button of desired device is lighted.
- 3 Press the **MENU** and **MUTE** buttons simultaneously, the remote control is ready to be programmed for the code.
- 4 Enter a code number using the number buttons on the remote control. Programming code numbers for the corresponding component can be found on the following pages. Again, if the code is correct, the device will turn off.
- 5 Press the **MENU** button to store the code.
- 6 Test the remote control functions to see if the component responds properly. If not, repeat from step 2.

#### DVD

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



**VCR**

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

# APPENDIX

## IR CODES

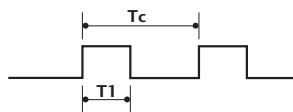
### 1. How to Connect

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

### 2. Remote Control IR Codes

#### ■ Output waveform

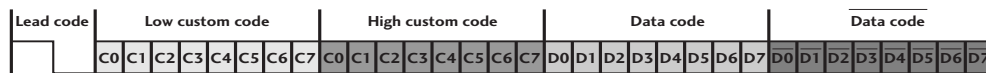
Single pulse, modulated with 37.917KHz signal at 455KHz



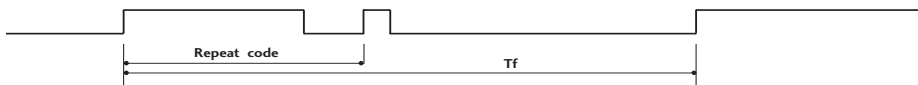
Carrier frequency  
 $FCAR = 1/TC = fOSC/12$   
 Duty ratio =  $T1/TC = 1/3$

#### ■ Configuration of frame

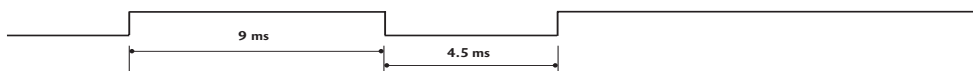
1st frame



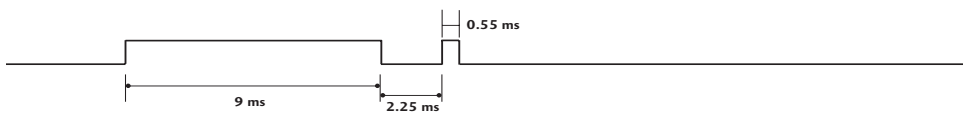
Repeat frame



#### ■ Lead code



#### ■ Repeat code

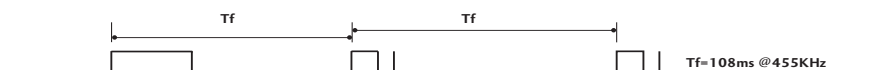


#### ■ Bit description



#### ■ Frame interval: Tf

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



## REMOTE CONTROL IR CODES

Code (Hexa)	Function	Note
0F	TV	R/C BUTTON
08	POWER	R/C BUTTON (POWER ON/OFF)
0B	INPUT	R/C BUTTON
79	RATIO	R/C BUTTON
E0	BRIGHTNESS +	R/C BUTTON
E1	BRIGHTNESS -	R/C BUTTON
7E	SIMPLINK	R/C BUTTON
60	PIP	R/C BUTTON
39	CAPTION	R/C BUTTON
0A	MTS	R/C BUTTON
72	PIP CH-	R/C BUTTON
71	PIP CH+	R/C BUTTON
63	SWAP	R/C BUTTON
61	PIP INPUT	R/C BUTTON
B1	TIME MACHINE STOP (■)	R/C BUTTON
B0	TIME MACHINE PLAY (▶)	R/C BUTTON
BA	TIME MACHINE PAUSE (  )	R/C BUTTON
BD	TIME MACHINE REC (●)	R/C BUTTON
B2	I◀◀	R/C BUTTON
8F	◀◀	R/C BUTTON
8E	▶▶	R/C BUTTON
B3	▶▶I	R/C BUTTON
43	MENU	R/C BUTTON
53	CH EDIT	R/C BUTTON
C8	TIME MACHINE	R/C BUTTON
9E	LIVE TV	R/C BUTTON
5B	EXIT	R/C BUTTON
40	UP (▲)	R/C BUTTON
41	DOWN (▼)	R/C BUTTON
07	LEFT (◀)	R/C BUTTON
06	RIGHT (▶)	R/C BUTTON
44	ENTER (⊙)	R/C BUTTON
02	VOL +	R/C BUTTON
03	VOL -	R/C BUTTON
00	CH +	R/C BUTTON
01	CH -	R/C BUTTON
1E	FAV/MARK	R/C BUTTON
09	MUTE	R/C BUTTON
11	Number Key 1	R/C BUTTON
12	Number Key 2	R/C BUTTON
13	Number Key 3	R/C BUTTON
14	Number Key 4	R/C BUTTON
15	Number Key 5	R/C BUTTON
16	Number Key 6	R/C BUTTON
17	Number Key 7	R/C BUTTON
18	Number Key 8	R/C BUTTON
19	Number Key 9	R/C BUTTON
10	Number Key 0	R/C BUTTON
0E	SLEEP	R/C BUTTON
1A	REVIEW	R/C BUTTON
64	SIZE	R/C BUTTON
62	POSITION	R/C BUTTON
91	DviX	R/C BUTTON

# APPENDIX

## EXTERNAL CONTROL DEVICE SETUP

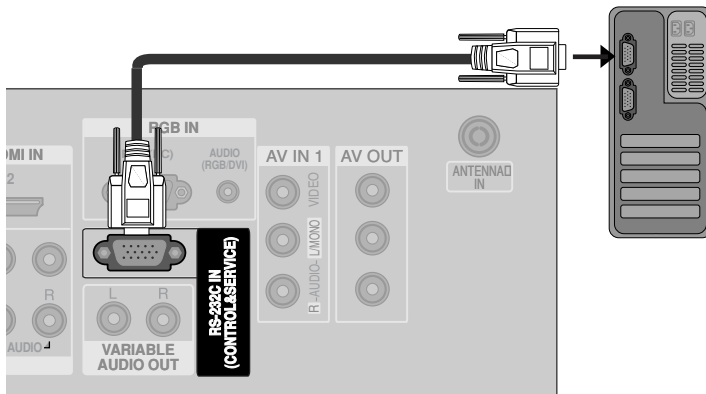
Connect the RS-232C input jack to an external control device (such as a computer or an A/V control system) and control the TV's functions externally.

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

RS-232C connection cables are not supplied with the TV.

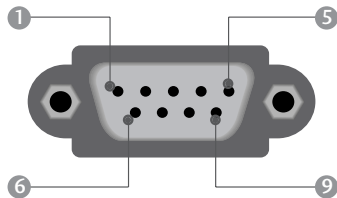
It's not available to use this function in Time MACHINE mode.

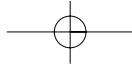
### RS-232C Setup



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

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





## RS-232C Configurations

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

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

D-Sub 9                  D-Sub 9

### 3-Wire Configurations (Not standard)

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

D-Sub 9                  D-Sub 9

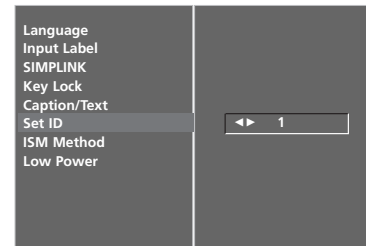
## Set ID

Use this function to specify a set ID number.  
Refer to 'Real Data Mapping'1. See page p.119

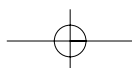
- 1 Press the **MENU** button and then use ▲ / ▼ button to select the **OPTION** menu.
- 2 Press the ► button and then use ▲ / ▼ button to select **Set ID**.
- 3 Press the ► button and then use ◀ / ▶ button to adjust **Set ID** to choose the desired TV ID number.
  - The adjustment range of SET ID is 1~99.
- 4 Press **EXIT** button to return to normal TV viewing.



1



2 3



## APPENDIX

- It's not available to use this function in **Time machine mode**.

### Communication Parameters

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

#### Command Reference List

	COMMAND 1	COMMAND 2	DATA (Hexadecimal)
01. Power	k	a	0 ~ 1
02. Aspect Ratio	k	c	*
03. Screen Mute	k	d	0 ~ 1
04. Volume Mute	k	e	0 ~ 1
05. Volume Control	k	f	0 ~ 64
06. Contrast	k	g	0 ~ 64
07. Brightness	k	h	0 ~ 64
08. Color	k	i	0 ~ 64
09. Tint	k	j	0 ~ 64
10. Sharpness	k	k	0 ~ 64
11. OSD Select	k	l	0 ~ 01
12. Remote control lock mode	k	m	0 ~ 1
13. PIP/DW	k	n	*
14. PIP Position	k	q	0 ~ 3
15. Balance	k	t	0 ~ 64
16. Color Temperature	k	u	0 ~ 3
17. Red Adjustment	k	v	0 ~ 3C (or 50)
18. Green Adjustment	k	w	0 ~ 3C (or 50)
19. Blue Adjustment	k	\$	0 ~ 3C (or 50)
20. Tune Command	m	a	Refer to p. 119
21. Abnormal Status	k	z	FF
22. ISM Method	j	p	0 ~ 3
23. Low Power	j	q	0 ~ 1
24. Auto Configure	j	u	1
25. Key	m	c	Key Code
26. Input select (Main)	x	b	*
27. Input select (PIP)	x	y	*

#### Transmission / Receiving Protocol

##### Transmission

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

- \* [Command 1] : First command to control the set.  
(j, k, m or x)
- \* [Command 2] : Second command to control the set.
- \* [Set ID] : You can adjust the set ID to choose desired monitor ID number in option menu.  
Adjustment range is 1 ~ 99.  
When selecting Set ID '0', every connected the set is controlled.  
Set ID is indicated as decimal (1~99) on menu and as Hexa decimal (0x0~0x63) on transmission/receiving protocol.
- \* [DATA] : To transmit command data.  
Transmit 'FF' data to read status of command.
- \* [Cr] : Carriage Return  
ASCII code '0x0D'
- \* [ ] : ASCII code 'space (0x20)'

##### OK Acknowledgement

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

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

##### Error Acknowledgement

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

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

- Data 1: Illegal Code  
2: not support function  
3: Wait more time

**01. Power (Command 2 : a)**

- ▶ To control Power On/Off of the set.

*Transmission*

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

Data 0 : Power Off                                  1 : Power On

*Ack*

```
[a][ ][Set ID][ ][OK][Data][x]
```

- ▶ To show Power On/Off.

*Transmission*

```
[k][a][ ][Set ID][ ][FF][Cr]
```

*Ack*

```
[a][ ][Set ID][ ][OK][Data][x]
```

\* In like manner, if other functions transmit '0xFF' data based on this format, Acknowledgement data feed back presents status about each function.

**02. Aspect Ratio (Command2:c)**

- ▶ To adjust the screen format. (Main picture format)  
You can also adjust the screen format using the RATIO button on remote control or in the PICTURE menu.

*Transmission*

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

Data 1: Normal screen (4:3)                          4: Zoom1  
2: Wide screen (16:9)                                  5: Zoom2

*Ack*

```
[c][ ][Set ID][ ][OK][Data][x]
```

\* Using the PC input, you select either 16:9 or 4:3 screen aspect ratio.

**03. Screen Mute (Command 2 : d)**

- ▶ To select screen mute on/off.

*Transmission*

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

Data 0 : Screen mute on (Picture off)  
1 : Screen mute off (Picture on)

*Ack*

```
[d][ ][Set ID][ ][OK][Data][x]
```

**04. Volume Mute (Command2:e)**

- \* To control volume mute on/off.  
You can also adjust mute using the MUTE button on remote control.

*Transmission*

```
[k][e][ ][Set ID][ ][Data][Cr]
```

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

*Ack*

```
[e][ ][Set ID][ ][OK][Data][x]
```

**05. Volume Control (Command 2 : f)**

- ▶ To adjust volume.  
You can also adjust volume with the VOLUME buttons on remote control.

*Transmission*

```
[k][f][ ][Set ID][ ][Data][Cr]
```

Data Min : 0 ~ Max : 64

\* Refer to 'Real data mapping 1': See page 119.

*Ack*

```
[f][ ][Set ID][ ][OK][Data][x]
```

**06. Contrast (Command 2 : g)**

- ▶ To adjust screen contrast.  
You can also adjust contrast in the PICTURE menu.

*Transmission*

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

Data Min : 0 ~ Max : 64

\* Refer to 'Real data mapping 1': See page 119.

*Ack*

```
[g][ ][Set ID][ ][OK][Data][x]
```

**07. Brightness (Command 2 : h)**

- ▶ To adjust screen brightness.  
You can also adjust brightness in the PICTURE menu.

*Transmission*

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

Data Min : 0 ~ Max : 64

\* Refer to 'Real data mapping 1': See page 119.

*Ack*

```
[h][ ][Set ID][ ][OK][Data][x]
```

**08. Color (Command 2 : i)**

- ▶ To adjust the screen color.  
You can also adjust color in the PICTURE menu.

*Transmission*

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

Data Min : 0 ~ Max : 64

\* Refer to 'Real data mapping 1': See page 119.

*Ack*

```
[i][ ][Set ID][ ][OK][Data][x]
```

**09. Tint (Command 2 : j)**

- ▶ To adjust the screen tint.  
You can also adjust tint in the PICTURE menu.

*Transmission*

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

Data Red : 0 ~ Green : 64

\* Refer to 'Real data mapping 1': See page 119.

*Ack*

```
[j][ ][Set ID][ ][OK][Data][x]
```

## APPENDIX

### 10. Sharpness (Command 2 : k)

- ▶ To adjust the screen sharpness.  
You can also adjust sharpness in the PICTURE menu.

#### Transmission

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

Data Min : 0 ~ Max : 64

\* Refer to 'Real data mapping 1'. See page 119.

#### Ack

[k][ ][Set ID][ ][OK][Data][x]

### 11. OSD Select (Command 2 : l)

- ▶ To select OSD (On Screen Display) on/off when controlling remotely.

#### Transmission

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

Data 0 : OSD off      1 : OSD on

#### Ack

[l][ ][Set ID][ ][OK][Data][x]

### 12. Remote control lock mode (Command 2 : m)

- ▶ To lock the front panel controls on the monitor and remote control.

#### Transmission

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

Data 0 : Lock off      1 : Lock on

#### Ack

[m][ ][Set ID][ ][OK][Data][x]

\* If you're not using the remote control, use this mode.  
When main power is on/off, external control lock is released.

### 13. PIP / DW (Command2:n)

- ▶ To control the PIP (Picture In picture)/DW.  
You can also control the PIP/DW using the PIP button on the remote control or in the PIP/DW menu.

#### Transmission

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

Data 0: PIP/DW off      2: DW1

1: PIP      3: DW2

#### Ack

[n][ ][Set ID][ ][OK][Data][x]

### 14. PIP Position (Command2:q)

- ▶ To select sub picture position for PIP.  
You can also adjust the sub picture position using POSITION button on the remote control or in the PIP/DW menu.

#### Transmission

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

Data 0: Right down on screen

Data 1: Left down on screen

Data 2: Left up on screen

Data 3: Right up on screen

#### Ack

[q][ ][Set ID][ ][OK][Data][x]

### 15. Balance (Command 2 : t)

- ▶ To adjust balance.  
You can also adjust balance in the AUDIO menu.

#### Transmission

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

Data Min : 0 ~ Max : 64

\* Refer to 'Real data mapping 1'. See page 119.

#### Ack

[t][ ][Set ID][ ][OK][Data][x]

### 16. Color Temperature (Command 2 : u)

- ▶ To adjust color temperature. You can also adjust Color Temperature in the PICTURE menu.

#### Transmission

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

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

#### Ack

[u][ ][Set ID][ ][OK][Data][x]

### 17. Red Adjustment (Command 2 : v)

- ▶ To adjust red in color temperature.

#### Transmission

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

Data Min : 0 ~ Max : 50

\* Refer to 'Real data mapping 2'. See page 119.

#### Ack

[v][ ][Set ID][ ][OK][Data][x]

### 18. Green Adjustment (Command 2 : w)

- ▶ To adjust green in color temperature.

#### Transmission

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

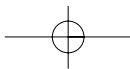
Data Min : 0 ~ Max : 50

\* Refer to 'Real data mapping 2'. See page 119.

#### Ack

[w][ ][Set ID][ ][OK][Data][x]





## 19. Blue Adjustment (Command 2 : \$)

- ▶ To adjust blue in color temperature.

### Transmission

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

Data Min : 0 ~ Max : 50

\* Refer to 'Real data mapping 2'. See page 119.

### Ack

[\$][ ][Set ID][ ][OK][Data][x]

## 20. Tune Command/Channel Tuning (Command1:m, Command2:a)

- ▶ Tune channel to following physical number.

### Transmission

[m][a][ ][Set ID][ ][Data0][ ][Data1][ ][  
Data2][ ][Data3][ ][Data4][ ][Data5][Cr]

Data 0: NTSC air : 02 ~ 45

NTSC cable : 01, 0E ~ 7D

Data 1 ~ 4: Don't care

Data 5: High -> Main channel: 0, Sub channel: 8

Low -> Air: 0, CATV: 1

### Ack

[a][ ][Set ID][ ][OK][Data0][Data1][  
Data2][Data3][Data4][Data5][x][a][ ][  
Set ID][ ][NG][Data0][x]

## 21. Abnormal State (Command 2 : z)

- ▶ To recognize an abnormal state.  
This feature is not available for all models.

### Transmission

[k][z][ ][Set ID][ ][FF][ ][Cr]

Data FF : Read

### Ack

[z][ ][Set ID][ ][OK][Data][x]

Data 0: Normal (Power on and signal exist)

1: No signal (Power on)

2: Turn the TV off by remote control

3: Turn the TV off by sleep time function

4: Turn the TV off by RS-232C function

5: 5V down

6: AC down

7: Turn the TV off by Fan Alarm function

8: Turn the TV off by Off time function

9: Turn the TV off by Auto sleep function

a: Turn the TV off by AV board detect

\* This function is "read only".

## 22. ISM Method (Command 1 : j, Command 2 : p)

- ▶ To control the ISM method. You can also adjust ISM Method in OPTION menu.  
It's not available to use this function in LCD TV models.

### Transmission

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

Data 0: Normal

2: Orbiter

1: White wash

3: Inversion

### Ack

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

## 23. Low Power (Command 1 : j, Command 2 : q)

- ▶ To reduce the power consumption of the set. You can also adjust Low Power in OPTION menu.  
It's not available to use this function in LCD TV models.

### Transmission

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

Data 0 : Off

1 : On

### Ack

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

## 24. Auto Configure (Command 1 : j, Command 2 : u)

- ▶ To adjust picture position and minimize image shaking automatically. It works only in RGB (PC) mode.

### Transmission

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

Data 1: To set

### Ack

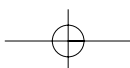
[u][ ][Set ID][ ][OK/NG][Data][x]

### \* Real data mapping 1

0 : Step 0  
⋮  
A : Step 10 (Set ID 10)  
⋮  
F : Step 15 (Set ID 15)  
10 : Step 16 (Set ID 16)  
⋮  
64 : Step 100  
⋮  
6E : Step 110  
⋮  
73 : Step 115  
74 : Step 116  
⋮  
C7 : Step 199  
⋮  
FE : Step 254  
FF : Step 255

### \* Real data mapping 2

0 : -40  
1 : -39  
2 : -38  
⋮  
28 : 0  
⋮  
4E : +38  
4F : +39  
50 : +40



# APPENDIX

## 25. Key (Command1:m, Command1:c)

► To send IR remote key code.

*Transmission*

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

Data Key code - Refer to page 113.

*Ack*

[c][ ][Set ID][ ][OK][Data][x]

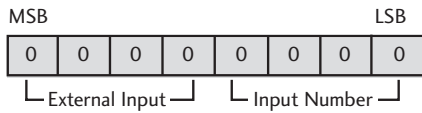
## 26. Input select (Command1:x, Command2:b) (Main Picture Input)

► To select input source for set.

*Transmission*

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

Data Structure



External Input				Data
0	0	0	1	Analog
0	0	1	0	AV
0	1	0	0	Component
0	1	1	0	RGB-PC
1	0	0	1	HDMI

Input Number				Data
0	0	0	0	Input1
0	0	0	1	Input2
0	0	1	0	Input3
0	0	1	1	Input4

*Ack*

[b][ ][Set ID][ ][OK][Data][x]

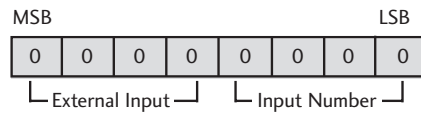
## 27. PIP Input select (Command1:x, Command2:y)

► To adjust input source for sub picture in PIP mode.

*Transmission*

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

Data Structure

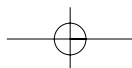
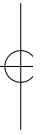
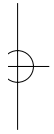
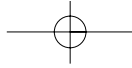


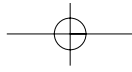
External Input				Data
0	0	0	1	Analog
0	0	1	0	AV
0	1	0	0	Component
0	1	1	0	RGB-PC
1	0	0	1	HDMI

Input Number				Data
0	0	0	0	Input1
0	0	0	1	Input2
0	0	1	0	Input3
0	0	1	1	Input4

*Ack*

[y][ ][Set ID][ ][OK][Data][x]





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