



LCD TV OWNER'S MANUAL

LCD TV MODELS

42LY3DE*

47LY3DE*

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



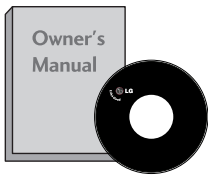
DVB is a registered trademark
of the DVB Project

ID Number: 4920: 42LY3DE
4919: 47LY3DE

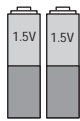


ACCESSORIES

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



Owner's Manual



Batteries



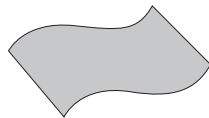
Remote Control



Power Cord



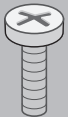
Cable Management



Polishing Cloth

- Carefully wipe stained spot on the exterior only with the polishing cloth if there is stain or fingerprint on the exterior.
- Do not wipe hard roughly when removing stain. Please be careful as excessive pressure may cause a scratch or discoloration.

This feature is not available for all models.



2- TV Bracket Bolts



2- TV Brackets,
2- Wall Brackets



Twist Holder
Arrange the wires with the twist holder.

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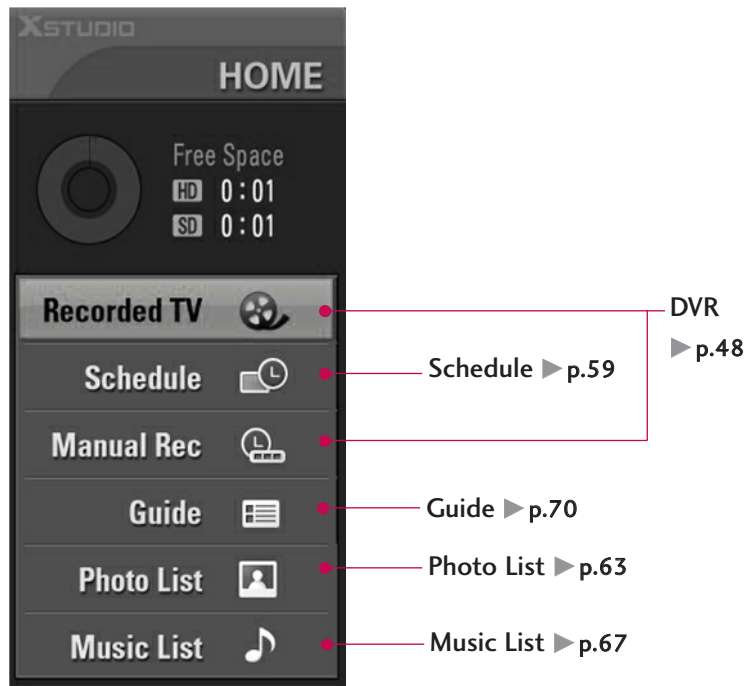
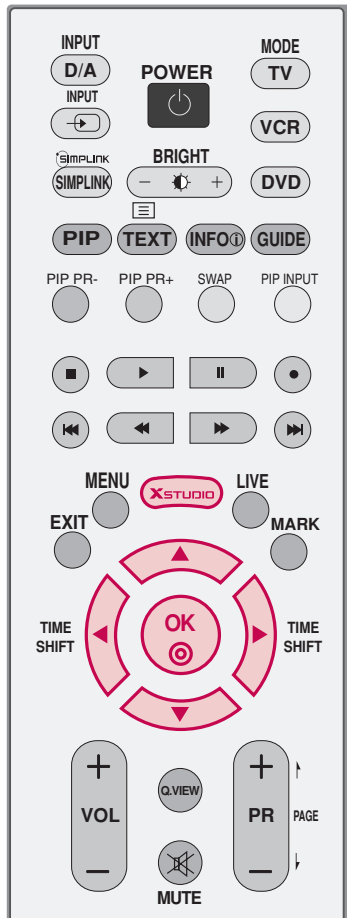
After reading this manual, keep it handy for future reference.

PREPARATION

HOME MENU

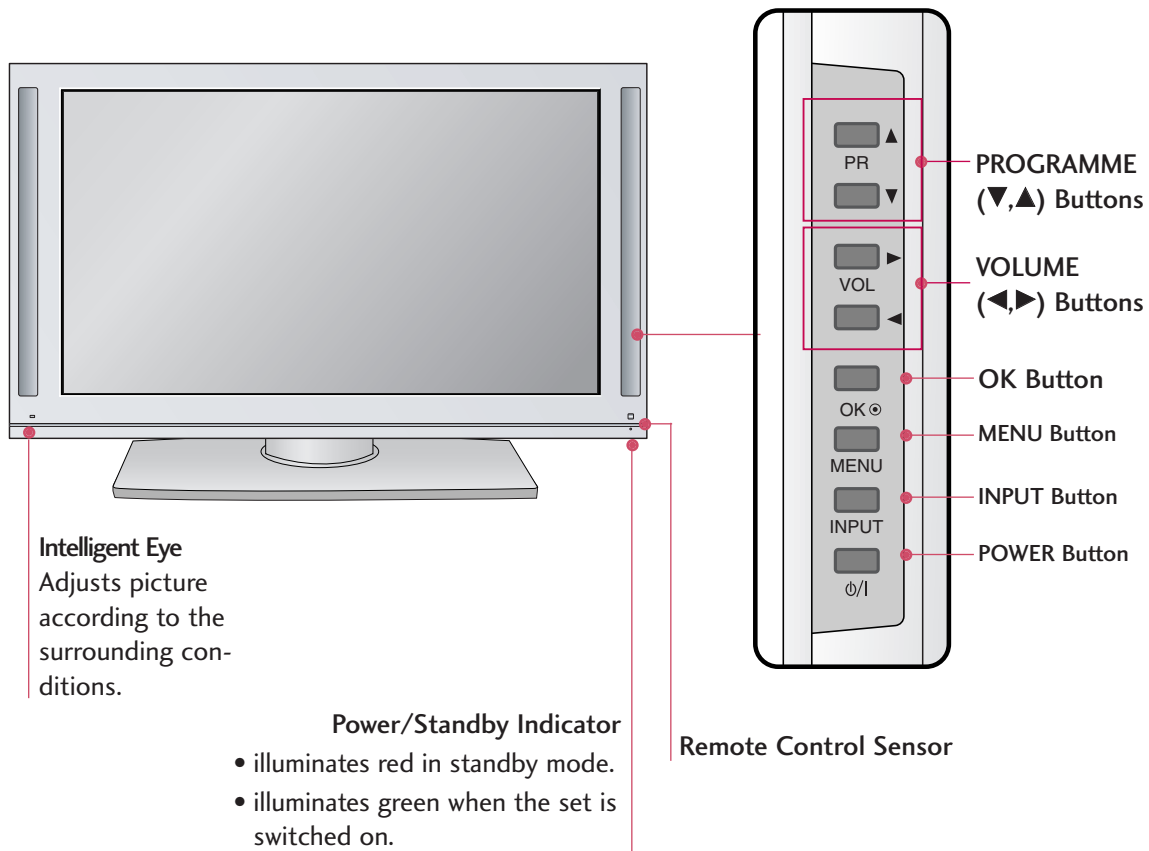
This menu is a contents guide.

In Home Menu, you enter the Recorded TV and the Guide of X-STUDIO, the X-STUDIO recording schedule, Manual Recording, Photo List, Music List



FRONT PANEL CONTROLS

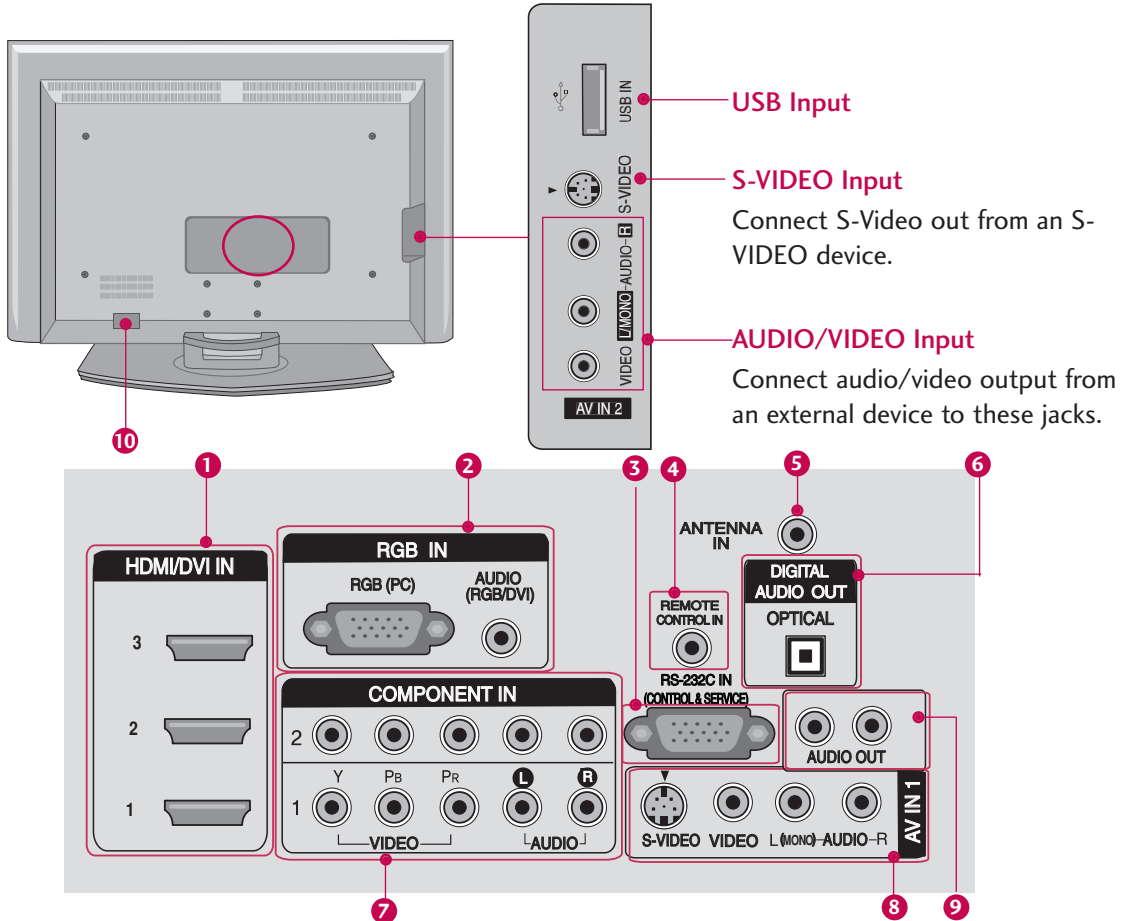
- This is a simplified representation of the front panel. Image shown may be somewhat different from your TV.
- If your product has a protection film attached, remove the film and then wipe the product with a polishing cloth.



PREPARATION

BACK PANEL INFORMATION

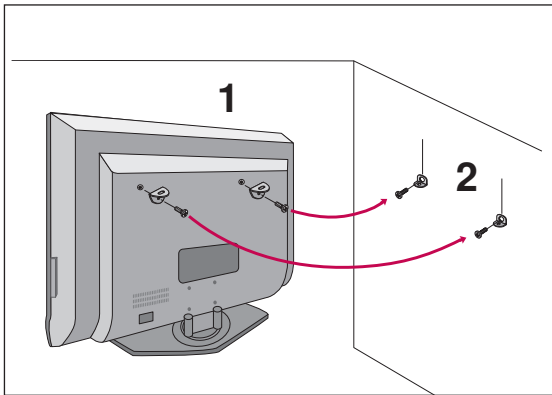
Image shown may be somewhat different from your TV.



- 1 HDMI/DVI IN**
Connect a HDMI signal.
Or DVI(VIDEO) signal to the this port with a HDMI to DVI cable.
- 2 RGB/AUDIO IN**
Connect the output from a set top box or PC to the appropriate input port.
- 3 RS-232C IN (CONTROL &SERVICE) PORT**
Connect to the RS-232C port on a PC.
- 4 Remote Control Port**
Connect your wired remote control.
- 5 ANTENNA IN**
Connect antenna signals to this jack.
- 6 DIGITAL AUDIO OUT**
Connect digital audio from various types of equipment. Note: In standby mode, these ports do not work.
- 7 COMPONENT IN**
Connect a component video/audio device to these jacks.
- 8 AV (Audio/Video) IN 1**
Connect audio/video output from an external device to these jacks.
S-VIDEO
Connect S-Video out from an S-VIDEO device.
- 9 AUDIO OUT**
Connect an external amplifier or add a subwoofer to your surround sound system.
- 10 Power Cord Socket**
For operation with AC power.
Caution: Never attempt to operate the TV on DC power.

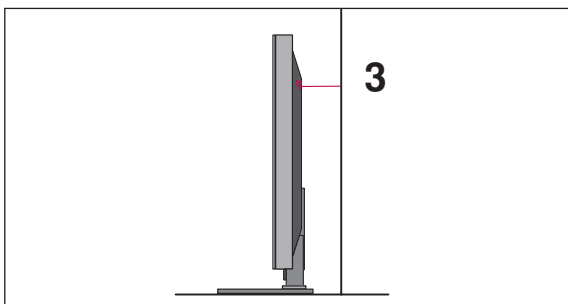
ATTACHING THE TV TO A WALL

- 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.



- 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.

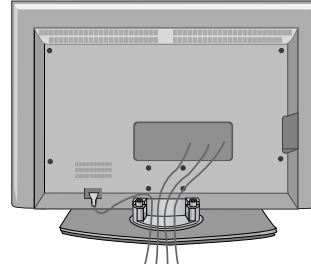
PREPARATION

BACK COVER FOR WIRE ARRANGEMENT

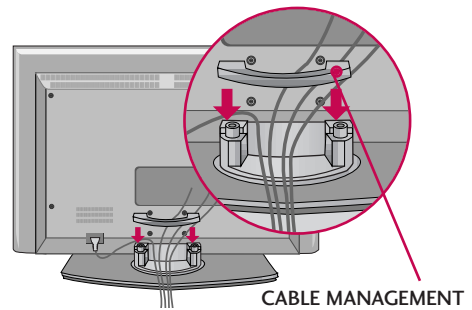
■ Here shown may be somewhat different from your TV.

1 Connect the cables as necessary.

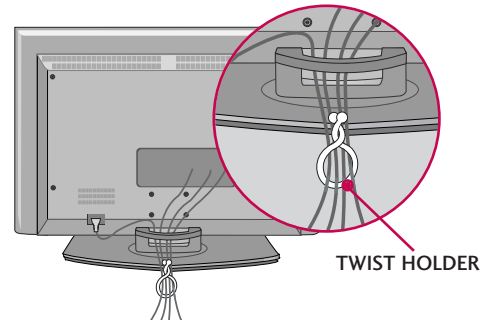
To connect additional equipment, see the **External Equipment Setup** section.



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

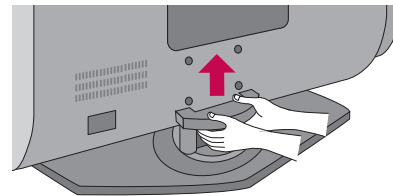


3 Bundle the cables using the supplied twist holder.
(This Feature is not available for all models.)



How to remove the cable management

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



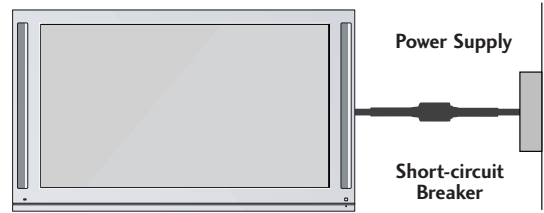
NOTE

- ▶ 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.

GROUNDING

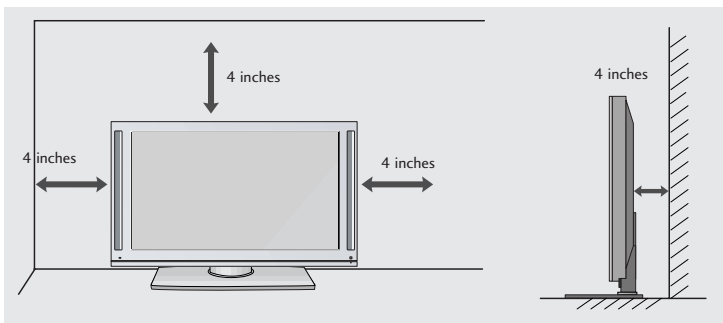
Ensure that you connect the earth ground wire to prevent possible electric shock. If grounding methods are not possible, have a qualified electrician install a separate circuit breaker.

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



DESKTOP PEDESTAL INSTALLATION

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

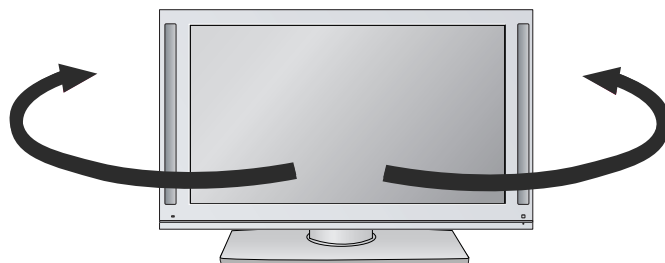


⚠ CAUTION

- ▶ Ensure adequate ventilation by following the clearance recommendations.

SWIVEL STAND

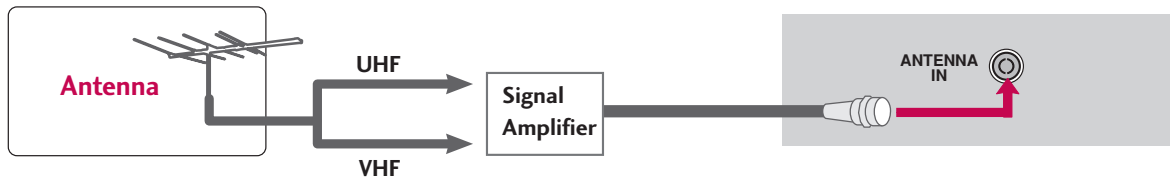
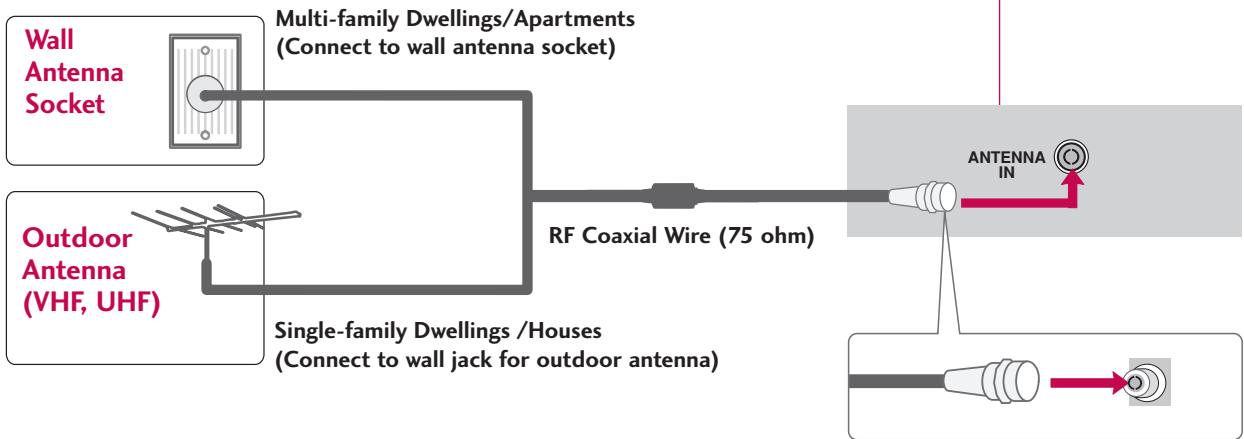
After installing the TV, you can adjust the TV set manually to the left or right direction by 20 degrees to suit your viewing position.



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

ANTENNA CONNECTION

Wall Antenna Socket or Outdoor Antenna without a Cable Box Connections. For optimum picture quality, adjust antenna direction if needed.



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

! NOTE

- ▶ The TV will let you know when the analogue, cable, and digital programme scans are complete.

EXTERNAL EQUIPMENT SETUP

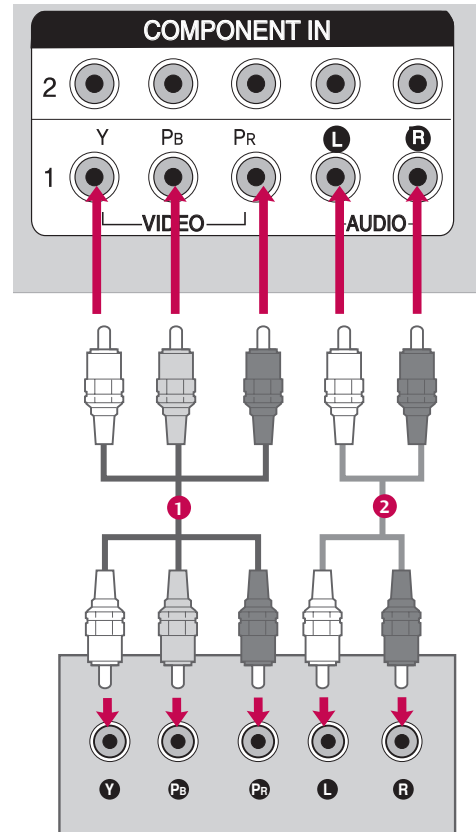
■ To prevent the equipment damage, never plug in any power cords until you have finished connecting all equipment.

HD RECEIVER SETUP

When connecting with a Component cables

- 1 Connect the video outputs (Y, PB, PR) of the digital set top box to the **COMPONENT IN VIDEO 1** jacks on the set. Match the jack colours. (Y = green, PB = blue, and PR = red)
- 2 Connect the audio output of the digital set-top box to the **COMPONENT IN AUDIO 1** jacks on the set.
- 3 Turn on the digital set-top box. (Refer to the owner's manual for the digital set-top box.)
- 4 Select **Component 1** input source using the **INPUT** button on the remote control. If connected to **COMPONENT IN 2** input, select **Component 2** input source.

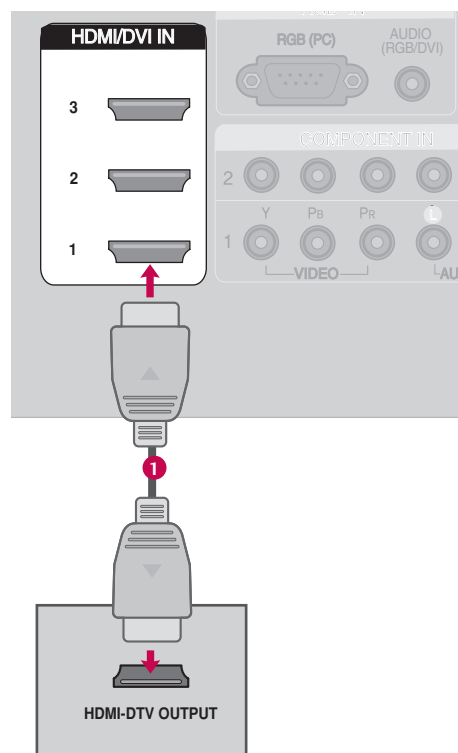
Signal	Component 1/2	HDMI 1/2/3
480i	Yes	No
480p	Yes	Yes
576i	Yes	No
576p	Yes	Yes
720p	Yes	Yes
1080i	Yes	Yes
1080p	Yes	Yes



EXTERNAL EQUIPMENT SETUP

When connecting with HDMI cable

- 1 Connect the digital set-top box to **HDMI/DVI IN1, 2** or **3** jack on the set.
- 2 No separate audio connection is necessary.
- 3 Turn on the digital set-top box.
(Refer to the owner's manual for the digital set-top box.)
- 4 Select **HDMI1**, **HDMI2** or **HDMI3** input source using the **INPUT** button on the remote control.

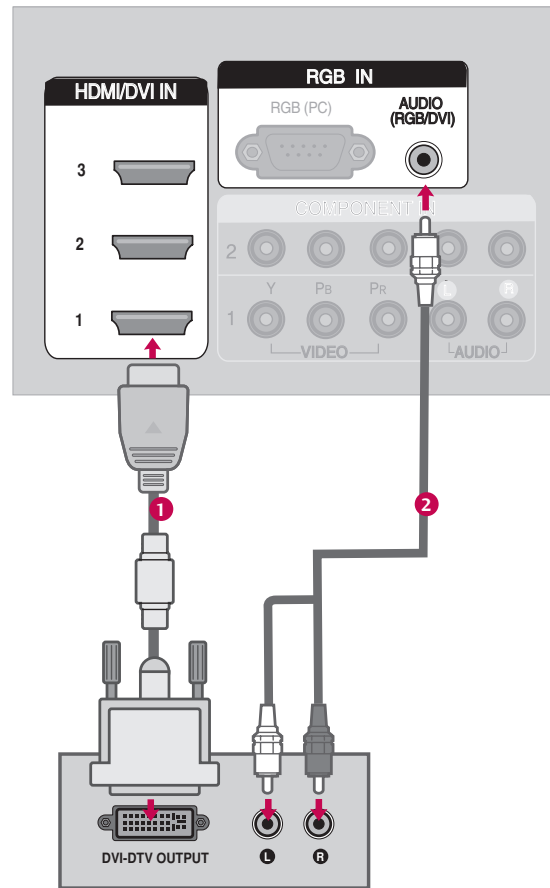


! NOTE

- ▶ If the digital set-top box supports Auto HDMI function, the output resolution of the source device will be automatically set to 1280x720p.
- ▶ If the digital set-top box player does not support Auto HDMI, you need to set the output resolution appropriately. To get the best picture quality, adjust the output resolution of the source device to 1920x1080i/1080p.

When connecting HDMI to DVI cable

- 1 Connect the DVI output of the digital set-top box to the **HDMI/DVI IN1, 2 or 3** 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, HDMI2 or HDMI3** input source with using the **INPUT** button on the remote control.

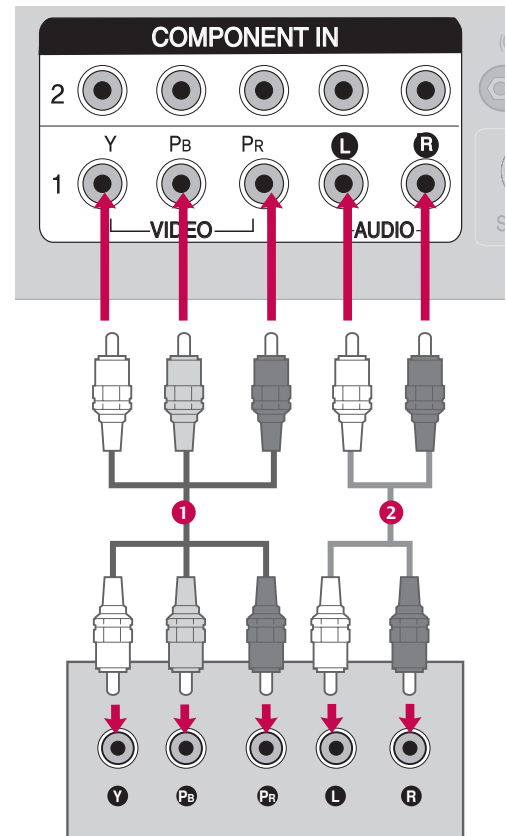


EXTERNAL EQUIPMENT SETUP

DVD SETUP

When connecting Component cables

- 1** Connect the video outputs (Y, PB, PR) of the DVD to the **COMPONENT IN VIDEO1** jacks on the set. Match the jack colours (Y = green, PB = blue, and PR = red).
- 2** Connect the audio outputs of the DVD to the **COMPONENT IN AUDIO1** jacks on the set.
- 3** Turn on the DVD player, insert a DVD.
- 4** Select **Component 1** input source using the **INPUT** button on the remote control. If connected to **COMPONENT IN 2** input, select **Component 2** input source.
- 5** Refer to the DVD player's manual for operating instructions.



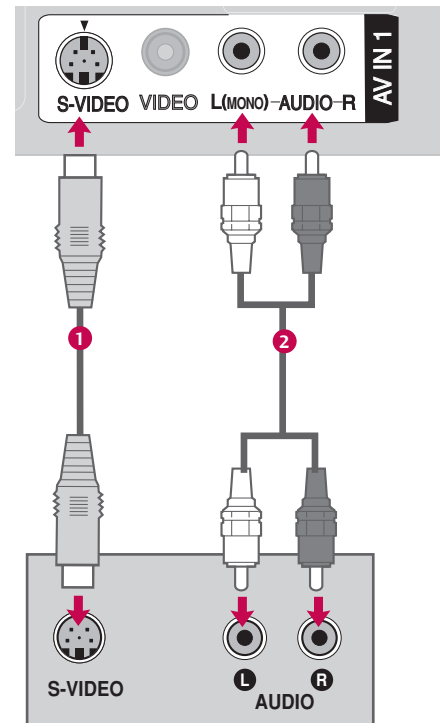
Component Input ports

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

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

When connecting with an S-Video cable

- 1 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 **AV1** input source using the **INPUT** button on the remote control.
If connected to **AV IN 2** input, select **AV2** input source.
- 5 Refer to the DVD player's manual for operating instructions.

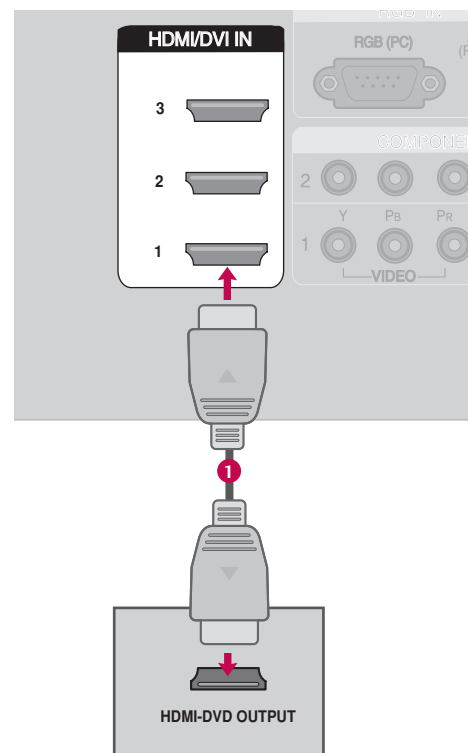


When connecting HDMI cable

- 1 Connect the HDMI output of the DVD to the **HDMI/DVI IN1, 2 or 3** jack on the set.
- 2 No separate audio connection is necessary.
- 3 Select **HDMI1, HDMI2 or HDMI3** input source using the **INPUT** button on the remote control.
- 4 Refer to the DVD player's manual for operating instructions.

NOTE

- ▶ If the DVD supports Auto HDMI function, the DVD output resolution will be automatically set to 1280x720p.
- ▶ If the DVD does not support Auto HDMI, you need to set the output resolution appropriately.
To get the best picture quality, adjust the output resolution of the DVD to 1920x1080i/1080p.

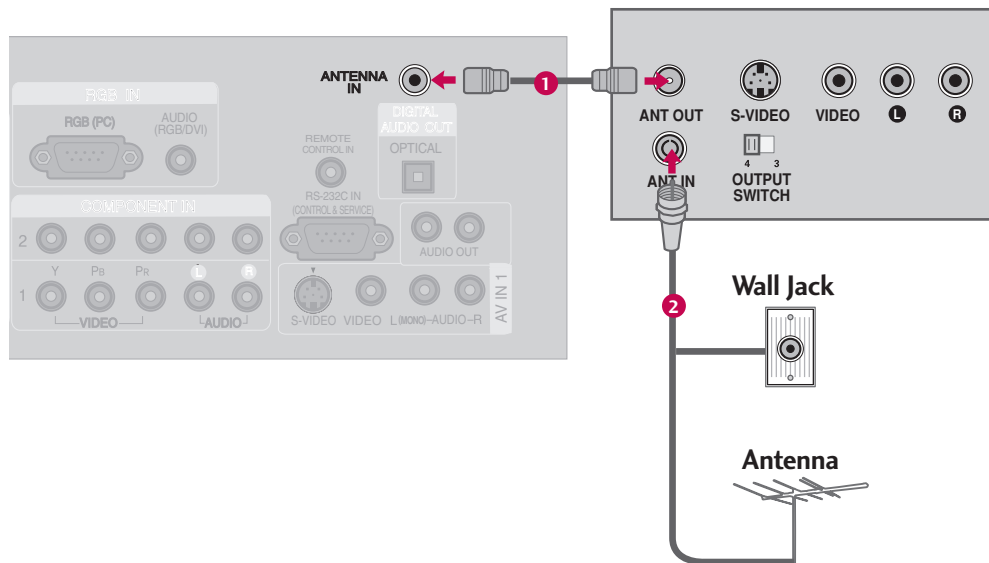


EXTERNAL EQUIPMENT SETUP

VCR SETUP

- To avoid picture noise (interference), leave an adequate distance between the VCR and TV.
- If the 4:3 picture format is used; the fixed images on the sides of the screen may remain visible on the screen. This phenomenon is common to all manufacturers and in consequence the manufacturer's warranty does not cover the product bearing this phenomenon.

When connecting with an antenna



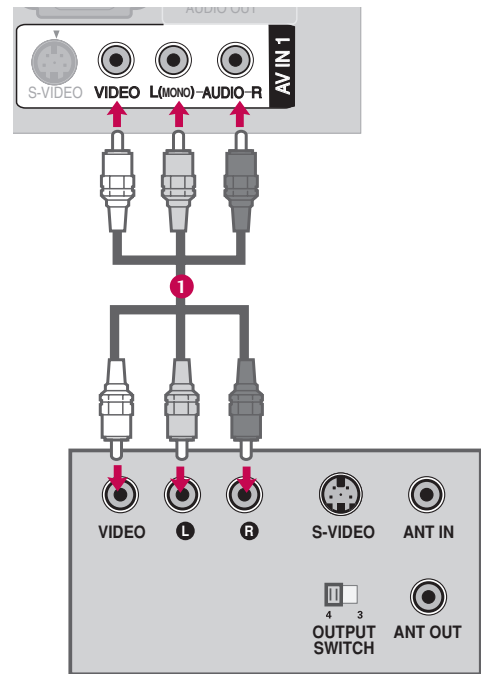
- 1 Connect the RF antenna out socket of the VCR to the **ANTENNA IN** socket on the set.
- 2 Connect the antenna cable to the RF antenna in socket of the VCR.
- 3 Set VCR output switch to 3 or 4 and then tune TV to the same programme number.
- 4 Insert a video tape into the VCR and press **PLAY** on the VCR. (Refer to the VCR owner's manual.)

When connecting with an RCA cable

- 1 Connect the **AUDIO/VIDEO** jacks between TV and VCR. Match the jack colours (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.

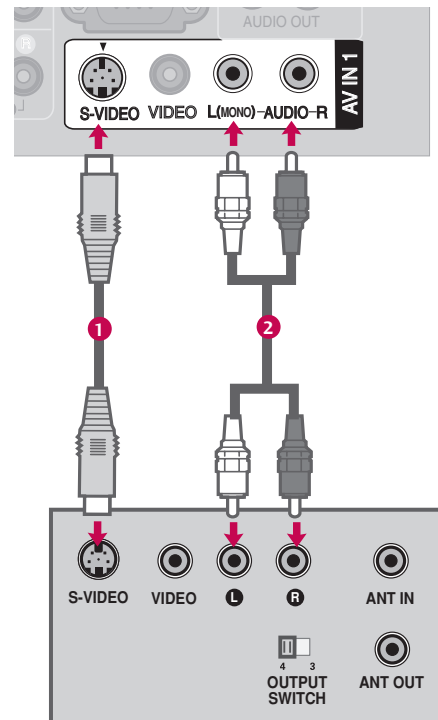


When connecting with an S-Video cable

- 1 Connect the S-VIDEO output of the VCR to the **S-VIDEO** input on the set.
- 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 **AV1** input source using the **INPUT** button on the remote control.
If connected to **AV IN 2** input, select **AV2** input source.

! NOTE

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

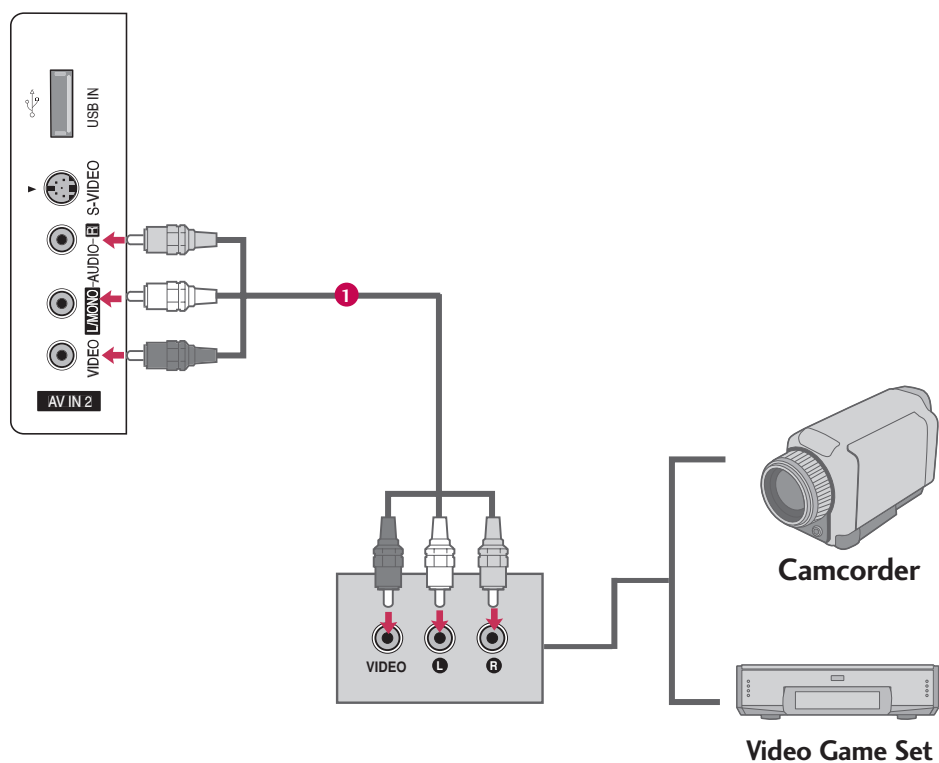


! CAUTION

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

EXTERNAL EQUIPMENT SETUP

OTHER A/V SOURCE SETUP



- 1 Connect the **AUDIO/VIDEO** jacks between TV and external equipment. Match the jack colours. (Video = yellow, Audio Left = white, and Audio Right = red)
- 2 Select **AV2** input source using the **INPUT** button on the remote control. If connected to **AV IN1** input, select **AV1** input source.
- 3 Operate the corresponding external equipment.

PC SETUP

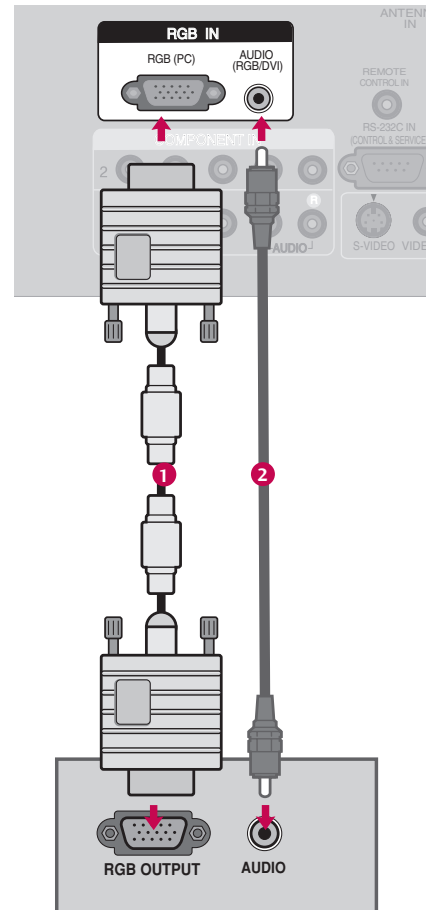
This TV provides Plug and Play capability, meaning that the PC adjusts automatically to the TV's settings. The TV perceives 1024x768, 60Hz as DTV 720p based on the PC graphic card. If necessary, change the screen scanning rate for the graphic card accordingly.

When connecting D-sub 15pin 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-PC** input source in input option of Special menu.
- 5 Once you select **RGB-PC** in input option of Special menu, **INPUT** button is also available for this purpose.

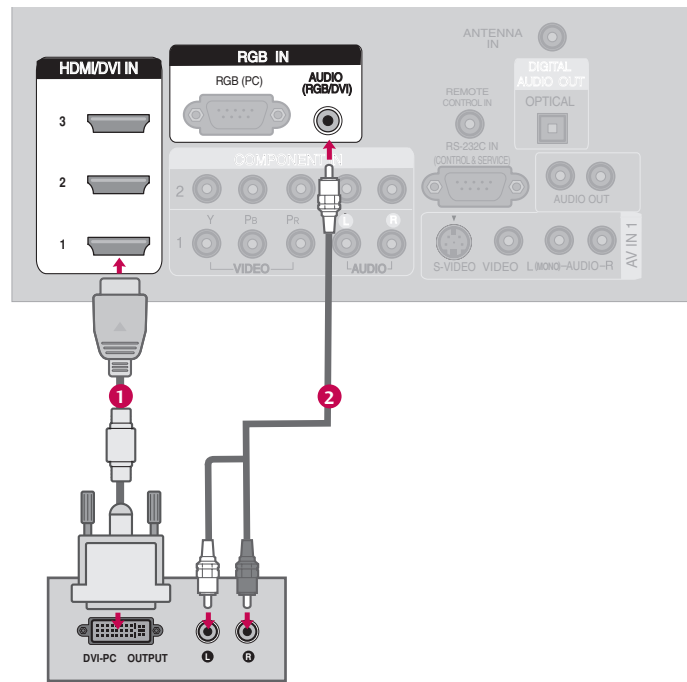
! NOTE

- ▶ Check the image on your TV. There may be noise associated with the resolution, vertical pattern, contrast or brightness in PC mode. If noise is present, change the PC output to another resolution, change the refresh rate to another rate or adjust the brightness and contrast on the VIDEO menu until the picture is clear. If the refresh rate of the PC graphic card can not be changed, change the PC graphic card or consult the manufacturer of the PC graphic card.



EXTERNAL EQUIPMENT SETUP

When connecting HDMI to DVI cable



- 1 Connect the DVI output of the PC to the **HDMI/DVI IN1**, **2** or **3** jack on the set.
(Use the HDMI to DVI cable)
- 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**, **HDMI2** or **HDMI3** input source using the **INPUT** button on the remote control.

! NOTE

- ▶ If the PC has a DVI output and no HDMI output, a separate audio connection is necessary.
- ▶ If the PC does not support Auto DVI, you need to set the output resolution appropriately. To get the best picture quality, adjust the PC graphics card's output resolution to 1920x1080, 60Hz.

Supported Display Specifications (RGB/HDMI-PC)

Resolution	Horizontal Frequency(kHz)	Vertical Frequency(Hz)
640x480	31.469	59.940
	37.500	75.000
720x400	31.469	70.08
800x600	37.879	60.317
	46.875	75.000
1024x768	48.363	60.004
	56.476	70.069
	60.023	75.029
1280x768	47.776	59.870
1360x768	47.712	60.015
1366x768	47.13	59.65
1280x1024	63.981	60.020
	79.976	75.025
1600x1200	75.000	60.000
1920x1080	67.500	60.000

! NOTES

- ▶ Depending on the graphics card, DOS mode may not work if a HDMI to DVI Cable is in use.
- ▶ Avoid keeping a fixed image on the screen for a long period of time. The fixed image may become permanently imprinted on the screen.
- ▶ The synchronization input form for Horizontal and Vertical frequencies is separate.

EXTERNAL EQUIPMENT SETUP

Screen Setup for PC mode

Overview

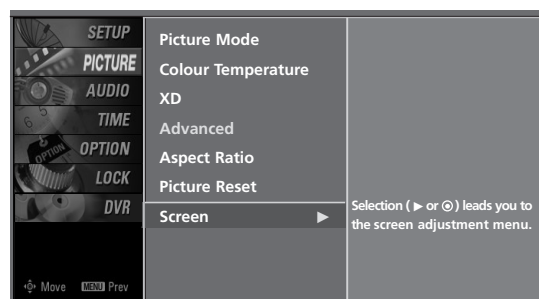
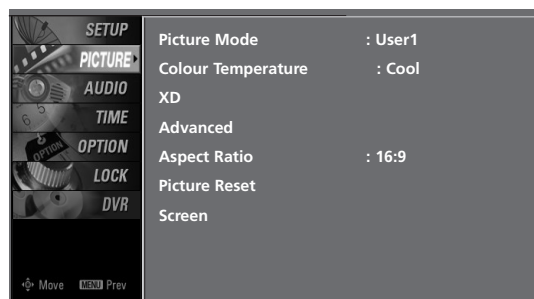
When the RGB input, of the set is connected to a PC Output, Select RGB-PC with using the **INPUT** button on the remote control.

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

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

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

3 Press the ► button to enter the screen adjustment menu.

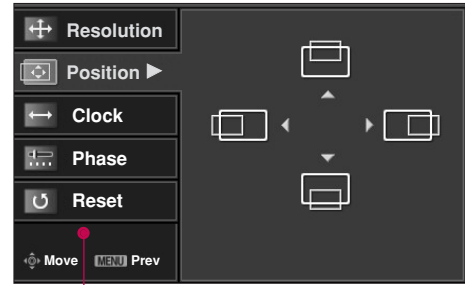


Adjustment for screen Resolution, Position, Clock, Phase, Reset

- 1 Use ▲ or ▼ button to select **Resolution**, **Position**, **Clock**, or **Phase**.

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

- 3 Press the **OK** button.



1 2 3

Resolution XGA(1024, 1280, 1360, 1366) isn't distinguished because of having the same H/V Sync Time. This function is you to select the Default Sync Time.

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

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.

Initializing (Reset to original factory values)

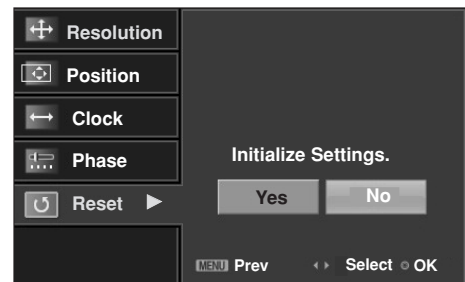
To initialize the adjusted values.

This function allows you to return to the good picture reproduction programmed at the factory and cannot be change.

- 1 Use ▲ or ▼ button to select **Reset**.

- 2 Press the **OK** button and then use ◀ or ▶ button to select **Yes**.

- 3 Press the **OK** button.

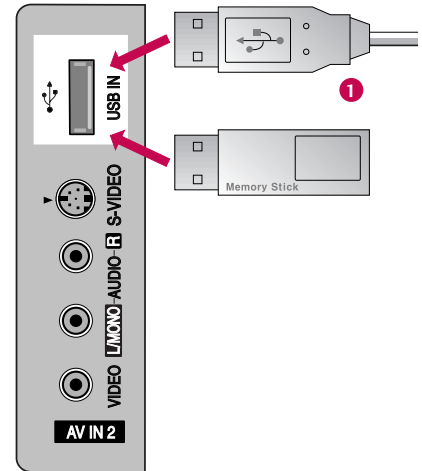


1 2 3

EXTERNAL EQUIPMENT SETUP

USB IN 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 **XSTUDIO** function. (▶ p.62)



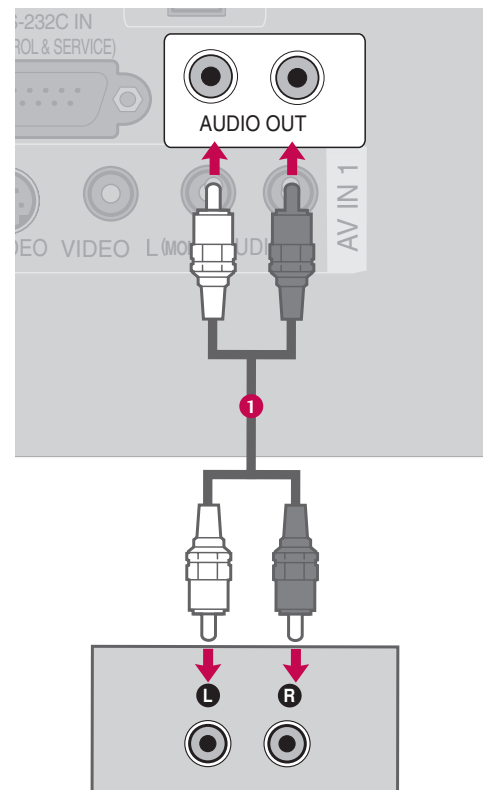
EXTERNAL STEREO SETUP

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 **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

- ▶ Only Digital, Analogue, AV mode can be used for Audio Out.
- ▶ When connecting with external audio equipments, such as amplifiers or speakers, please turn the TV speakers off. (▶ p.91)



DIGITAL AUDIO OUTPUT SETUP

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

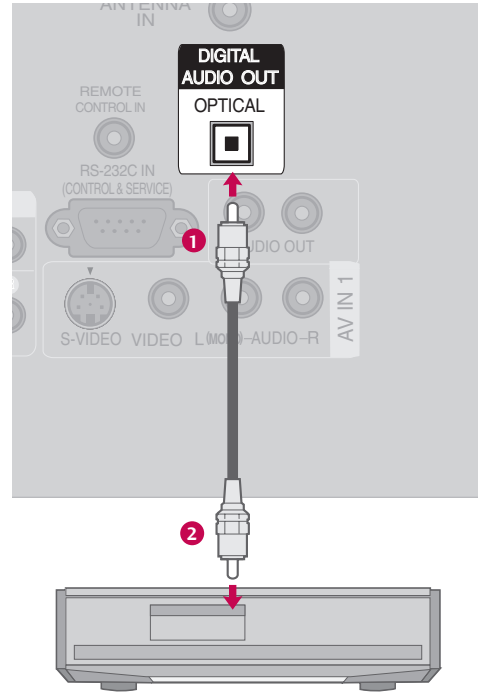
- 1 Connect one end of an optical cable to the TV Digital Audio (Optical) Output port.
- 2 Connect the other end of the optical cable to the digital audio (optical) input on the audio equipment.
- 3 Set the "TV Speaker option - Off" in the AUDIO menu. See the external audio equipment instruction manual for operation.

NOTE

- ▶ When connecting with external audio equipments, such as amplifiers or speakers, please turn the TV speakers off. (▶ p.91)

CAUTION

- ▶ Do not look into the optical output port. Looking at the laser beam may damage your vision.



WATCHING TV /PROGRAMME CONTROL

REMOTE CONTROL KEY FUNCTIONS

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

- D/A INPUT** (Digital TV / Analogue TV) Selects digital or analogue mode.

INPUT External input modes rotate in regular sequence: Digital, Analogue, AV1-2, Component 1-2, RGB-PC, HDMI1, HDMI2, HDMI3.

POWER Switches the set between ON and STANDBY.
- SIMPLINK** See a list of AV devices connected to TV. When you toggle this button, the Simplink menu appears at the screen ► p.45-46

BRIGHT Adjusts brightness on screen. It returns to the default settings brightness by changing mode source.
- VCR/DVD control buttons** Control some video cassette recorders or DVD players ("RECORD" button is not available for DVD player).

XSTUDIO mode control buttons Control the **XSTUDIO** mode.
- THUMBSTICK** (Up/Down/Left Right) (TIME SHIFT) Adjusts menu settings. Selects menu item.

OK Accepts your selection or displays the current mode.
- VOLUME UP/DOWN** Increase/decrease the sound level.

Q.VIEW Returns to the previously viewed programme.

MUTE Switches the sound on or off.

PROGRAMME UP/DOWN Select a programme.

PAGE UP/DOWN Move from one full set of screen information to the next one.
- NUMBER button** Selects a programme. Selects numbered items in a menu.

LIST Displays the programme table.

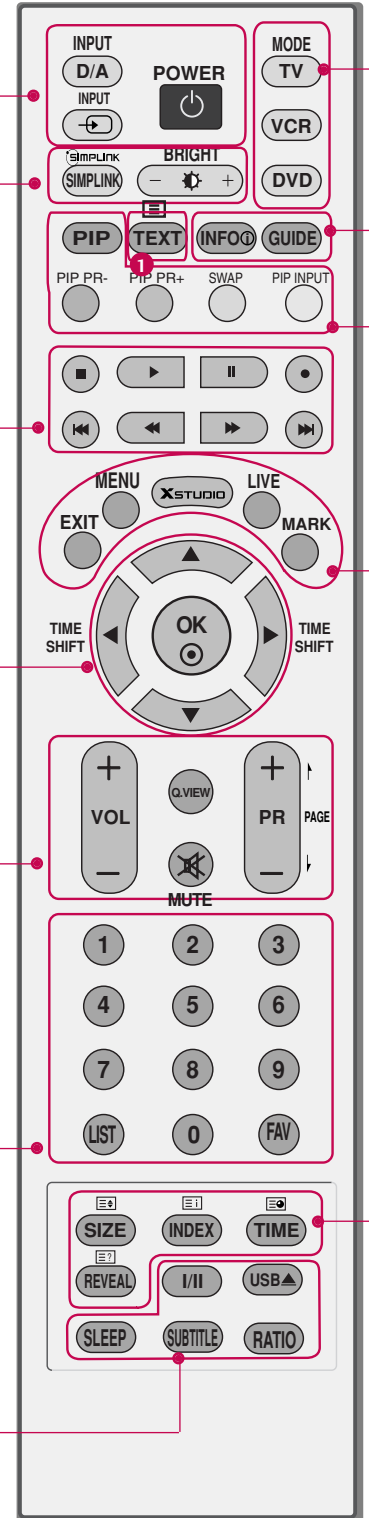
FAV(FAVORITE) Displays the selected favorite programmes.
- I/II** Selects the sound output or the audio mode.

USB▲ Remove the USB device.

SLEEP Sets the sleep timer.

SUBTITLE Recalls your preferred subtitle in digital mode.

RATIO Selects your desired picture format.



TV, VCR, DVD Select the remote operating mode: TV, VCR, DVD. Select other operating modes, for the remote to operate external devices.

INFO ⓘ Shows the present screen information.

GUIDE Shows a programme schedule.

PIP Switches to PIP and DW modes or off mode.

PIP PR +/- Selects a programme for the sub picture.

SWAP Alternates between main and sub picture in PIP/DW mode.

PIP INPUT Selects the input mode for the sub picture.

Coloured Button They are used as per the indications or functions displayed on the TV screen in the case of Text displays (Teletext, EPG) and programme edit.

EXIT Returns to TV viewing from any menu.

MENU Selects a menu.

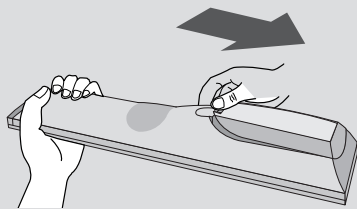
XSTUDIO Enter to the **XSTUDIO** mode.

LIVE In delayed mode, the screen returns to Live programme from TV, AV1 and AV2 modes.

MARK Selects the wanted functions.

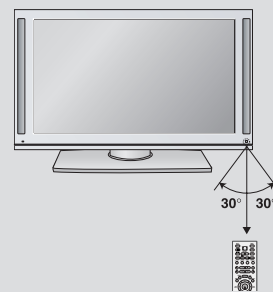
TELETEXT BUTTONS These buttons are used for teletext. Text button is used to enable teletext services while other buttons are for teletext functions.
* For further details, see the 'Teletext' section.

Installing Batteries



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

Remote control effective range



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

WATCHING TV/PROGRAMME CONTROL

TURNING ON THE TV

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

- 1** Ensure the power cord is connected correctly.
When connected to power the TV switches to standby mode.
 - In standby mode, press the **⏻/I**, **INPUT**, **PR ▲** or **▼** button on the TV or press the **POWER**, **INPUT**, **D/A INPUT**, **PR +** or **-**, **Number (0~9)** button on the remote control.
- 2** Select the viewing source by using the **INPUT** button on the remote control.
 - This TV is programmed to remember which mode it was last set to, even if you turn the TV off.
- 3** When finished using the TV, press the **POWER** button on the remote control. The TV reverts to standby mode.

! NOTE

- ▶ If you intend to be away on vacation, disconnect the power plug from the wall power outlet.
- ▶ When the TV is turned on, the indicator will blink red before the picture is seen.

INITIALIZING SETUP

- 1** If the OSD (On Screen Display) is displayed on the screen as figure 1 after turning on the set, you can adjust the Auto Programme tuning, Time Zone selection or Password setting.

! NOTE

- ▶ It will automatically disappear after approx. 40 seconds unless a button is pressed.

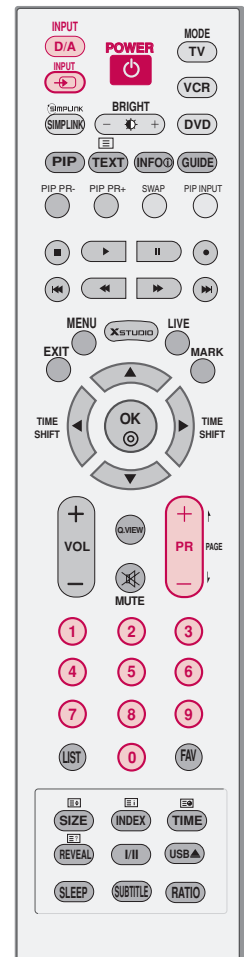
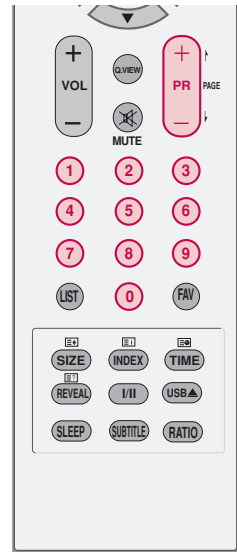


Figure 1.

PROGRAMME SELECTION

Automatically finds all programmes available through antenna inputs, and stores them in memory on the programme list.

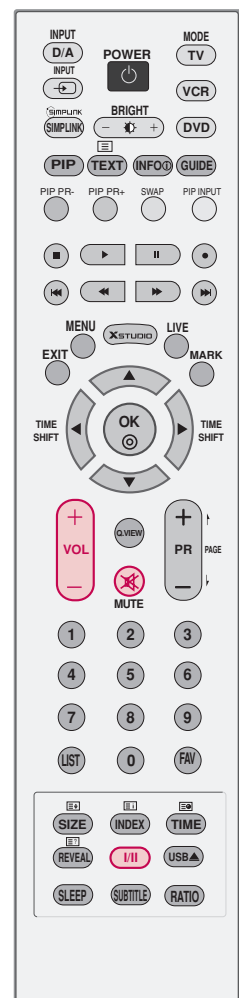
- 1 Press the **PR +** or **-** or **NUMBER** buttons to select a programme number.



VOLUME ADJUSTMENT

Adjust the volume to suit your personal preference.

- 1 Press the **VOL +** or **-** button to adjust the volume.
- 2 If you want to switch the sound off, press the **MUTE** button.
- 3 You can cancel the Mute function by pressing the **MUTE**, **I/II** or **VOL +** or **-** button.



WATCHING TV/PROGRAMME CONTROL

ON-SCREEN MENUS SELECTION AND ADJUSTMENT

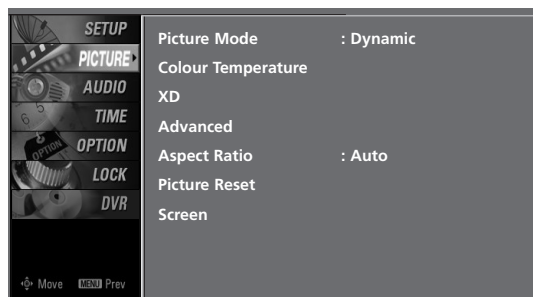
Your TV's OSD (On Screen Display) may differ slightly from what is shown in this manual.

- 1 Press the **MENU** button and then use **▲** or **▼** button to select each menu.
- 2 Press the **▶** button and then use **▲** or **▼** or **◀** or **▶** button to display the available menus.

SETUP



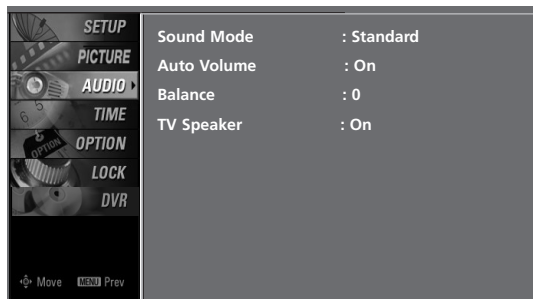
PICTURE



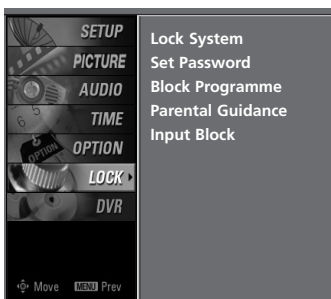
DVR



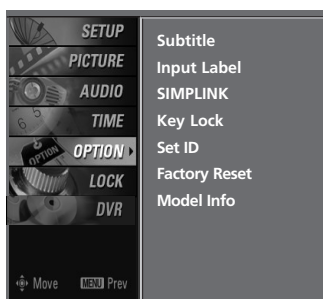
AUDIO



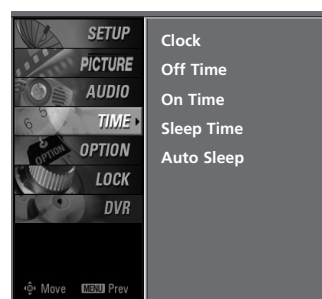
LOCK



OPTION



TIME



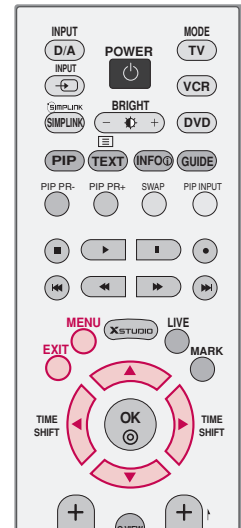
FACTORY RESET

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

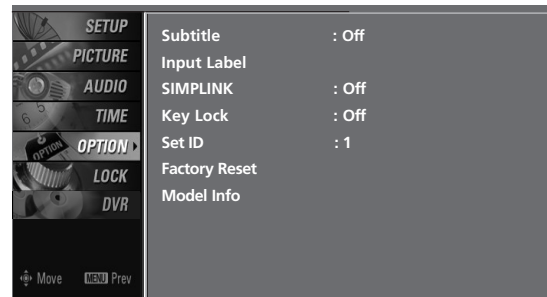
This function deletes all TV programmes.

To begin Factory Reset, input a 4-digit password in Lock system. Be sure to remember this number!

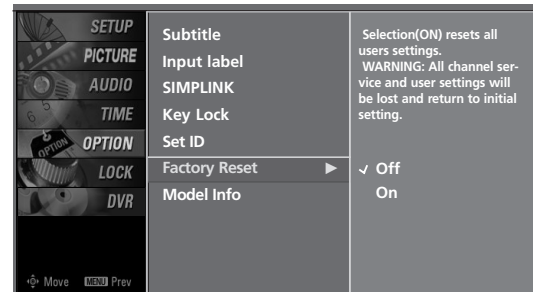
If you forgot your password, press '7', '7', '7', '7' on the remote control handset.



- 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 **Factory Reset**.
- 3 Press the ► button and then use ▲ or ▼ button to select **On** or **Off**.
- 4 Press **EXIT** button to return to normal TV viewing or press **MENU** button to return to the previous menu.



1

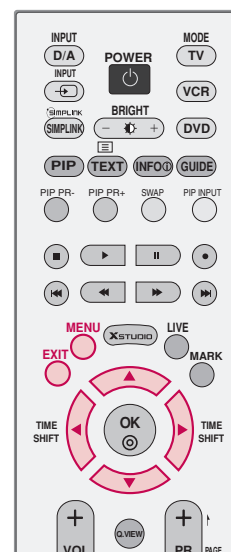


2 3

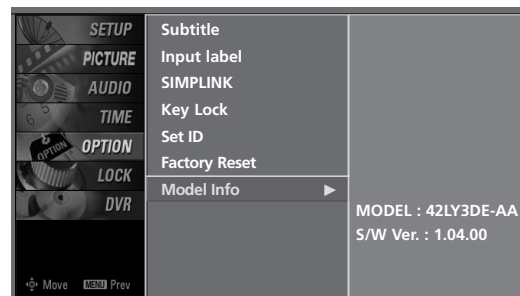
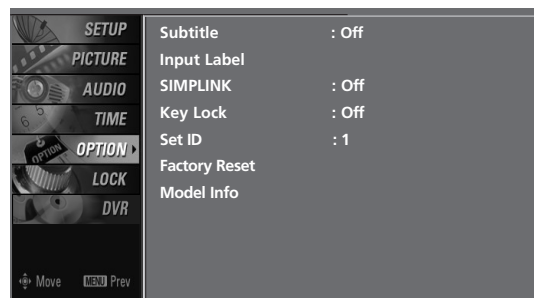
WATCHING TV/PROGRAMME CONTROL

MODEL INFO

This function enables you to watch Model, Software Version.



- 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 **Model Info**.
- 3 Press the ► button to display **Model, Software Version**.
- 4 Press **EXIT** button to return to normal TV viewing or press **MENU** button to return to the previous menu.



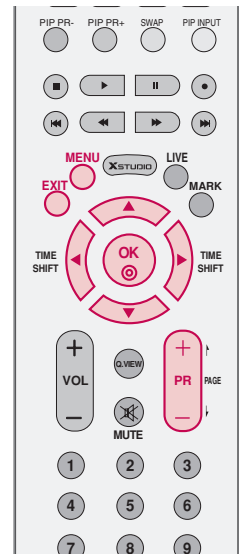
1 2 3

AUTO PROGRAMME TUNING

A password is required to gain access to Auto programme or Manual programme menu if the Lock system is turned on.

If you forgot your password, press '7', '7', '7', '7' on the remote control.

In Australia, if no station name can be assigned to a station, the programme number is assigned and stored as ----- followed by a number see 'Assigning a station name' section to assign the station name.

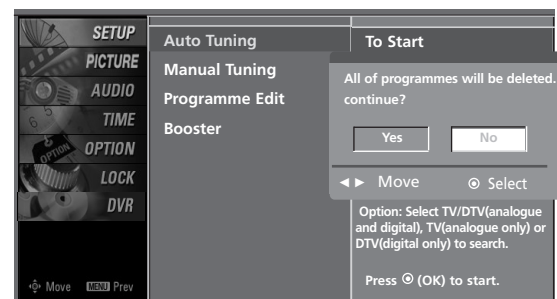
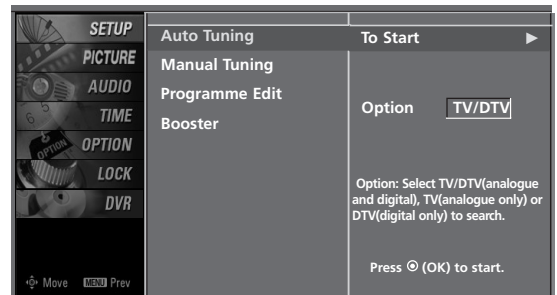
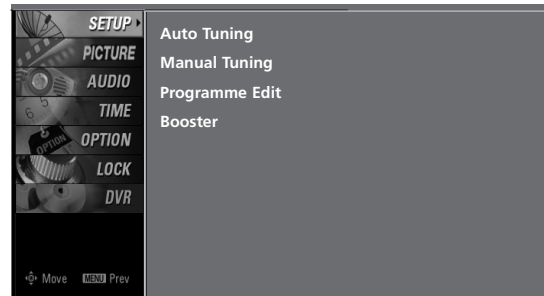


1 Press the **MENU** button and then ▲ or ▼ button to select the **SETUP** menu.

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

3 Press the ► button to select **To Start** and then press the ◀ or ▶ button to select **No**.

4 Press the **OK** button.



4

WATCHING TV/PROGRAMME CONTROL

5 Press the **▼** button and then **◀** or **▶** button to select **TV**(or **DTV** or **TV/DTV**) and then press the **OK** button.

6 Press the **◀** or **▶** button to select **Yes**.

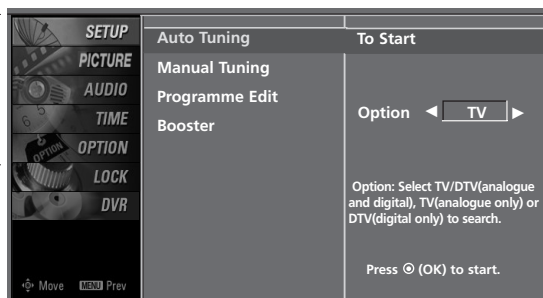
7 Press the **OK** button to begin auto programming. All of analogue programmes are deleted and all analogue stations are stored.

To stop auto tuning, press the **OK** button. When auto tuning is completed, the **Programme Edit** menu appears on the screen. See the 'Programme Edit' section to edit the stored programme.

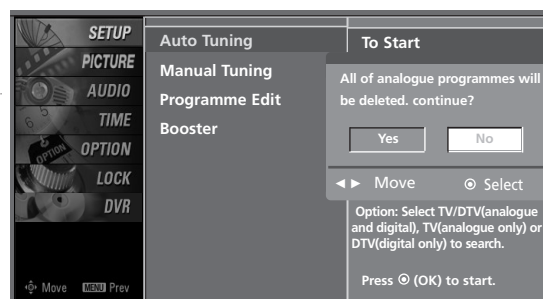
8 Press **EXIT** button to return to normal TV viewing or press **MENU** button to return to the previous menu.

! NOTE

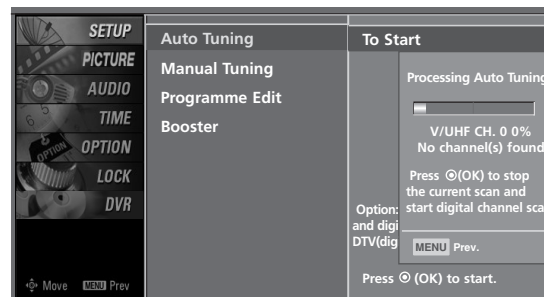
- ▶ In Auto Tuning mode, schedule list is deleted.



5



6

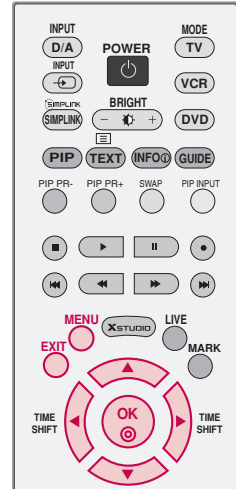


7

MANUAL PROGRAMME TUNING

In Digital Mode

Manual programme lets you manually add a programme to your programme list.



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

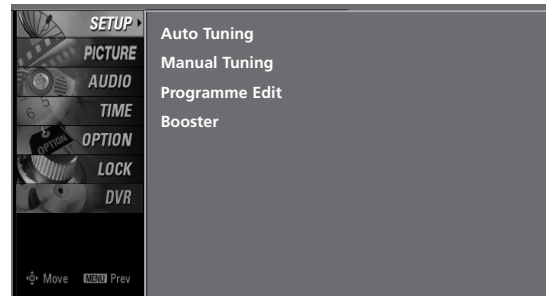
2 Press the ► button and then use ▲ or ▼ button to select **Manual Tuning**.

3 Press the ► button and then use ▲ or ▼ button to select the programme number you want to add.

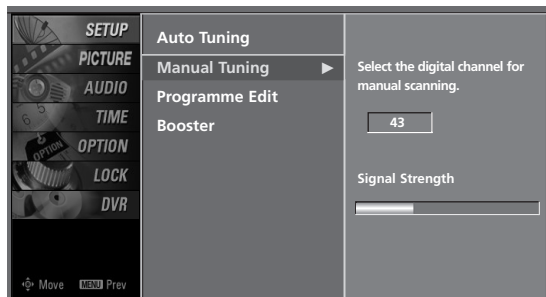
4 Press the **OK** button to store the programme. When the programme number you want to add is already added in programme list, the message “**Already programmed channel. Do you want to update?**” will appear. If you want to keep on manual tuning, select YES with using ◀ or ▶ button . Then, press the **OK** button. Otherwise select **NO**.

When the programme is stored, the Programme edit menu appears on the screen. See the ‘Programme Edit’ section to edit the stored programme.

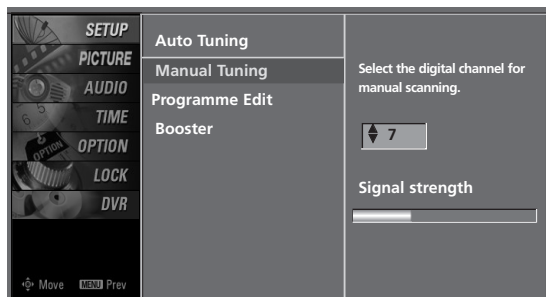
5 Press **EXIT** button to return to normal TV viewing or press **MENU** button to return to the previous menu.



1



2



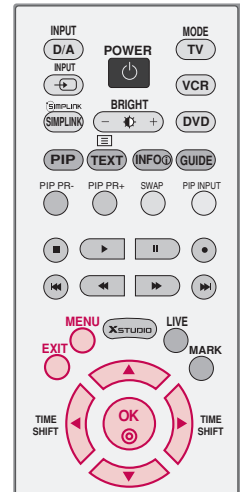
3 4 5

WATCHING TV/PROGRAMME CONTROL

MANUAL PROGRAMME TUNING *Continued*

In Analogue Mode

Manual programme lets you manually tune and arrange the stations in whatever order you desire. Also you can assign a station name with five characters to each programme number.



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 to select **Band**. Press the **◀** or **▶** button to select **V/UHF** or **Cable** as required.

4 Press the **▼** button to select **Channel**. Press the **◀** or **▶** button to select the desired channel number.

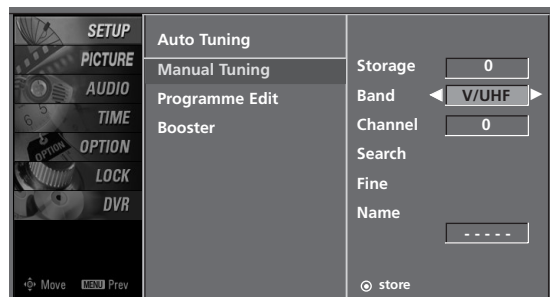
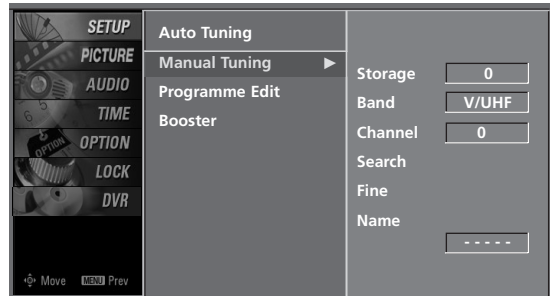
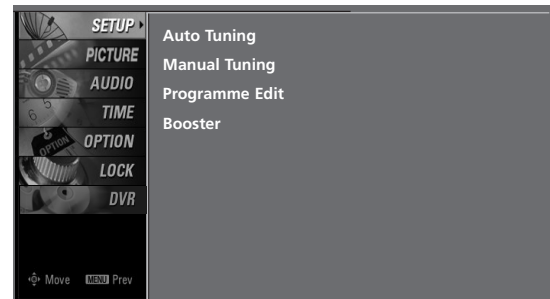
5 Press the **▼** button to select **Search**. Press the **◀** or **▶** button to commence searching. If a station is found the search will stop.

6 If this station is the one required, press the **▲** or **▼** button to select **Storage**. Select the desired programme number with the **◀** or **▶** button.

7 Press the **OK** button to store it.

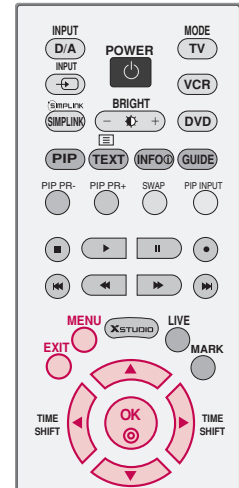
8 To store another station, repeat steps 3 to 7.

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



FINE TUNING - In Analogue Mode only

Normally fine tuning is only necessary if reception is poor. The finely tuned programme will be indicated by a yellow number during programme selection.



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

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

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

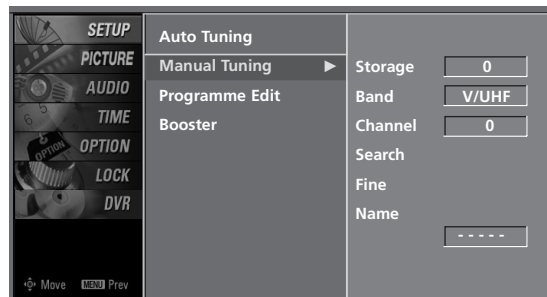
4 Press the ◀ or ▶ button to fine tune for the best picture and sound.

5 Press the **OK** button to store.

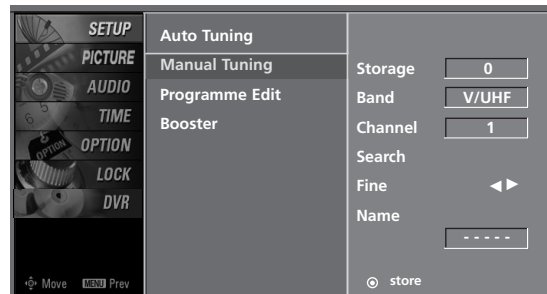
6 Press **EXIT** button to return to normal TV viewing or press **MENU** button to return to the previous menu.



1



2

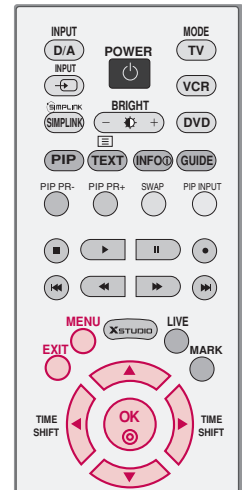


3 4

WATCHING TV/PROGRAMME CONTROL

ASSIGNING A STATION NAME - *In Analogue Mode only*

You can assign a station name with the characters to each programme number.



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**.

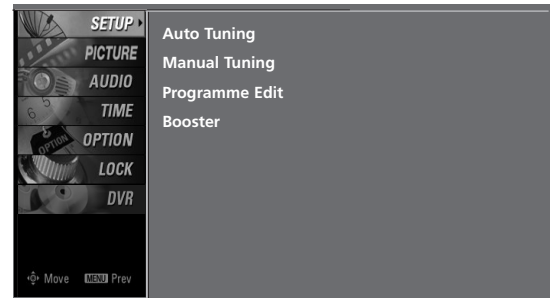
3 Press the ► button and then use ▲ or ▼ button to select **Name**.

4 Press the ◀ or ▶ button. You can use the numeric 0 to 9, the alphabet A to Z +, -, and blank.

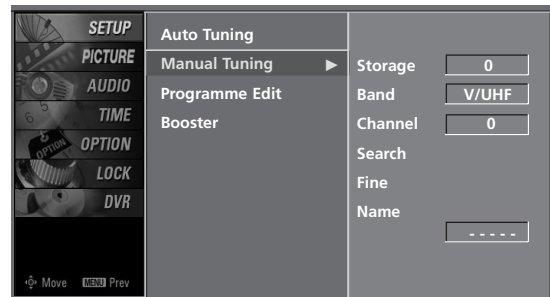
5 Press the ▲ or ▼ button to select the position and make your choice of the second character, and so on.

6 Press the **OK** button to store.

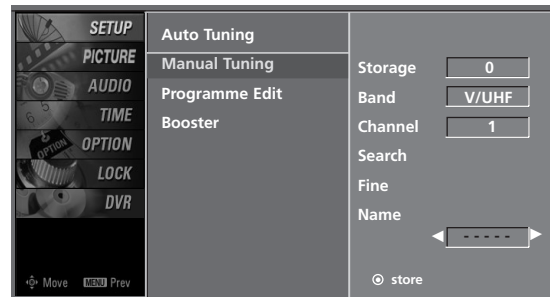
7 Press **EXIT** button to return to normal TV viewing or press **MENU** button to return to the previous menu.



1



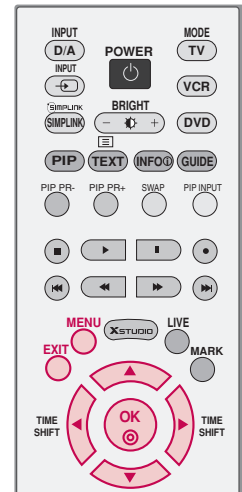
2



3 4

BOOSTER - In Digital Mode only

If the reception is poor in the fringe areas, set 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 **Booster**.

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

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

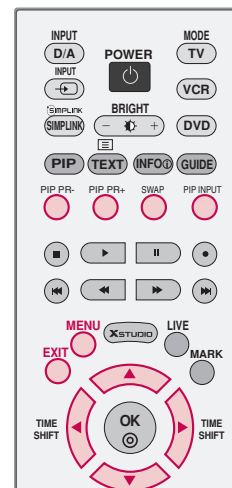


2 3

WATCHING TV/PROGRAMME CONTROL

PROGRAMME EDIT

This function enables you to delete or skip the stored programmes. Also you can move some stations to other programme numbers or copy blank station data into the selected programme number.



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 **Programme Edit**.

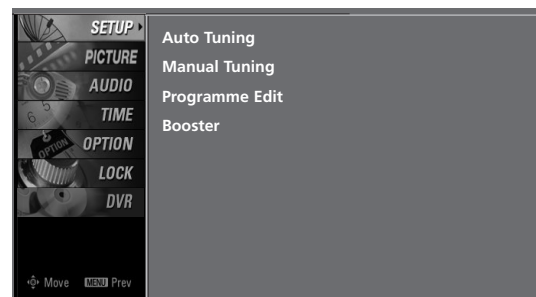
3 Press the **▶** button.

4 ■ **Deleting a programme (In Analogue Mode Only)**

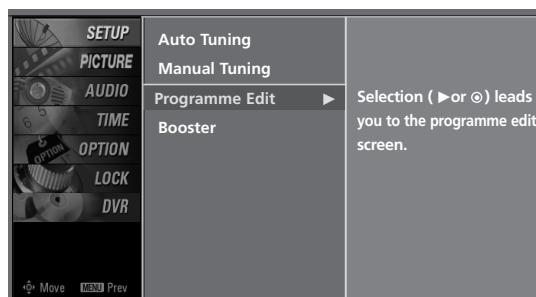
- Select a programme to be deleted with the **▲** or **▼** or **◀** or **▶** button.
- Press the **RED** button twice. The selected programme is deleted, all the following programmes are shifted up one position.

■ **Copying a programme (In Analogue Mode Only)**

- Select a programme to be copied with the **▲** or **▼** or **◀** or **▶** button.
- Press the **GREEN** button.
- Move the programme to the desired programme number with the **▲** or **▼** or **◀** or **▶** button.
- Press the **GREEN** button again to copy the programme. All the following programmes are shifted down one position.



1



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3 4 5

■ Moving a programme (In Analogue Mode Only)

- Select a programme to be moved with ▲ or ▼ or ◀ or ▶ button.
- Press the **YELLOW** button.
- Move the programme to the desired programme number with the ▲ or ▼ or ◀ or ▶ button.
- Press the **YELLOW** button again to release this function.

■ Skipping a programme number

- Select a programme number to be skipped with ▲ or ▼ or ◀ or ▶ button.
- Press the **BLUE** button. The skipped programme number turns to blue.
- Press the **BLUE** button again to release the skipped programme.

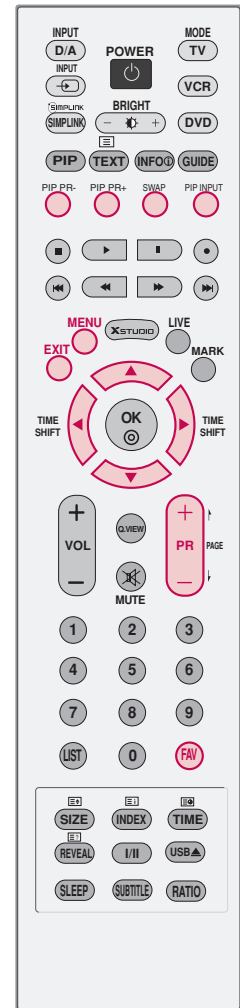
When a programme number is skipped it means that you will be unable to select it using the **PR+** or **-** button during normal TV viewing. If you want to select the skipped programme, directly enter the programme number with the **NUMBER** buttons or select it in the programme edit or table menu.

■ Selecting Favourite Programme

- Select your favourite programme number with ▲ or ▼ or ◀ or ▶ button and then press the **FAV** button. It will automatically include the selected programme into your favourite programmes list and a heartmark will appear in front of that programme number.

5

Repeatedly press the **FAV** button to select stored favourite programmes in normal TV viewing.

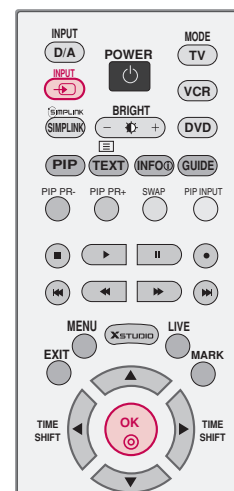
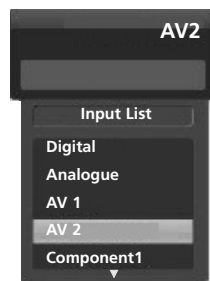


WATCHING TV/PROGRAMME CONTROL

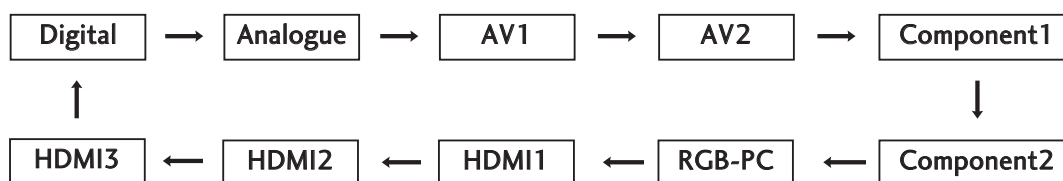
INPUT LIST

Press the **INPUT** button to display external device that is connected to the unit, on screen.

Press the **OK** button to change the input to the active external device. Use the **INPUT** button to select the input source.



1 If all external input sources are connected:



2 If any external input sources are not connected:



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



Digital : Select it when watching the Digital TV.

Analogue : Select it when watching the Analog TV.

AV 1, AV 2 : Select it when watching the VCR or external equipment.

Component 1-2 : Select it when using the DVD or the Digital set-top box depend on connector.

RGB-PC : Select it when using PC depend on connector.

HDMI, HDMI2, HDMI3 : Select it when using DVD, PC or Digital set-top box depend on connector.

CALLING UP THE CHANNEL LIST

You can check the programmes stored in the memory by displaying the channel list.

Displaying Channel list

- Press the **LIST** button to display the Channel List menu.
The Channel list appears on the screen.

! NOTE

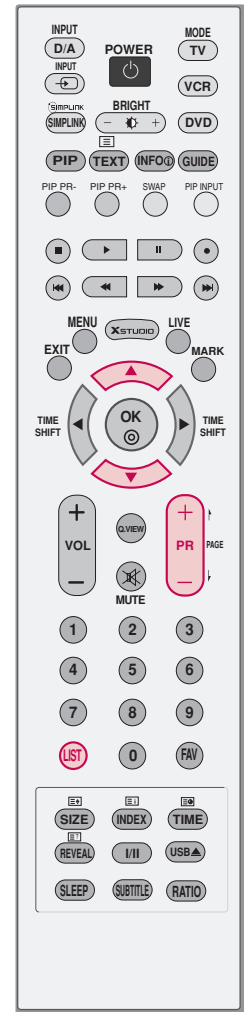
- ▶ You may find some gray programmes. They have been set up to be skipped by auto tuning or in the programme edit mode.
- ▶ Some programmes with the channel number shown in the channel LIST indicate there is no station name assigned.

Selecting a programme in the channel list

- 1 Select a programme with the ▲ or ▼ buttons.
- 2 The set switches to the chosen programme number.

Paging through a channel list

- 1 Press the ▲ or ▼ button to changes current channel into previous or next channel.

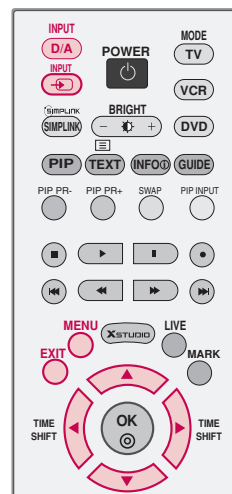


WATCHING TV/PROGRAMME CONTROL

INPUT SOURCE SELECTION

Alternatively you can select the Digital, Analogue, AV1-2, Component 1-2, RGB-PC, HDMI1/2/3 mode by pressing the **INPUT** button.

Press the **D/A INPUT** button to select digital or analogue mode.



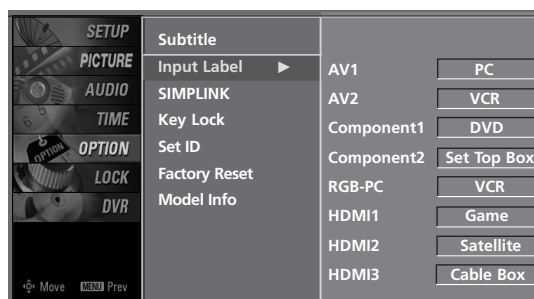
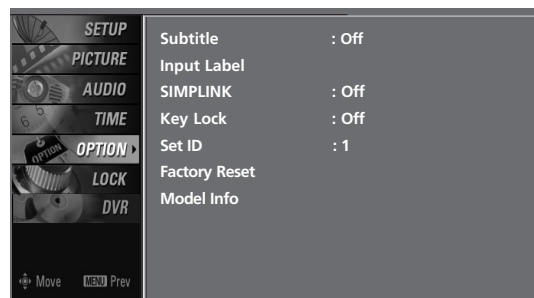
1 Press the **MENU** button and then use **▲** or **▼** button to select the **OPTION** menu.

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

3 Press the **▶** button and then use **▲** or **▼** to select AV 1 , AV 2 , Component 1, Component 2, RGB-PC, HDMI1/2/3.

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

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



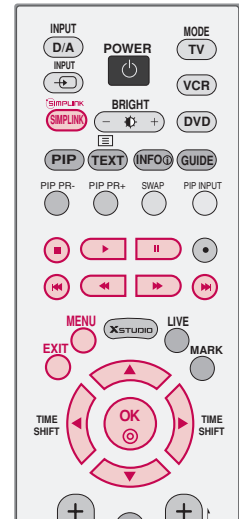
3



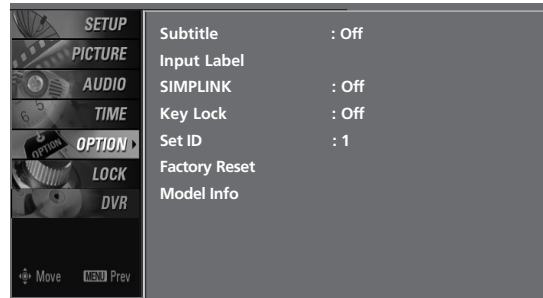
This operates only for the devices with the SIMPLINK logo. Please check the SIMPLINK logo.

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

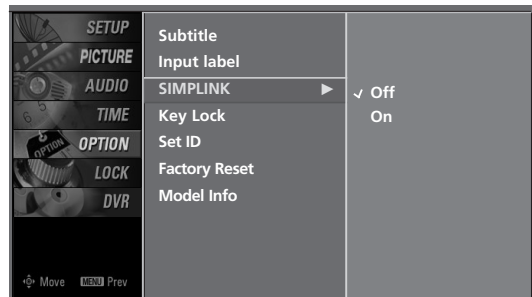
If you do not want SIMPLINK menu, select "Off".



- 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 **SIMPLINK**.
- 3 Press the ► button and then use ▲ or ▼ button to select **On** or **Off**.
- 4 Press **EXIT** button to return to normal TV viewing or press **MENU** button to return to the previous menu.



2



3 4 5

WATCHING TV/PROGRAMME CONTROL

SIMPLINK Functions

Disc playback

Control connected AV devices by pressing the ▲ or ▼ or ◀ or ▶, OK 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 ▲ or ▼ or ◀ or ▶ button and then OK button to select the desired SIMPLINK source.

- 1 TV viewing** : Switch to the previous TV programme 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 theatre/Audio Out to TV** : Select Home theatre or TV speaker for Audio Out.
- 
- The image shows a vertical SIMPLINK menu on a dark background. At the top is the SIMPLINK logo. Below it are five menu items, each with a red circle containing a number from 1 to 5 on the left. Item 1 is 'TV' with a TV icon and a checkmark, labeled 'Selected Device'. Item 2 is 'DISC HDD/DVD-R' with a disc icon. Item 3 is 'VCR' with a VCR icon, labeled 'When no device is connected (displayed in gray)'. Item 4 is 'HDD Recorder' with a hard drive icon, also labeled 'When no device is connected (displayed in gray)'. Item 5 is 'Speaker TV Speaker' with a speaker icon, labeled 'When a device is connected (displayed in bright colour)'. Arrows on the right of each item indicate navigation options.

NOTE

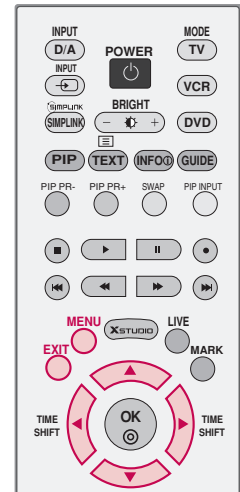
- ▶ Connect the HDMI/DVI IN or HDMI IN terminal of the TV to the rear terminal (HDMI terminal) of the SIMPLINK device with the HDMI cable.
- ▶ After connecting the HDMI terminal for the home theater with SIMPLINK function in the above method, connect the VARIABLE AUDIO OUT terminal on the back of the 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).
- ▶ When you execute 'Photo List, Music List' function during DVD playback included in home theater supported the SIMPLINK stops and the applicable function is executed after switching the input to TV.

KEY LOCK

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

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

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

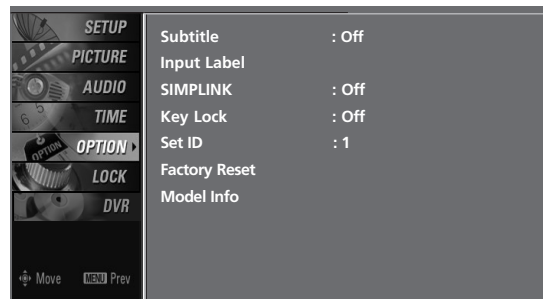


1 Press the **MENU** button and then use ▲ or ▼ button to select the **OPTION** menu.

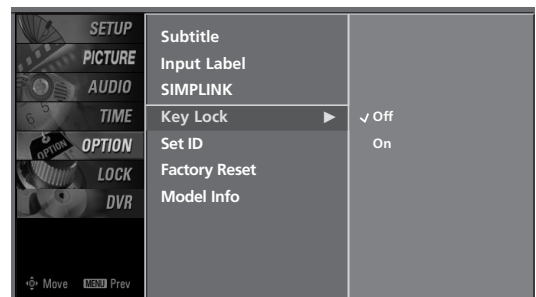
2 Press the ► button and then use ▲ or ▼ button to select **Key Lock**.

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

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



1



2 3

NOTE

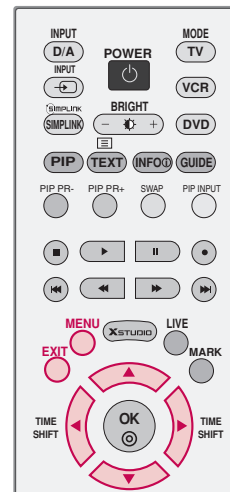
- ▶ With the lock on, the display 'Key Lock' appears on the screen if any button on the front panel is pressed while viewing the TV.
- ▶ The display 'Key Lock' will not appear on the screen if any button on the front panel is pressed while displaying the menus.

DVR (DIGITAL VIDEO RECORDER)

TIMESHIFT MODE

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

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

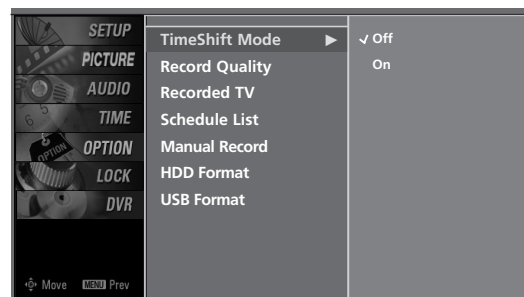


1 Press the **MENU** button and then use ▲ or ▼ button to select the **DVR** menu.

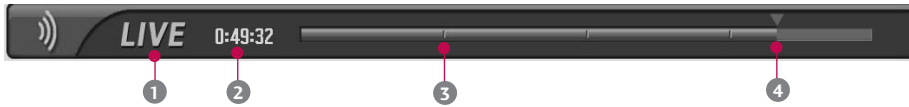
2 Press the ► button and then use ▲ or ▼ button to select the **TimeShift Mode**.

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

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



Using the Timeshift Mode function



- 1 After selecting the **TimeShift Mode On**, press the **OK** button.
 - As soon as Timeshift 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 **OK** button to display the 'Progress Bar'.
 - This function is preserved even change a programme on progressing the Timeshift.

The 'Progress Bar'?

This function indicates a possible DVR re-showing section, a current on-screen and real on-broadcasting position, a section of section-recording.

- 1 Status of current displayed video.
- 2 Current save time.
- 3 30 minute intervals from Timeshift start time. (Total - 2 hours).
- 4 Indicates current TimeShift Mode position.

- 2 When finished with the Timeshift function, enter the **DVR** menu and turn **TimeShift Mode Off**.

! NOTE

- ▶ DVR (Digital Video Recorder) : A device which records and plays broadcast program contents onto a hard disk in TV or SET TOP BOX.
- ▶ If available hard-disk space is low when Timeshift is initiated, the oldest information is deleted.
- ▶ In order to save hard-disk space, nothing is saved when there is no signal.
- ▶ The total storage space of the hard-disk is 160GB. 10GB minimum is reserved for Timeshift.
- ▶ When turning power on, it may take up to 3 minutes to initialize the HDD.
- ▶ 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, Timeshift is stopped.
- ▶ Timeshift is available in AV1-2 mode.
- ▶ Timeshift is not available for Audio only programmes.

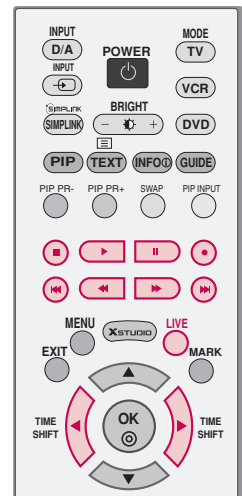
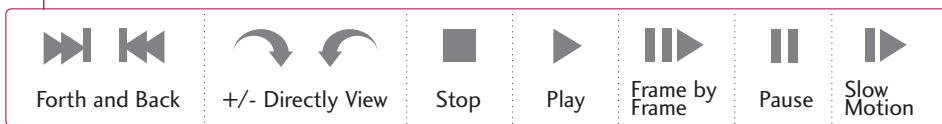
DVR (DIGITAL VIDEO RECORDER)

Using the Timeshift Mode function, play

When using Timeshift Mode, there are diverse playback options.









Indicates that the current broadcast and displayed video differ.



Using the remote control

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



	<p>When playing, press the REW (◀) or FF (▶) button.</p> <ul style="list-style-type: none"> Press ◀ -> ◀◀ -> ◀◀◀ -> ◀◀◀◀ to speed up. Pressing these buttons repeatedly increases the fast forward/reverse speed.
	<p>Press the ⏮ or ⏭ button to move back and forth within the current program.</p> <ul style="list-style-type: none"> Press the ⏭ button to jump about 30 seconds forward. Pressing the ⏮ button to jump about 8 seconds backward.
	<p>During playback, press the Pause (⏸) button.</p> <ul style="list-style-type: none"> Still screen is displayed. Repeatedly press the Pause (⏸) button to advance frame by frame. Press the Pause (⏸) button and then the FF (▶) button for slow motion (as indicated by ▶.)
	<ul style="list-style-type: none"> When using the ◀ or ▶ button during playback the cursor can be viewed on the screen.
	<p>Press the PLAY (▶) button to return to normal playback.</p>
	<p>If you want to return to the last selected input mode, press the LIVE button.</p>


RECORDING



Use this function to record the program you are watching on the main screen.
(AV 1-2, Analogue or Digital broadcast.)

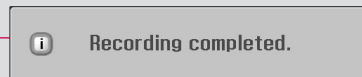
Instant Record






This function records the currently displayed programme.



- 1 Select the desired programme 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. And then recording will stop.

- While recording, if you press the  button before 10 seconds of recording time has passed, this message is displayed.
- If you press the  button after more than 10 seconds of recording time has passed, this message is displayed.



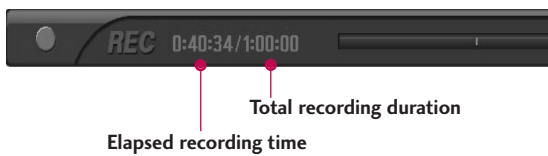
- 3 You can add/subtract recording time by pressing the  button while recording. Press the  or  button repeatedly to add/subtract to the recording time. Each time you press  or  button the recording duration changes as shown below.

 +10min → +20min → +30min → +40min → +50min → +1hr
 No Change
 -10min → -20min → -30min → -40min → -50min

DVR (DIGITAL VIDEO RECORDER)

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

- 4 After adjusting the recording time, select **OK**. Press the **OK** button to check the adjusted recording time. The progress bar will be displayed.



- 5 Recording stops when the selected duration is reached or when you press the **Stop** button.
Note: Although recording has stopped, the Timeshift feature remains active.

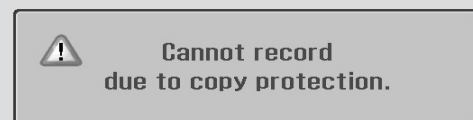


3

! 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 analog or digital broadcasts, no data is saved if there is no signal.
- ▶ The recording function will not initiate for a copy-protected program.
- ▶ The displayed time differs slightly from the actual time.
- ▶ In no signal or film source, the displayed time slightly differ from the actual time.

- ▶ The recording can not be used with content-protected programs on progressing Timeshift.



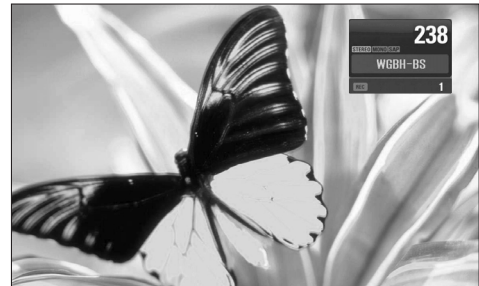
If you press Record while watching a broadcast (with content-protected program) using the Timeshift function, recording begins from that point.

- ▶ If you record for a long time, in a state of the Analogue signal is weak, remained recording time may be short.

Watching & Record

While recording, you can change programmes or inputs without disturbing the recording.

- 1 After starting an Instant Record or Reserved Record, change the programme or input.
 - When changing to the programme being recorded in Watch & Record, the screen is changed to Instant Record state or Reserved Record state.



NOTE

- ▶ When a digital broadcast is being recorded, another digital broadcast can be watched.

CAUTION

- ▶ if you turn the power off while recording, the message shown below is displayed.

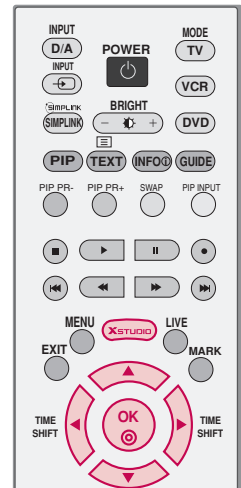


- ▶ If you select Yes, recording continues and the power is turned off.
- ▶ If you select No, recording stops and then power is turned off.

DVR (DIGITAL VIDEO RECORDER)

MANUAL RECORDING

This function is used to perform reserved recording.

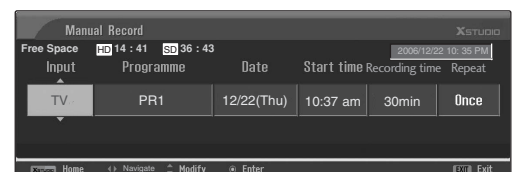
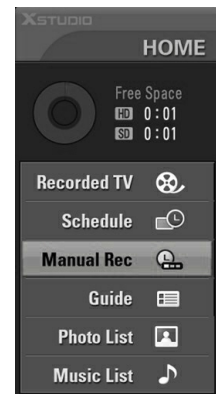


- 1 Press the **XSTUDIO** button to display **HOME** menu. Use the **▲** or **▼** button to select the **Manual Rec** and then use the **OK** or **▶** button.

- 2 **Manual Rec** screen is displayed as shown below. Use the **▲** or **▼** or **◀** or **▶** button to set the **Input**, **Programme**, **Date**, **Start Time**, **Recording time**, **Repeat**

- ▶ **Input** : Select the input source from the available options (TV, DTV, AV1-2).
- ▶ **Programme** : Select either the current programme or a scanned programme.
- ▶ **Date** : You can select a date up to one month in the future. The max duration is 8 hours.
- ▶ **Start time** : Ensure you have set AM or PM correctly.
- ▶ **Recording time** : Recording time is minimum 2 minutes to maximum 180 minutes.
- ▶ **Repeat** : Choose either Once, Daily, Weekly.

- 3 After setting the **Manual Rec**, press the **OK** button.



RECORDED TV

You can view the recorded program list at a glance.

- 1 Press the **XSTUDIO** button to display **HOME** menu.
Use the **▲** or **▼** button to select the **Recorded TV** and then use the **OK** or **▶** button.



Screen Components

- 1 Usable HDD
- 2 Storage
- 3 Current page/Total pages
- 4 Marked thumbnail photo number
- 5 Direct Buttons

DVR (DIGITAL VIDEO RECORDER)

Recorded programme Selection and PopUp Menu

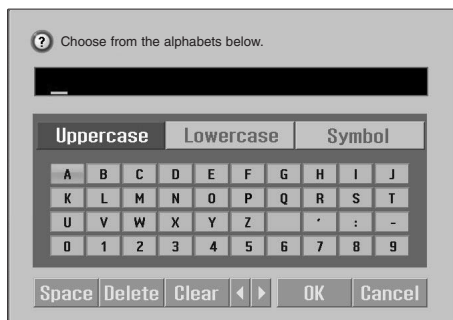
The thumbnail recorded list is shown above.

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

2 Use the **MARK** button to move or delete from the list. A is displayed next to the thumbnail photo if an item is marked.

3 Use **▲** or **▼** or **◀** or **▶** button to navigate the appropriate thumbnail photo, then press the **OK** button to open the pop-up menu.

- ▶ **Play First** : Begin playback of selected recorded programme from the beginning.
- ▶ **Play Previous** : Begin playback of selected recorded program from last scene where you left off.
- ▶ **Mark All** : mark all recorded programmes on the current folder.
- ▶ **Unmark All** : Change marked recorded programmes to unmarked recorded programmes.
- ▶ **Copy to USB** : Copies the recorded programme in the internal HDD to the USB storage device.
- ▶ **Delete** : Delete the selected recorded programmes.
- ▶ **Rename** : Edit recorded programme title.



4 ▶ **Cancel** : Close the Pop-up menu.

Press **EXIT** button to return to TV viewing or press **XSTUDIO** button to return to the **HOME** menu.



1

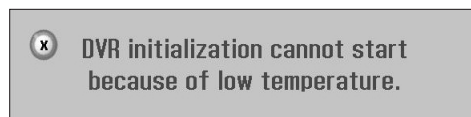


2



3

- If the HDD has a problem performing a function (Recording) related to the DVR, select **Yes** or **No** to initialize HDD.
If you select **Yes**, the Recorded List (Recording) will be deleted. If you select **No**, the DVR may not function properly.
- If the temperature is below zero (0°C), a warning message is displayed to protect the HDD from error and the DVR from incorrect operation.



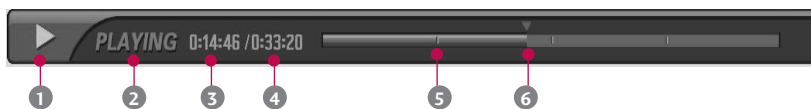
DVR (DIGITAL VIDEO RECORDER)

Playing recorded programmes

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

- 1 Play a recorded program.
- 2 While playing, You can see a diversified playback screen as shown below.

- At first, an icon showing current playback mode is displayed as marking **PLAYING**. Then press the **OK** 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 DVR re-showing 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

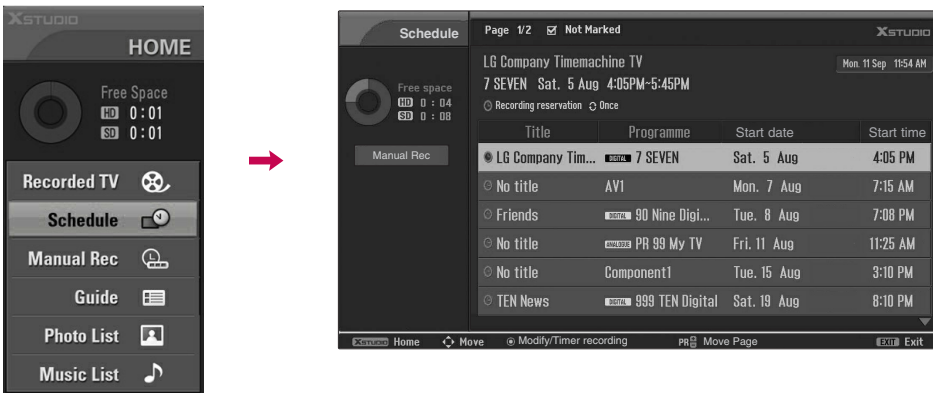
You can shift playback to any point within the recorded program.

	<p>When playing, press the REW(◀) or FF(▶) button.</p> <ul style="list-style-type: none"> ▪ Press ◀ -> ◀◀ -> ◀◀◀ -> ◀◀◀◀ to speed up. ▪ Pressing these buttons repeatedly increases the fast forward/reverse speed.
	<p>Press the ⏮ or ⏭ button to move back and forth within the current program.</p> <ul style="list-style-type: none"> ▪ Press the ⏭ button to jump about 30 seconds forward. ▪ Pressing the ⏮ button to jump about 8 seconds backward.
	<p>During playback, press the Pause (⏸) button.</p> <ul style="list-style-type: none"> ▪ Still screen is displayed. ▪ Repeatedly press the Pause (⏸) button to advance frame by frame. ▪ Press the Pause (⏸) button and then the FF (▶) button for slow motion (as indicated by ⏪▶).
	<p>After using ▶ to rewind while playing, press the ◀ button to return to the prior screen.</p>
	<p>Press the PLAY(▶) button to return to a normal playback.</p>
	<p>When playing the recorded program: Return to the last selected input source. When delaying: Return to the last selected input source.</p>
	<p>If you press the STOP(⏹) button, you can watch TV.</p>

SCHEDULED LIST

This function is available to use in DVR menu.

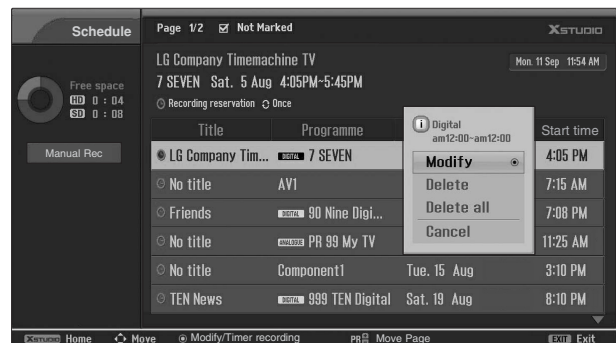
- 1 Press the **XSTUDIO** button to display **HOME** menu.
Use the **▲** or **▼** button to select the **Schedule** and then use the **OK** or **▶** button.



- 2 **Schedule** screen is displayed as shown.
Use **▲** or **▼** button to select recorded programme.

Programme Selection and PopUp Menu

- 1 Use **▲** or **▼** button to select the programme you want.
- 2 Press the **OK** button to open the pop-up menu.
 - ▶ **Modify** : Modify the programme selection.
 - ▶ **Delete** : Delete the programme.
 - ▶ **Delete All** : Delete all programmes.
- 3 Press **EXIT** button to return to TV viewing or press **XSTUDIO** button to return to the **HOME** menu.

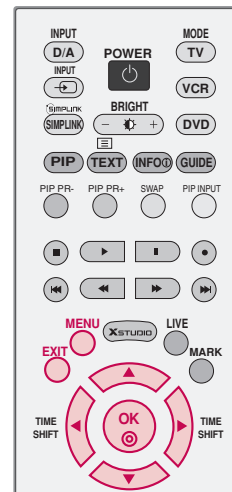


1

DVR (DIGITAL VIDEO RECORDER)

HDD FORMAT

Erases all programs and initializes the hard drive.



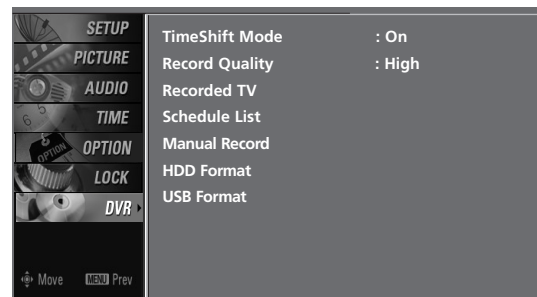
1 Press the **MENU** button and then use **▲** or **▼** button to select the **DVR** menu.

2 Press the **▶** button and then use **▲** or **▼** button to select **HDD Format**

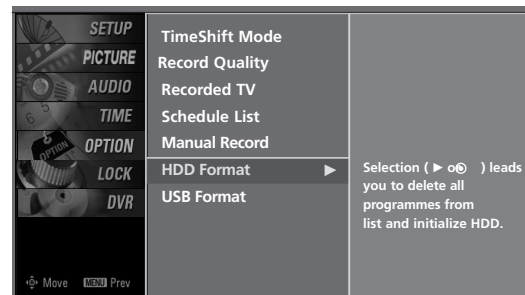
3 Press the **OK** or **▶** button.
Select **Yes** or **No** to format HDD as shown below.

- If you select **Yes**, the Recorded List (Recording) will be deleted. Even if you select **No**, the DVR may not function if there are problems with the hard drive.

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



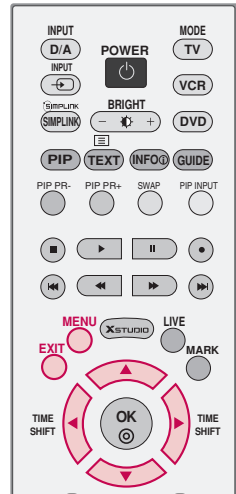
1



2 3

RECORD QUALITY

This function is available on Manual record.
 In Analogue, AV1-2, this function is also available.
 The record quality always works **best** on Timeshift and Instant record.



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

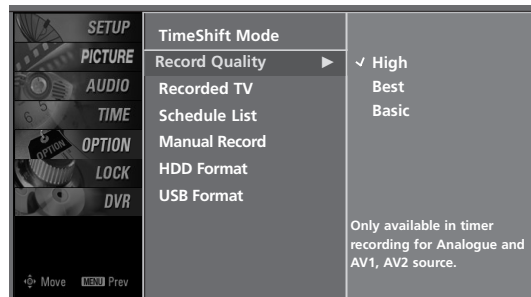
- 2 Press the ► button and then use ▲ or ▼ button to select **Record quality**.

- 3 Press the ► button and then use ▲ or ▼ button to select **High, Best** or **Basic**.

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



1



2 3

DVR (DIGITAL VIDEO RECORDER)

TO USE THE USB DEVICE

Precautions when using the USB device

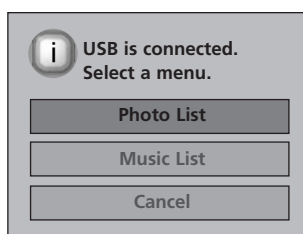
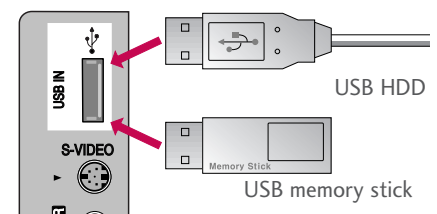
- ▶ Press the USB button of remote control before removing the USB device.
- ▶ Only a USB storage device is recognizable.
- ▶ If the USB storage device is connected through a USB hub, the device is not recognizable.
- ▶ A USB storage device using an automatic recognition programme may not be recognized.
- ▶ 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.

When connecting the USB device

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

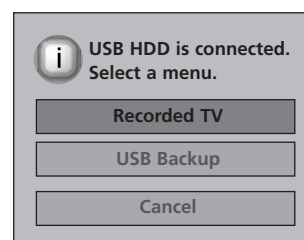
In USB device, you can not add a new folder or delete the existing folder.

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



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

2 3



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

2 3

- ▶ This product incorporates copy protection technology that is protected by U.S. and foreign patents, including patent numbers 5,315,448 and 6,836,549, and other intellectual property rights. The use of Macrovision's copy protection technology in the product must be authorized by Macrovision. Reverse engineering or disassembly is prohibited.

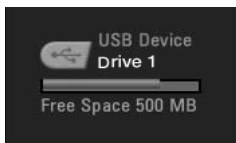
PHOTO LIST

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

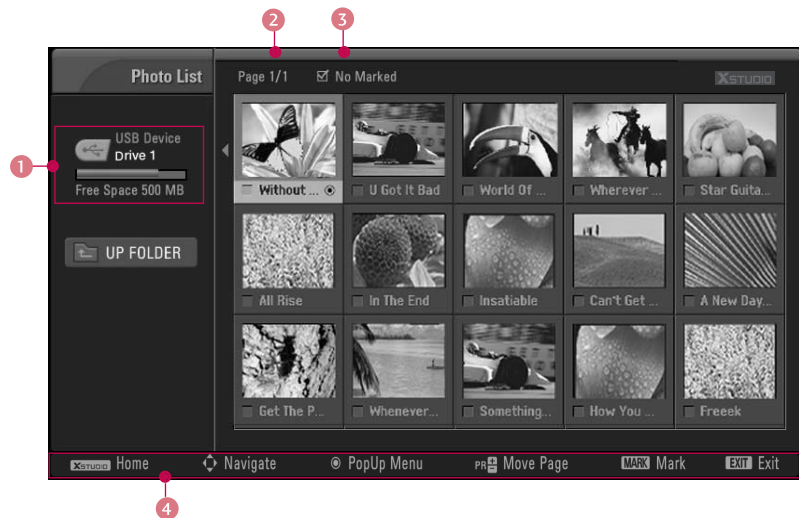
The On Screen Display may be different from your set. Images are an example to assist with the TV operation.

Screen Components

- 1 Usable USB memory



- 2 Current page/Total pages
- 3 Total number of marked thumbnail photos
- 4 Corresponding buttons on the remote control



DVR (DIGITAL VIDEO RECORDER)

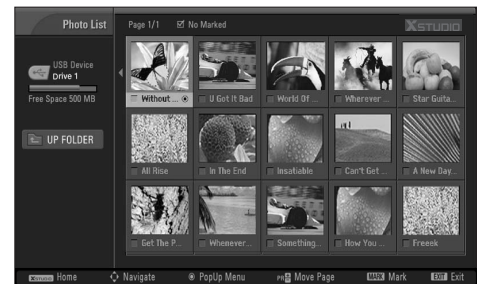
Photo Selection and PopUp Menu

As shown, up to 15 thumbnail photos are listed per page.

- 1 Use the **PR +** or **-** button to navigate in the thumbnail photo page.
- 2 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.
- 3 Use **▲** or **▼** or **◀** or **▶** button to navigate the appropriate thumbnail photos, then press the **OK** button to show the PopUp menu.

- ▶ **View** : Display the selected item.
- ▶ **Mark All** : Mark all photos on the screen.
- ▶ **Delete** : Delete the selected photo item.
- ▶ **Cancel** : Close the pop-up menu.

- 4 Repeatedly, press **EXIT** button to return to TV viewing or press the **XSTUDIO** button to return to the X-STUDIO menu.



1 2



3

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 the **PR +** or **-** button to navigate the thumbnail photo page.


2 Use **▲** or **▼** or **◀** or **▶** button to navigate the appropriate thumbnail photos, then press the **OK** button to show the PopUp menu.

3 Use **▲** or **▼** button to Move to the **View** menu, then press the **OK** button.

4 The selected photo is displayed in full size.




1 2 3

▶ **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 **OK** button on **Slideshow** .

- Set the time interval of the slide show in **Option**.
- A slide show continues for a maximum of 4 hours. After 4 hours, the slide show will end and go to TV mode or external input mode.

▶ **BGM** : Listen to music while viewing photos in full size. To start BGM, press **OK** button on **BGM** .

- Set the BGM device and album in **Option**.

▶ **Rotate**  : Rotate photos.

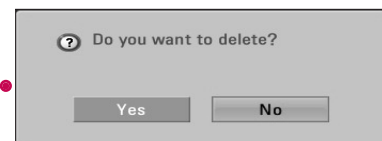
- Rotates the photo 90°, 180°, 270°, 360° clockwise upon **OK** button on **Rotate** .

▶ **Delete** : Delete photos. Use **◀** or **▶** button to select **Delete** and press **OK** button.



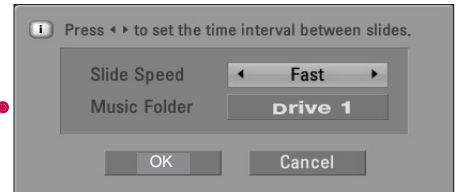
The aspect ratio of a photo may change the size of the photo displayed on the screen in full size.

4



DVR (DIGITAL VIDEO RECORDER)

- ▶ **Option** : Set values for **Slide Speed** and **Music folder**. Use ◀ or ▶ button to select **Option** and press **OK** button.
 - Use ◀ or ▶ button and **OK** button to set values. Then go to **OK** and press **OK** to save the settings.
 - You cannot change **Music Folder** while BGM is playing.
- ▶ **Hide** : Hide the menu on the full-sized screen. Use ◀ or ▶ button to select **Hide** and press **OK** button.
 - To see the menu again on the full-sized screen, press **OK** button to display.



- 5 Use ▲ or ▼ or ◀ or ▶ button to select the previous or next photo.
Use ▲ or ▼ or ◀ or ▶ 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 **X-STUDIO** button to return to the X-STUDIO menu.

! NOTE

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

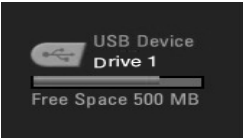
MUSIC LIST

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.

Screen Components

① Usable USB memory

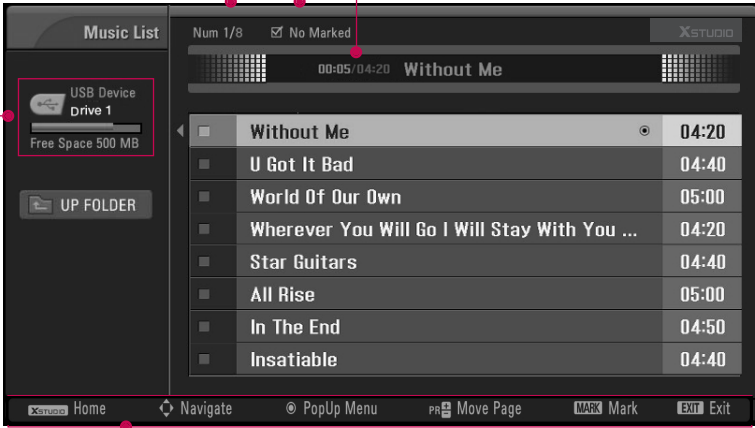


② Current page/Total pages

③ Total number of marked music

④ Current playing time/Total playing time

⑤ Corresponding buttons on the remote control



The screenshot shows the 'Music List' screen. At the top left, it displays 'USB Device Drive 1' and 'Free Space 500 MB' (callout 1). Below this is an 'UP FOLDER' button. The top right shows 'Num 1/8' and 'No Marked' (callout 2). The center displays the current track 'Without Me' with a progress bar showing '00:05 / 04:20' (callout 4). Below the track is a list of songs with their durations: 'Without Me' (04:20), 'U Got It Bad' (04:40), 'World Of Our Own' (05:00), 'Wherever You Will Go I Will Stay With You ...' (04:20), 'Star Guitars' (04:40), 'All Rise' (05:00), 'In The End' (04:50), and 'Insatiable' (04:40). At the bottom, a navigation bar includes buttons for 'Home', 'Navigate', 'PopUp Menu', 'Move Page', 'Mark', and 'Exit' (callout 5).

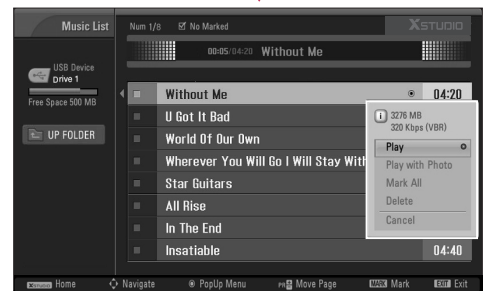
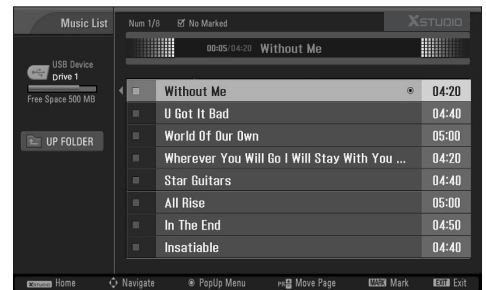
DVR (DIGITAL VIDEO RECORDER)

Music Selection and PopUp Menu


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

- 1 Use the **PR +** or **-** button to navigate in the music titles page.
- 2 Use **MARK** button to mark or unmark a music. When one or more music files are marked, the marked music 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.
- 3 Use **▲** or **▼** button to navigate the appropriate music, then press the **OK** button to show up the pop-up menu.

- ▶ **Play (During stop)** : Play the selected music.
Once a music finishes playing, the next selected one will be played. When there are no selected music to play, the next one in the current folder will be played. If you go to a different folder and press the **OK** button, the current music in playback will stop.
- ▶ **Stop Play (During playback)** : Stop the playing music.
- ▶ **Play With Photo** : Start playing the selected music and then move to the Photo List.
- ▶ **Mark All** : Mark all music in the folder.
- ▶ **Delete** : Delete the selected music.
- ▶ **Cancel** : Close the pop-up menu.










- 1
- 2
- 3

- 4 Repeatedly, press **EXIT** button to return to TV viewing or press  button to return to the X-STUDIO menu.
- 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 **OK**  , **EXIT** buttons, screen saver is stopped.
- ▶ The  ,  ,  ,  ,  buttons on the remote control are also available in this mode.

EPG(ELECTRONIC PROGRAMME GUIDE)

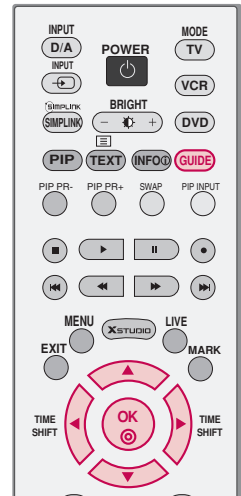
- In Digital Mode Only

This system has an Electronic Programme Guide (EPG) to help your navigation through all the possible viewing options.

The EPG supplies information such as programme listings, start and end times for all available services. In addition, detailed information about the programme is often available in the EPG (the availability and amount of these programme details will vary, depending on the particular broadcaster).

This function can be used only when the EPG information is broadcasted by broadcasting companies.

The EPG displays the programme description for next 7 days.



Switch on/off EPG

- 1 Press the **GUIDE** button to switch on EPG.
- 2 Press the **GUIDE** or **EXIT** button again to switch off EPG and return to TV viewing.

Select a programme

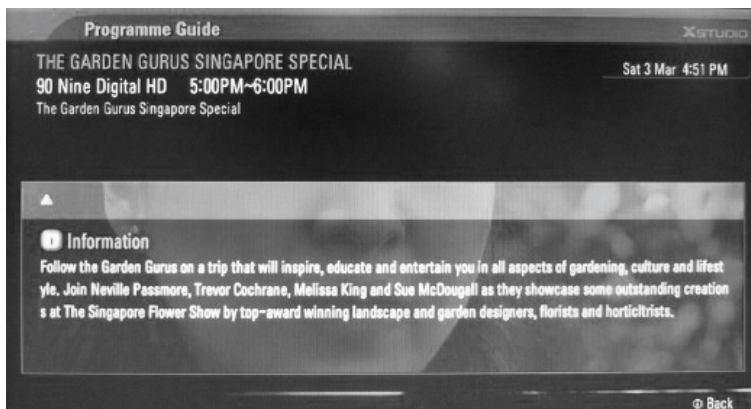
- 1 Press the **▲** or **▼** or **◀** or **▶** buttons to select desired programme, then press the **OK** button to display the selected programme.

Button Function in NOW/NEXT Guide Mode



Remote Control Buttons	Function
GREEN	Change to 7Day's EPG Guide
YELLOW	Shows the Schedule list
BLUE	Selects the Radio programmes
▲/▼/◀/▶	Select the Broadcasting Programme
EXIT	Switch off EPG
INFO ⓘ	The detail information on or off

Button Function in Extended Description Box



Remote Control Buttons	Function
●	Change to the selected programme
INFO ⓘ	The detail information on or off

EPG(ELECTRONIC PROGRAMME GUIDE)

Button Function in 7 Days Guide Mode



Remote Control Buttons	Function
GREEN	Change to Now/Next Guide
RED	Enter Recording/Reservation/Cancel setting mode
YELLOW	Shows the Schedule List
BLUE	Selects the Radio programmes
▲/▼/◀/▶	Select the Broadcasting Programme
EXIT	Switch off EPG
◀◀ ▶▶	Selects the page
◀◀ ▶▶	Selects the day
INFO ⓘ	The detail information on or off

▶ Press the RED button repeatedly to make reservation.

```

    graph LR
      A[Reservation] --> B[Recording Reservation]
      B --> C[Watching Reservation]
      C --> D[Cancel]
      D --> A
  
```

▶ You can also adjust INFO ⓘ on the remote control.

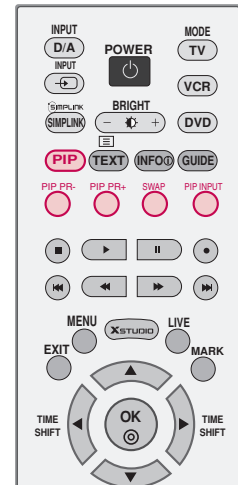
▶ The following symbol will appear on the reserved programme.: ⓘ

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 be shown in a smaller inset image.

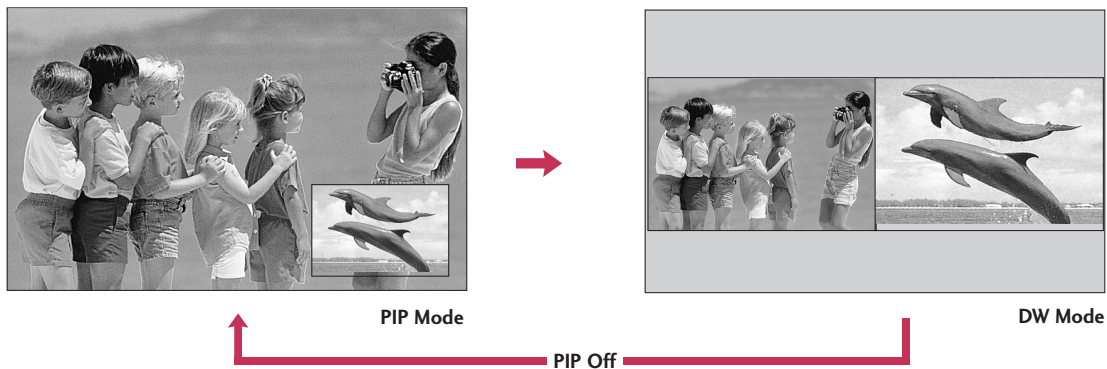
DW mode splits the screen into two images, allowing two picture sources to be shown on the TV screen at the same time. Each source is given half the screen.



Watching PIP/Double Window

Press the **PIP** button to access the sub picture.

Each press of PIP changes the PIP options as shown below.



! NOTE

- ▶ When the sub picture size is 1/2 of the main picture, the picture quality may deteriorate.
- ▶ The motion of the sub picture can be unnatural because the set displays full screen by synchronizing the main picture source when the refresh rate between the main picture source and the sub picture source is different in PIP mode.

PICTURE CONTROL

Input Source Selection for Sub Picture

Use the **PIP INPUT** button to select the input source for the sub picture. Each press of **PIP INPUT** changes the PIP source.

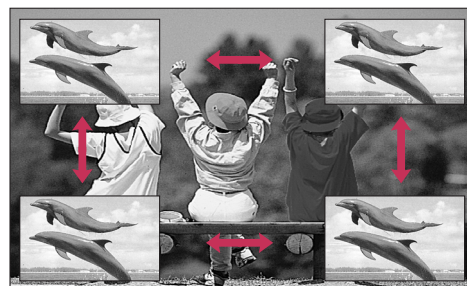
Main Picture Source	Available Sub Picture Sources
Digital	Analogue, Digital, AV1, and AV2
Analogue	
AV1-2, Component1-2, RGB, HDMI/DVI	

Program selection for Sub Picture(PIP mode only)

- 1 Press the **PIP** button.
- 2 Select the **Digital** or **Analogue** option on the Sub input menu or with the **PIP INPUT** button. Use the **PIP PR+** / **PIP PR-** button to select a programme for the sub picture.

Moving the sub picture(PIP mode only)

- 1 In PIP mode, press the **▲** or **▼** or **◀** or **▶** button to move the sub picture to a different location on the screen.

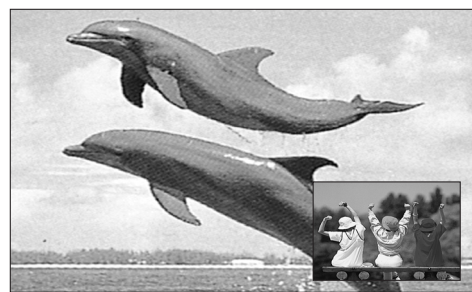
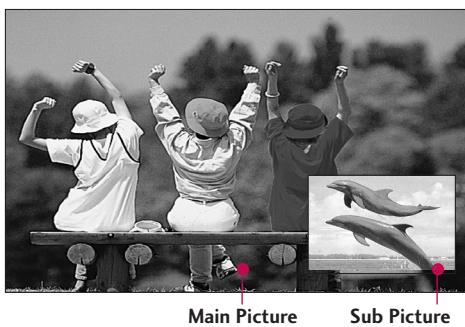


Swapping the PIP/DW

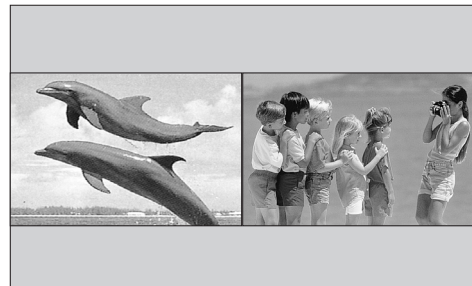
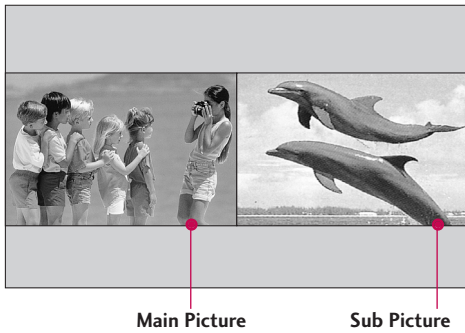
1 Repeatedly, use the **SWAP** button to switch the main and sub pictures.

- When the main picture is in Digital, Analogue or AV modes, swapping is available.

PIP

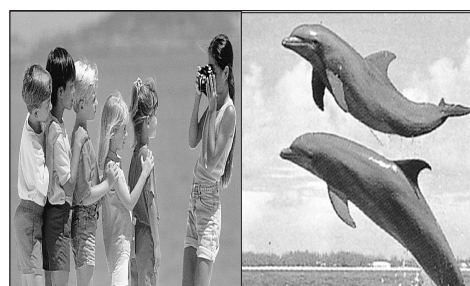
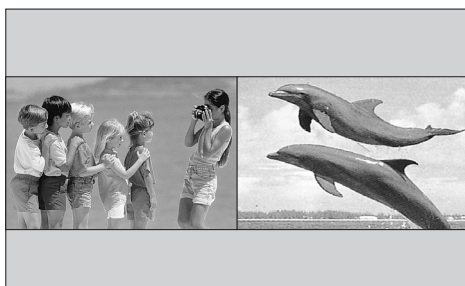


DW



Adjusting Main and Sub Picture Sizes for DW

1 Use the ▲ or ▼ button to change main and sub picture sizes in DW mode.



PICTURE CONTROL

PICTURE SIZE (ASPECT RATIO) CONTROL

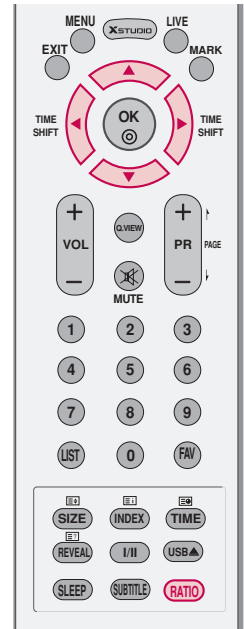
You can watch TV in various picture formats; Auto, 4:3, 16:9 (Wide), 14:9, Zoom and 1:1 Pixel.

! NOTE

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

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

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



Auto

Selects the proper picture proportion to match the source's image. (4:3 → 4:3, 16:9 → 16:9)

4:3

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

16:9

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

14:9

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

You can move the 14:9 screen using ▲ or ▼ button. The adjustment range is -10 - +10.

Zoom

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

You can move the Zoom screen using ▲ or ▼ button. The adjustment range is -16 - +16.

1:1 Pixel

Choose 1:1 Pixel when you want to view the picture of best quality without loss of original picture in high resolution image.

! NOTE

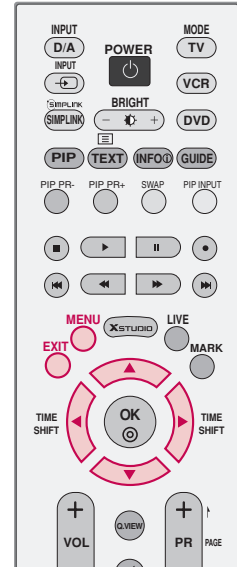
- ▶ In HDMI/DVI-PC and RGB-PC mode, 4:3 and 16:9 is available.
- ▶ Auto: When your TV receives the wide screen signal, it will be automatically changed to the picture format sent. (Not available in all countries)
- ▶ In HDMI/DVI(1080i or 1080p) mode, 1:1 Pixel is available.

PRESET PICTURE SETTINGS

Picture Mode -Preset

Intelligent Eye Adjusts picture according to the surrounding conditions.

- 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.



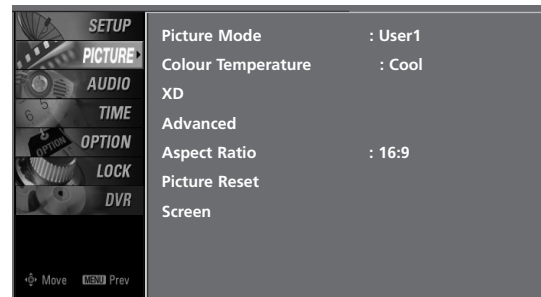
1 Press the **MENU** button and then use **▲** or **▼** button to select the **PICTURE** menu.

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

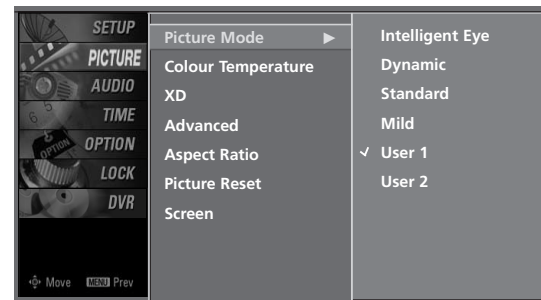
3 Press the **▶** button and then use **▲** or **▼** button to select **Intelligent Eye, Dynamic, Standard, Mild, User1, or User2**.

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

- Picture Mode adjusts the TV for the best picture appearance. Select the preset value in the **Picture Mode** menu based on the programme category.
- Intelligent Eye, 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.



1



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! NOTE

▶ In RGB-PC, HDMI-PC mode, to get the best picture quality, adjust the picture mode to Standard.

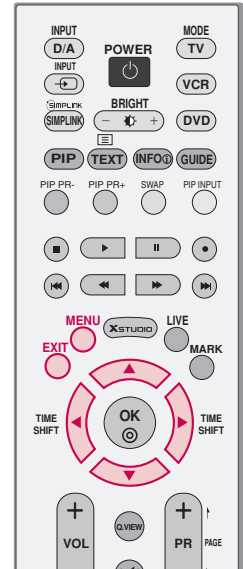
PICTURE CONTROL

Auto Colour Tone Control (Warm/Medium/Cool)

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

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

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

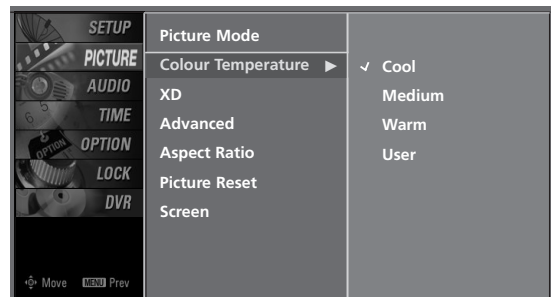
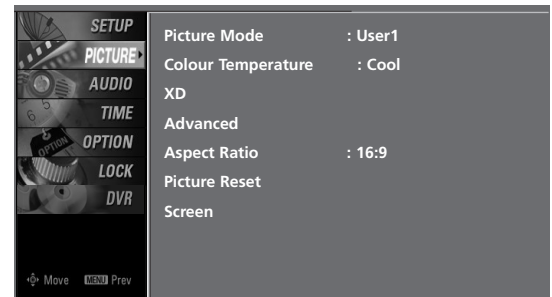


1 Press the **MENU** button and then use **▲** or **▼** button to select the **PICTURE** menu.

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

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

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

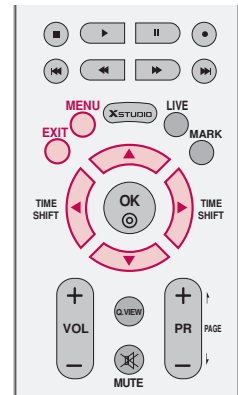


3

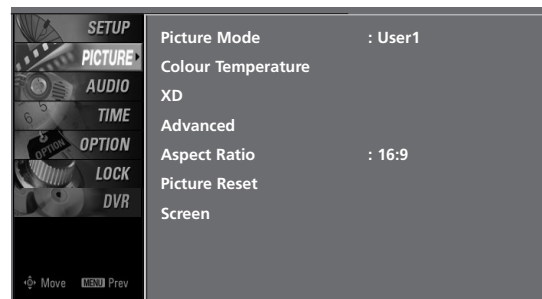
MANUAL PICTURE ADJUSTMENT

Picture Mode -User Option

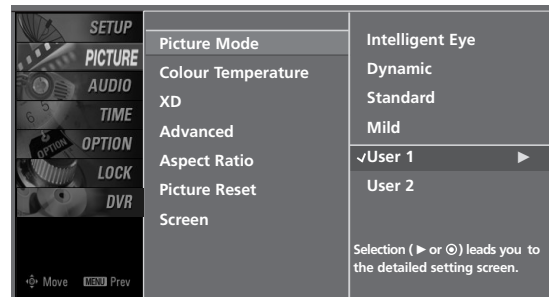
You can adjust picture Contrast, Brightness, Colour, Sharpness, Tint and Back Light options to the levels you prefer.



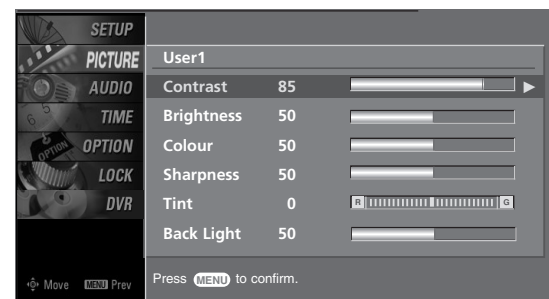
1 Press the **MENU** button and then use **▲** or **▼** button to select the **PICTURE** menu.



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



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



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

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



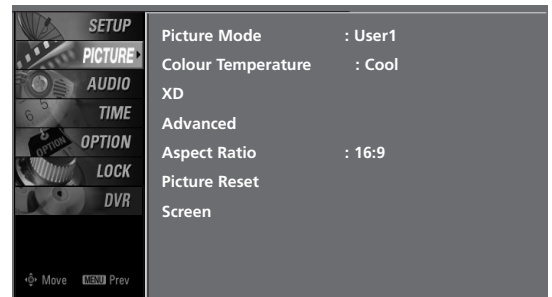
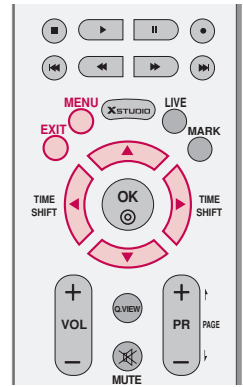
6 Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.

PICTURE CONTROL

Colour Tone -User Option

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

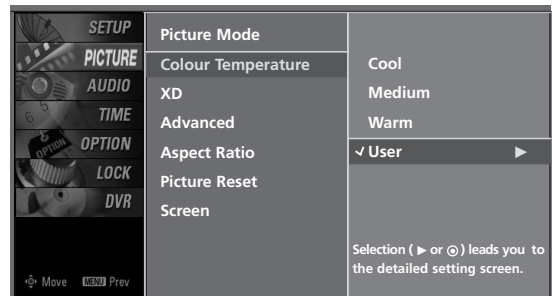
This feature operates only if the picture mode is set to **User 1** or **User 2**.



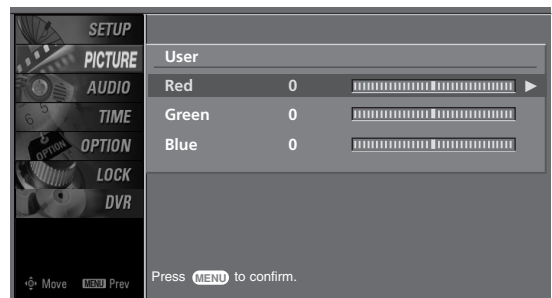
1 Press the **MENU** button and then use **▲** or **▼** button to select the **PICTURE** menu.

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

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



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



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

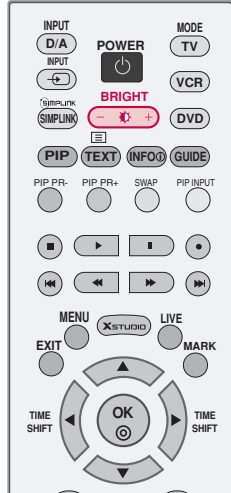
- The adjustment range of **Red, Green, or Blue** is -20~ +20.



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

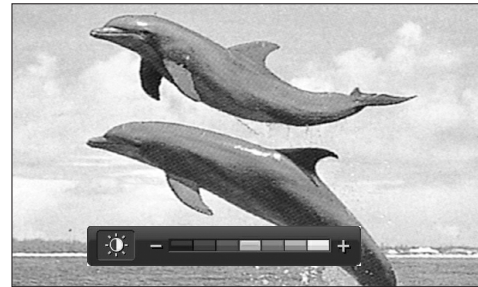
BRIGHTNESS ADJUSTMENT

Adjust the brightness using this button on the remote control.
In Intelligent Eye mode, Brightness adjustment is not available.



1 Press the  button.

2 Adjust the desired screen brightness.



1 **2**

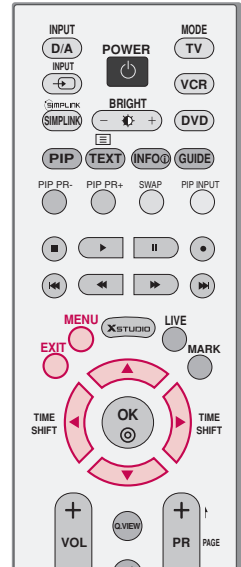
PICTURE CONTROL

XD - PICTURE IMPROVEMENT TECHNOLOGY

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

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

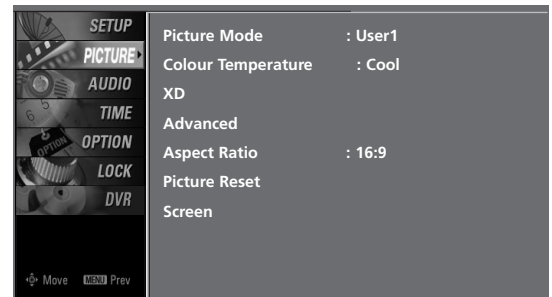
When selecting Picture Mode options (User 1 and User 2), you can choose the Auto / Manual and when selecting Manual, you can adjust the XD Contrast, XD colour and XD Noise.



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

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

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



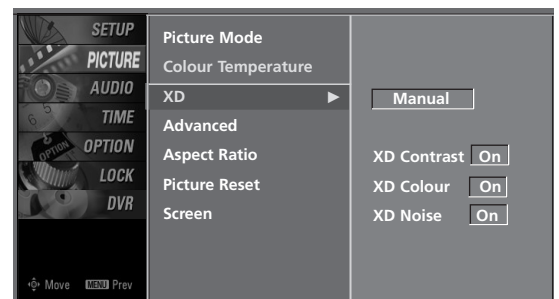
1

* Selecting the Manual

1. Press the ▼ button and then use ▲ or ▼ button to select **XD Contrast**, **XD Colour** or **XD Noise**.

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

2. Use the ◀ or ▶ button to select **On** or **Off**.



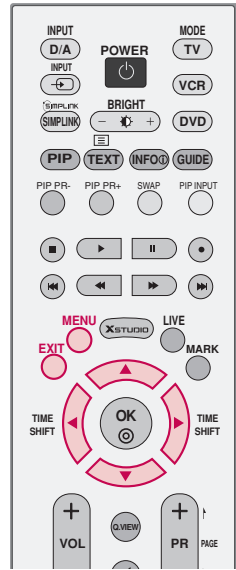
2 3 4

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

ADVANCED -CINEMA

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

When you operate Cinema, the TV will adjust 24 fps video from movies to 30 fps video for display (This function is only available in TV(Analogue, DTV), AV1, AV2, Component 480i, 576i mode.)



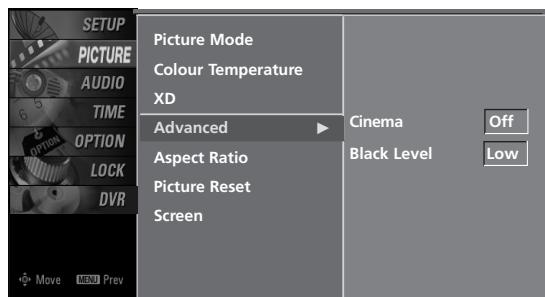
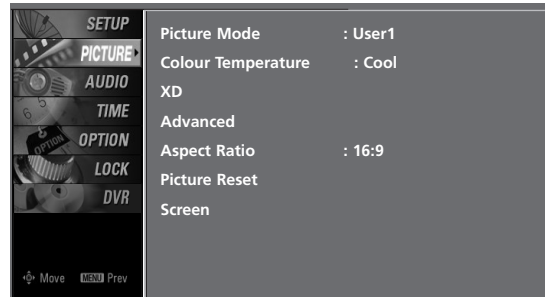
- 1 Press the **MENU** button and then use ▲ or ▼ button to select the **PICTURE** menu.

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

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

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

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



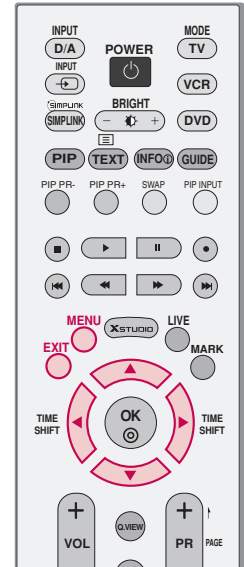
- 3
- 4

PICTURE CONTROL

ADVANCED-BLACK(DARKNESS) LEVEL

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

This feature operates only in HDMI1, HDMI2, HDMI3 or AV1, AV2 mode.



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

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

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

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

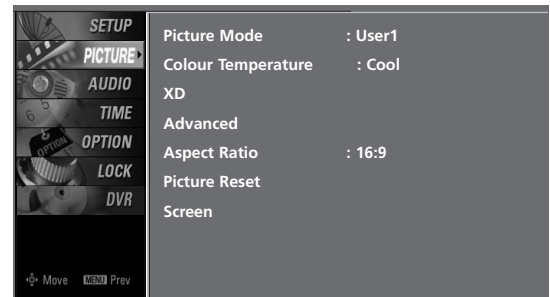
■ **Low**

The reflection of the screen gets darker.

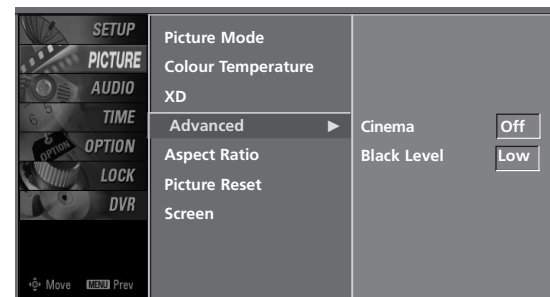
■ **High**

The reflection of the screen gets brighter.

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



1



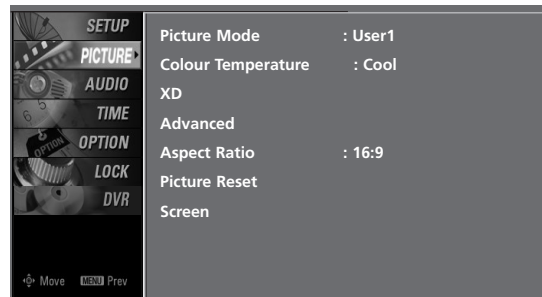
2 3 4

PICTURE RESET

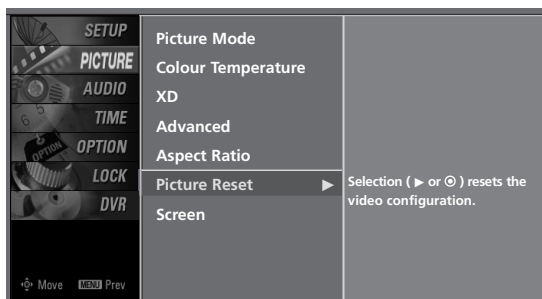
Use to quickly reset all the Picture menu options to their original factory preset values.



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



1

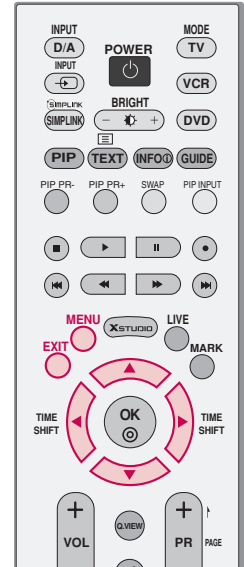


2 3

SOUND & LANGUAGE CONTROL

AUTO VOLUME LEVELER(AUTO VOLUME)

AVL automatically keeps on an equal volume level even if you change programmes.

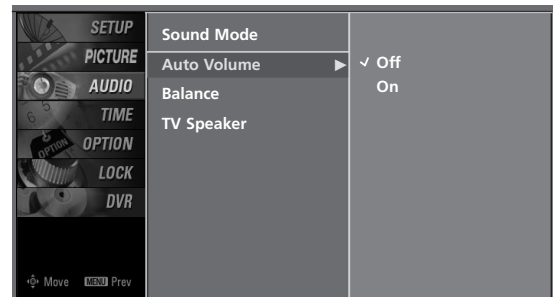
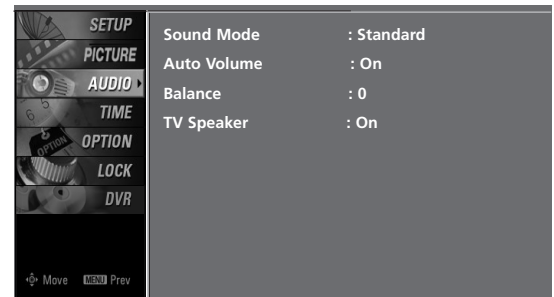


1 Press the **MENU** button and then use **▲** or **▼** button to select the **AUDIO** menu.

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

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

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

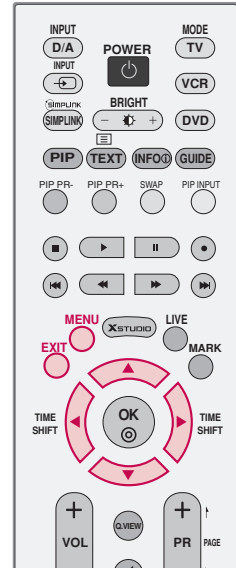


3

PRESET SOUND SETTINGS -SOUND MODE

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

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

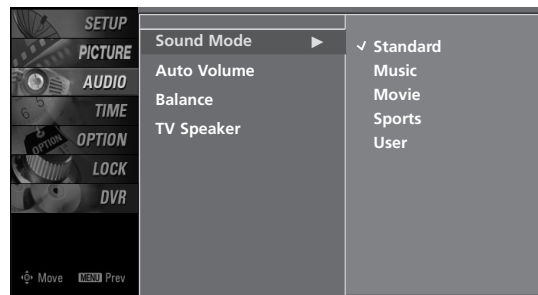
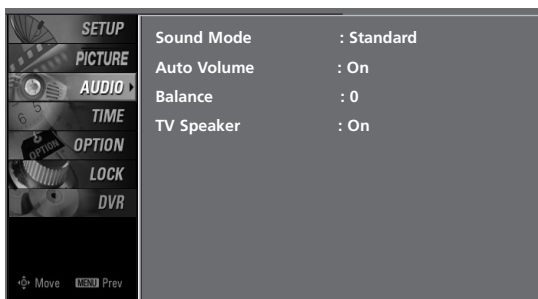


1 Press the **MENU** button and then use ▲ or ▼ button to select the **AUDIO** menu.

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

3 Press the ► button and then use ▲ or ▼ button to select **Standard, Music, Movie, Sports, or User**.

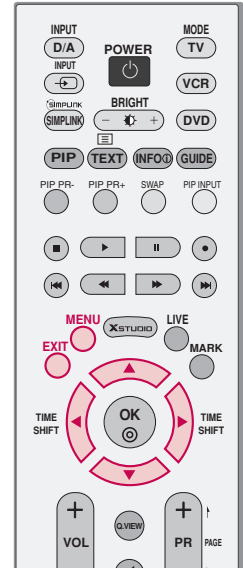
4 Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.



SOUND & LANGUAGE CONTROL

SOUND SETTING ADJUSTMENT-USER MODE

Adjust the sound to suit your taste and room situations.

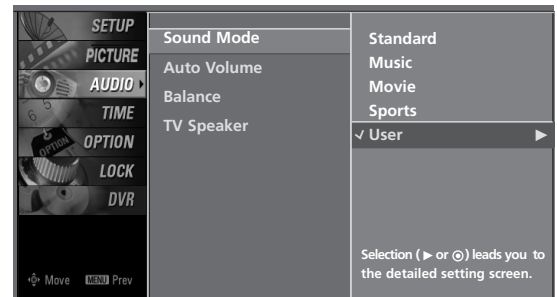


1 Press the **MENU** button and then use ▲ or ▼ button to select the **AUDIO** menu.

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

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

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



1 2 3

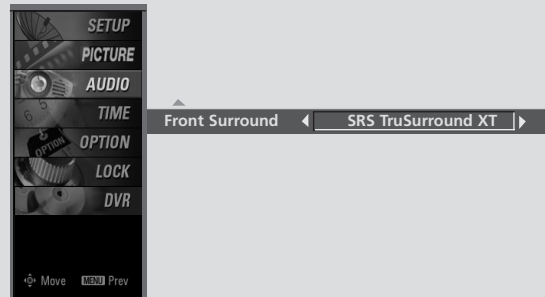


4

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

* Selecting the Front Surround


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



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

SRS TruSurround XT

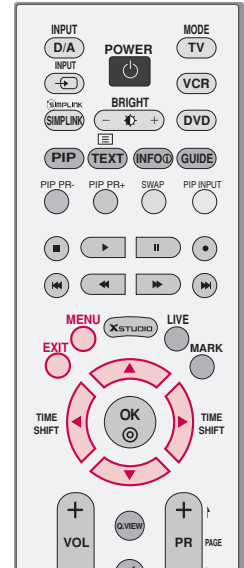
Takes advantage of any multi-channel format without needing to add extra speakers or equipment. Dialog clarity, bass enrichment, and the addition of stereo audio enhancement produces an immersive sound experience from standard stereo material.

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

SOUND & LANGUAGE CONTROL

BALANCE

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

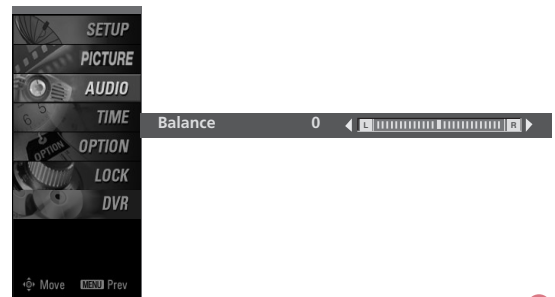
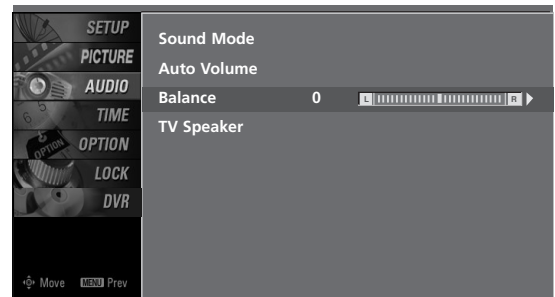
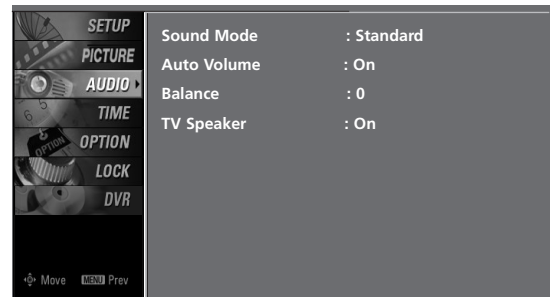


1 Press the **MENU** button and then use ▲ or ▼ button to select the **AUDIO** menu.

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

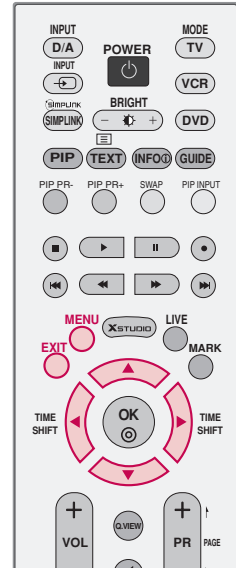
3 Press the ► button and then use ◀ or ▶ button to make appropriate adjustments.

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



TV SPEAKERS ON/OFF SETUP

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

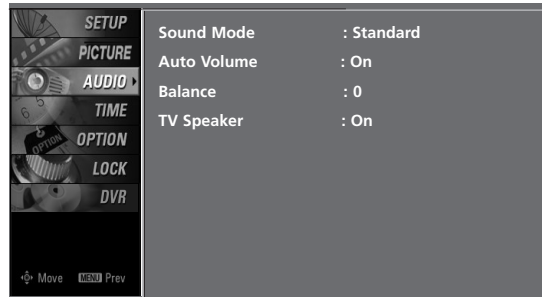


- 1 Press the **MENU** button and then use ▲ or ▼ button to select the **AUDIO** menu.

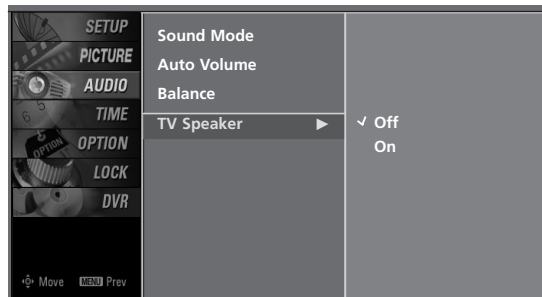
- 2 Press the ► button and then use ▲ or ▼ button to select **TV Speaker**.

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

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



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SOUND & LANGUAGE CONTROL

I/II

STEREO/DUAL RECEPTION - *In Analogue Mode only*

■ Mono sound selection

If the stereo signal is weak in stereo reception, you can switch to mono by pressing the **I/II** button twice. In mono reception, the clarity of sound is improved. To switch back to stereo, press the **I/II** button twice again.

Broadcast	On Screen Display
Mono	MONO
Stereo	MONO / STEREO

SPEAKER SOUND OUTPUT SELECTION

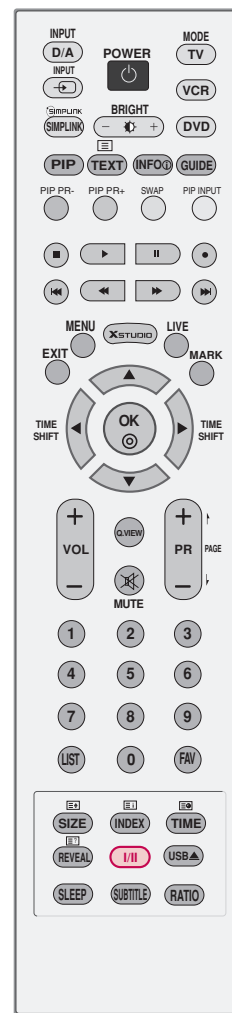
In AV 1-2, Component 1-2, RGB-PC, HDMI1/2/3 mode, you can select output sound for the left and right loudspeakers.

Repeatedly press the **I/II** button to select the sound output.

L+R: Audio signal from audio L input is sent to the left loud speaker and audio signal from audio R input is sent to the right loud speaker.

L+L: Audio signal from audio L input is sent to left and right loud speakers.

R+R: Audio signal from audio R input is sent to left and right loud speakers.



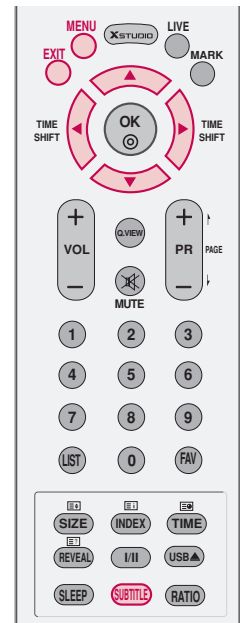
! NOTE

- ▶ In digital mode, if the OSD (On Screen Display) is Displayed on the screen after press the **I/II** button, you can selected the audio language and type(MPEG or DOLBY DIGITAL).
- ▶ IN MPEG mode only, you can selected L or R audio sound.



SUBTITLE - In Digital Mode only

You can select Subtitle on or off with the **SUBTITLE** button in DTV mode.

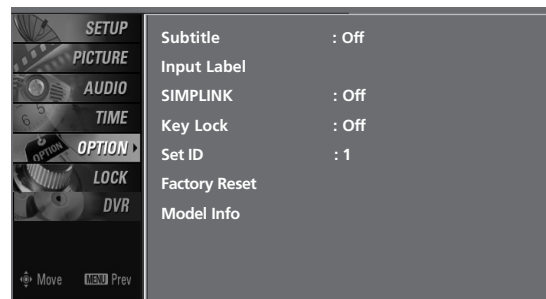


1 Press the **MENU** button and then use ▲ or ▼ button to select the **OPTION** menu.

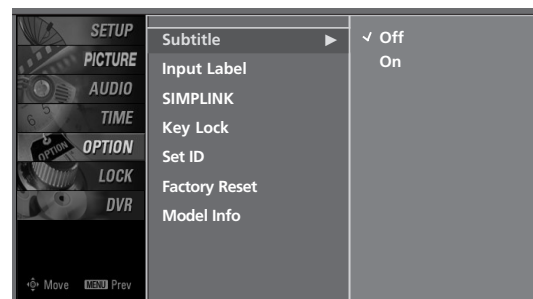
2 Press the ► button and then use ▲ or ▼ button to select **Subtitle**.

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

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



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2 3

TIME SETTING

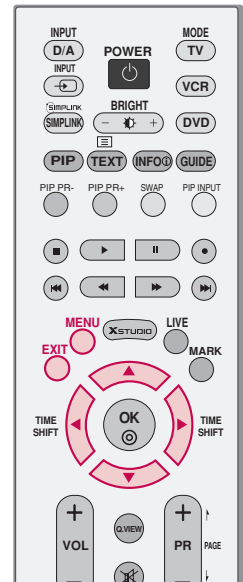
CLOCK SETTING

Auto Clock Setting

The time is set automatically from a digital channel signal.

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

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



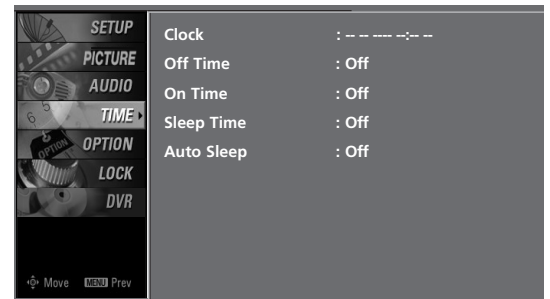
1 Press the **MENU** button and then use ▲ or ▼ button to select the **TIME** menu.

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

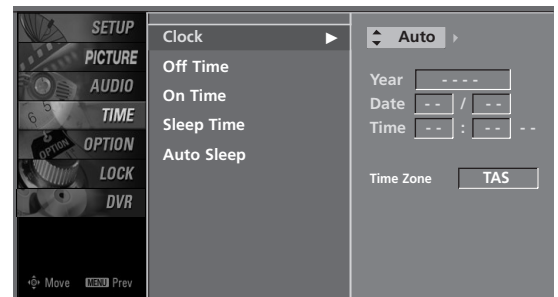
3 Press the ► button and then use ▲ or ▼ button to select **Auto**.

4 Press the ► button and then use ▲ or ▼ button to select your viewing area Time Zone :
NT, TAS, WA, SA, QLD, VIC, or NSW/ACT.

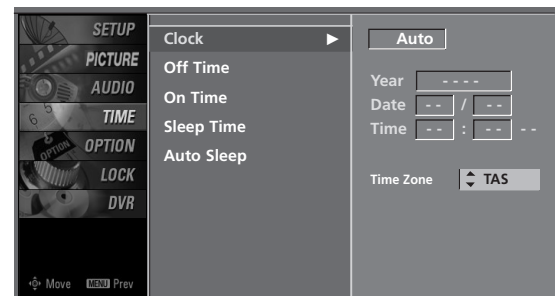
5 Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.



1



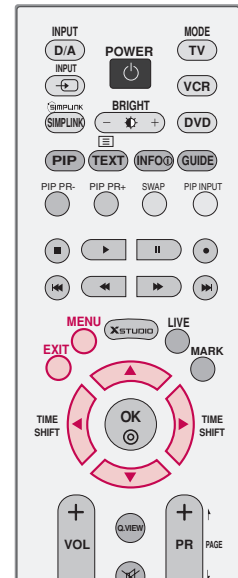
2 3 4 5



2 3 4 5

Manual Clock Setting

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



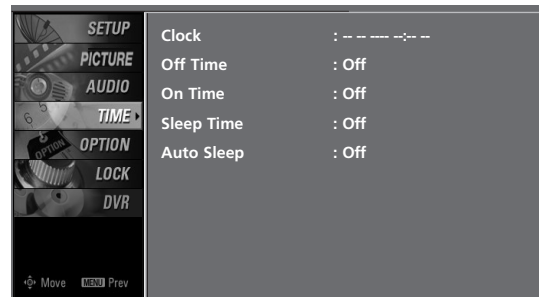
1 Press the **MENU** button and then use ▲ or ▼ button to select the **TIME** menu.

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

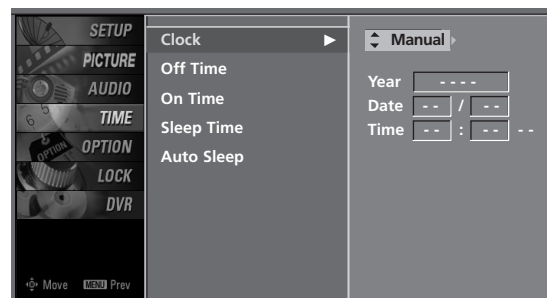
3 Press the ► button and then use ▲ or ▼ button to select **Manual**.

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

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



1



2 3

TIME SETTING

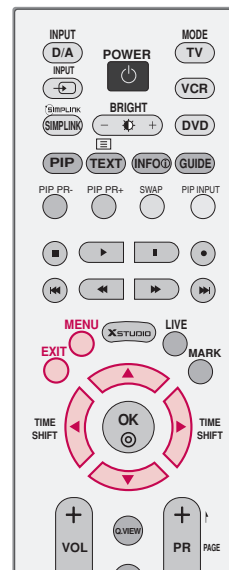
AUTO ON/OFF TIMER SETTING

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

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

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

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



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

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

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

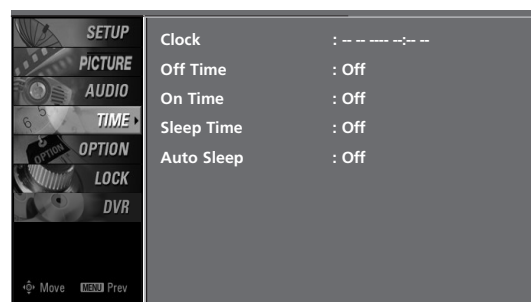
4 Press the **▶** button and then use **▲** or **▼** button to set the hour.

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

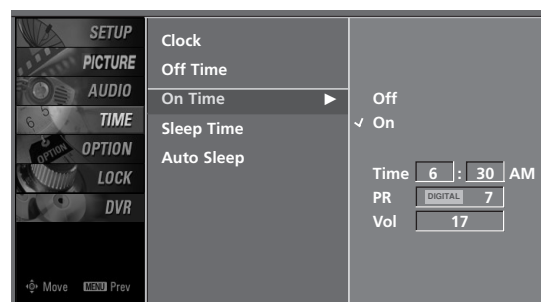
6 **Only On Time**
 Press the **▶** button and then use **▲** or **▼** button to select the channel at turn-on.

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

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



1



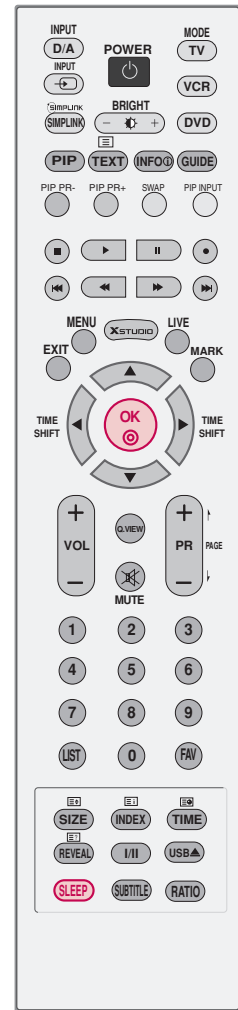
2 3 4 5 6

SLEEP TIMER SETTING

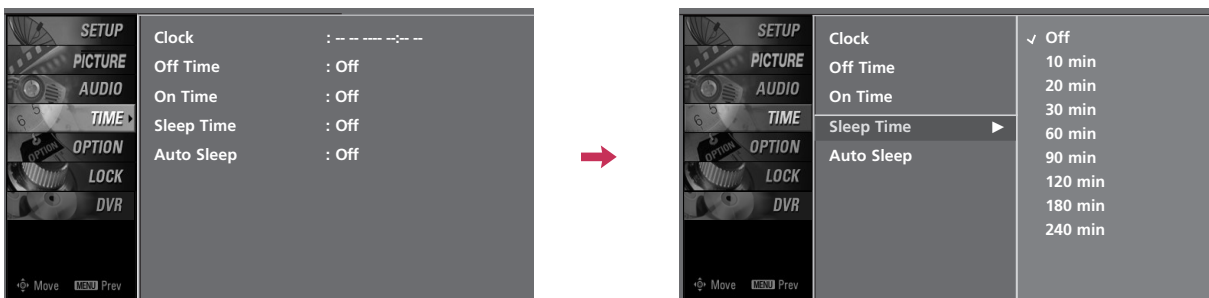
You don't have to remember to switch the set off before you go to sleep.

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. First the **Off** option appears on the screen, followed by the following Sleep Time options : 10, 20, 30, 60, 90, 120, 180, and 240 minutes.
- 2 When the number of minutes you want is displayed on the screen, press the **OK** button. The timer begins to count down from the number of minutes selected.
- 3 To check the remaining minutes before the TV turns off, press the **SLEEP** button once.
- 4 To cancel the Sleep Time, press the **SLEEP** button repeatedly to select **Off**.
- 5 When you switch the set off, the set cancels the preset sleep time.



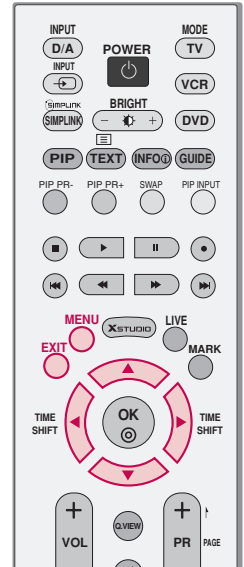
■ You can also set up the Sleep Time in the TIME menu.



TIME SETTING

AUTO SHUT-OFF SETTING

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

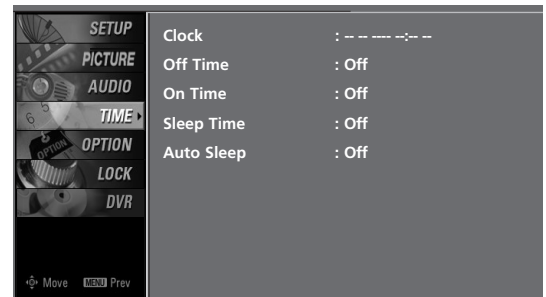


1 Press the **MENU** button and then use ▲ or ▼ button to select the **TIME** menu.

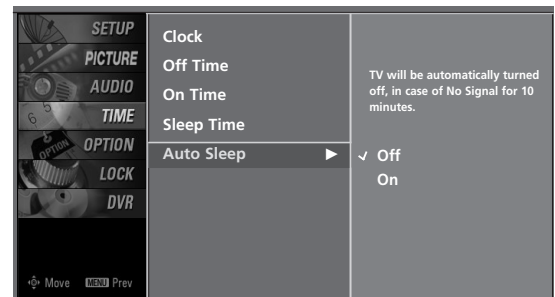
2 Press the ► button and then use ▲ or ▼ button to select **Auto Sleep**.

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

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



1



2 3

PARENTAL CONTROL / RATINGS

SET PASSWORD & LOCK SYSTEM

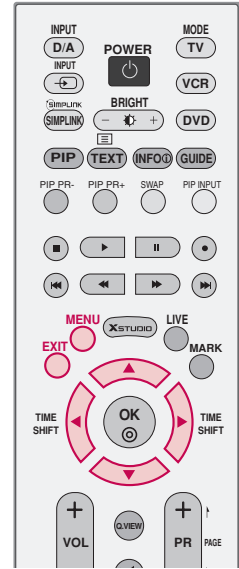
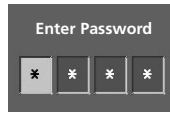
Setting up your Password

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

A password is required to gain access to this menu.

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

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



Set Password

Change the password by inputting a new password twice.

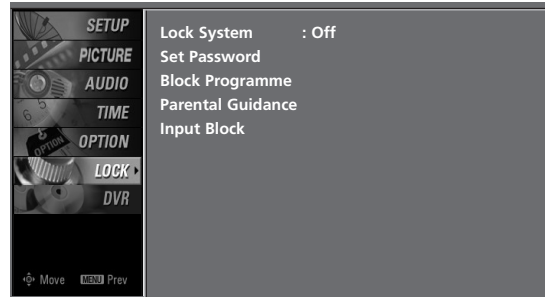
1 After inputting the password, use the **▲** or **▼** button to choose **Set Password**.

2 Press the **▶** button and then choose any 4 digits for your new password and enter the them on the **New**.

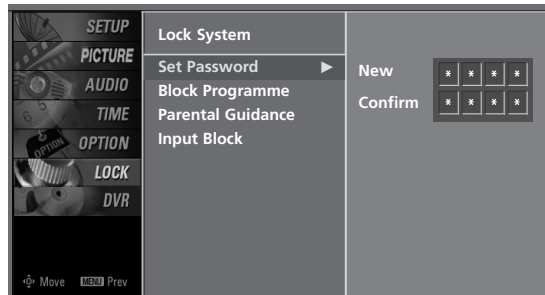
As soon as the 4 digits are entered, reenter the same 4 digits on the **Confirm**.

Then your changed password has been memorized.

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



1



2

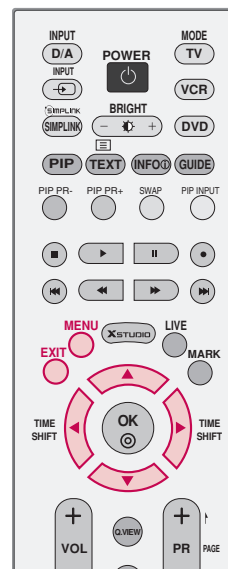
NOTE

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

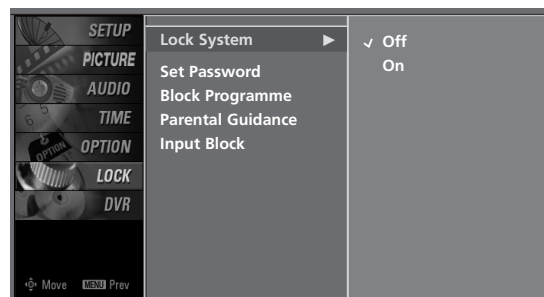
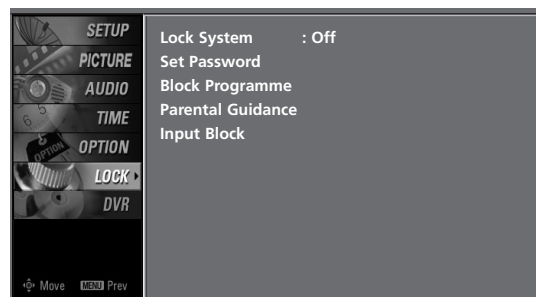
PARENTAL CONTROL / RATINGS

Lock System

Enables or disables the blocking scheme you set up previously.

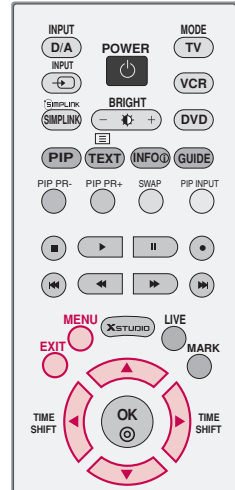


- 1 After inputting the password, use the ▲ or ▼ button to choose **Lock System**.
- 2 Press the ► button and then use the ▲ or ▼ to select **On** or **Off**.
 - When you select, the Lock System is enable.
- 3 Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.



PROGRAMME BLOCKING

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

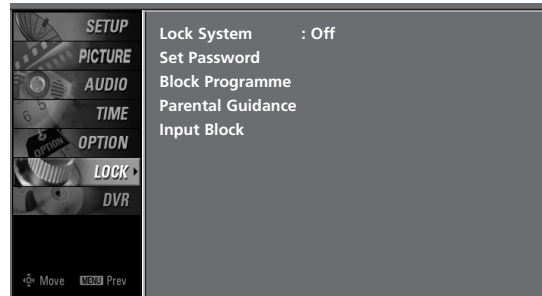


1 After inputting the password, use the ▲ or ▼ button to choose **Block Programme**.

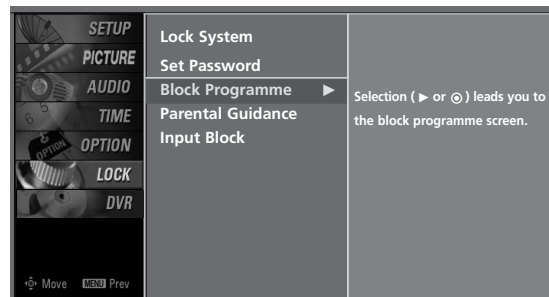
2 Press the ► button. You will now see a screen filled with channel numbers and a preview picture.

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

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



1



2

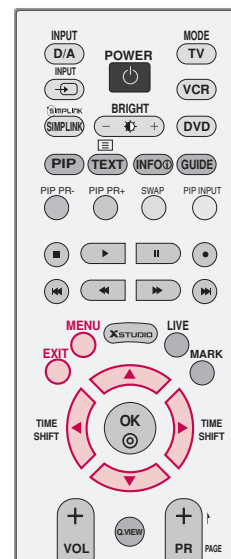


3

PARENTAL CONTROL / RATINGS

PARENTAL GUIDANCE - *In Digital Mode only*

Prevents children from watching certain children's TV programmes, according to the ratings limit set.

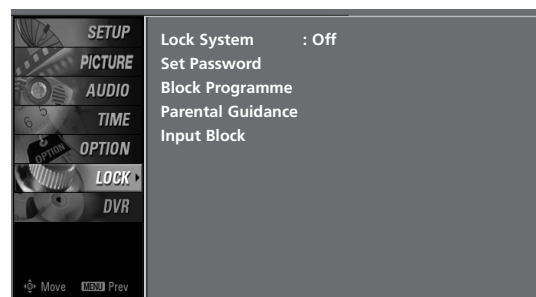


1 After inputting the password, use the ▲ or ▼ button to choose **Parental Guidance**.

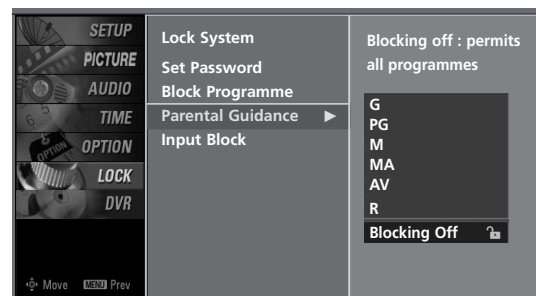
2 Press the ► button and then use the ▲ or ▼ to select **G, PG, M, MA, AV** or **R**.

- G (General audiences)
- PG (Parental guidance suggested)
- M (Mature audiences)
- MA (Mature adult audiences)
- AV (Adult audiences)
- R (Restricted)
- Blocking Off (Permits all programmes)

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



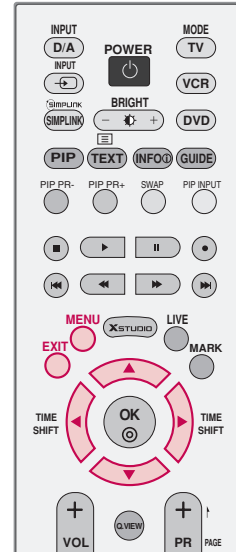
1



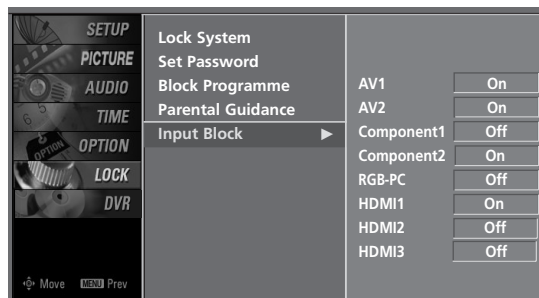
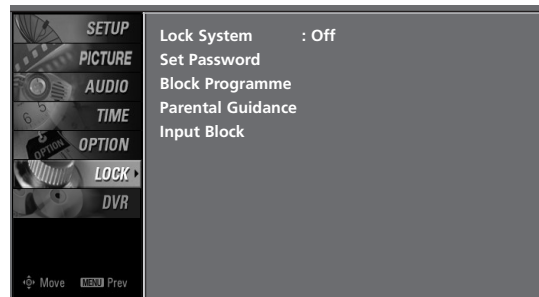
2

EXTERNAL INPUT BLOCKING

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



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



TELETEXT

* This feature is not available in all countries.

- Teletext is a free service broadcast by some TV stations which gives up-to-the-minute information on news, weather, television programmes, share prices and many other topics.
- The teletext decoder of this TV can support the SIMPLE, TOP and FASTEXT systems. SIMPLE (standard teletext) consists of a number of pages which are selected by directly entering the corresponding page number. TOP and FASTEXT are more modern methods allowing quick and easy selection of teletext information.

Switch On/Off

Press the **TEXT** button to switch to teletext. The initial page or last page appears on the screen.

Two page numbers, TV station name, date and time are displayed on the screen headline. The first page number indicates your selection, while the second shows the current page displayed.

Press the **TEXT** or **EXIT** button to switch off teletext.

SIMPLE Text

* This feature is not available in all countries.

■ Page selection

- 1 Enter the desired page number as a three digit number with the NUMBER buttons. If during selection you press a wrong number, you must complete the three digit number and then re-enter the correct page number.
- 2 The **PR +** or **-** button can be used to select the preceding or following page.

TOP Text

* This feature is not available in all countries.

- The user guide displays four fields-red, green, yellow and blue at the bottom of the screen. The yellow field denotes the next group and the blue field indicates the next block.

■ Block / group / page selection

- 1 With the **BLUE** button you can progress from block to block.
- 2 Use the **YELLOW** button to proceed to the next group with automatic overflow to the next block.
- 3 With the **GREEN** button you can proceed to the next existing page with automatic overflow to the next group. Alternatively the **PR +** button can be used.
- 4 The **RED** button permits to return to previous selection. Alternatively the **PR-** button can be used.


■ Direct page selection

Corresponding to the SIMPLE teletext mode, you can select a page by entering it as a three digit number using the NUMBER buttons in TOP mode.

FASTEXT

- The teletext pages are colour coded along the bottom of the screen and are selected by pressing the corresponding coloured button.

■ Page selection

1. Press the  button to select the index page.
2. You can select the pages which are colour coded along the bottom line with the same coloured buttons.
3. Corresponding to the SIMPLE teletext mode, you can select a page by entering its three digit page number with the NUMBER buttons in FASTEXT mode.
4. The **PR +** or **-** button can be used to select the preceding or following page.

Special Teletext Functions



REVEAL

Press this button to display concealed information, such as solutions of riddles or puzzles. Press this button again to remove the information from the display.



TIME

When viewing a TV programme, press this button to display the time at the top right hand corner of the screen. Press this button again to remove the display.



SIZE

Selects double height text.
Press this button to enlarge the top half of the page.
Press this button again to enlarge the bottom half of the page.
Press this button again to return to the normal display.



INDEX

Select the each index page

APPENDIX

TROUBLESHOOTING

The operation does not work normally.	
The remote control doesn't work	<ul style="list-style-type: none">■ Check to see if there is any object between the product and the remote control causing obstruction. Ensure you are pointing the remote control directly at the TV.■ Ensure that the batteries are installed with correct polarity (+ to +, - to -).■ Ensure that the correct remote operating mode is set: TV, VCR etc.■ Install new batteries.
Power is suddenly turned off	<ul style="list-style-type: none">■ 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	<ul style="list-style-type: none">■ 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	<ul style="list-style-type: none">■ This is normal, the image is muted during the product startups process. Please contact your service center, if the picture has not appeared after five minutes.
No or poor colour or poor picture	<ul style="list-style-type: none">■ Adjust Colour 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	<ul style="list-style-type: none">■ Check for local interference such as an electrical appliance or power tool.
Poor reception on some channels	<ul style="list-style-type: none">■ 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	<ul style="list-style-type: none">■ Check antenna (Change the direction of the antenna).

The audio function does not work.

Picture OK & No sound	<ul style="list-style-type: none">■ Press the VOL or VOLUME button.■ Sound muted? Press MUTE button.■ Try another channel. The problem may be with the broadcast.■ Are the audio cables installed properly?
No output from one of the speakers	<ul style="list-style-type: none">■ Adjust Balance in menu option.
Unusual sound from inside the product	<ul style="list-style-type: none">■ A change in ambient humidity or temperature may result in an unusual noise when the product is turned on or off and does not indicate a fault with the product.

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

The signal is out of range (Invalid format)	<ul style="list-style-type: none">■ Adjust resolution, horizontal frequency, or vertical frequency.■ Check the input source.
Vertical bar or stripe on background & Horizontal Noise & Incorrect position	<ul style="list-style-type: none">■ Work the Auto configure or adjust clock, phase, or H/V position. (Option)
Screen colour is unstable or single colour	<ul style="list-style-type: none">■ Check the signal cable.■ Reinstall the PC video card.

MAINTENANCE

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

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

Cleaning the Screen

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

Cleaning the Cabinet

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

Extended Absence

CAUTION

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

PRODUCT SPECIFICATIONS

42LY3DE* 42LY3DE-AA	Dimensions (Width x Height x Depth)	with stand	1113.3x722.3x294.3 mm 43.8x28.4x11.6 inches
		without stand	1113.3x656.5x88.5 mm 43.8x25.8x3.5 inches
	Weight	with stand	30.5kg / 67.2 pounds
		without stand	24.4kg / 53.8 pounds
Power requirement		AC100-240V~ 50/60Hz 2.4A	
47LY3DE* 47LY3DE-AA	Dimensions (Width x Height x Depth)	with stand	1236.9 x 795.6 x 325.6 mm 48.7 x 31.3 x 12.8 inches
		without stand	1236.9 x 725.5 x 103.0 mm 48.7 x 28.6 x 4.1 inches
	Weight	with stand	40.5 kg / 89.3 lbs
		without stand	34.0 kg / 75.0 lbs
Power requirement		AC100-240V~ 50/60Hz 3.3A	
Television System Program Coverage External Antenna Impedance			PAL B/G, DVB-T VHF 0-12, UHF 20-75, CATV 02-44, DTV 06-12, 27-69 75 Ω
Environment condition	Operating Temperature		32~104°F (0 ~ 40°C)
	Operating Humidity		Less than 80%
	Storage Temperature		-4~104°F(-20 ~ 60°C)
	Storage Humidity		Less than 85%

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

PROGRAMMING THE REMOTE CONTROL

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

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

Programming a code into a remote mode

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

Code (Hexa)	Function	Note	Code (Hexa)	Function	Note
50	D/A INPUT	Remote control Button	26	TIME	Remote control Button
0B	INPUT	Remote control Button	2A	REVEAL	Remote control Button
79	RATIO	Remote control Button	20	TEXT	Remote control Button
0E	SLEEP	Remote control Button	72	RED	Remote control Button
10-19	Number Key 0-9	Remote control Button	71	GREEN	Remote control Button
1A	Q.VIEW	Remote control Button	63	YELLOW	Remote control Button
09	MUTE	Remote control Button	61	BLUE	Remote control Button
02	VOL +	Remote control Button	53	LIST	Remote control Button
03	VOL -	Remote control Button	0A	I/II	Remote control Button
00	PR +	Remote control Button	AA	INFO	Remote control Button
01	PR -	Remote control Button	E1	–	Remote control Button
1E	FAV	Remote control Button	E0	+	Remote control Button
40	▲	Remote control Button	B1	■	Remote control Button
41	▼	Remote control Button	B0	▶	Remote control Button
07	◀	Remote control Button	BA		Remote control Button
06	▶	Remote control Button	BD	●	Remote control Button
44	OK	Remote control Button	B2	◀◀	Remote control Button
43	MENU	Remote control Button	8F	◀◀	Remote control Button
5B	EXIT	Remote control Button	8E	▶▶	Remote control Button
A9	GUIDE	Remote control Button	B3	▶▶	Remote control Button
7E	SIMPLINK	Remote control Button	CA	USB▲	Remote control Button
39	SUBTITLE	Remote control Button	7C	XSTUDIO	Remote control Button
08	POWER	Remote control Button	60	PIP	Remote control Button
7D	MARK	Remote control Button	72	PIP PR+	Remote control Button
64	SIZE	Remote control Button	71	PIP PR-	Remote control Button
70	INDEX	Remote control Button	63	SWAP	Remote control Button
			61	PIP INPUT	Remote control Button

APPENDIX

IR CODES

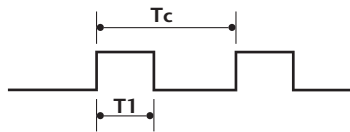
1. How to Connect

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

2. Remote Control IR Codes

■ Output waveform

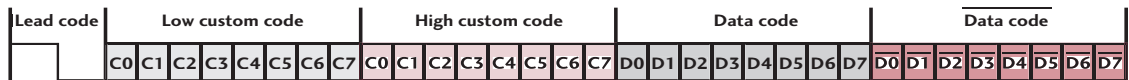
Single pulse, modulated with 37.917KHz signal at 455KHz



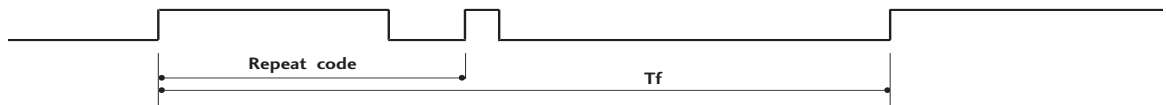
Carrier frequency
 $FCAR = 1/TC = fOSC/12$
 Duty ratio = $T1/TC = 1/3$

■ Configuration of frame

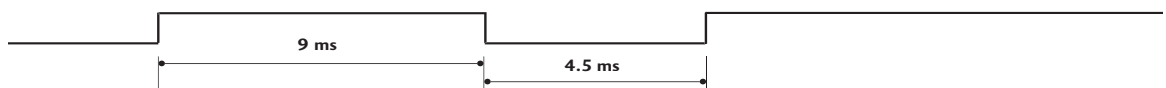
1st frame



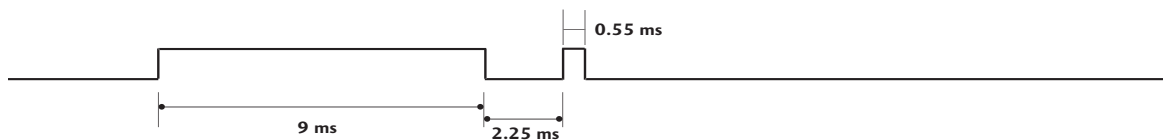
Repeat frame



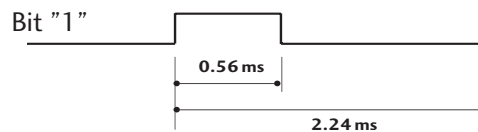
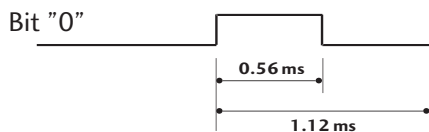
■ Lead code



■ Repeat code

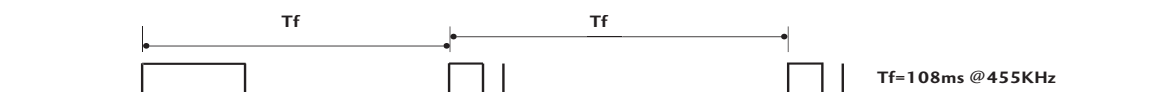


■ Bit description



■ Frame interval: Tf

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



Remote control code

VCRs

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

VCRs

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

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		

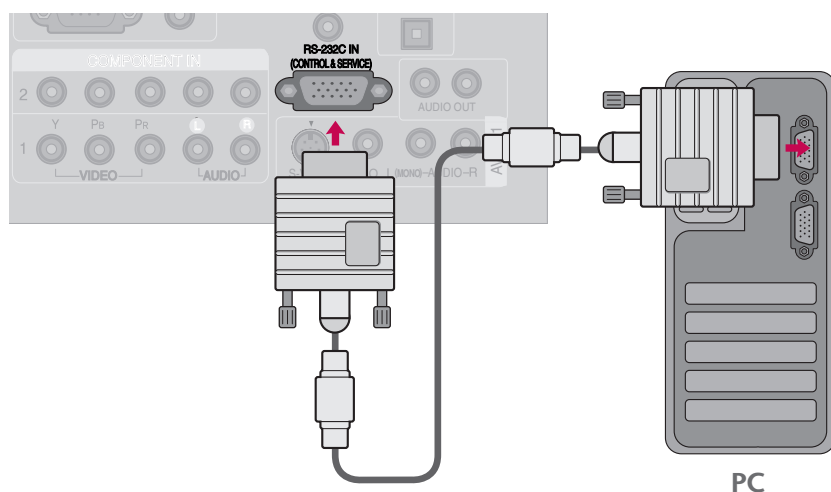
EXTERNAL CONTROL THROUGH RS-232C

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

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

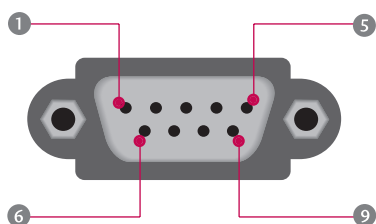
Note: RS-232C connection cables are not supplied with the product.

RS-232C Setup



Type of Connector; D-Sub 9-Pin Male

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



RS-232C Configurations

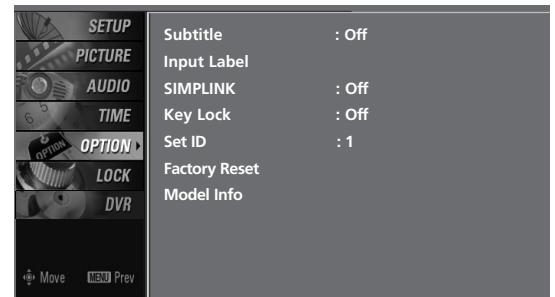
7-Wire Configurations (Standard RS-232C cable)				
	PC		PDP	
RXD	2	● ——— ●	3	TXD
TXD	3	● ——— ●	2	RXD
GND	5	● ——— ●	5	GND
DTR	4	● ——— ●	6	DSR
DSR	6	● ——— ●	4	DTR
RTS	7	● ——— ●	8	CTS
CTS	8	● ——— ●	7	RTS
	D-Sub 9		D-Sub 9	

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

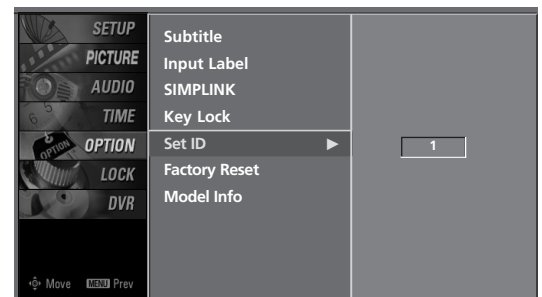
Set ID

Use this function to specify a TV ID number.
Refer to 'Real Data Mapping 1'. ▶ p.118

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



1



2 3

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

	COMMAND1	COMMAND2	DATA (Hexadecimal)		COMMAND1	COMMAND2	DATA (Hexadecimal)
01. Power	k	a	0 ~ 1	15. PIP Position	k	q	0 ~ 3
02. Input Select	k	b	0 ~ 9	16. Remote Control/Key Lock	k	m	0 ~ 1
03. Aspect Ratio	k	c	See p.118	17. Treble	k	r	0 ~ 64
04. Screen Mute	k	d	0 ~ 1	18. Bass	k	s	0 ~ 64
05. Volume Mute	k	e	0 ~ 1	19. Balance	k	t	0 ~ 64
06. Volume Control	k	f	0 ~ 64	20. Colour Temperature	k	u	0 ~ 3
07. Contrast	k	g	0 ~ 64	21. Red Adjustment	k	v	0 ~ C8
08. Brightness	k	h	0 ~ 64	22. Green Adjustment	k	w	0 ~ C8
09. Colour	k	i	0 ~ 64	23. Blue Adjustment	k	\$	0 ~ C8
10. Tint	k	j	0 ~ 64	24. Channel Tuning	m	a	See p.120
11. Sharpness	k	k	0 ~ 64	25. Send IR Code	m	c	See p.120
12. Back Light	m	g	See p.119	26. Input Select	x	b	See p.120
13. OSD Select	k	l	0 ~ 1	27. PIP Input Source	k	y	0 ~ 3
14. PIP/DW	k	n	0 ~ 2				

Transmission / Receiving Protocol

Transmission

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

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

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

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

[DATA] : To transmit command data.

Transmit 'FF' data to read status of command.

[Cr] : Carriage Return

ASCII code '0x0D'

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

OK Acknowledgement

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

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

Error Acknowledgement

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

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

Data1: Illegal Code

Data2: Not supported function

Data3: Wait more time

01. Power (Command2:a)

To control Power On/Off of the TV.

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

Data 0 : Power Off Data 1 : Power On

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

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

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

There might be a time delay between command and acknowledge.

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

To select input source for the TV.

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

Data 0: DTV Data 1: Analogue

Data 2: AV1 Data 3: AV2

Data 4: Component 1 Data 5: Component 2

Data 6: RGB-PC Data 7: HDMI1

Data 8: HDMI2 Data 9: HDMI3

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

03. Aspect Ratio (Command2:c)

To adjust the screen format.

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

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

Date 0: Auto 1: 4:3

2: 16:9

3: 14:9 (-10) ~ D: 14:9 (0) ~ 17: 14:9 (10)

18: Zoom (-16) ~ 28: Zpom (0) ~ 38: Zoom (16)

39: 1:1 Pixel

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

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

* In HDMI/DVI(1080i or 1080p)mode, 1:1 Pixel is available.

04. Screen Mute (Command2:d)

To select screen mute on/off.

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

Data 0 : Screen mute off (Picture on)

Data 1 : Screen mute on (Picture off)

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

05. Volume Mute (Command2:e)

To control volume mute on/off.

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

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

Data 0 : Volume mute on (Volume off)

Data 1 : Volume mute off (Volume on)

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

06. Volume Control (Command2:f)

To adjust volume.

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

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

Data Min : 0 ~ Max : 64

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

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

07. Contrast (Command2:g)

To adjust screen contrast.

You can also adjust contrast in the Picture menu.

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

Data Min : 0 ~ Max : 64

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

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

08. Brightness (Command2:h)

To adjust screen brightness.

You can also adjust brightness in the Picture menu.

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

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

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

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

*Real data mapping 1

0 : Step 0

⋮

A : Step 10 (SET ID 10)

⋮

F : Step 15 (SET ID 15)

10 : Step 16 (SET ID 16)

⋮

63 : Step 99 (SET ID 99)

64 : Step 100

09. Colour (Command2:i)

To adjust the screen colour.

You can also adjust colour in the Picture menu.

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

Data Min : 0 ~ Max : 64

*Refer to 'Real data mapping 1'. See page 118.

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

10. Tint (Command2: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 118.

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

11. Sharpness (Command2: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 118.

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

12. Back light(Command: m g)

To adjust screen back light.

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

Data Min:0 ~ Max:64

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

13. OSD Select (Command2:l)

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

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

Data 0: OSD off Data 1: OSD on

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

14. 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.

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

Data 0: PIP off 2: DW
1: PIP

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

15. PIP Position (Command2:q)

To select sub picture position for PIP.

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

Data 0: Right down on screen

Data 1: Right up on screen

Data 2: Left up on screen

Data 3: Left down on screen

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

16. Remote Control Lock Mode (Command2:m)

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

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

Data 0: Lock off Data 1: Lock on

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

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

17. Treble (Command2:r)

To adjust treble.

You can also adjust treble in the Audio menu.

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

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

*Refer to 'Real data mapping 1'. See page 118.

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

18. Bass (Command2:s)

To adjust bass.

You can also adjust bass in the Audio menu.

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

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

*Refer to 'Real data mapping 1'. See page 118.

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

19. Balance (Command2:t)

To adjust balance.

You can also adjust balance in the Audio menu.

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

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

*Refer to 'Real data mapping 1'. See page 118.

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

20. Colour Temperature (Command:2:u)

To adjust colour temperature.

You can also adjust colour temperature in the Picture menu.

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

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

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

21. Red adjustment(Command:v)

To adjust red in colour temperature

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

Data Min:0 ~ Max:C8

*Refer to "Real data mapping 2".

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

*In User Mode, Colour Temperature is available.

22. Green Adjustment(Command:w)

To adjust green in colour temperature.

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

Data Min:0 ~ Max:C8

*Refer to "Real data mapping 2" as shown below

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

23. Blue adjustment(Command:\$)

To adjust blue in colour temperature.

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

Data Min:0 ~ Max:C8

*Refer to "Real data mapping 2".

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

*In User Mode, Colour Temperature is available.

*Real data mapping 2

0 : -20

5 : -19

A : -18

⋮

5F: -1

64: 0

69: +1

⋮

C3 : +19

C8 : +20

24. Channel Tuning (Command: m a)

To tune channel to following programme number

Transmission [m][a][][Set ID][][Data0][][Data1][][Data2][Cr]

Data 0: High channel data

Data 1: Low channel data

Data 2: 00: Analogue TV

: 10: Digital TV

ex) Analogue TV : ma 0 00 01 00

* Channel Data Range:

Analogue TV: 0 ~ 63

Digital TV: 0 ~ 3E

25. Send IR Code (Command: m c)

To send IR remote key code

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

Data Key code: Refer to page 111.

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

26. Input Select(Command: x b)

To select input source for TV.

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

Data 00 : Digital

Data 41 : Component2

Data 10 : Analogue

Data 50 : RGB-PC

Data 20 : AV1

Data 90 : HDMI1

Data 21 : AV2

Data 91 : HDMI2

Data 40 : Component1

Data 92 : HDMI3

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

27. PIP Input Select (Command:2:y)

To select input source for sub picture in PIP/DW mode.

You can also adjust input source for sub picture using PIP INPUT button remote control.

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

Data 0: Digital

Data 2: AV1

Data 1: Analogue

Data 3: AV2

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

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APPENDIX

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