Supported Display Specifications

RGB/HDMI-PC

Resolution	Horizontal Frequency(KHz)	Vertical Frequency(Hz)
640x350	31.468	70.09
720x400	31.469	70.08
640x480	31.469	59.94
	37.861	72.80
	37.500	75.00
800x600	35.156	56.25
	37.879	60.31
	48.077	72.18
	46.875	75.00
1024x768	48.363	60.00
	56.476	70.06
	60.023	75.02
1280x768	47.776	59.870
1280x768	60.289	74.893
1360x768	47.712	60.015
1280x1024	63.981	60.020
	79.976	75.025
1600x1200	75.00	60.00
1920x1080	67.50	60.00

* RGB-PC mode only: 1280x768(H-60.289, V-74.893)

HDMI-DTV

Resolution	Horizontal Frequency(KHz)	Vertical Frequency(Hz)
720x480	31.47	60.00
	31.47	59.94
1280x720	45.00	60.00
	44.96	59.94
1920x1080	33.75	60.00
	33.72	59.94
	67.50	60.00
	67.432	59.939
	27.00	24.00
	26.97	23.94
	33.75	30.00
	33.71	29.97

Y, C_B/P_B, C_R/P_R

Resolution	Horizontal Frequency(KHz)	Vertical Frequency(Hz)
720x480	15.73	60.00
	15.73	59.94
	31.47	59.94
	31.47	60.00
1280x720	45.00	60.00
	44.96	59.94
1920x1080	33.75	60.00
	37.72	59.94
	67.50	60.00
	67.432	59.939
	27.00	24.00
	26.97	23.94
	33.75	30.00
	33.71	29.97

EXTERNAL EQUIPMENT SETUP
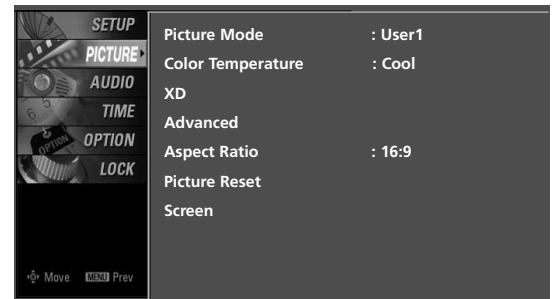
Screen Setup for PC mode

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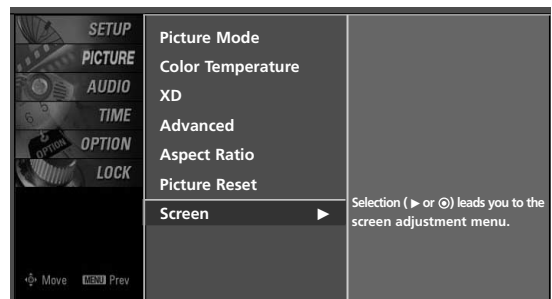
1 Press the **MENU** button and then use ▲ or ▼ button to select the **PICTURE** menu.

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

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

SETUP		
PICTURE	Picture Mode	: User1
AUDIO	Color Temperature	: Cool
TIME	XD	
OPTION	Advanced	
LOCK	Aspect Ratio	: 16:9
	Picture Reset	
	Screen	

Move   MENU Prev

1

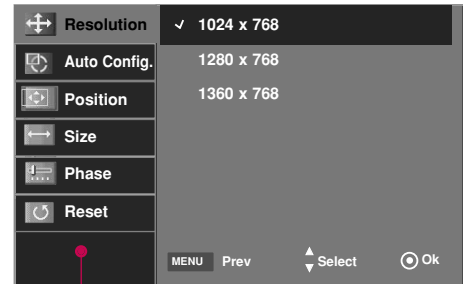| SETUP		
PICTURE	Picture Mode	
AUDIO	Color Temperature	
TIME	XD	
OPTION	Advanced	
LOCK	Aspect Ratio	
	Picture Reset	
	Screen ▶	Selection (▶ or ⊙) leads you to the screen adjustment menu.

Move   MENU Prev

2 3

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Adjustment for screen Resolution, Position, Size, and Phase

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

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

3 Press the **ENTER** button.

⊞ **Resolution**	✓ **1024 x 768**	
▣ Auto Config.	1280 x 768	
▣ Position	1360 x 768	
↔ Size		
▦ Phase		
↻ Reset		
	MENU Prev	▲▼ Select ⊙ Ok

① ② ③

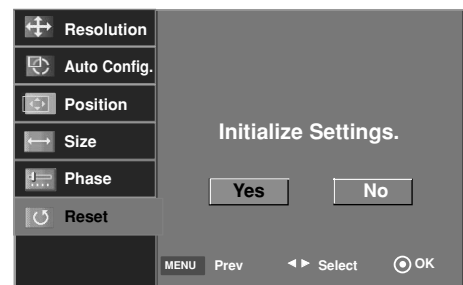|	
Resolution	XGA(1024, 1280, 1360) isn't distinguished because of having the same H/V Sync Time. This function is you to select the Default Sync Time.
Position	This function is to adjust picture to left/right and up/down as you prefer.
Size	This function is to minimize any vertical bars or stripes visible on the screen background. And the horizontal screen size will also change.
Phase	This function allows you to remove any horizontal noise and clear or sharpen the image of characters.

Auto Configuration and Initializing (Reset to original factory values)

To initialize the adjusted values.

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

2 Press the **ENTER** button and then use ◄ or ► button to select **Yes**.

3 Press the **ENTER** button.

⊞ Resolution	
▣ Auto Config.	
▣ Position	
↔ Size	**Auto config.**
▦ Phase	
↻ Reset	Yes No
	MENU Prev ◄ ► Select ⊙ OK

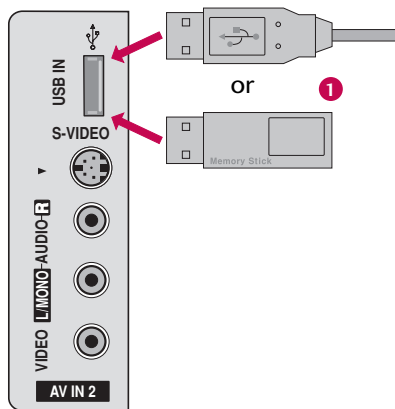|	
⊞ Resolution	
▣ Auto Config.	
▣ Position	
↔ Size	**Initialize Settings.**
▦ Phase	
↻ Reset	Yes No
	MENU Prev ◄ ► Select ⊙ OK

① ② ③

EXTERNAL EQUIPMENT SETUP

USB IN SETUP

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

1. How to connect

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

2. How to use

■ After connecting the **USB IN** (or **USB**) jack, you use the
*MEDIA*HOST function. (► **p.48**)

AUDIO OUT SETUP

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

Analog

1. How to connect

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

2 Set the "TV Speaker option - Off" in the AUDIO menu. (▶ **p.71**). See the external audio equipment instruction manual for operation.

Digital

1. How to connect

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

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

3 Set the "TV Speaker option - Off" in the AUDIO menu. (▶ **p.71**). 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.71**)

> ⚠ **CAUTION**
>
> ▶ Do not look into the optical output port. Looking at the laser beam may damage your vision.
> ▶ Block the SPDIF out(optical/coaxial) about the contents with ACP(Audio Copy Protection) function.

EXTERNAL EQUIPMENT SETUP
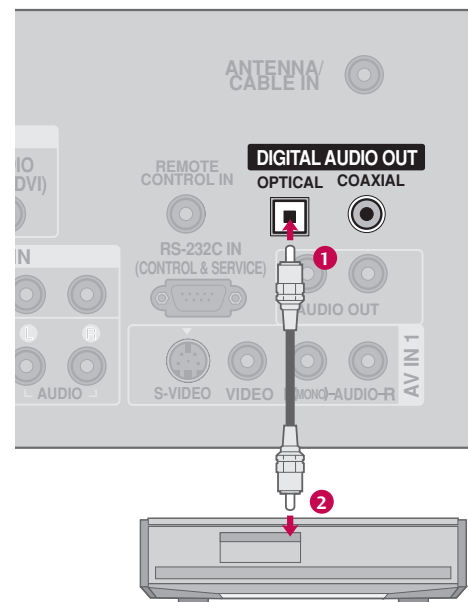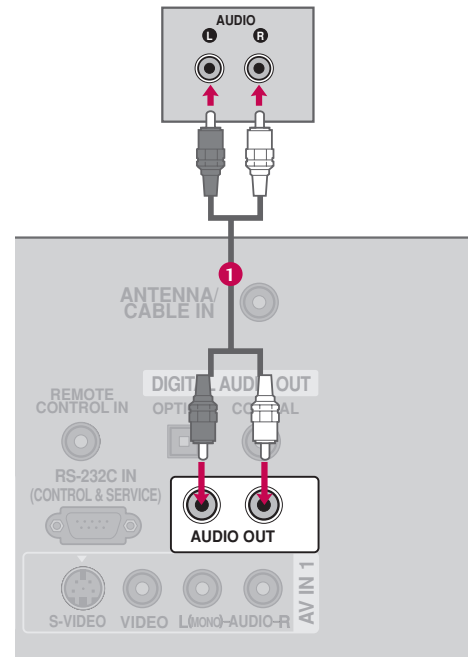
WATCHING TV / CHANNEL CONTROL

REMOTE CONTROL FUNCTIONS

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

WATCHING TV / CHANNEL CONTROL

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|	
POWER	Turns your TV or any other programmed equipment on or off, depending on the mode.
TV INPUT	In AV 1-2, Component 1-2, RGB-PC, HDMI1, HDMI2 and HDMI3 input sources, screen returns to the last TV channel.
INPUT	External input modes rotate in regular sequence: Antenna, Cable, AV1-2, Component 1-2, RGB-PC, HDMI1, HDMI2, HDMI3 (Antenna, Cable, AV 1-2, Component 1-2, RGB-PC, HDMI1, HDMI2, HDMI3 input sources are linked automatically, only if these are connected).

MODE	Select the remote operating mode: TV, DVD, VCR, AUDIO, CABLE or STB. * If the mode of another product is selected, a button on the remote control which is not used for the selected product can control the TV.
MEDIAHOST	Enter to the *MEDIAHOST* mode.

Inside the Sliding Cover
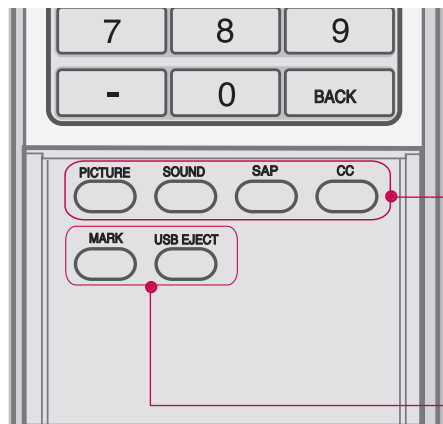
|	
PICTURE	Adjust the factory preset picture depend on the viewing environment. ▶ **p. 56**
SOUND	Select the appropriate type of sound for type of program. ▶ **p. 68**
SAP	Select MTS sound: Mono, Stereo, and SAP analog mode. Change the audio language DTV mode. ▶ **p. 72**
CC	Select the Caption On/Off. ▶ **p.75**
MARK	Enter the selected functions. ▶ **p.50**
USB EJECT	Remove the USB device. ▶ **p.34**

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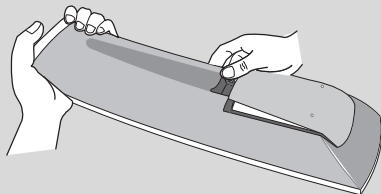
■ Open the battery compartment cover on the back side and install the batteries matching correct polarity (+with +,-with -).

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

■ Close cover.

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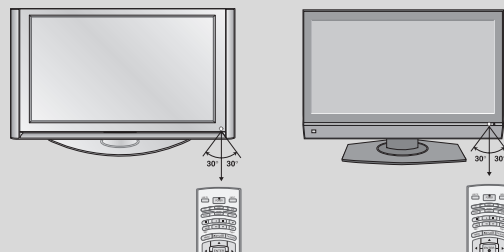
■ Use a remote control up to 7 meters distance and 30 degree (left/right) within the receiving unit scope.

■ Dispose of used batteries in a recycle bin to preserve environment.

WATCHING TV / CHANNEL CONTROL

TURNING ON TV

1 First, connect power cord correctly.
At this moment, the TV switches to standby mode.
- In standby mode to turn TV on, press the ⏻/I , **INPUT**, **CH (▲ or ▼)** button on the TV or press the **POWER, INPUT, TV INPUT, CH(▲ or ▼)**, **Number (0~9)** button on the remote control.

2 Select the viewing source by using the **TV INPUT**, **INPUT** button on the remote control.
- This TV is programmed to remember which power state it was last set to, even if the power cord is out.

3 When finished using the TV, press the **POWER** button on the remote control. The TV reverts to standby mode.

❗ NOTE

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

CHANNEL SELECTION

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

VOLUME ADJUSTMENT

Adjust the volume to suit your personal preference.

1 Press the **VOL (▲ or ▼)** button to adjust the volume.

2 If you want to switch the sound off, press the **MUTE** button.

3 You can cancel the Mute function by pressing the **MUTE** or **VOL (▲ or ▼)** button.
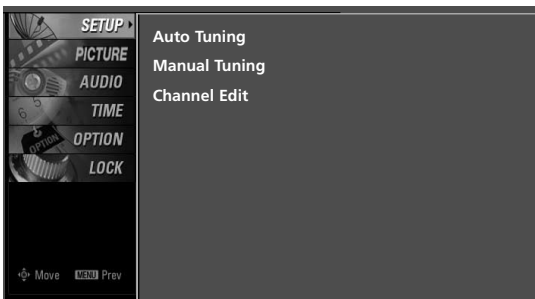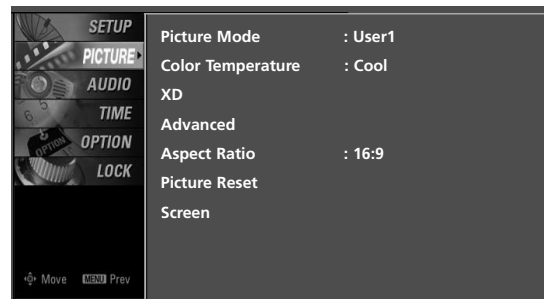
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ON-SCREEN MENUS SELECTION

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

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

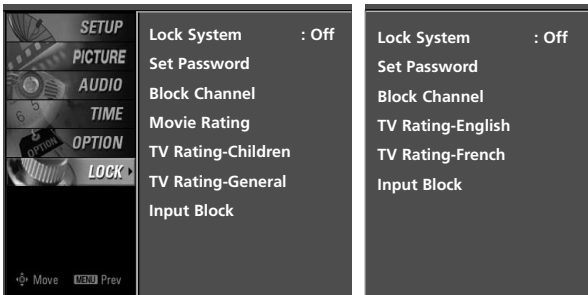**2** Press the ▶ button and then use ▲ ▼ ◀ ▶ button to display the available menus.

SETUP

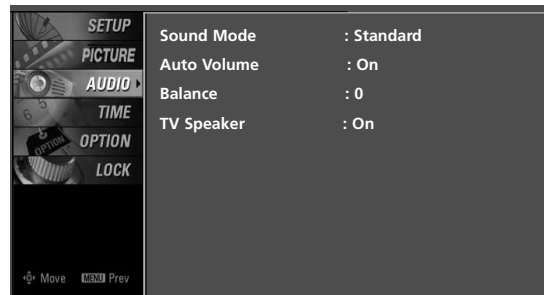| SETUP |
|---|
| PICTURE |
| AUDIO |
| TIME |
| OPTION |
| LOCK |

Auto Tuning
Manual Tuning
Channel Edit

⟷ Move   MENU Prev

PICTURE

SETUP
PICTURE
AUDIO
TIME
OPTION
LOCK

Picture Mode   : User1
Color Temperature   : Cool
XD
Advanced
Aspect Ratio   : 16:9
Picture Reset
Screen

⟷ Move   MENU Prev

LOCK

For USA

SETUP
PICTURE
AUDIO
TIME
OPTION
LOCK

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

⟷ Move   MENU Prev

For Canada

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

AUDIO

SETUP
PICTURE
AUDIO
TIME
OPTION
LOCK

Sound Mode   : Standard
Auto Volume   : On
Balance   : 0
TV Speaker   : On

⟷ Move   MENU Prev

OPTION

SETUP
PICTURE
AUDIO
TIME
OPTION
LOCK

Language   : English
Input Label
SimpLink   : Off
Key Lock   : Off
Caption   : Off
ISM Method   : Orbiter
Low Power   : Off
Front Display   : Bright
Set ID   : 1

⟷ Move   MENU Prev

Only Plasma TV model

TIME

SETUP
PICTURE
AUDIO
TIME
OPTION
LOCK

Clock   : Oct 19, 2006, 03:44 AM
Off Time   : Off
On Time   : Off
Sleep Time   : Off
Auto Sleep   : Off

⟷ Move   MENU Prev

CHANNEL SETUP

Auto Scan (Auto Tuning)

Automatically finds all channels available through antenna or cable inputs, and stores them in memory on the channel list.
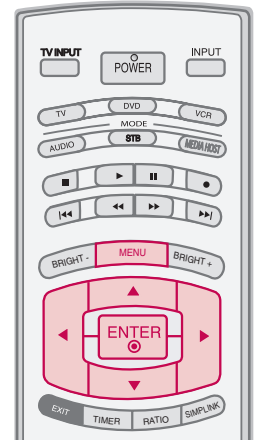
Run Auto Tuning again after any Antenna/Cable connection changes.

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

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

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

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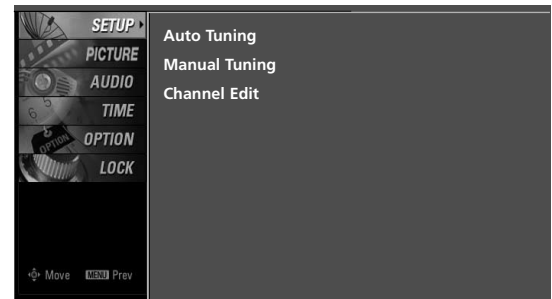
❗ NOTE

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

Add/Delete Channel (Manual Tuning)

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

If selecting DTV or CADTV input signal, you can view the on-screen signal strength monitor to see the quality of the signal being received.
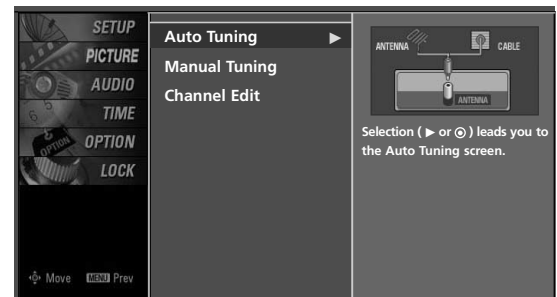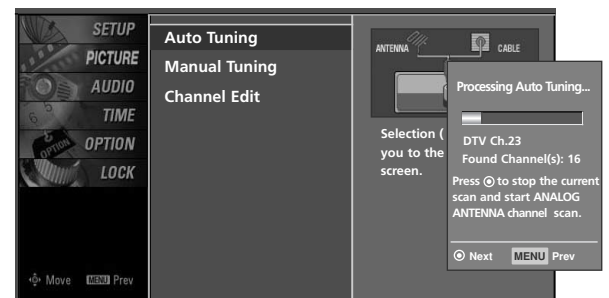
1 Press the **MENU** button and then use ▲ or ▼ button to select the **SETUP** menu.

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

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

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

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

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

🛈 NOTE

► This digital channel number is a physical channel number, which is different from the normal channel number shown in Channel Edit.

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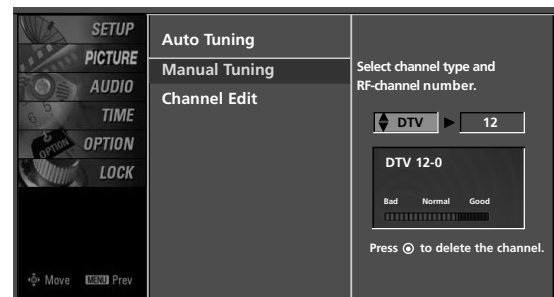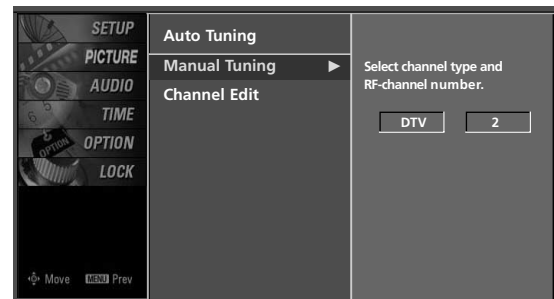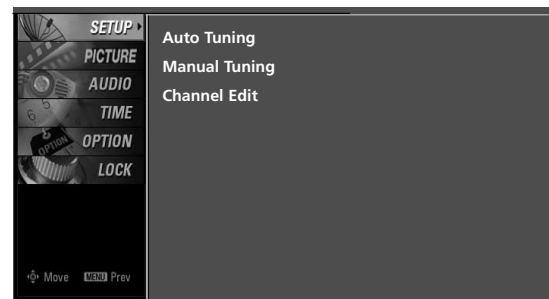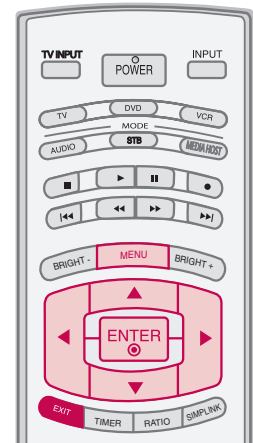
Channel Editing

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

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

You can create your own Favorite List. Use the FAV button on the remote control when a channel is highlighted and then add or delete the channel to/from your Favorite List.
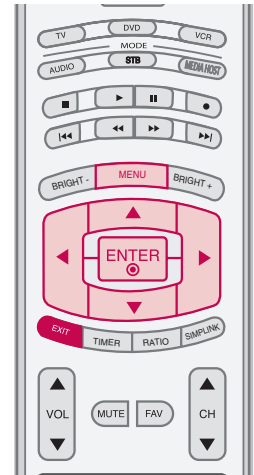
1 Press the MENU button and then use ▲ or ▼ button to select the SETUP menu.
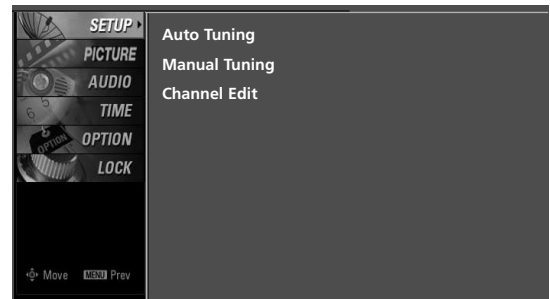
2 Press the ► button and then use ▲ or ▼ button to select Channel Edit.
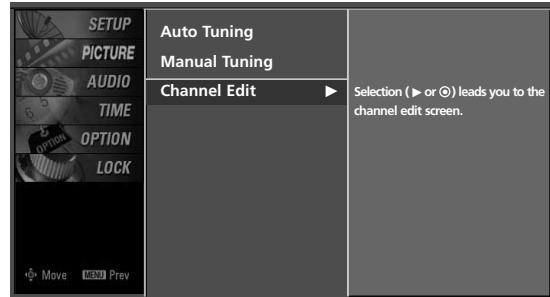
3 Press the ► button. You will now see a screen filled with channel numbers and a preview picture.
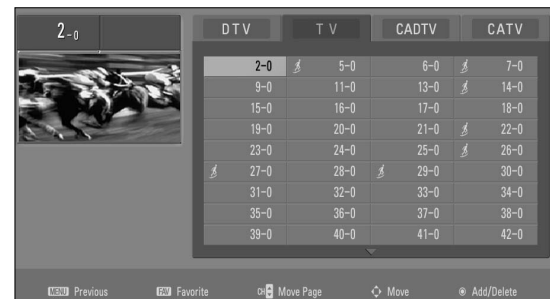
4 Use ▲ ▼ ◄ ► button to select a channel and then use the ENTER button to add or delete it. Press FAV button to add the channel to the Favorite List. The surfing icon will appear in front of that channel number.

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

INPUT LIST

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

Press the **ENTER** button to change the input to the active external device. Use the ▲ or ▼ button to select the input source.

AV 2

Input List
Antenna
Cable
AV 1
AV 2
Component1
▼
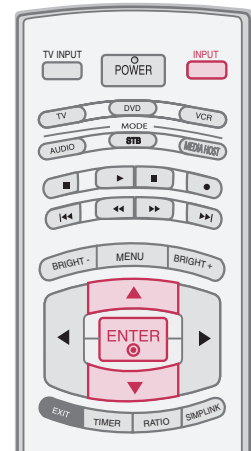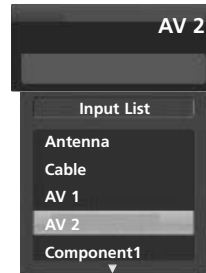
1 If all external input sources are connected:

Antenna	→	Cable	→	AV1	→	AV2	→	Component1

↑   ↓

HDMI3	←	HDMI2	←	HDMI1	←	RGB-PC	←	Component2
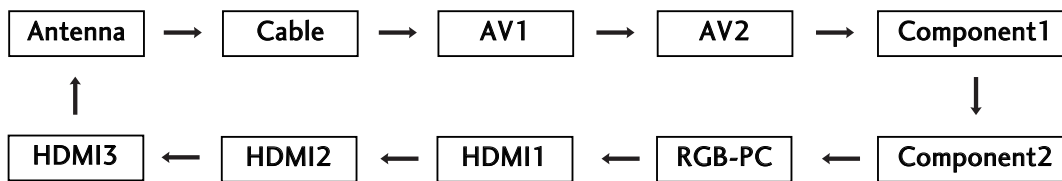
2 If no external input sources are not connected:

Antenna	⟷	Cable

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

Antenna	→	Cable	→	AV2
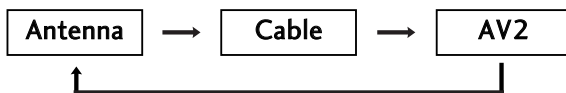
Antenna : Select it when watching the DTV/TV.
Cable : Select it when watching the CADTV/CATV.
AV 1, AV 2 : Select it when watching the VCR or external equipment.
Component 1-2 : Select it when using the DVD or the Digital set-top box depend on connector.
RGB-PC : Select it when using PC depend on connector.
HDMI, HDMI2, HDMI3 : Select it when using DVD, PC or Digital set-top box depend on connector.

This operates only for the devices with the Ⓢimplink **logo. Please check the** Ⓢimplink **logo.**

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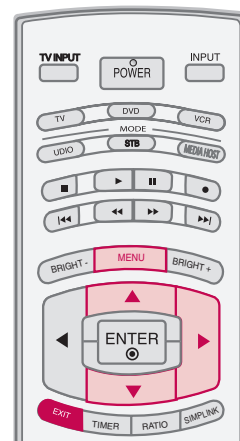
SimpLink Preparations

1 Connect the HDMI/DVI IN 1, 2 or 3 terminal of the TV to the rear terminal (HDMI output) of the Simplink device with the HDMI cable.

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

| SETUP	Language	: English
PICTURE	Input label	
AUDIO	SimpLink	: Off
TIME	Key Lock	: Off
OPTION	Caption	: Off
LOCK	ISM Method	: Orbiter
	Low Power	: Off
	Front Display	: Bright
Move MENU Prev	Set ID	: 1

2

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

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

SETUP	Language	
PICTURE	Input Label	
AUDIO	SimpLink ▶	✓ Off
TIME	Key Lock	On
OPTION	Caption	
LOCK	ISM Method	
	Low Power	
	Front Display	
Move MENU Prev	Set ID	

3 **4**

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

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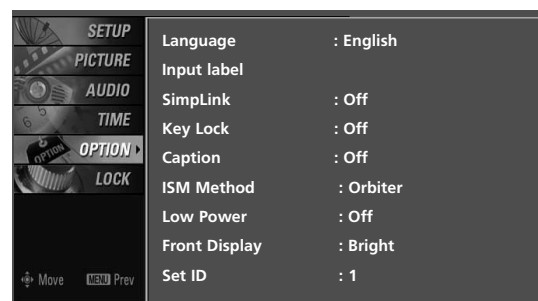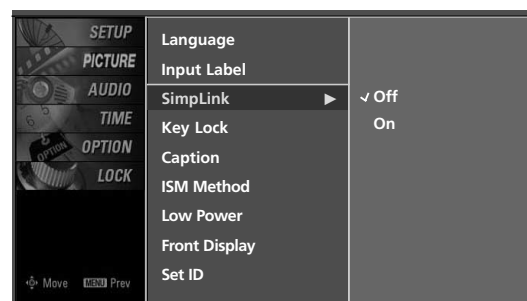
❶ NOTE

▶ When operating the external device with SimpLink, press the TV button among the MODE button on the remote control.

▶ When you switch the Input source with the INPUT button on the remote control, you can stop the operation of device worked by SimpLink.

▶ When you select or operate the media device with home theater function, the speaker automatically switches to home theater speaker (HT speaker).

▶ 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.

SimpLink Functions

- **Direct Play:** After connecting AV devices to TV, you can directly control the devices and play media without additional settings.
- **Select AV device:** Enables you to select one of AV devices connected to TV and play it.
- **Disc playback:** Control connected AV devices by pressing the ▶ , ■ , ❙❙ , ◀◀ , ▶▶ , ◀◀ , ▶❙ , ▲ ▼ ◀ ▶, **ENTER** buttons and buttons for play, stop, pause, fast reverse, fast forward, chapter skip.
- **Power off all devices:** When you power off TV, all connected devices are turned off.
- **Switch audio-out:** Offers an easy way to switch audio-out.
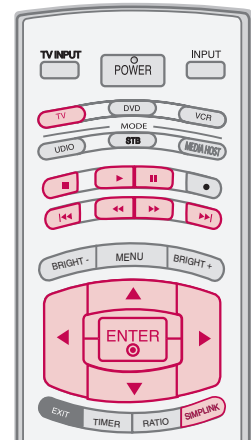
(A device, which is connected to TV through HDMI cable but does not support SimpLink, does not provide this function)

❶ After selecting the **TV** button of the MODE on the remote control, press the **SIMPLINK** button.

❷ Use ▲ ▼ ◀ ▶ button to select the desired device and then press the **ENTER** button.

❸ Control connected AV devices by pressing the ▶ , ❙❙ , ■ , ◀◀ , ▶❙ , ◀◀ , ▶▶ , ▲▼◀ ▶, **ENTER** buttons.
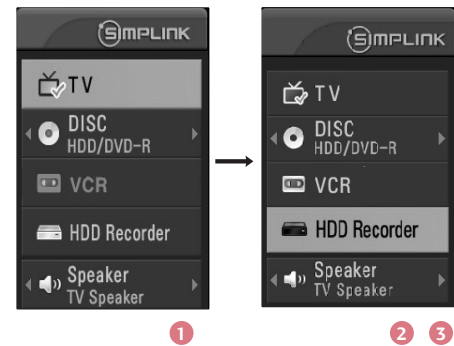
SimpLink Menu

❶ **TV viewing**: Switch to the previous TV channel regardless of the current mode.

❷ **DISC playback**: Select and play discs. When multiple discs are available, the titles of discs are conveniently displayed at the bottom of the screen.

❸ **VCR playback**: Play and control the connected VCR.

❹ **HDD Recordings playback**: Play and control recordings stored in HDD.

❺ **Audio Out to HT speaker/Audio Out to TV**: Select HT speaker or TV speaker for Audio Out.

▶ Selected Device

▶ When no device is connected (displayed in gray)

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

INPUT LABEL

Sets a label to each input source which is not in use when you press the INPUT button.
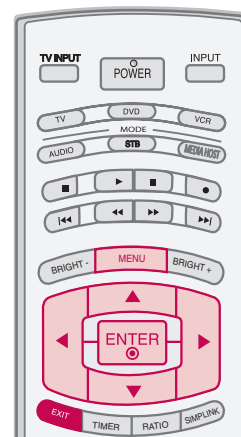
1 Press the **MENU** button and then use ▲ or ▼ button to select the **OPTION** menu.

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

3 Press the ▶ button and then use ▲ or ▼ button to select the source: AV1, AV2, Component1, Component2, RGB-PC, HDMI1, HDMI2 or HDMI3.

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

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

SETUP		
PICTURE	Language	: English
AUDIO	Input label	
TIME	SimpLink	: Off
OPTION ▷	Key Lock	: Off
LOCK	Caption	: Off
	ISM Method	: Orbiter
	Low Power	: Off
	Front Display	: Bright
◆ Move MENU Prev	Set ID	: 1

❶

SETUP		
PICTURE	Language	
AUDIO	Input label ▶	AV1 — Cable Box
TIME	SimpLink	AV2 — VCR
OPTION	Key Lock	Component1 — DVD
LOCK	Caption	Component2 — Set Top Box
	ISM Method	RGB-PC — VCR
	Low Power	HDMI1 — Game
	Front Display	HDMI2 — Satellite
◆ Move MENU Prev	Set ID	HDMI3 — Cable Box

❷ ❸ ❹

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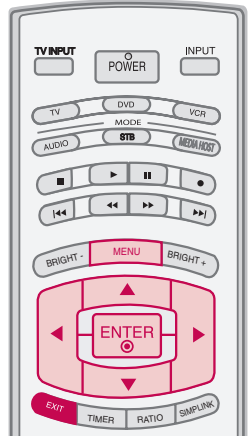
1   Press the **MENU** button and then use ▲ or ▼ button to select the **OPTION** menu.

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.

SETUP	Language	: English
PICTURE	Input label	
AUDIO	SimpLink	: Off
TIME	Key Lock	: Off
OPTION ▶	Caption	: Off
LOCK	ISM Method	: Orbiter
	Low Power	: Off
	Front Display	: Bright
⊕ Move MENU Prev	Set ID	: 1

❶

SETUP	Language	
PICTURE	Input Label	
AUDIO	SimpLink	
TIME	Key Lock ▶	✓ Off
OPTION	Caption	On
LOCK	ISM Method	
	Low Power	
	Front Display	
⊕ Move MENU Prev	Set ID	

❷   ❸

MEDIA*HOST*
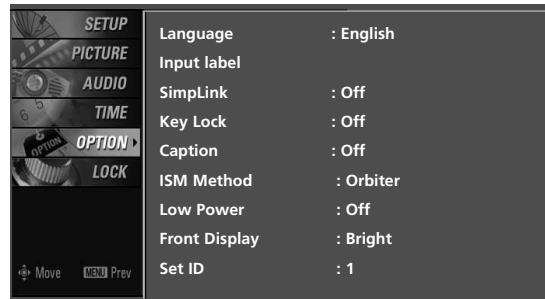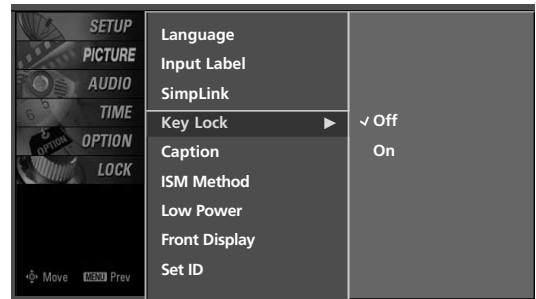
ENTRY MODES

When you connect a USB device or press the 〔MEDIA HOST〕 button, this screen is displayed, automatically.

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

1 Press the ▲ or ▼ button to select the desired item.

2 Press the **ENTER** button to move to **Photo List** or **Music List** of USB device.

3 Press the **USB EJECT** button of remote control before removing the USB device.
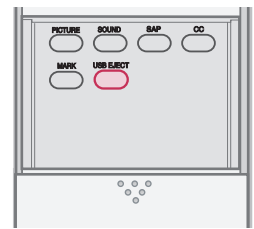
❗ NOTE

▶ Press the **USB EJECT** 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 program 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. To unplug the USB storage device, please press the **USB EJECT** button on the remote control, and then unplug it safely.

▶ 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 FAT or a NTFS file system provided with the Windows operating system. In case of a storage device formatted as a different utility program which is not supported by Windows, it may not be recognized.

▶ In case of a hard disk drive (HDD) formatted as NTFS, writing and deletion are not allowable.

▶ 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.

MEDIA HOST
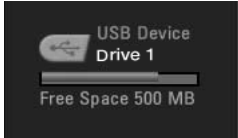
PHOTO LIST

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

❶ Usable USB memory

❷
❸

Photo List   Page 1/1   ☑ No Marked   *MEDIA HOST*

USB Device
Drive 1

Free Space 500 MB

❶

USB Device
Drive 1

Free Space 500 MB

⌐ UP FOLDER

Without ... ⊙ | □ U Got It Bad | □ World Of ... | □ Wherever ... | □ Star Guita...
□ All Rise | □ In The End | □ Insatiable | □ Can't Get ... | □ A New Day...
□ Get The P... | □ Whenever... | □ Something... | □ How You ... | □ Freeek

❷ Current page/Total pages
❸ Total number of marked thumbnail photos
❹ Corresponding buttons on the remote control

MEDIA HOST Media Host   ✧ Navigate   ○ PopUp Menu   CH☐ Move Page   MARK Mark   EXIT Exit

❹

MEDIA*HOST*

MEDIA HOST

Photo Selection and PopUp Menu

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

1 Use the **CH ▲** or ▼ button to navigate in the thumb-nail 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 **▲ ▼ ◄ ►** button to navigate the appropriate thumbnail photos, then press the **ENTER** button to show the PopUp menu.

> ▶ **View** : Display the selected item.
> ▶ **Mark All** : Mark all photos on the screen.
> ▶ **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 ⬭MEDIAHOST button to return to the Media Host menu.
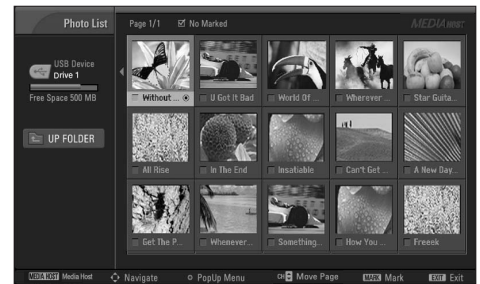
Set up the menu in Full-Sized Screen

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 **CH ▲** or **▼** button to navigate the thumbnail photo page.

2 Use **▲ ▼ ◄ ►** button to navigate the appropriate thumbnail photos, then press the **ENTER** button to show the PopUp menu.

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

4 The selected photo is displayed in full size.
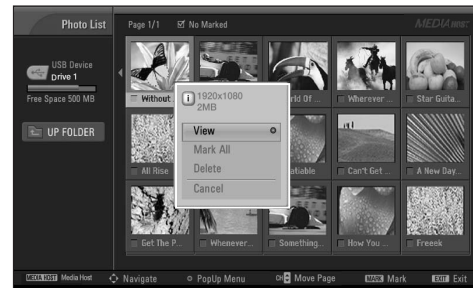
▶ **Slide Show**: When no picture is selected, all photos in the current folder are displayed during slide show. When selected, the selected photos are displayed during slide show. To start slide show, press **ENTER** button on Slideshow ▷

  ■ Set the time interval of the slide show in **Option**.

  ■ 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 **ENTER** button on BGM ▷ .

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

▶ ↻ **(Rotate)**: Rotate photos.

  ■ Rotates the photo 90°, 180°, 270°, 360° clockwise upon **ENTER** button on ↻ **(Rotate)**.

▶ **Delete**: Delete photos. Use **◄** or **►** button to select **Delete** and press **ENTER** button.

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

MEDIA HOST

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MEDIA*HOST*

MEDIA HOST
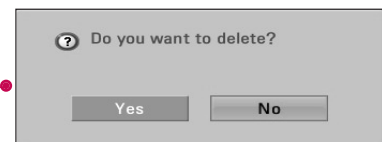
▶ **Option**: Set values for **Slide Speed** and **Music folder**. Use ◀ or ▶button to select **Option** and press **ENTER** button.

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

▶ **Hide**: Hide the menu on the full-sized screen. Use ◀ or ▶ button to select **Hide** and press **ENTER** button.

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

ⓘ Press ◀ ▶ to set the time interval between slides.

Slide Speed ◀ **Fast** ▶
Music Folder **Drive 1**

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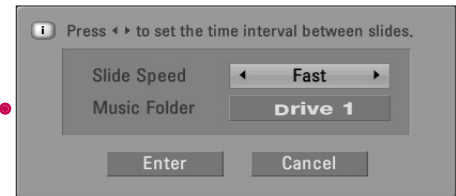
⑤ Use ▲ ▼ ◀ ▶ button to select the previous or next photo.
Use ▲ ▼ ◀ ▶ button to select and control the menu on the full-sized screen.

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

⑦ Repeatedly, press **EXIT** button to return to TV viewing or press MEDIAHOST button to return to the Media Host menu.

❗ NOTE

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

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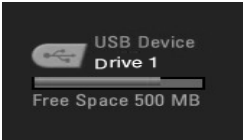
Purchased music files(*.MP3) may contain copyright restrictions. Playback of these files may not be supported by this model. Music file on your USB device can be played by this unit.

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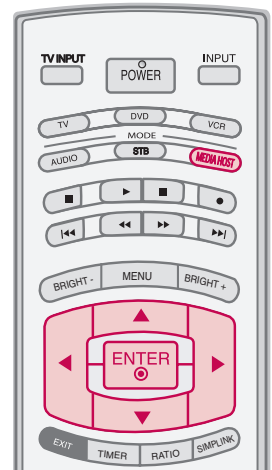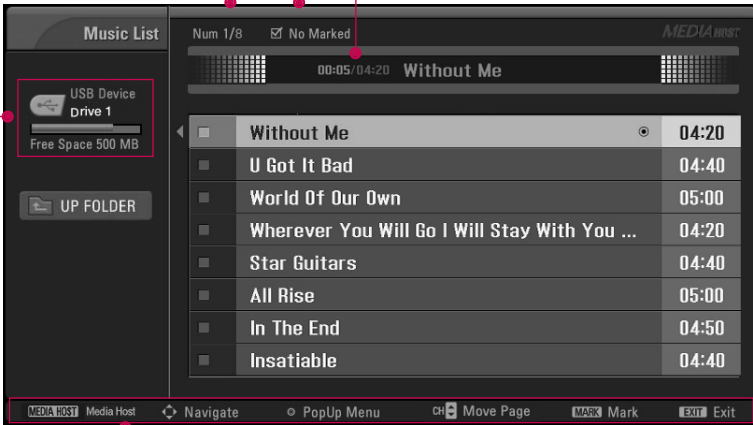
Screen Components

① Usable USB memory

USB Device Drive 1
Free Space 500 MB

② Current page/Total pages
③ Total number of marked musics
④ Current playing time/Total playing time
⑤ Corresponding buttons on the remote control

Music List	Num 1/8	☑ No Marked		*MEDIA HOST*
		00:05/04:20 Without Me		

USB Device Drive 1		
Free Space 500 MB		
▣ UP FOLDER		

☐	**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
☐	Insatiable		04:40

MEDIA HOST Media Host ◇ Navigate ◉ PopUp Menu CH⬛ Move Page MARK Mark EXIT Exit

MEDIA*HOST*

Music Selection and PopUp Menu

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

1 Use the **CH ▲** 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 musics will be played in sequence. For example, if you want to listen to only one music repeatedly, just mark the music only and play it. If no music is marked, all the music in the folder will be played in sequence.

3 Use **▲ ▼** button to navigate the appropriate musics, then press the **ENTER** button to show up the pop-up menu.

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

4 Repeatedly, press **EXIT** button to return to TV viewing or press ⬤MEDIAHOST button to return to the Media Host 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.

▶ 00:20/04:20 Without Me

Music List	Num 1/8 ☑ No Marked	MEDIA*HOST*

00:05/04:20 Without Me

USB Device
Drive 1
Free Space 500 MB

UP FOLDER

	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
	Insatiable		04:40

Media Host   ◇ Navigate   ○ PopUp Menu   CH Move Page   MARK Mark   EXIT Exit

⬇

| Music List	Num 1/8 ☑ No Marked	MEDIA*HOST*

00:05/04:20 Without Me

USB Device
Drive 1
Free Space 500 MB

UP FOLDER

	Without Me	⬤	04:20
	U Got It Bad		
	World Of Our Own		
	Wherever You Will Go I Will Stay With		
	Star Guitars		
	All Rise		
	In The End		
	Insatiable		04:40

3276 MB
320 Kbps (VBR)
Play ○
Play with Photo
Mark All
Delete
Cancel

Media Host   ◇ Navigate   ○ PopUp Menu   CH Move Page   MARK Mark   EXIT Exit

1 **2** **3**

❢ NOTE

▶ When music is playing, 🎵 is displayed in front of the music title.

▶ A damaged or corrupted music does not play but displays 00:00 in playtime.

▶ A music downloaded from a paid service with copyright protection does not start but displays inappropriate information in playtime.

▶ If you press **ENTER**, ⬛ , **EXIT** buttons, screen saver is stopped.

▶ The ▶ , ⏸ , ⬛ , ⏮ , ⏭ buttons on the remote control are also available in this mode.

▶ It's not avaiable to play MP3 file under 16Kbyt.

PICTURE CONTROL

PICTURE SIZE (ASPECT RATIO) CONTROL

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

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

■ DTV, CADTV, HDMI, or DVI input source use **Just Scan**.
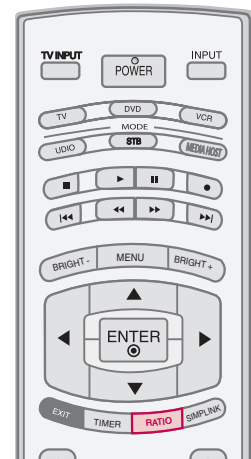
> **🛈 NOTE**
>
> ▶ If a fixed image is displayed on the screen for a long time, the image may become imprinted on the screen and remain visible.
> This phenomenon is common to all manufactures and in consequence the manufactures warranty does not cover the product bearing this phenomenon.

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

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

Set by program

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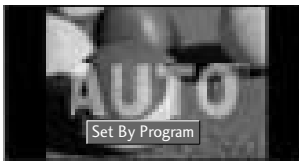
(4:3 ➡ 4:3)   (16:9 ➡ 16:9)

4:3

Choose 4:3 when you want to view a picture with an original 4:3 aspect ratio.
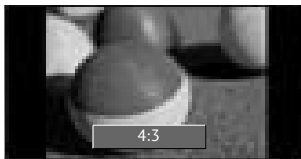
16:9

Adjust the picture horizontally, in a linear proportion to fill the entire screen.
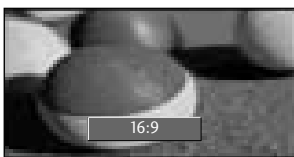
Zoom 1

Choose Zoom 1 when you want to view the picture without any alteration. However, the top and bottom portions of the picture will be cropped.
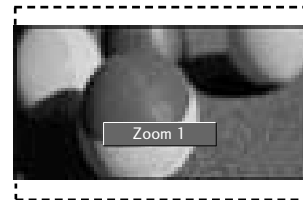
Zoom 2

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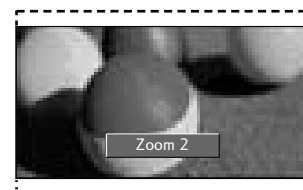
Just Scan

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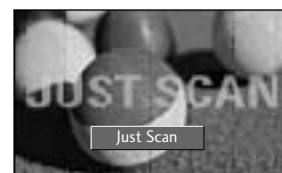
PRESET PICTURE SETTINGS

Picture Mode - Preset

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

Intelligent Eye, **Dynamic**, **Standard**, **Mild** Settings are pre-set for the optimum picture quality at the factory and are not adjustable.

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

---
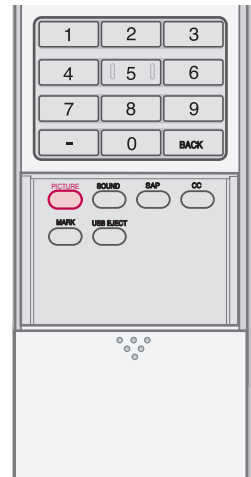
1 Press the **PICTURE** button repeatedly to select the picture appearance setup option as below :

Intelligent Eye (LCD TV only), **Dynamic**, **Standard**, **Mild**, **User1**, and **User2** (your own settings).

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

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

SETUP	Picture Mode : User1
PICTURE	Color Temperature : Cool
AUDIO	XD
TIME	Advanced
OPTION	Aspect Ratio : 16:9
LOCK	Picture Reset
	Screen
⟐ Move MENU Prev	

➡

SETUP	Picture Mode ▶	Intelligent Eye
PICTURE	Color Temperature	Dynamic
AUDIO	XD	Standard
TIME	Advanced	Mild
OPTION	Aspect Ratio	✓ User 1
LOCK	Picture Reset	User 2
	Screen	
⟐ Move MENU Prev		
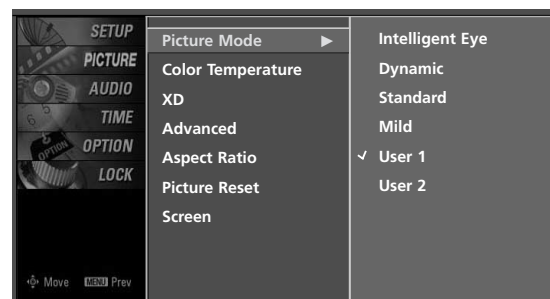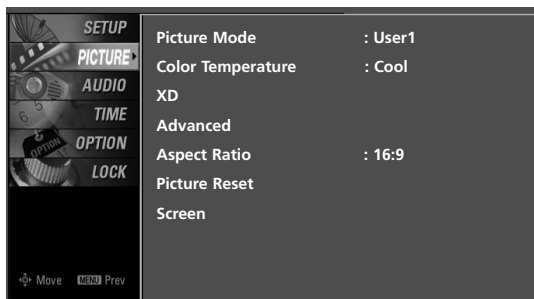
Color Tone - Preset

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

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

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

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

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

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

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

SETUP		
PICTURE	Picture Mode	: User1
AUDIO	Color Temperature	: Cool
TIME	XD	
OPTION	Advanced	
LOCK	Aspect Ratio	: 16:9
	Picture Reset	
	Screen	

Move MENU Prev

1

SETUP		
PICTURE	Picture Mode	
AUDIO	Color Temperature ►	✓ Cool
TIME	XD	Medium
OPTION	Advanced	Warm
LOCK	Aspect Ratio	User
	Picture Reset	
	Screen	

Move MENU Prev

2 3

PICTURE CONTROL

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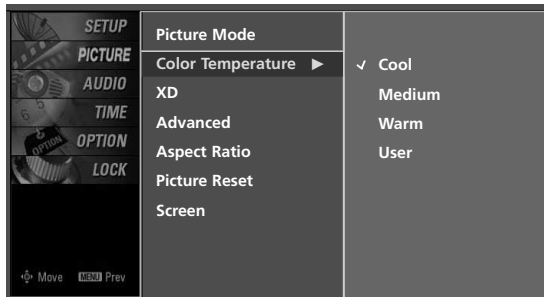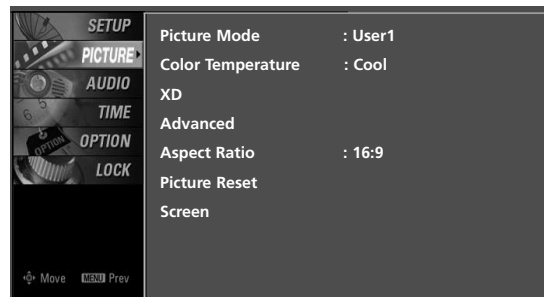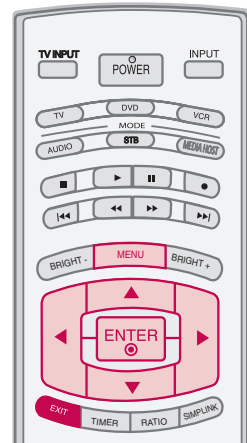
MANUAL PICTURE ADJUSTMENT

Picture Mode - User Mode

Adjust the picture appearance to suit your preference and viewing situations.
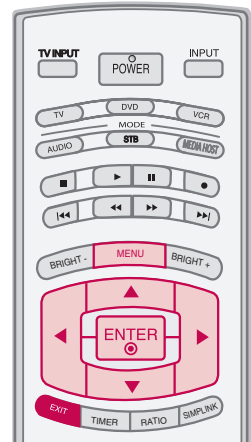
1 Press the **MENU** button and then use ▲ or ▼ button to select the **PICTURE** menu.

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

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

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

    ■ **Back Light**

      To control the brightness of the screen, adjust the brightness of LCD panel.

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.

SETUP		
PICTURE	Picture Mode	: User1
AUDIO	Color Temperature	: Cool
TIME	XD	
OPTION	Advanced	
LOCK	Aspect Ratio	: 16:9
	Picture Reset	
	Screen	

⊕ Move MENU Prev ❶

SETUP	Picture Mode	Intelligent Eye
PICTURE	Color Temperature	Dynamic
AUDIO	XD	Standard
TIME	Advanced	Mild
OPTION	Aspect Ratio	√User 1 ►
LOCK	Picture Reset	User 2
	Screen	

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

⊕ Move MENU Prev ❷ ❸

SETUP	User1	
PICTURE	Contrast	85
AUDIO	Brightness	50
TIME	Color	50
OPTION	Sharpness	50
LOCK	Tint	0
	Back Light	100

Press MENU to confirm.

⊕ Move MENU Prev ❹

SETUP	▲	
PICTURE	Contrast	85
AUDIO	▼	
TIME		
OPTION		
LOCK		

⊕ Move MENU Prev ❺

Color Tone - User Mode

You can also adjust the detailed settings (Red, Green, Blue) by selecting the **Color Temperature-User** menu.
This feature operate only if the picture mode set **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 **Color Temperature**.

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

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

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

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

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

SETUP	Picture Mode	: User1
PICTURE	Color Temperature	: Cool
AUDIO	XD	
TIME	Advanced	
OPTION	Aspect Ratio	: 16:9
LOCK	Picture Reset	
	Screen	

◈ Move MENU Prev

1

SETUP	Picture Mode	
PICTURE	Color Temperature	Cool
AUDIO	XD	Medium
TIME	Advanced	Warm
OPTION	Aspect Ratio	✓ User ▶
LOCK	Picture Reset	
	Screen	

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

◈ Move MENU Prev

2 **3**

SETUP	User		
PICTURE			
AUDIO	Red	0	▶
TIME	Green	0	
OPTION	Blue	0	
LOCK			

Press MENU to confirm.

◈ Move MENU Prev

4

SETUP			
PICTURE			
AUDIO	▲		
TIME	Red	0	
OPTION	▼		
LOCK			

◈ Move MENU Prev

5

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XD - PICTURE IMPROVEMENT TECHNOLOGY

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

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

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

When selecting the Manual, you can adjust the XD Contrast, XD color and XD Noise.
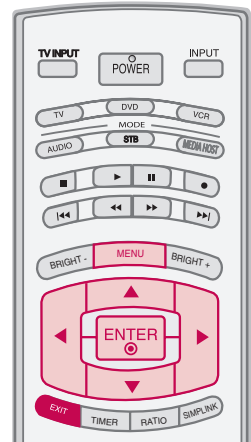
1 Press the **MENU** button and then use ▲ or ▼ button to select the **PICTURE** menu.

SETUP	
PICTURE	
AUDIO	
TIME	
OPTION	
LOCK	

Picture Mode	**: User1**
Color Temperature	**: Cool**
XD	
Advanced	
Aspect Ratio	**: 16:9**
Picture Reset	
Screen	

Move MENU Prev

❶

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**.
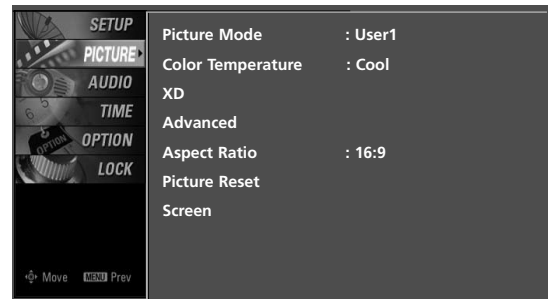
Selecting the Manual

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

   ■ **XD Contrast:** Optimizing the contrast automatically according to the brightness of the reflection.

   ■ **XD Color:** Adjusting the colors of the reflection automatically to reproduce as closely as possible to the natural colors.

   ■ **XD Noise :** Removing the noise up to the point where it does not damage the original picture.

2. Use the ◀ or ▶ button to select **On** or **Off**.
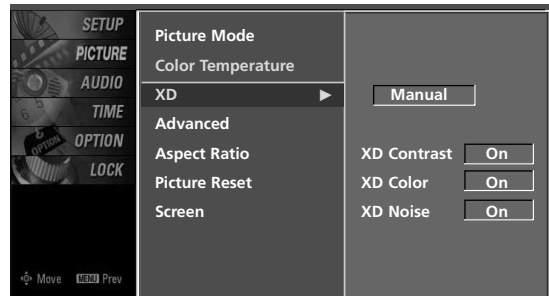
SETUP	
PICTURE	
AUDIO	
TIME	
OPTION	
LOCK	

Picture Mode	
Color Temperature	
XD	▶
Advanced	
Aspect Ratio	
Picture Reset	
Screen	

Manual	
XD Contrast	On
XD Color	On
XD Noise	On

Move MENU Prev

❷ ❸

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

ADVANCED - CINEMA 3:2 PULL DOWN MODE

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

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

This feature operates only in TV (Analog, DTV), AV1, AV2, and Component 480i mode.
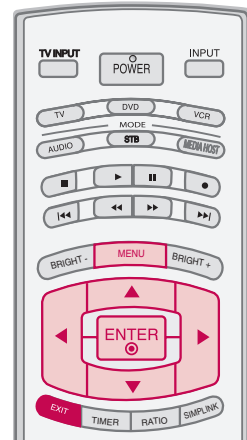
1 Press the **MENU** button and then use ▲ or ▼ button to select the **PICTURE** menu.

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

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

4 Use ◀ or ▶ button to select **On** or **Off**.

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

SETUP
PICTURE
AUDIO
TIME
OPTION
LOCK

Picture Mode	: User1
Color Temperature	: Cool
XD	
Advanced	
Aspect Ratio	: 16:9
Picture Reset	
Screen	

Move MENU Prev

❶

SETUP
PICTURE
AUDIO
TIME
OPTION
LOCK

Picture Mode
Color Temperature
XD
Advanced ▶
Aspect Ratio
Picture Reset
Screen

| Cinema 3:2 Mode | Off |
| Black Level | Low |

Move MENU Prev

❷ ❸ ❹

PICTURE CONTROL

ADVANCED - BLACK (DARKNESS) LEVEL

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

This feature operates only in AV1, AV2, HDMI1, HDMI2, or HDMI3 mode.
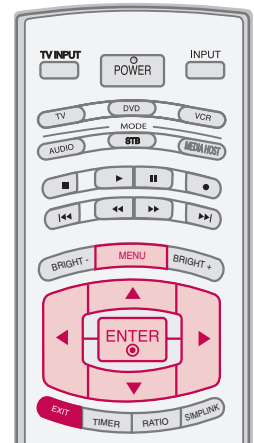
1 Press the **MENU** button and then use ▲ or ▼ button to select the **PICTURE** menu.

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 screen gets darker.

■ **High**

The screen gets brighter.

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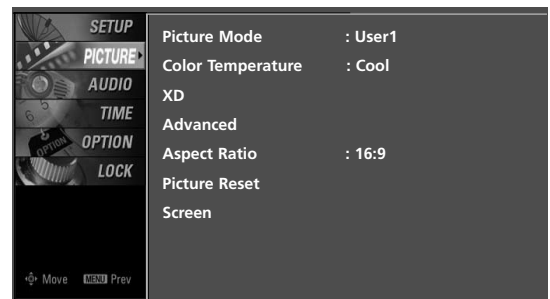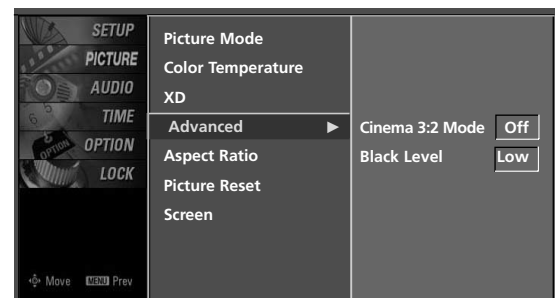
PICTURE RESET

Use to quickly reset all the Picture menu options to their original factory preset values.
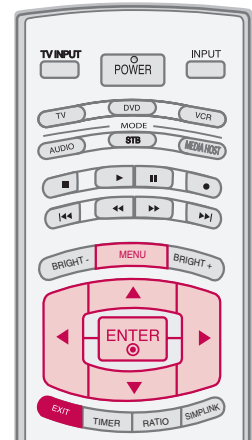
① Press the **MENU** button and then use ▲ or ▼ button to select the **PICTURE** menu.

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.

SETUP
PICTURE
AUDIO
TIME
OPTION
LOCK

Picture Mode	: User1
Color Temperature	: Cool
XD	
Advanced	
Aspect Ratio	: 16:9
Picture Reset	
Screen	

Move MENU Prev

①

SETUP
PICTURE
AUDIO
TIME
OPTION
LOCK

Picture Mode
Color Temperature
XD
Advanced
Aspect Ratio
Picture Reset ▶
Screen

Selection (▶ or ◉) resets to the factory settings(defaults).

Move MENU Prev

② ③
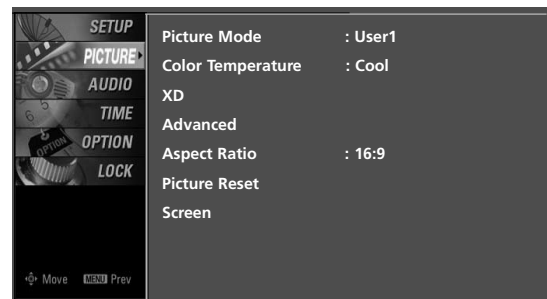
IMAGE STICKING MINIMIZATION (ISM) METHOD - *Plasma TV only*

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

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

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

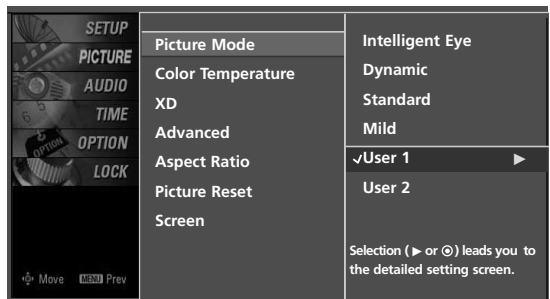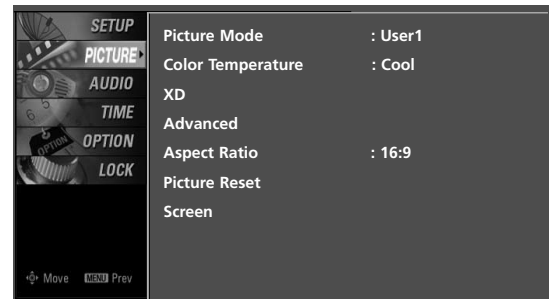**3** Press the ► button and then use ▲ or ▼ button to select either **Normal**, **Orbiter**, **Inversion**, or **White Wash**.

■ **Normal**

If image sticking is never a problem, ISM is not necessary - set to Normal.

■ **Orbiter**

Orbiter may help prevent ghost images. However, it is best not to allow any fixed image to remain on the screen. To avoid a ghost image on the screen, the image will move once per 2 minutes : Left ➞ Right ➞ Upside ➞ Downside ➞ Right ➞ Left ➞ Downside ➞ Upside.

■ **Inversion**

Inversion will automatically invert the plasma display panel color every 30 minutes.

■ **White Wash**

White Wash removes ghost images from the screen.

Use sparingly. Watch the TV normally for a while before using this feature to see if the ghost image disappears on its own.

> **❗ NOTE**
>
> ► An excessive ghosted image may be impossible to clear entirely with White Wash. To return to normal viewing, press the any button.

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

Language	: English
Input Label	
SimpLink	: Off
Key Lock	: Off
Caption	: Off
ISM Method	: Orbiter
Low Power	: Off
Front Display	: Bright
Set ID	: 1

Language
Input Label
SimpLink
Key Lock
Caption
ISM Method ►   Normal
Low Power   ✓ Orbiter
Front Display   Inversion
Set ID   White Wash
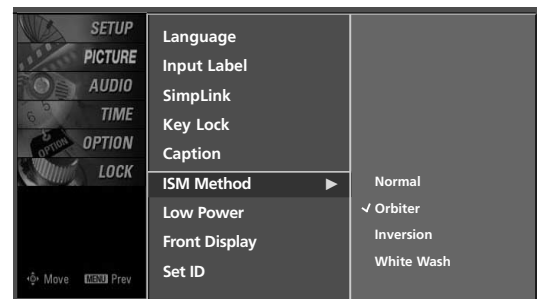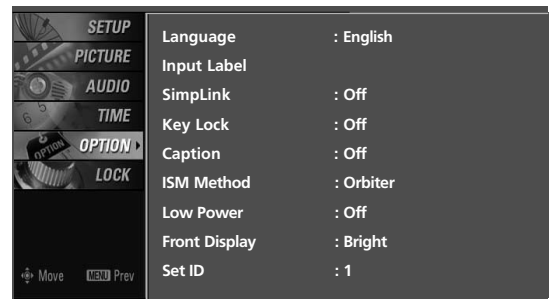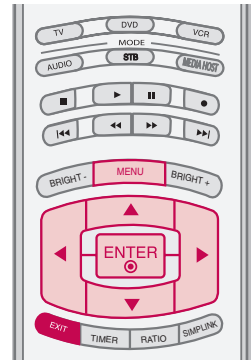
LOW - POWER PICTURE MODE - *Plasma TV only*

Low power reduces the plasma display power consumption.
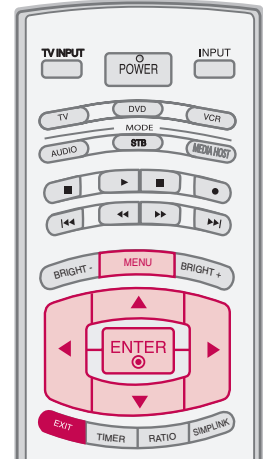
1 Press the **MENU** button and then use ▲ or ▼ button to select the **OPTION** menu.

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

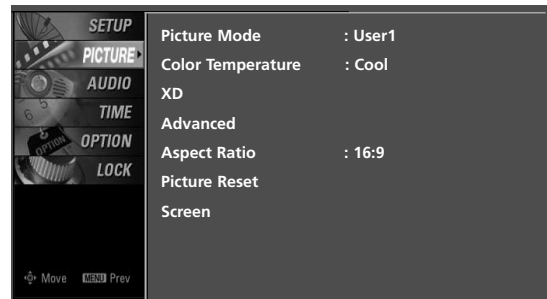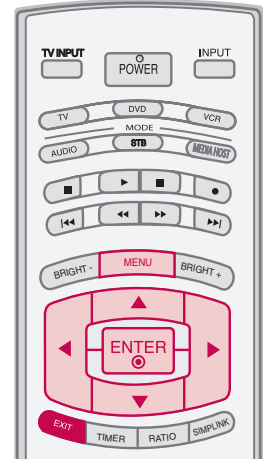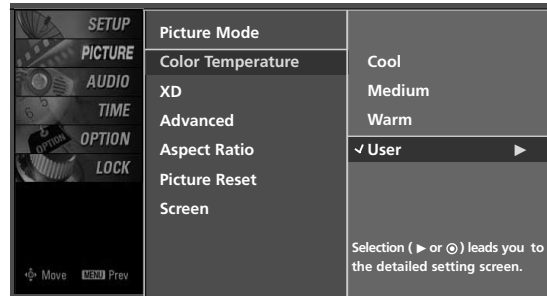**3** Press the ► button and then use ▲ or ▼ button to select **On** or **Off**.

   ■ When you select **On**, the screen darkens.

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

SETUP	Language	: English
PICTURE	Input Label	
AUDIO	SimpLink	: Off
TIME	Key Lock	: Off
OPTION ►	Caption	: Off
LOCK	ISM Method	: Orbiter
	Low Power	: Off
	Front Display	: Bright
⬩ Move MENU Prev	Set ID	: 1

❶

SETUP	Language	
PICTURE	Input Label	
AUDIO	SimpLink	
TIME	Key Lock	
OPTION	Caption	
LOCK	ISM Method	
	Low Power ►	✓ Off
	Front Display	On
⬩ Move MENU Prev	Set ID	

❷ ❸

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PICTURE CONTROL

FRONT DISPLAY *- Plasma TV only*

Illuminates brightly when the set is turned on. The LED displays current TV status.
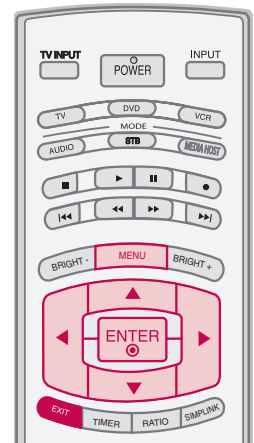
1 Press the **MENU** button and then use ▲ or ▼ button to select the **OPTION** menu.

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

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

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

SETUP		
PICTURE	Language	: English
AUDIO	Input Label	
TIME	SimpLink	: Off
OPTION	Key Lock	: Off
LOCK	Caption	: Off
	ISM Method	: Orbiter
	Low Power	: Off
	Front Display	: Bright
⊕ Move MENU Prev	Set ID	: 1

1

SETUP		
PICTURE	Language	
AUDIO	Input Label	
TIME	SimpLink	
OPTION	Key Lock	
LOCK	Caption	
	ISM Method	
	Low Power	Off
	Front Display ►	Dark
⊕ Move MENU Prev	Set ID	✓ Bright

2 **3** **4**

SOUND & LANGUAGE CONTROL

AUTO VOLUME LEVELLER (AUTO VOLUME)

Scans for changes in sound levels during commercials, then adjusts the sound to match the specified audio level. Auto Volume makes sure that the volume level remains consistent whether you are watching a commercial or a regular TV program.
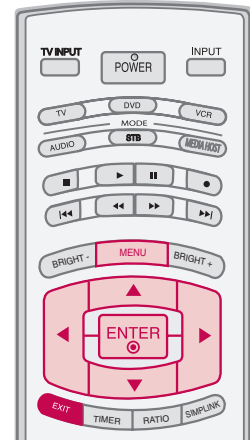
1 Press the **MENU** button and then use ▲ or ▼ button to select the **AUDIO** menu.

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

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

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

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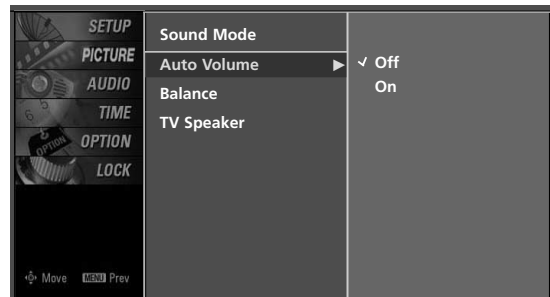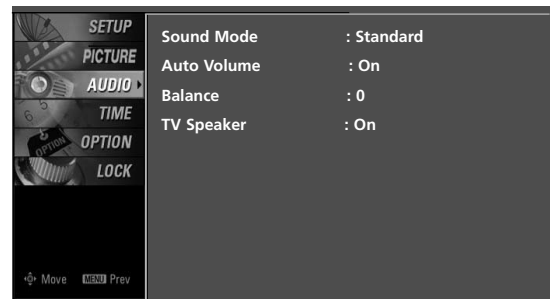
PRESET SOUND SETTINGS (SOUND MODE)

Sound Mode lets you enjoy the best sound without any special adjustment because the TV sets the appropriate sound options based on the program content.
Standard, **Music**, **Movie**, and **Sports** are preset for good sound quality at the factory and are not adjustable.
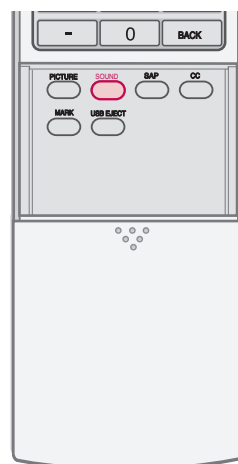
1 Press the **SOUND** button repeatedly to select the appropriate sound setup as below :
Standard, **Music**, **Movie**, **Sports**, and **User** (your own settings).

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

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

SETUP	
PICTURE	
AUDIO ▶	
TIME	
OPTION	
LOCK	

Sound Mode	: Standard
Auto Volume	: On
Balance	: 0
TV Speaker	: On

Move MENU Prev

SETUP	
PICTURE	
AUDIO	
TIME	
OPTION	
LOCK	

Sound Mode	▶
Auto Volume	
Balance	
TV Speaker	

✓ Standard
Music
Movie
Sports
User

Move MENU Prev
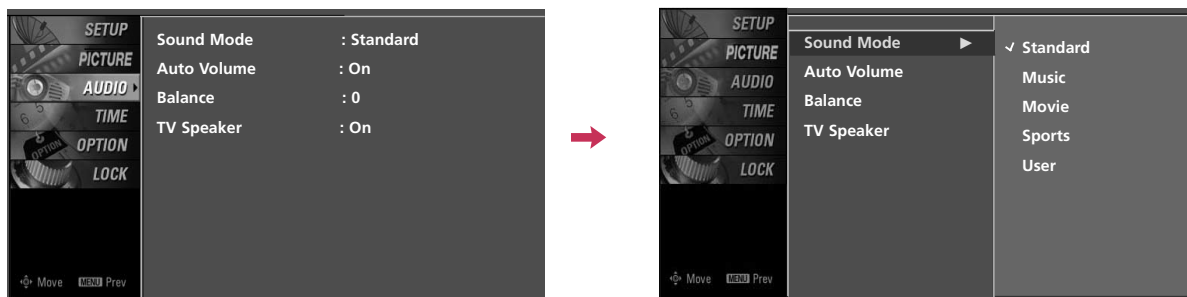
SOUND SETTING ADJUSTMENT - USER MODE

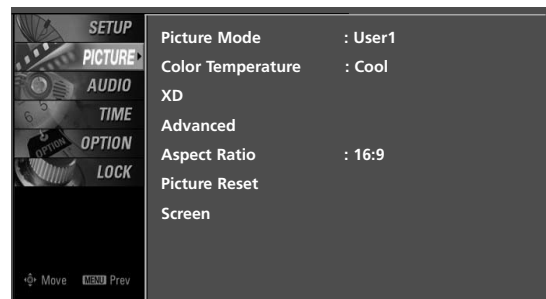**Adjust the sound to suit your taste and room situations.**

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

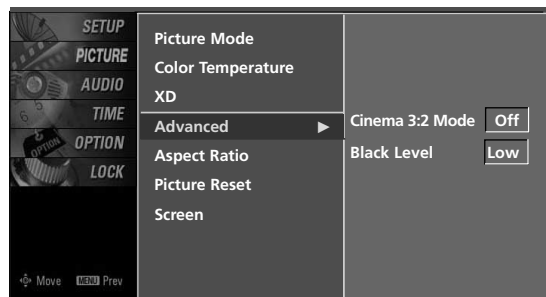**2** Press the ► button and then use ▲ or ▼ button to select **Sound Mode**.

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**).

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**, **3D EchoSound System** 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.

3D EchoSound System
Creates a stunning simulated stereo effect from any mono sound and a realistic three-dimensional sound with a very wide and deep sound stage.

Sound Mode	: Standard
Auto Volume	: On
Balance	: 0
TV Speaker	: On

❶

Sound Mode	Standard
Auto Volume	Music
Balance	Movie
TV Speaker	Sports
	√ User ►

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

❷ ❸

User		
Treble	50	►
Bass	50	
Front Surround	Off	

Press **MENU** to confirm.

❹

Front Surround   ◄ **3D EchoSound System** | ►

❺

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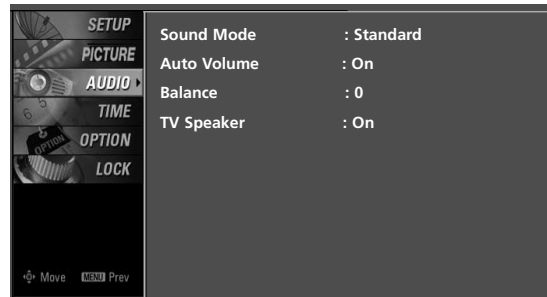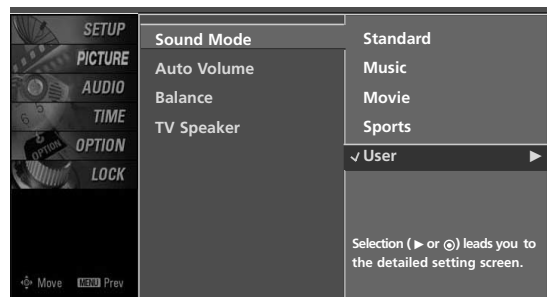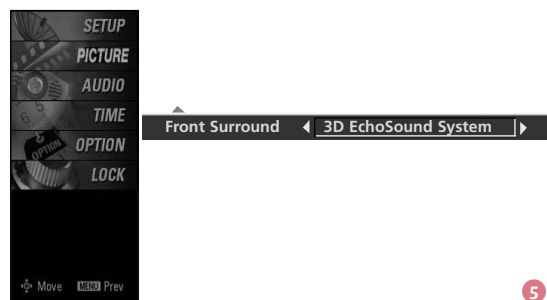
SOUND &LANGUAGE CONTROL

BALANCE

Adjust the left/right sound of speaker to suit your taste and room situations.
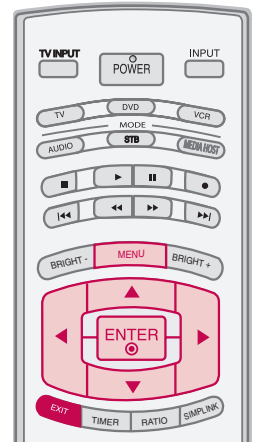
1 Press the **MENU** button and then use ▲ or ▼ button to select the **AUDIO** menu.

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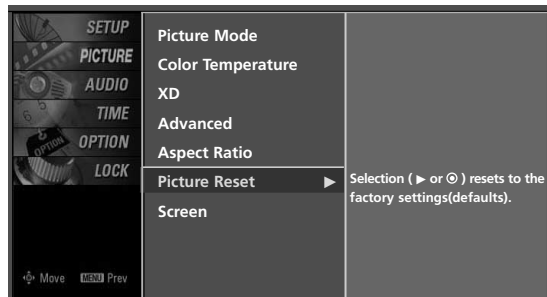
4 Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.

Sound Mode	: Standard
Auto Volume	: On
Balance	: 0
TV Speaker	: On

Move MENU Prev

1

Sound Mode
Auto Volume
Balance   0   L |||||||||||||||||||||||||| R ▶
TV Speaker

Move MENU Prev

2

Balance   0   ◀ L |||||||||||||||||||||||||| R ▶

Move MENU Prev

3

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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.

SETUP	Sound Mode	: Standard
PICTURE	Auto Volume	: On
AUDIO ▶	Balance	: 0
TIME	TV Speaker	: On
OPTION		
LOCK		

✛ Move   MENU Prev

1

SETUP	Sound Mode	
PICTURE	Auto Volume	
AUDIO	Balance	
TIME	TV Speaker ▶	✓ Off
OPTION		On
LOCK		

✛ Move   MENU Prev

2 **3**

SOUND & LANGUAGE CONTROL

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STEREO/SAP BROADCAST SETUP

This TV can receive MTS stereo programs and any SAP (Secondary Audio Program) that accompanies the stereo program if the station transmits an additional sound signal as well as the original one and when you select Stereo or SAP on the remote control.

Mono sound is automatically received if the broadcast is only in Mono; even though Stereo or SAP has been selected.

Select Mono if you want to listen to the mono sound in remote areas during stereo/SAP broadcasting.

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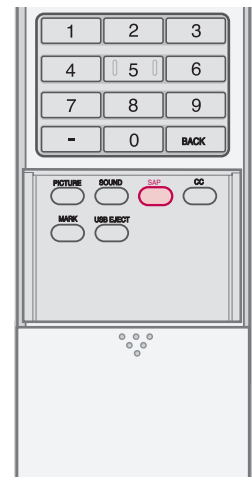
1 Use the **SAP** button to select your desired MTS mode in analog signal. Each time you press the **SAP** button, **Mono**, **Stereo**, or **SAP** appear in turn.

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

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

AUDIO LANGUAGE

Other languages may be available if a digital signal is pro-
vided by the broadcasting station.
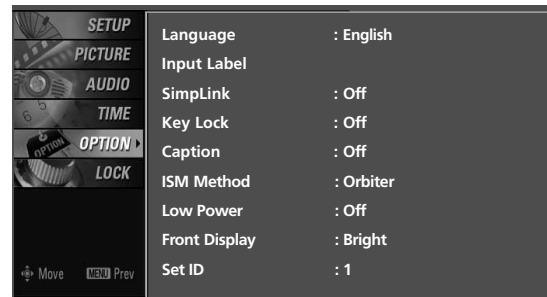This feature operates only in DTV/CADTV mode.
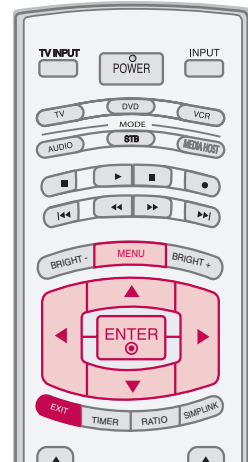
1 Press the **MENU** button and then use ▲ or ▼ button
to select the **OPTION** menu.

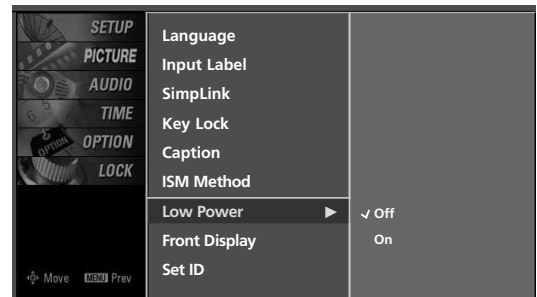**2** Press the ► button and then use ▲ or ▼ button to
select **Language**.

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

4 Use ◄ or ► button to select : **English**, **Spanish**, or
French.

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

SETUP	
PICTURE	Language : English
AUDIO	Input Label
TIME	SimpLink : Off
OPTION ►	Key Lock : Off
LOCK	Caption : Off
	ISM Method : Orbiter
	Low Power : Off
	Front Display : Bright
Move [MENU] Prev	Set ID : 1

1

SETUP	Language ►	
PICTURE	Input Label	Menu English
AUDIO	SimpLink	Audio English
TIME	Key Lock	
OPTION	Caption	
LOCK	ISM Method	
	Low Power	
	Front Display	
Move [MENU] Prev	Set ID	

2 3

SETUP	Language	
PICTURE	Input Label	Menu English
AUDIO	SimpLink	Audio ◄ English ►
TIME	Key Lock	
OPTION	Caption	
LOCK	ISM Method	
	Low Power	
	Front Display	
Move [MENU] Prev	Set ID	

4

ON-SCREEN MENUS LANGUAGE SELECTION

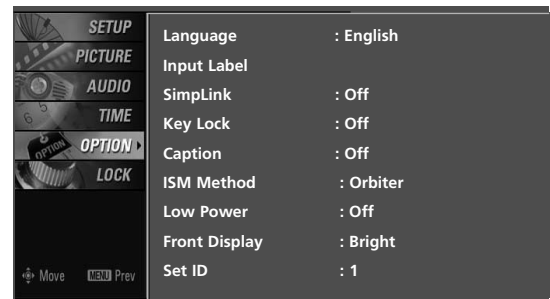**The menus can be shown on the screen in the selected language. First select your language.**
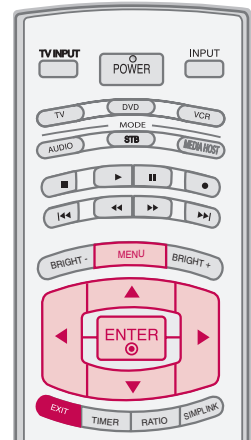
1 Press the **MENU** button and then use ▲ or ▼ button to select the **OPTION** menu.

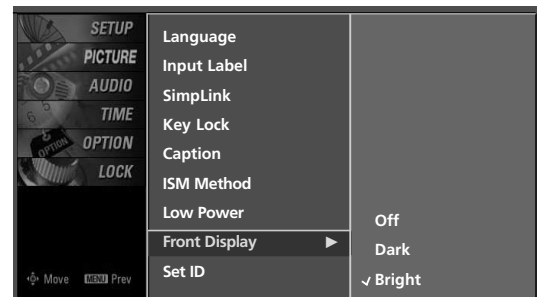**2** Press the ► button and then use ▲ or ▼ button to select **Language.**

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

4 Press the ► button and then use ◄ or ► button to select your desired language.
From this point on, the on-screen menus will be shown in the selected language.

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

SETUP	Language	: English
PICTURE	Input Label	
AUDIO	SimpLink	: Off
TIME	Key Lock	: Off
OPTION	Caption	: Off
LOCK	ISM Method	: Orbiter
	Low Power	: Off
	Front Display	: Bright
Move Prev	Set ID	: 1

①

SETUP	Language ►	Menu	English
PICTURE	Input Label	Audio	English
AUDIO	SimpLink		
TIME	Key Lock		
OPTION	Caption		
LOCK	ISM Method		
	Low Power		
	Front Display		
Move Prev	Set ID		

② ③

SETUP	Language	Menu ◄	English ►
PICTURE	Input Label	Audio	English
AUDIO	SimpLink		
TIME	Key Lock		
OPTION	Caption		
LOCK	ISM Method		
	Low Power		
	Front Display		
Move Prev	Set ID		

④

CAPTION MODE

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

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

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

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

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

SETUP	Language	: English
PICTURE	Input Label	
AUDIO	SimpLink	: Off
TIME	Key Lock	: Off
OPTION ▶	Caption	: Off
LOCK	ISM Method	: Orbiter
	Low Power	: Off
	Front Display	: Bright
⊕ Move MENU Prev	Set ID	: 1

➡

SETUP	Language		
PICTURE	Input Label		
AUDIO	SimpLink		
TIME	Key Lock		
OPTION	Caption ▶	Mode	On
LOCK	ISM Method	Analog	Text1
	Low Power	Digital	Service3
	Front Display	Digital Option	
⊕ Move MENU Prev	Set ID		

SOUND &LANGUAGE CONTROL

Analog Broadcasting System Captions

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

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

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

This function is only available when **Caption** Mode is set **On**.
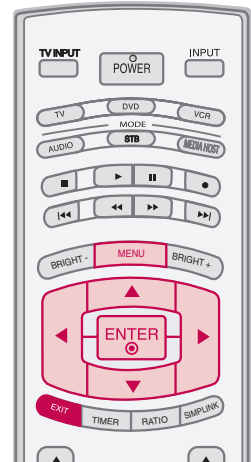
1 Press the **MENU** button and then use ▲ or ▼ button to select the **OPTION** menu.

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

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

4 Use ◄ or ► button to select **CC1**, **CC2**, **CC3**, **CC4**, **Text1**, **Text2**, **Text3** or **Text4**

■ **CAPTION**

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

■ **TEXT**

The term for the words that appear in a large black frame and almost cover the entire screen; usually messages provided by the broadcaster.
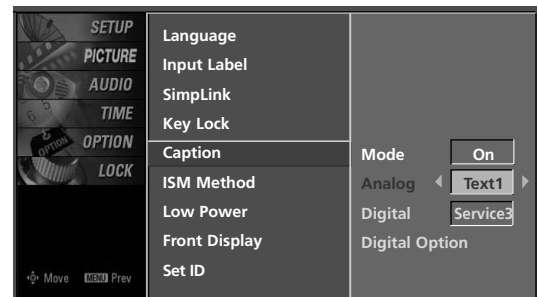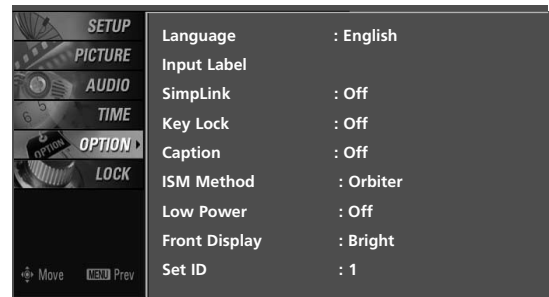
5 Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.

Language	: English
Input Label	
SimpLink	: Off
Key Lock	: Off
Caption	: Off
ISM Method	: Orbiter
Low Power	: Off
Front Display	: Bright
Set ID	: 1

❶

Language		
Input Label		
SimpLink		
Key Lock		
Caption	Mode	On
ISM Method	Analog ◄	Text1 ►
Low Power	Digital	Service3
Front Display	Digital Option	
Set ID		

❷ ❸ ❹

SOUND & LANGUAGE CONTROL

Digital Broadcasting System Captions

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

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

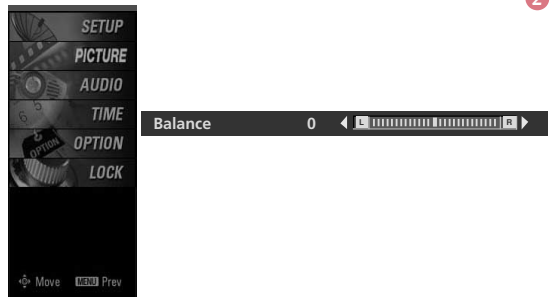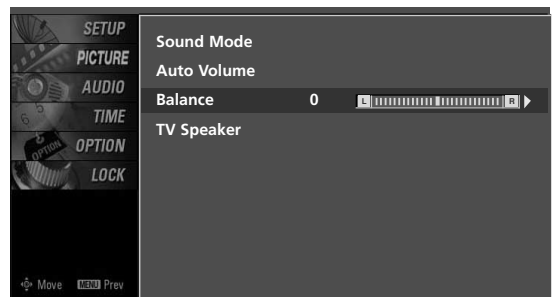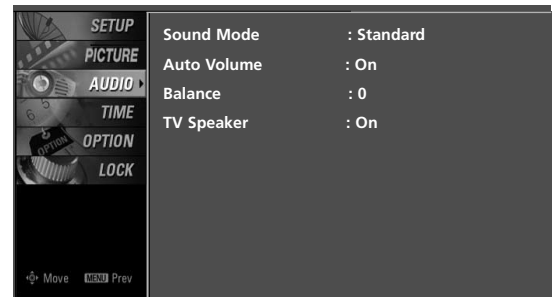This function in only available when **Caption** Mode is set **On**.

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

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

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

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

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

SETUP	Language	: English
PICTURE	Input Label	
AUDIO	SimpLink	: Off
TIME	Key Lock	: Off
OPTION ▶	Caption	: Off
LOCK	ISM Method	: Orbiter
	Low Power	: Off
	Front Display	: Bright
Move MENU Prev	Set ID	: 1

❶

SETUP	Language		
PICTURE	Input Label		
AUDIO	SimpLink		
TIME	Key Lock		
OPTION	Caption	Mode	On
LOCK	ISM Method	Analog	Text1
	Low Power	Digital ◀ Service3 ▶	
	Front Display	Digital Option	
Move MENU Prev	Set ID		

❷ **❸** **❹**

Caption Option

Customize the DTV/CADTV captions that appear on your screen.
This function in only available when Caption Mode is set On.
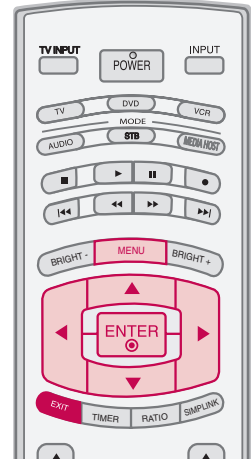
1 Press the **MENU** button and then use ▲ or ▼ button to select the **OPTION** menu.

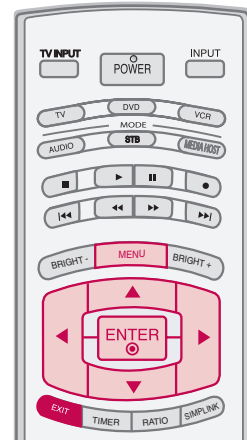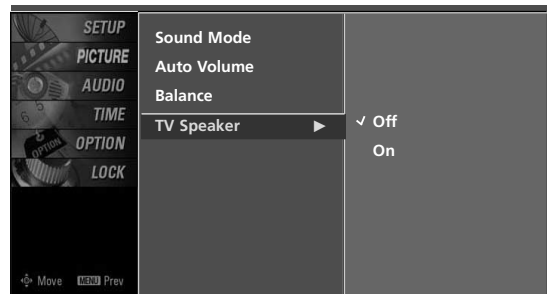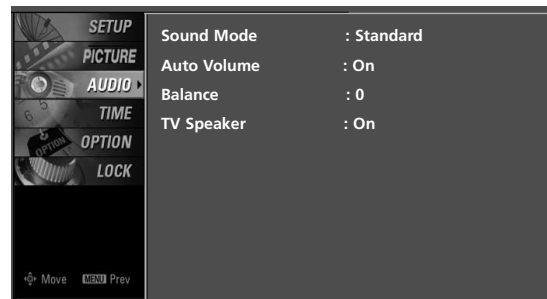**2** Press the ► button and then use ▲ or ▼ button to select **Caption**.

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

4 Press the ► button and then use ◄ or ► button to select **Custom**.

5 Use ▲ or ▼ button to customize the **Style**, **Font**, etc., to your preference.
A preview icon is provided at the bottom of the screen, use it to see the caption language.

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

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

SETUP		
PICTURE	Language	: English
AUDIO	Input Label	
TIME	SimpLink	: Off
OPTION	Key Lock	: Off
LOCK	Caption	: Off
	ISM Method	: Orbiter
	Low Power	: Off
	Front Display	: Bright
Move MENU Prev	Set ID	: 1

❶

SETUP		
PICTURE	Language	
AUDIO	Input Label	
TIME	SimpLink	
OPTION	Key Lock	Mode	On
LOCK	Caption	Analog	Text1
	ISM Method	Digital	Service3
	Low Power	Digital Option ►
	Front Display	
Move MENU Prev	Set ID	Selection (► or ⊙) leads you to the Caption Option screen.

❷ ❸

SETUP			
PICTURE	Language	Style	◄ Custom ►
AUDIO	Input Label	Size	A Standard
TIME	SimpLink	Font	Font 0
OPTION	Key Lock	Mo	Text Color	☐ White
LOCK	Caption	Ana	Text Opacity	Solid
	ISM Method	Dig	Bg Color	■ Black
	Low Power	Dig	Bg Opacity	Solid
	Front Display	Selec	Edge Type	None
Move MENU Prev	Set ID	Capti	Edge Color	■ Black

❹ ❺

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TIME SETTING

CLOCK SETTING

Auto Clock Setup

The time is set automatically from a digital channel signal.

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

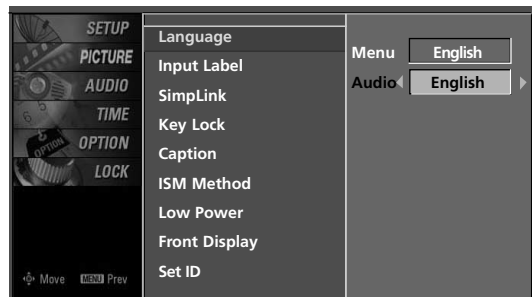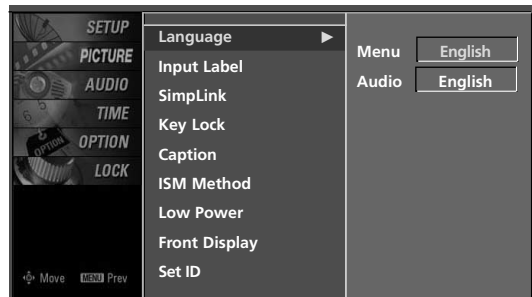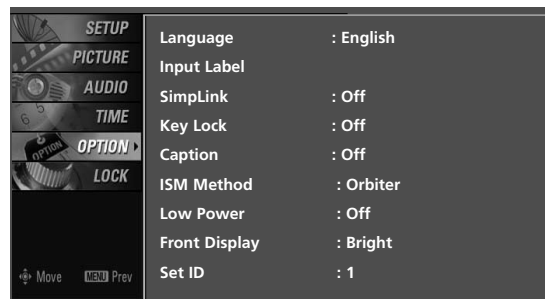**Set the clock manually if the current time is set incorrectly by the auto clock function.**
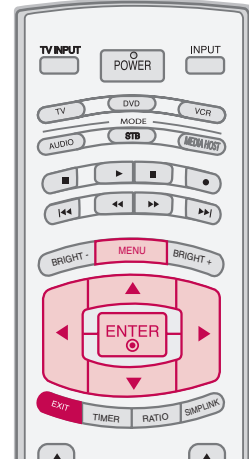
1 Press the **MENU** button and then use ▲ or ▼ button to select the **TIME** menu.

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:

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

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

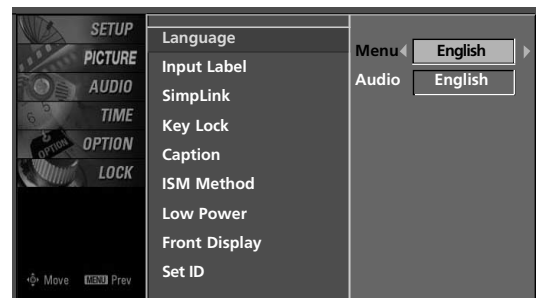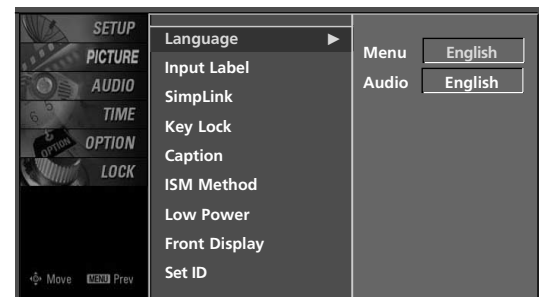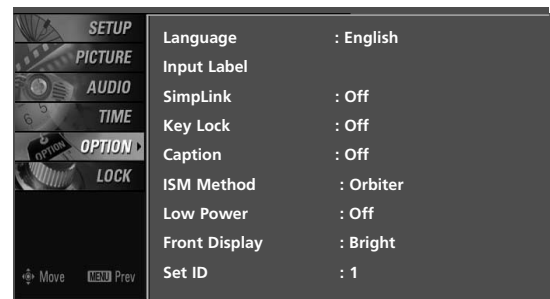**5** Press the ► button and then use ▲ or ▼ button to select **Auto**, **Off**, **On**, depending on whether or not your viewing area observes Daylight Saving time.

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

SETUP	Clock	: Oct 19, 2006, 03:44 AM
PICTURE	Off Time	: Off
AUDIO	On Time	: Off
TIME	Sleep Time	: Off
OPTION	Auto Sleep	: Off
LOCK		

Move   MENU Prev

❶

SETUP	Clock ►	▲▼ Auto ►
PICTURE	Off Time	
AUDIO	On Time	Year - - - -
TIME	Sleep Time	Date - - / - -
OPTION	Auto Sleep	Time - - : - - - -
LOCK		
		Time Zone Eastern
		Daylight Saving Auto

Move   MENU Prev

❷ ❸

SETUP	Clock ►	Auto
PICTURE	Off Time	
AUDIO	On Time	Year - - - -
TIME	Sleep Time	Date - - / - -
OPTION	Auto Sleep	Time - - : - - - -
LOCK		
		Time Zone ▲▼Eastern ►
		Daylight Saving Auto

Move   MENU Prev

❹ ❺

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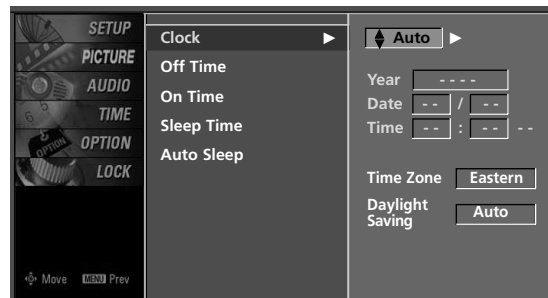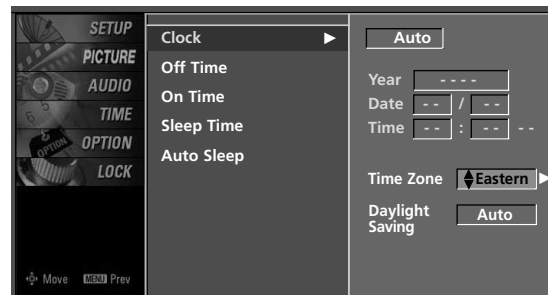
Manual Clock Setup

If the current time setting is wrong, reset the clock manually.
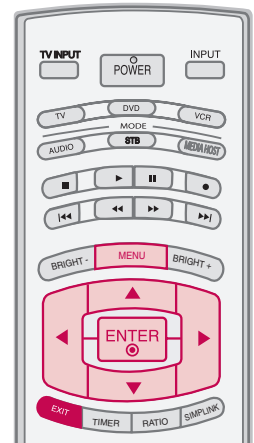
1 Press the **MENU** button and then use ▲ or ▼ button to select the **TIME** menu.

Clock	: Oct 19, 2007, 03:44 AM
Off Time	: Off
On Time	: Off
Sleep Time	: Off
Auto Sleep	: Off

SETUP
PICTURE
AUDIO
TIME ▶
OPTION
LOCK

Move   MENU Prev

①

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

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

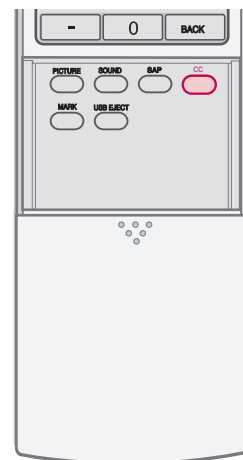**4** Press the ▶ button and then use ◄ or ▶ button to select either the year, date, or time option. Once selected, use the ▲ or ▼ button to set the year, date, and time options.

SETUP
PICTURE
AUDIO
TIME
OPTION
LOCK

Clock   ▶
Off Time
On Time
Sleep Time
Auto Sleep

Move   MENU Prev

◆ Manual   ▶

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

② **③**

5 Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.
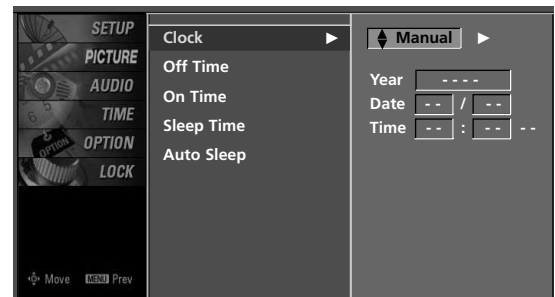
AUTO ON/OFF TIMER SETTING

This function operates only if the current time has been set.
The **Off Time** function overrides the **On Time** function if they are both set to the same time.
The TV must be in standby mode for the **On Time** to work.
If you do not press any button within 2 hours after the TV turns on with the **On Time** function, the TV will automatically revert to standby mode.
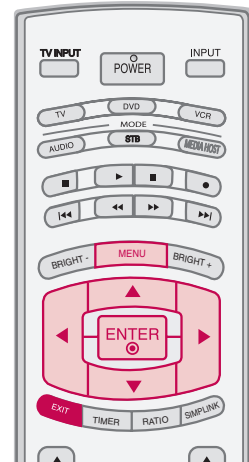
1 Press the **MENU** button and then use ▲ or ▼ button to select the **TIME** menu.

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

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

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

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

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

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

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

SETUP		
PICTURE		
AUDIO	Clock	: Oct 19, 2007, 03:44 AM
TIME ▸	Off Time	: Off
OPTION	On Time	: Off
LOCK	Sleep Time	: Off
	Auto Sleep	: Off

◈ Move MENU Prev

❶

SETUP	Clock		
PICTURE	Off Time		
AUDIO	On Time ▸	Off	
TIME	Sleep Time	✓ On	
OPTION	Auto Sleep		
LOCK		Time 6 : 30 AM	
		Ch. TV 2-0	
		Vol 17	

◈ Move MENU Prev

❷ ❸ ❹ ❺ ❻
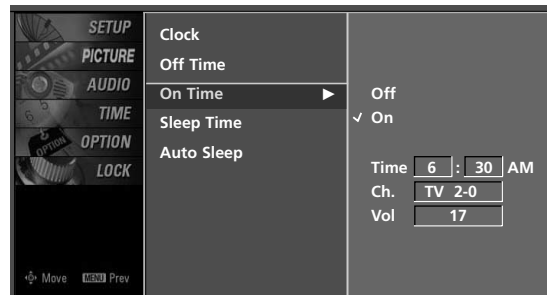
TIME SETTING

SLEEP TIMER SETTING

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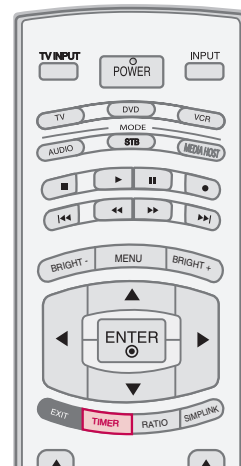
1 Press the **TIMER** button repeatedly to select the number of minutes. First the **Off** option appears on the screen, followed by the following sleep time options : 10, 20, 30, 60, 90, 120, 180, and 240 minutes.

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

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

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

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

SETUP	Clock	: Oct 19, 2006, 03:44 AM
PICTURE	Off Time	: Off
AUDIO	On Time	: Off
TIME	Sleep Time	: Off
OPTION	Auto Sleep	: Off
LOCK		

SETUP	Clock	✓ Off
PICTURE	Off Time	10 min
AUDIO	On Time	20 min
TIME	Sleep Time ▶	30 min
OPTION	Auto Sleep	60 min
LOCK		90 min
		120 min
		180 min
		240 min

TIME SETTING

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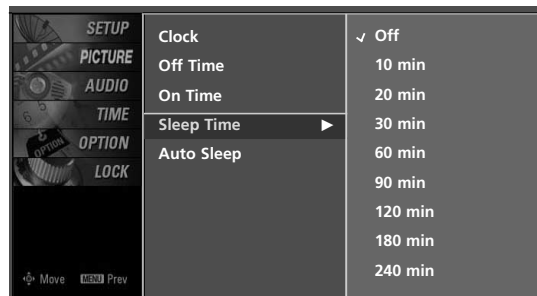
AUTO SHUT-OFF SETTING

TV will be automatically turned off, in case of No Signal for 10 minutes.
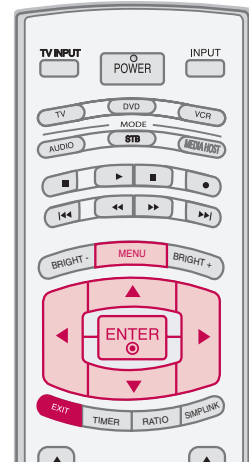
① Press the **MENU** button and then use ▲ or ▼ button to select the **TIME** menu.

② Press the ▶ button and then use ▲ or ▼ button to select **Auto Sleep**.
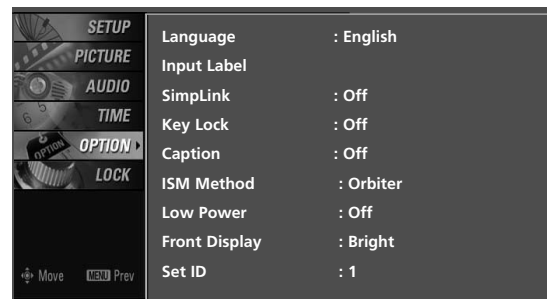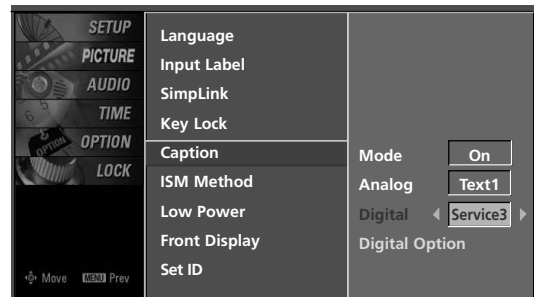
③ Press the ▶ button and then use ▲ or ▼ button to select **On** or **Off**.

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

SETUP		
PICTURE	**Clock**	: Oct 19, 2007, 03:44 AM
AUDIO	**Off Time**	: Off
	On Time	: Off
TIME	**Sleep Time**	: Off
OPTION	**Auto Sleep**	: Off
LOCK		

⊕ Move   **MENU** Prev

❶

SETUP		
PICTURE	**Clock**	
AUDIO	**Off Time**	TV will be automatically turned off, in case of No Signal for 10 minutes.
	On Time	
TIME	**Sleep Time**	
OPTION	**Auto Sleep** ▶	✓ Off
LOCK		On

⊕ Move   **MENU** Prev

❷ ❸
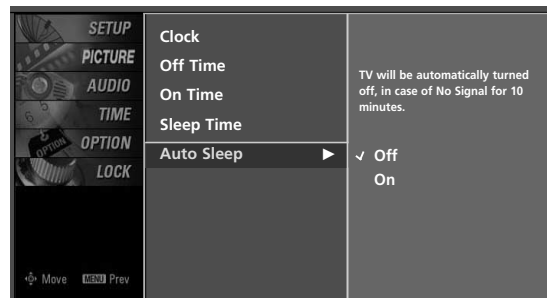
PARENTAL CONTROL / RATINGS

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

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

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

V-Chip rating and categories

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

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

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

SET PASSWORD & LOCK SYSTEM

Setting up Your Password

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

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

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

Enter Password

| * | * | * | * |
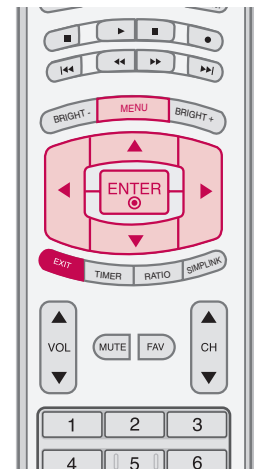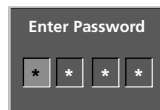
Set Password

Change the password by inputting a new password twice.

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

2 Press the ► button and then choose any 4 digits for your new password.

As soon as the 4 digits are entered, re-enter the same 4 digits on the **Confirm**.

Then your changed password has been memorized.

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

For USA

SETUP	Lock System : Off
PICTURE	Set Password
AUDIO	Block Channel
TIME	Movie Rating
OPTION	TV Rating-Children
LOCK ►	TV Rating-General
	Input Block

Move [MENU] Prev

For Canada

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

1

SETUP	Lock System
PICTURE	Set Password ►
AUDIO	Block Channel
TIME	Movie Rating
OPTION	TV Rating-Children
LOCK	TV Rating-General
	Input Block

New * * * *
Confirm * * * *

Move [MENU] Prev
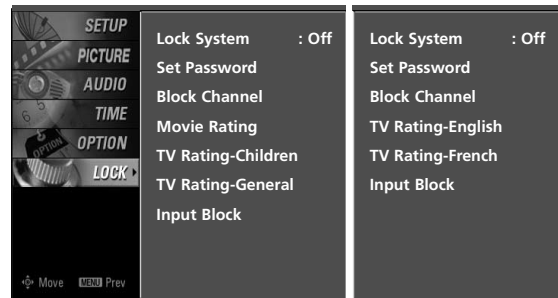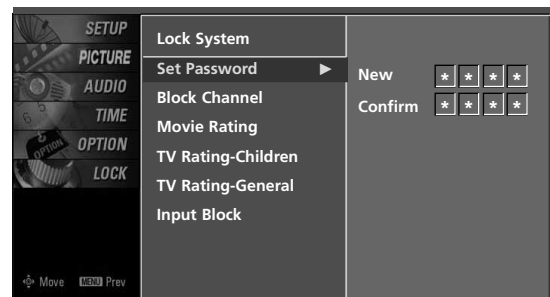
2

Lock System

Enables or disables the blocking scheme you set up previously.

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

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

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

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

For USA

SETUP	Lock System : Off
PICTURE	Set Password
AUDIO	Block Channel
TIME	Movie Rating
OPTION	TV Rating-Children
LOCK ►	TV Rating-General
	Input Block

Move [MENU] Prev

For Canada

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

1

SETUP	Lock System ►
PICTURE	Set Password
AUDIO	Block Channel
TIME	Movie Rating
OPTION	TV Rating-Children
LOCK	TV Rating-General
	Input Block

✓ Off
  On

Move [MENU] Prev

2
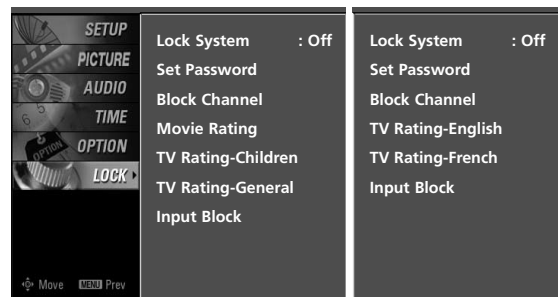
CHANNEL BLOCKING

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

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

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

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

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

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

Selection (▶ or ◉) leads you to the block channel screen.

⊕ Move MENU Prev

❶

2–0	DTV	TV	CADTV	CATV
	2–0	5–0	6–0	7–0
	9–0	11–0	13–0	14–0
	15–0	16–0	17–0	18–0
	19–0	20–0	21–0	22–0
	23–0	24–0	25–0	26–0
	27–0	28–0	29–0	30–0
	31–0	32–0	33–0	34–0
	35–0	36–0	37–0	38–0
	39–0	40–0	41–0	42–0

MENU Previous   Move Page   ⊕ Move   ◉ Block/Unblock

❷ ❸
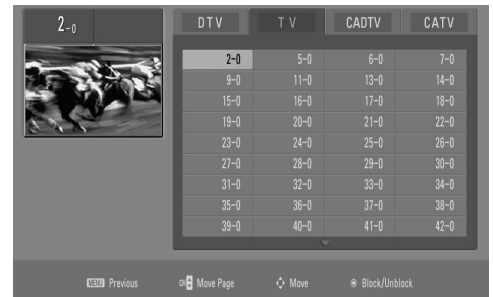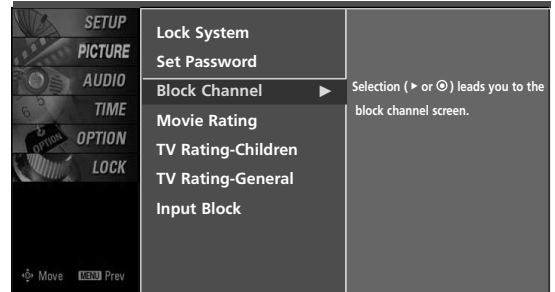
EXTERNAL INPUT BLOCKING

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

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

2 Press the ▶ button and then use the ▲ or ▼ button to select a source.

3 Use the ◀ or ▶ button to select **On** or **Off** on the each source.

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

For USA

SETUP	Lock System : Off
PICTURE	Set Password
AUDIO	Block Channel
TIME	Movie Rating
OPTION	TV Rating-Children
LOCK ▶	TV Rating-General
	Input Block

⊕ Move MENU Prev

For Canada

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

❶

SETUP	Lock System	
PICTURE	Set Password	
AUDIO	Block Channel	AV1 On
TIME	Movie Rating	AV2 On
OPTION	TV Rating-Children	Component1 Off
LOCK	TV Rating-General	Component2 On
	Input Block ▶	RGB-PC Off
		HDMI1 Off
		HDMI2 Off
		HDMI3 Off

⊕ Move MENU Prev

❷ ❸

MOVIE & TV RATING

Movie Rating (MPAA) *- for USA only*

Blocks movies according to the movie ratings limits speci-
fied, so children cannot view certain movies. You can set
the ratings limit by blocking out all the movies with the
ratings above a specified level. Keep in mind that the
movie ratings limit only applies to movies shown on TV,
not TV programs, such as soap operas.
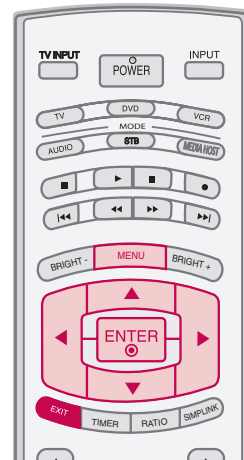
1 After inputting the password, use the ▲ or ▼ button
to choose **Movie Rating**.

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

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

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

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

SETUP		
PICTURE	Lock System	: Off
AUDIO	Set Password	
TIME	Block Channel	
OPTION	Movie Rating	
LOCK	TV Rating-Children	
	TV Rating-General	
	Input Block	

Move MENU Prev

❶

SETUP		Blocking off : permits all
PICTURE	Lock System	programs
AUDIO	Set Password	
TIME	Block Channel	G
OPTION	Movie Rating ▶	PG
LOCK	TV Rating-Children	PG-13
	TV Rating-General	R
	Input Block	NC-17
		X
		Blocking Off

Move MENU Prev

❷
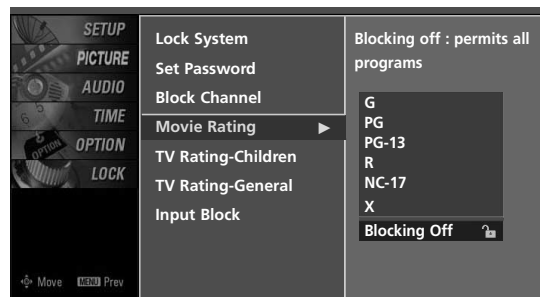
PARENTAL CONTROL /RATINGS

TV Rating Children *- for USA only*

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

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

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

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

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

SETUP	Lock System	: Off
PICTURE	Set Password	
AUDIO	Block Channel	
TIME	Movie Rating	
OPTION	TV Rating-Children	
LOCK ►	TV Rating-General	
	Input Block	

◄⊕► Move MENU Prev

1

SETUP	Lock System	
PICTURE	Set Password	
AUDIO	Block Channel	
TIME	Movie Rating	
OPTION	TV Rating-Children ►	✓ Age
LOCK	TV Rating-General	Fantasy Violence
	Input Block	

◄⊕► Move MENU Prev
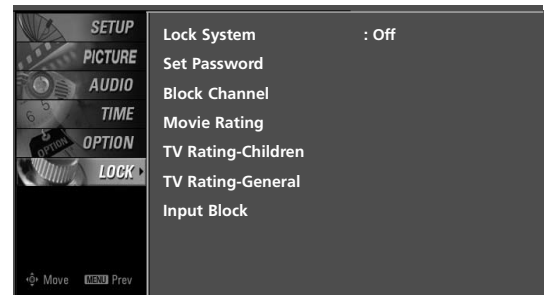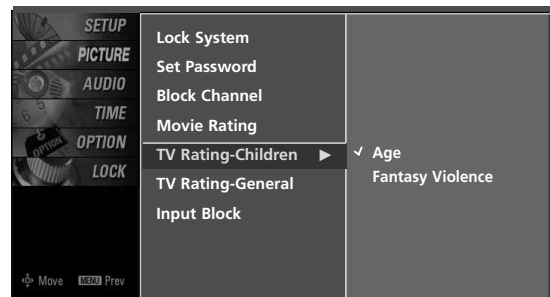
2

TV Rating General *- for USA only*

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

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

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

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

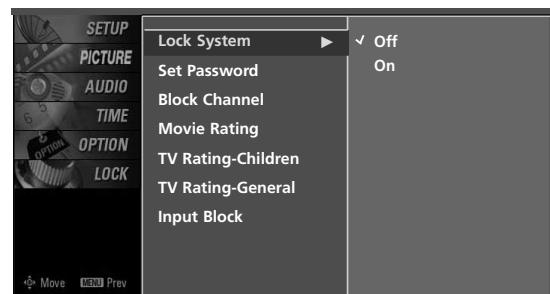**3** Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.

SETUP	Lock System	: Off
PICTURE	Set Password	
AUDIO	Block Channel	
TIME	Movie Rating	
OPTION	TV Rating-Children	
LOCK ►	TV Rating-General	
	Input Block	

◄⊕► Move MENU Prev

1

SETUP	Lock System	
PICTURE	Set Password	
AUDIO	Block Channel	
TIME	Movie Rating	
OPTION	TV Rating-Children	✓ Age
LOCK	TV Rating-General ►	Dialogue
	Input Block	Language
		Sex
		Violence

◄⊕► Move MENU Prev

2

PARENTAL CONTROL / RATING
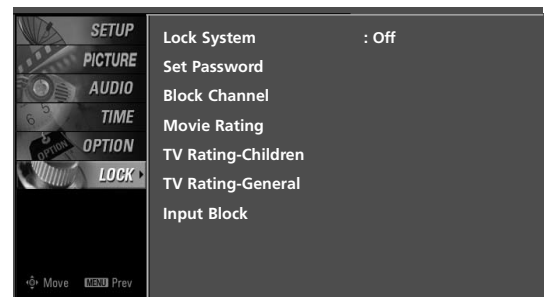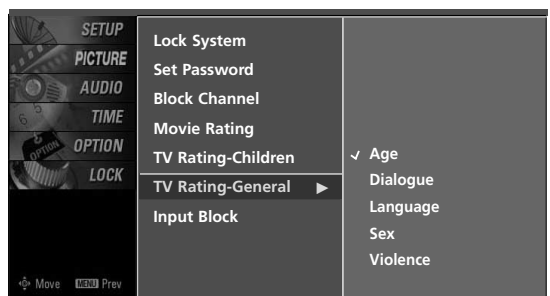
TV Rating English - *for CANADA only*

Selecting canadian english language rating system.

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

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

- E (Exempt)
- C (Children)
- C8+ (Children eight years and older)
- G (General programming, suitable for all audiences)
- PG (Parental Guidance)
- 14+ (Viewers 14 years and older)
- 18+ (Adult programming)
- Blocking Off (Permits all programs)

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

SETUP	Lock System	: Off
PICTURE	Set Password	
AUDIO	Block Channel	
TIME	TV Rating-English	
OPTION	TV Rating-French	
LOCK ►	Input Block	

◆ Move   MENU Prev

❶

SETUP	Lock System	Blocking off : permits all programs
PICTURE	Set Password	
AUDIO	Block Channel	
TIME	TV Rating-English ►	E
OPTION	TV Rating-French	C
LOCK	Input Block	C8+
		G
		PG
		14+
		18+
		Blocking Off

◆ Move   MENU Prev

❷
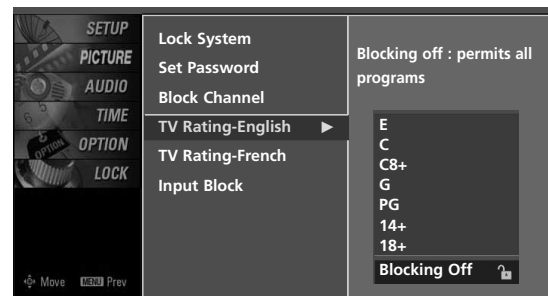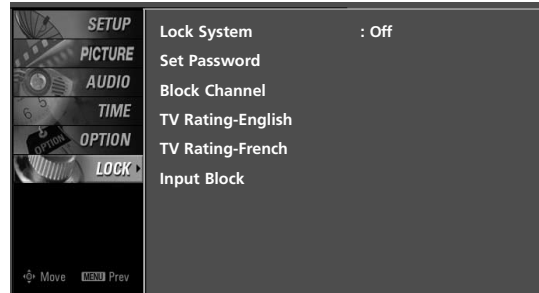
TV Rating French - *for CANADA only*

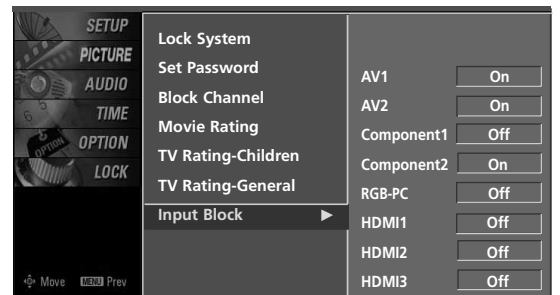**Selecting canadian french language rating system.**

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

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

- E(Exempt)
- G(General)
- 8ans+ (General-Not convenient for little children)
- 13ans+ (Not convenient for children of 13 years and younger)
- 16ans+ (Not convenient for children of 16 years and younger)
- 18ans+ (This programs is only for adults)
- Blocking off (Permits all programs)

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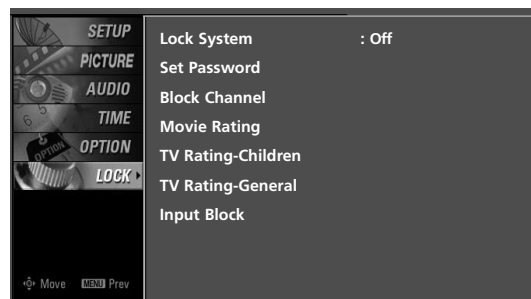
❶

SETUP	Lock System	Blocking off : permits all programs
PICTURE	Set Password	
AUDIO	Block Channel	
TIME	TV Rating-English	E
OPTION	TV Rating-French ►	G
LOCK	Input Block	8 ans+
		13 ans+
		16 ans+
		18 ans+
		Blocking Off

◆ Move   MENU Prev

❷
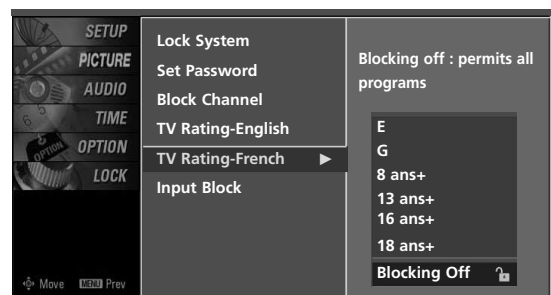
APPENDIX

TROUBLESHOOTING

The operation does not work normally.	
The remote control doesn't work	■ Check to see if there is any object between the product and the remote control causing obstruction. Ensure you are pointing the remote control directly at the TV. ■ Ensure that the batteries are installed with correct polarity (+ to +, - to -). ■ Ensure that the correct remote operating mode is set: TV, VCR etc. ■ Install new batteries.
Power is suddenly turned off	■ Is the sleep timer set? ■ Check the power control settings. Power interrupted. ■ No broadcast on station tuned with Auto off activated.

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

The audio function does not work.

Picture OK & No sound	■ Press the VOL or VOLUME button. ■ Sound muted? Press MUTE button. ■ Try another channel. The problem may be with the broadcast. ■ Are the audio cables installed properly?
No output from one of the speakers	■ Adjust Balance in menu option.
Unusual sound from inside the product	■ A change in ambient humidity or temperature may result in an unusual noise when the product is turned on or off and does not indicate a fault with the product.

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

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

APPENDIX

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MAINTENANCE

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

Cleaning the Screen

1 Here's a great way to keep the dust off your screen for a while. Wet a soft cloth in a mixture of lukewarm water and a little fabric softener or dish washing detergent. Wring the cloth until it's almost dry, and then use it to wipe the screen.

2 Make sure the excess water is off the screen, and then let it air-dry before you turn on your TV.

Cleaning the Cabinet

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

Extended Absence

⚠ CAUTION

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

PRODUCT SPECIFICATIONS

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

MODELS		47LC7DF (47LC7DF-UK)	50PY3D (50PY3DF-UJ)	60PY3D (60PY3DF-UJ)
Dimensions (Width x Height x Depth)	Including stand	45.1 x 32.5x 12.1 inches	53.5 x 35.0 x 14.6 inches	63.5 x 40.8 x 17.8 inches
		1144.3 x 825.5 x 306.4mm	1360.0 x 887.0 x 370.0 mm	1613.6 x 1036.8 x 452.0 mm
	Excluding stand	45.1 x 29.7 x 4.1 inches	53.5 x 32.4 x 3.8 inches	63.5 x 38.2 x 3.9 inches
		1144.3 x 754.7 x 103.0 mm	1360.0 x 822.8 x 95.5 mm	1613.6 x 970.0 x 98.5 mm
Weight	including stand	82.9 pounds / 37.6 kg	126.8 pounds / 57.5kg	178.6 pounds / 81.0kg
	excluding stand	69.4 pounds / 31.5 kg	107.0 pounds / 48.5kg	143.3 pounds / 65.0kg
Power requirement Television System Program Coverage External Antenna Impedance		AC100-240V ~ 50/60Hz NTSC-M, ATSC, 64 & 256 QAM VHF 2-13, UHF 14-69, CATV 1-135, DTV 2-69, CADTV 1-135 75 ohm		
Environment condition	Operating Temperature Operating Humidity	32 ~ 104˚F (0 ~ 40˚C) Less than 80%		
	Storage Temperature Storage Humidity	-4 ~ 140˚F (-20 ~ 60˚C) Less than 85%		

APPENDIX

MODELS		37LB5D (37LB5DF-UL)	42LB5D (42LB5DF-UL)	47LB5D (47LB5DF-UL)	52LB5D (52LB5DF-UL)
Dimensions (Width x Height x Depth)	Including stand	36.5 x 27.3 x 11.1 inches 927.0 x 692.8 x 283.2 mm	40.7 x 29.5 x 11.3 inches 1033.1 x 750.0 x 287.6 mm	45.1 x 32.5 x 13.0 inches 1144.5 x 825.6 x 331.0 mm	50.6 x 35.5 x 14.1 inches 1284.6 x 901.8 x 356.9 mm
	Excluding stand	36.5 x 24.8 x 3.5 inches 927.0 x 630.0 x 88.0 mm	40.7 x 27.0 x 3.5 inches 1033.1 x 686.5 x 88.5 mm	45.1 x 29.7 x 4.1 inches 1144.5 x 754.9 x 103.0 mm	50.6 x 32.7 x 4.4 inches 1284.6 x 831.6 x 111.5 mm
Weight	including stand excluding stand	44.1 pounds / 20.0kg 35.3 pounds / 16.0kg	60.6 pounds / 27.5kg 50.7 pounds / 23.0kg	82.7 pounds / 37.5kg 69.2 pounds / 31.4kg	106.0 pounds / 48.1kg 89.3 pounds / 40.5kg
Power requirement Television System Program Coverage External Antenna Impedance		AC100-240V ~ 50/60Hz NTSC-M, ATSC, 64 & 256 QAM VHF 2-13, UHF 14-69, CATV 1-135, DTV 2-69, CADTV 1-135 75 ohm			
Environment condition	Operating Temperature Operating Humidity	32 ~ 104˚F (0 ~ 40˚C) Less than 80%			
	Storage Temperature Storage Humidity	-4 ~ 140˚F (-20 ~ 60˚C) Less than 85%			

PROGRAMMING THE REMOTE CONTROL

The provided universal remote control can be programmed to operate most remote-controllable devices.
Note that the remote may not control all models of other brands.

Programming a code into a remote mode

1 To find out whether your remote control can operate each device without programming, turn on the device (such as a VCR) and press the corresponding mode button on the remote.
After that, press the **POWER** button. If the device is turned off and it responds properly the remote control need not be programmed. If not, the remote should be programmed to operate the device. The programming procedures are explained below.

2 Press the **MENU** and **MUTE** button continuously at the same time for two seconds; the currently selected device button is illuminated.
If you don't press any button for 20 seconds, the light on the mode button will be turned off. In that case, you have to repeat from step 2.

3 Enter the appropriate code from the code table on the following pages. When pressing the button, the light blinks at a time. If the device turned off, the programming is successful.

4 Press the **MENU** button to store the code. After blinking twice, this code is stored.

5 Test the remote control functions to see if the device responds properly. If not, steps 2-5.

Remote Control Code
VCR

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

Cable Box

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

HDSTB

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

Audio

Brand	Codes				Brand	Codes				Brand	Codes			
AIWA	014	028	070	096		157	158	159	160	RCX	092			
	125	129	139	229		189	207	222	224	REALISTIC	103	106		
	230					225	226	227	243	SAMSUNG	124	145	146	182
AKAI	163					247					193	194	195	203
ANAM	003	014	017	023	LOTTE	014	016	036	098		204	244	245	246
	059	106	189	216		100	172	173	174	SANSUI	011	135	138	144
	217	235	236			175	176	177	178	SANYO	019	083	234	
BURMECTER	252					179	180	181	183	SCOTT	106	186		
CARVER	086					201	202	208	213	SHARP	031	032	051	052
CLARION	199					214	219	223	232		072	082	117	119
DAEWOO	027	053	060	084		238	240				156	184	199	200
	102	148	198	221	LXI	103					206	209		
DENON	015	075	130	143	MAGNAVOX	111				SHERWOOD	005	006	158	
FANTASIA	071				MARANTZ	002	018	020	025	SONY	044	045	109	114
FINEARTS	022					034	041	081	090		118	126	248	249
FISHER	089	099				097	112			TAEKWANG	012	020	073	074
LG(GOLDSTAR)	001	021	024	029	MCINTOSH	049					076	077	105	161
	087	107	108	110	MCS	104					162	163	164	165
	190	191	192	210	MEMOREX	107					166	167	168	169
	211	212	239		NAD	046					205	231	233	242
HAITAI	034	035	188	222	ONKYO	013	040	041	047					
HARMAN/KARDON	068					048	056	057	132	TEAC	010	085	106	136
JVC	004	013	141			133	140				185	187	237	
KEC	185	186	187		OPTIMUS	158				TECHNICS	101	113	128	134
KOHEL	030				PANASONIC	007	033	064	113		147	218		
NAD	045	046				142	220	241	251	TOSHIBA	137			
KENWOOD	038	050	067	089	PENNEY	104				THE	061			
	170	171	197	206	PHILIPS	026	112	143		VICTOR	088	131		
	215	222			PIONEER	039	042	043	063	WARDS	089			
INKEL	037	058	062	069		065	091	093	094	YAMAHA	054	055	066	092
	078	079	095	121		115	123	127	250		199			
	122	149	150	151	QUASAR	113								
	152	153	154	155	RCA	080								

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				

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

Tc

T1
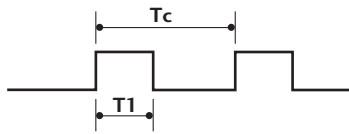
Carrier frequency

FCAR = 1/TC = fOSC/12

Duty ratio = T1/TC = 1/3

■ **Configuration of frame**

1st frame

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

Repeat frame

Repeat code

Tf

■ **Lead code**

9 ms

4.5 ms

■ **Repeat code**

0.55 ms

9 ms

2.25 ms
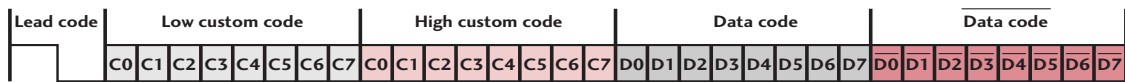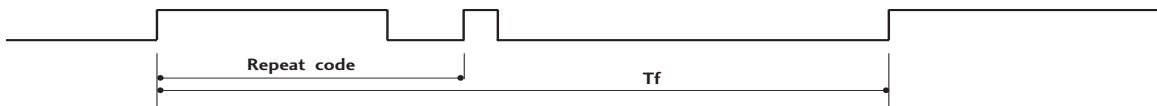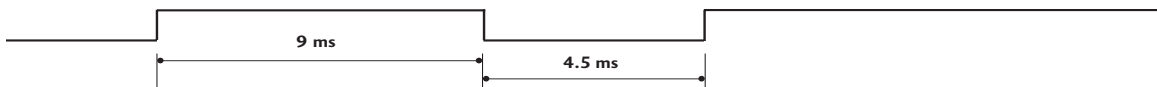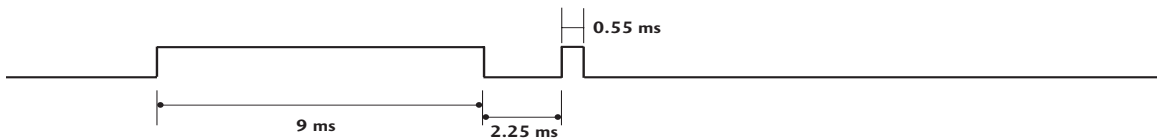
■ **Bit description**

Bit "0"

0.56 ms

1.12 ms

Bit "1"

0.56 ms

2.24 ms
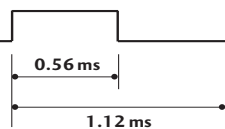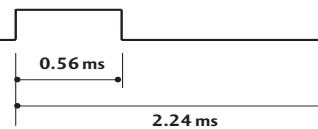
■ **Frame interval: Tf**

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

Tf

Tf

Tf=108ms @455KHz
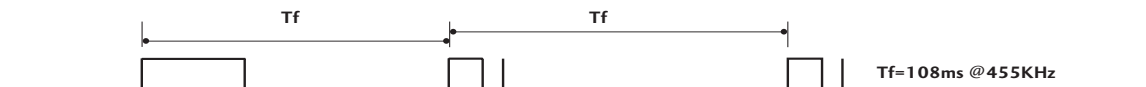
APPENDIX

Code (Hexa)	Function	Note	Code (Hexa)	Function	Note
0F	TV INPUT	Remote control Button	BF	COMPONENT1	Discrete IR Code (Component1 Input Selection)
0B	INPUT	Remote control Button			
08	POWER	Remote control Button (Power On/Off)	D4	COMPONENT2	Discrete IR Code (Component2 Input Selection)
79	RATIO	Remote control Button			
0E	TIMER	Remote control Button	D5	RGB-PC	Discrete IR Code (RGB-PC Input Selection)
10-19	Number Key 0-9	Remote control Button			
4C	- (Dash)	Remote control Button	CE	HDMI1	Discrete IR Code (HDMI1 Input Selection)
1A	BACK	Remote control Button			
09	MUTE	Remote control Button	CC	HDMI2	Discrete IR Code (HDMI2 Input Selection)
02	VOL ▲	Remote control Button			
03	VOL ▼	Remote control Button	76	Ratio 4:3	Discrete IR Code (Only 4:3 Mode)
00	CH ▲	Remote control Button			
01	CH ▼	Remote control Button	77	Ratio 16:9	Discrete IR Code (Only 16:9 Mode)
1E	FAV	Remote control Button			
39	CC	Remote control Button	AF	Ratio Zoom	Discrete IR Code (Only Zoom1 Mode)
40	▲	Remote control Button			
41	▼	Remote control Button	C4	POWER ON	Discrete IR Code (Only Power On)
07	◄	Remote control Button			
06	►	Remote control Button	C5	POWER OFF	Discrete IR Code (Only Power Off)
44	ENTER	Remote control Button			
E1	BRIGHT-	Remote control Button	B0	PLAY	Remote control Button
43	MENU	Remote control Button	BA	PAUSE	Remote control Button
E0	BRIGHT+	Remote control Button	B1	STOP	Remote control Button
52	SOUND	Remote control Button	BD	REC	Remote control Button
4D	PICTURE	Remote control Button	8F	REW	Remote control Button
5B	EXIT	Remote control Button	8E	FF	Remote control Button
7E	SIMPLINK	Remote control Button	B2	GO TO PREV	Remote control Button
0A	SAP	Remote control Button	B3	GO TO NEXT	Remote control Button
D6	TV	Discrete IR Code (TV Input Selection)	7C	MEDIA HOST	Remote control Button
			7D	MARK	Remote control Button
5A	AV1	Discrete IR Code (AV1 Input Selection)	CA	USB EJECT	Remote control Button
D0	AV2	Discrete IR Code (AV2 Input Selection)			

EXTERNAL CONTROL THROUGH RS-232C

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

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

RS-232C Setup

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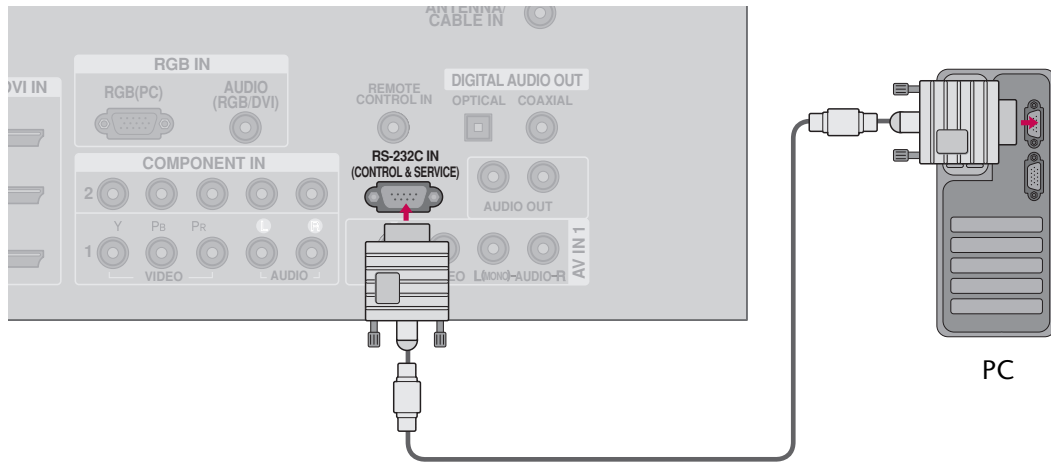
Type of Connector; D-Sub 9-Pin Male

No.	Pin Name
1	No connection
2	RXD (Receive data)
3	TXD (Transmit data)
4	DTR (DTE side ready)
5	GND
6	DSR (DCE side ready)
7	RTS (Ready to send)
8	CTS (Clear to send)
9	No Connection
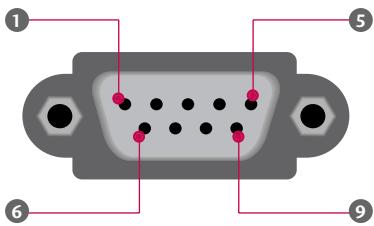
RS-232C Configurations

Either cable below can be used.

7-Wire Configuration (Serial female-female NULL modem cable)			
	PC	TV	
RXD	2	3	TXD
TXD	3	2	RXD
GND	5	5	GND
DTR	4	6	DSR
DSR	6	4	DTR
RTS	7	8	CTS
CTS	8	7	RTS
	D-Sub 9	D-Sub 9	

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

Set ID

Use this function to specify a TV ID number.
Refer to 'Real Data Mapping1'. ▶ p.104.
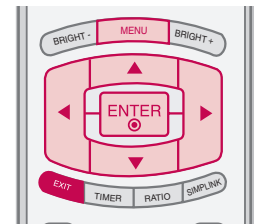
1 Press the **MENU** button and then use ▲ or ▼ button to select the **OPTION** menu.

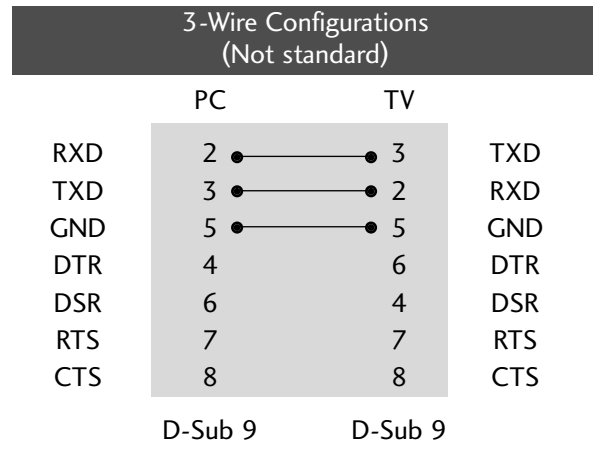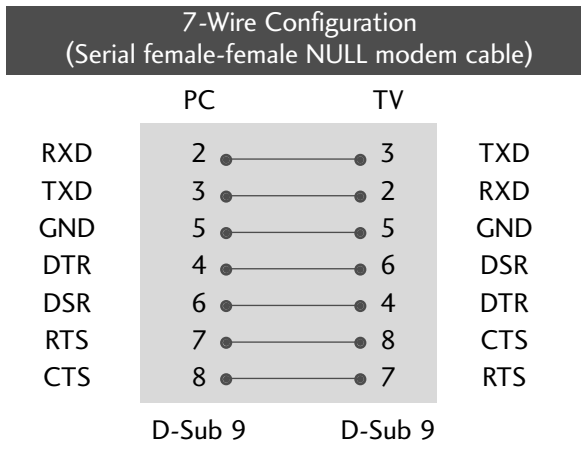| SETUP PICTURE AUDIO TIME **OPTION** LOCK	Language	: English
	Input Label	
	SimpLink	: Off
	Key Lock	: Off
	Caption	: Off
	ISM Method	: Orbiter
	Low Power	: Off
	Front Display	: Bright
	Set ID	: 1

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

❶

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.

SETUP PICTURE AUDIO TIME OPTION LOCK	Language	
	Input label	
	SimpLink	
	Key Lock	
	Caption	
	ISM Method	
	Low Power	
	Front Display	
	Set ID	▶ 1

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

❷ ❸
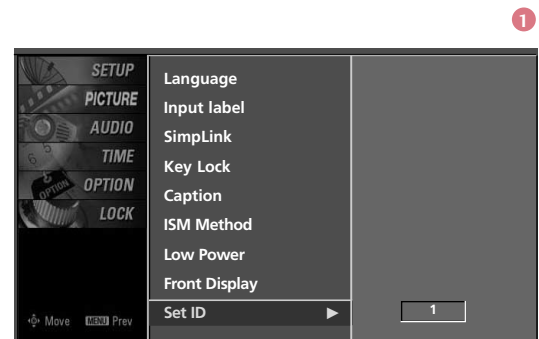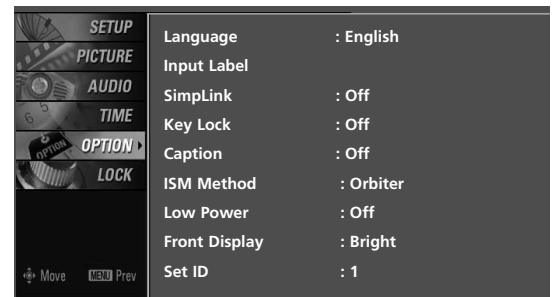
Communication Parameters

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

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

Command Reference List

	COMMAND1	COMMAND2	DATA (Hexadecimal)		COMMAND1	COMMAND2	DATA (Hexadecimal)
01. Power	k	a	0 ~ 1	13. Remote Control Lock Mode	k	m	0 ~ 1
02. Input Select	k	b	0 ~ 9				
03. Aspect Ratio	k	c	(▶ p.104)	14. Treble	k	r	0 ~ 64
04. Screen Mute	k	d	0 ~ 1	15. Bass	k	s	0 ~ 64
05. Volume Mute	k	e	0 ~ 1	16. Balance	k	t	0 ~ 64
06. Volume Control	k	f	0 ~ 64	17. Color Temperature	k	u	0 ~ 3
07. Contrast	k	g	0 ~ 64	18. Red Adjustment	k	v	0 ~ C8
08. Brightness	k	h	0 ~ 64	19. Green Adjustment	k	w	0 ~ C8
09. Color	k	i	0 ~ 64	20. Blue Adjustment	k	$	0 ~ C8
10. Tint	k	j	0 ~ 64	21. ISM Method	j	p	(▶ p.106)
11. Sharpness	k	k	0 ~ 64	22. Low Power	j	q	0 ~ 1
12. OSD Select	k	l	0 ~ 1				

Plasma TV Model Only

	COMMAND1	COMMAND2	DATA0 (Hexadecimal)	DATA1 (Hexadecimal)	DATA2 (Hexadecimal)	DATA3 (Hexadecimal)	DATA4 (Hexadecimal)	DATA5 (Hexadecimal)
23. Channel Tuning	m	a	physical program high	major program low	major low	minor high	minor low	attribute
24. Channel Add/Del	m	b	0 ~ 1					
25. Key	m	c	(▶ p.107)					
26. Input Select	x	b	(▶ p.107)					
27. Back Light	m	g	0~64					

Transmission / Receiving Protocol

Transmission

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

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

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

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

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

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

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

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

OK Acknowledgement

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

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

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

* Data Format

[Command 2] : Use as command.

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

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

[OK] : Use the large character.

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

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

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

Error Acknowledgement

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

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

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

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

* Data Format

[Command 2] : Use as command.

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

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

[NG] : Use the large character

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

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

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

01. Power (Command2:a)

To control Power On/Off of the TV.

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

Data 0: Power Off   Data 1: Power On

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

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

* 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: Analog
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]

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

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

04. Screen Mute (Command2:d)

To select screen mute on/off.

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

Data 0: Screen mute off (Picture on)

Data 1: Screen mute on (Picture off)

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

05. Volume Mute (Command2:e)

To control volume mute on/off.

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

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

Data 0 : Volume mute on (Volume off)

Data 1 : Volume mute off (Volume on)

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

06. Volume Control (Command2:f)

To adjust volume.

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

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

Data Min : 0 ~ Max : 64

Refer to 'Real data mapping 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. Color (Command2:i)

To adjust the screen color.

You can also adjust color in the Picture menu.

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

Data Min : 0 ~ Max : 64

*Refer to 'Real data mapping 1'. See page 104.

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 104.

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 104.

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

12. OSD Select (Command2:l)

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

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

Data 0: OSD off   Data 1: OSD on

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

13. Remote Control Lock Mode (Command2:m)

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

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

Data 0: Lock off   Data 1: Lock on

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

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

14. Treble (Command2:r)

To adjust treble.

You can also adjust treble in the Audio menu.

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

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

*Refer to 'Real data mapping 1'. See page 104.

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

15. Bass (Command2:s)

To adjust bass.

You can also adjust bass in the Audio menu.

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

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

*Refer to 'Real data mapping 1'. See page 104.

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

16. Balance (Command2:t)

To adjust balance.

You can also adjust balance in the Audio menu.

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

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

*Refer to 'Real data mapping 1'. See page 104.

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

17. Color Temperature (Command2:u)

To adjust color temperature.

You can also adjust color temperature in the 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]

18. Red Adjustment (Command:v)

To adjust red in color temperature

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

Data Min:0 ~ Max:C8

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

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

19. Green Adjustment (Command:w)

To adjust green in color temperature.

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

Max: C8

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

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

*Real data mapping 2

0 : -20

5 : -19

A : -18

⋮

5F: -1

64: 0

69: +1

⋮

C3 : +19

C8 : +20

20. Blue Adjustment (Command:$)

To adjust blue in color temperature.

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

Data Min:0 ~ Max:C8

*Refer to 'Real data mapping 2'. See page 105.

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

21. ISM Method (Command2:p)

(Only Plasma TV model)

To avoid having a fixed image remain on screen.

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

Data 1: Inversion   2: Orbiter
     4: White Wash   8: Normal

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

22. Low Power (Command2:q)

(Only Plasma TV model)

To control the low power function on/off.

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

Data 0: low power off
     1: low power on

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

23. Channel Tuning (Command: m a)

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

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

Digital channels have a Physical, Major, and Minor channel number. The Physical number is the actual digital channel number, the Major is the number that the channel should be mapped to, and the Minor is the sub-channel. Since the ATSC tuner automatically maps the channel to the Major number, the Physical number is not required when sending a command.
Data 0: Physical Channel Number
     NTSC air: 02~45, NTSC cable: 01, 0E~7D
     ATSC air: 01~45, ATSC cable: 01~87
Data1 & 2: Major Channel Number
  Data1: High byte   Data2: Low byte
  Two bytes are available for the Major and Minor, normally only the second byte is used.
Data3 & 4: Minor Channel Number
   Not needed for NTSC.

Data5:

7 Main/Sub Picture	6 Two/One Part Channel	5 Using Physical Channel	4 Reserved	3	2	1	0	Step
0 Main	0 Two	0 Use	x	0	0	0	0	NTSC Air
1 Sub	1 One	1 No Use	x	0	0	0	1	NTSC Cable
			x	0	0	1	0	ATSC Air
			x	0	0	1	1	ATSC Cable_std
			x	0	1	0	0	ATSC Cable_hrc
			x	0	1	0	1	ATSC Cable_irc
			x	0	1	1	0	ATSC cable_auto
			x	0	1	1	1	Reserved
			x	x	x	x	x	...
			x	1	1	1	1	Reserved

The table above lists the binary code which must be converted to Hexadecimal before sending. For example: The binary code to tune the sub source to an NTSC cable channel is "1000 0001", which translates to "81" in Hex.

* 7th bit : For which source do you want to change the channel.

* 6th bit: Use a two part or one part channel. Most cases just use 0 since it's ignored when using NTSC.

* 5th bit: Use 0 with NTSC since it can only use the phys-ical channel number. Normally use 1 for ATSC since most times it doesn't matter what the physical number is.

* 4th bit: Set to 0.

* 3-0 bits: Choose signal type.

* Tune Command Examples:

1. Tune to the analog (NTSC) cable channel 35.
   Data 0 = Physical of 35 = 23
   Data 1 & 2 = No Major = 00 00
   Data 3 & 4 = No Minor = 00 00
   Data 5 = 0000 0001 in binary = 01
   Total = ma 00 23 00 00 00 00 01

2. Tune to the digital (ATSC) local channel 30-3.
   Data 0 = Don't know Physical = 00
   Data 1 & 2 = Major is 30 = 00 1E
   Data 3 & 4 = Minor is 3 = 00 03
   Data 5 = 0010 0010 in binary = 22
   Total = ma 00 00 00 1E 00 03 22

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

24. Channel Add/Del (Command: m b)

To add and delete the channels

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

Data 0: Channel Delete   Data 1: Channel Add

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

25. Key (Command: m c)

To send IR remote key code.

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

Data Key code: Refer to page 100.

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 : DTV (Antenna)   Data 01 : DTV (Cable)
Data 10 : Analog (Antenna) Data 11 : Analog (Cable)
Data 20 : AV1   Data 21 : AV2
Data 40 : Component 1   Data 41 : Component 2
Data 60 : RGB-PC   Data 90 : HDMI1
Data 91 : HDMI2   Data 92 : HDMI3

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

27. 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]

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