VCR SETUP

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

■ Use the ISM feature in the Option menu to avoid having a fixed image remain on the screen for a long period of time. If the 4:3 picture format is used; the fixed images on the sides of the screen may remain visible on the screen. This phenomenon is common to all manufactures and in consequence the manufactures warranty does not cover the product bearing this phenomenon.

When connecting with an antenna
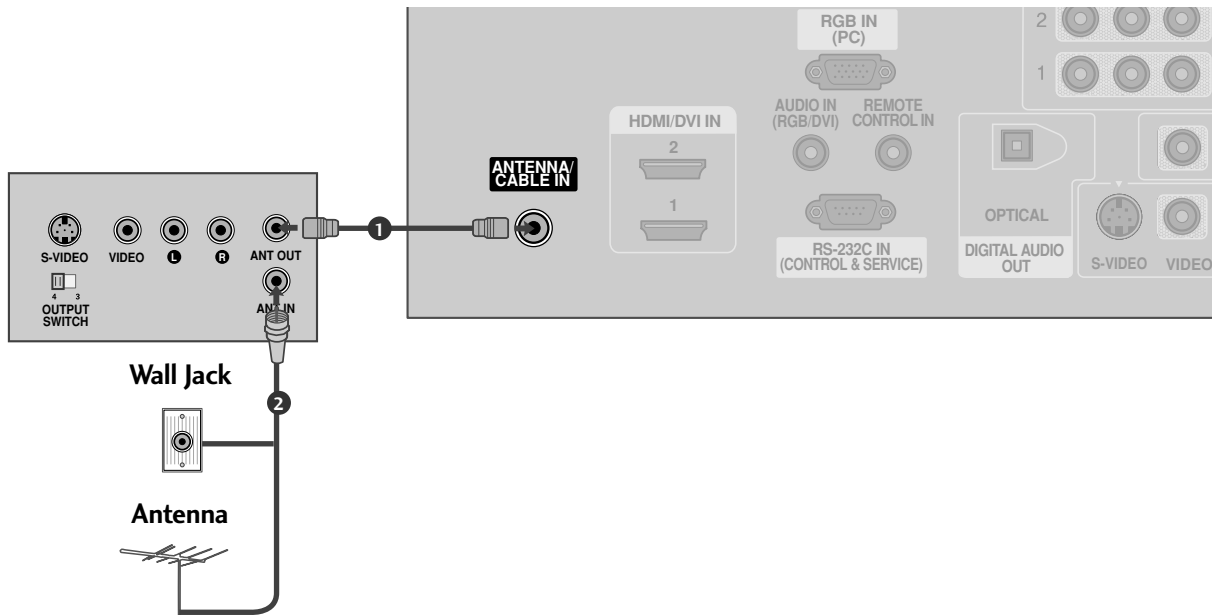
1. How to connect

❶ Connect the RF antenna out socket of the VCR to the **Antenna** socket on the set.

❷ Connect the antenna cable to the RF antenna in socket of the VCR.

2. How to use

■ Set VCR output switch to 3 or 4 and then tune TV to the same channel number.

■ Insert a video tape into the VCR and press PLAY on the VCR. (Refer to the VCR owner's manual.)
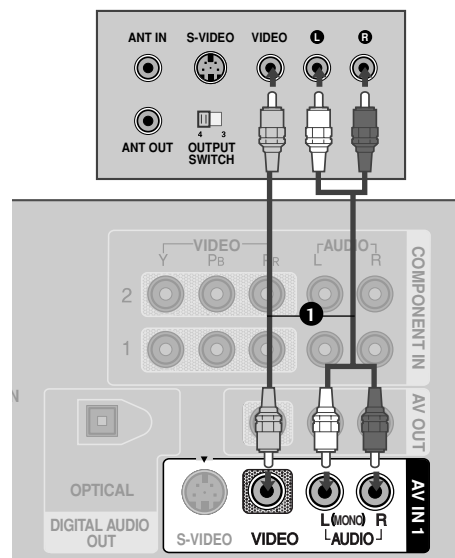
When connecting with a RCA cable

1. How to connect

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

2. How to use

■ Insert a video tape into the VCR and press PLAY on the VCR. (Refer to the VCR owner's manual.)

■ Select **AV1** input source with using the **INPUT** button on the remote control.

■ If connected to **AV IN2**, select **AV2** input source.

! NOTE

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

# When connecting with an S-Video cable

1. How to connect

1 Connect the S-VIDEO output of the VCR to the **S-VIDEO** input on the set.

2 Connect the audio outputs of the VCR to the **AUDIO** input jacks on the set.

2. How to use

■ Insert a video tape into the VCR and press PLAY on the VCR. (Refer to the VCR owner's manual.)

■ Select **AV1** input source with using the **INPUT** button on the remote control.

■ If connected to **AV IN2**, select **AV2** input source.

! NOTE

▶ The picture quality is improved: compared to normal composite (RCA cable) input.
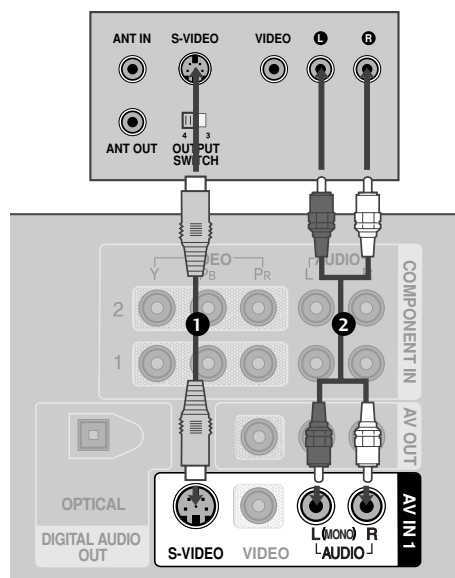
⚠ CAUTION

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

OTHER A/V SOURCE SETUP

1. How to connect

1 Connect the **AUDIO/VIDEO** jacks between TV and external equipment. Match the jack colors.

(Video = yellow, Audio Left = white, and Audio Right = red)

2. How to use

- Select **AV2** input source with using the **INPUT** button on the remote control.

- If connected to **AV IN1** input, select **AV1** input source.

- Operate the corresponding external equipment.

Camcorder

Video Game Set

VIDEO Ⓛ Ⓡ

AV IN 2

S-VIDEO

VIDEO L/MONO-AUDIO-R

❗ NOTE

▶ This TV finds the connected input sources automatically for AV1, AV2, Component 1-2, RGB, HDMI1/DVI and HDMI2 sources are connected.
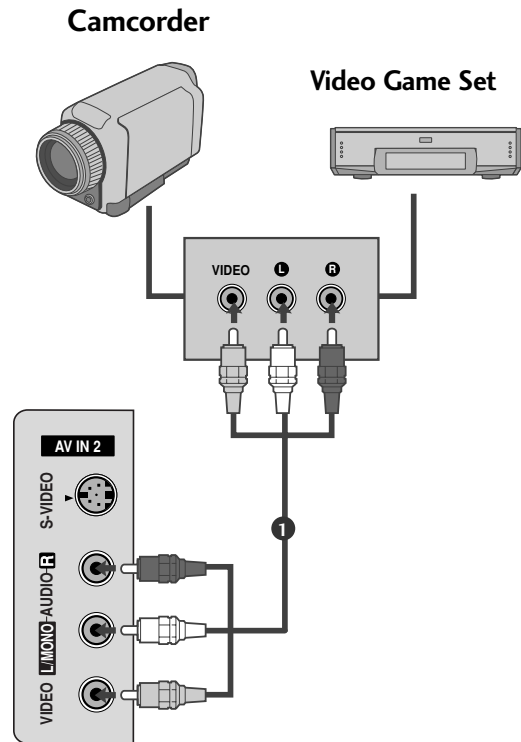
PC SETUP

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

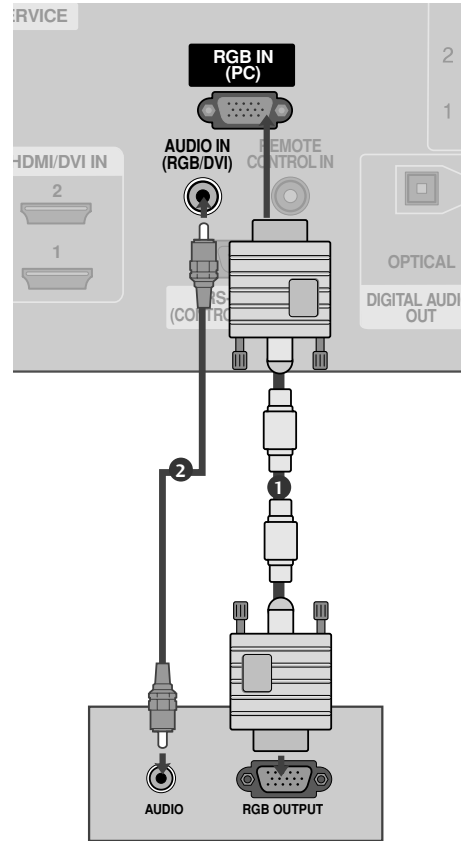## When connecting D-sub 15pin cable

1. How to connect

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

② Connect the PC audio output to the **AUDIO IN (RGB/DVI)** jack on the set.

2. How to use

■ Turn on the PC and the set.

■ Select **RGB-PC** input source in main input option of SETUP menu. **(▶ p.67)**

! NOTE

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

When connecting HDMI to DVI cable
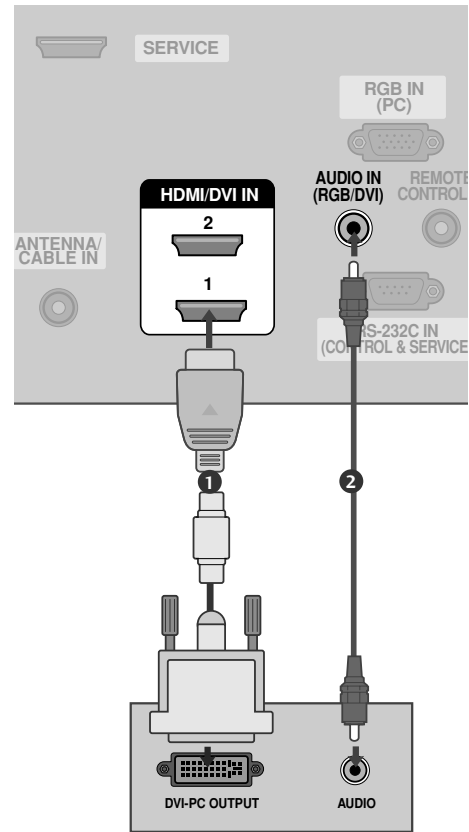
1. How to connect

1 Connect the DVI output of the PC to the **HDMI/DVI IN 1** or **2** jack on the set.

2 Connect the PC audio output to the **AUDIO IN (RGB/DVI)** jack on the set.

2. How to use

■ Turn on the PC and the set

■ Select **HDMI1/DVI** or **HDMI2** input source with using the **INPUT** button on the remote control.

! NOTE

► If the PC has a DVI output and no HDMI output, a separated audio connection is necessary.

► If the PC does not support Auto DVI, you need to set the output resolution appropriately. To get the best picture quality, adjust the output resolution of PC graphics card's output resolution to 1024x768, 60Hz.

SERVICE

RGB IN (PC)

AUDIO IN (RGB/DVI)

REMOTE CONTROL

HDMI/DVI IN

ANTENNA/ CABLE IN

2

1

RS-232C IN (CONTROL & SERVICE)

1   2

DVI-PC OUTPUT   AUDIO

❗ NOTES

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

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

▶ When Source Devices are connected with HDMI/DVI Input, the output PC Resolution (VGA, SVGA, XGA, WXGA), Position and Size may not fit on the Screen. Press the ADJUST button to adjust the screen Position of the TV SET and contact a PC graphics card service center.

▶ When Source Devices connected with HDMI/DVI Input, output TV SET Resolution (480p, 720p, 1080i, 1080p) and TV SET Display fit EIA/CEA-861-B Specification to Screen. If not, refer to the

Manual of HDMI/DVI Source Devices or contact your service center.

▶ If the HDMI/DVI Source Device is not connected to the Cable or if there is a poor cable connection, "No signal" is displayed in the HDMI/DVI Input. In this case, that Video Resolution is not supported. If "Invalid Format" is displayed, refer to the Source Device manual or contact your service center.

▶ Avoid keeping a fixed image on the screen for a long period of time. The fixed image may become permanently imprinted on the screen.

▶ The synchronization input form for Horizontal and Vertical frequencies is separate.

Supported Display Specifications

RGB-PC, HDMI1/DVI-PC mode

Resolution	Horizontal Frequency(KHz)	Vertical Frequency(Hz)
640x350	31.469	70.08
720x400	31.469	70.08
640x480	31.469	59.94
800x600	37.879	60.31
1024x768	48.363	60.00
1280x768	47.776	59.87
1360x768	47.720	59.799
1366x768	47.130	59.65

* RGB-PC mode only: 640x350, 720X400

HDMI1/DVI-DTV, HDMI2-DTV mode

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

# EXTERNAL EQUIPMENT SETUP

Screen Setup for PC mode

Overview

When RGB connect to PC output and select the RGB-PC in Input source, this function is used.

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

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

When you change the resolution, select the proper resolution in present input to see the best picture appearance.
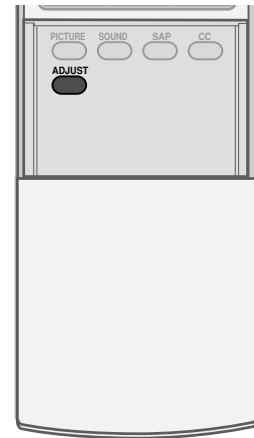
Adjustment for screen Resolution, Position, Size, and Phase

① Press the **ADJUST** button and then use ▲ or ▼ button to select **Resolution**, **Position**, **Size**, or **Phase**.

② Press the **ENTER** button and then use ▲ ▼ ◄ ► button to make appropriate adjustments.
  - ■ The **Phase** adjustment range is **-16 ~ +16**.
    In HDMI/DVI-PC mode, **Phase** is not available.
  - ■ The **Size** adjustment range is **-30 ~ +30**.
    In HDMI/DVI-PC mode, **Size** is not available.

③ Press the **ENTER** button.

Initializing (Reset to original factory values)

To initialize the adjusted values

① Press the **ADJUST** button and then use ▲ or ▼ button to select **Reset**.

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

③ Press the **ENTER** button.

|	
Resolution	This function allows you select resolution of XGA/WXGA.
Position	This function is to adjust picture to left/right and up/down as you prefer.
Size	This function is to minimize any vertical bars or stripes visible on the screen background. And the horizontal screen size will also change.
Phase	This function allows you to remove any horizontal noise and clear or sharpen the image of characters.

EXTERNAL EQUIPMENT SETUP

AV OUT SETUP

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

1. How to connect

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

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

! NOTE

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

▶ We recommend to use the AV OUT jacks for VCR recording.
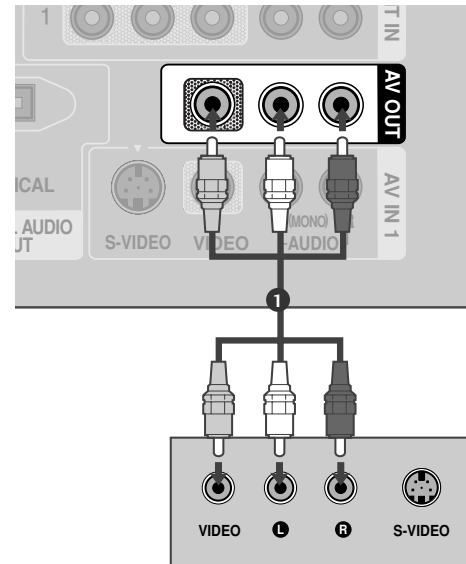
DIGITAL AUDIO OUTPUT

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

1. How to connect

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

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

3 Set the "TV Speaker option - Off" in the AUDIO menu. **(▶ p.84).** 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.84)**

⚠ CAUTION

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

EXTERNAL EQUIPMENT SETUP
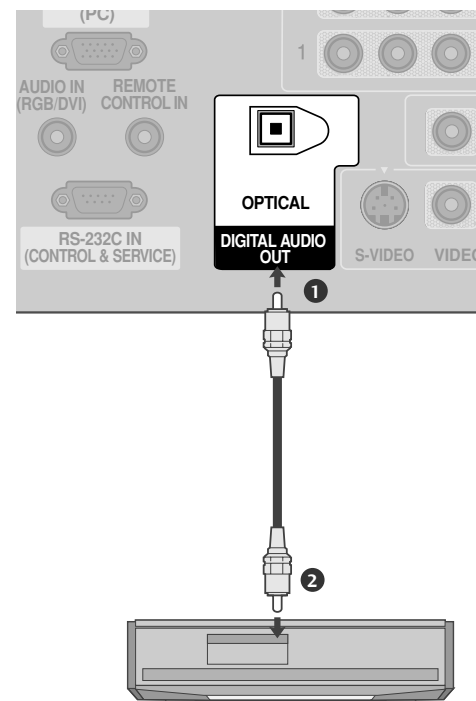
REMOTE CONTROL FUNCTIONS

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

|	
MODE	Select the remote operating mode: TV, DVD, VCR, AUDIO, CABLE or STB.
VCR/DVD control buttons	Control video cassette recorders or DVD players.
MENU	Displays the main menu.
BRIGHT -/ +	●Adjust the brightness on screen. ●It turns to the default settings brightness by changing mode source.
THUMBSTICK (Up/Down/Left Right/ENTER)	Navigate the on-screen menus and adjust the system settings to your preference.
EXIT	Clear all on-screen displays and return to TV viewing from any menu.
TIMER	Select the amount of time before your TV turns off automatically. ▶ **p.90**
RATIO	Change the aspect ratio. ▶ **p.92-93**
SIMPLINK	C? ▶ **p.92-93**
VOLUME UP /DOWN	Increase/decrease the sound level.
MUTE	Switch the sound on or off. ▶ **p.38**
FAV	Scroll through the programmed Favorite channels.
CHANNEL UP/DOWN	Select available channels.
NUMBER button	
— (DASH)	Used to enter a program number for multiple program channels such as 2-1, 2-2, etc.
BACK	Tune to the last channel viewed.
LIGHT	Illuminates the remote control buttons of selected mode.
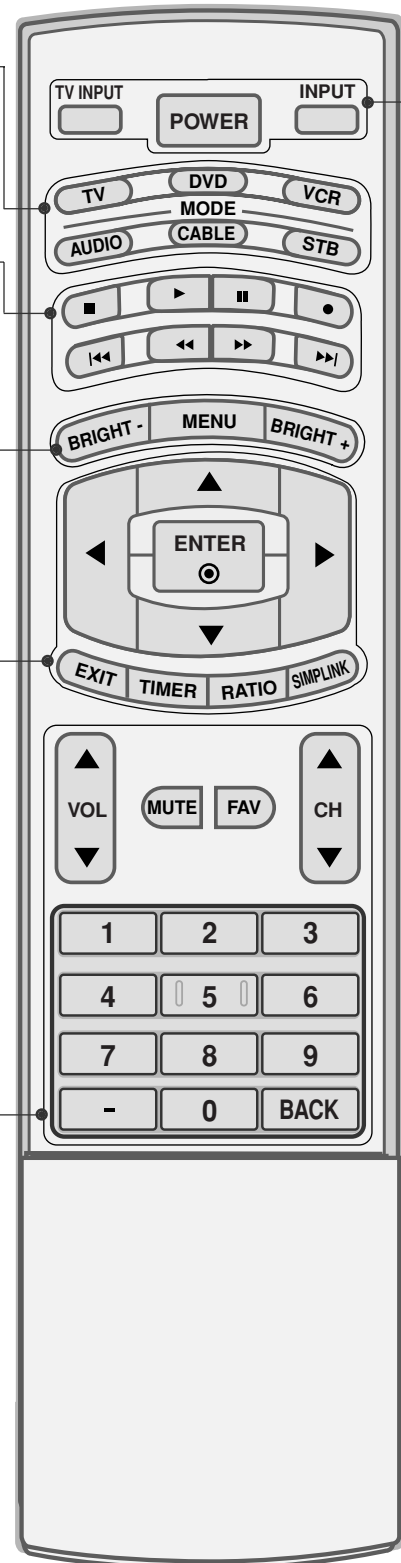
POWER | Turns your TV or any other programmed equipment on or off, depending on the mode.

TV INPUT | In AV 1-2, Component 1-2, RGB-PC (or RGB-DTV), HDMI1/DVI, and HDMI2 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 (or RGB-DTV), HDMI1/DVI and HDMI2.
(AV 1-2, Component 1-2, RGB-PC (or RGB-DTV), HDMI1/DVI, and HDMI2 input sources are linked automatically, only if these are connected.)

Inside the Sliding Cover
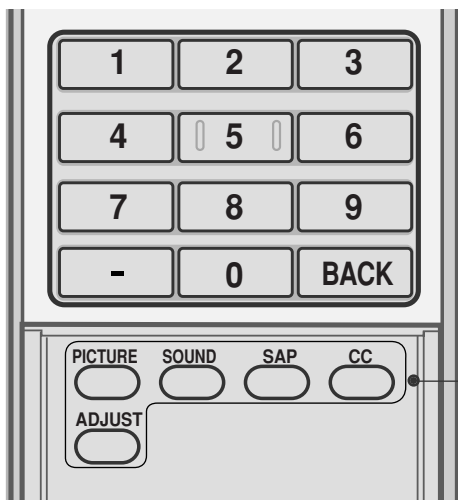
PICTURE | Adjust the factory preset picture depend on the viewing environment. ▶ **p.69**

SOUND | Select the appropriate type of sound for type of program. ▶ **p.80**

SAP | ○Analog mode: Selects MTS sound (Mono, Stereo, and a SAP)
○DTV mode: Change the audio language.

CC | Select a closed caption. ▶ **p.94**
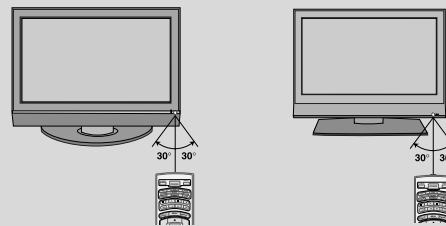(*In DTV/CADTV mode ▶ **p.95**)

ADJUST | Adjust the screen position, size and phase in PC mode. ▶ **p.**

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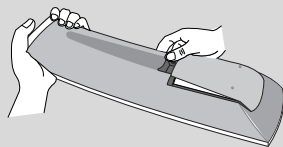
■ Open the battery compartment cover on the back side and install the batteries matching correct polarity (+with +,-with -).

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

■ Close cover.

Remote control effective range

30° 30°   30° 30°

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

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

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 ⏻/|, **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.

► When the TV is turned on, the indicator will blink green before the picture is seen.

CHANNEL SELECTION

1 Press the **CH ▲ ▼** 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.
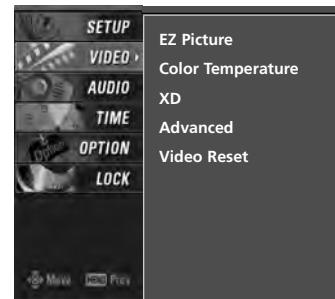
30

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.

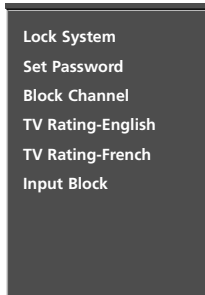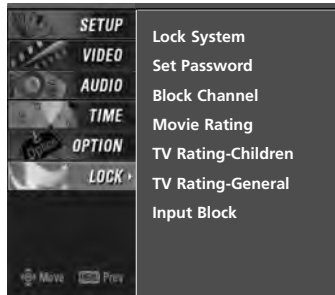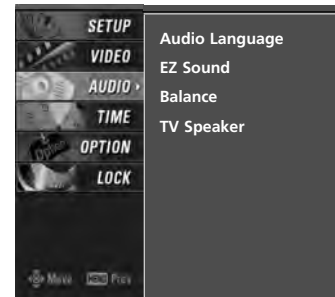**2** Press the ▶ button and then use ▲ ▼ ◀ ▶ button to display the available menus.

SETUP

SETUP ▸
VIDEO
AUDIO
TIME
OPTION
LOCK

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

VIDEO

SETUP
VIDEO ▸
AUDIO
TIME
OPTION
LOCK

EZ Picture
Color Temperature
XD
Advanced
Video Reset

LOCK

For USA

SETUP
VIDEO
AUDIO
TIME
OPTION
LOCK ▸

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

For Canada

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

AUDIO

SETUP
VIDEO
AUDIO ▸
TIME
OPTION
LOCK

Audio Language
EZ Sound
Balance
TV Speaker

OPTION

SETUP
VIDEO
AUDIO
TIME
OPTION ▸
LOCK

Aspect Ratio
Caption/Text
Caption Option
Language
ISM Method
Low Power

TIME

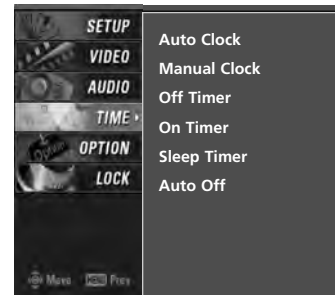| SETUP |
|---|
| VIDEO |
| AUDIO |
| TIME ▸ |
| OPTION |
| LOCK |

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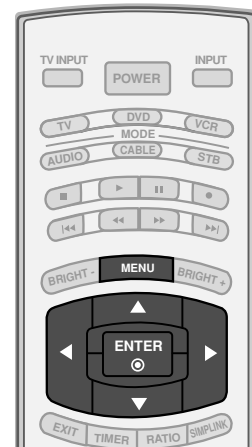Off Timer
On Timer
Sleep Timer
Auto Off

WATCHING TV / CHANNEL CONTROL

AUTO SCAN (EZ SCAN)

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

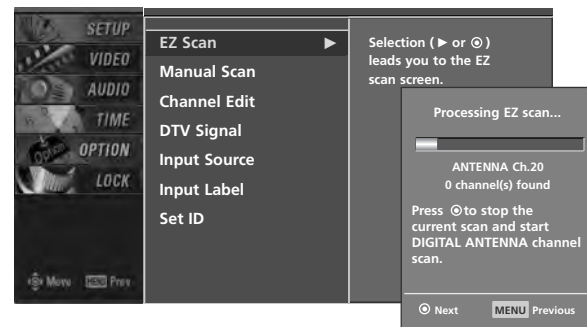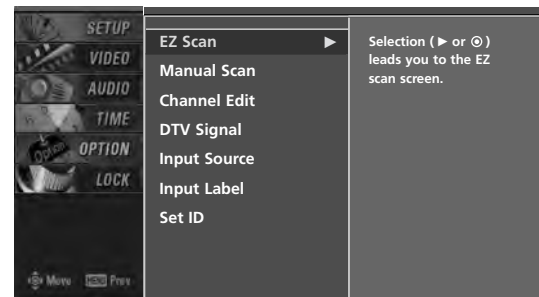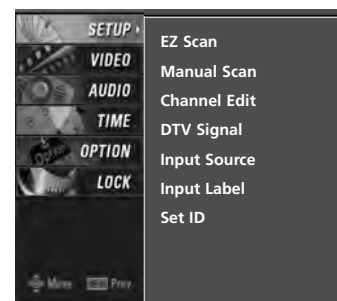Run EZ Scan again after any Antenna/Cable connection changes.

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

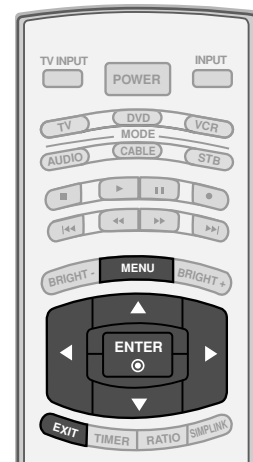**1** Press the **MENU** button and then use ▲ or ▼ button to select the **SETUP** menu.
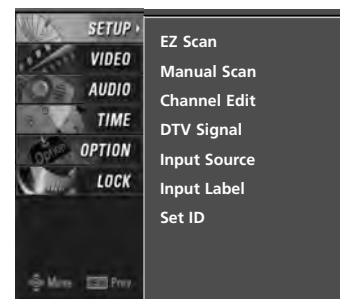
2 Press the ► button and then use ▲ or ▼ button to select **EZ Scan**.

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

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

1

EZ Scan ►   Selection (► or ◉)
Manual Scan   leads you to the EZ
Channel Edit   scan screen.
DTV Signal
Input Source
Input Label
Set ID

2

EZ Scan ►   Selection (► or ◉)
Manual Scan   leads you to the EZ
Channel Edit   scan screen.
DTV Signal
Input Source   **Processing EZ scan...**
Input Label
Set ID   ANTENNA Ch.20
                       0 channel(s) found

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

                    ◉ Next   MENU Previous

3

ADD/DELETE CHANNEL (MANUAL SCAN)

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

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

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

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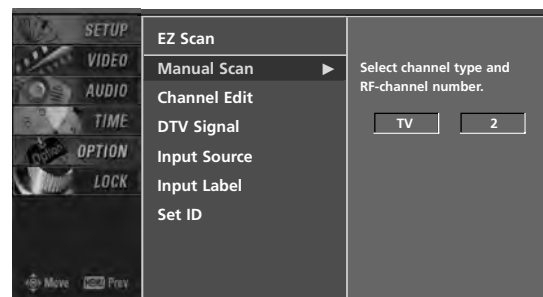select **TV**, **DTV**, **CATV**, and **CADTV**.

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

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

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

SETUP ▸
VIDEO
AUDIO
TIME
OPTION
LOCK

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

Move   Prev

1

SETUP
VIDEO
AUDIO
TIME
OPTION
LOCK

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

Select channel type and
RF-channel number.

| TV | 2 |

Move   Prev

2

SETUP
VIDEO
AUDIO
TIME
OPTION
LOCK

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

Select channel type and
RF-channel number.

| ▲ TV ▶ | 2 |

TV 2-0

Press ◉
to delete the channel.

Move   Prev

3 **4** **5**
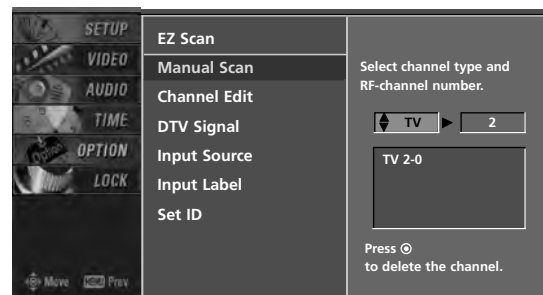
CHANNEL EDITING

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

A Custom List can be created by toggling each channel on or off with ENTER button. The channels in the Custom List are displayed in black color, and the channels deleted from the Custom List are displayed in gray color. 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.
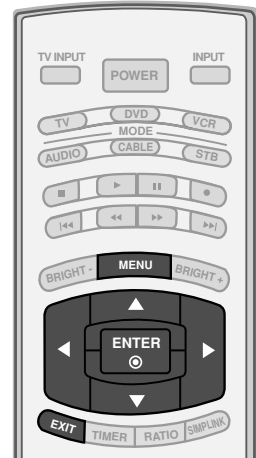
1 Press the **MENU** button and then use ▲ or ▼ button to select the **SETUP** menu.

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 heart-mark will appear in front of that channel number.

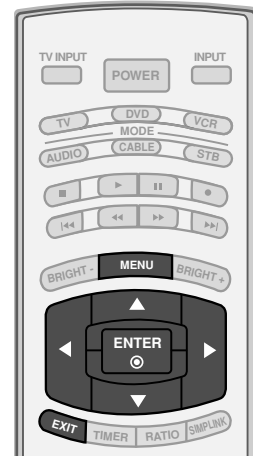**5** Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.
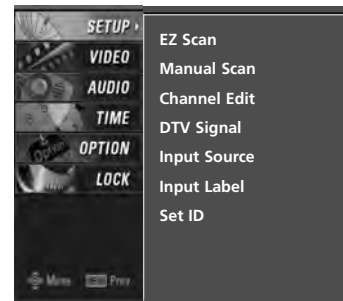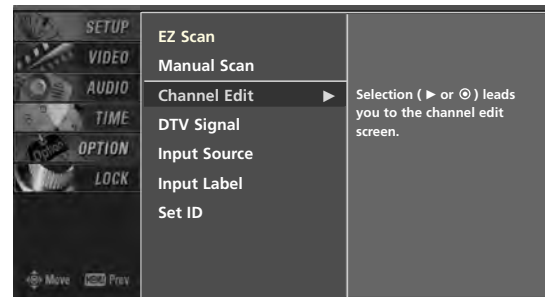
DTV SIGNAL STRENGTH

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

DTV Signal: This function is only available when the input signal is DTV or CADTV.
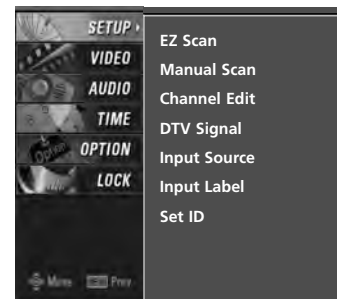
1 Press the **MENU** button and then use ▲ or ▼ button to select the **SETUP** menu.
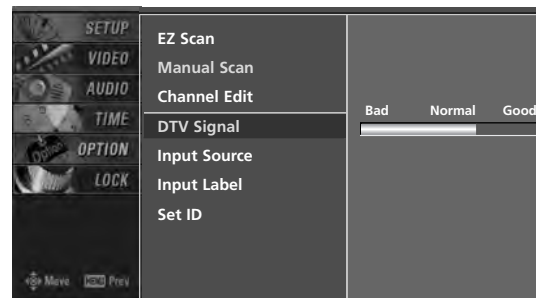
2 Press the ▶ button and then use ▲ or ▼ button to select **DTV Signal.**

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

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

INPUT SOURCE SELECTION

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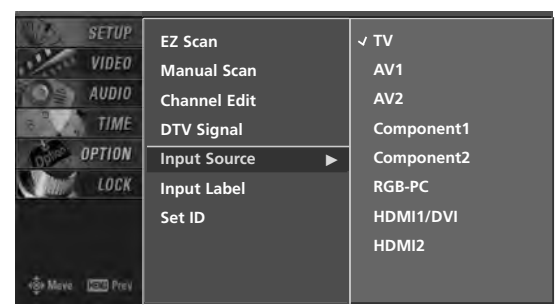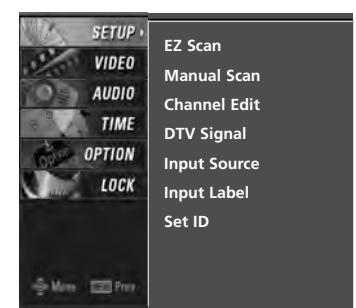
1 Press the **MENU** button and then use ▲ or ▼ button to select the **SETUP** menu.

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

3 Press the ► button and then use ▲ or ▼ button to select the source: **TV**, **AV1**, **AV2**, **Component1**, **Component2**, **RGB-PC**, **HDMI1/DVI**, or **HDMI2**.
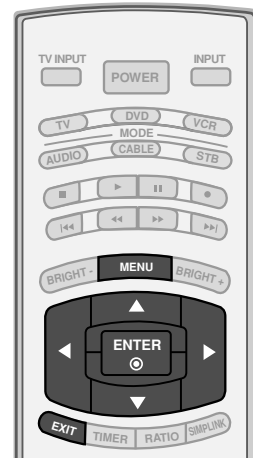
4 Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.

INPUT LABEL

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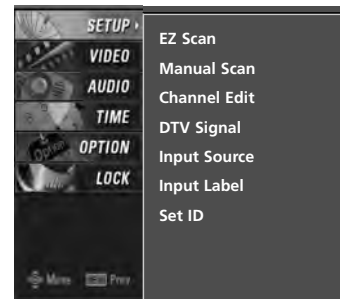
1   Press the **MENU** button and then use ▲ or ▼ button to select the **SETUP** menu.

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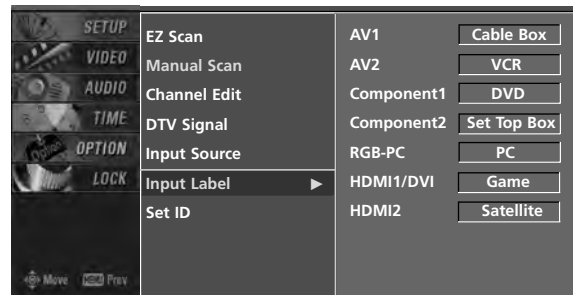
3   Press the ► button and then use ▲ or ▼ button to select the source: **AV1**, **AV2**, **Component1**, **Component2**, **RGB-PC**, **HDMI1/DVI** or **HDMI2**.

4   Press the ◄ or ► button to select the label.

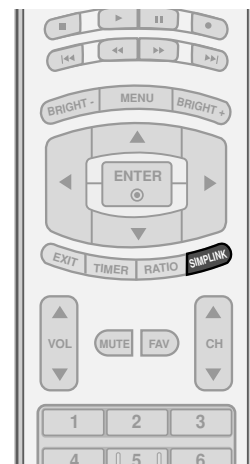5   Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.

SIMPLINK

This Enables you to control and play other AV devices connected to TV through HDMI cable without additional cables and settings.

In order to control AV devices connected to TV without Simplink, user had to switch the input mode of TV and use additional remote control bundled to the AV devices.

Simplink provides an easy solution to control all connected devices with one remote control.

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

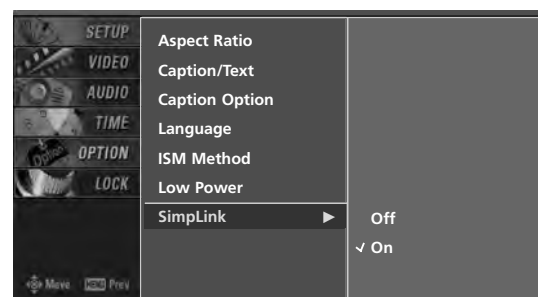**2** Press the ► button and then use ▲ or ▼ button to select **SimpLink**.

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

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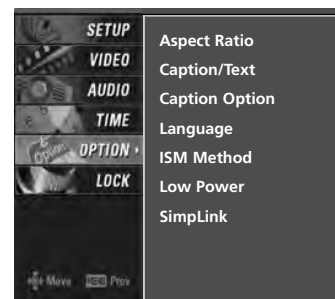
❗ NOTE

► While Auto Tuning is proceeding, Simplink does not work.
► Except Auto Tuning, Simplink stops the current activity or clears Display OSD on the screen. After Simplink workes, only Info. OSD resumes the display.
► While Menu, XSTUDIO is proceeding, Simplink does not work.

SETUP
VIDEO
AUDIO
TIME
OPTION ►
LOCK

Aspect Ratio
Caption/Text
Caption Option
Language
ISM Method
Low Power
SimpLink

1

SETUP
VIDEO
AUDIO
TIME
OPTION
LOCK

Aspect Ratio
Caption/Text
Caption Option
Language
ISM Method
Low Power
SimpLink ►

Off
✓ On

2 **3** **4**

Simplink Functions

■ **Recording/Disc playback :** Control connected AV devices by pressing the ▲ ▼ ◄ ►, **ENTER** buttons and buttons for play, stop, pause, fast reverse, fast forward, chapter skip.

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

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

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

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

(A device, which is connected to TV through HDMI cable but does not support Simplink, does not provide this function)

AV devices supporting SimpLink

■ **DVD Player H/T** : DVD player embeddedH/T device.

■ **HDD embedded DVD Recorder (RH)** : DVD recorder with HDD.

■ **DVD Recorder Combo(R-Combi)** : DVD Recorder integrating VCR.

■ **DVD Player** : Pre-recorded discs playback only.

SimpLink Menu

► Selected Device

► When no device is connected (displayed in gray)

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

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

❷ **DISC playback**: Select and play connected 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 Home theatre/Audio Out to TV**: Select Home theatre or TV speaker for Audio Out.