LG
Life's Good

OWNER'S MANUAL

M228WD

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

DVB
Digital Video Broadcasting

Trade Mark of the DVB Digital Video Broadcasting Project (1991 to 1996)

ID Number(s): 4984: M228WD

SAFETY PRECAUTIONS

Please read these safety precautions carefully before using the product.

⚠ **Warning**   If you ignore the warning message, you may be seriously injured or there is a possibility of accident or death.

⚠ **Caution**   If you ignore the caution message, you may be slightly injured or the product may be damaged

Precautions in installing the Product

⚠ **Warning**

Keep away from heat sources like electrical heaters.
- Electrical shock, fire, malfunction or deformation may occur.

Keep the packing anti-moisture material or vinyl packing out of the reach of children.
- Anti-moisture material is harmful if swallowed. If swallowed by mistake, force the patient to vomit and visit the nearest hospital. Additionally, vinyl packing can cause suffocation. Keep it out of the reach of children.

Do not put heavy objects on the product or sit upon it.
- If the product collapses or is dropped, you may be injured. Children must pay particular attention.

Do not leave the power or signal cable unattended on the pathway.
- The passerby can falter, which can cause electrical shock, fire, product breakdown or injury.

Install the product in a neat and dry place.
- Dust or moisture can cause electrical shock, fire or product damage.

**If you can smell smoke or other odors or hear a strange sound unplug the power cord and con
tact the service center.**
- If you continue to use without taking proper measures, electrical shock or fire can occur.

If you dropped the product or the case is broken, turn off the product and unplug the power cord.
- If you continue to use without taking proper measures, electrical shock or fire can occur. Contact the service center.

Do not drop an object on or apply impact to the product. Do not throw any toys or objects on the product screen.
- It can cause injury to human, problem to product and damage the display.

Do not let the product fall or drop when connecting it with an external device.
- This may cause injury and/or damage to the product.

When connecting it with a game device, keep a distance of four times as long as the diagonal measurement of the screen from the device.
- If the product falls because of the short cable, this may cause injury and/or damage to the product.

Leaving a fixed image on the screen for a long time may cause damage to the screen and cause image burn-in. Make sure to use a screen saver on the product. Burn-in and related problems are not covered by the warranty on this product.

⚠ **Caution**

Make sure the product ventilation hole is not blocked. Install the product in a suitably wide place (more than 10cm from the wall)
- If you install the product too close to the wall, it may be deformed or fire can break out due to internal heat.

Do not block the ventilation hole of the product by a tablecloth or curtain.
- The product can be deformed or fire can break out due to overheating inside the product.

Install the product on a flat and stable place that has no risk of dropping the product.
- If the product is dropped, you may be injured or the product may be broken.

Install the product where no EMI occurs.

Keep the product away from direct sunlight.
- The product can be damaged.

SAFETY PRECAUTIONS

Electrical Power Related Precautions

⚠ **Warning**

Make sure to connect the power cable to the grounded current.
- You may be electrocuted or injured.

Use the rated voltage only.
- The product can be damaged, or you may be electrocuted.

In the presence of thunder and lightning, never touch the power cord and signal cable because it can be very dangerous.
- It can cause electric shock.

Do not connect several extension cords, electrical appliances or electrical heaters to a single outlet. Use a power bar with a grounding terminal designed for exclusive use with the computer.
- A fire can break out due to overheating.

Do not touch the power plug with wet hands. Additionally, if the cord pin is wet or covered with dust, dry the power plug completely or wipe dust off.
- You may be electrocuted due to excess moisture.

If you don't intend to use the product for a long time, unplug the power cable from the product.
- Covering dust can cause a fire, or insulation deterioration can cause electric leakage, electric shock or fire.

Fix the power cable completely.
- If the power cable is not fixed completely, a fire can break out.

Hold the plug when pulling out the power cable. Do not bend the power cord with excessive force or put heavy objects on the power cord.
- The power line can be damaged, which may cause electric shock or fire.

Do not insert a conductor (like a metal chopstick) into one end of the power cable while the other end is connected to the input terminal on the wall. Additionally, do not touch the power cable right after plugging into the wall input terminal.
- You may be electrocuted.

The power supply cord is used as the main disconnection device. Ensure that the socket-outlet is easily accessible after installation.

Main power breaker is the power cord and this breaking device must be located at a location where it is easy to operate.

⚠ **Caution**

Do not unplug the power cord while the product is in use.
- Electrical shock can damage the product.

Precautions in Moving the Product

⚠ **Warning**

Make sure to turn off the product.
- You may be electrocuted or the product can be damaged.

Make sure to remove all cables before moving the product.
- You may be electrocuted or the product can be damaged.

SAFETY PRECAUTIONS

⚠ **Caution**
Do not shock the product when moving it.
- You may be electrocuted or the product can be damaged.

Do not dispose the product-packing box. Use it when you move.

Make the panel face forward and hold it with both hands to move.
- If you drop the product, the damaged product can cause electric shock or fire. Contact with the service center for repair.

Precautions in Using the Product

⚠ **Warning**
Do not disassemble, repair or modify the product at your own discretion.
- Fire or electric shock accident can occur.
- Contact the service center for check, calibration or repair.

When the display is to be left unattended for an extended period of time, unplug it from the wall outlet.

Keep the product away from water.
- Fire or electric shock accident can occur.

⚠ **Caution**
Do not put or store inflammable substances near the product.
- There is a danger of explosion or fire due to careless handling of the inflammable substances.

When cleaning the brown tube surface, unplug the power cord and scrub with soft cloth to pre vent scratching. Do not clean with a wet cloth.
- The water can sink into the product, which can cause electric shock or serious malfunction.

Take a rest from time to time to protect your vision.

Keep the product clean at all times.

Take a comfortable and natural position when working with a product to relax the muscles.

Take a regular break when working with a product for a long time.

Do not press strongly upon the panel with a hand or sharp object such as nail, pencil or pen, or make a scratch on it.
Keep the proper distance from the product.
- Your vision may be impaired if you look at the product too closely.

Set the appropriate resolution and clock by referring to the User's Guide.
- Your vision can be impaired.

Use authorized detergent only when cleaning the product. (Do not use benzene, thinner or alcohol.)
- Product can be deformed.

On Disposal

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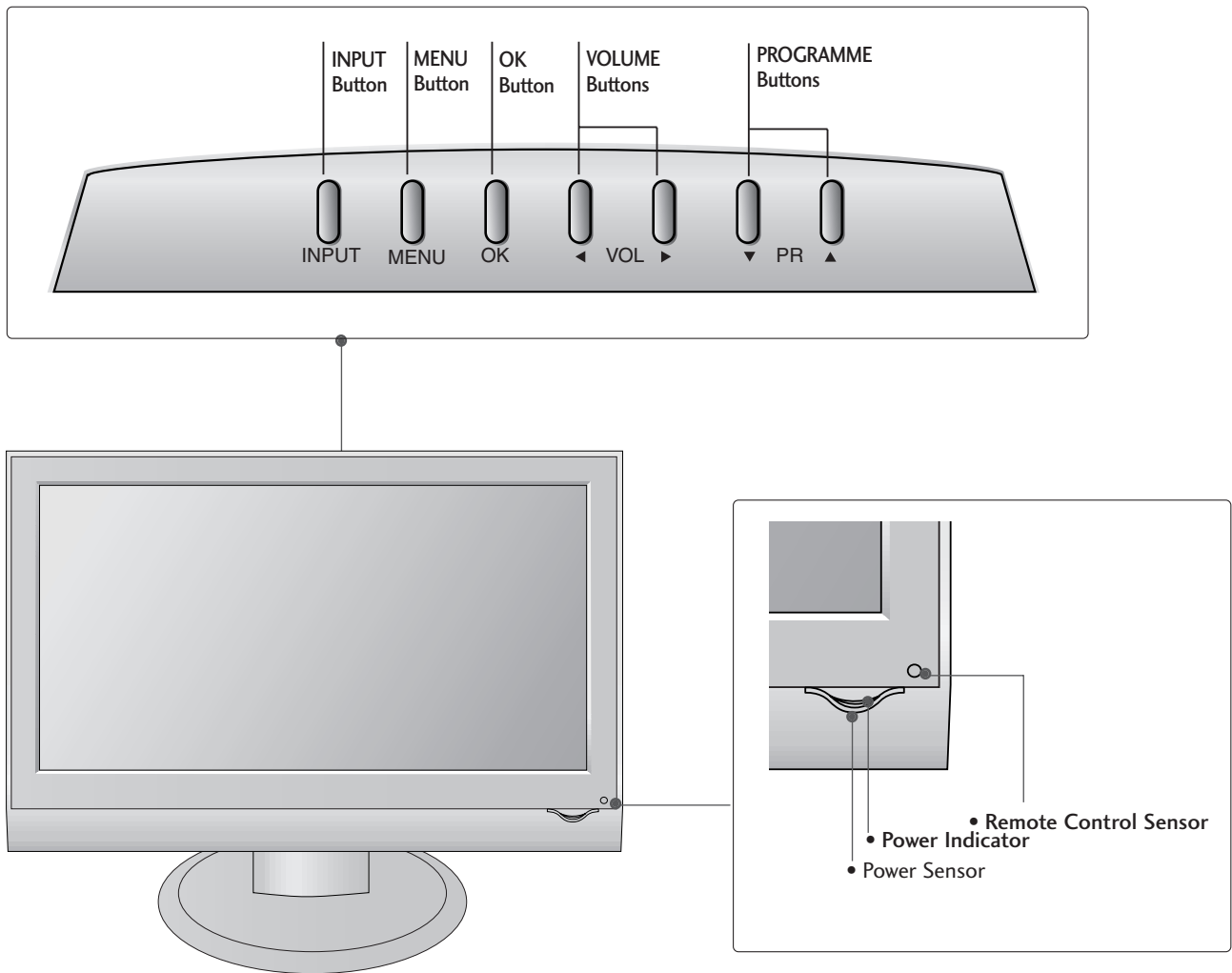**Do not dispose of this product with general household waste.**
Disposal of this product must be carried out in accordance to the regulations of your local authority.

PREPARATION

FRONT PANEL CONTROLS

■ This is a simplified representation of the front panel. Here shown may be somewhat different from your set.

INPUT
Button

MENU
Button

OK
Button

VOLUME
Buttons

PROGRAMME
Buttons

INPUT   MENU   OK   ◄ VOL ►   ▼ PR ▲

• Remote Control Sensor
• Power Indicator
• Power Sensor

BACK PANEL INFORMATION

■ This is a simplified representation of the back panel. Here shown may be somewhat different from your set.
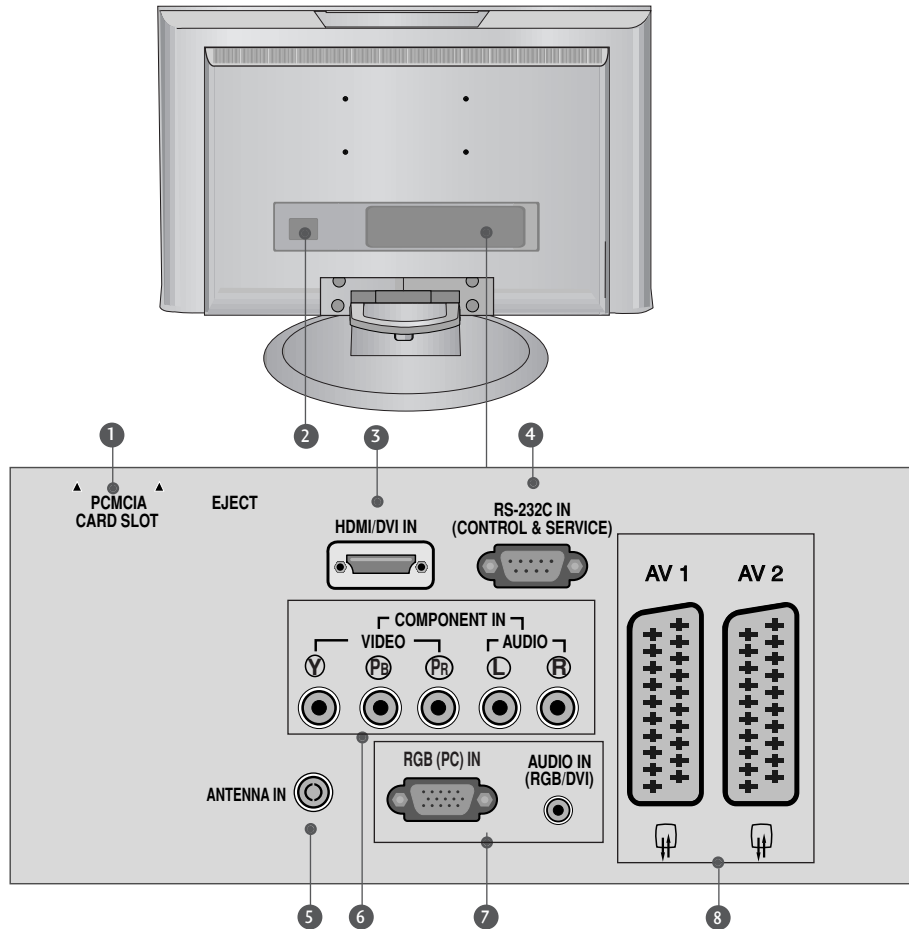
❶ **PCMCIA (Personal Computer Memory Card International Association) Card Slot**
(This feature is not available in all countries.)

❷ **Power Cord Socket**
This set operates on an AC power. The voltage is indicated on the Specifications page. Never attempt to operate the set on DC power.

❸ **HDMI Input**
Connect a HDMI signal to HDMI IN.
Or DVI(VIDEO)signal to HDMI/DVI port with DVI to HDMI cable.

❹ **RS-232C IN (CONTROL & SERVICE) PORT**
Connect to the RS-232C port on a PC.

❺ **Antenna Input**
Connect over-the-air signals to this jack.

❻ **Component Input**
Connect a component video/audio device to these jacks.

❼ **RGB/DVI Audio Input**
Connect the monitor output from a PC to the appropriate input port.

❽ **Euro Scart Socket (AV1/AV2)**
Connect scart socket input or output from an external device to these jacks.
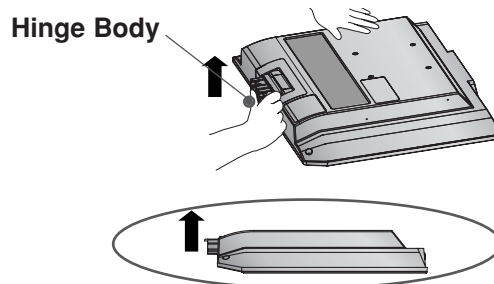
PREPARATION

STAND INSTALLATION

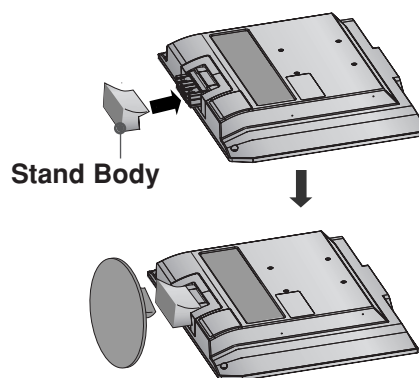■ Here shown may be somewhat different from your set.

1 Carefully place the product screen side down on a cushioned surface that will protect product and screen from damage.
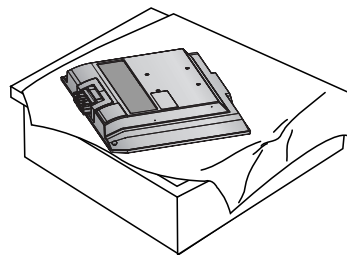
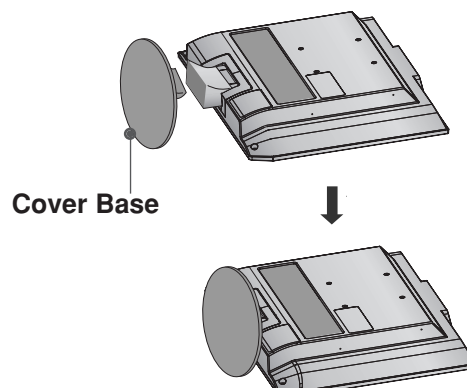**2** Hold the **hinge body** and bend it upward.

Hinge Body

3 Insert the **stand body** into the product until clicking sound.

Stand Body

4 Assemble the parts of the **stand body** with **cover base** of the product.

Cover Base

PREPARATION

DETACHING STAND

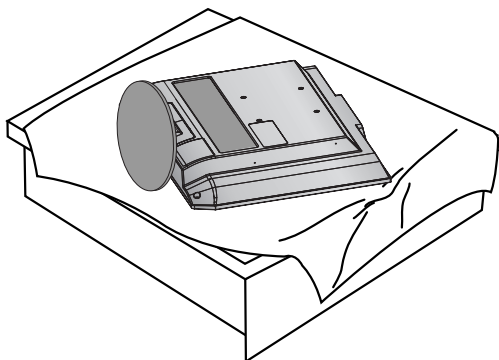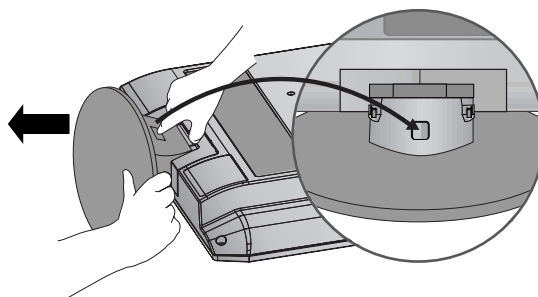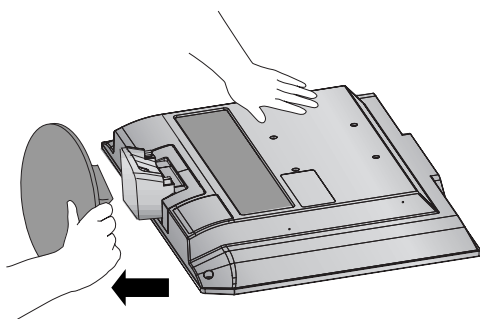■ Here shown may be somewhat different from your set.

1 Place the set with its front facing downward on a cushion or soft cloth.

2 Pull cover base backward during pressing botton on stand body.

3 Hold cover base and pull with shake it backward to separate from stand body.

4 Hold the stand and bend it upward.
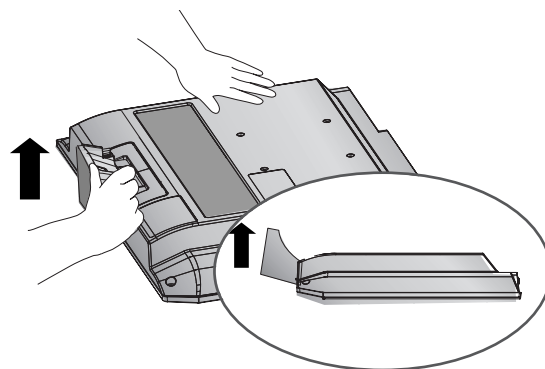
5 Pull stand body to separate from set during pressing 2 latches.
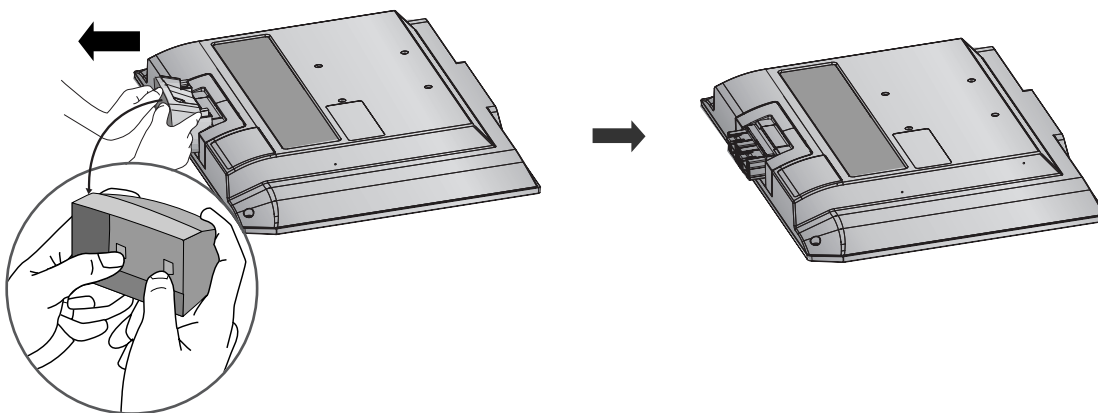
PREPARATION

BACK COVER FOR WIRE ARRANGEMENT

■ Here shown may be somewhat different from your set.

1 Connect the cables as necessary.

To connect an additional equipment, see the **External Equipment Setup** section.
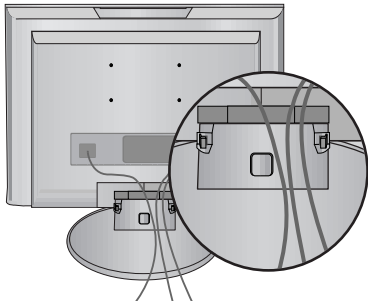
2 Install the **CABLE MANAGEMENT** as shown.
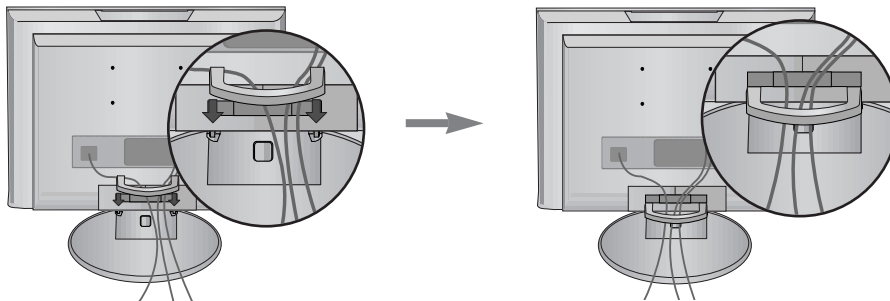
How to remove the cable management

First, press the cable management. Hold the **CABLE MANAGEMENT** with both hands and pull it upward.
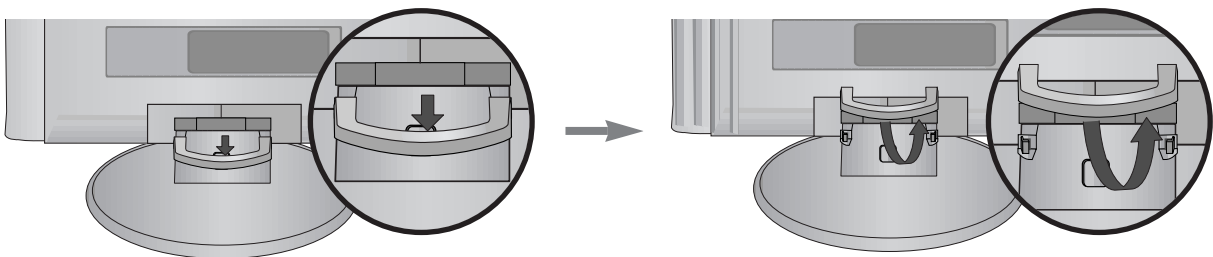
> **⊕ NOTE**
> ▶ Do not hold the **CABLE MANAGEMENT** when moving the product.
> - If the product is dropped, you may be injured or the product may be broken.

PREPARATION

WALL MOUNT: HORIZONTAL INSTALLATION

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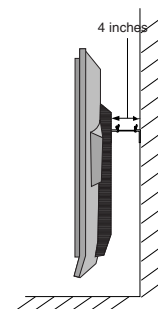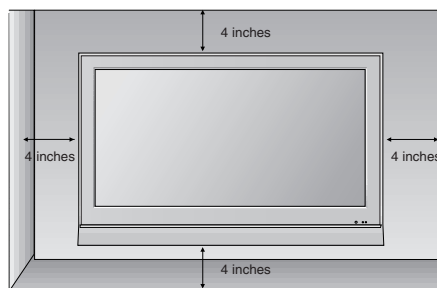
DESKTOP PEDESTAL INSTALLATION

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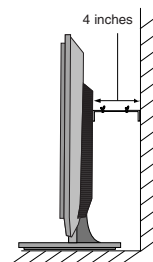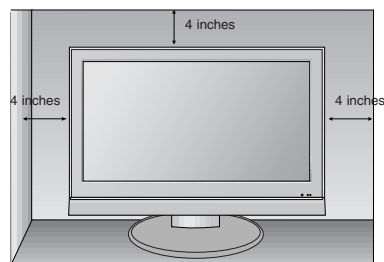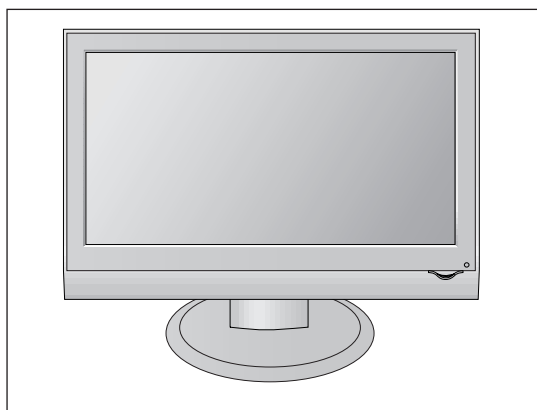
PREPARATION

POSITIONING YOUR DISPLAY

■ Here shown may be somewhat different from your set.

Adjust the position of the panel in various ways for maximum comfort.

• Tilt range

```
        0° ~ 3°              12°~8°
```
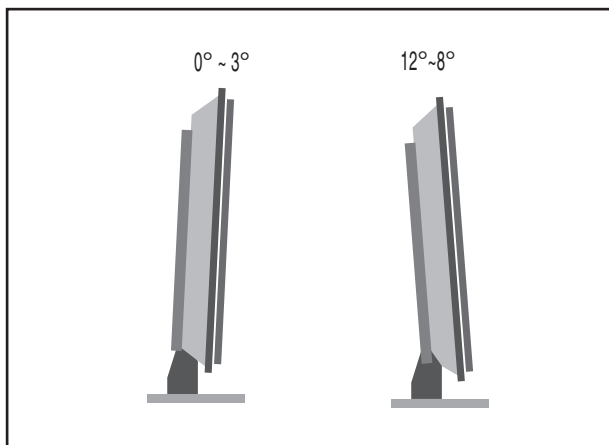
LOCATION

Position your set so that no bright light or sunlight falls directly onto the screen. Care should be taken not to expose the set to any unnecessary vibration, moisture, dust or heat. Also ensure that the set is placed in a position to allow a free flow of air. Do not cover the ventilation openings on the back cover. If you intend to mount the set to a wall, attach VESA standard mounting interface (optional parts) to the back of the set.
When you install the set to use the wall mounting bracket (optional parts), fix it carefully so as not to drop.

PREPARATION

KENSINGTON SECURITY SYSTEM

- The product is equipped with a Kensington Security System connector on the back panel. Connect the Kensington Security System cable as shown below.

- For the detailed installation and use of the Kensington Security System, refer to the user's guide provided with the Kensington Security System.

  For further information, contact **http://www.kensington.com**, the internet homepage of the Kensington company. Kensington sells security systems for expensive electronic equipment such as note-book PCs and LCD projectors.

NOTE
- The Kensington Security System is an optional accessory.

NOTES
a. If the product feels cold to the touch, there may be a small "flicker" when when it is turned on.
   This is normal, there is nothing wrong with product.
b. Some minute dot defects may be visible on the screen, appearing as tiny red, green, or blue spots.
   However, they have no adverse effect on the monitor's performance.
c. Avoid touching the LCD screen or holding your finger(s) against it for long periods of time.
   Doing so may produce some temporary distortion effects on the screen.
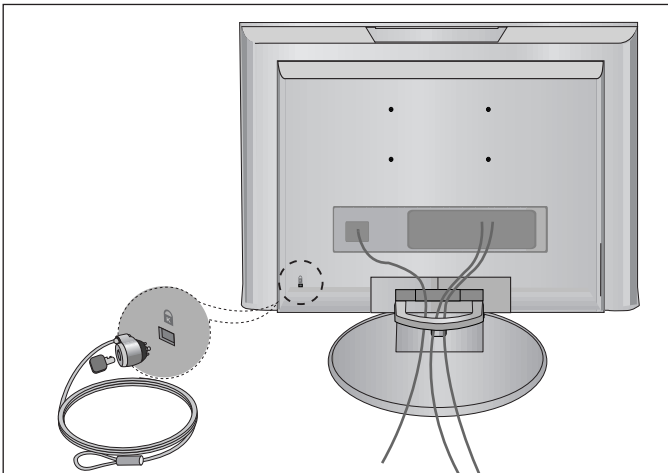
PREPARATION

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

ANTENNA CONNECTION

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

Wall Antenna Socket

Multi-family Dwellings/Apartments (Connect to wall antenna socket)

ANTENNA IN

RF Coaxial Wire (75 ohm)

Outdoor Antenna (VHF, UHF)

Single-family Dwellings /Houses (Connect to wall jack for outdoor antenna)

- Be careful not to bend the bronze wire when connecting to an antenna port.
- 5V antenna power works In Digital mode only. (Refer to p. 37)

Antenna

UHF

VHF

Signal Amplifier

ANTENNA IN

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

EXTERNAL EQUIPMENT SETUP

■ To prevent the equipment damage, never plug in any power cords until you have finished connecting all equipment.
■ Here shown may be somewhat different from your set.

HD RECEIVER SETUP

When connecting with a component cable

1 Connect the SET TOP outputs to the **COMPONENT IN VIDEO** sockets (Y P$_B$ P$_R$) on the set.

2 Connect the audio cable from the SET TOP to **COMPO-NENT IN AUDIO** sockets of the set.

3 Press the **INPUT** button to select **Component** (480i/576i/480p/576p/720p/1080i).

Signal	Component	HDMI
480i/576i	Yes	No
480p/576p	Yes	Yes
720p/1080i	Yes	Yes
1080p	Yes (only 60Hz)	Yes
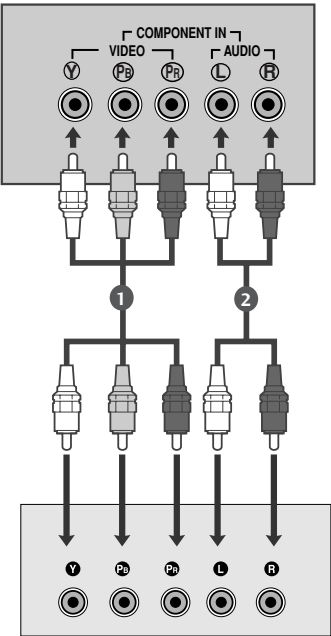
EXTERNAL EQUIPMENT SETUP

When connecting with a HDMI

1 Connect the HDMI output of the digital set-top box to the **HDMI/DVI IN** jack on the set.

2 Select **HDMI/DVI** (DTV) input source with using the **INPUT** button on the remote control.

HDMI/DVI IN

HDMI-DVD OUTPUT

Input		
DTV		
TV		
AV1		
AV2		
Component		
RGB		
HDMI	▶ DTV ⊙	
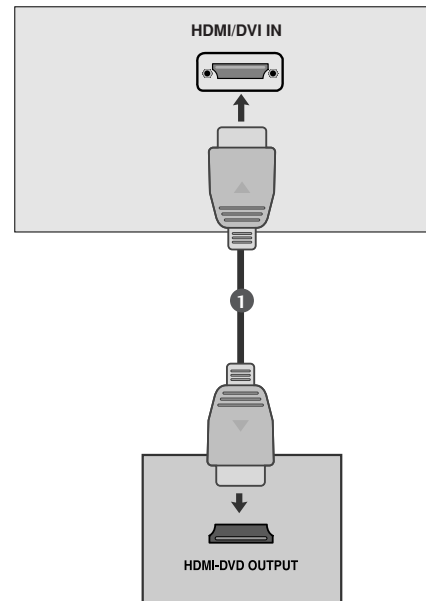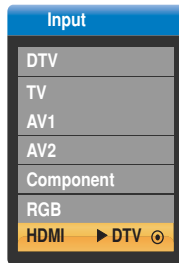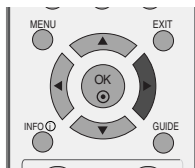
❗ NOTE

► When the output device is HDMI / DVI Settop box or DVD.
► If the output device does not meet the selected HDMI mode, the abnormal or black screen may be displayed.
► In this case, select the HDMI mode appropriate for the output device, and turn off the DC power and then turn on it again.

When connecting with a HDMI to DVI cable

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

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

3 Turn on the digital set-top box. (Refer to the owner's manual for the digital set-top box.)

4 Select **HDMI/DVI** input source with using the **INPUT** button on the remote control.

HDMI/DVI IN

AUDIO IN
(RGB/DVI)

DVI OUTPUT
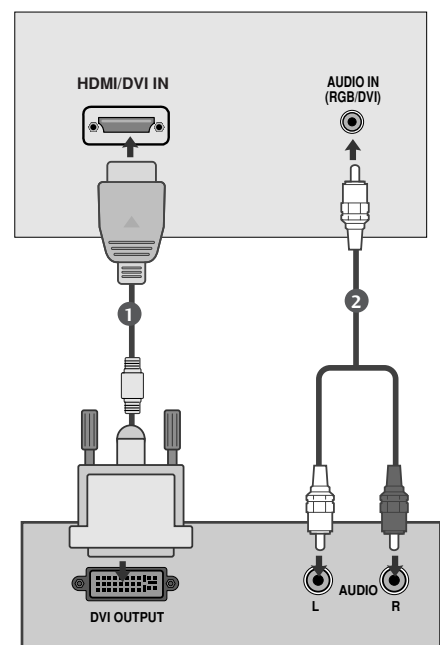
AUDIO
L   R

EXTERNAL EQUIPMENT SETUP

DVD SETUP

When connecting with a component cable

1 Connect the video output sockets (Y P$_B$ P$_R$) of the DVD to the **COMPONENT IN VIDEO** sockets (Y P$_B$ P$_R$) of the set.

2 Connect the audio cable from the DVD to **COMPONENT IN AUDIO** sockets of the set.

3 Press the **INPUT** button to select **Component**.

4 Press the **PLAY** button on the DVD.
The DVD playback picture appears on the screen.
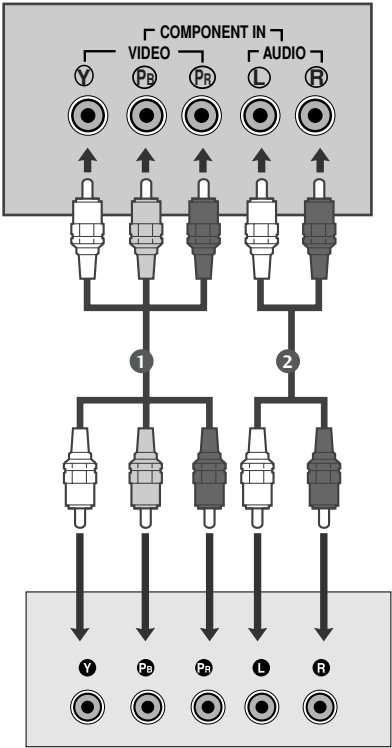
Component Input ports

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

Component ports on the set	Y	P$_B$	P$_R$

	Y	P$_B$	P$_R$
Video output ports on DVD player	Y	B-Y	R-Y
	Y	Cb	Cr
	Y	Pb	Pr

EXTERNAL EQUIPMENT SETUP

When connecting with a Euro Scart

1 Connect the Euro scart socket of the DVD to the Euro scart socket of the set.

2 Press the **INPUT** button to select **AV1**.

3 Press the **PLAY** button on the DVD.
The DVD playback picture appears on the screen.

❶ NOTE
▶ Please use the shield scart cable.

AV 1   AV 2

AUDIO/VIDEO   (R) AUDIO (L)
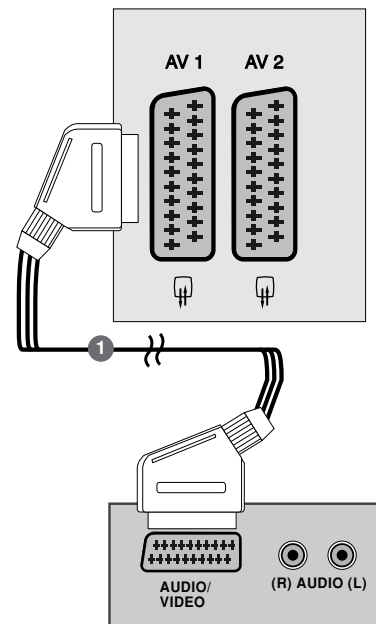
When connecting HDMI cable

1 Connect the HDMI output of the DVD to the **HDMI/DVI IN** jack on the set.

2 Select **HDMI/DVI** (DTV) input source with using the **INPUT** button on the remote control.

HDMI/DVI IN

HDMI-DVD OUTPUT

Input
DTV
TV
AV1
AV2
Component
RGB
HDMI   ▶ DTV ⊙

MENU   EXIT
OK
INFO ⓘ   GUIDE
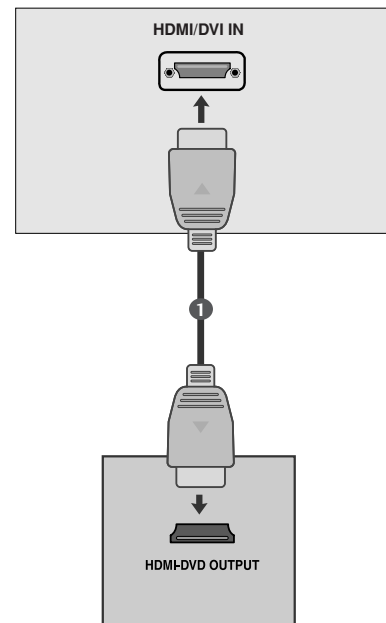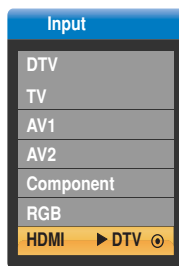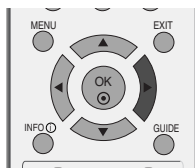
❶ NOTE
▶ Set can receive the video and audio signal simultaneously with using a HDMI cable.
▶ If the DVD supports Auto HDMI function, the output resolution of the source device will be automatically set to 1280x720p.
▶ If the DVD player does not support Auto HDMI, you need to set the DVD output resolution appropriately.
To get the best picture quality, adjust the output resolution of the source device to 1280x720p.
▶ When the output device is HDMI / DVI Settop box or DVD.
▶ If the output device does not meet the selected HDMI mode, the abnormal or black screen may be displayed.
▶ In this case, select the HDMI mode appropriate for the output device, and turn off the DC power and then turn on it again.

VCR SETUP

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

When connecting with an antenna

ANTENNA IN

ANT OUT   S-VIDEO   VIDEO   L   R

ANT IN   OUTPUT SWITCH   4   3

Wall Jack

Antenna
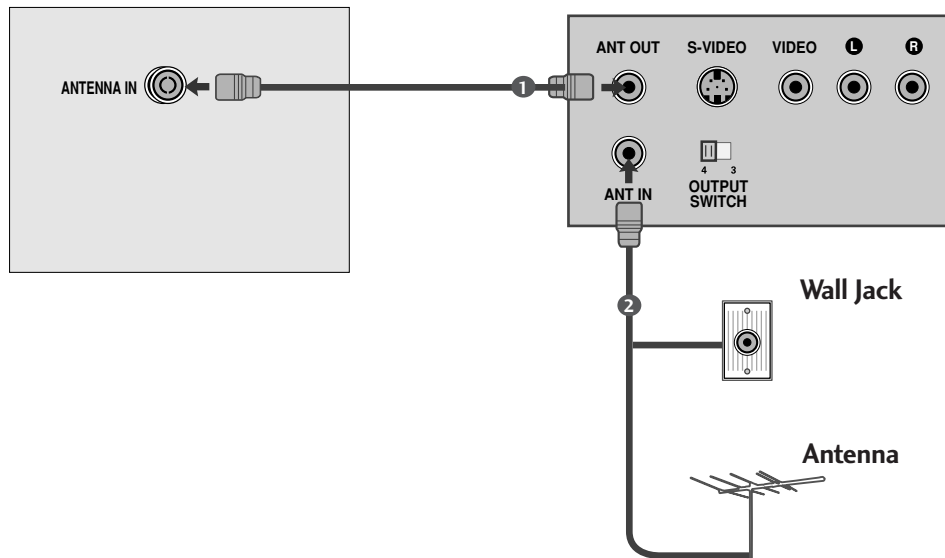
1 Connect the RF out socket of the VCR to the aerial socket of the set.

2 Connect the aerial cable to the RF aerial in socket of the VCR.

3 Store the VCR channel on a desired programme number using the 'Manual programme tuning' section.

4 Select the programme number where the VCR channel is stored.

5 Press the **PLAY** button on the VCR.

EXTERNAL EQUIPMENT SETUP

When connecting with a Euro Scart

① Connect the Euro scart socket of the VCR to the Euro scart socket of the set.

② Press the **PLAY** button on the VCR.
If your VCR outputs an AV switching signal via the Scart lead the set will auto switch to **AV 1** mode on start of playback, but if you want to keep on watching in TV mode, press the ▲ **/** ▼ or NUMBER buttons.

Otherwise press the **INPUT** button on the remote control handset to select **AV 1**. The VCR play back picture appears on the screen.

You can also record programmes received by the set on video tape.
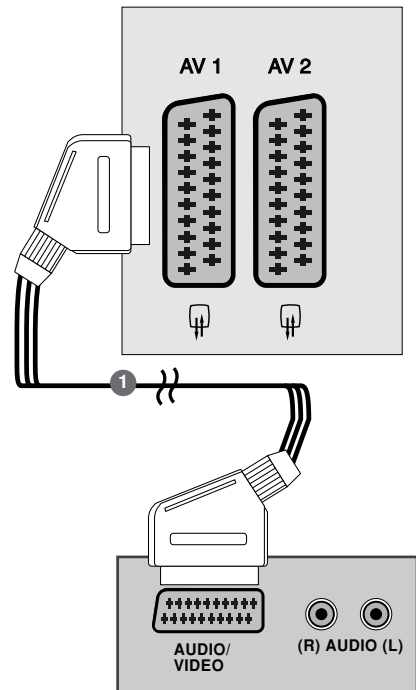
❗ NOTE

► Signal type RGB, i.e. the signals red, green and blue can only be selected for the Euro scart and the AV1 can be received. These signals are transmitted, for example, by a pay TV decoder, game machine or photo CD unit, etc.
► Please use shielded scart cable.

INSERTION OF CI MODULE

- To view the scrambled (pay) services in digital TV mode.
- This feature is not available in all countries.

① Insert the CI Module to **PCMCIA** (Personal Computer Memory Card International Association) **CARD SLOT** of set as shown.

For further information, see p.40.
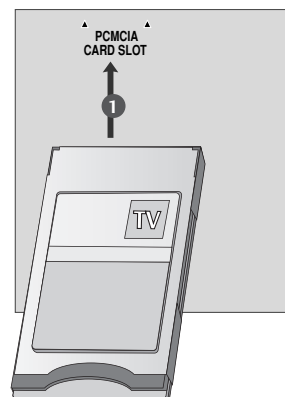
EXTERNAL EQUIPMENT SETUP

PC SETUP

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

When connecting with a D-sub 15 pin cable

1 Connect the signal cable from the monitor output socket of the PERSONAL COMPUTER to the PC input socket of the set.

2 Connect the audio cable from the PC to the **AUDIO IN (RGB/DVI)** sock-ets of the set.

3 Press the INPUT button to select **RGB**.

4 Switch on the PC, and the PC screen appears on the set. The set can be operated as the PC monitor.
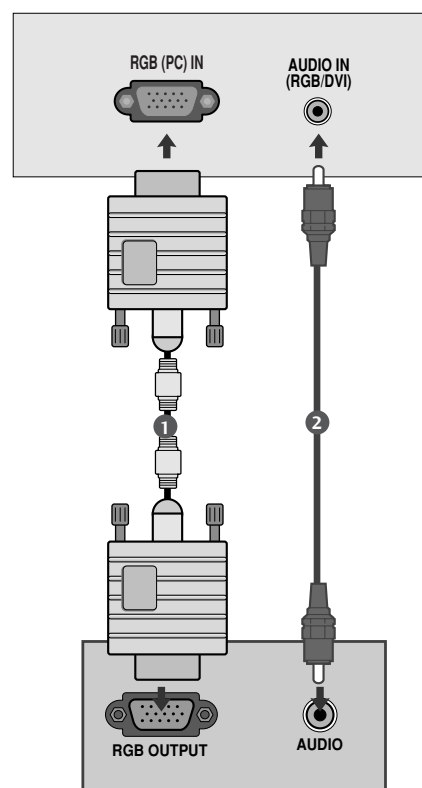
EXTERNAL EQUIPMENT SETUP

When connecting with a HDMI to DVI cable

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

2 Connect the audio cable from the PC to the **AUDIO IN (RGB/DVI)** sockets of the set.

3 Select **HDMI/DVI** (PC) input source with using the **INPUT** button on the remote control.

HDMI/DVI IN   AUDIO IN
                    (RGB/DVI)

1   2

DVI OUTPUT   AUDIO

Input

| DTV |
| TV |
| AV1 |
| AV2 |
| Component |
| RGB |
| HDMI   ▶ PC ◉ |

MENU   EXIT

OK

INFO   GUIDE

❗ NOTE

► If the set is cold, there may be a small "flicker" when the set is switched on. This is normal, there is nothing wrong with the set.

► If possible, use the, 1680x1050@60Hz video mode to obtain the best image quality for your LCD monitor. If used under the other resolutions, some scaled or processed pictures may appear on the screen. The set has been preadjusted to the mode 1680x1050@60Hz.

► Some dot defects may appear on the screen, like Red, Green or Blue spots. However, this will have no impact or effect on the monitor performance.

► Do not press the LCD screen with your finger for a long time as this may produce some temporary distortion effects on the screen.

► When the PC screen appears on the set, a message may appear on the screen, and the message will differ according to the Window system version. If a message appears click "Next" until the message finishes.

► When the output device is HDMI / DVI PC.

► If the output device does not meet the selected HDMI mode, the abnormal or black screen may be displayed.

► In this case, select the HDMI mode appropriate for the output device, and turn off the DC power and then turn on it again.

EXTERNAL EQUIPMENT SETUP

When connecting with a HDMI to HDMI cable

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

**2** Select **HDMI** (PC) input source with using the **INPUT** button on the remote control.

HDMI/DVI IN

Input

| DTV |
| TV |
| AV1 |
| AV2 |
| Component |
| RGB |
| HDMI ▶ PC ⊙ |

MENU   EXIT

OK

INFO ①   GUIDE

HDMI-DVD OUTPUT

❗ NOTE

► If the set is cold, there may be a small "flicker" when the set is switched on. This is normal, there is nothing wrong with the set.

► If possible, use the, 1680x1050@60Hz video mode to obtain the best image quality for your LCD monitor. If used under the other resolutions, some scaled or processed pictures may appear on the screen. The set has been preadjusted to the mode 1680x1050@60Hz.

► Some dot defects may appear on the screen, like Red, Green or Blue spots. However, this will have no impact or effect on the monitor performance.

► Do not press the LCD screen with your finger for a long time as this may produce some temporary distortion effects on the screen.

► When the PC screen appears on the set, a message may appear on the screen, and the message will differ according to the Window system version. If a message appears click "Next" until the message finishes.

► When the output device is HDMI / DVI PC.

► If the output device does not meet the selected HDMI mode, the abnormal or black screen may be displayed.

► In this case, select the HDMI mode appropriate for the output device, and turn off the DC power and then turn on it again.

EXTERNAL EQUIPMENT SETUP

RGB, HDMI/DVI-PC Preset mode

Resolution	Horizontal Frequency(kHz)	Vertical Frequency(Hz)
720x400	31.468	70
640x480	31.469	60
	37.500	75
800x600	37.879	60
	46.875	75
1024x768	48.363	60
	60.123	75
1152x864	67.500	75
1280x1024	63.981	60
	79.976	75
1680x1050	64.674	60
	65.290	60

HDMI/DVI-DTV supported mode

Resolution	Horizontal Frequency(kHz)	Vertical Frequency(Hz)
720x480	31.47	59.94
	31.50	60
640x480	31.50	59.94
	31.50	60
720x480	31.47	59.64
	31.47	60
720x576	31.25	50.00
1280x720	45.00	50.00
	44.96	59.94
	44.96	60
1920x1080	28.13	50.00
	33.72	59.94
	33.75	60
	27	24
	56.25	50.00
	67.43	59.94
	67.50	60

*You have to select directly HDMI-PC or HDMI-DTV when using the PC or Set-top box.

Screen Setup for PC mode

Auto Configure (RGB mode only)

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

Auto configure

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

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

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

3 Press the ► button to start **Auto Config.**.

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

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

4 Press the **EXIT** button to disappear the menu window.

SETUP	Auto Config.
PICTURE	Manual Config.
AUDIO	SXGA Mode
TIME	Aspect Ratio
OPTION	Reset
SCREEN	

Move MENU Prev.

1

Auto Config. ►	To Set
Manual Config.	
SXGA Mode	
Aspect Ratio	
Reset	

2 **3**
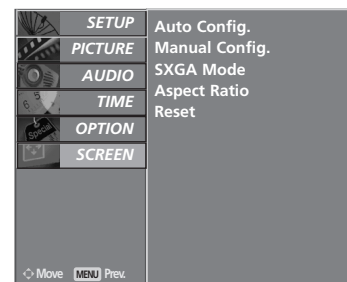
EXTERNAL EQUIPMENT SETUP

Adjustment for screen Phase, Clock, Position

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

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

This function works in the following mode : RGB.

Clock This function is to minimize any vertical bars or stripes visible on the screen background. And the horizontal screen size will also change.

Phase This function allows you to remove any horizontal noise and clear or sharpen the image of characters.

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

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

③ **3** Press the ▶ button and then ▲ or ▼ button to select **Phase**, **Clock**, **H-Position** or **V-Position**.

④ **4** Press the ◀ or ▶ button to make appropriate adjustments.

⑤ **5** Press the **EXIT** button to disappear the menu window.
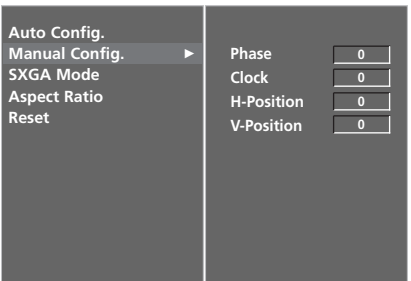
EXTERNAL EQUIPMENT SETUP

Selecting Wide SXGA mode

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

This function works in the following mode: RGB mode

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

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

3 Press the ► button and then use ▲ or ▼ button to select the desired SXGA resolution.

4 Press the **EXIT** button to disappear the menu window.

SETUP	Auto Config.
PICTURE	Manual Config.
AUDIO	SXGA Mode
TIME	Aspect Ratio
OPTION	Reset
SCREEN	

◇ Move MENU Prev.

1

Auto Config.	
Manual Config.	
SXGA Mode ►	√ 1400 X 1050
Aspect Ratio	1680 X 1050
Reset	

2 **3**
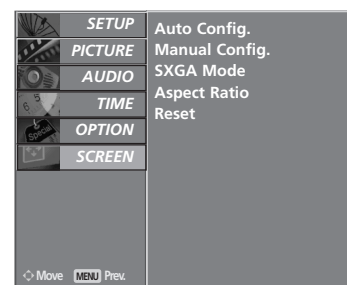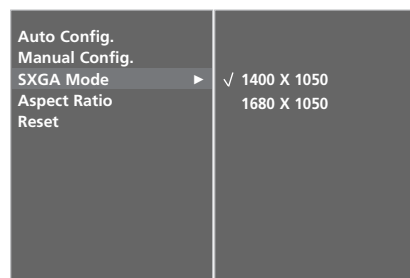
EXTERNAL EQUIPMENT SETUP

Initializing
(Reset to original factory settings)

This function operates in current mode.
To initialize the adjusted value.

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

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

3 Press the ▶ button and then ▲ or ▼ button to select **Factory Reset**.

4 Press the ▶ button.

The message "**If you enter a password, all user setting will be reset**" will appear.

5 Use NUMBER buttons to input a 4-digit password.

SETUP
PICTURE
AUDIO
TIME
OPTION
SCREEN

Language
Country
Lock System
Parental Control
Input Label
Factory Mode

◇ Move MENU Prev.

1

Language
Country
Lock System
Parental Control
Input Label
Factory Mode ▶

Set ID
1
Factory Reset
OK

2

Language
Country
Lock System
Parental Control
Input Label
Factory Mode

Set ID
1
Factory Reset
OK
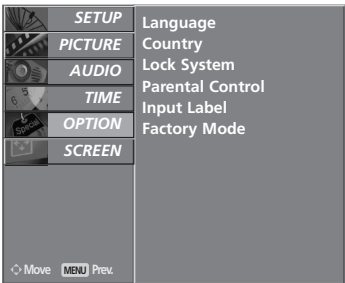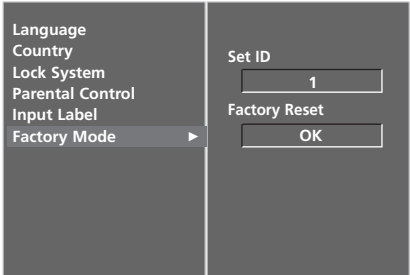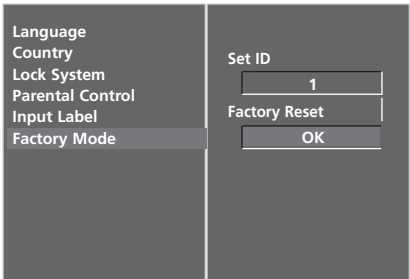
3 4

WATCHING TV /PROGRAMME CONTROL

REMOTE CONTROL KEY FUNCTIONS

When using the remote control, aim it at the remote control sensor on the set.
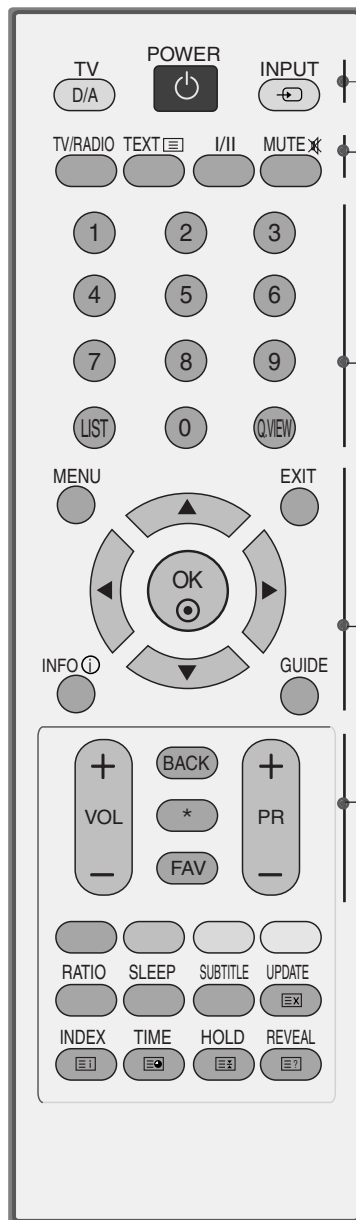
POWER	Switches the set on from off or off to on.
D/A INPUT	Selects digital or analogue mode. Switches the set on from off.
INPUT	External input mode rotate in regular sequence. Switches the set on from off.

TV/RADIO	Selects Radio or TV channel in digital mode.
I/II	Selects the sound output.
MUTE	Switches the sound on or off.

0~9 number button	Selects a programme. Selects numbered items in a menu.
LIST	Displays the programme table.
Q.VIEW	Returns to the previously viewed programme.

MENU	Selects a menu.
EXIT	Clears all on-screen displays.
INFO ⓘ	Shows the present screen information.
GUIDE	Shows programme schedule.
THUMBSTICK (Up/Down/Left Right)	Allows you to navigate the on-screen menus and adjust the system settings to your preference.
OK	Accepts your selection or displays the current mode.

VOLUME UP /DOWN	Adjusts the volume.
BACK	Allow the user to move back one step in an interactive application, EPG or other user interaction function.
∗	No function
FAV	Displays the selected favourite programme.
Programme UP/DOWN	Selects a programme.
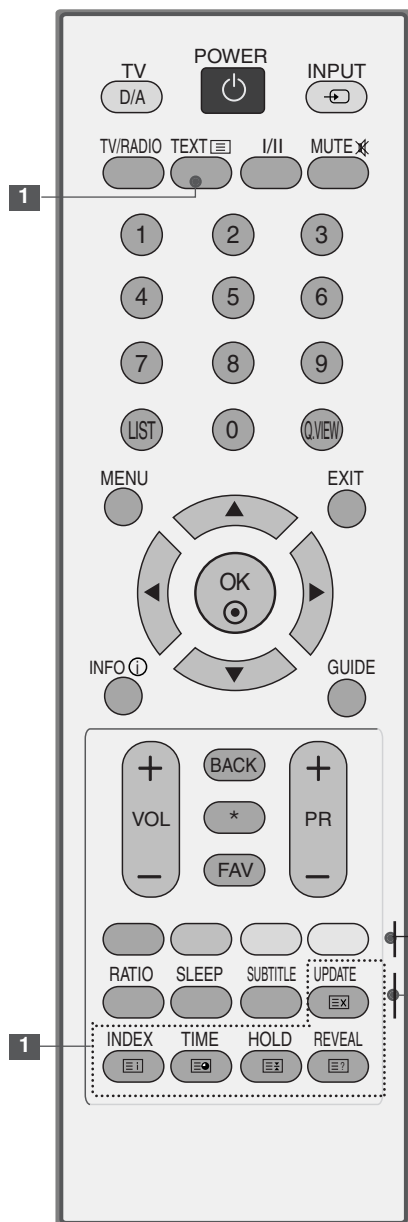
| 1 | TELETEXT BUTTONS | These buttons are used for teletext. For further details, see the 'Teletext' section. |

| | Coloured buttons | These buttons are used for teletext (only **TELETEXT** models) or **Programme edit**. |

	RATIO	Selects your desired picture format.
	SLEEP	Sets the sleep timer.
	SUBTITLE	Recalls your preferred subtitle in digital mode.

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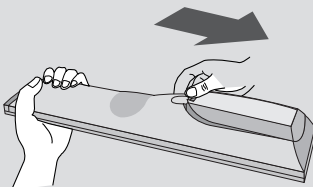
- Open the battery compartment cover on the back side and install the batteries matching correct polarity (+with +,-with -).

- Install two batteries. Don't mix old or used batteries with new ones.

- Close cover.

TURNING ON THE TV

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

1 First, connect power cord correctly.

2 Turn on power by pressing the power button on the product.

3 Press the TV button on the remote control.

4 Set the channel by using the PR+ / - buttons or number buttons on the remote control. .

Initializing setup

If the OSD (On Screen Display) is displayed on the screen as figure after turning on the set, you can adjust the Language, Country, Time Zone, Auto programme tuning.

Note:
a. *It will automatically disappear after approx. 40 seconds unless a button is pressed.*
b. *Press the BACK button to change current OSD into previous OSD.*
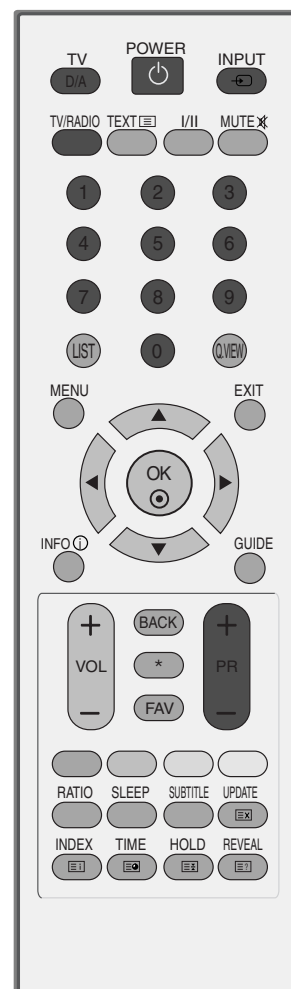
PROGRAMME SELECTION

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

VOLUME ADJUSTMENT

1   Press the **VOL +** or **-** button to adjust the volume.

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

You can cancel this function by pressing the **MUTE**,
VOL + or **-**, or **I/II** button.
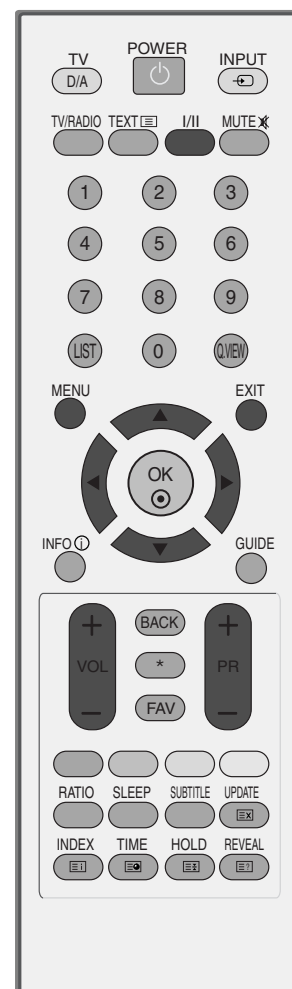
WATCHING TV /PROGRAMME CONTROL

ON SCREEN MENUS SELECTION AND ADJUSTMENT

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

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

2 Press the ▶ button and then ▲ or ▼ button to select a menu item.

3 Change the setting of an item in the sub or pull-down menu with ◀ or ▶ button.
You can move to the higher level menu by pressing the **OK** or **MENU** button.

SETUP	Auto Tuning
PICTURE	Manual Tuning
AUDIO	Programme Edit
TIME	5V Antenna Power
OPTION	Software Update
SCREEN	Diagnostics
	CI Information

* : This feature is not available in all countries.

SETUP	Picture Mode
PICTURE	Colour Temperature
AUDIO	XD
TIME	Advanced
OPTION	Picture Reset
SCREEN	XD Demo

SETUP	Auto Config.
PICTURE	Manual Config.
AUDIO	SXGA Mode
TIME	Aspect Ratio
OPTION	Reset
SCREEN	

SETUP	Sound Mode
PICTURE	Auto Volume
AUDIO	Balance 0
TIME	
OPTION	
SCREEN	

SETUP	Language
PICTURE	Country
AUDIO	Lock System
TIME	Parental Control
OPTION	Input Label
SCREEN	Factory Mode

SETUP	Clock
PICTURE	Off time
AUDIO	On time
TIME	Auto Sleep
OPTION	Time Zone
SCREEN	

⚠ NOTE

► In Analogue mode, **5V Antenna Power**, **CI Information**, **Software Update** and **Diagnostics** will not display.

AUTO PROGRAMME TUNING (IN DIGITAL MODE)

Use it to automatically find and store all of the programmes.

When you start auto programming in digital mode, all the stored service information will be deleted.

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

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

3 Press the ► button to begin auto tuning.
Use NUMBER buttons to input a 4-digit password in **Lock System** 'On'.

The message "**All service-information will be updated. Continue?**" will appear.

If you want to keep on auto tuning select **YES** with using the ◄ or ► button. Then, press the **OK** button. Otherwise select **NO**.

To stop auto tuning, press the **MENU** button.

4 Press the **EXIT** button to disappear the menu window.

SETUP	Auto Tuning
PICTURE	Manual Tuning
AUDIO	Programme Edit
TIME	5V Antenna Power
	Software Update
OPTION	Diagnostics
SCREEN	CI Information

◇ Move [MENU] Prev.

1

Auto Tuning ►	Start
Manual Tuning	
Programme Edit	
5V Antenna Power	
Software Update	
Diagnostics	
CI Information	

2

Auto Tuning

	0	Programme(s)
	0	Programme(s)

UHF CH.   14

24 %

[MENU] Stop

3
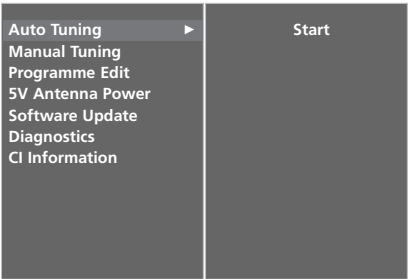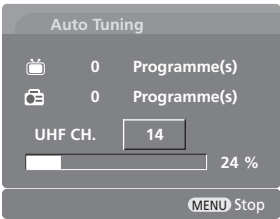
MANUAL PROGRAMME TUNING (IN DIGITAL MODE)

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

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

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

3 Press the ► button and then ▲ or ▼ button or NUM-BER buttons to select the desired channel number. Use NUMBER buttons to input a 4-digit password in **Lock System** '**On**'.

4 Press the **OK** button to save.

When the channel number you want to add is already added in programme list, the massage "**Setup information for the channel will be updated. Continue?**" will appear.

If you want to keep on manual tuning, select **YES** with using the ◄ or ► button.

Then, press the **OK** button. Otherwise select **NO**.

5 Press the **EXIT** button to disappear the menu window.

SETUP	Auto Tuning	
PICTURE	Manual Tuning	
AUDIO	Programme Edit	
TIME	5V Antenna Power	
OPTION	Software Update	
SCREEN	Diagnostics	
	CI Information	

◇Move MENU Prev.

1

Auto Tuning
Manual Tuning ►
Programme Edit
5V Antenna Power
Software Update
Diagnostics
CI Information

Your receiver will add this channel to your channel list.

UHF CH. 35

2

Auto Tuning
Manual Tuning
Programme Edit
5V Antenna Power
Software Update
Diagnostics
CI Information

Your receiver will add this channel to your channel list.

UHF CH ⬍ 35

◉ Search

3 **4**

PROGRAMME EDIT
(IN DIGITAL MODE)

When a programme number is skipped, it means that you will be unable to select it using **PR +** or - button during TV viewing.

If you want to select the skipped programme, directly enter the programme number with the **NUMBER** buttons or select it in the Programme edit menu.

This function enables you to skip the stored programmes.

It's available in some countries only to move a programme number by **YELLOW** button.

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

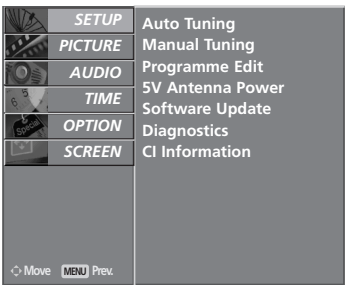② Press the ▶ button and then ▲ or ▼ button to select **Programme Edit** menu.

③ Press the ▶ button to enter the **Programme Edit** menu.
Use NUMBER buttons to input a 4-digit password in **Lock System** 'On'.

④ Select a programme to be stored or skipped with the ▲ or ▼ or ◀ or ▶ button.

⑤ Press the **BLUE** button repeatedly to have the programme skipped or stored.

In case of programmes to be skipped, skipped programme shows in blue colour and these programmes will not be selected by the **PR +** or - buttons during TV viewing.

⑥ Press the **EXIT** button to disappear the menu window.

SETUP	Auto Tuning
PICTURE	Manual Tuning
AUDIO	Programme Edit
TIME	5V Antenna Power
	Software Update
OPTION	Diagnostics
SCREEN	CI Information

◇Move MENU Prev.

①

Auto Tuning	
Manual Tuning	
Programme Edit ▶	To Set
5V Antenna Power	
Software Update	
Diagnostics	
CI Information	

② ③
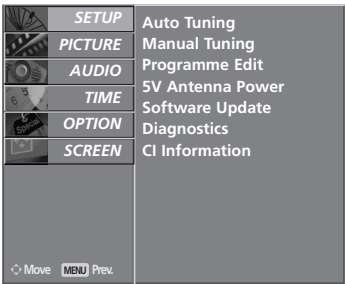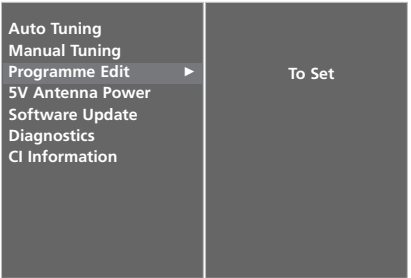
> **Mini Glossary**
>
> 📺 Displayed when the DTV Programme.   TEXT Displayed when the Teletext Programme.
>
> ❤ Displayed when the Favourite Programme.   ▦ Displayed when the Subtitle Programme.
>
> 🔒 Displayed when the Locked Programme.   ▦ Displayed when the Scramble Programme.
>
> 📻 Displayed when the Radio Programme.   ▦ Displayed when the Dolby Programme.
>
> MHEG Displayed when the MHEG Programme.

■ **Skipping a programme number**

1 Select a programme number to be skipped with the ▲ or ▼ or ◄ or ► button.

2 Press the **BLUE** button. The skipped programme number turns to blue.

3 Press the **BLUE** button again to release the skipped programme.

When a programme number is skipped it means that you will be unable to select it using the **PR** + or - button during normal TV viewing.

If you want to select the skipped programme, directly enter the programme number with the NUMBER buttons or select it in the programme edit or EPG.

4 Press the **EXIT** button to disappear the menu window.

■ **Locking a programme (In Lock System On mode only)**

1 Select a programme to be locked with the ▲ or ▼ or ◄ or ► button.

2 Press the **GREEN** button. The lock mark will appear in front of that programme number.

3 Press the **GREEN** button again to release this function.

Note :
► To watch a locked programme, input a 4-digit password in Lock system. Be sure to remember this number!
► If you forgot your password, press '7', '7', '7', '7' on the remote control handset.
► If you select other programme after releasing a locked programme and then return to the locked programme within 1 minute, you needn't input a password to select the locked programme.

■ **Selecting favourite programme**

1 Select your favourite programme number by pressing ▲ or ▼ or ◄ or ► button and then press the **FAV** button on your remote control handset.

It will automatically include the selected programme into your favourite programme list and heart-mark will appear in front of that programme number.

5V ANTENNA POWER (IN DIGITAL MODE ONLY)

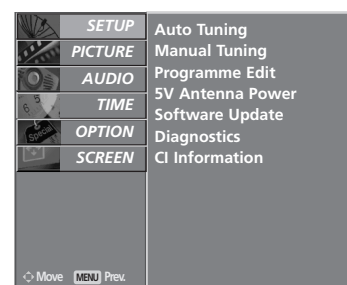Even if there isn't a special 5V adapter power in the external antenna, this function can output 5V in the set.

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

2   Press the ▶ button and then use ▲ or ▼ button to select **5V Antenna Power**.

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

In **5V Antenna Power On**, if the set is short-circuit, it will automatically return to **Off**.

The message "**Antenna feed overloaded. Automatically switched off.**" will appear.

4   Press the **EXIT** button to disappear the menu window.

SETUP	Auto Tuning
PICTURE	Manual Tuning
AUDIO	Programme Edit
TIME	5V Antenna Power
OPTION	Software Update
SCREEN	Diagnostics
	CI Information

Move MENU Prev.

1

Auto Tuning	
Manual Tuning	
Programme Edit	
5V Antenna Power ▶	√ Off
Software Update	On
Diagnostics	
CI Information	

2 **3**
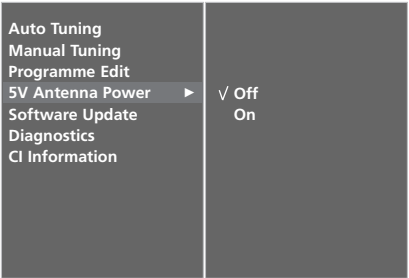
SOFTWARE UPDATE (IN DIGITAL MODE ONLY)

Software Update means software can be downloaded through the digital terrestrial broadcasting system.

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

2 Press the ► button and then ▲ or ▼ button to select **Software update**.

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

　• If you select **On**, a user confirm message box will be displayed to notify that new software is found.

4 Press the **EXIT** button to disappear the menu window.

SETUP	Auto Tuning
PICTURE	Manual Tuning
AUDIO	Programme Edit
TIME	5V Antenna Power
OPTION	Software Update
SCREEN	Diagnostics
	CI Information

◇Move MENU Prev.

1

Auto Tuning	
Manual Tuning	
Programme Edit	
5V Antenna Power	
Software Update ►	√ Off
Diagnostics	On
CI Information	
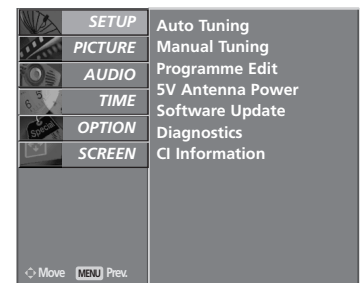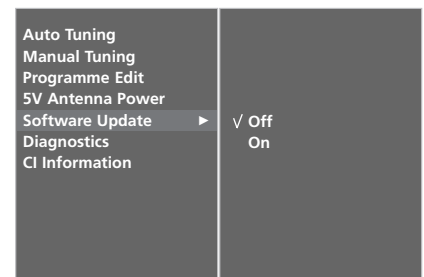
2 3

* When setting "Software Update"

Occasionally, a transmission of updated digital software information will result in the following menu on the TV screen.

Select the **YES** using the ◄ or ► button and when you see the following picture.

After Software Update is completed, the System takes about one minute to restart.

- **During Progress of Software Update, please note the following:**

• The power of the set must not be interrupted.
• The set must not be switched off.
• The antenna must not be disconnected.
• During this time, you should not switch off the power to the set.
• At this time, you should not work power On/Off.
• After Software Update, you can confirm the updated software version in Diagnostics menu.

DIAGNOSTICS
(IN DIGITAL MODE ONLY)

This function enables you to watch Manufacturer, Model/Type, Serial Number and Software Version.

It's displayed the information and signal strength of the tuned MUX.
It's displayed the signal information and service name of the selected MUX.

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

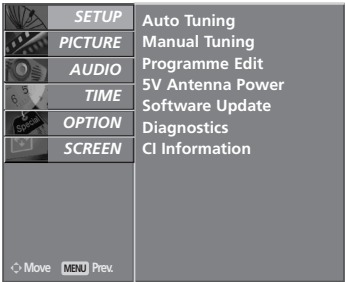**2**   Press the ► button and then use ▲ or ▼ button to select **Diagnostics**.

3   Press the ► button to display Manufacturer, Model/Type, Serial Number and Software Version.

4   Press the **EXIT** button to disappear the menu window.

SETUP	Auto Tuning
PICTURE	Manual Tuning
AUDIO	Programme Edit
TIME	5V Antenna Power
	Software Update
OPTION	Diagnostics
SCREEN	CI Information

Move MENU Prev.

1

Auto Tuning	
Manual Tuning	
Programme Edit	
5V Antenna Power	
Software Update	
Diagnostics ►	To Set
CI Information	

2

Enginee [i] Channel 30

Manufactur
Model / Typ Transmitter : Teracom_Mux_2
Serial No. Signal strength   53%
Software ve

Signal quality   100%

CH 30
CH 34

1 YLE PEU	1 YLE TV1
3 YLE TV2	4 YLEQ
5 YLE FST	6 YLEN KLASS
7 YLE FSR+	8 YLE24

Menu Prev.   ⊙ Back

3

CI [COMMON INTERFACE] INFORMATION (IN DIGITAL MODE ONLY)

This function enables you to watch some scrambled services (pay services). If you remove the CI Module, you can't watch the pay services. When the module is inserted to CI slot, you can access the module menu. To purchase a module and smart card, contact your supplying dealer. Do not often insert or remove a CAM module from the set. It may cause a trouble. When the set turned on after inserting the CI Module, you often can't hear the sound.

There might be unnatural picture according to CI module and smart card.

CI (Common Interface) function may not be applied based on country broadcasting circumstance.

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

2 Press the ► button and then ▲ or ▼ button to select **CI Information**.

3 Press the ► button and then **OK** button.

4 Press the ▲ or ▼ button to select the desired item: Module information, smart card information, language, or software download etc.

5 Press the **OK** button.

6 Press the **EXIT** button to disappear the menu window.

SETUP	Auto Tuning
PICTURE	Manual Tuning
AUDIO	Programme Edit
TIME	5V Antenna Power
	Software Update
OPTION	Diagnostics
SCREEN	CI Information

◇Move MENU Prev.

1

Auto Tuning
Manual Tuning
Programme Edit
5V Antenna Power
Software Update
Diagnostics
CI Information   ►   Module
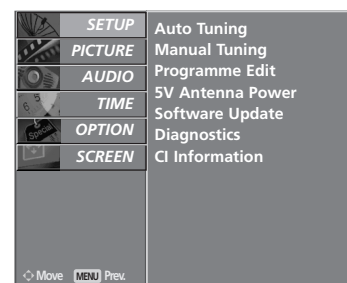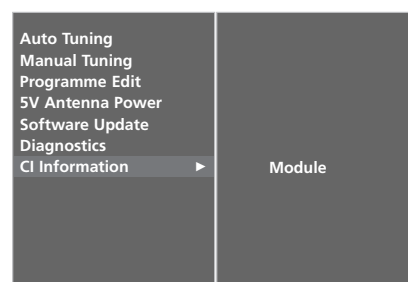
2 **3**

• This OSD is only for illustration and the menu options and screen format will vary according to the Digital pay services provider.

• It's possible for you to change CI (Common Interface) menu screen and service by your dealer.

● Viaccess Module

Consultations
Authorizations
Module information

Select the item

4 **5**
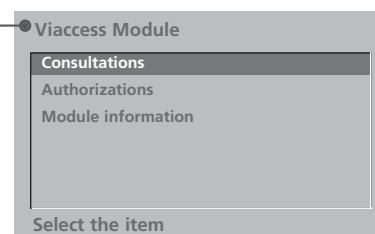
AUTO PROGRAMME TUNING (IN ANALOGUE MODE)

All stations that can be received are stored by this method. It is recommended that you use Auto tuning during installation of this set.
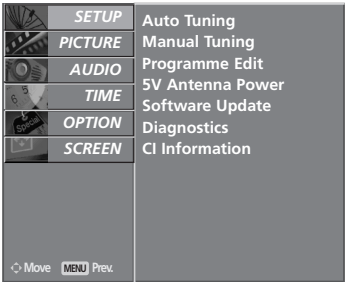
1 Press the **MENU** button and then ▲ or ▼ button to select the **SETUP** menu.

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

3 Press the ► button to select **System**. Select a TV system with the ◄ or ► button;

L : SECAM L/L' (France)
BG : PAL B/G, SECAM B/G (Europe / East Europe / Asia / New Zealand / M.East / Africa / Australia)
I : PAL I/II (U.K. / Ireland / Hong Kong / South Africa)
DK : PAL D/K, SECAM D/K (East Europe / China / Africa / CIS)

4 Press the ▼ button to select **Storage From**.

Select the beginning programme number with the ◄ or ► button or NUMBER buttons on the **Storage From** menu.

5 Press the ▼ button to select **Start**.

The station name is stored for stations which broadcast VPS (Video Programme Service), PDC (Programme Delivery Control) or TELETEXT data.

If no station name can be assigned to a station, the channel number is assigned and stored as **C** (V/UHF 01-69) or **S** (Cable 01-47), followed by a number.

To stop auto tuning, press the **MENU** button.

When auto tuning is completed, the **Programme Edit** menu appears on the screen.

See the '**Programme Edit**' section to edit the stored programme.

SETUP	Auto Tuning
PICTURE	Manual Tuning
AUDIO	Programme Edit
TIME	
OPTION	
SCREEN	

Move MENU Prev.

1

Auto Tuning ►	System	BG
Manual Tuning	Storage From	2
Programme Edit	Start	
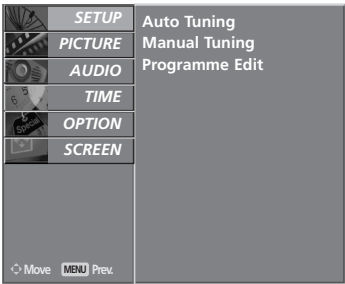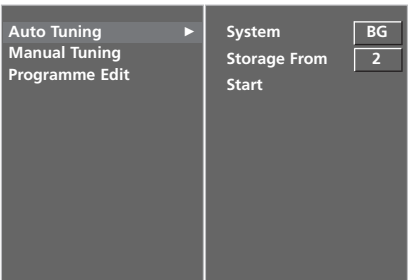
2 3 4 5

MANUAL PROGRAMME TUNING (IN ANALOGUE MODE)

Manual Tuning lets you manually tune and arrange the stations in whatever order you desire.

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

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

3 Press the ► button to select **Storage**.

Select the desired programme number with the ◄ or ► button or NUMBER buttons on the **Storage** menu.

4 Press the ▼ button to select **System**. Select a TV system with the ◄ or ► button;

L   : SECAM L/L' (France)
BG : PAL B/G, SECAM B/G (Europe / East Europe / Asia / New Zealand / M.East / Africa / Australia)
I   : PAL I/II (U.K. / Ireland / Hong Kong / South Africa)
DK : PAL D/K, SECAM D/K (East Europe / China / Africa / CIS)

5 Press the ▼ button to select **Band**. Press the ◄ or ► button to select **V/UHF** or **Cable** as required.

6 Press the ▼ button to select **Channel**. You can select the desired channel number with the ◄ or ► button or NUMBER buttons.

If possible, select the channel number directly with the NUMBER buttons.

7 Press the ▼ button to select **Search**. Press the ◄ or ► button to commence searching. If a station is found the search will stop.

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

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

10 Press the **EXIT** button to disappear the menu window.

SETUP	Auto Tuning
PICTURE	Manual Tuning
AUDIO	Programme Edit
TIME	
OPTION	
SCREEN	

◇ Move MENU Prev.

❶

Auto Tuning		Storage	1
Manual Tuning ►		System	BG
Programme Edit		Band	V/UHF
		Channel	1
		Fine	
		Search	
		Name	
			C 01

❷ ❸ ❹ ❺
❻ ❼ ❽ ❾
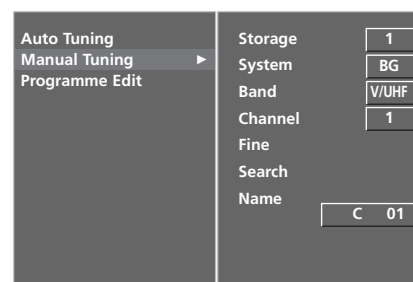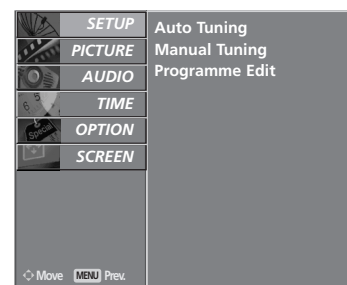
FINE TUNING (IN ANALOGUE MODE)

Normally fine tuning is only necessary if reception is poor.

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

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

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

④ Press the ► button and then ◄ or ► button to fine tune for the best picture and sound.

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

⑥ Press the **EXIT** button to disappear the menu window.

SETUP	Auto Tuning
PICTURE	Manual Tuning
AUDIO	Programme Edit
TIME	
OPTION	
SCREEN	

◇ Move MENU Prev.
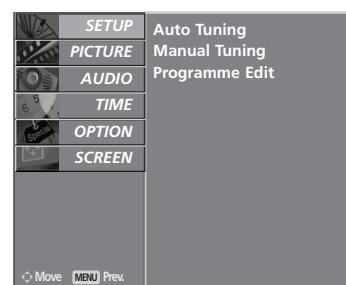
①

ASSIGNING A STATION NAME (IN ANALOGUE MODE)

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

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

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

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

④ Press the ► button and then ▲ or ▼ button. You can use a the alphabet **A** to **Z**, the number **0** to **9**, +/ -, and blank.

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

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

⑦ Press the **EXIT** button to disappear the menu window.

Auto Tuning	Storage	1
Manual Tuning	System	BG
Programme Edit	Band	V/UHF
	Channel	1
	Fine	◄ ►
	Search	
	Name	
		C 01

◎ Store

② ③ ④ ⑤

Auto Tuning	Storage	1
Manual Tuning	System	BG
Programme Edit	Band	V/UHF
	Channel	1
	Fine	
	Search	
	Name	
		◄ ↕ C 01 ►
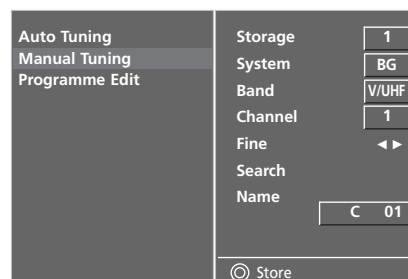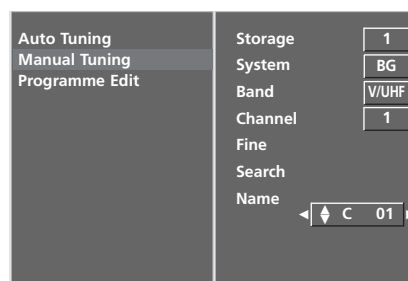
② ③ ④ ⑤ ⑥

PROGRAMME EDIT (IN ANALOGUE MODE)

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

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

2 Press the ► button and then ▲ or ▼ button to select **Programme Edit**.

3 Press the ► button to display the Programme Edit menu.

■ **Deleting a programme**

a Select a programme to be deleted with the ▲ or ▼ or ◄ or ► button.

b Press the **RED** button twice. The selected programme is deleted, all the following programmes are shifted up one position.

■ **Copying a programme**

a Select a programme to be copied with the ▲ or ▼ or ◄ or ► button.

b Press the **GREEN** button. All the following programmes are shifted down one position.

SETUP	Auto Tuning
PICTURE	Manual Tuning
AUDIO	Programme Edit
TIME	
OPTION	
SCREEN	

◇ Move MENU Prev.

1

Auto Tuning	
Manual Tuning	
Programme Edit ►	To Set
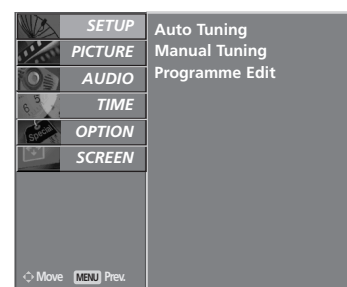
2

WATCHING TV /PROGRAMME CONTROL

■ **Moving a programme**

a Select a programme to be moved with ▲ or ▼ or ◄ or ► button.

b Press the **YELLOW** button.

c Move the programme to the desired programme number with the ▲ or ▼ or ◄ or ► button.

d Press the **YELLOW** button again to release this function.

■ **Skipping a programme number**

a Select a programme number to be skipped with ▲ or ▼ or ◄ or ► button.

b Press the **BLUE** button. The skipped programme number turns to blue.

c Press the **BLUE** button to release the skipped programme.

d When a programme number is skipped it means that you will be unable to select it using the **PR +** or **-** button during normal TV viewing.

If you want to select the skipped programme, directly enter the programme number with the **NUMBER** buttons or select it in the programme edit or table menu.

■ **Selecting Favourite Programme**

a Select your favourite programme number with ▲ or ▼ or ◄ or ► button.

b Press the **FAV** button.

The selected programme will be added to the favourite programme list and heart-mark will appear in front of that programme number.

CALLING THE PROGRAMME TABLE

You can check the programmes stored in the memory by displaying the programme table.

■ **Displaying programme LIST**

---

1 Press the **LIST** button to display the **PROGRAMME LIST** menu.

The programme list appears on the screen.

• You may find some blue programmes. They have been set up to be skipped by auto programming or in the programme edit mode.

• Some programmes with the channel number shown in the programme LIST indicate there is no station name assigned.

■ **Selecting a programme in the programme list**

---

1 Select a programme with the ▲ or ▼ or ◄ or ► button.

2 Press the **OK** button. The set switches to the chosen pro- gramme number.

■ **Paging through a programme list**

There are programme LIST pages which total contain 100 programmes.

1 Press the ▲ or ▼ or ◄ or ► button repeatedly to turns the pages.

2 Press the **LIST** button to return to normal TV viewing.

■ **Displaying favourite programme table**

Press the **FAV** button to display the Favourite Programme table menu.

DTV List	
801	YLE TV1 ◉
802	YLE TV2
803	YLE FST
804	YLE24
805	YLE Teema
806	TV4

< In Digital Mode >

Programme List	
0	BBC1 ◉
1	C 01
2	C 04
3	C 05
4	BLN 2
5	C 05

< In Analogue Mode >

Mini Glossary

♥ Displayed when the Favourite Programme.

🔒 Displayed when the Locked Programme.

INPUT SOURCE SELECTION

Sets a label to each input source which is not in use.

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, Comp., RGB or HDMI.

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

5 Press the **EXIT** button to disappear the menu window.

SETUP	Language
PICTURE	Country
AUDIO	Lock System
TIME	Parental Control
OPTION	Input Label
SCREEN	Factory Mode

◇ Move MENU Prev.

1

Language	AV1
Country	AV2
Lock System	Comp.
Parental Control	RGB
Input Label ►	HDMI
Factory Mode	
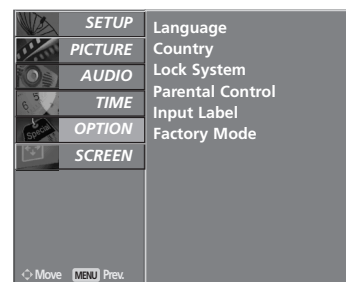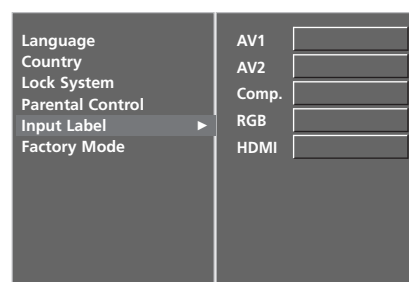
2 3 4

EPG (ELECTRONIC PROGRAMME GUIDE) (IN DIGITAL MODE)

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

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

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

The EPG displays the programme description for next 8 days.

Switch on/off EPG

1   Press the **GUIDE** button to switch on EPG.

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

Select a programme

1   Press the ▲ or ▼, ◄ or ►, **PR** + or - button to select desired programme, then press the **OK** button to display the selected programme.

Button Function in NOW/NEXT Guide Mode

Remote Control Buttons	Function
RED	Change EPG mode
YELLOW	Enter Timer Record/Remind setting mode
BLUE	Enter Timer Record/Remind list mode
◉	Change to the selected channel
◄ or ►	Select NOW or NEXT Programme
▲ or ▼	Select the Broadcasting Programme
PR + or -	Page Up/Down
GUIDE/EXIT	Switch off EPG
TV/RADIO	Select TV or RADIO Programme
INFO ⓘ	The detail information on or off

Button Function in 8 Days Guide Mode

Remote Control Buttons	Function
RED	Change EPG mode
GREEN	Enter Date setting mode
YELLOW	Enter Timer Record/Remind setting mode
BLUE	Enter Timer Record/Remind list mode
◉	Change to the selected channel
◄ or ►	Select NOW or NEXT Programme
▲ or ▼	Select the Broadcasting Programme
PR + or -	Page Up/Down
GUIDE/EXIT	Switch off EPG
TV/RADIO	Select TV or RADIO Programme
INFO ⓘ	The detail information on or off

Button Function in Date Change Mode

Remote Control Buttons	Function
GREEN	Switch off Date setting mode
◉	Change to the selected date
◄ or ►	Select a date
▼	Switch off Date setting mode
GUIDE/EXIT	Switch off EPG

EPG (ELECTRONIC PROGRAMME GUIDE) (IN DIGITAL MODE)

Button Function in Extended Description Box

Remote Control Buttons	Function
▲ or ▼	Text Up/Down
YELLOW	Enter Timer Record/Remind setting mode
INFO ⓘ	The detail information on or off
GUIDE/EXIT	Switch off EPG

Button Function in Record/Remind Setting Mode

- This function is available only when recording equipment that use pin8 recording signalling has been connected to the DTV-OUT terminal, using a SCART cable.

Remote Control Buttons	Function
YELLOW	Change to Guide or Timer list mode
◉	Save Timer Record/Remind
◀ or ▶	Select Type, Service, Date or Start/End time
▲ or ▼	Function setting
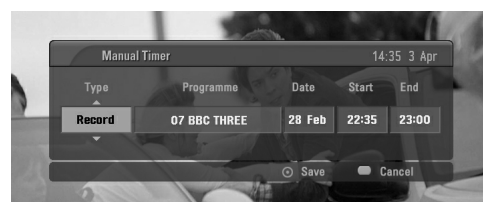
Button Function in Timer List Mode

Remote Control Buttons	Function
YELLOW	Add new Manual Timer setting mode
GREEN	Enter Timer list editing mode
RED	Delete the selected item
BLUE	Change to Guide mode
▲ or ▼	Select Timer list

PICTURE CONTROL

PICTURE SIZE (ASPECT RATIO) CONTROL

You can watch the screen in various picture formats; **16:9**, **Original**, **4:3**, **14:9** and **Zoom1/2**.

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

There might be uncomfortable in full mode. Then change into other mode.

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

This function works in the following signal.

---

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

- **16:9**
  Following selection will lead you to adjust the picture horizontally, in a linear proportion, to fill the entire screen (useful for viewing 4:3 formatted DVDs).
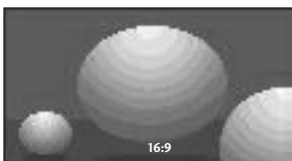
- **4:3**
  Following selection will lead you to view a picture with an original 4:3 aspect ratio, with gray bars appearing at both the left and right sides..

- **Original**
  When your TV receives the wide screen signal, it will be automatically changed to the picture format to be sent.
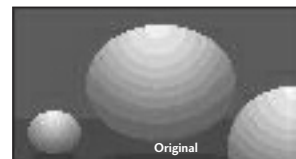
- **14:9**
  You can enjoy the picture format of 14:9 or general TV programme through the 14:9 mode. The screen 14:9 is viewed just like that the screen 4:3 is magnified to the left / right.

PICTURE CONTROL

• Zoom1

Following selection will lead you to view the picture without any alternation, while filling the entire screen. However, the top and bottom portions of the picture will be cropped.
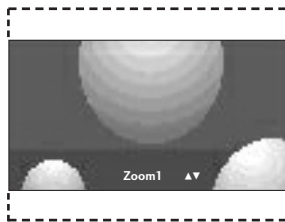
• Zoom2

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

---
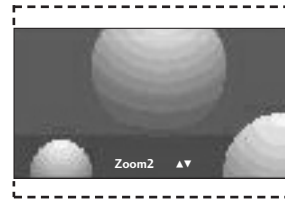
① NOTE

▶ You can only select **4:3**, **16:9** (Wide), Zoom 1/2 in Component, HDMI mode.
▶ You can only select **4:3**, **16:9** (Wide) in RGB mode only.

PRESET PICTURE SETTINGS

Picture Mode-Preset

Dynamic   Select this option to display with a sharp image.
Standard   The most general and natural screen display status.
Mild   Select this option to display with a mild image.
User 1/2   Select this option to use the user-defined setting.

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

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

③ Press the ▶ button and then ▲ or ▼ button to select **Dynamic**, **Standard**, **Mild**, **User 1**, or **User 2**.

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

Picture Mode adjusts the set for the best picture appearance. Select the preset value in the **Picture Mode** menu based on the programme category.

Dynamic, **Standard** and **Mild** are programmed for optimum picture reproduction at the factory and cannot be changed.

SETUP
PICTURE
AUDIO
TIME
OPTION
SCREEN

Picture Mode
Colour Temperature
XD
Advanced
Picture Reset
XD Demo

◇ Move   MENU Prev.

①

Picture Mode   ▶
Colour Temperature
XD
Advanced
Picture Reset
XD Demo

√ Dynamic
Standard
Mild
User 1
User 2

② ③
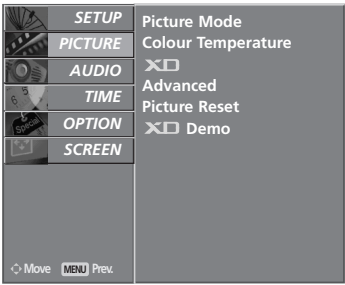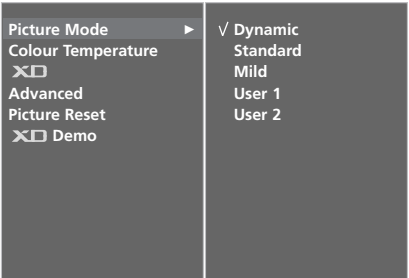
PICTURE CONTROL

Auto Colour Tone Control (Warm/Medium/Cool)

To initialize values (reset to default settings), select the Cool option.
It's available DTV, TV, AV1, AV2, Component, HDMI-DTV mode.

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

It's available to use this function in **User** mode.

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

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

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

4 Press the **EXIT** button to disappear the menu window.

SETUP	Picture Mode
PICTURE	Colour Temperature
AUDIO	XD
TIME	Advanced
OPTION	Picture Reset
SCREEN	XD Demo

◇Move MENU Prev.

1

Picture Mode	
Colour Temperature ▶	√ Cool
XD	Medium
Advanced	Warm
Picture Reset	User
XD Demo	

2 **3**

PICTURE CONTROL

Auto Colour Tone Control (9300K/6500K/sRGB)

To initialize values (reset to default settings), select the 9300K option.
It's available RGB, HDMI-PC mode.

Choose one of three automatic colour adjustments. Set to 6500K to enhance hotter colours such as red, or set to 9300K to see less intense colours with more blue.

It's available to use this function in **User** mode.

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

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

3   Press the ► button and then ▲ or ▼ button to select either **9300K**, **6500K**, **sRGB**, or **User**.

4   Press the **EXIT** button to disappear the menu window.

SETUP	Picture Mode
PICTURE	Colour Temperature
AUDIO	XD
TIME	Advanced
OPTION	Picture Reset
SCREEN	XD Demo

◇Move MENU Prev.

❶

Picture Mode	
Colour Temperature ►	√ 9300K
XD	6500K
Advanced	sRGB
Picture Reset	User
XD Demo	

❷❸

PICTURE CONTROL

MANUAL PICTURE ADJUSTMENT

Picture Mode-User option

Contrast   Adjusts the difference between the light and
             dark levels in the picture.

Brightness   Increases or decreases amount of white in the
             your picture.

Colour   Adjusts intensity of all colours.

Sharpness   Adjusts the level of crispness in the edges
             between the light and dark areas of the picture.
             The lower the level, the softer the image.

Tint   Adjusts the balance between red and green lev-
             els.
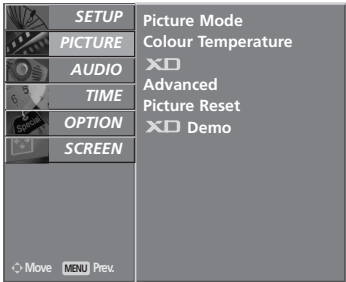
① Press the **MENU** button and then ▲ or ▼ button to select
   the **PICTURE** menu.

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

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

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

⑤ Press the ◄ or ► button to make appropriate adjustments.

⑥ Press the **EXIT** button to disappear the menu window.
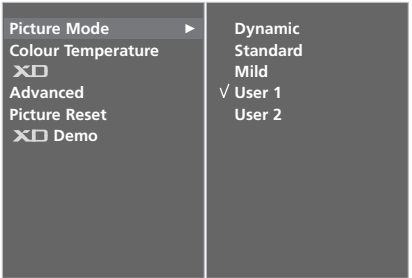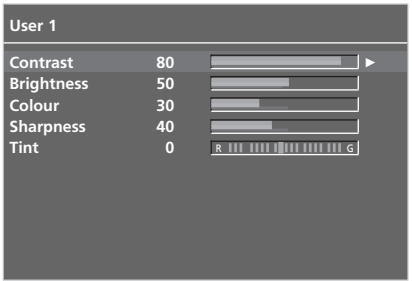
! NOTE

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

SETUP	Picture Mode
PICTURE	Colour Temperature
AUDIO	XD
TIME	Advanced
OPTION	Picture Reset
SCREEN	XD Demo

◇ Move MENU Prev.

①

Picture Mode ►	Dynamic
Colour Temperature	Standard
XD	Mild
Advanced	√ User 1
Picture Reset	User 2
XD Demo	

② ③

User 1

Contrast	80	►
Brightness	50	
Colour	30	
Sharpness	40	
Tint	0	R ||||||||||||||| G

④ ⑤

PICTURE CONTROL

Colour Tone - User option

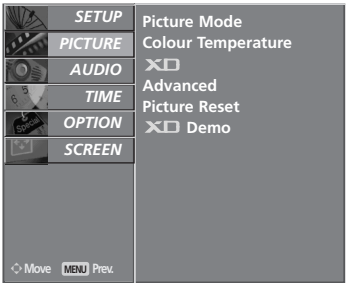**To adjust red, green, blue to any colour temperature you prefer.**

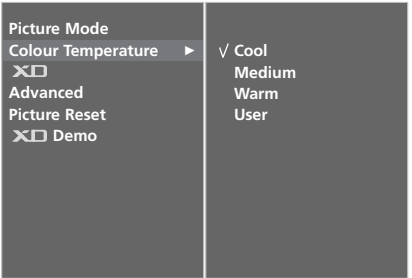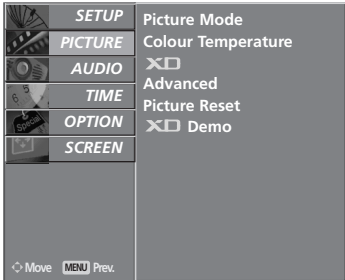① Press the **MENU** button and then ▲ or ▼ button to select the **PICTURE** menu.

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

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

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

⑤ Press the ◄ or ► button to make appropriate adjustments.

⑥ Press the **EXIT** button to disappear the menu window.

SETUP	Picture Mode
PICTURE	Colour Temperature
AUDIO	XD
TIME	Advanced
OPTION	Picture Reset
SCREEN	XD Demo

◇Move MENU Prev.

①

Picture Mode	
Colour Temperature ►	√ Cool
XD	Medium
Advanced	Warm
Picture Reset	User
XD Demo	

<DTV, TV, AV1, AV2, Component, HDMI-DTV>

Picture Mode	
Colour Temperature ►	√ 9300K
XD	6500K
Advanced	sRGB
Picture Reset	User
XD Demo	

<RGB, HDMI-PC>

② ③

User		
Red	40	►
Green	0	
Blue	0	

④ ⑤

PICTURE CONTROL

XD - PICTURE IMPROVEMENT TECHNOLOGY

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

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

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

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

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

4 Press the **EXIT** button to disappear the menu window.

SETUP
PICTURE
AUDIO
TIME
OPTION
SCREEN

Picture Mode
Colour Temperature
XD
Advanced
Picture Reset
XD Demo

◇Move MENU Prev.

1

* Selecting the Manual

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

1 Press the ▶ button and then ▲ or ▼ button to select **XD Contrast**, **XD Colour**, **XD NR** or **MPEG NR**.

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

3 Press the **EXIT** button to disappear the menu window.

Picture Mode
Colour Temperature
XD   ▶
Advanced
Picture Reset
XD Demo

Auto
√ Manual
XD Contrast
                On
XD Colour
                On
XD NR
          Low
MPEG NR   0

2

- **XD Contrast :** Optimizing the contrast automatically according to the brightness of the reflection.
- **XD Colour :** Adjusting the colours of the reflection automatically to reproduce as closely as possible to the natural colors.
- **XD NR :** Removing the noise up to the point where it does not damage the original picture.
- **MPEG NR :** To reduce the picture noise which may appear on the screen during watching the TV.

Picture Mode
Colour Temperature
XD
Advanced
Picture Reset
XD Demo

Auto
√ Manual   ▶
XD Contrast
                On
XD Colour
                On
XD NR
          Low
MPEG NR   0
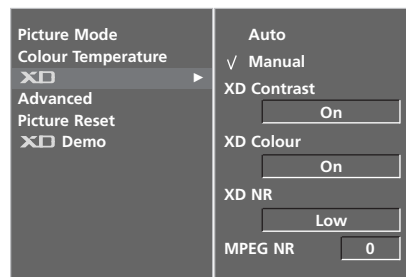
3

PICTURE CONTROL

XD DEMO

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

It's not available to use this function in RGB, HDMI[PC] mode.

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

② Press the **MENU** button and then ▲ or ▼ button to select **XD Demo.**

③ Press the ► button to begin **XD Demo.**

④ To stop **XD Demo**, press the **MENU** or **EXIT** button.

SETUP	Picture Mode
PICTURE	Colour Temperature
AUDIO	XD
TIME	Advanced
OPTION	Picture Reset
SCREEN	XD Demo

Move MENU Prev.

①

Picture Mode	
Colour Temperature	
XD	
Advanced	
Picture Reset	
XD Demo ►	To Start

② ③

• XD Demo

XD™ Off   XD™ On

Menu Exit

59
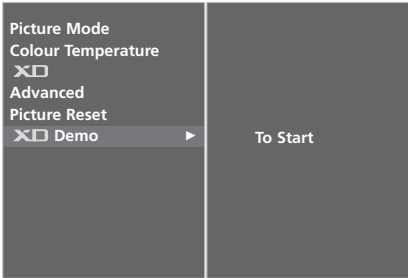
PICTURE CONTROL

ADVANCED - CINEMA

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

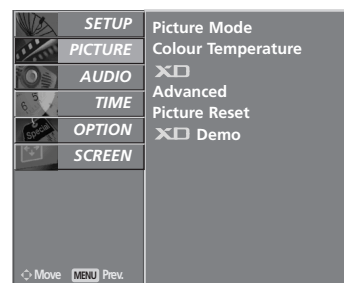This feature operates only in TV, AV and Component
480i/576i mode.

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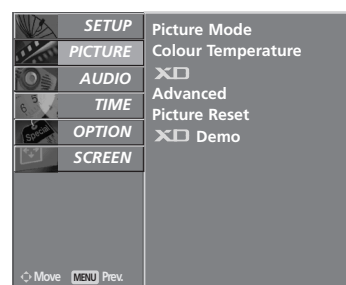
2 Press the ▶ button and then ▲ or ▼ button to select **Advanced**.

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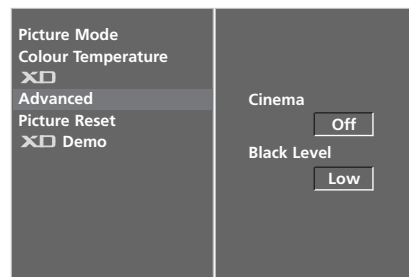
4 Press the ▶ button and then ◀ or ▶ button to select **On** or **Off**.

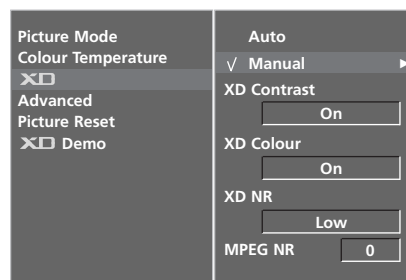**5** Press the **EXIT** button to disappear the menu window.

ADVANCED - BLACK(DARKNESS) LEVEL

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

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

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

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

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

4 Press the ▶ button and then ◄ or ▶ button to select **Low** or **High**.

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

5 Press the **EXIT** button to disappear the menu window.

SETUP	Picture Mode
PICTURE	Colour Temperature
AUDIO	XD
TIME	Advanced
OPTION	Picture Reset
SCREEN	XD Demo

◇Move MENU Prev.

1

Picture Mode
Colour Temperature
XD
Advanced
Picture Reset
XD Demo

Cinema
        Off
Black Level
        Low

2

Picture Mode
Colour Temperature
XD
Advanced
Picture Reset
XD Demo

Cinema
        Off
Black Level
        ◄► Low
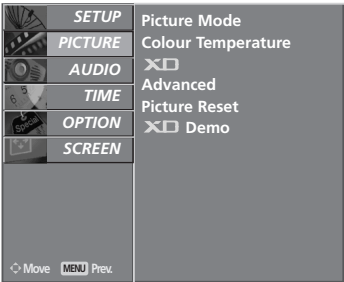
3 **4**

PICTURE CONTROL

PICTURE RESET

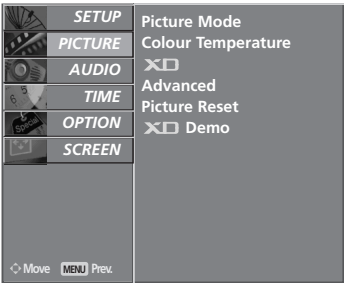**Returns to the default settings Picture Mode, Colour Temperature, XD, Advanced at the factory.**

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

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

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

SETUP	Picture Mode
PICTURE	Colour Temperature
AUDIO	XD
TIME	Advanced
OPTION	Picture Reset
SCREEN	XD Demo

◆Move MENU Prev.

❶

Picture Mode	
Colour Temperature	
XD	
Advanced	
Picture Reset ▶	To Set
XD Demo	

❷ ❸
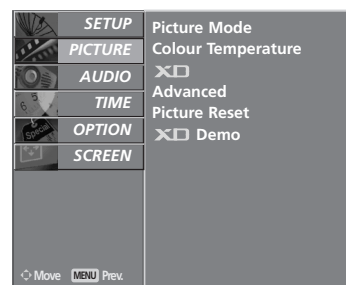
SOUND & LANGUAGE CONTROL

AUTO VOLUME LEVELER

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

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

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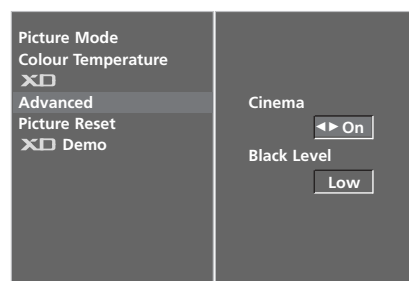
3 Press the ► button and then ▲ or ▼ button to select **Off** or **On**.

4 Press the **EXIT** button to disappear the menu window.

	SETUP	Sound Mode	
	PICTURE	Auto Volume	
	AUDIO	Balance	0
	TIME		
	OPTION		
	SCREEN		

◇Move MENU Prev.

1

Sound Mode			
Auto Volume	►	√ Off	
Balance	0	On	

2 3
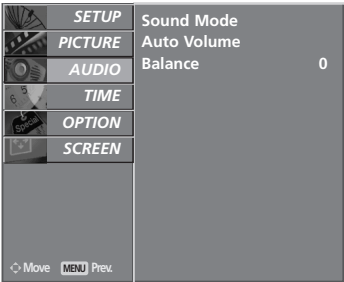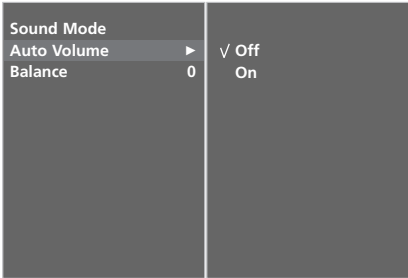
SOUND &LANGUAGE CONTROL

PRESET SOUND SETTINGS-SOUND MODE

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

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

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

Surround MAX Select this option to sound realistic.

Standard The most commanding and natural audio.

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

Movie Select this option to enjoy sublime sound.

Sports Select this option to watch sports broadcasting.

User Select this option to use the user-defined audio set-
tings.

SETUP	Sound Mode
PICTURE	Auto Volume
AUDIO	Balance 0
TIME	
OPTION	
SCREEN	

Move MENU Prev.

1

Sound Mode ►	√ Surround MAX
Auto Volume	Standard
Balance 0	Music
	Movie
	Sports
	User
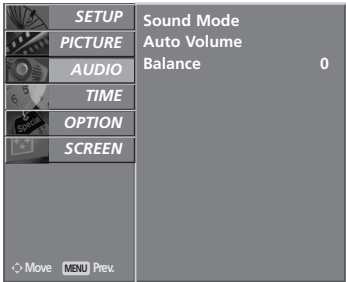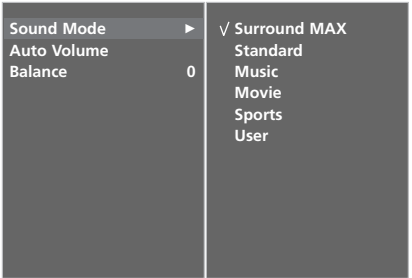
2 **3**

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

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

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

④ Press the **EXIT** button to disappear the menu window.

SOUND &LANGUAGE CONTROL

SOUND SETTING ADJUSTMENT -USER MODE

Adjust the sound equalizer.

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

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

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

4 Press the ▶ button.

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

6 Press the **EXIT** button to disappear the menu window.

SETUP	Sound Mode
PICTURE	Auto Volume
AUDIO	Balance　　　　0
TIME	
OPTION	
SCREEN	

Move　MENU Prev.

1

Sound Mode	▶	√ Surround MAX
Auto Volume		Standard
Balance	0	Music
		Movie
		Sports
		User

2 **3**

User

120Hz	◀ ▶
200Hz	
500Hz	
1.2KHz	
3KHz	
7.5KHz	
12KHz	

4 **5**
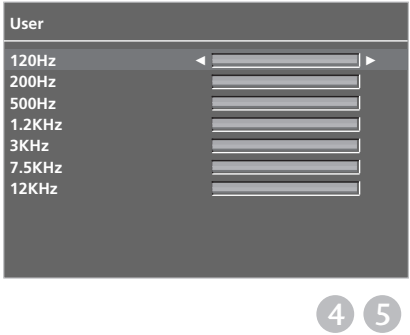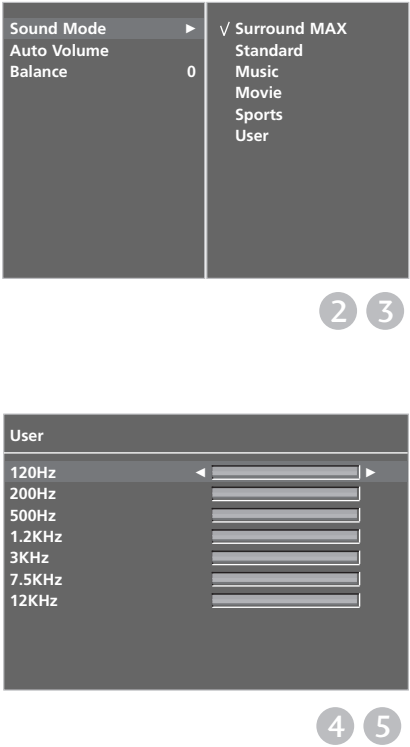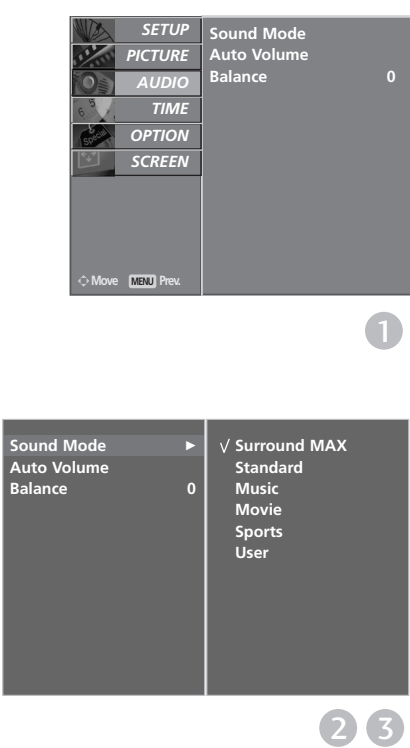
SOUND &LANGUAGE CONTROL

BALANCE

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

---

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

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

3 Press the ► button and then ◄ or ► button to make desired adjustment.

4 Press the **EXIT** button to disappear the menu window.

SETUP	**Sound Mode**
PICTURE	**Auto Volume**
AUDIO	**Balance** 0
TIME	
OPTION	
SCREEN	

◇ Move MENU Prev.

1

Sound Mode	
Auto Volume	
Balance 0 ►	L|||||||||||||||||||||||||||| R

2 3
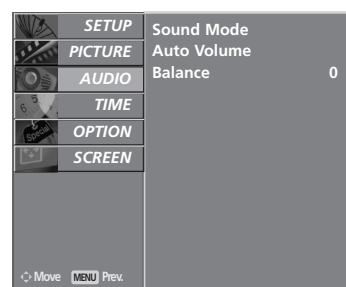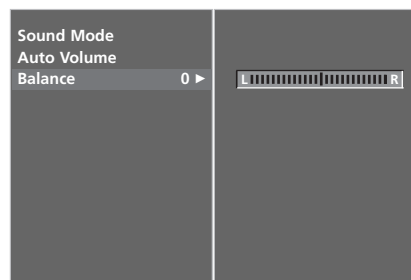
SOUND &LANGUAGE CONTROL

I/II

Stereo/Dual Reception (In Analogue Mode Only)

When a programme is selected, the sound information for the station appears after the programme number and station name disappear.

Broadcast	On Screen Display
Mono	MONO
Stereo	STEREO
Dual	DUAL I

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

■ **Language selection for dual language broadcast**
   If a programme received two languages (dual language), you can switch to **DUAL I**, **DUAL II** or **DUAL I+II** by pressing the **I/II** button repeatedly.

   DUAL I   Sends the primary broadcast language to the loudspeakers.
   DUAL II   Sends the secondary broadcast language to the loudspeakers.
   DUAL I+II   Sends a separate language to each loudspeaker.

NICAM Reception (In Analogue Mode Only)

If the set is equipped with the receiver for NICAM reception, the high quality NICAM (Near Instantaneous Companding Audio Multiplex) digital sound can be received.

Sound output can be selected according to the type of received broadcast as follows by pressing the I/II button repeatedly.

1 When **NICAM mono** is received, you can select **NICAM MONO** or **FM MONO**.

2 When **NICAM** stereo is received, you can select **NICAM STEREO** or **FM MONO**. If the stereo signal is weak, switch to **FM mono**.

3 When NICAM dual is received, you can select **NICAM DUAL I**, **NICAM DUAL II** or **NICAM DUAL I+II** or **MONO**.

Speaker Sound Output Selection

In AV, Component, RGB and HDMI mode, you can select output sound for the left and right loudspeakers.

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

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

ON-SCREEN MENU LANGUAGE / COUNTRY SELECTION

Installation guide menu appears on TV screen when it is turned on for the first time.

1 Press the ▲ or ▼ or ◄ or ► button and then, **OK** button to select your desired language.

2 Press the ▲ or ▼ button and then, **OK** button to select your country.

* If you want to change Language/ Country selection

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**. The menus can be shown on the screen in the selected language.
Or, Press the ► button and then use ▲ or ▼ button to select **Country**.

3 Press the ► button and then use ◄ or ► button to select your desired language or country.

4 Press the **OK** button.

5 Press the **EXIT** button to disappear the menu window.

⚠ NOTE

► If you don't finish set up **Installation Guide** by pressing **EXIT** button or time out of OSD (On Screen Display) display, it will continuously appear until completing set up whenever the set is turned on.

► If you turn the power on without setting the Installation Guide, the screen in TV mode will display the Installation Guide setting. Please make sure that Installation Guide is set before you use the product.

► If you select wrong local country, the teletext may not appear correctly on the screen and some problem may happen during teletext operation.

► CI (Common Interface) function may not be applied based on country broadcasting circumstance.

► DTV mode control buttons may not be working based on country broadcasting circumstance.

LANGUAGE SELECTION (IN DIGITAL MODE ONLY)

Audio function lets you select your preferred language for audio. If the audio data in selected language is not broadcasted, default language audio will be played.

Use **Subtitle** function when two or more subtitle languages are broadcasted. If the subtitle data in selected language is not broadcasted, default language subtitle will be displayed.

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**, **Subtitle** or **Subtitle Hard of hearing**.

4 Press the ▶ button and then use ◄ or ▶ button to select your desired language.

5 Press the **EXIT** button to disappear the menu window.
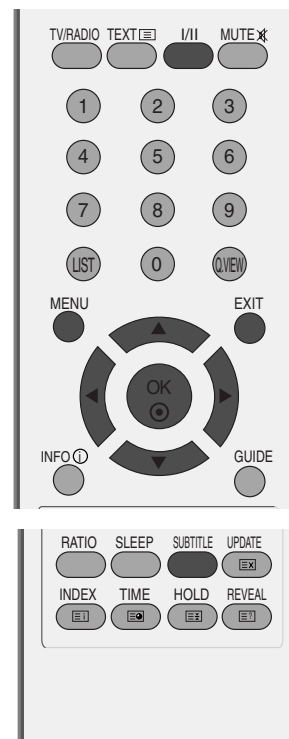
❶ NOTE

< Audio Language Selection >
▶ When two or more audio languages are broadcasted, you can select audio language with the I/II button on the remote control.
▶ Press the ▲ or ▼ button to select an audio language.
▶ Press the ◄ or ▶ button to select **L+R, L+L or R+R**.

< Subtitle Language Selection >
▶ When two or more subtitle languages are broadcasted, you can select subtitle language with the **SUBTITLE** button on the remote control.
▶ Press the ▲ or ▼ button to select a subtitle language.

Audio Language OSD Information	
Display	Status
N.A	Not Available
MPEG	MPEG Audio
DCD	Dolby Digital Audio
	Audio for "Visual Impaired"
ABC	Audio for "Hearing Impaired"

Subtitle Language OSD Information	
Display	Status
N.A	Not Available
TEXT	Teletext Subtitle
ABC	Subtitle for "Hard of Hearing"

- The audio/subtitle can be displayed simpler form with 1 to 3 characters which is broadcast by service provider.
- When you select supplementary Audio (Audio for "Visual/Hearing Impaired") it may speak out a part of Main audio.

TIME SETTING

CLOCK SETUP

The clock is set automatically when receiving the digital signal.
(You can set the clock if the set has no DTV signal.)
You must set to the time correctly before using on/off time
function.

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

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

③ Press the ▶ button and then ◀ 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.

④ Press the **EXIT** button to disappear the menu window.

SETUP	Clock
PICTURE	Off time
AUDIO	On time
TIME	Auto Sleep
OPTION	Time Zone
SCREEN	

◇Move MENU Prev.

①

Clock ▶	Time	20	14
Off time	Date	12	Apr
On time	Year	2007	
Auto Sleep			
Time Zone			

② ③
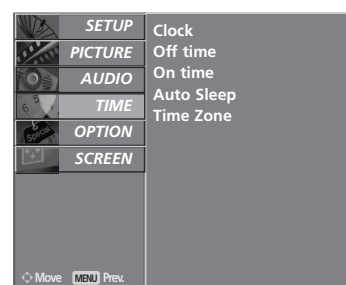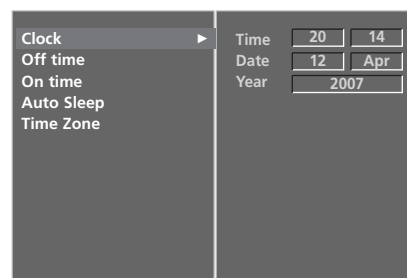
AUTO ON/OFF TIMER SETTING

The Off time automatically switches the set to standby at the preset time.
Two hours after the set is switched on by the on time function it will automatically switch back to standby mode unless a button has been pressed.
Once the on time/off time is set, these functions operate daily at the preset time.
Off time function overrides On timer function if they are set both to the same time.
The set must be in standby mode for the On timer to work.

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

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

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

• To cancel **On/Off time** function, select **Off**.

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

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

6 **For only On time function**

• **Programme:** Press the ► button and then ▲ or ▼ button to select **TV**, **DTV** or **Radio** in the **Mode** menu. And then, Press the ► button and then ▲ or ▼ button to select the programme.

• **Volume:** Press the ► button and then ▲ or ▼ button to adjust volume level at turn-on.

7 Press the **EXIT** button to disappear the menu window.
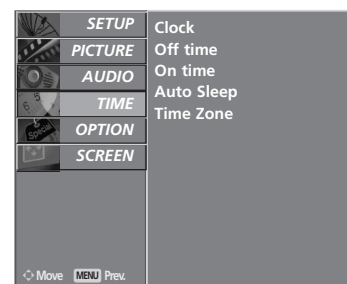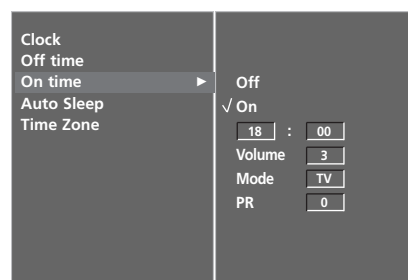
AUTO SHUT-OFF SETTING

If set to on and there is no input signal, the set turns off auto-matically after 10 minutes.

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

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

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

4 Press the **EXIT** button to disappear the menu window.

SETUP	Clock
PICTURE	Off time
AUDIO	On time
TIME	Auto Sleep
OPTION	Time Zone
SCREEN	

◇Move MENU Prev.

1

Clock	
Off time	
On time	
Auto Sleep ▶	√ Off
Time Zone	On

2 3

TIME ZONE SETUP

When you select a Time Zone city, TV time is set by the time offset information based on Time Zone and GMT (Greenwich Mean Time) information which is received to broadcasting signal when time is set automatically by a digital signal.

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

2 Press the ► button and then ▲ or ▼ button to select **Time Zone**.

3 Press the ► button and then ◄ or ► button to select your viewing area time zone.

4 Press the **EXIT** button to disappear the menu window.

SETUP	Clock
PICTURE	Off time
AUDIO	On time
TIME	Auto Sleep
OPTION	Time Zone
SCREEN	

◇ Move MENU Prev.
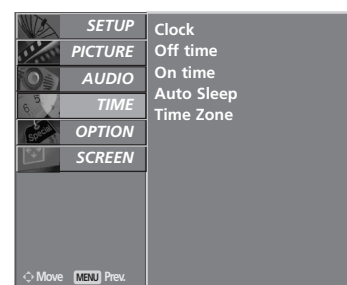
1

SLEEP TIMER SETTING

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

Clock		
Off time		
On time		
Auto Sleep		
Time Zone	►	Time Zone
		London GMT

2 3

a Press the **SLEEP** button repeatedly to select the number of minutes.

The display ' **- - - Min.** ' will appear on the screen, followed by **10**, **20**, **30**, **60**, **90**, **120**, **180** and **240**.

b When the number of minutes you want is displayed on the screen, the timer begins to count down from the number of minutes selected.

c To view the remaining sleep time, press the **SLEEP** button once.

d To cancel the sleep time, repeatedly press the **SLEEP** button until the display ' **- - - Min.** ' appears.

e When you switch the set off, the set releases the preset sleep time.
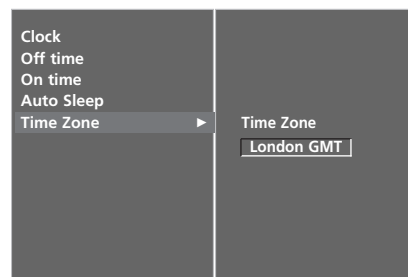
PARENTAL CONTROL / RATINGS

SET PASSWORD & LOCK SYSTEM

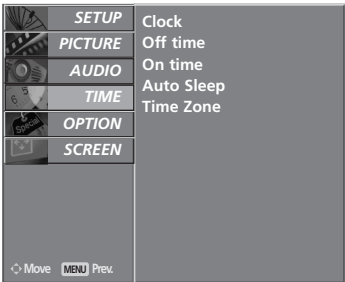If you first enter the password, press '0', '0', '0', '0' on the remote control handset.

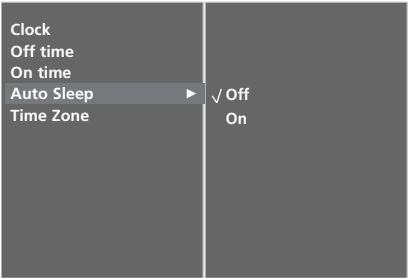1. Press the **MENU** button and then ▲ or ▼ button to select the **OPTION** menu.

2. Press the ▶ button and then ▲ or ▼ button to select **Lock System**.

3. Press the ▶ button and then ◀ or ▶ button to select **On**.

   To set the password

   Press the ▶ button and then use NUMBER buttons to input a 4-digit password.

   Be sure to remember this number!

   Re-enter new password for confirm.

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

4. Press the **EXIT** button to disappear the menu window.

SETUP	Language
PICTURE	Country
AUDIO	Lock System
TIME	Parental Control
OPTION	Input Label
SCREEN	Factory Mode

◇Move MENU Prev.

①

Language
Country
Lock System   ▶
Parental Control
Input Label
Factory Mode

Lock   Off

Set Password
New

Confirm

② ③

PARENTAL CONTROL

This function operates according to information from the broadcasting station. Therefore if the signal has wrong information, this function dose not operates.

Lets you set up blocking schemes to block specific channels, ratings, and external viewing sources.

A password is required to gain access to this menu.

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

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

2 Press the ► button and then ▲ or ▼ button to select **Parental Control**.
Then, press the ► button to enter the password as requested.
The set is set up with the initial password "0-0-0-0".

3 Press the ► button and then ◄ or ► button to select **Parental Guidance** or **Key Lock**.

Parental Guidance (In Digital mode only)
Prevents children from watching certain adult's TV programmes, according to the ratings limit set.
Key Lock
The set can be set so that the remote control is needed to control it. This feature can be used to prevent unauthorized viewing.

4 Press the ▲ or ▼ button to make appropriate adjustments.

5 Press the **EXIT** button to disappear the menu window.

SETUP	Language
PICTURE	Country
AUDIO	Lock System
TIME	Parental Control
OPTION	Input Label
SCREEN	Factory Mode

◇Move MENU Prev.

❶

Language	
Country	
Lock System	
Parental Control ►	Parental Guidance
Input Label	Off
Factory Mode	Key Lock
	Off

❷ ❸ ❹
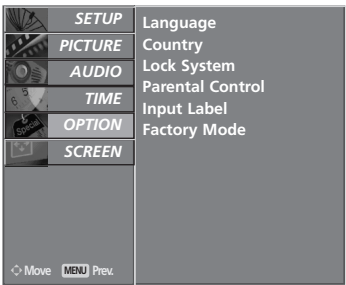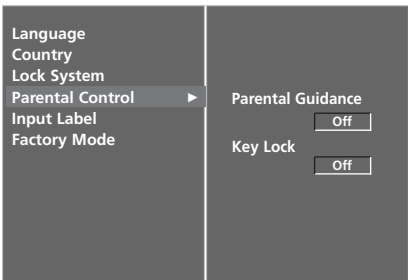
In **Key Lock** '**On**', if the set is turned off, press the ⏻ / I, **INPUT**, **PR** ▲ or ▼ button on the set or **POWER**, **INPUT**, D/A TV, **PR** + or - or NUMBER buttons on the remote control.

With the **Key Lock On**, the display ' **Key Lock On** ' appears on the screen if any button on the front panel is pressed while viewing the set.

TELETEXT

This feature is not available in all countries.

Teletext is a free service broadcast by most TV stations which gives up-to-the-minute information on news, weather, television programmes, share prices and many other topics.

The teletext decoder of this set can support the SIMPLE, TOP and FASTEXT systems. SIMPLE (standard teletext) consists of a number of pages which are selected by directly entering the corresponding page number. TOP and FASTEXT are more modern methods allowing quick and easy selection of teletext information.

SWITCH ON/OFF

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

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

Press the **TEXT** or **EXIT** button to switch off teletext. The previous mode reappears.

SIMPLE TEXT

■ Page selection

❶   Enter the desired page number as a three digit number with the NUMBER buttons. If during selection you press a wrong number, you must complete the three digit number and then re-enter the correct page number.

❷ The **PR+** or - button can be used to select the preceding or following page.

TOP TEXT

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

■ Block / group / page selection

❶ With the blue button you can progress from block to block.

❷ Use the yellow button to proceed to the next group with automatic overflow to the next block.

❸ With the green button you can proceed to the next existing page with automatic overflow to the next group.
Alternatively the **PR+** button can be used.

❹ The red button permits to return to previous selection. Alternatively the **PR-** button can be used.

■ Direct page selection

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

TELETEXT

FASTEXT

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

■ Page selection

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

SPECIAL TELETEXT FUNCTIONS

⊟?

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

⊟X

■ UPDATE
Displays the TV picture on the screen while waiting for the new teletext page. The display will appear at the top left hand corner of the screen. When the updated page is available then display will change to the page number. Press this button to view the updated teletext page.

⊟⊘

■ TIME
When viewing a TV programme, press this button to display the time at the top right hand corner of the screen. Press this button again to remove the display. In the teletext mode, press this button to select a sub page number. The sub page number is displayed at the bottom of the screen. To hold or change the sub page, press the RED/GREEN, **PR+** or - or NUMBER buttons.
Press again to exit this function.

⊟⊠

■ HOLD
Stops the automatic page change which will occur if a teletext page consists of 2 or more sub pages. The number of sub pages and the sub page displayed is, usually, shown on the screen below the time. When this button is pressed the stop symbol is displayed at the top left-hand corner of the screen and the automatic page change is inhibited. To continue press this button again.

DIGITAL TELETEXT

*This function works in UK only.

The set gives you access to a digital teletext which is greatly improved in various aspects such as text, graphics and so on.
This digital teletext can be accessed by special digital teletext services and specific services which broadcast digital teletext.
You should select off from the subtitle language to display teletext by pressing **SUBTITLE** button.

TELETEXT WITHIN DIGITAL SERVICE

① Press the numeric or **PR +** or **-** button to select a digital service which broadcasts digital teletext.
To know which are digital teletext services, refer to the EPG service list.

② Follow the indications on digital teletext and move onto the next step by pressing **TEXT**, **OK**, ▲ or ▼, ◄ or ►, **RED**, **GREEN**, **YELLOW**, **BLUE** or **NUMBER** buttons and so on.

③ To change digital teletext service, just select a different service by the numeric or **PR +** or **-** button.

If pressing the **MENU**, **GUIDE** or **INFO** ⓘ button, the teletext service disappear temporarily. When pressing these buttons again, the teletext service is appeared.

TELETEXT IN DIGITAL SERVICE

① Press the numeric or **PR +** or **-** button to select a certain service which broadcasts digital teletext.

② Press the **TEXT** or colour button to switch on teletext.

③ Follow the indications on digital teletext and move onto the next step by pressing **OK**, ▲ or ▼, ◄ or ►, **RED**, **GREEN**, **YELLOW**, **BLUE** or **NUMBER** buttons and so on.

④ Press the **TEXT** or colour button to switch off digital teletext and return to TV viewing.

Some services may allow you to access text services by pressing the **RED** button.

If pressing the **MENU**, **GUIDE** or **INFO** ⓘ button, the teletext service disappear temporarily. When pressing these buttons again, the teletext service is appeared.

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 set. ■ 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 sleep** 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 centre, if the picture has not appeared after five minutes.
No or poor colour or poor picture	■ Adjust Colour in menu option. ■ Keep a sufficient distance between the product and the VCR. ■ Try another channel. The problem may be with the broadcast. ■ Are the video cables installed properly? ■ Activate any function to restore the brightness of the picture.
Horizontal/vertical bars or picture shaking	■ Check for local interference such as an electrical appliance or power tool.
Poor reception on some channels	■ Station or cable product experiencing problems, tune to another station. ■ Station signal is weak, reorient antenna to receive weaker station. ■ Check for sources of possible interference.
Lines or streaks in pictures	■ Check antenna (Change the direction of the antenna).

APPENDIX

The audio function does not work.	
Picture OK & No sound	■ Press the **VOL +** or **-** 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.

Only RGB mode applied

No image is displayed.	
Power is on, power indicator is blue but the screen appears extremely dark.	■ Adjust brightness and contrast again.
Does the power indicator look amber?	■ If the product is in power saving mode, move the mouse or press any key. ■ In DVD Player or Settop Box, check the power status of connected device.
Does the 'Out of range'message appear?	■ The signal from the PC (Video card) is out of the vertical or horizontal frequency range of the product. Adjust the frequency range by referring to the Specifications in this user's guide. * Maximum resolution 1680 X 1050 @ 60Hz
Does the 'Check signal cable'message appear?	■ The signal cable between PC and product is not connected. Check the signal cable. ■ Press the 'INPUT' button in the remote control to check the input signal.

APPENDIX

Only RGB mode applied

'Unknown Product' message appears when the product is connected.	
Did you install the driver?	■ Install the product driver, which is provided with the product, or download it from the web sige. (http://www.lge.com) ■ See if the plug&play function is supported by referring to the video card user's guide.

The screen image looks abnormal.	
Is the screen position wrong?	■ Adjust the Position menu in OSD. ■ See if the video card resolution and frequency are supported by the product. If the frequency is out of range, set to the recommended resolution in the Control Panel-Display-Setting menu.
Do thin lines appear on the background screen?	■ Adjust the Clock menu in OSD.
Horizontal noise appear or the characters look blurred.	■ Adjust the Phase menu in OSD.

After-image appears on the product.	
After-image appears when the product is turned off.	■ If you use a fixed image for a long time, the pixels may be damaged quickly. Use the screen saver function.

Screen color is abnormal.	
Screen has poor color res-oluion (16colors).	■ Screen color resolution to more than 24 bits (true color) Select control Panel-Display-Settings-Color Table menu in Windows.
Screen color is unstable or mono color.	■ Check the connection status of the signal cable.
Do back spots appear on the screen?	■ Several pixels (red, green, white or black color) may appear on the screen, which can be attributable to the unique characteristics of the LCD panel. It is not a malfunction of the LCD.

APPENDIX

MAINTENANCE

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

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 set dormant for a long time (such as a vacation), it's a good idea to unplug the power cord to protect against possible damage from lightning or power surges.

APPENDIX

PRODUCT SPECIFICATIONS

LCD Panel	Screen Type	22 inches Wide (55.868 cm) TFT (Thin Film Transistor) LCD (Liquid Crystal Display) Panel Visible diagonal size : 55.868 cm
	Pixel Pich	0.282 mm
Video Signal	Max. Resolution	1680 X 1050 @60 Hz
	Recommecded Resolution	1680 X 1050 @60 Hz
	Horizontal Frequency	30 - 83 kHz
	Vertical Frequency	56 - 75 Hz
	Synchronization Type	Separate Sync, Digital
Input Connector		TV, D-Sub Analog, HDMI, SCART*2, PC Audio In, component
Power	Rated Voltage	AC100-240V~ 50/60Hz 1.0A
	Power Consumption	On Mode : 60W (typ.) Sleep Mode ≤ 1W Off Mode ≤ 1W
Tilt	Tilt Range	-3 ~ 8˚
	Swivel	350˚
Dimensions (Width x Height x Depth) Weight		456.8 x 396.6 x 172.0mm (18.0 x 15.6 x 6.8 inches) 5.1 kg / 11.3 lbs
Environment condition	Operating Temperature	10 ~ 35˚C
	Operating Humidity	20 ~ 80%
	Storage Temperature	-10 ~ 60˚C
	Storage Humidity	5 ~ 90%

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

APPENDIX

PROGRAMMING THE REMOTE CONTROL

The remote is a multi-brand or a universal remote. It can be programmed to operate most remote-controllable devices of other manufacturers.
Note that the remote may not control all models of other brands.

Programming a code into a remote mode

1   Test your remote control.
To find out whether your remote control can operate the component without programming, turn on the component such as a VCR and press the corresponding mode button (such as a **DVD** or **VCR**) on the remote control, while pointing at the component. Test the **POWER** and **PR + / -** buttons to see if the component responds properly. If not, the remote requires programming to operate the device.

2   Turn on the component to be programmed, then press the corresponding mode button (such as a **DVD** or **VCR**) on the remote control. The remote control button of desired device is lighted.

3   Press the **MENU** and **MUTE** buttons simultaneously, the remote control is ready to be programmed for the code.

4   Enter a code number using the number buttons on the remote control. Programming code numbers for the corresponding component can be found on the following pages. Again, if the code is correct, the device will turn off.

5   Press the **MENU** button to store the code.

6   Test the remote control functions to see if the component responds properly. If not, repeat from step 2.

PROGRAMMING CODE

DVD

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

VCR

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

APPENDIX

IR CODES

1. How to Connect

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

2. Remote Control IR Codes

■ **Output waveform**

Single pulse, modulated with 37.917KHz signal at 455KHz
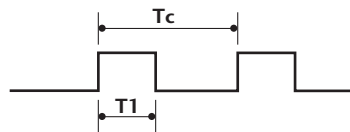
Carrier frequency

$FCAR = 1/TC = fOSC/12$

Duty ratio $= T1/TC = 1/3$

■ **Configuration of frame**

1st frame

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
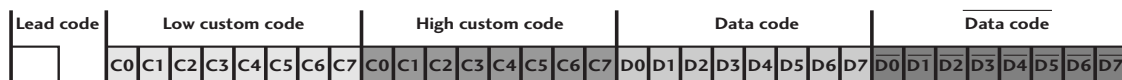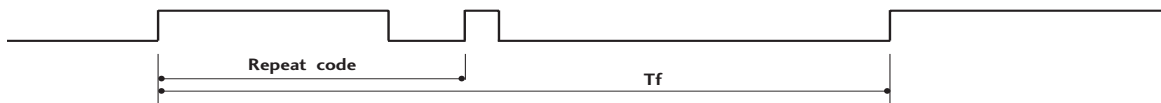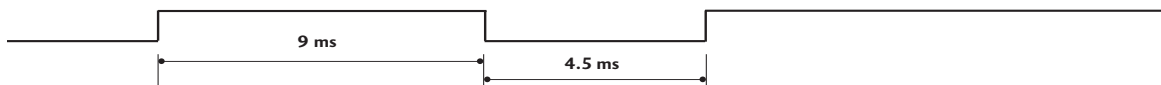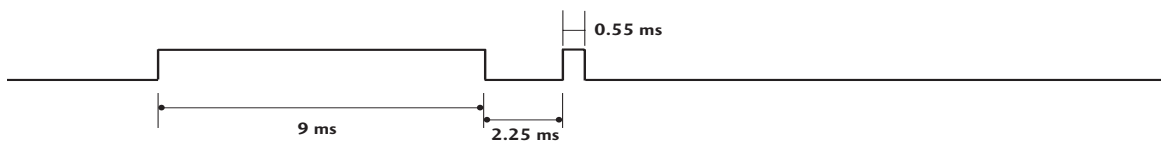
■ **Bit description**

Bit "0"

0.56 ms

1.12 ms

Bit "1"

0.56 ms

2.24 ms
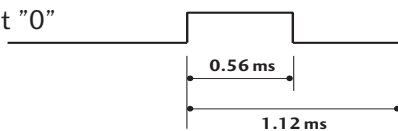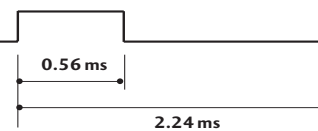
■ **Frame interval: Tf**

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

Tf

Tf

Tf=108ms @455KHz
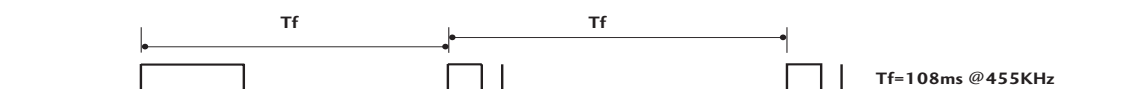
APPENDIX

| Code (Hexa)	Function	Note
00	PR +	R/C BUTTON
01	PR -	R/C BUTTON
02	VOL +	R/C BUTTON
03	VOL -	R/C BUTTON
40	Up (▲)	R/C BUTTON
41	Down (▼)	R/C BUTTON
06	Right (►)	R/C BUTTON
07	Left (◄)	R/C BUTTON
08	POWER	R/C BUTTON (POWER ON/OFF)
09	MUTE	R/C BUTTON
10	Number Key 0	R/C BUTTON
11	Number Key 1	R/C BUTTON
12	Number Key 2	R/C BUTTON
13	Number Key 3	R/C BUTTON
14	Number Key 4	R/C BUTTON
15	Number Key 5	R/C BUTTON
16	Number Key 6	R/C BUTTON
17	Number Key 7	R/C BUTTON
18	Number Key 8	R/C BUTTON
19	Number Key 9	R/C BUTTON
0B	INPUT	R/C BUTTON
AA	INFO ⓘ	R/C BUTTON
AB	GUIDE	R/C BUTTON
56	SUBTITLE	R/C BUTTON
5B	EXIT	R/C BUTTON
1E	FAV	R/C BUTTON
1A	Q.VIEW	R/C BUTTON
50	D/A TV	R/C BUTTON
F0	TV/RADIO	R/C BUTTON
0A	I/II	R/C BUTTON
0E	SLEEP	R/C BUTTON
43	MENU	R/C BUTTON
44	OK(◉)	R/C BUTTON
53	LIST	R/C BUTTON
20	TEXT	R/C BUTTON
2A	REVEAL	R/C BUTTON
26	TIME	R/C BUTTON
28	BACK	R/C BUTTON
62	UPDATE	R/C BUTTON
70	INDEX	R/C BUTTON
65	HOLD	R/C BUTTON
61	BLUE Key	R/C BUTTON
63	YELLOW Key	R/C BUTTON
71	GREEN Key	R/C BUTTON
72	RED Key	R/C BUTTON
79	RATIO	R/C BUTTON

APPENDIX

EXTERNAL CONTROL DEVICE SETUP

RS-232C Setup

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

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

Note: RS-232C connection cables are not supplied with the product.
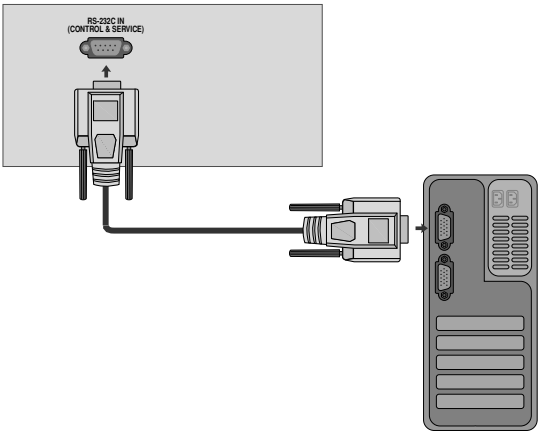
Type of Connector; D-Sub 9-Pin Male

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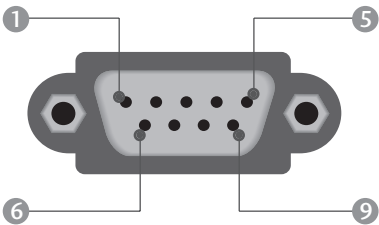
RS-232C Configurations

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

	PC	TV	
RXD	2 —— 3	TXD
TXD	3 —— 2	RXD
GND	5 —— 5	GND
DTR	4 —— 6	DSR
DSR	6 —— 4	DTR
RTS	7 —— 8	CTS
CTS	8 —— 7	RTS
	D-Sub 9	D-Sub 9

3-Wire Configurations(Not standard)

	PC	TV	
RXD	2 —— 3	TXD
TXD	3 —— 2	RXD
GND	5 —— 5	GND
DTR	4	6	DTR
DSR	6	4	DSR
RTS	7	7	RTS
CTS	8	8	CTS
	D-Sub 9	D-Sub 9

APPENDIX

Set ID

Use this function to specify a set ID number.
Refer to 'Real Data Mapping'. ▶ p.92

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

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

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

4 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.

5 Press the **EXIT** button to disappear the menu window.

SETUP
PICTURE
AUDIO
TIME
OPTION
SCREEN

Language
Country
Lock System
Parental Control
Input Label
Factory Mode

Move MENU Prev.

1

Language
Country
Lock System
Parental Control
Input Label
Factory Mode ▶

Set ID
1
Factory Reset
OK

2

Language
Country
Lock System
Parental Control
Input Label
Factory Mode

Set ID
◄► 1
Factory Reset
OK
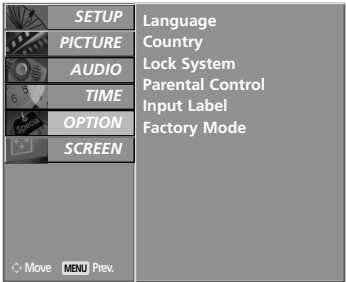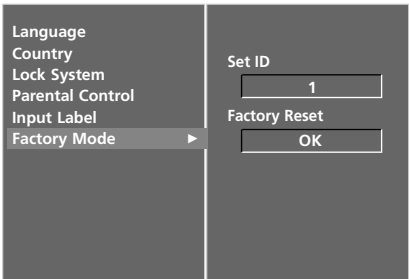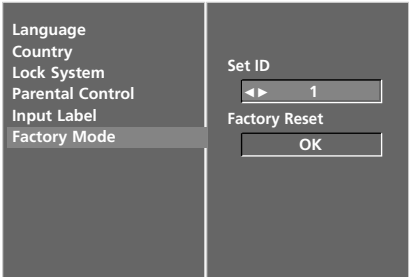
3 *4*

APPENDIX

Communication Parameters

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

Command Reference List

	COMMAND 1	COMMAND 2	DATA (Hexadecimal)
01. Power	k	a	0 ~ 1
02. Input Select	k	b	Refer to p. 89
03. Aspect Ratio	k	c	Refer to p. 89
04. Screen Mute	k	d	0 ~ 1
05. Volume Mute	k	e	0 ~ 1
06. Volume Control	k	f	0 ~ 64
07. Contrast	k	g	0 ~ 64
08. Brightness	k	h	0 ~ 64
09. Colour	k	i	0 ~ 64
10. Tint	k	j	0 ~ 64
11. Sharpness	k	k	0 ~ 64
12. OSD Select	k	l	0 ~ 1
13. Remote control lock mode	k	m	0 ~ 1
14. Balance	k	t	0 ~ 64
15. Colour Temperature	k	u	0 ~ 3
16. Red Adjustment	k	v	0 ~ 50
17. Green Adjustment	k	w	0 ~ 50
18. Blue Adjustment	k	$	0 ~ 50
19. Abnormal Status	k	z	0 ~ 9
20. Auto Configure	j	u	1
21. Channel Select Command	m	a	Refer to p. 92
22. Send IR Code	m	c	Key Code
23. Input select (Main)	x	b	Refer to p. 92

* When setting the 19 ~ 23, a menu doesn't display on screen.

Transmission / Receiving Protocol

Transmission

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

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

OK Acknowledgement

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

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

Error Acknowledgement

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

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

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

APPENDIX

01. Power (Command 2 : a)
► To control Power On/Off of the set.
Transmission

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

Data 0 : Power Off   1 : Power On
Ack

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

► To show Power On/Off.
Transmission

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

Ack

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

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

02. Input Select (Command 2 : b)
► To select input source for the set.
You can also select an input source using the INPUT button on the set's remote control.

Transmission

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

Data 0 : DTV   5 : Component
        1 : ATV   6 : RGB
        2 : AV1   7 : HDMI
        3 : AV2

Ack

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

03. Aspect Ratio (Command 2 : c) (Main Picture Size)
► To adjust the screen format. (Main picture format)
You can also adjust the screen format using the ARC (Aspect Ratio Control) button on remote control or in the SCREEN menu.
Transmission

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

Data 1 : Normal screen (4:3)   5 : Zoom2
        2 : Wide screen (16:9)   6 : Original
        4 : Zoom1   7 : 14:9

Ack

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

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

04. Screen Mute (Command 2 : d)
► To select screen mute on/off.
Transmission

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

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

Ack

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

05. Volume Mute (Command 2 : 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 off (Volume on)
        1 : Volume mute on (Volume off)

Ack

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

06. Volume Control (Command 2 : f)
► To adjust volume.
You can also adjust volume with the VOLUME buttons on remote control.
Transmission

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

Data Min : 0 ~ Max : 64
        * Refer to 'Real data mapping 1'. See page 91.
Ack

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

07. Contrast (Command 2 : g)
► To adjust screen contrast.
You can also adjust contrast in the PICTURE menu.
Transmission

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

Data Min : 0 ~ Max : 64
        * Refer to 'Real data mapping 1'. See page 91.
Ack

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

08. Brightness (Command 2 : h)
► To adjust screen brightness.
You can also adjust brightness in the PICTURE menu.
Transmission

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

Data Min : 0 ~ Max : 64
        * Refer to 'Real data mapping 1'. See page 91.
Ack

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

APPENDIX

09. Colour (Command 2 : i)
▶ To adjust the screen colour.
   You can also adjust colour in the PICTURE menu.

Transmission

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

Data Min : 0 ~ Max : 64
      * Refer to 'Real data mapping 1'. See page 91.

Ack

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

10. Tint (Command 2 : j)
▶ To adjust the screen tint.
   You can also adjust tint in the PICTURE menu.

Transmission

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

Data Red : 0 ~ Green : 64
      * Refer to 'Real data mapping 1'. See page 91.

Ack

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

11. Sharpness (Command 2 : k)
▶ To adjust the screen sharpness.
   You can also adjust sharpness in the PICTURE menu.

Transmission

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

Data Min : 0 ~ Max : 64
      * Refer to 'Real data mapping 1'. See page 91.

Ack

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

12. OSD Select (Command 2 : l)
▶ To select OSD (On Screen Display) on/off when con-
   trolling remotely.

Transmission

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

 Data 0 : OSD off   1 : OSD on

Ack

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

13. Remote control lock mode (Command 2 : m)
▶ To lock the front panel controls on the monitor and
    remote control.

Transmission

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

Data 0 : Lock off   1 : Lock on

Ack

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

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

14. Balance (Command 2 : t)
▶ To adjust balance.
   You can also adjust balance in the AUDIO menu.

Transmission

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

Data Min : 0 ~ Max : 64
      * Refer to 'Real data mapping 1'. See page 91.

Ack

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

15. Colour Temperature (Command 2 : u)
▶ To adjust colour temperature. You can also adjust Colour
   Temperature in the PICTURE menu.

Transmission

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

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

Ack

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

16. Red Adjustment (Command 2 : v)
▶ To adjust red in colour temperature.

Transmission

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

Data Min : 0 ~ Max : 50
      * Refer to 'Real data mapping 2'. See page 91.

Ack

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

17. Green Adjustment (Command 2 : w)
▶ To adjust green in colour temperature.

Transmission

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

Data Min : 0 ~ Max : 50
      * Refer to 'Real data mapping 2'. See page 91.

Ack

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

18. Blue Adjustment (Command 2 : $)
▶ To adjust blue in colour temperature.

Transmission

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

Data Min : 0 ~ Max : 50
      * Refer to 'Real data mapping 2'. See page 91.

Ack

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

APPENDIX

19. Abnormal State (Command 2 : z)

► To recognize an abnormal state.

Transmission

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

Data FF : Read

Ack

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

Data 0: Normal (Power on and signal exist)
     1: No signal (Power on)
     2: Turn the monitor off by remote control
     3: Turn the monitor off by sleep time function
     4: Turn the monitor off by RS-232C function
     5: 5V down
     6: AC down
     7: Turn the monitor off by Fan Alarm function
     8: Turn the monitor off by Off time function
     9: Turn the monitor off by Auto sleep function

* This function is "read only".

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

► To adjust picture position and minimize image shaking automatically. It works only in RGB mode.

Transmission

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

Data 1: To set

Ack

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

21. Channel Select Command (Command 1 : m, Command 2 : a)

► Select channel to following physical number.

Transmission

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

Data0 :High channel data
Data1 :Low channel data
  ex. No. 47 -> 00 2F (2FH)
        No. 394 -> 01 88 (188H),
        DTV No. 0 -> Don't care
Data2 0x00 : ATV Main
        0x10 : DTV Main

Channel data range
 Analogue - Min: 00 ~ Max: 63 (0~99)
 Digital - Min: 00 ~ Max: 3E7 (0~999)

Ack

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

Data Min: 00 ~ Max: 7D

22. Send IR Code (Command 1 : m, Command 2 : c)

► To send IR remote key code.

Transmission

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

Data Key code - Refer to page 85.

Ack

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

---

* Real data mapping 1

0 : Step 0

A : Step 10 (Set ID 10)

F : Step 15 (Set ID 15)
10 : Step 16 (Set ID 16)

64 : Step 100

6E : Step 110

73 : Step 115
74 : Step 116

C7 : Step 199

FE : Step 254
FF : Step 255

* Real data mapping 2

0 : -40
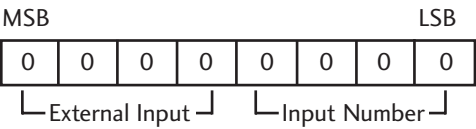1 : -39
2 : -38

28 :0

4E : +38
4F : +39
50 : +40

APPENDIX

23. Input select (Command 1 : x, Command 2 : b)
(Main Picture Input)

▶ To select input source for main picture.

Transmission

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

Data Structure

MSB   LSB

0	0	0	0	0	0	0	0

└─External Input─┘ └─Input Number─┘

External Input				Data
0	0	0	0	DTV
0	0	0	1	Analogue
0	0	1	0	AV
0	0	1	1	Component
0	1	0	0	RGB
0	1	0	1	HDMI

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

Ack

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

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