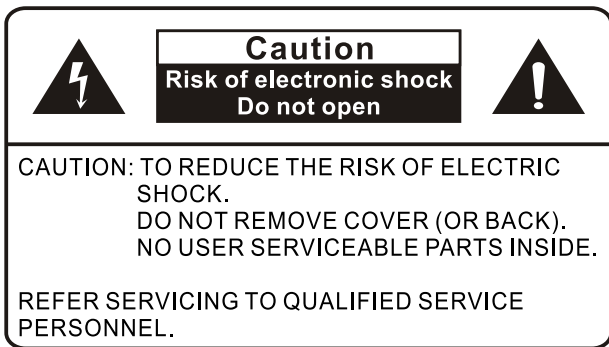




# The Important Safety Instruction



The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of a sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

## Caution

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturers instructions.
8. Do not install near any heat source such as radiators, heat registers, stoves or other apparatus that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding type plug. A polarized plug has type blades with one wide than the other. A grounding - type plug has two blades and a third grounding prong. The wide blade or third prong are provide for your safety. When the provide plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachment/accessories specified by the manufacturer.
12. Use only with a cart, stand, tripod, bracket or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.



## FCC notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- 1.Reorient or relocate the receiving antenna.
- 2.Increase the separation between the equipment and receiver.
- 3.Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- 4.Consult the dealer or an experienced radio/TV technician for help.

Modifications not expressly approved by the manufacturer could void the user's authority to operated the equipment under FCC rules. This device complies with part 15 of the FCC Rules.

Operation is subjected to the following two conditions:

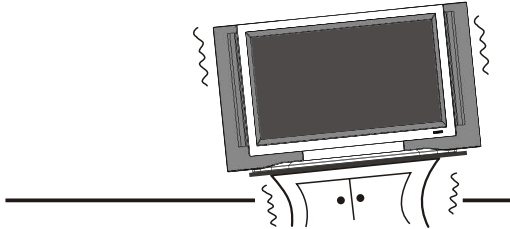
- 1.This device may not cause harmful interference.
- 2.this device must accept any interference received, including interference that may cause undesired operation.

## Approval

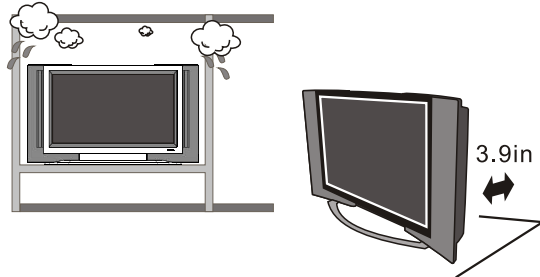


# Precautions and Reminders

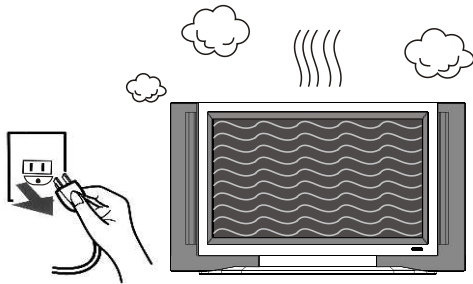
Place unit on even surfaces.  
Avoid unstable



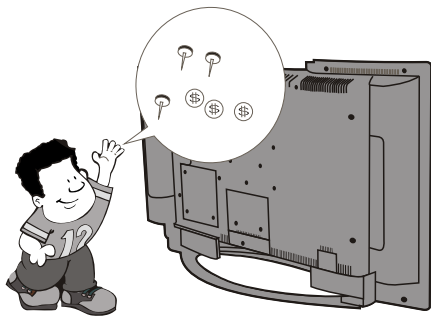
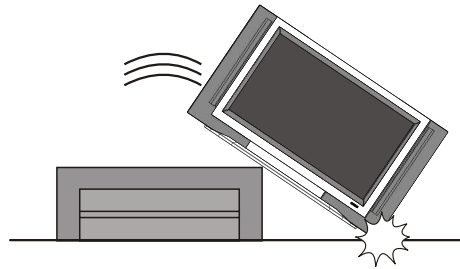
Don't place TV in a closed area  
when using it.



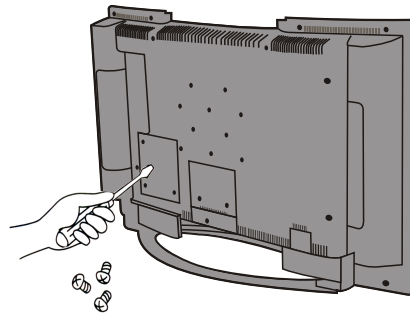
Unplug immediately if there is  
malfunction like no picture, no  
video/audio, smoke, bad odor  
from TV..



Unplug immediately if other  
foreign materials are put inside  
TV box or if the TV falls down.



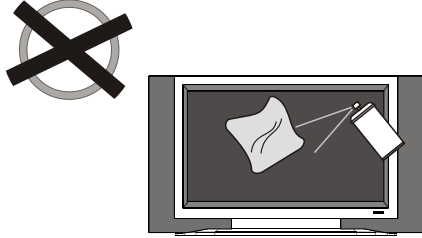
Don't throw any object inside  
the TV box like metals or other  
flammable materials.



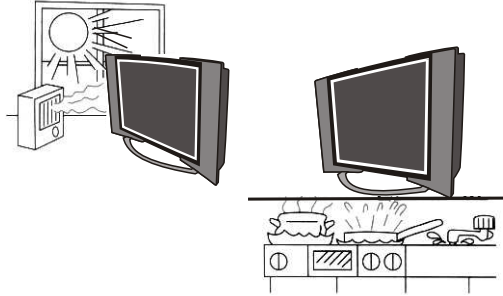
Prohibit/Avoid opening the TV box

# Precautions and Reminders

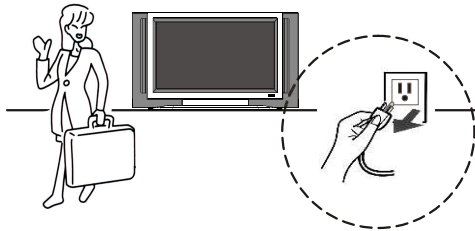
Remember to unplug the AC cord from the AC outlet before cleaning the display unit. And do not use liquid cleaners or aerosol cleaners to clean the display.



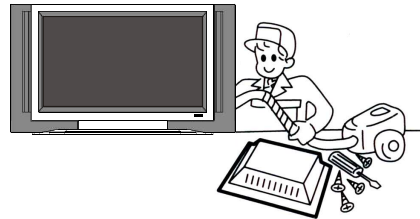
Avoid direct sunlight contact to TV. Avoid dusty, high humidity and smoky areas.



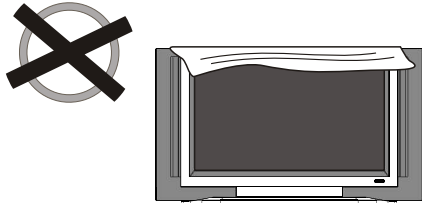
Make sure to unplug the unit when there are no people left in the house for a long period of time (days).



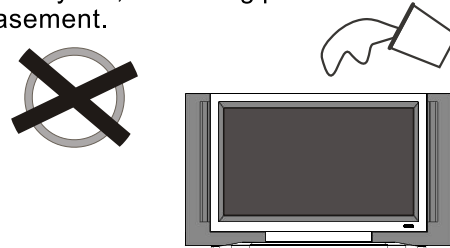
Call service personnel to dean the internal part of the TV box once a year.



Do not cover or block these vents and openings, because inadequate ventilation may shorten the display unit life and cause overheating.



Do not place the display near water. Like bathtub, washbasin, kitchen sink and laundry tub, swimming pool and in a wet basement.



## Precautions for Remote Controller

**Avoid Dropping**



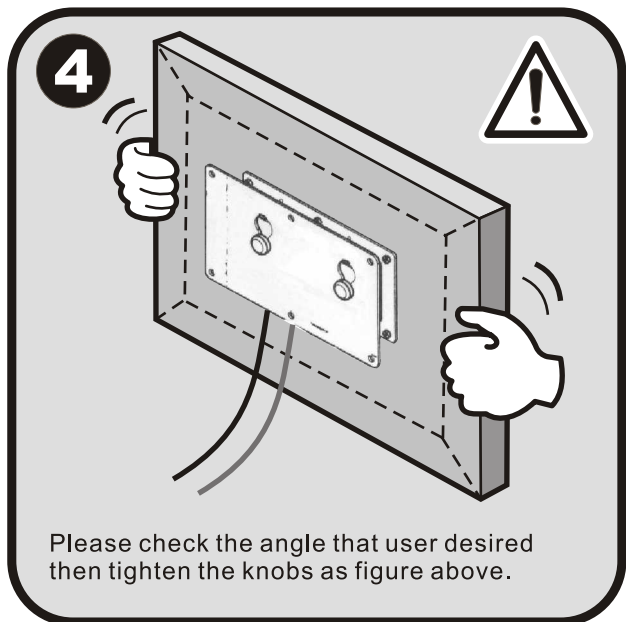
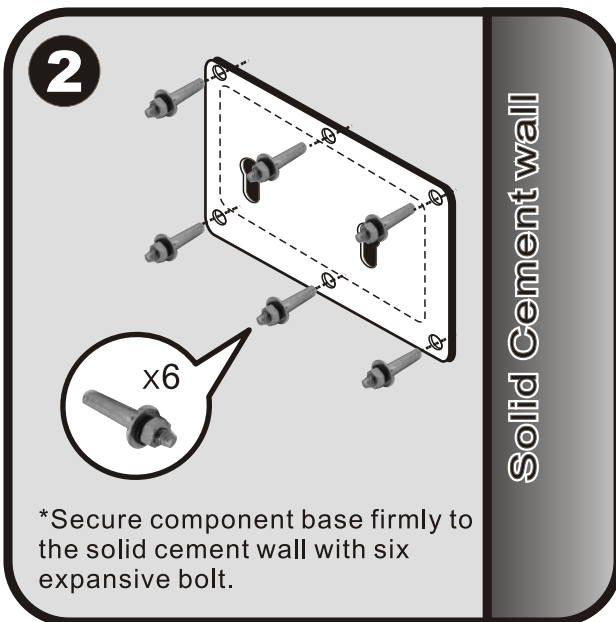
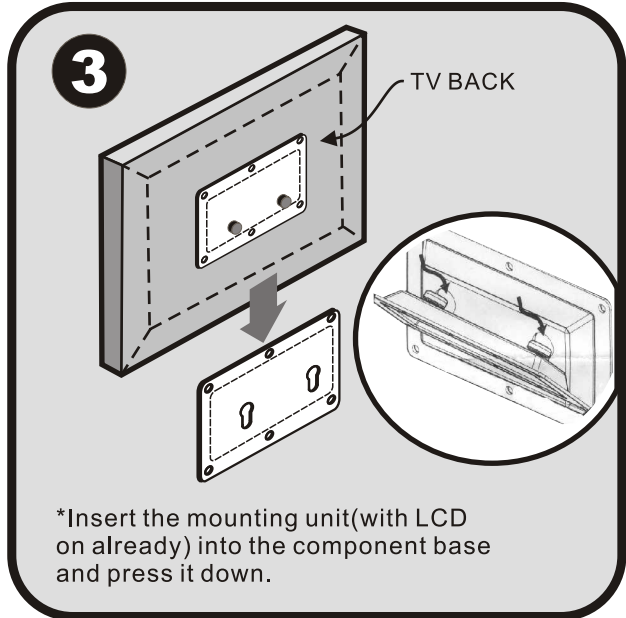
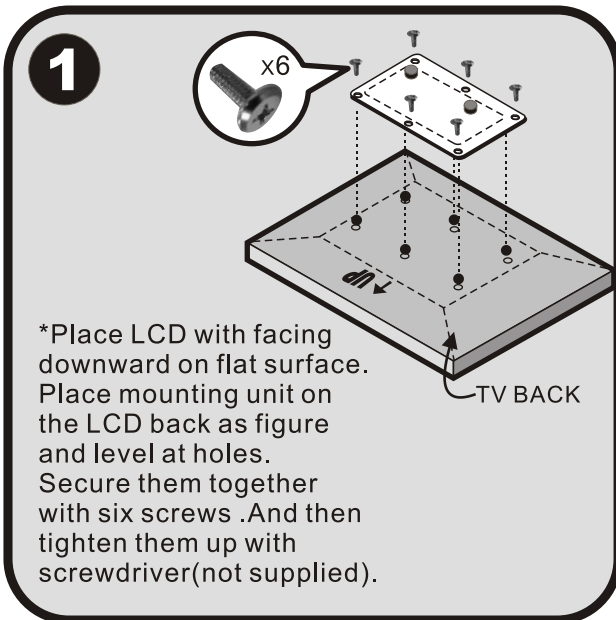
**Avoid Soaking**



**Avoid Aerosol Cleaners**



1. Before using wall mount, please read manual of wall mount and follow assembly guide.
2. For safety purpose, please purchase appropriate wall mount to bear the LCD TV weight.
3. Following installation instruction is only for your reference.
4. Please consult authorized service personnel for the installation of wall mount.

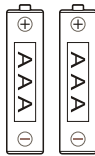
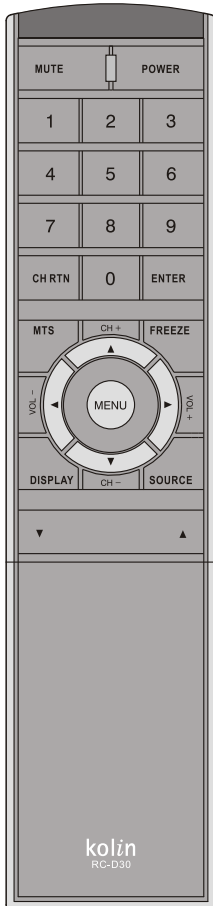


## CAUTION

- \*There are many small components used in the construction of this unit. These loose items should be kept away from young children while assembling your unit.
- \*Incomplete or inadequate mounting of this unit to the wall may cause it to fall down, resulting in potentially fatal accidents.
- \*Please consult authorized service personnel for the installation of this unit.

## Supplied accessories

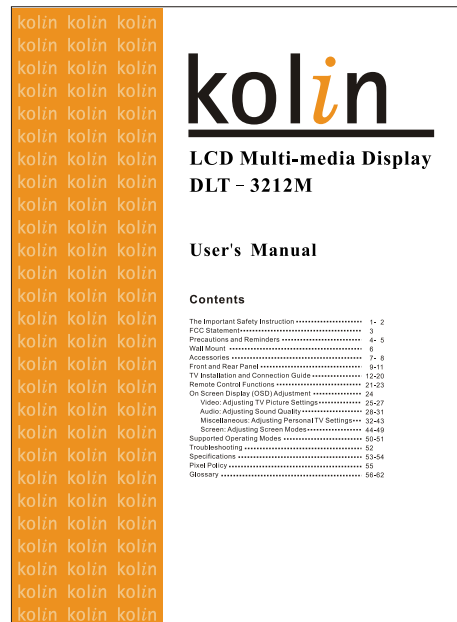
Remote control & batteries (1.5V AAA x 2)



VGA cable (D-Sub 15 male) x 1



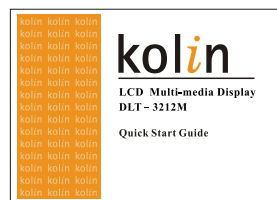
User manual booklet x 1






Power cord x 1



Quick start guide x 1





**Optional accessories**

AV cable with RCA connector	
S-Video cable	
Audio cable with RCA connector	

**Audio cable with stereo mini jack**

Use the proper cable for the device.

Stereo mini jack cable	
Stereo mini jack to RCA cable	

**Wall mount set**

Use VESA 100 standard wall mount.

KM-1020A



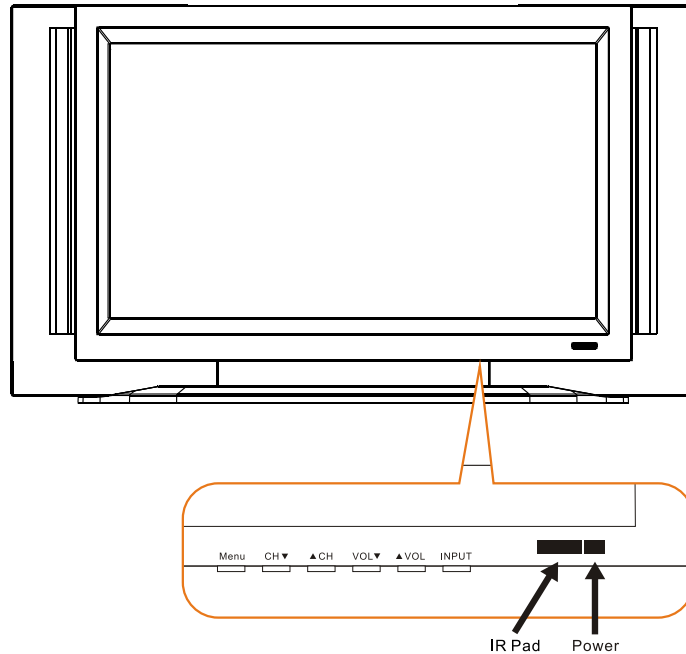
KM-1020B





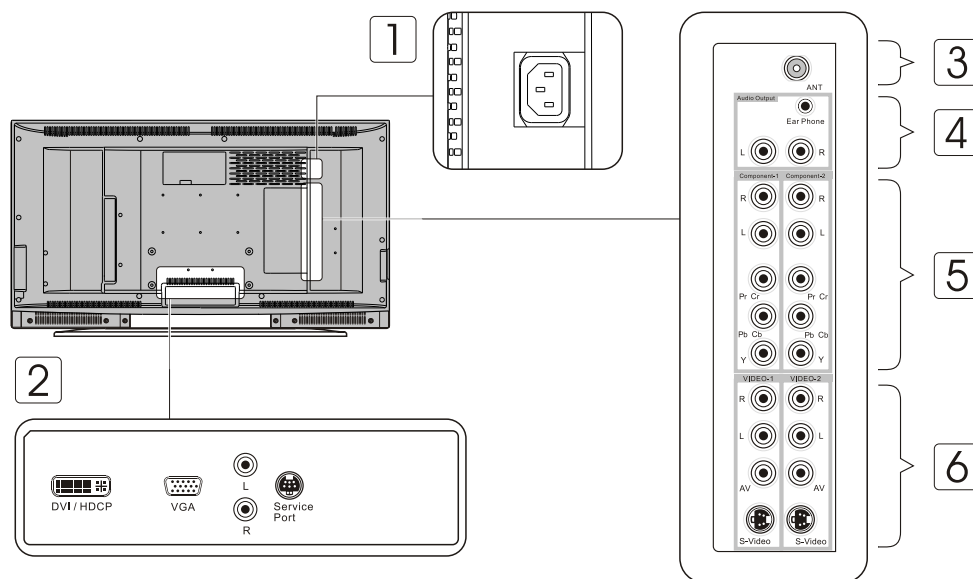
DLT-3212M

## Front panel



<b>POWER</b>	Turns display on/off
<b>IR SENSOR</b>	Contains Infra-red light for digital data transmission by the remote control. Please point remote control at IR Sensor for function.
<b>INPUT</b>	Press to switch the input sources.
<b>VOL+/VOL-</b>	Adjusts volume. In OSD menu, both key are used to navigate within menu. Vol+ is used to select the highlighted option.
<b>CH▲ / CH▼</b>	Adjusts Channel. In the OSD menu, both keys are used to navigate within menu.
<b>MENU</b>	Displays the On Screen Display(OSD) menu. In OSD menu, press it to return to pre-phase

## Rear Panel



**1 AC IN** power cord connects here.

**2 DVI/HDCP and VGA Port** This display includes a DVI input that receives analog or digital video signals through the interface for the display of high quality digital video signals. The DVI port is HDCP (High Bandwidth Digital Content Protection) compliant and is fully compatible with video equipment that features the HDCP function. The VGA input can be used for analog RGB signals from a HD Receiver or personal computer. Resolutions supported are VGA, SVGA, XGA and WXGA. DVI and VGA share Audio L/R inputs.

**Service Port** is reserved for manufacturer use. Incorrect use may damage the Display.

**3 Antenna (ANT)** Antenna receives signals from VHF/ UHF antennas or a cable system.

**4 Audio Out** The Audio Output sends the TV's connected audio signals to an A/V receiver or other equipment. Display features a R/L stereo and subwoofer output.

- 5 **Component 1, 2** These inputs can be used for the connection of A/V equipment with component video outputs, such as a DVD player, Digital Satellite Receiver, or compatible Video Game System.
- 6 **Video 1,2** These inputs can be used for the connection of a VCR, Super VHS (S-VHS) VCR, DVD player, or other video devices to the TV. There is a Video and an S-Video input for Video1 and video 2. When both inputs are used simultaneously on Video 1, only the S-Video input will be recognized. Same behavior for Video 2. The display will automatically detect the input being used.

**NOTE:** The S-Video input has a better quality of picture than a composite Video signal.

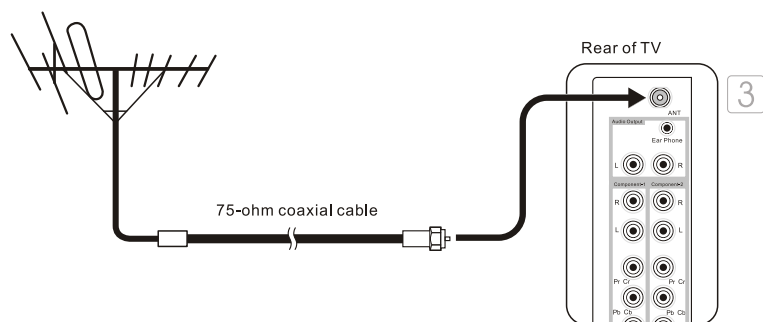
Graphic ports are located on the back cover.  
They are DVI terminal, VGA terminal, Audio in and Service port.

PORTS	FUNCTION
DVI / HDCP	Connect the DVI signal terminal on the display to the output of the signal equipment, such as a satellite gateway or a decoder, which has DVI interface through DVI cable.
VGA (RGB signal connection)	Connect the VGA signal terminal on the display to the output of the signal equipment, such as a personal computer (PC), which has D-sub interface through D-sub 15 pin cable.
Audio in	Connect this terminal on the display to the output of PC equipment through audio cable, usually utilizing with VGA or DVI application.
Service port	This terminal can be accessed by a service professional only. Unauthorized access this port may seriously damage the firmware of this display unit.

## Connecting to an Antenna or Video Equipment with Antenna outlet

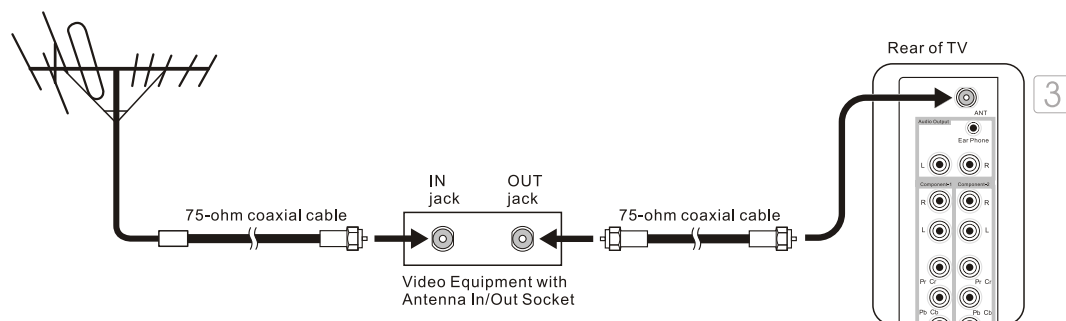
⚠ **Disconnect all power sources before making any connection.**

1. Connect a 75-ohm coaxial cable onto the ANT input on the back of the TV's right side panel.



## If connecting to Video Equipment with Antenna outlet

1. Using a 75-ohm coaxial cable (or choice of Antenna Cable), connect the cable box's OUT jack to the TV's ANT jack (RF Terminal).

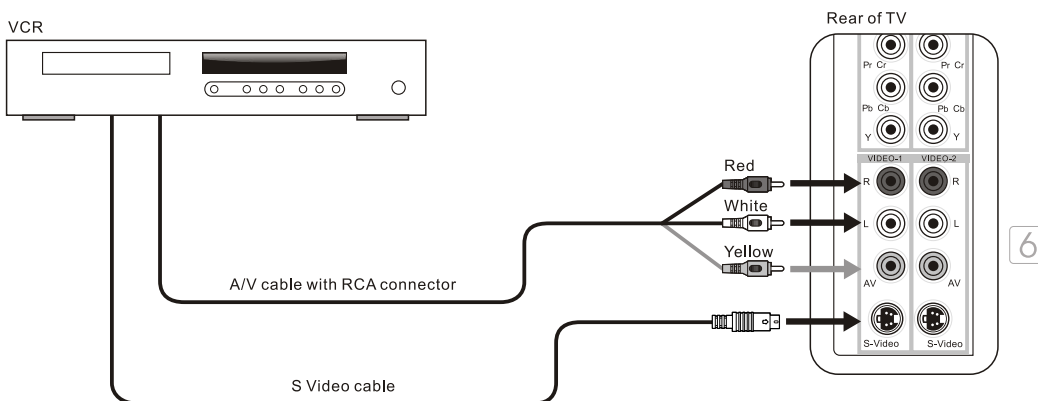


## Connecting to a VCR

**⚠ Disconnect all power sources before making any connections.**

Use this hookup if you subscribe to a cable TV system that does not require a cable box.

1. Using A/V cable and S-Video cables, connect the VCR's Audio and S-Video OUT jacks to the TV's Audio and S-Video In jacks.



## When Connecting both Video IN and S-Video IN

**Note:** S-Video is strongly recommended for use if your VCR or video equipment has it. S-Video input has a better quality of picture than a composite Video signal.

## Speaker System

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# Connecting to a DVD Player

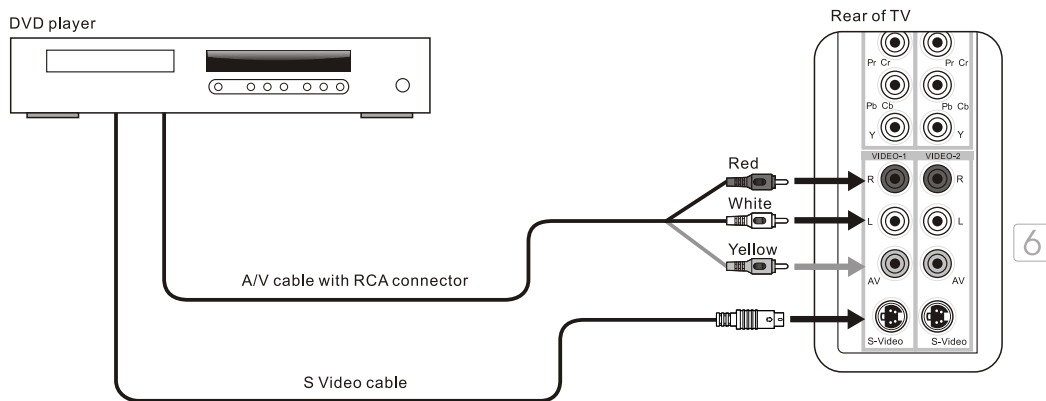
## Connecting to a DVD Player with A/V or S-Video Cables

**⚠ Disconnect all power sources before making any connections.**

Use this hookup if your DVD player does not have component (Y, Pb, Pr) jacks.

**Note:** If your DVD player has component video output connectors, for best picture quality, use the connection described for **Connecting to a DVD Player With Component Connectors.** (See page.17)

1. Using an A/V cable, connect the DVD player's Audio OUT jacks to the TV's Audio IN jacks.
2. Using an SVideo Cable, connect the DVD player's S Video OUT jack to the TV's S Video IN jack.



**Note:** S-Video is strongly recommended for use if your VCR or video equipment has it. S-Video input has better quality of picture than a composite Video signal.

# Connecting to a DVD Player

## Connecting to a DVD Player With Component Cables

⚠ **Disconnect all power sources before making any connections.**

Use this hookup if your DVD Player has component (Y, Pb, Pr) jacks.

1. Using a component video cable, connect the DVD Player's Y, Pb and Pr jacks to the Y, Pb and Pr jacks on the TV.

### Colors on Component Video connectors:

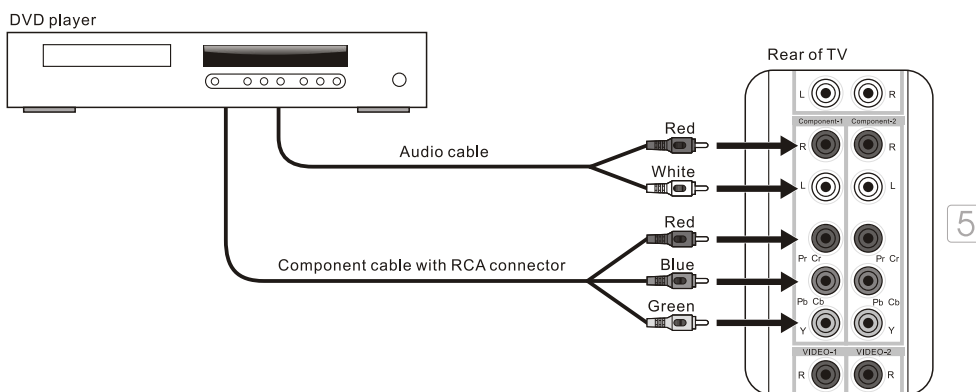
**Y:** Green

**Pb** (also identified as Cb, CB or B-Y): Blue

**Pr** (also identified as Cr, CR or R-Y): Red

**Note:** The Y, Pb and Pr jacks on your DVD player are sometimes labeled as Y, Cb and Cr, or B-Y and R-Y. If so, connect the cables to the matching colors.

2. Using an Audio cable, connect the DVD player's Audio OUT jacks to the TV's Audio in jacks.



**Note:** The Y, Pb and Pr jacks do not provide audio, so audio cables must be connected to provide sound.

**Note:** The YPbPr connection provides the best quality of video signal compared to AV (Composite) and S-Video connection.

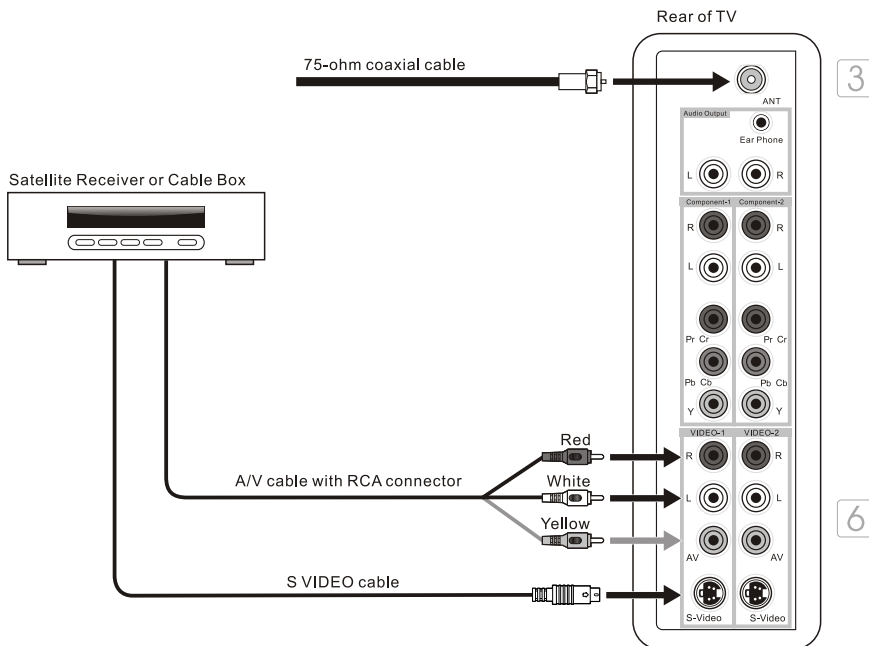


# Connecting to a Satellite Receiver

## Connecting to a Satellite Receiver or Cable Box with A/V Connectors

**⚠ Disconnect all power sources before making any connections.**

1. Using Audio and S Video cables, connect the satellite receiver's Audio and S Video OUT jacks to the TV Audio and S Video IN jacks.
2. Connect a 75-ohm coaxial cable from your cable or antenna to the TV Ant (Antenna) jack.



**Note:** S-Video is strongly recommended for use if your VCR or video equipment has it because S-Video input has better quality of picture than a composite Video signal.

# Connecting to a Satellite Receiver

## Connecting to a Satellite Receiver or Cable Box With Component Connectors

⚠ **Disconnect all power sources before making any connections.**

Use this hookup if your Satellite Receiver or Cable Box has component (Y, Pb, Pr) jacks.

1. Using a component video cable, connect the Satellite Receiver or Cable Boxes' Y, Pb and Pr jacks to the Y, Pb and Pr jacks on the TV.

### Colors on Component Video connectors:

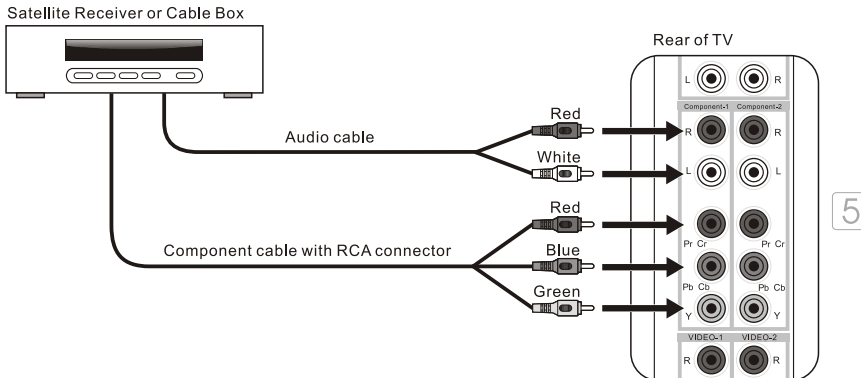
**Y:** Green

**Pb** (also identified as Cb, CB or B-Y): Blue

**Pr** (also identified as Cr, CR or R-Y): Red

**Note:** The Y, Pb and Pr jacks on your Satellite Receiver or Cable Box are sometimes labelled as Y, Cb and Cr, or B-Y and R-Y. If so, connect the cables to the matching colors.

2. Using an Audio cable, connect the Satellite Receiver or Cable Boxes' Audio OUT jacks to the TV's Audio in jacks.



**Note:** The Y, Pb and Pr jacks do not provide audio, so audio cables must be connected to provide sound.

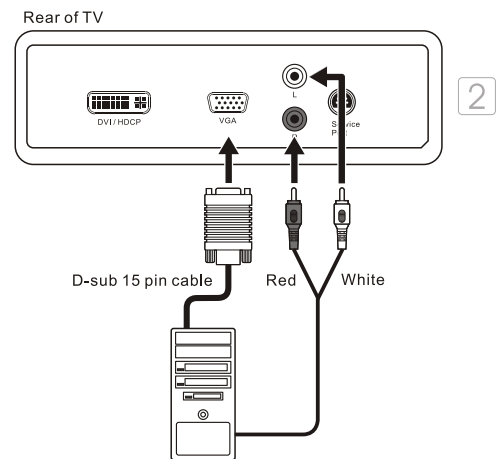
**Note:** The YPbPr connection provides the best quality of video signal compared to AV (composite) and S-Video connection.

# Connecting to a PC and DVD

## Connecting to a PC with VGA Connector

⚠ **Disconnect all power sources before making any connections.**

1. Using a D-Sub 15 pin cable, connect the VGA output terminal of the PC to the TV's VGA signal input terminal.
2. You may need to use a Stereo mini jack to RCA L/R connectors to receive audio.



## Connecting to a DVD Player or HD-Receiver with a DVI/HDCP Cable

⚠ **Disconnect all power sources before making any connections.**

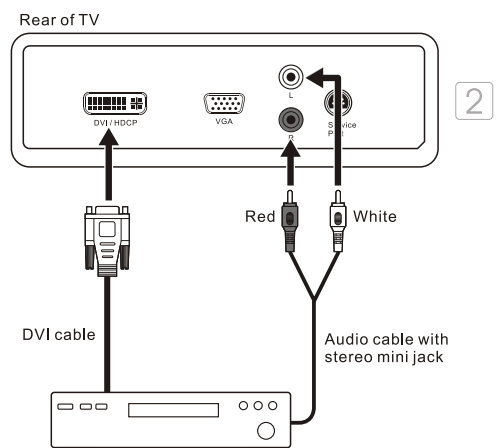
1. Using a DVI cable, connect the DVD's DVI output terminal to the TV's DVI-HDCP input terminal.
2. Using an Audio cable, connect the DVD's Audio OUT jacks to the TV's Audio IN jacks.

Note: VGA and DVI/HDCP Connectors share the same audio input.

**Note:** HDCP is a copy protected digital connection that receives analog or digital video signals from equipment with DVI output that features the HDCP function. DVI allows the transfer of digital uncompressed data to the TV.

DVI technology is better than Component, S Video or AV (composite) connections.

**Note:** DVI signal is purely digital and provides a crystal clear technology better than component, S-Video or Video connections. It is strongly recommended to use this connection if you have this function on your equipment.

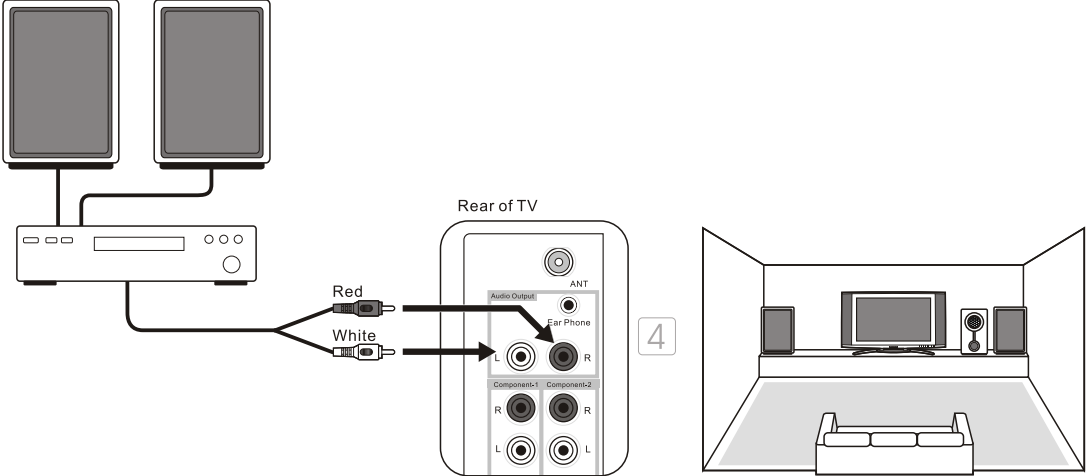


## Other Connections

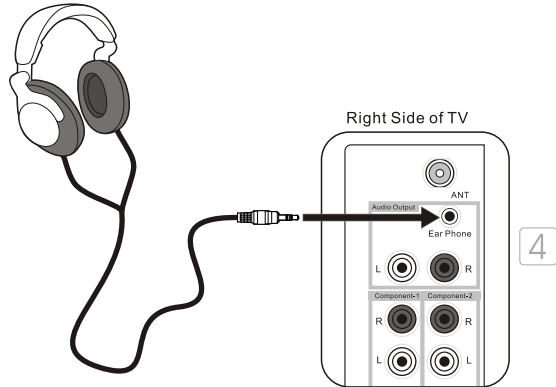
⚠ **Disconnect all power sources before making any connections.**

See setup instructions for: Connecting to an Audio Receiver on page 15.

### other Speakers



### Headphone Set

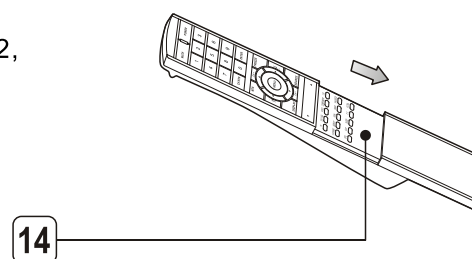
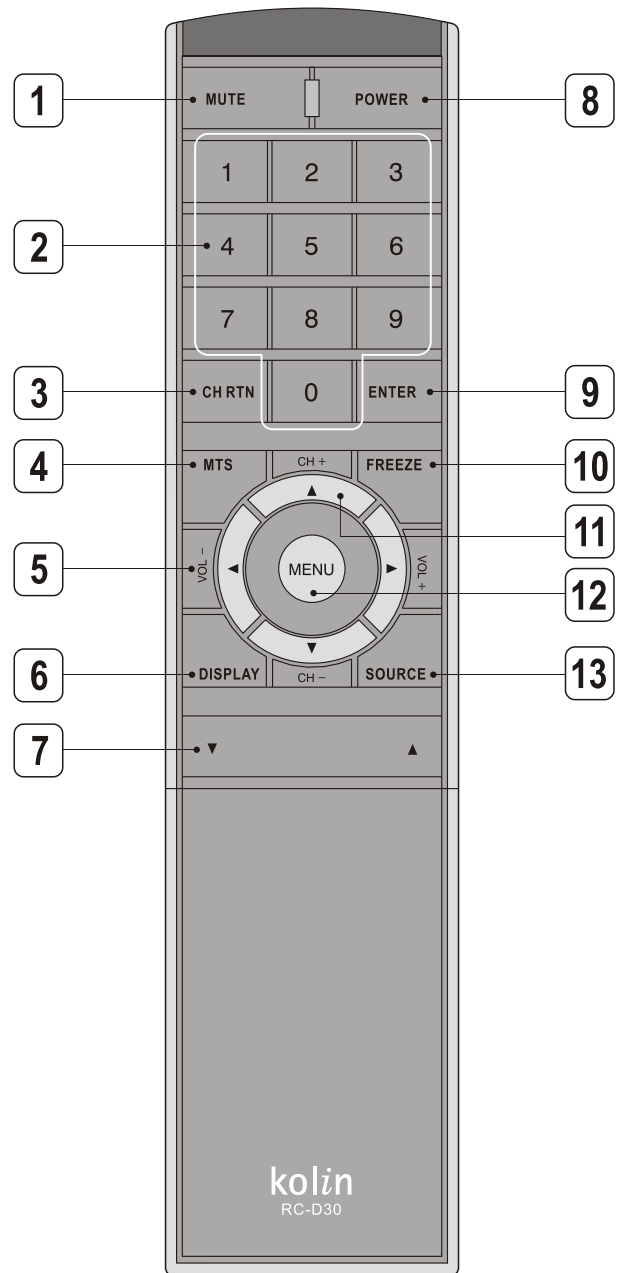


**Note:** When headphone is plugged in the speaker will turn into mute mode.

# Remote Control Functions

## Function keys

- 1 MUTE** Press to mute the sound.
- 2 NUMBER BUTTONS** Press the number buttons to select channels on the display.
- 3 CH RTN (Channel Return)** Press to return the to previous-channel.
- 4 MTS** Press to select from SAP, Mono or Stereo mode
- 5 VOL+ / VOL -** Press to adjust the volume.
- 6 DISPLAY** Press to display the information of current channel number and time.
- 7 ▼ /▲ buttons (Direction Buttons)** Press to move highlighted selection through menus or submenus or adjust Channel +/- under TV input.
- 8 POWER** Press to turn display on/off.
- 9 ENTER** Press to enter the channel number, highlighted menu or submenu item.
- 10 FREEZE** Press to freeze the picture. Press again to unfreeze the picture.
- 11 CH + / CH-** Press to adjust channel up and channel down.
- 12 MENU** Press to activate or close the On Screen Display menu. In OSD Menu, acts as a cancel button while navigating through the OSD.
- 13 SOURCE** Press to show the source input from TV, Video 1, Video 2 , Component 1, Component 2, VGA, DVI, and Cardreader (optional).
- 14 Hotkeys** Press to directly access certain Shortcut TV functions..



# Remote Control Functions

## Hot keys Tutorial

The remote control contains 15 additional "Hotkeys" that represent direct access to a certain function on your TV. Hotkeys enable you to directly change the setting to your preference without having to navigate through the OSD (On Screen Display) Menu.

## How to use your Hot keys

### HOT KEY FUNCTION

**TV** Press to switch between TV and DTV Mode (optional function currently unavailable).

**DVI/VGA** Press to switch to DVI or VGA Mode.

**VIDEO** Press to switch source as Video 1 and Video 2.

**COMPONENT** Press to switch between Component 1 and Component 2.

**C.R.** Optional function currently unavailable.

**V.FORMAT** Optional function currently unavailable.

**ASPECT** Press to change the aspect ratio (4:3, 16:9, Zoom) and letterbox modes.

**VIEW** Press to select and program PIP, Split Screen or viewing options.

**SWAP** Press to select TV channels between main and sub screen. (This function is only in the PIP and Split Screen modes.)

**FAVORITE** Press to select favorite channels. Can be preset in OSD Menu.

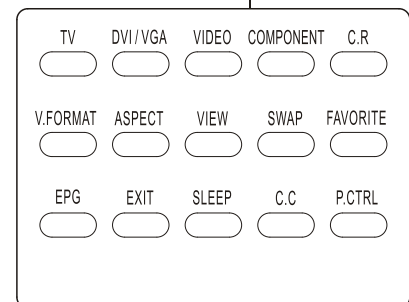
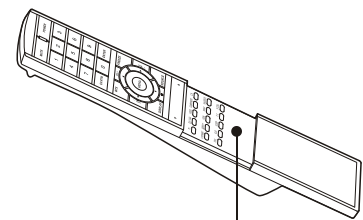
**EPG** Optional function currently unavailable.

**EXIT** Press to go back to the previous menu.

**SLEEP** Press to choose preset time interval for automatic shutoff.

**C.C.** Press to call up the Close Caption (CC) and Caption Service (CS) list. You can pre-select one to see Closed Caption.

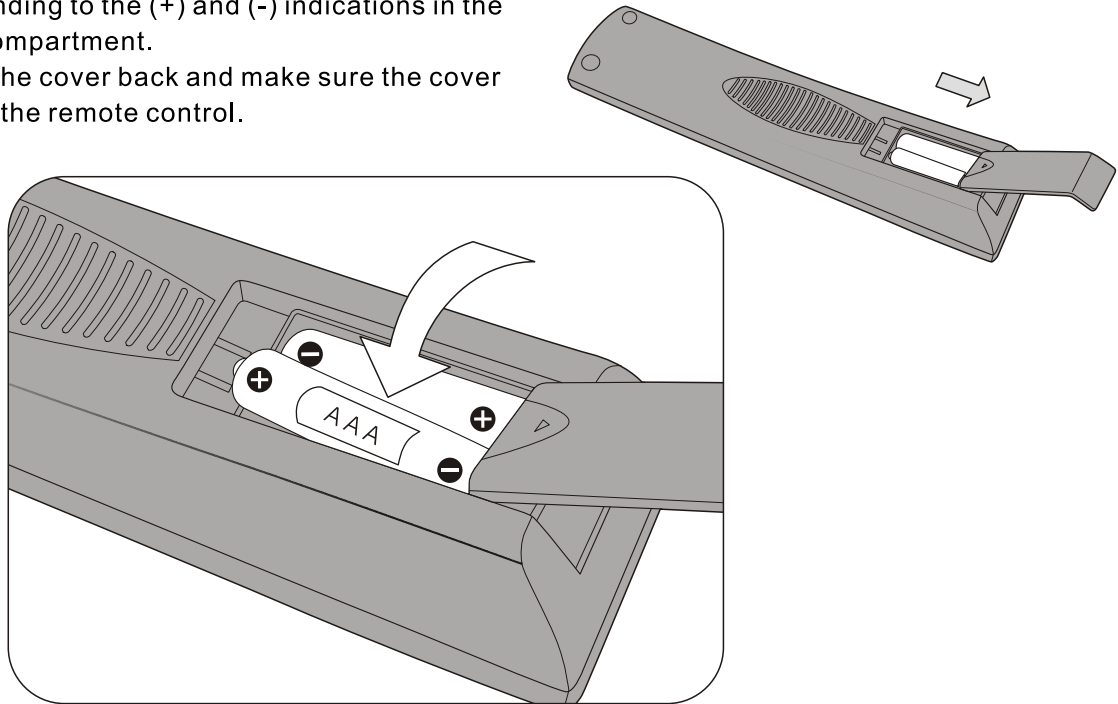
**P.CTRL** Press to access Parental Control password and/ or program parental locks.



## Battery Installation

Follow the steps to install batteries on the remote control before operating the display.

1. Push the tab and pull it out as illustrated below
2. Place the batteries with the (+) and (-) terminals corresponding to the (+) and (-) indications in the battery compartment.
3. Replace the cover back and make sure the cover snap into the remote control.



### Note:

1. The display unit comes with two new AAA batteries as accessories. However, due to some uncontrollable causes, electricity of the accessorized batteries may partially or completely drain. We do not warrant the quality of the batteries in any case since many uncontrollable causes. If replacement is needed, please purchase the type AAA batteries.
2. Keep the remote control away from wet. If the incident happens, please wipe it dry immediately. However, depends on how severe the wetness incident, a replacement of remote control may required.
3. If you do not use the remote control for a long period of time, please remove the batteries and store in a cool and no direct lighting area.
4. Do not mix new and used or different types of batteries for operation.

# On Screen Display (OSD) Adjustment

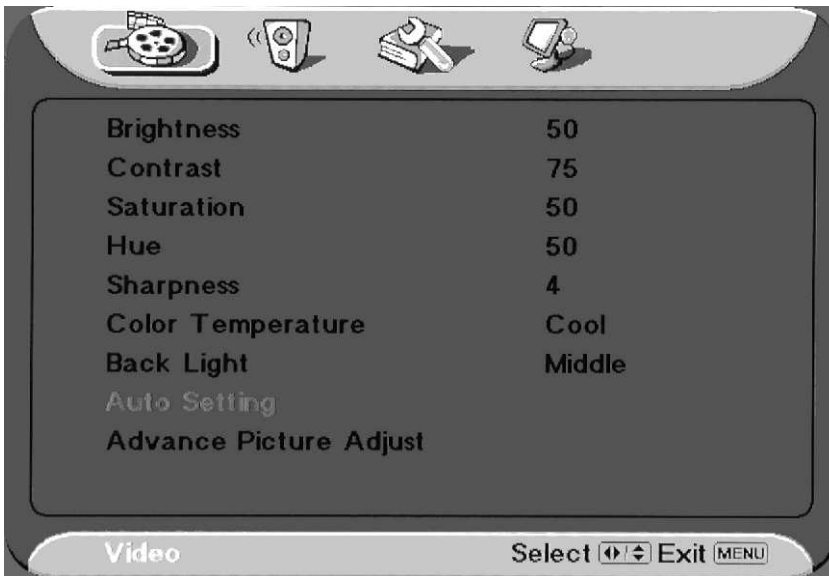
## Introduction

After you have finished connecting your TV, you are now ready to choose and personalize your TV settings in the OSD (On Screen Display) menu.



There are four main sections in the OSD Menu:

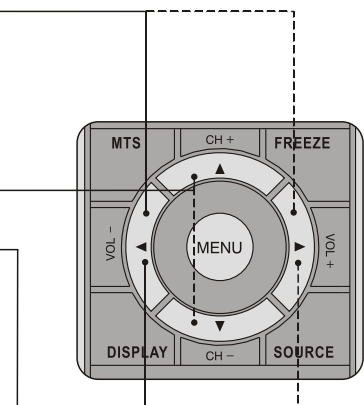


**Video      Audio      Miscellaneous      Screen**



## To Operate in the OSD

1. Press "Menu" button to enter OSD menu mode.
2. In Main OSD Menu, use the ► and ◀ keys to select and enter each main OSD Section: Video; Audio; Miscellaneous; Screen.  
**Note:** The OSD Section appears at the bottom left corner of the OSD Screen at all times.
3. In Each OSD Section, press the ▲ and ▼ to select the function, and the  button to make an adjustment or selection.
4. To adjust the value bar, use the keys ► and ◀.
5. After choosing your setting, press the ◀ to go back into Main OSD Section. To exit, press  to go back to Main OSD Menu.
6. To exit the OSD menu, press "Menu" until you exit the OSD menu, or without action for 12 seconds of inactivity. This is also adjustable in the OSD.



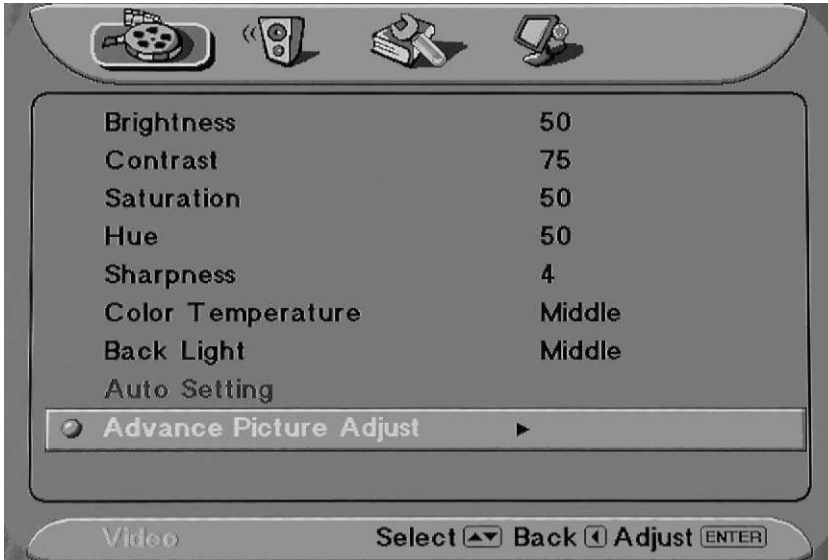


# On Screen Display (OSD) Adjustment

## VIDEO: Adjusting TV Picture Settings

### Advance Video Quality

In this Setup Index, you can adjust the video and picture settings to suit your personal preferences.



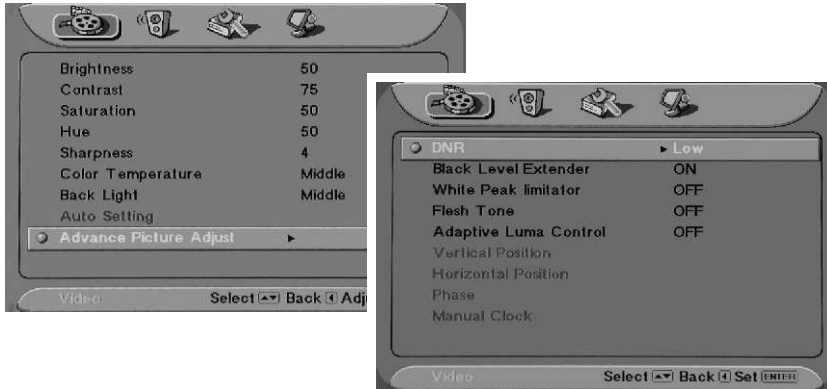
### Video Settings

Item	Adjustment	Function
Brightness	0~100	Adjusts picture brightness contrast
Contrast	0~100	Adjusts picture color contrast
Saturation	0~100	Adjusts the color intensity
Hue	0~100	Adjusts the tint or shade of picture
Sharpness	0~100	Adjusts the picture sharpness or softness
Color Temperature	Cool / Middle / Warm / User	Adjusts image color intensity. <b>Cool:</b> More blue-tinted colors <b>Middle:</b> Standard color temperature <b>Warm:</b> More red-tinted colors <b>User:</b> Allows User to adjust RGB Gain
Red Gain	0~100	Adjusts the color control with red tones
Green Gain	0~100	Adjusts the color controls with green tones
Blue Gain	0~100	Adjusts the color controls with green tones
Backlight	Bright / Middle / Dark	Adjusts the darkness or lightness of the screen
Auto Setting	Enter	Adjusts OSD Settings back to factory default
Advance Picture Setting	Enter	Adjusts additional specific picture settings ( DNR, Black Level Extender, White Peak Limitator, CTI, Flesh Tone, Adaptive Luma Control )

# On Screen Display (OSD) Adjustment

## Advance Video Adjust

To further adjust specific picture settings, enter this function by pressing the ► button.



## Advance picture setting

### Definition of Terms

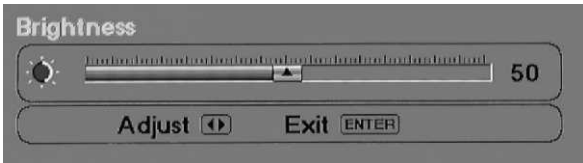
Item	Status	Description and Function
DNR	Off/Low/Middle/Strong	DNR-Dynamic Noise Reduction. Reduces high frequency noise dynamically. Off- Dynamic Noise Reduction is not available. Low/Middle/Strong---Set the DNR in low/medium/strong degree.
Black Level Extend	On/Off	Black Level Extender -Extends "grays" to black so a more accurate picture is produced with a wider contrast scale. On-Set the Black Level Extender available Off-Set the Black Level Extender not available
White Peak Limitor	On/Off	White Peak Limitor-Limit the signal amplitude varying degree resulted in frequency increasing or other reasons, and in case of screen defocus for white-peak. On-Set the White Peak Limitor available Off- Set the White Peak Limitor not available
Flesh Tone	On/Off	Flesh Tone-Eyes of mankind is most sensitive for the flesh tone errors. Flesh tone adjustment function can adjust the flesh errors automatically and make the image of screen displaying much more nature. On-Set the Flesh tone adjustment available Off- Set the Flesh tone adjustment not available
Adaptive Luma Control	On/Off	Control the luminance adaptively. On-Set the Adaptive luma control available Off- Set the Adaptive luma control not available

# On Screen Display (OSD) Adjustment

## To Adjust Settings:

Use the ► and ◀ remote buttons to adjust each Video picture setting, as seen below:

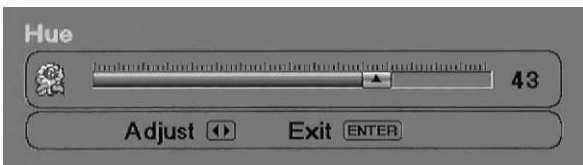
### Brightness




### Saturation



### Hue



To exit, press the  Button

## To Reset Factory Settings

If, at any time, you wish to go back to original factory setting, you may do so by choosing the Default setting in the OSD Picture and Audio Sections.

Selecting "Default," will reset all OSD settings to the original manufacture settings. The only items which will remain unaffected, are:

- Clock
- Auto Scan Channels
- Edited Channels
- Parental Control Password

# On Screen Display (OSD) Adjustment

## Audio: Adjusting Sound Quality



### Audio setting

#### Definition of Terms

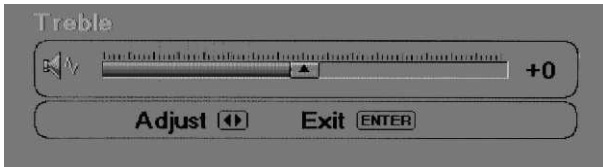
Item	Adjustment	Function
Treble	-50~50	Adjusts higher pitched sounds
Bass	-50~50	Adjusts lower pitched sounds
Balance	-20~20	Adjusts volume balance in Left and Right
Surround	On / Off	Creates a panoramic stereo audio image by producing deep and rich bass tones and clear treble tones. This enables you to enjoy powerful sound effects like those in a movie theatre
Equalizer 1	Off, Concert, Living Room, Hall, Arena, Church	Adjusts the sound as occurred in an enclosed space of varying spaces
Equalizer 2	Off, Rock, Pop, Live, Classic, Soft	Adjusts the volume of different bands (ranges of frequencies (HZ)) to control the overall sound
MTS	Mono, Stereo, SAP	Adjusts sound reception of stereo, bilingual and mono programs under the TV Source.
Speakers	On / Off	Turns off the speakers of the TV when using a Receiver or Home Theater System.

# On Screen Display (OSD) Adjustment

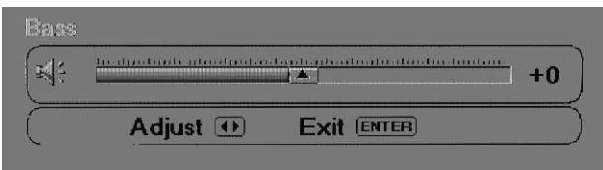
## To Adjust Settings:

Use the ► and ◀ remote buttons to adjust each Audio sound quality, as seen below:

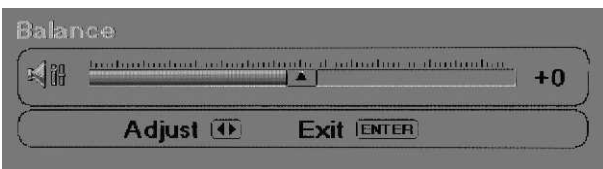
### Treble



### Bass



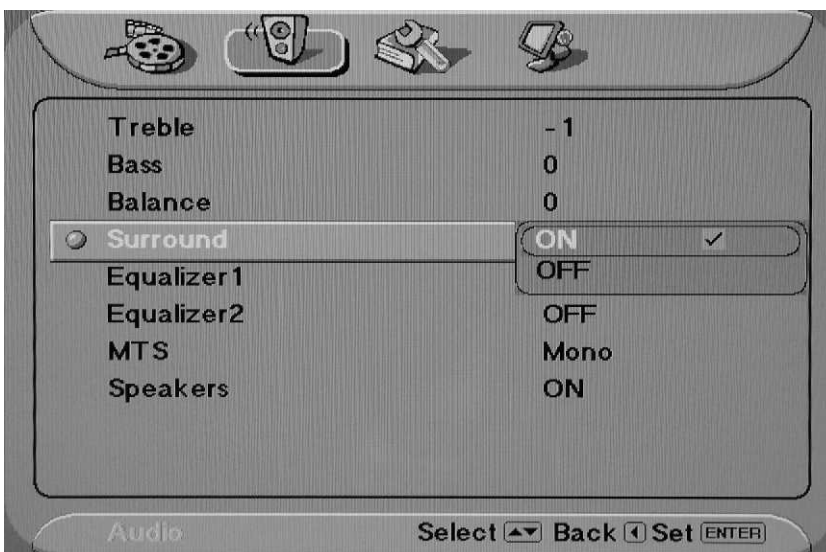
### Balance



**Surround Sound** is an available option for creating a panoramic stereo audio image by producing deep and rich bass tones and clear treble tones. This enables you to enjoy powerful sound effects like those in a movie theater.

### Speakers

Turn off speakers of the TV when using a Receiver or Home Theater System.



# On Screen Display (OSD) Adjustment

## OSD Audio Settings: Equalizer 1



## OSD Audio Settings: Equalizer 2



# On Screen Display (OSD) Adjustment

## MTS System for Stereo TV

You can enjoy stereo, bilingual and mono programs.



Additionally, you can press the hotkey "MTS" until the desired sound indication appears. Each time you press the button, the sound indication changes as follows:

## Mono, Auto SAP, Stereo

### Definition of Terms

Sound Effect	Description
Stereo	Select for stereo reception when viewing a program broadcast in stereo
SAP	Select to automatically switch the TV to Secondary Analog Program when a signal is received. (If no SAP signal is present, the TV remains in Stereo Mode)
Mono	Select for mono reception. (Use to reduce noise during weak stereo broadcasts)

# On Screen Display (OSD) Adjustment

## MISCELLANEOUS: Adjusting Personal TV Settings

In this Section, you can adjust additional TV settings to your personal preference, including channel setup, choosing tuner modes, setting up timer, closed caption services, parental controls, and viewing the OSD in your preferred language.



### Description of Settings

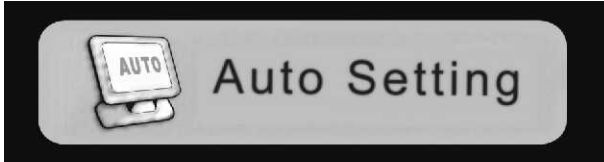
Item	Adjustment	Function
Channel Setup		Setting up Channel functions
Channel-Favorite	24 favorite channels setting	Stores the favorite channels
Channel-Skip		Sets up available channels. <b>Add</b> : To add available channel. <b>Skip</b> : To cancel available channel
Channel-Name		Stores channel names
Color System	Auto, PAL, PAL_M, PAL_N, NTSC358, NTSC443, SECAM	Sets up color system according to TV system
Tuner Mode	Air / Cable	
Auto Search		Selects to auto scan the available channels of the TV or CATV.
Timer	Time, Start/Stop Time, Channel, Activate option, Display option	Set Alarm with channel preference
Closed Caption	C1, C2, C3, C4, T1, T2, T3, T4	Switches different types of caption or cancel caption functions.
Parental	MPAA G/PG/PG-13/R/NC-17/X Tv rating TV-Y/ TV-Y7/ TV-Y7-FV NPAA Unrated TV-G/ TV-PG(V,S,L,D)/ TV-14(V,S,L,D) / TV-MA(V,S,L) TV None Rating Password	Adjusts MPAA and TV Ratings under parental control settings and setup password lock.
Language	English / Deutsch / Francese Español / Italiano / Português Русский / 繁體中文 / 簡中	Switches the OSD language
Default		Resets OSD setting to default.



# On Screen Display (OSD) Adjustment

## Setting the Channels

After you finish connecting your TV, you can run Auto Scan program to setup your channels. The program will scan and preset all receivable channels automatically.




### To Cancel Auto Program

Exit auto scan program by pressing "menu" Key.

**Note:** The Auto Scan is set to scan cable TV channels by default. You cannot receive and set the cable TV channels VHF/ UHF channels at the same time.

## Setting Favorites Channels

You can select and store a list of your favorite channel settings. Selected favorite channels are marked with a  icon.



You can preset favorite channels on this page. You can also access this function by pressing the " FAVORITE " hotkey on the remote control and select or switch between your favorite channels .

1. Enter "Channel-Favorite" mode.
2. Press "Edit " to enter the channel(s) using the number keys.  
You can "Delete" channels per line or "Empty" all channels at once.
3. Press "View" to see the selected channel display in real time.
4. Press "Enter" to exit when complete.

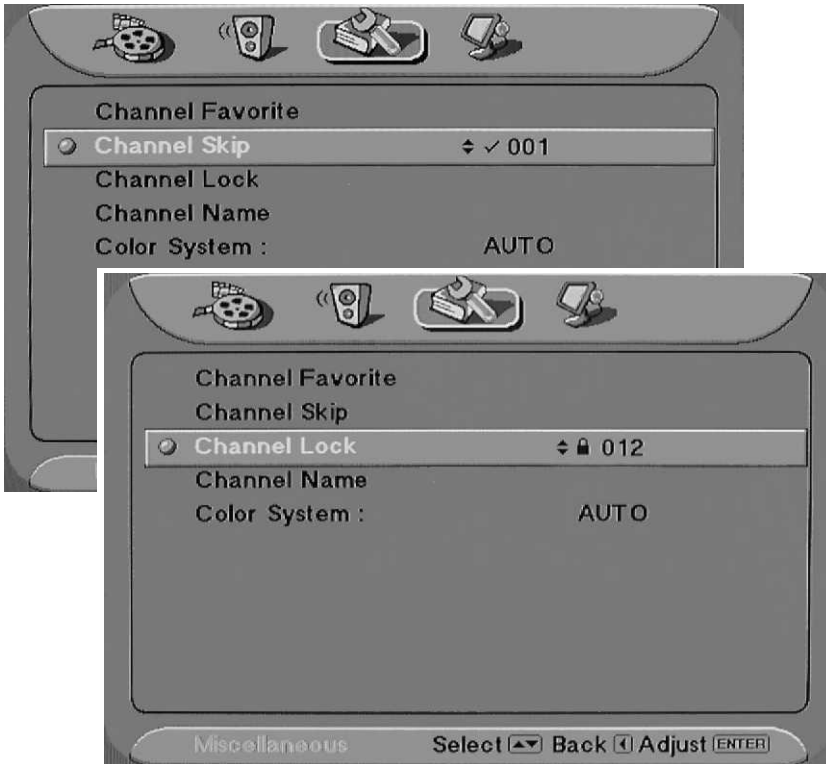
# On Screen Display (OSD) Adjustment

## Watching favorite channels

To watch you favorite channels after specifying your preferences, just press the Hotkey "FAVORITE" to browse through each favorite channel.

## Editing Channels

You can also edit channels to your personal preference. Once you edit a channel, it will be skipped when surfing through TV channels.



### To Skip or Lock a Channel

1. Make sure Channel Skip or Channel Lock is highlighted.
2. Enter the channel number you wish to skip or lock, or scroll through channels using the ▲ and ▼ Arrow.
3. Press "Enter" to make your selection or adjustment.

**Note:** You will see a checkmark next to Skipped Channels, and a small lock icon next to Locked Channels.

4. Press ◀ to exit when complete.

### To Undo a Skipped or Locked Channel:

1. Make sure Channel Skip or Channel Lock is highlighted.
2. Enter channel number you wish you undo, or scroll through channels using the ▲ and ▼ Arrow.
3. Press "Enter" to make your selection or adjustment.

**Note:** You will NOT see a checkmark next to Skipped Channels, or a small lock icon next to Locked Channels afterwards.

4. Press ◀ to exit when complete.

# On Screen Display (OSD) Adjustment

## Personal Channel Preferences: Channel Naming

You can also create personal names for each channel, which will show up in the upper Right hand corner of the TV screen.

### To Name a Channel:


1. Enter Channel Name sub-page
2. Enter Channel name using alphabet-numerical keypad as seen below:

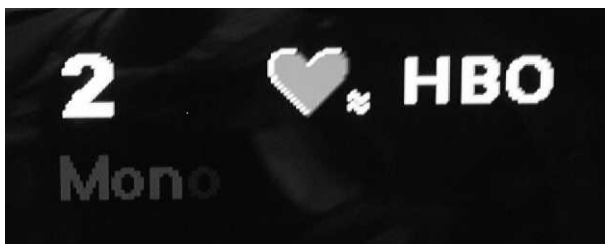


3. Press "Okay" to exit keypad when naming is complete.

Once you have named a channel, your preset channel name will show up on the TV screen when flipping through channels, or by pressing the Display Key.



If you named your favorite channel, you will see the heart icon  next to the channel name.



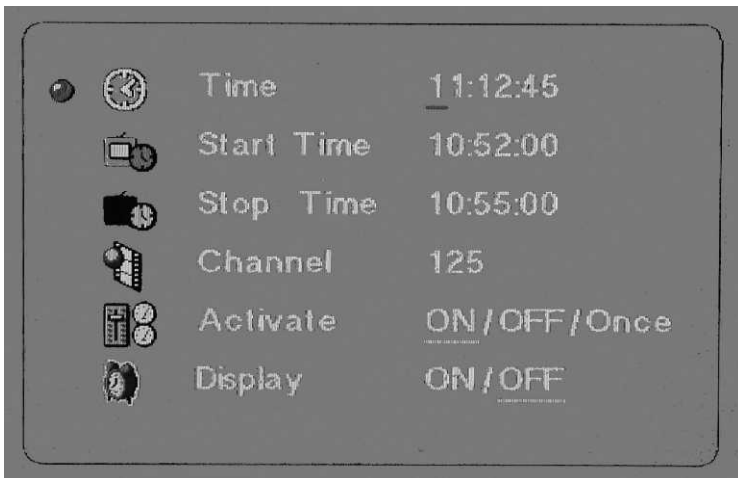
# On Screen Display (OSD) Adjustment

## Personal Channel Preferences: Color System

You can also select the TV system of channels received based on TV source(s). If you choose "AUTO", the TV will automatically scan for the system with best picture resolution. You can also choose from: PAL, PAL-M, PAL-N, NTSC358, NTSC443, SECAM TV Sources.



## Setting up the TV Timer



To setup the time on the TV:

1. Using ▲ and ▼ keys, enter in HH: MM: SS Enter the time using the number keys found on the remote.
2. press "Enter" when complete.

**NOTE:** Clock will NOT BE affected when Factory Default settings are reset. Under Activate, "ON" allows the start/stop time to be ongoing whereas, "ONCE" allows it to only function once.

**However, when the power cord is not connected to the TV, you will lose all previous time adjustments.**

# On Screen Display (OSD) Adjustment

## Timer: Start Time / Stop Time

You can set the TV to turn On and/or Off automatically at a predetermined time through the timer function. Use the Start Time to setup the hour and minute preferences. Your TV will automatically turn on at the set time. Use the Stop Time to setup the hour and minute preferences. Your TV will automatically turn off at the set time.

**Note:** Alarm WILL BE affected when Factory Default settings are reset.

***When the power cord is not connected to the TV, you will lose all previous saved adjustments.***

## Watching with Closed Caption



You can display closed captioning if the broadcaster offers this service.

Close Caption option can be set On/Off from the OSD page. This function also can be accessed by pressing "C.C " hotkey on the remote control.

1. Not all programs offer the Closed Caption option.
2. Closed Caption may not be seen clearly (white blocks, strange characters, etc.) if the signal condition is poor, or if there are technical difficulties with the broadcaster.
3. If no TEXT broadcast is being received while viewing in the [TEXT] mode, the screen may become dark and blank for some programs. Switch Off the Closed Caption mode.

# On Screen Display (OSD) Adjustment

## TV OSD Languages

There are nine language formats available for the OSD Menu. You may choose from the following:

English, Chinese Traditional, Chinese Simplified, Spanish, French, German, Portuguese, Italian and Russian.



## Using the Parental Control Feature

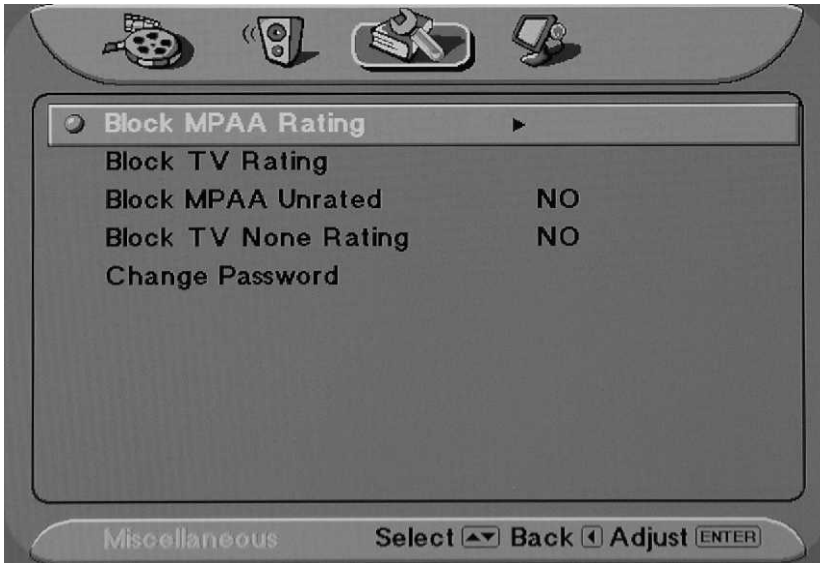
To block programs you feel unsuitable for your children, you need to Set the TV for desired rating systems. The TV Parental Control feature functions by receiving the rating signal from your local broadcasting station or cable service provider.

The TV programs and movies shown on TV are given a rating signal based on the following rating systems.

In U.S.A.: U.S. Television Parental Guidelines to rate television programs (U.S. TV Ratings) and Motion Picture Association of America (MPAA) Guidelines to rate movies including those shown on TV (Movie ratings).

In Canada: Canadian English Language ratings to rate television programs in English, and Canadian French Language ratings to rate those in French.

# On Screen Display (OSD) Adjustment



## Parental Control

1. This function allows programs to be restricted and controlled by parents based on FCC regulation. It prevents children from watching program contents that may be prohibited by parents.
2. Restriction of programs is based on three Rating Systems: MPA Rating, TV (Child) Rating and TV (Entire Audience) Rating. The MPA Rating restricts based on age. TV (Child) rating and TV (Entire Audience) Rating restrict based on age and contents.
3. When you block the lower rating, the higher age-based ratings are blocked automatically.
4. When you enter "Parental control" mode, those messages display for different state.

The Parental Control Main Menu contains four options in the following categories:

- 1.MPA Rating
- 2.TV Rating
- 3.MPA Unrated
- 4.TV Unrating

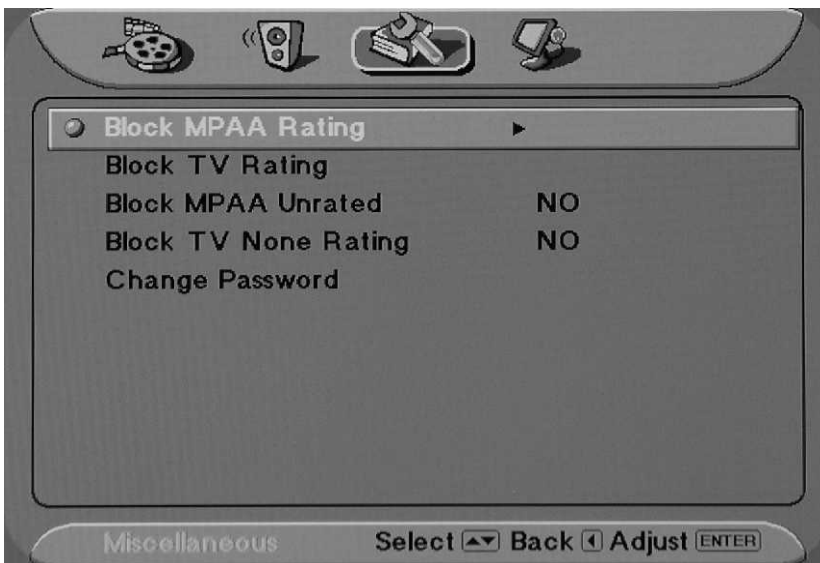
# On Screen Display (OSD) Adjustment

## Activating the Parental Control Feature

Once you enter the highlighted section of Parental Control, you will have to enter your password. The Factory Default password is "9999". Once you enter the Parental Control Menu, you may change the password to your personal preference.



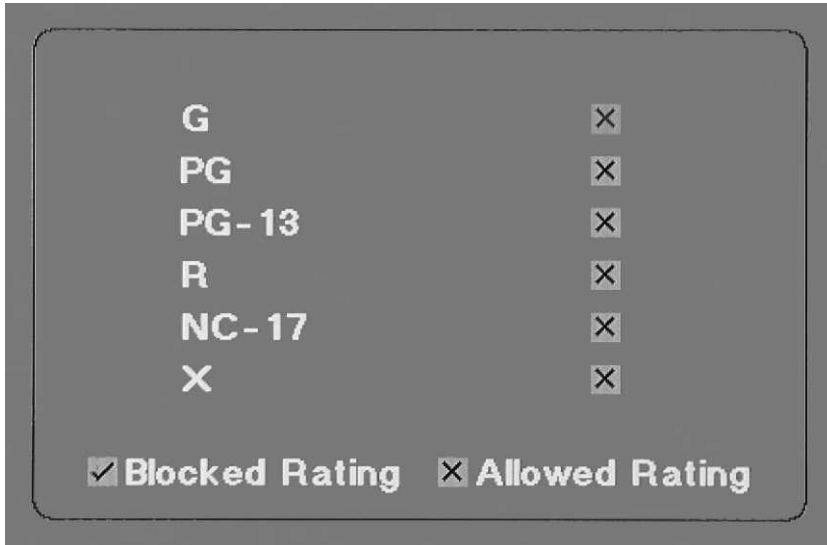
To setup, enter each sub-menu to setup your parental controlled TV channels.





# On Screen Display (OSD) Adjustment

**MPAA Rating** controls channels and movies that are rated from **G**, **PG-13**, **R**, **NC-17**, and **X**.



The OSD menu for MPAA Rating is displayed on a dark grey background. It lists six rating categories: G, PG, PG-13, R, NC-17, and X. Each category has a small square icon to its right, all of which contain an 'X', indicating they are blocked. At the bottom of the menu, there are two options: 'Blocked Rating' with a checked checkbox and 'Allowed Rating' with an unchecked checkbox.

G	<input checked="" type="checkbox"/>
PG	<input checked="" type="checkbox"/>
PG-13	<input checked="" type="checkbox"/>
R	<input checked="" type="checkbox"/>
NC-17	<input checked="" type="checkbox"/>
X	<input checked="" type="checkbox"/>

Blocked Rating     Allowed Rating

**TV Rating** controls channels and movies that have been rated from **TV-Y**, **TV Y-7**, **TV-G**, **TV-PG**, **TV-14**, and **TV-MA**.



The OSD menu for TV Rating is displayed on a dark grey background. It lists six rating categories: TV-Y, TV-Y7, TV-G, TV-PG, TV-14, and TV-MA. Each category has a small square icon to its right. The icons for TV-Y, TV-Y7, and TV-G contain an 'X', indicating they are blocked. The icons for TV-PG, TV-14, and TV-MA are empty, indicating they are allowed. Above the TV-Y7 icon, the letters 'FV V S L D' are displayed. At the bottom of the menu, there are two options: 'Blocked Rating' with a checked checkbox and 'Allowed Rating' with an unchecked checkbox.

		F	V	S	L	D
TV-Y	<input checked="" type="checkbox"/>					
TV-Y7	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
TV-G	<input checked="" type="checkbox"/>					
TV-PG	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TV-14	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TV-MA	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Blocked Rating     Allowed Rating

## To Block Unrated Channels

You may choose "YES" for Block MPAA Unrated and Block TV None Rating. This will lock you from accessing any channels that do not contain MPAA or TV Ratings. To watch unrated channels, re-activate Block MPAA Unrated and Block TV None Rating to "NO".

# On Screen Display (OSD) Adjustment

## Setting up Parental Control Password

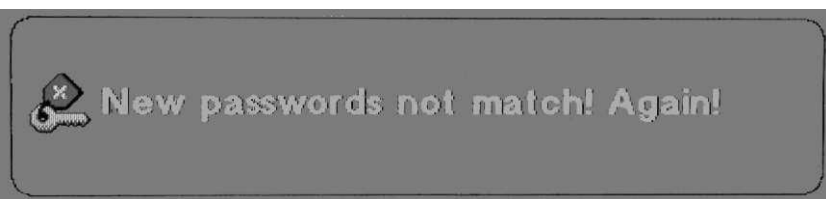
Enter the password sub-page. Enter the current password. If this is the first time, you do not have to enter a password.



You will have to enter and confirm your password before changing to a new password. Please keep password within 4 numbers.



If you enter the incorrect password, you will see an error page. Please re-enter the new password and confirmation password again.



**Note:** If you forget the password, press "9999" to lift the Password lock and change to a new preferred password.

# On Screen Display (OSD) Adjustment

## Factory Default Option



### Reset Factory Settings:

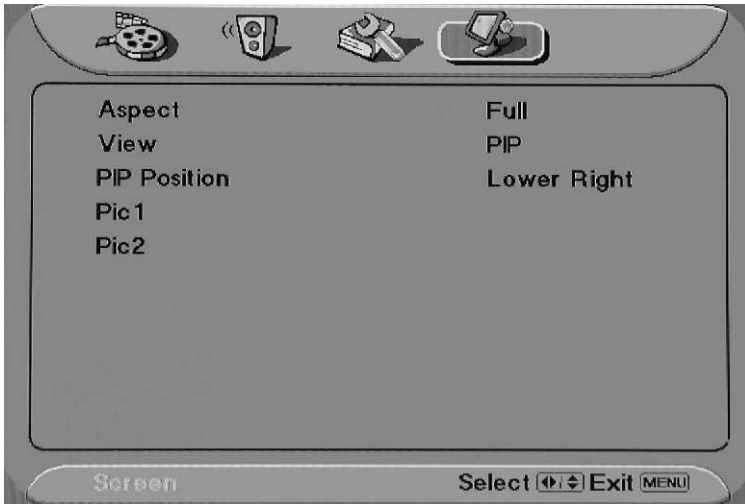
Initiating Factory Default will reset all OSD settings to original manufacture settings. The only items, which will remain unaffected are:

- Clock
- Auto Scan Channels
- Edited Channels
- Parental Control Password

# On Screen Display (OSD) Adjustment

## Screen: Adjusting Screen Modes

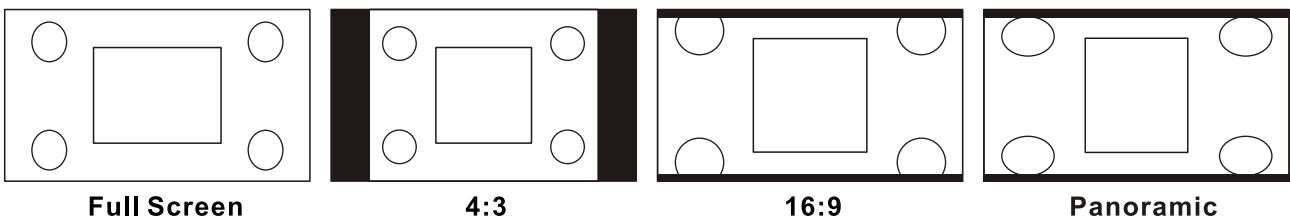
There are two options in the Screen Modes, "Aspect" & "View." Aspect will allow user to select different aspect ratios, whereas, View will allow all different modes of viewing 1 or 2 sources.



## Changing the Screen Mode



You can alter the aspect ratio of a picture by choosing between these four options:



**Full Screen** Enlarges the picture to 16:9 wide mode, by stretching the picture horizontally only.

**4:3** Returns the 4:3 picture to its original size. This is considered the "normal" viewing mode.

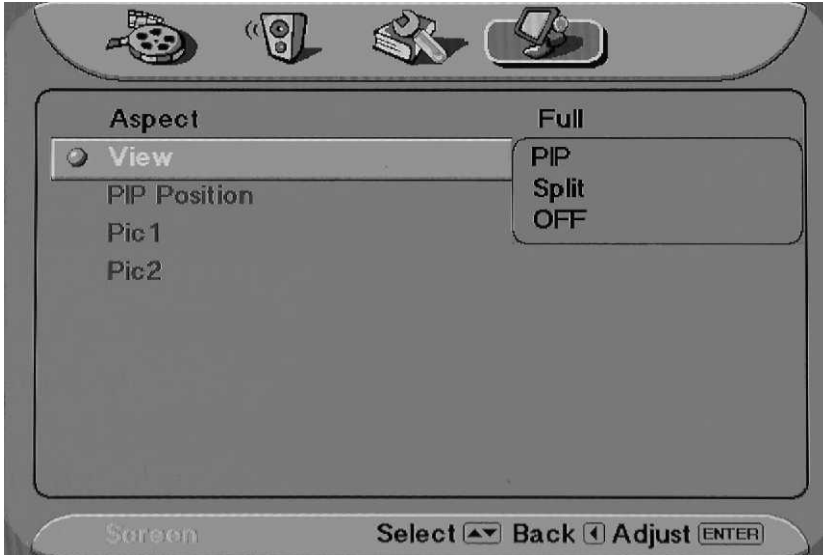
**16:9** Enlarges (zoom-in) the size of a 4:3 picture on screen as geometric ratio, keeping the original image as much as possible.

**Panoramic** Widens the displayed image. (only applies to content larger than 16:9)

# On Screen Display (OSD) Adjustment

## Changing the View Modes

You can select four view types of picture modes that best suits the program you are watching. You can set a different view mode for each video mode for each input and store it manually.



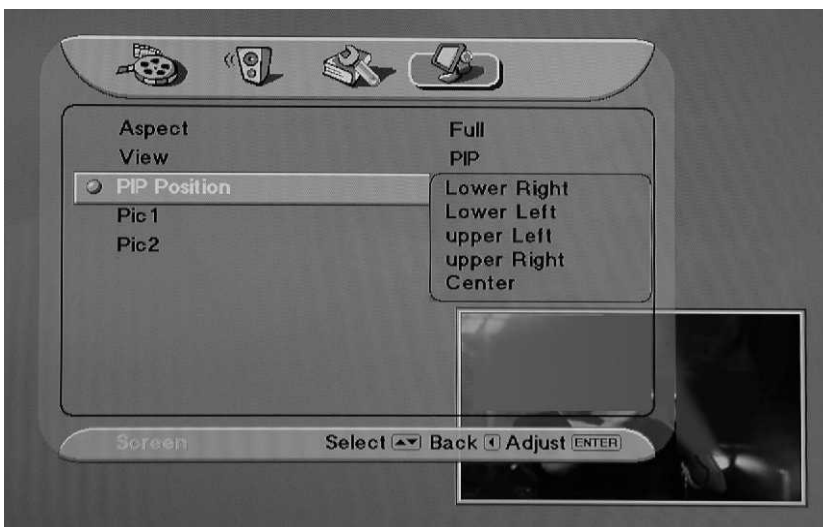
View Modes	Function
PIP	Picture-in-Picture has a Main screen and small screen view
Split Screen	Full Screen split in two Views

## Picture in Picture (PIP)

Allows you to view a main screen (Picture 1) and a secondary small screen (Picture 2).

Press 'source' button to switch from P1 to P2 and vice versa.

You may also choose the settings of P1 and P2 as well as the position of P2 on screen.

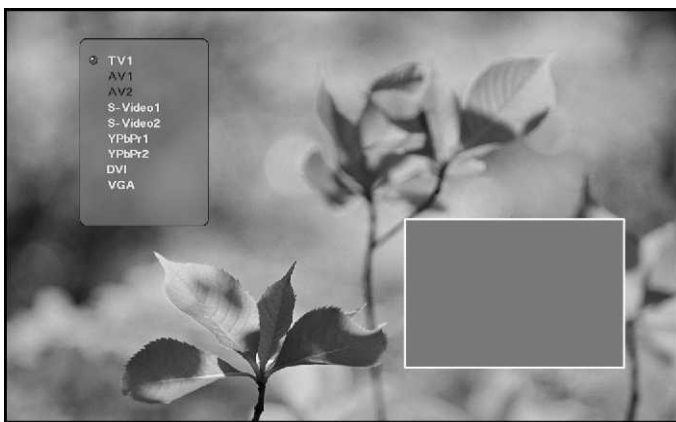
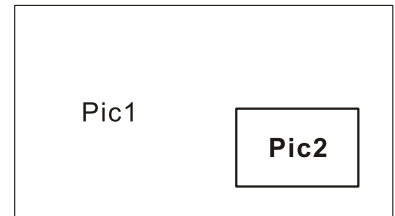
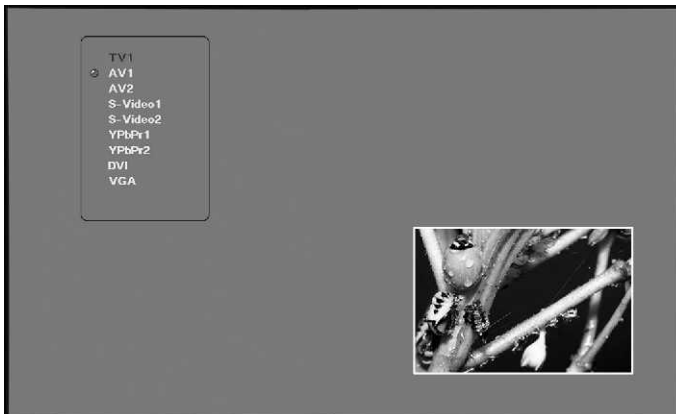


# On Screen Display (OSD) Adjustment

## OSD View



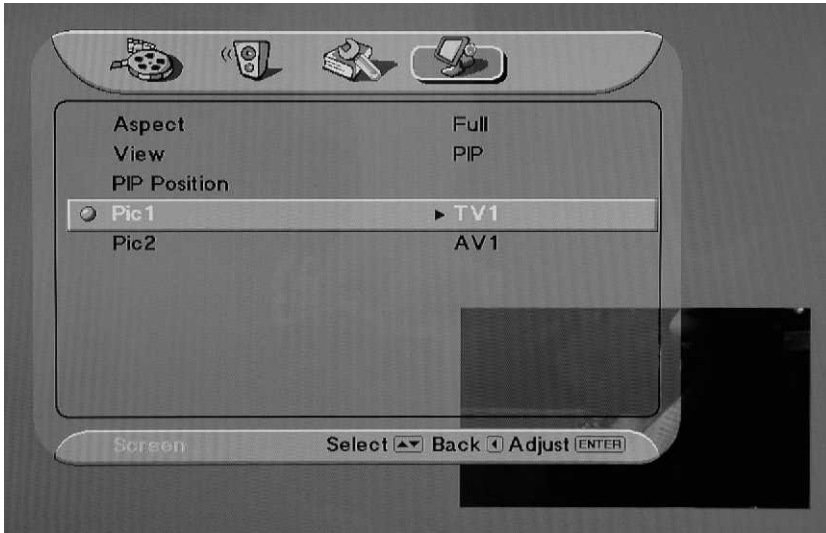
## TV View



# On Screen Display (OSD) Adjustment

## PIP mode

You may adjust setting for each Picture source. Pic 1 allows for a TV, AV1, AV2 and DVI sources while Pic 2 supports all other input sources.



Item	Adjustment	Function
PIP Position	Upper Left / Upper Right / Lower Left / Lower Right	Changes the position of Picture 2
PIP-Pic1	TV1, SV1, SV2, YpbPr1, YpbPr2, DVI, VGA	Switches the source of Picture 1
PIP-Pic2	AV1, AV2, SV1, SV2, YpbPr1, YpbPr2, DVI, VGA	Switches the source of Picture 2

**Note:** Pic 1 allows for a TV1, SV1, SV2, YpbPr1, YpbPr2, DVI, VGA. Pic 2 allows for all sources except TV or if you are already using one of the other sources from Pic 1.

When you use the swap function, the signals from the main window and the PIP window will swap positions no matter what sources you specified on either window.

# On Screen Display (OSD) Adjustment

## Split Screen

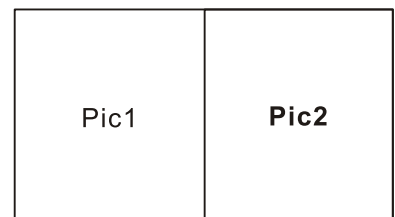
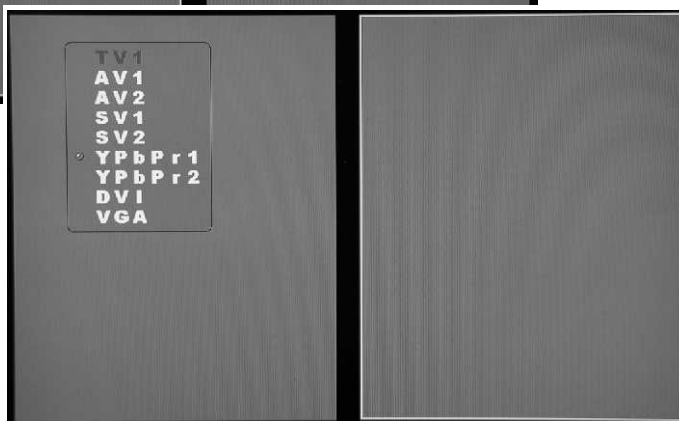
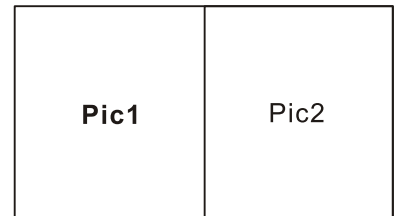
Allows you to view two separate screens simultaneously (Picture 1 and Picture 2).

Press 'source' button to switch from P1 to P2 and vice versa.

### OSD View



### TV View





# On Screen Display (OSD) Adjustment

## Split Screen mode

You may adjust setting for each Picture source. Only Pic1 supports a TV input source, while Pic2 supports all other TV input sources.

Item	Adjustment	Function
Pic1	TV1, SV1, SV2, YpbPr1, YpbPr2, DVI, VGA	Switches the source of Picture 1
Pic2	AV1, AV2, SV1, SV2, YpbPr1, YpbPr2, DVI, VGA	Switches the source of Picture 2

**Note:** Pic 1 allows for a TV1, SV1, SV2, YpbPr1, YpbPr2, DVI, VGA. Pic2 allows for all sources except TV or if you are already using one of the other sources from Pic 1.

When you use the swap function, the signals from the main window and the PIP window will swap positions no matter what sources you specified on either window.



## Supported Operating Modes

Source	Resolution	Horizontal frequency (Khz)	Vertical frequency(Hz)	Pixel rate (MHZ)
VGA	1024 x 768	75	60.241	80
		75	62.937	84.6
		75	61.08	86
		75	60.023	78.75
		77	62.04	84.4
		85	68.677	94.5
	1053 x 754	86.907	35.414	45.5
	1056 x 768	86.939	35.602	45.57
	1120x750	80.042	32.857	47.8
	1152 x 864	70.012	63.851	94.5
			75	67.5
		75.062	68.681	100
			61.795	92.9
	1152 x 900	66.004	61.846	94.5
			76.047	71.713
		76.149	71.809	108
			60	63.36
	1024 x 1024	61.399	65.286	92.9
			60	60
	1280x 960	60	60	108
	1280 x 720	60	45	74.25
	1028 x 1024	63.362	59.974	111.518
	1136 x 768	47.7	60	85.765
1280 x 768	48.36	60	81.631	
DVI	1024 x 768	50.014	48.363	32.5
		56.041	48.363	32.5
	1280 x 720	60	45	74.25
	800 x 600	60.317	37.879	40
	1400 x 788	60	65.52	54
	1400 x 1050	60	65.52	54
	1024 x 768	60.004	48.363	65
	1388 x 780	60	65.52	54
	1028 x 1024	63.362	59.974	111.518
	1136 x 768	47.7	60	85.765
	1280 x 768	48.36	60	81.63

If problems are still encountered after troubleshooting, contact service personnel for repair.

Symptoms	Possible solution
Power On failed	Power plug is securely inserted into the socket.
No picture or sound	<ol style="list-style-type: none"> <li>1. Check LCD TV power status.</li> <li>2. Check if the terminal is properly connected and the input mode has a right connection.</li> <li>3. Check if the cable is well connected between the video source and the LCD TV.</li> </ol>
Full of spots or noise on the screen	Check if any interference from automobiles, trains, high-voltage transmission lines, neon signs or other potential sources of interference.
Poor color display	Check OSD and adjust in "Picture" function
Image distortion	Check aspect ratio in "Screen" function.
The image is blue	Check the setting of source in the LCD TV and set it in the right type.
The image is too bright, and the image is saturation in the brightest areas.	<ol style="list-style-type: none"> <li>1. Check if the contrast setting is too high.</li> <li>2. The DVD player is set for a high-level output.</li> </ol>
The screen shows searching for signal but no image.	<ol style="list-style-type: none"> <li>1. Check if the signal cable is disconnected</li> <li>2. Check if the terminal is properly connected and the input mode has a right connection..</li> </ol>
Out of range	Check if input signal is suitable to the display.
Remote control does not work	<ol style="list-style-type: none"> <li>1. Check if the batteries are properly installed.</li> <li>2. Check if the batteries are out of power.</li> <li>3. Check both distance and angle from the LCD TV's infrared (IR receiver) to remote control.</li> <li>4. Check if any object is in between remote control and IR receiver.</li> <li>5. Check if the IR is under strong fluorescent lighting.</li> </ol>
No sound	<ol style="list-style-type: none"> <li>1. Check if the display's sound volume is set on "mute" or set to minimum.</li> <li>2. Check if the earphone is connected.</li> <li>3. Check if audio cable is properly connected.</li> <li>4. Check is the speaker wires are both properly connected. .</li> </ol>
Stripes on the screen	Check if any interference from the radiation wave. Any antenna of radio or cell phone may also cause interference. Keep display away from those devices.

# Specifications

Specificatinos	LT32HVE
Panel size	32"
Aspect Ratio	16:9
Pixels	1366 X 768
Brightness	800 Nits
Contrast	1200:1*
H/V(View Angle)	178° (H) / 178° (V)
Gray to Gray Response Time	8 ms
Video/Graphic Processing	
PC compatible frequency	30~85 KHz(H) / 50~75Hz(V) Max. 1280x1024 @60Hz
Video Compatibility	NTSC
DTV & HDTV Compatability	480i, 480p, 720p, 1080i
Aspect Ratio Adjustment	Full screen, 4:3, 16:9, Panoramic
3D Comb Filter	Y
3 : 2 / 2 : 2 Pull Down	Y
Digital Noise Reduction	ON/OFF, Low, Middle, Strong
Adjustable Color Temperature	Cool, Middle, Warm, User
De-interlacer	Y
VGA Auto Frequency Correction	Y
TV Auto Frequency Detection	Y
Audio Processing	
Auto Sound Level Control	Y
Output Watt	10W + 10W
Sound Effect	MTS (Mono / Stereo / SAP) EQ1 and EQ2
Input Terminals	
TV Tuner	NTSC VHF/UHF tuner x 1
Video Input (Rear)	Input 1:AV x1, S-Video x1, RL x1 Input 2:AV x1, S-Video x1, RL x1 Input 3:Y, Pb/Cr, Pr/Cr x1, RLx1 Input 4:Y, Pb/Cb, PrCr x1, RLx1
Graphic Input(Rear)	Input 1:RGB D-Sub 15 pin x1 Input 2:DVI-D(HDCP)x1, RL x1
Service Port(Rear)	RS-232 mini DIN 6 pins X 1

\* DCR : Dynamic Contrast Ratio

# Specifications

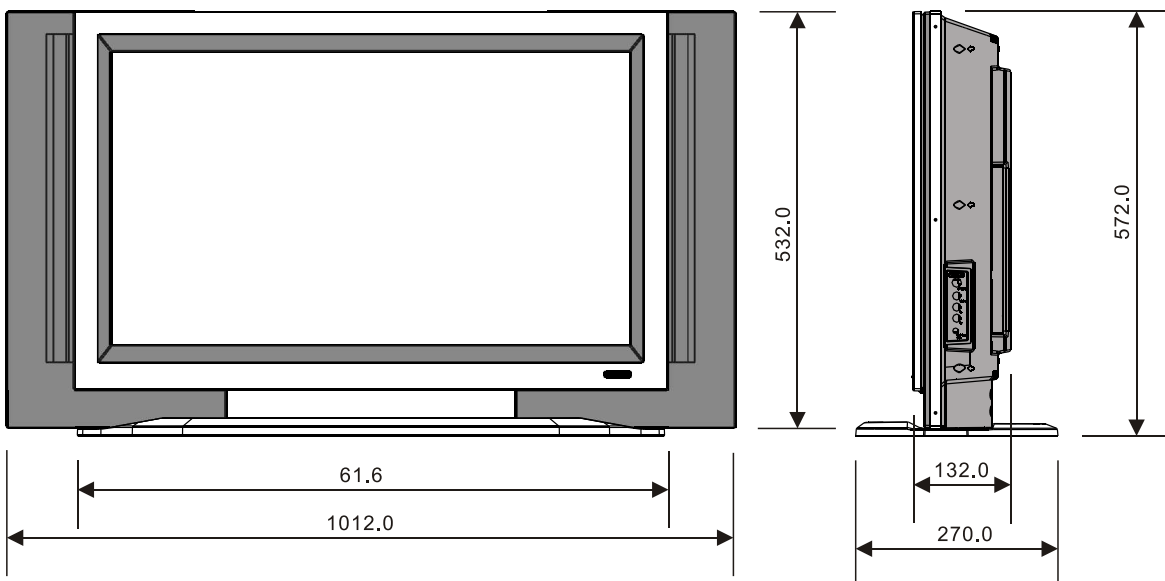
## Output Terminals

Audio Output(Rear)	Output 1: Stereo Audio R/L x1
	Output 2: Earphone x 1

## Others

Power (Voltage)	100~240 VAC / 50-60 Hz
(Power Consumption)	145W
Stand-by	< 3W
Dimensions (W x D x H)	39.8 in x 5.1 in x 22.4 in
Weight	45 lbs
Weight w/ stand	55 lbs

## Dimensional drawing



## **kolin's D.O.A. Policy for LCD TVs for Defective Pixels on LCD Panels**

(Applicable to the LCD TV sold within USA & Canada only)

kolin™ LCD TVs are evaluated at a distance of approximately 50 centimeters (approximately 20 inches) between the LCD panel and the eyes of the user at a 90 degrees viewing angle. All LCD panels have been tested to ensure they comply with our factory standards. Our evaluation is based on the number of defective pixels and the distance between any two defective pixels. Bright dots are dots that appear bright and unchanged in size when a LCD TV screen displays under a black pattern; dark dots are dots that appear dark and unchanged in size when a LCD TV screen is displayed under pure red, green, or blue patterns ( defective pixels ). Adjacent dots are dots located directly next to each other.

Customers are required to check their LCD panel immediately after purchase. To identify defective pixels, the LCD panel should be examined under normal operating conditions as mentioned above, preferably in its native display resolution, and with a 90 degrees viewing angle.

A LCD TV will be considered dead on arrival (D.O.A.) with regards to defective pixels on the LCD panel when any one of the following criteria is met:

- A total of 7 defective pixels including both bright dots and dark dots are present (the typical 30 LCD Television screen has 16.7 million pixels), or
- 2 or more pairs of adjacent bright dots are present, or
- 3 adjacent bright dots are present, or
- 3 adjacent dark dots are present.

In view of customers' concerns about dead pixels, kolin would like to address that defective pixels are not ultimately avoidable with the current LCD industry standard panel manufacturing processes. We always strive to improve our technology and minimize the chance of occurrence of defective pixels by applying strict screening processes in our factory production processes. However, kolin cannot guarantee that a return unit to our customers will be 100% free of defective pixels.

For questions, please call our toll free service number in the USA at 888-7968298.

**" At kolin Groups, a satisfied customer is our most important focus. "**

**1080i**

1080 lines of interlaced video (540 lines per field). Usually refers to 1920x1080 resolution in 1.78 aspect ratio.

**3D digital comb filter.** A circuit that processes composite video signals, stripping the color signal (chrominance) apart from the black-and-white signal (luminance). To maintain picture quality, this filter compares each horizontal scanning line with the lines above and below—and with the corresponding lines on the previous and subsequent video frames. You get higher horizontal resolution, higher vertical resolution and reduced video noise.

**480i.** The conventional, Standard Definition television signal. This contains 480 active scanning lines (of a total 525 lines) displayed at 30 frames per second. Interlaced ("i") scanning divides each frame into two fields of 240 lines. Each field lasts for 1/60 second.

**480p.** Enhanced definition TV signal with 480 active scanning lines, progressive ("p") scanning and a rate of 60 frames per second. Used in both digital television broadcasting and progressive scan DVD players.

**720p.** High Definition TV signal with 720 active scanning lines and progressive ("p") scanning. Used in digital television broadcasting.

**Active Matrix TFT**

The most common type of LCD, used in most laptops, and most LCD panels and projectors. A typical active matrix TFT display is a single panel of LCD glass that modulates all three primary colors. Most of these offer contrast ratios up to 100:1 for good color dynamics, and just enough "speed" to handle video and 30 fps multimedia with little or barely distinguishable hesitation (jerkiness.)

**Artifacts**

Undesired viewable objects in the picture generated by disturbances in transmission.

**Aspect Ratio**

The width-to-height ratio of an image. A 4:3 aspect ratio means the horizontal size is a third again wider than the vertical size. Standard television ratio is 4:3 (or 1.33:1). Widescreen DVD and HTDV aspect ratio is 16:9 (or 1.78:1). Common film aspect ratios are 1.85:1 and 2.35:1. Aspect ratios normalized to a height of 1 are often abbreviated by leaving off the :1.

**Audio In (Stereo SOURCE)**

The jack or jacks (typically standard RCA jacks) to plug in sound coming from a computer or video source. (Most projectors have multiple audio SOURCES, since they often support at least one computer and one to two video SOURCES.)

**Audio Out (Stereo Out)**

The jack or jacks to hook up external (powered) speakers or a PA system. Most projectors allow their remote to control the volume of their internal speaker(s) and the external systems.

**A/V SOURCES:** For connecting external audio/video equipment, including VCRs, DVD players, A/V receivers.

**Brightness**

The dimension of color that is referred to an achromatic scale, ranging from black to white, also called lightness or luminous reflectance. Because of confusion with saturation, the use of this term should be discouraged.

**Built-in Tuner**

Allows you to access and guide through TV channels without having to add an additional source. Without a built-in tuner, you will need to use your VCRs tuner to use the Picture-in-Picture feature.



**Chromatic Aberration:** An optical defect of a lens which causes different colors or wave lengths of light to be focused at different distances from the lens. It is seen as color fringes or halos along edges and around every point in the image.

**Chromaticity:** The color quality of light that is defined by the wavelength (hue) and saturation. Chromaticity defines all the qualities of color except its brightness.

**Chrominance.** The color component of a video signal, abbreviated C. Chrominance is combined with the black-and-white signal (luminance) in composite video connections, but kept apart in S-Video and component connections. For higher quality, the single chrominance signal can also be divided into B-Y and R-Y components in Y/PB/PR component connections, or into the primary colors of Red, Green and Blue for R/G/B component connections.

### **Closed Caption**

Textual video overlays that are not normally visible, as opposed to open captions, which are a permanent part of the picture. Captions are usually a textual representation of the spoken audio. In the United States, the official NTSC Closed Caption standard requires that all TVs larger than 13 inches include circuitry to decode and display caption information stored on line 21 of the video signal. DVD-Video can provide closed caption data, but the subtitle format is preferred for its versatility.

**Coaxial digital output.** A method of connecting high-quality digital audio from a source component to an A/V receiver.

### **Channel Skip**

This feature allows viewers to surf through other channels during program commercials. It will automatically return to the viewing channel after a programmed time.

### **Component Video**

A video system containing three separate color component signals, either red/green/blue (RGB) or chroma/color difference (YCbCr, YPbPr, YUV), in analog or digital form. The MPEG-2 encoding system used by DVD is based on color-difference component digital video. Very few televisions have component video SOURCES.

Y/Pb/Pr used most often with progressive scan video devices progressive scan video devices. Separates a video signal into three separate channels using progressive scan (non-interlaced). These channels reduce interference to produce better picture quality. This format can handle 30K of information.

Y/Cb/Cr used most often with standard interlaced scan video devices. Separates a video signal into three separate channels for better picture quality. This format can handle 15K of information.

### **Composite Video**

An analog video signal in which the luma and chroma components are combined (by frequency multiplexing), along with sync and burst. Also called CVBS. Most televisions and VCRs have composite video connectors, which are usually colored yellow.

### **Contrast Ratio**

The difference in luminance between a white square centered on the screen and the black surrounding area. The larger the contrast ratio the greater the ability of a projector to show subtle color details and tolerate extraneous room light. There are two methods used by the projection industry: 1) **Full On/Off** contrast measures the ratio of the light output of an all white image (full on) and the light output of an all black (full off) image. 2) **ANSI** contrast is measured with a pattern of 16 alternating black and white rectangles. The average light output from the white rectangles is divided by the average light output of the black rectangles to determine the **ANSI** contrast ratio. When comparing the contrast ratio of projectors make sure you are comparing the same type of contrast.

**Full On/Off** contrast will always be a larger number than **ANSI** contrast for the same projector.

**Decoder**

A circuit that decodes compressed audio or video, taking an encoded SOURCE stream and producing output such as audio or video. DVD players use the decoders to recreate information that was compressed by systems such as MPEG-2 and Dolby Digital; 2) a circuit that converts composite video to component video or matrixed audio to multiple channels.

**Digital Television (DTV).** The US system for over-the-air broadcasting gives stations 18 options in signal format, six of which are designated as true High Definition.

**Display Area**

In the viewing area of the LCD glass, the dimensions of the perimeter of the conductive area.

**Display Scanning Format**

You will find that the display format is often followed by the letter "i" or "p" which stands for interlaced scanning or progressive scanning. Some TVs can have different display formats with both scanning method to produce an image.

**DTV**

Digital television. In general, any system that encodes video and audio in digital form. In specific, the Digital Television System proposed by the ATSC or the digital TV standard proposed by the Digital TV Team founded by Microsoft, Intel, and Compaq.

**Dual Tuner**

Dual tuner allows you to view two different channels simultaneously without using an external video source like VCR or DVD.

**DVI:** DVI means Digital Visual Interface. DVI is a standard that defines the digital interface between digital devices such as projectors and personal computers. For devices that support DVI, a digital to digital connection can be made that eliminates the conversion to analog and thereby delivers an unblemished image. Specifications on DVI are available at [www.ddwg.org](http://www.ddwg.org).

**DVI-HDTV.** An interface that enables spectacular, uncompressed digital-to-digital transport of a video signal from an HDTV receiver to a "high scanning," "High Definition monitor" or "High Definition upgradeable" television. The connection is also secured by HDCP technology to protect the signal from piracy.

**Energy Star Compatible**

EPA rating given to TVs with low power consumption. Products with this rating benefit the environment and cost less to operate since they use less energy.

**Flat Screen**

While the TVs we all grew up with bowed out like a bubble, many of today's tube TVs have completely flat screens that give a truer, more accurate image and can be viewed from a wider angle. While they cost a bit more than TVs with older tube technology, many think the picture quality is well worth it.

**HDTV**

High-definition television. A video format with a resolution approximately twice that of conventional television in both the horizontal and vertical dimensions, and a picture aspect ratio of 16:9. Used loosely to refer to the U.S. DTV System. Contrast with EDTV and IDTV.

**High Gain Screen:** A screen that uses one of many methods to collect light and reflect it back to the audience, which dramatically increase the brightness of the image over a white wall or semi-matte screen. Technologies used include curved screens, special metal foil screens (some polarized), and certain glass bead screens. Prices and performance vary tremendously, but attention to the screen can make a big difference, particularly in "tough" environments such as trade shows.

The traditional remote control is a radio-

Interlaced scanning is a method that creates a flicker-free picture by alternating lines of color and black. Progressive scanning is a method that results in flicker-free picture quality.

A unit that is "self-switching" will automatically switch on to be switched (internally or externally) to a state of operation.

The black box that appears when a video signal is not present is called a "black box".

Created by sandwiching an electrode between two layers of liquid crystal, a flat-panel display is a type of display that is lit up by applying and removing voltage. It is a type of flat-panel display.

The black-and-white response of a color signal (chrominance) is called white.

An optical illusion that occurs when the eye of the viewer thinks that a shape is not a shape.

Information in more than one form is called information. Information is present in more than one form.

**Panel Link:** An all digital interface used to transmit computer video from a PC/Notebook to a projector. Supports resolutions from 640x480(VGA) up to 1600x1200(UXGA). This digital interface might someday replace the analog VGA interface typically used to connect projectors to computers.

## **Parental Controls**

Allows parents to "lock out" children's access to certain functions or to the entire set with remote control access codes. In some DVD players, parents may also control a child's access by film rating codes. (i.e. PG but not R). It is also known as the V-Chip.

## **PIP (Picture In Picture)**

This feature allows you to watch two images at once on your TV screen by placing one image in a small box within the larger picture. TVs with PIP as well as dual tuners can tune into two channels simultaneously. TVs without a dual tuner can place images from another video source, such as a VCR, in the smaller picture.

## **Pitch**

The centre-to-centre distance between subpixels of the same color.

## **Pixel**

The smallest information building block of an on-screen image. The resolution of a monitor is determined by the number of pixels covering the width and height of the complete on-screen image.

## **Pixel Resolution**

The number rows of horizontal and vertical pixels that create the picture. The more pixels on the projection TV, the sharper the picture image.

## **Plug and Play**

Hardware or software that can immediately be used after being installed is known as plug & play. Non plug & play hardware or software will require configuration.

## **Progressive Scan**

A video scanning system that displays all lines of a frame in one pass. Contrast with interlaced scan.

**QXGA:** QXGA is used to define a specific display resolution. Resolution is defined by the number of individual dots that a display uses to create an image. These dots are called pixels. A QXGA display has 2048 horizontal pixels and 1536 vertical pixels giving a total display resolution of 3,145,728 individual pixels that are used to compose the image delivered by a projector. A QXGA display has 4 times the resolution of an XGA display.

## **Refresh Rate**

"Vertical Refresh Rate" or "Vertical Scan Rate" is the maximum number of frames that can be displayed on a monitor in a second, expressed in Hertz.

**Resolution.** A measure of video signal detail for source material, transmission channels, recorders and displays. Resolution can be measured in pixels or in "lines of resolution."

## **RF Coaxial Output**

This is a standard cable output of a video/audio signal. Signals using this type of output are limited to a maximum of 330 lines of resolution, so it is not a good hookup to use with high resolution sources like DVD players or satellite dishes. It does allow hookup to older TV's without other types of SOURCES.

## **RGB (Red, Green, Blue)**

The basic components of the color television system. They are also the primary colors of light, not to be confused with Cyan, Magenta, and Yellow, the primary pigments.

**S-Video**

A video interface standard that carries separate luma and chroma signals, usually on a four-pin mini-DIN connector. Also called Y/C. An encoded video that separates the brightness from color in a transmission. The S-Video connection can vastly improve picture quality when used in conjunction with video sources such as DVD, VCD, Laser Discs. The quality of s-video is significantly better than composite video since it does not require a comb filter to separate the signals, but it's not quite as good as component video. Most high-end televisions have s-video SOURCES. S-video is often erroneously called S-VHS.

**SECAM**

A French and international broadcast standard for video and broadcasting. Higher resolution than NTSC.

**Set-Top Box**

A box similar in appearance to a cable box that can receive and decode digital transmission for a receiver.

**Surround Sound**

Instead of the traditional feature where sound is generated from a single source, surround sound uses multiple channels and speakers to amplify sound and audio depth. The five types of surround sound are: Simulated, Dolby Surround, Matrix Surround, Dolby ProLogic and Dolby Digital.

**SVGA:** An SVGA display has 800 horizontal pixels and 600 vertical pixels giving a total display resolution of 480,000 individual pixels that are used to compose the image delivered by a projector.

**SXGA:** An SXGA display has 1280 horizontal pixels and 1024 vertical pixels giving a total display resolution of 1,310,720 individual pixels that are used to compose the image delivered by a projector.

**Thin-Film Transistor (TFT)**

A technology for building the LCD screens that are commonly found on laptop computers. TFT screens are brighter and more readable than dual-scan LCD screens, but consume more power and are generally more expensive.

**Timers (on-off/sleep)**

Some sets have on/off timers that are useful to give your home that lived-in look when you're away. Many TVs also feature a timer to turn the set off after a set time, should you happen to fall asleep while watching TV.

**V-Chip (see Parental Control)****VGA (Video Graphics Array)**

A standard analog monitor interface for computers. Also a video graphics resolution of 640 x 480 pixels.

**Video Components**

Video components are used to increase the picture quality. The three types of video component SOURCES are: Composite Video, S-Video and Component Video. Most projection TVs are equipped with Composite Video and S-Video SOURCES.

**Viewing Angles**

Refers to the angle from which you can still view the picture on the screen. TVs with wide viewing angles mean that you don't need to be positioned directly in front of the set to see the ideal picture your TV is capable of.

**Wall Mount**

Flat-panel displays present you with a number of mounting options because of their slim size. They can be mounted close to the wall like a picture, or tilt-mounted, allowing for ventilation and clearance behind the display. Tilt-mounting can also add depth to your display.

**Widescreen**

A video image wider than the standard 1.33 (4:3) aspect ratio. When referring to DVD or HDTV, widescreen usually indicates a 1.78 (16:9) aspect ratio.

**WXGA:** WXGA defines a class of XGA displays with a width resolution sufficient to create an aspect ratio of 16:9. Resolution is defined by the number of individual dots that a display uses to create an image. These dots are called pixels. A WXGA display has 1366 to 1280 horizontal pixels and 768 to 720 vertical pixels respectively that are used to compose the image delivered by the projector.

**XGA Resolution**

A resolution of 1024x 768, this is now the most common used resolution on laptops and desktops, and as such has replaced SVGA and the current \"standard\". Higher resolutions are available as well, including SXGA and UXGA.

**kolin**

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