

ATTACHMENT E.

- USER'S MANUAL-1 -

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Caution



CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK), NO USER-SERVICE ABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

CAUTION

- TO PREVENT DAMAGE WHICH MAY RESULT IN FIRE OR SHOCK HAZARD.
- DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.
- SHOCK HAZARD DO NOT OPEN.

CAUTION

These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

CAUTION

The stand intended for use only with this TV. Use with other apparatus is capable of resulting in instability causing possible injury.

WARNING

- Apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.
- This is Class B product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.
- To reduce the risk of fire and electric shock, do not expose this product to rain or moisture.

FCC NOTICE

This device has been tested and found to comply with the limits for a Class B device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in home environment as well as in a commercial, industrial or business environment. This equipment can generate, use and radiate radio frequency energy and, if not installed and used in accordance with the instruction, 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:

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

Changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Connecting of peripherals requires the use of grounded shielded signal cables.

Always be careful when using your the TV. To reduce the risk of fire, electrical shock, and other injuries, keep these safety precautions in mind when installing, using, and maintaining your machine.

- Read all safety and operating instructions before operating your the TV.
- Keep the safety and operating instructions for future reference.
- Heed all warnings on the TV and in the operating instructions.

Important Safety Instructions

Always be careful when using your the TV. To reduce the risk of fire, electrical shock, and other injuries, keep these safety precautions in mind when installing, using, and maintaining your machine.

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 damp cloth.
7. Do not block any of the ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that aproduce heat.
9. Do not defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. When the provided 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 the attachments/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.



13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. When installing the LCD TV, do not block the appliance coupler with any structure. User can easily have access to the coupler to disconnect it from AC main power.

Precaution

In case of the following cases, unplug the unit from the wall outlet and contact qualified service center.

- When power supply cord or plug is damaged.
- If liquid has been spilled on the unit or if alien objects have fallen into the unit.
- If the TV has been exposed to rain or water.
- If the TV does not operate normally by following the operating instructions.
- If the TV dropped or the cabinet has been damaged.
- When the TV exhibits a distinct change in performance.

Setting



CAUTION

- ▶ Follow all operating and use instructions.
- ▶ Do not use the TV where contact with or immersion in water is a possibility, such as near bath tubs, sinks, washing machines, swimming pools, etc.
- ▶ Avoid overhead power lines. An outside antenna

system should not be placed in the vicinity of overhead power lines or other electric light or power circuits or where it can fall into such power lines or circuits. When installing an outside antenna system, be extremely careful to keep from touching the power lines or circuits. Contact with such lines can be fatal.

Ground outdoor antennas. If an outside antenna or cable system is connected to the TV, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Section 810 of the National Electrical Code, ANSI/NFPA No.70-1984, provides information about proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

- ▶ Bend antenna cable between inside and outside building to prevent rain from flowing in.
 - This may cause water damaged inside the TV and could give an electric shock.
- ▶ Do not place an outside antenna in the vicinity of overhead power lines, or other electric light or power circuits.

- This may cause an electric shock.

- ▶ There should be enough distance between an outside antenna and power lines to keep the former from touching the latter even when the antenna falls.

- This may cause an electric shock.

Setting



WARNING

- ▶ When installing the TV on a table, be careful not to place the edge of its stand.
 - This may cause the TV to fall, causing serious injury to a child or adult, and serious damage to the TV.
- ▶ Provide ventilation for the TV. The unit is designed with slots in the cabinet for ventilation to protect it from overheating. Do not block these openings with any object, and do not place the TV on a

bed, sofa, rug or other similar surface. Do not place it near a radiator or heat register. If you place the TV on a rack or bookcase, ensure that there is adequate ventilation and that you've followed the manufacturer's instructions for mounting.

- ▶ This TV is designed to be mounted horizontally (wide viewing). Any inquiry regarding its vertical position should be forwarded to the manufacture directly.

Precaution

Power



CAUTION

- ▶ Use only the accessory cord designed for this product to prevent shock. The power supply voltage rating of this product is AC100-240V, the power cord attached conforms to the following power supply voltage. Use only the power cord designated by our dealer to ensure Safety and EMC. When it is used by other power supply voltage, power cable must be changed. Consult your product dealer.
 - ▶ Unplug the TV from the wall outlet before cleaning. Use a damp cloth; do not use liquid or aerosol cleaners.
 - ▶ Unplug the TV from the wall outlet and disconnect the antenna or cable system during a lightning storm or when left unattended and unused for long periods of time. This will prevent damage to the unit due to lightning and power-line surges.
 - ▶ Protect the power cord. Power supply cords should be routed so that they won't be walked on or pinched by objects placed on or against them.
- Pay particular attention to cords at plugs, convenience receptacles, and the point where they exit from the unit.
- ▶ Do not touch the plug with wet hand.
 - It can make an electric shock.
 - ▶ Use only a grounded or polarized outlet. For your safety, this TV is equipped with a polarized alternating current line plug having one blade wider than the other. This plug will fit into the power outlet only one way. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug still does not fit, contact your electrician to replace your outlet.
 - ▶ Protect the power cord. Power supply cords should be routed so that they won't be walked on or pinched by objects placed on or against them. Pay particular attention to cords at plugs, convenience receptacles, and the point where they exit from the unit.

Operation



CAUTION

- ▶ Upon completion of any service or repairs to this the TV, ask the service technician to perform safety checks to determine that the TV is in a safe operating condition.
 - ▶ Do not place anything containing liquid on top of the TV.
 - This may cause a fire or could give an electric shock.
 - ▶ Never add any attachments and/or equipment without approval of the manufacturer. Such additions can increase the risk of fire, electric shock, or other personal injury.
- ▶ In case of smoke or strange smell from the TV, switch it off, unplug it from the wall outlet and contact your dealer or service center.
 - This may cause a fire or could give an electric shock.
 - ▶ Do not insert anything through the openings in the unit, where they can touch dangerous voltage points or damage parts. Never spill liquid of any kind on the TV.

Operation



WARNING

- ▶ When replacement parts are required, be sure the service technician uses replacement parts specified by the manufacturer or those that have the same characteristics as the original part. Unauthorized substitutions may result in additional damage to the unit.
- ▶ If you make adjustments yourself, adjust only those controls that are covered by the operating instructions. Adjusting other controls may result in damage and will often require extensive work by a qualified technician to restore the TV to normal.
- ▶ Do not let children hang on or ride on the TV.



Precaution

Operation

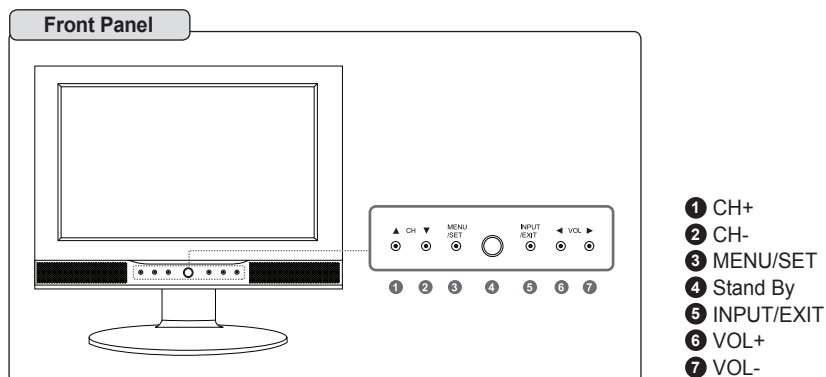


WARNING

- ▶ Do not use new battery with old one.
 - This can lead a fire or electric shock caused by leakage liquid from abused batteries.
- ▶ Put the batteries in right direction (+/-).
 - Otherwise, it can make a fire, injury and pollution caused by bursting of batteries.
- ▶ Only use the specified batteries.
 - This make cause damaged the TV or could give an electric shock.
- ▶ More than two people are necessary to move or take off the package due to the product's weightiness.
 - Otherwise, it can cause personal injury.
- ▶ Keep the batteries out of reach of children when exchanged.
 - Seek urgent medical advice if child swallows a battery.
- ▶ When moving the TV assembled with speakers do not carry holding the speakers.
 - This may cause the TV to fall, causing serious injury to a child or adult, and serious damage to the TV.
- ▶ The distance between eyes and the screen should be about 5~7 times as long as diagonal length of the screen.
 - If not, eyes will strain.

Viewing the Control Panel

OSD Button Position



OSD Button Function

1 INPUT SELECT/EXIT

Select the signal source from multiple input sources such as TV, AV Input, S-Video, PC and HDMI.

2 VOL/CH ▲/▼

To change the CHANNEL, press ▼ button first and change the channel with ▲, ▼ buttons.

To change the VOLUME, press ▲ button first and change the volume with ▲, ▼ buttons.

3 ⏻ Stand By ON/OFF

Turn the TV on and off.

4 Menu/SET

Call the OSD Menu.

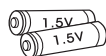
Accessories



Remote Control Handset



Power Cord



Alkaline Batteries

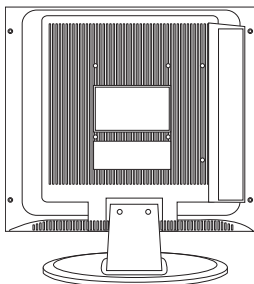


Owner's Manual

Viewing the Connecting Panel

Back Panels and Jacks

Back panel of the TV



- 1 DC IN
- 2 RS-232C (Stereo Jack)
- 3 T-PORT (MTI Port)
- 4 SPDIF
- 5 HDMI

- 6 S-VIDEO
- 7 AV-INPUT
- 8 PC SOUND
- 9 PC INPUT
- 10 TV ANT.

Viewing the Connection Panel



DC-IN Cable



RS-232C (Stereo Jack) Cable



T-PORT (MTI Port) Cable



SPDIF Cable



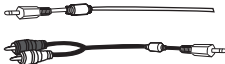
HDMI Cable



S-VIDEO Cable



AV-INPUT Cable



PC SOUND Cable



PC INPUT Cable



RF Cable

Connectors

AUDIO INPUT	RCA Pin Jack
COMPOSITE VIDEO INPUT	RCA Pin Jack
COMPOSITE VIDEO OUTPUT	RCA Pin Jack
S-VIDEO INPUT	Mini Din 4 Pin
COMPONENT VIDEO INPUT	RCA Pin Jack
ANALOG RGB INPUT	Mini D-Sub 15pin
HDMI INPUT	HDMI Connect
DIGITAL VIDEO INPUT	DVI-D 24 pin

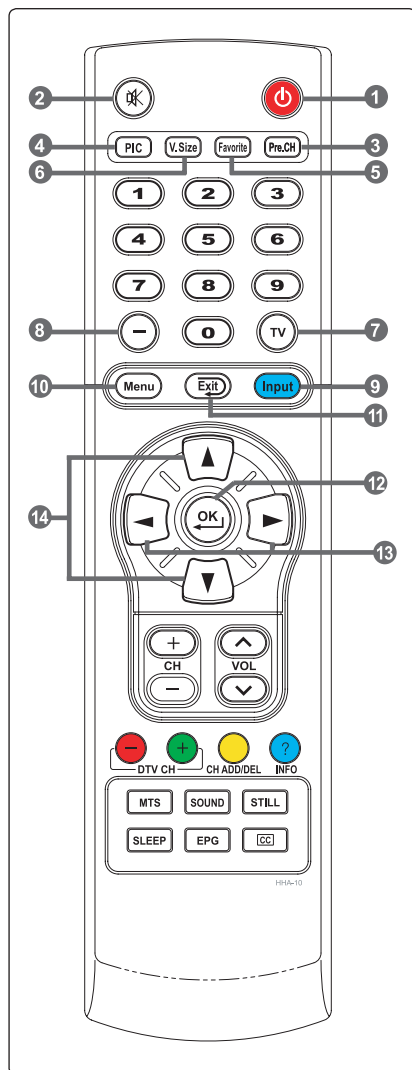
- Cables connecting the PC vary according to the type of machine, so consult your product dealer.

RS-232C Configurations 3-Wire (Non-standard)

	PC	TV	
RXD	2	3	TXD
TXD	3	2	RXD
GND	5	5	GND
DTR	4	4	DTR
DSR	6	6	DSR
RTS	7	7	RTS
CTS	8	8	CTS

Viewing the Remote Control

■ Button Description



1 Stand By

Turn the TV on and off.

2 Mute

Temporarily cut the sound and restore it.

3 Pre PG

Turn to the previous programme or exit OSD.

4 PIC

Color temp mode.

Normal → Warm → Cool

5 FAVORITE (FAVOURITE)

Tune to favorite channel.

6 V.Size

Choose the screen form.

Normal → Zoom → Wide → Cinema

7 TV

Move to Tuner input source.

8 —

Dash bar for Digital numeric tune.

9 INPUT

Select the input source.

Tuner → Composite → PC → HDMI → S-Video

10 Menu

Display the main OSD menu.

11 Exit

Exit to current OSD menu.

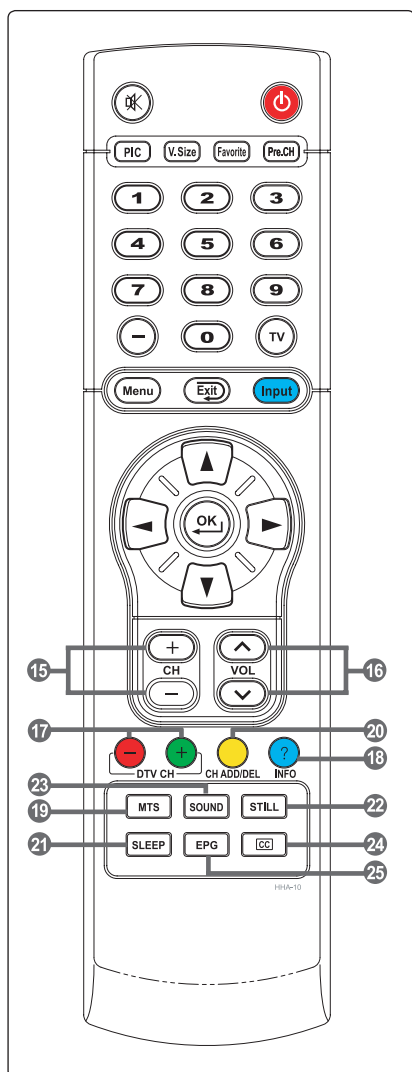
12 OK

Active choice.

13 14 Move

Move to direction Up / Down / Left / Right.

Viewing the Remote Control



15 CH

Move to the upper channel and lower channel.

16 VOL

Increase and decrease volume level.

17 DTV CH

Move to the Digital upper and lower channel.

18 INFO

Display the current information about time, screen form, source and MTS mode.

19 MTS

Choose the MTS (Stereo) mode.
Each time it is pressed, different mode is selected.

Mono → Stereo → SAP

- You can select only available modes depending on the source.

20 CH ADD/DEL

Add current channel to memory.
Delete current channel from memory.

21 SLEEP

Set the preset time interval for automatic turn-off.

OFF → 30 min. → 60 → 90 → 120

22 STILL

Temporarily freeze the screen and restore it.

23 SOUND

Choose the sound settings.
STANDARD → MOVIE → MUSIC

24 CC (CLOSED CAPTION)

Set the close caption.

Off → CC1 → CC2 → CC3 → CC4 → Text1
→ Text2 → Text3 → Text4

25 EPG

Display the Electric Program Guide menu.

Notice

- EPG Button of remote control is activate on DTV Mode.
- EPG showing the program information table from Current time.

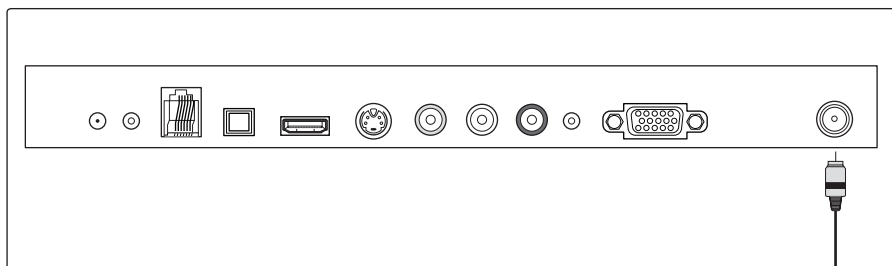


Viewing the Remote Control

Table Stand Installation (optional)

Wall Mount Installation (optional)

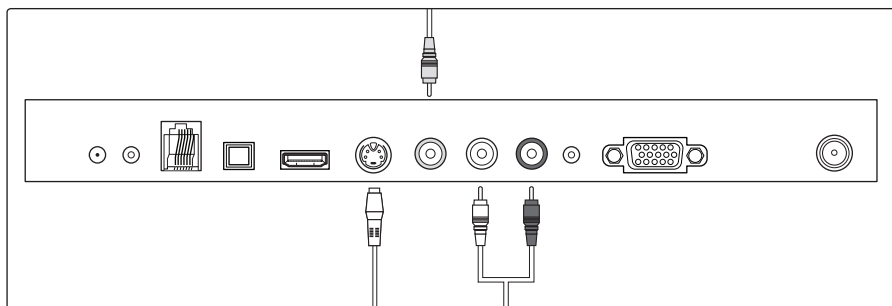
Connecting the TV Cable



Connection the TV Cable

- 1** Connect the TV Antenna cable to the TV input jack. Press INPUT button on the remote control and select TV or HDTV on OSD.
- 2** Use CH+, CH- button or numeric button to change TV program for your program selection.
- 3** Press Pre.CH button on the remote control to tune the previous program.
- 4** Also, you can tune to cable service provided programs using the cable box.
For further information regarding cable TV service, contact cable TV service provider(s).

Connecting the VCR



Connecting the VCR

With S-VIDEO

Connect a S-Video cable to the S-Video jacks of the VCR and the TV.

Connect L (White), R (Red) sound cable (Composite) to the sound jacks of the VCR and the TV.

With AV Input

Connect a composite cable to the AV video jacks of the VCR and the TV.

Connect L (White), R (Red) sound cable (Composite) to the sound jacks of the VCR and the TV.

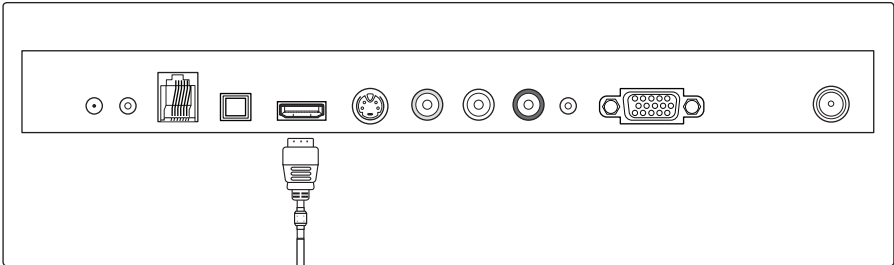
Watching VCR

- 1 Press INPUT button on the remote control and select video sources.
- 2 Insert a video tape into the VCR and press the PLAY button on the VCR.

Notes

- **To avoid picture noise** (interference), leave an adequate distance (over 3m) between the VCR and monitor.
- When connecting the TV with external equipments, match the colour of connecting ports (e.g. Video - yellow, Audio (L) - white, Audio (R) - red).
- If you have a mono VCR, connect the audio cable from the VCR to the AUDIO (L/MONO) input of the TV.
- If you connect an S-VHS VCR to the S-VIDEO input socket, you can get a better picture quality than normal video input (AV).
- **Avoid having a fixed image remain on the screen for a long period of time.**
Typically a frozen still picture from a VCR 4:3 picture format or if a programme information is present.

Connecting the DVD



Connecting the DVD

- 1 Connect the three separate component video cables to the DVD player's DVBS jacks and to the component jacks on the TV.
- 2 Connect the audio cable to the DVD player's audio L (White) and R (Red) jacks and to the Land R audio jacks beside the component jacks on the TV.
- 3 Connect the HDMI cables to the DVD player's and to the HDMI cables on the TV.

How to Use

- 1 Turn on the DVD player.
- 2 Press INPUT button on the remote control of the TV and select HDMI, Composite.

Supported Signals				
	Composite	S-Video	PC	HDMI
480i / 60Hz	O	O	X	X
480p / 60Hz	O	O	O	O
576i / 50Hz	O	O	X	X
576p / 50Hz	O	O	O	O
720p / 50Hz	O	O	O	O
720p / 60Hz	O	O	O	O
1080i / 50Hz	O	O	O	O
1080i / 60Hz	O	O	O	O

Notice

- Normal DVD source is based on 480i, which should be through normal composite signal.

Connecting the DVD

What is HDMI?



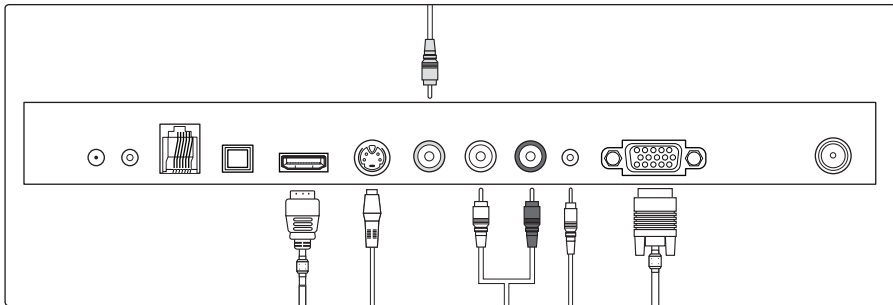
HDMI, or high-definition multimedia interface, is a next-generation interface that enables the transmission of digital audio and video signals using a single cable without compression.

- "Multimedia interface" is a more accurate name for it especially because it allows multiple channels of digital audio (5.1 channels). The difference between HDMI and DVI is that the HDMI device is smaller in size, has the HDCP (High Bandwidth Digital Copy Protection) coding feature installed, and supports multi - channel digital audio.
- Use the HDMI/DVI terminal for DVI connection to an extended device.
You should use the DVI-to-HDMI cable or DVI-HDMI Adapter for the connection.
- HDMI, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC.

Connecting HDMI/DVI

- Supports connections between HDMI-connection-enabled AV devices (set top boxes, DVD players, AV receivers and digital TVs).
- No sound connection is needed for an HDMI to HDMI connection.

Connecting the Set Top Box



How to connect

Connect set top box video inputs to AV, HDMI, PC or DVI jacks on the TV.

Audio inputs to Audio sockets beside the L (White) and R (Red) audio jacks which you connect video inputs.

With AV

Connect a AV cable to the AV jacks of the STB (set top box) and the TV.

With Composite

Connect a three separate composite cables to the composite jacks of the STB and the TV.

Connect L (White) and R (Red) sound cables (Composite) to the sound jacks of the STB and the TV.

With HDMI

Connect a HDMI cable to the HDMI jacks of the STB and the TV.

With RGB

Connect a D-Sub cable to the AV video jacks of the STB and the TV.

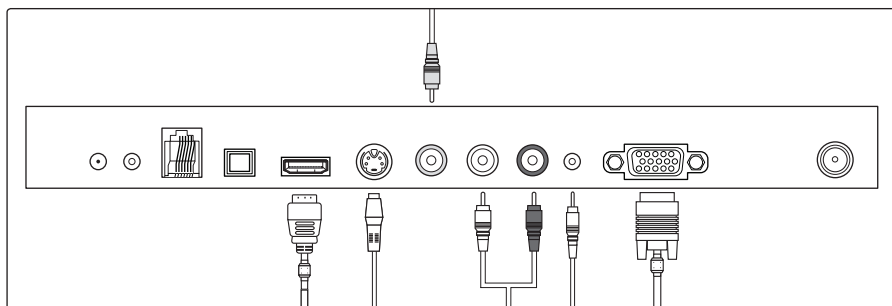
Connect L (White) and R (Red) sound cables (Composite) to the sound jacks of the STB and the TV.

How to Use

- 1 Turn on the set top box.
- 2 Press INPUT button on the remote control of the TV and select Composite, HDMI, PC.

Supported Signals				
	Composite	S-Video	PC	HDMI
480i / 60Hz	O	O	X	X
480p / 60Hz	O	O	O	O
576i / 50Hz	O	O	X	X
576p / 50Hz	O	O	O	O
720p / 50Hz	O	O	O	O
720p / 60Hz	O	O	O	O
1080i / 50Hz	O	O	O	O
1080i / 60Hz	O	O	O	O

Connecting the PC (D-Sub & DVI)

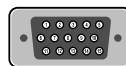


Connecting a PC to the TV

Connect a PC (15pin) video cable between the video output port on the PC and the PC port on the TV.

Pin Configuration

15pin signal cable (based on protruded pin).



To watch the PC screen

- 1 Turn on the TV and press INPUT button to select the PC mode.
- 2 Turn on the PC and check for the PC requirements.
- 3 Adjust the PC screen in Geometry menu.
(See 38 page.)

Pin No.	Description
1	Red (R)
2	Green (G)
3	Blue (B)
4	Grounding
5	Grounding (DDC)
6	Red (R) Grounding
7	Green (G) Grounding
8	Blue (B) Grounding
9	Reserved
10	Sync Grounding
11	Grounding
12	Data (DDC)
13	Horizontal sync.
14	Vertical sync.
15	Clock (DDC)

Displayable TV Specification

Resolution	Horizontal Frequency (KHz)	Vertical Frequency (Hz)
640 x 350	31.468	70.09
	37.861	85.08
640 x 400	31.469	70.08
	37.927	85.03
640 x 480	31.469	59.94
	35.000	66.66
	37.861	72.80
	37.500	75.00
	43.269	85.00
	45.913	90.03
	53.011	100.04
	64.062	120.00
800 x 600	35.156	56.25
	37.879	60.31
	48.077	72.18
	46.875	75.00
	53.674	85.06
	56.000	90.00
	64.016	100.00
832 x 624	49.725	74.55
852 x 480	31.468	60.05
1024 x 768	48.363	60.00
	56.476	70.06
	60.023	75.02
1280 x 1024	-	-
1366 x 768	-	-

Notes

- **Synchronization input form : separate**
- The TV recognizes 640 x 480 @ 60Hz signal as 480p DTV signal.
So the signal is expanded, please try other signals like 640 x 480 @ 75Hz
- The TV operates abnormally if a non-standard video format is selected.
- **852 x 480 : 42" Native Resolution** Horizontal Polarity is Positive (+) Vertical Polarity is Negative (-).
- **1366 x 768 : 50/55/63" Native Resolution** Horizontal Polarity is Positive (+) Vertical Polarity is Negative (-).
- **Depending on the manufacturer, your PC screen might appear differently** (and depending on your particular version of Windows).
Check your PC instruction book for information about connecting your PC to a the TV.
- The TV may operate abnormally if a non-standard video signal.
- **"Out of Range"** message box will appear when an over-spec video signal is input.
Change th video settings of PC when the message is displayed.