

# Panasonic®

## Digital Device Display Operating Instructions

Models No. **PT-50LCX63/PT-60LCX63**



**HDTV**  
— INTEGRATED TUNER —

**DOLBY**  
**DIGITAL**



MultiMediaCard™

**HDMI™**  
HIGH-DEFINITION MULTIMEDIA INTERFACE

### (USA)

For assistance, please call :  
**1-888-VIEW PTV(843-9788)**  
or, contact us via the web at:  
<http://www.panasonic.com/contactinfo>

### (Puerto Rico)

For assistance, please call :  
**787-750-4300**  
or visit us at [www.panasonicpr.com](http://www.panasonicpr.com)

### Three Important Reasons to Register Your Product Immediately!

- 1 Protect Your New Investment...**  
Register your new Device Display for insurance purposes in case your new Device Display is stolen.
- 2 Product safety notification...**  
Registering your product can help us to contact you in the unlikely event a safety notification is required under the Consumer Product Safety Act.
- 3 Improved Product Development...**  
Help us continue to design products that meet your needs.  
Register online at [www.panasonic.com/register](http://www.panasonic.com/register)



\* The presence of the DTV certification mark indicates that this product will successfully receive digital television transmissions that conform to any and all of the video formats described in the ATSC Digital Television Standard.

This operating instruction book is designed for use with models PT-50LCX63 and PT-60LCX63. Illustrations in this manual show the PT-50LCX63.

Before connecting, operating or adjusting this product, please read the instructions completely. Please keep this manual for future reference.



# IMPORTANT SAFETY INSTRUCTIONS



## CAUTION

**RISK OF ELECTRIC SHOCK  
DO NOT OPEN**



**WARNING: To reduce the risk of electric shock, do not remove cover or back. No user-serviceable parts inside. Refer servicing to qualified service personnel.**



This symbol warns the user that uninsulated voltage within the unit may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any inside part of this unit.



This symbol alerts the user that important literature concerning the operation and maintenance of this unit has been included. Therefore, it should be read carefully in order to avoid any problems.



The pictorial representation of a hot surface within a triangle is intended to tell the user that parts inside the product are a risk of burns to persons.

### Note to CATV System Installer:

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.



## WARNING

**To reduce the risk of electric shock, fire, injury to persons or damage to this product:**

- 1) **Read all instructions** before using, connecting or adjusting this product.
- 2) **Retain these safety and operating instructions** for future reference.
- 3) **Adhere to all warnings** on the product and in this Operating Instructions manual.
- 4) **Follow all instructions** carefully.
- 5) **Do not use this product near water**, for example, near a bathtub, wash bowl, kitchen sink, or laundry tub, in a wet basement or near a swimming pool, and the like. **Do not** place objects filled with water, such as a vase or the like, on top of this unit.
- 6) **Clean only with a dry cloth.** Do not use liquid cleaners or aerosol cleaners.
- 7) **Do not block any ventilation openings.** Install only in accordance with the manufacturer's instructions. Openings in the cabinet are provided for ventilation, to ensure reliable operation and to protect it from overheating. Never block openings by placing the product on a bed, sofa or similar surfaces.
- 8) **Do not install near a heat source**, such as a radiator, heat register, stove, or similar appliances (including amplifiers). **Do not** install in a built-in installation such as a bookcase or rack, unless proper ventilation is provided or the manufacturer's instructions have been adhered to.
- 9) **Insert plug in outlet fully - Do not defeat the safety purpose of the polarized or grounding-type plug.** A polarized plug has two blades, one wider than the other. A grounding type plug has two blades and a grounding prong. The wide blade or grounding prong is provided for your safety. If the provided plug does not fit into your outlet, consult a qualified electrician to replace the obsolete outlet.
- 10) **Protect the power cord** from being walked on or tripped over, pinched or entangled
- 11) **Use only attachments or accessories specified by the manufacturer.**
- 12) **Never place unit on support or stand that is not firm, level, and adequately strong.** The unit could fall causing serious injury to a child or adult and damage to the unit.
  - Move any appliance and cart combination with care. Quick stops, excessive force, and uneven surfaces may cause objects to overturn.
  - Carefully follow all instructions.
- 13) **Unplug this product during lightning storms** or when unused for long periods of time.
- 14) Do not service this unit yourself. Refer all servicing to qualified personnel. Servicing is required when this product has been damaged in any way, such as if the power cord is damaged, liquid was spilled or objects were dropped into this unit, or the unit was exposed to rain or moisture, does not operate normally, or has been dropped.
- 15) Because the temperature of the lamp unit is elevated immediately after its use, a direct touch to it may cause burns. Replace the lamp unit only after it has cooled.



## ⚠ IMPORTANT SAFETY INSTRUCTIONS (CONTINUED)

### ⚠ WARNING

AS WITH ANY SMALL OBJECT, SD CARDS CAN BE SWALLOWED BY YOUNG CHILDREN. DO NOT ALLOW CHILDREN TO HANDLE THE SD CARD.

### ⚠ CAUTION

- (1) This Device Display is intended to be used with the following TV stand: model TY-50LC13C for the PT-50LCX63/PT-60LCX63. Use with other stands may result in the Device Display becoming unstable, possibly causing injury.
- (2) This Device Display should not be exposed to direct sunlight, extreme temperatures or moisture, as this can result in serious irreparable damage.
- (3) This product has a High Intensity Discharge (HID) lamp that contains a small amount of mercury. It also contains lead in some components.  
Disposal of these materials may be regulated in your community due to environmental considerations.  
For disposal or recycling information please contact your local authorities, or the Electronics Industries Alliance: <<http://www.eiae.org>.>

The lamp has a maximum life of about 10 000 hours.  
If use exceeds this figure, the possibility of lamp damage becomes greater.  
The lamp should be changed as soon as possible once the lamp warning message appears.  
If the lamp is damaged, please contact your nearest dealer.

Due to the characteristics and use conditions of individual lamps, the lamp may cease to light before the stated lamp life.  
Influences of frequent lighting, continuous light use for over 24 hours, the number of times lit, the length of time between lightings, etc. may shorten lamp life.  
(Because of this, we recommend having a replacement lamp on hand.)

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- VESA and SVGA are trademarks of the Video Electronics Standard Association.  
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This product incorporates copyright protection technology that is protected by U.S. patents and other intellectual property rights. Use of this copyright protection technology must be authorized by Macrovision Corporation, and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision. Reverse engineering or disassembly is prohibited.

U.S. Patents Nos. 4,631,603; 4,577,216; 4,819,098; 4,907,093; 6,381,747; and 6,516,132.

# Dear Panasonic Customer

Welcome to the Panasonic family of customers. We hope that you will have many years of enjoyment from your new Device Display.

To obtain maximum benefit from your set, please read these Instructions before making any adjustments, and retain them for future reference.

Retain your purchase receipt also, and record the serial number of your set in the space provided on the rear cover of these instructions.

Visit our Panasonic Web Site for USA : [www.panasonic.com](http://www.panasonic.com)

## (USA)

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or, contact us via the web at: <http://www.panasonic.com/contactinfo>

## (Puerto Rico)

For assistance, please call : 787-750-4300  
or visit us at [www.panasonicpr.com](http://www.panasonicpr.com)

### FCC STATEMENT:

#### NOTE:

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:

- 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.

### FCC CAUTION:

To assure continued compliance and prevent undesirable interference, use only the provided shielded RGB cable with 2 ferrite cores while connecting the Device Display to a computer. Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

ANY CHANGES OR MODIFICATIONS TO THIS PTV RECEIVER NOT EXPRESSLY APPROVED BY MATSUSHITA ELECTRIC CORPORATION OF AMERICA COULD CAUSE HARMFUL INTERFERENCE, WHICH WOULD VOID THE USER'S AUTHORITY TO OPERATE THIS EQUIPMENT.



The Class II insulation symbol (square within a square) indicates that this product has been evaluated and tested to comply with Class II insulation requirements.

### Declaration of Conformity

Models Number: **PT-50LCX63/PT-60LCX63**  
Trade Name: Panasonic  
Responsible party: Matsushita Electric Corporation of America.  
Address: One Panasonic Way Secaucus New Jersey 07094  
Telephone number: 1-888-VIEW PTV(843-9788)

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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# Before Using

## Receiver Location

This Device Display is intended to be used with an optional stand or entertainment center. Consult your dealer for available options.

Locate for comfortable viewing. Avoid placing where sunlight or other bright light (including reflections) will fall on the screen.

Use of some types of fluorescent lighting can reduce Remote Control transmitter range.

Adequate ventilation is essential to prevent internal component failure. Keep away from areas of excessive heat or moisture.

## Optional External Equipment

The Video / Audio connection between components can be made with shielded video and audio cables. For best performance, video cables should utilize 75  $\Omega$  coaxial shielded cables. Cables are available from your dealer or electronic supply house.

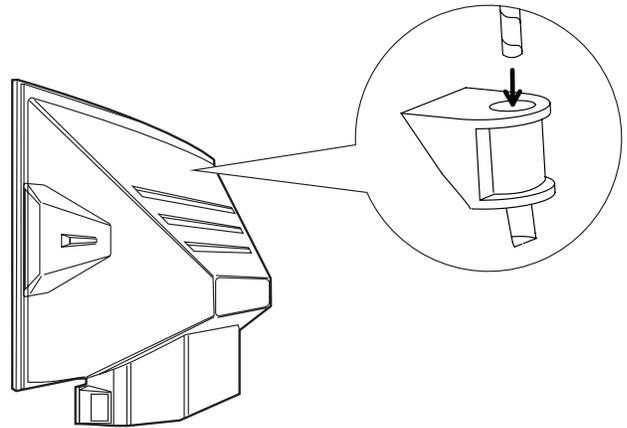
Before you purchase any cables, be sure you know what type of output and input connectors your various components require. Also determine the length of cable you'll need.

## Safety Precaution

Please take safety precautions to prevent the unit from falling over.

### **WARNING**

The unit may tip or fall if not situated on a stable surface, if pushed or during an earthquake. Use a strong rope or chain (not included) to fasten the Device Display firmly to a strong wall support.



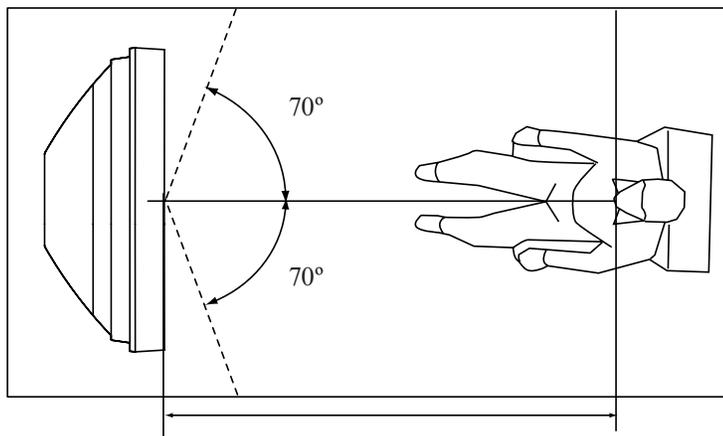
## Accessories

1. Remote Control (EUR7627Z10)
2. Batteries 2 "AA"
3. RGB Cable (2 m) (LSJA0239-1 or LSJA0443)

## Viewing position

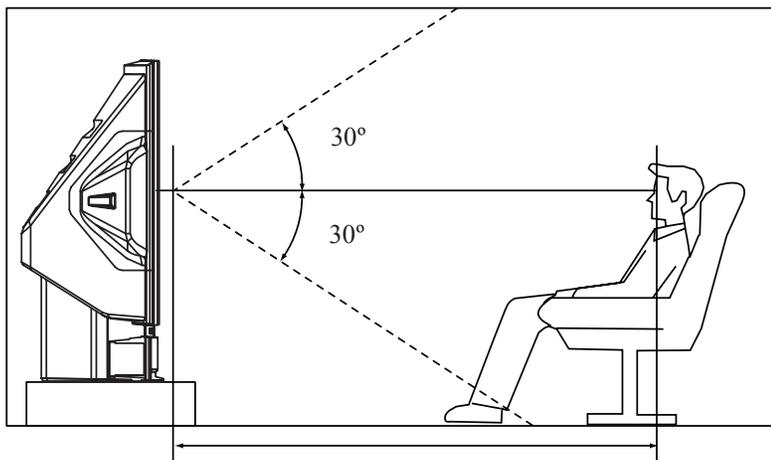
To optimize your viewing comfort, please follow the viewing guidelines shown in the diagrams below. If viewing for an extended period of time, sit as far back from the screen as possible.

<Top view>



At least 1.8 m (PT-50LCX63)/2.2 m (PT-60LCX63).

<Side view>



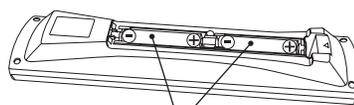
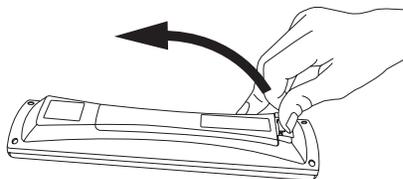
At least 1.8 m (PT-50LCX63)/2.2 m (PT-60LCX63).

## Before Using

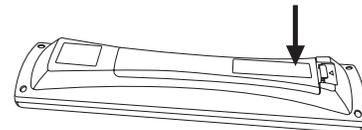
# Remote Control Battery Installation

Requires two AA batteries (supplied).

1. While pressing in on the catch, open cover in direction of arrow.
2. Install the batteries as shown in the battery compartment. (Polarity + or - must match the markings in the compartment).
3. Press cover in direction of arrow until it snaps shut.



Two AA size



### **⚠ CAUTION**

Incorrect battery installation can cause the batteries to leak, leading to personal injury and/or damage to the remote control.

#### **Observe the following precautions:**

1. Batteries should always be replaced as a pair. Always use new batteries when replacing the old set.
2. Do not mix battery types (example: "Zinc Carbon" with "Alkaline").
3. Do not attempt to charge, short-circuit, disassemble, heat or burn used batteries.
4. Battery replacement is necessary when the remote control acts sporadically or stops operating the Device Display set.

### **Helpful Hints:**

- (1) For frequent remote control users, replace old batteries with Alkaline batteries for longer battery life.
- (2) Whenever you remove the batteries, **you may need to reset the remote control infrared codes**. We recommend that you record the code on page 90, prior to setting up the remote.

## Emergency Alert System (EAS) Forced Tuning

If a DCM (Digital Cable Module) is installed, the cable MSO (multiple system owner/operator) may provide an Emergency Alert System message. These messages are intended to alert the general public of important local or national emergency situations. In the event of receipt of one of these messages, the Device Display shall immediately tune to the channel as directed by the EAS message. If the channel has been blocked using the parental control, the parental blocking has priority over the forced tune.

## Glossary and Acronyms

### CC (Closed Captioning)

### EAS (Emergency Alert System)

### OSD (On-Screen Display)

### MSO (Multiple system owner/operator)

### Dolby Digital

This is a method of coding digital signals developed by Dolby Laboratories. Apart from stereo (2-channel) audio, these signals can also be multichannel audio. A large amount of audio information can be recorded on one disc using this method.

### Film and video

DVD-Videos are recorded using either film or video. Usually, film is recorded at 24 frames per second, the rate movies are filmed at, while video is recorded at 30 frames per second.

### PCM (pulse code modulation)

These are uncompressed digital signals, similar to those found on CDs.

### DTV (Digital Television)

Name of the process whereby television picture and sound signals are changed to digital code for receiving and transmitting.

### HDTV (High Definition Television)

Television with improved picture quality by increasing vertical and horizontal resolution.

### ATSC (Advanced Television Systems Committee)

Standardization body that developed the Digital Television Terrestrial formats.

### DCF (Design rule for Camera File system)

Unified standard established by Japan Electronics and Information Technology Industries Association (JEITA).

### HDMI (High Definition Multimedia Interface)

Interface that supports every uncompressed digital format as well as all existing multi-channel audio format on a single cable.

### JPEG (Joint Photographic Experts Group)

A system used for compressing/decoding color still pictures.

### MPAA (Motion Picture Association of America)

Guild governing rating assignments to movies.

### NTSC (National Television Systems Committee)

Standardization body that developed the Analog Television Terrestrial formats.

### Password

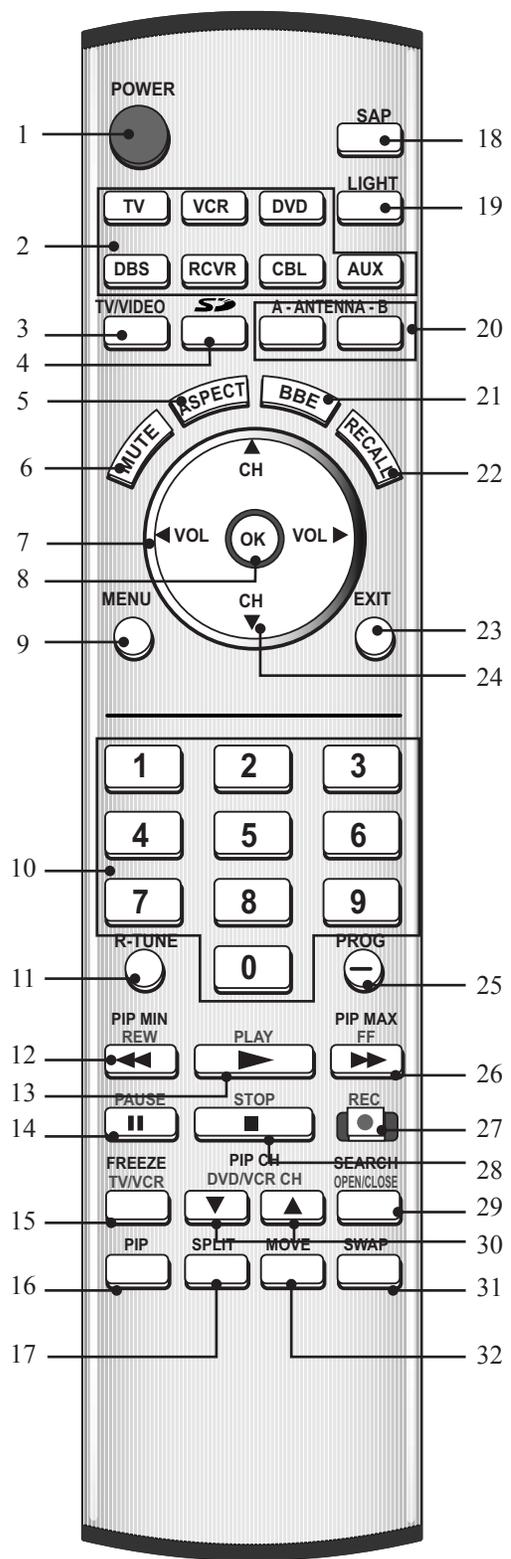
A four (4) digit code a user must provide in order to perform a function.

### DCM (Digital Cable Module)

A module that is required to receive premium digital services through the cable input.

# Location of Controls

## Illuminated Remote Control



**Note:**  
This section describes TV mode only. For other modes, see pages 89-95.

# Location of Controls

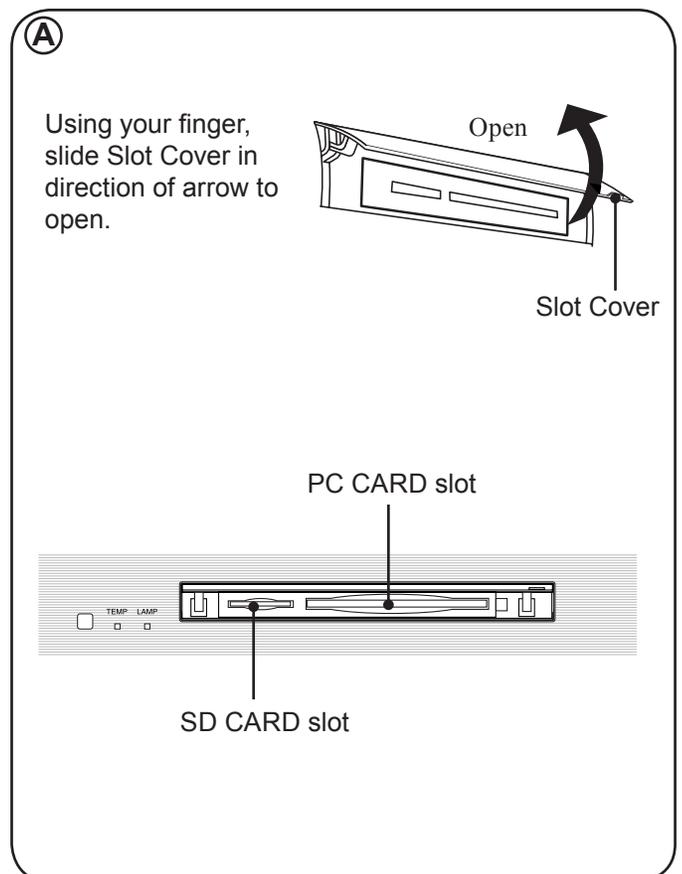
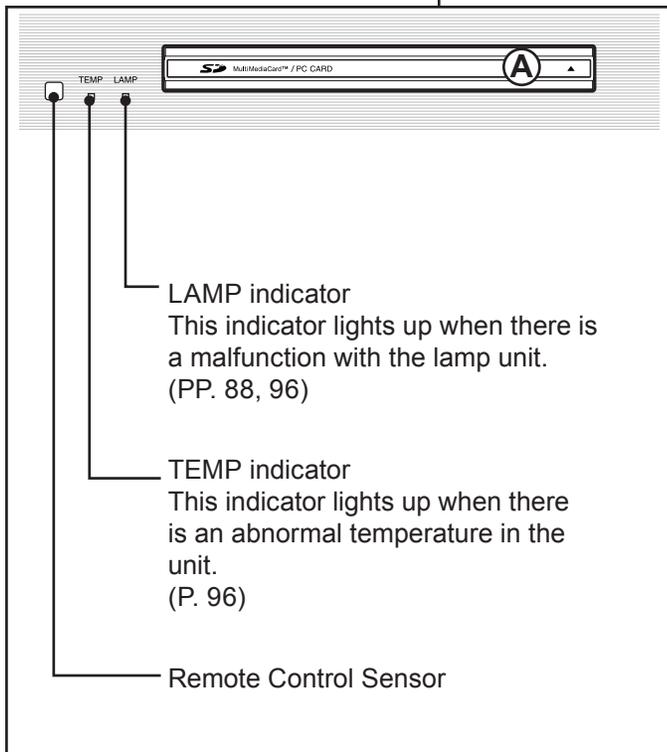
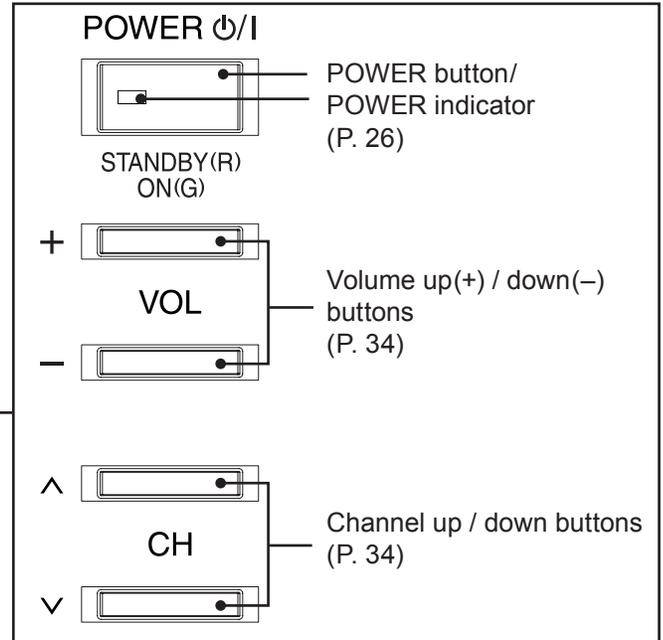
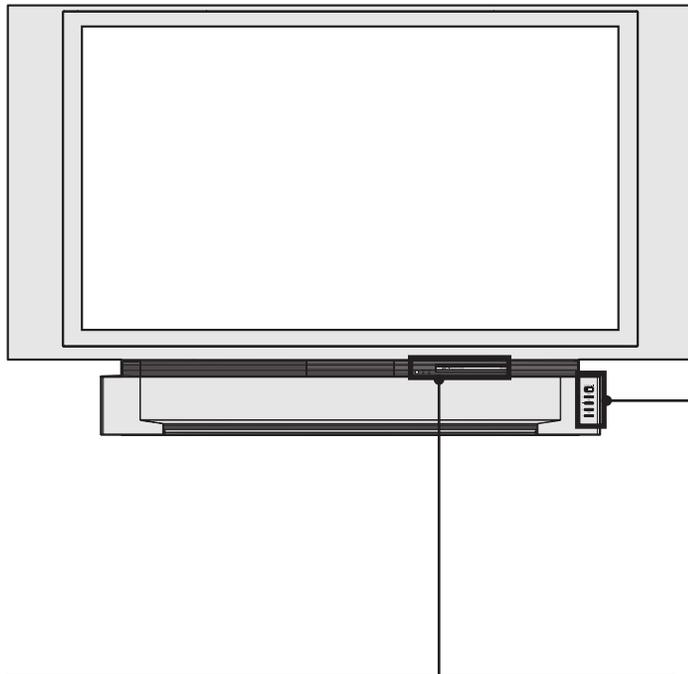
	Remote Keys	DESCRIPTION
1	<b>POWER</b>	Press to turn ON and OFF.
2	<b>TV</b>	Sets the remote to communicate with television.
	<b>VCR, DVD, AUX, CBL, RCVR, DBS</b>	Sets the remote to communicate with other devices.
3	<b>TV/VIDEO</b>	Changes Input source.
4	<b>SD</b>	Accesses the Photo Viewer feature (SD Card or PC Card).
5	<b>ASPECT</b>	Changes display aspect ratio.
6	<b>MUTE</b>	Press to mute sound.
7	<b>VOL ◀▶</b>	Press to adjust TV sound and navigate in menus.
8	<b>OK</b>	Press to choose menu and sub-menu entry.
9	<b>MENU</b>	Press to display Main Menu or return one step backward in menus.
10	<b>Number</b>	Press numeric keypad to select any channel or press to enter alphanumeric input in menus.
11	<b>R-TUNE</b>	Press to switch to previously viewed channel, Photo Viewer or input modes.
12	<b>PIP MIN</b>	While remote is in TV mode, press to decrease the PIP size.
	<b>REW</b>	While remote is in VCR or DVD mode, press to rewind.
13	<b>PLAY</b>	While remote is in VCR or DVD mode, press to play.
14	<b>PAUSE</b>	While remote is in VCR or DVD mode, press to pause.
15	<b>FREEZE</b>	Still full video window.
	<b>TV/VCR</b>	Press to switch to TV or VCR.
16	<b>PIP</b>	Press to display or delete PIP screen.
17	<b>SPLIT</b>	Press to display or delete Split screen.
18	<b>SAP</b>	In analog mode, press to access audio modes (Stereo, SAP or Mono). In digital mode, press to access next audio track.
19	<b>LIGHT</b>	Lights all buttons. The selected mode button (TV, VCR, etc.) flashes.
20	<b>ANTENNA A/B</b>	Press to switch to (A or B) RF antenna input.
21	<b>BBE</b>	Press to turn BBE OFF or ON.
22	<b>RECALL</b>	Press to display or delete Channel banner.
23	<b>EXIT</b>	Press to exit menus.
24	<b>CH ▲▼</b>	Press to change channels and navigate in menus.
25	<b>PROG</b>	Press after entering major channel numbers to enter minor (-) channel numbers.
26	<b>PIP MAX</b>	While remote is in TV mode, press to increase the PIP size.
	<b>FF</b>	While remote is in VCR or DVD mode, press to fast forward.
27	<b>REC</b>	While remote is in VCR mode, press to record.
28	<b>STOP</b>	While remote is in VCR or DVD mode, press to stop.
29	<b>SEARCH</b>	While remote is in TV mode, press to scan available channels in search screens. Press again to delete search screens.
	<b>OPEN/CLOSE</b>	While remote is in DVD mode, press to open or close DVD tray.
30	<b>PIP CH ▲▼</b>	While remote is in TV mode, press to change channels for PIP.
	<b>DVD/VCR CH</b>	While remote is in VCR or DVD mode, press to change channels for DVD or VCR.
31	<b>SWAP</b>	Press to swap Main screen with PIP or Split screen.
32	<b>MOVE</b>	While PIP screen is displayed, press to move to one of four corners.

# Location of Controls

## Controls and Terminals on the Device Display

Model PT-50LCX63 unit shown

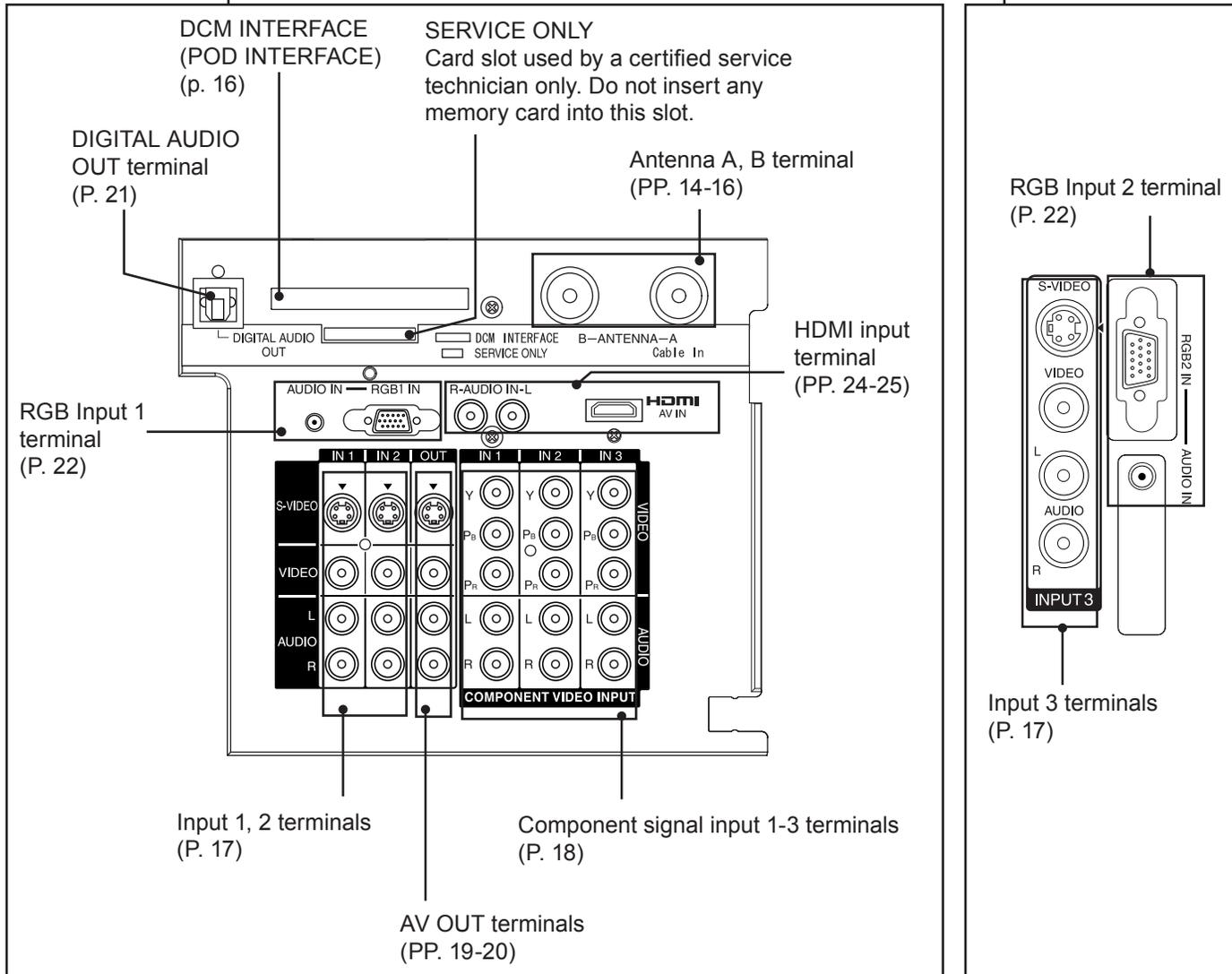
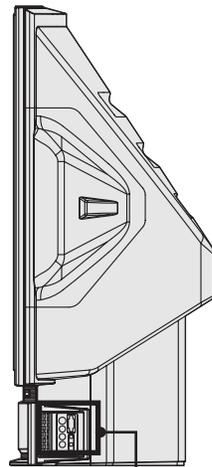
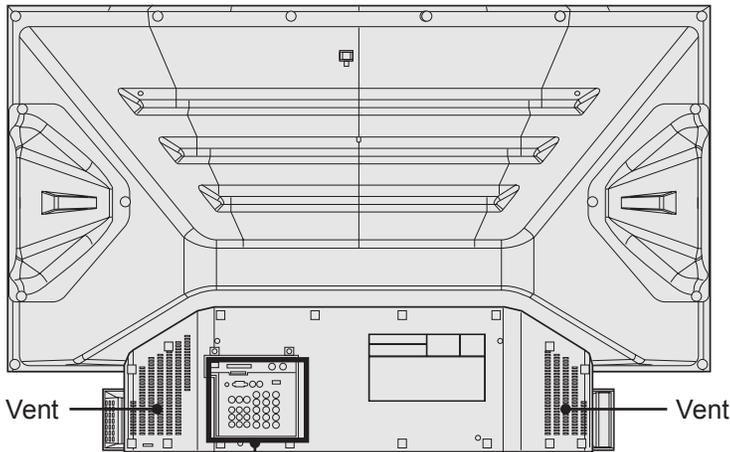
< FRONT >



## Model PT-50LCX63 unit shown

< REAR >

< SIDE >



**Notes:**

- Make sure the vents are not blocked. (This could cause damage.)
- Indication on the back panel may change without notice.

# Installation

## Notes on connections

- Turn off the power supply for all components before making any connections.
- If the cables necessary for connecting a component to the system are not included with the component or available as an option, you may need to fashion a cable to suit the component concerned.
- Read the instruction manual for each system component carefully before connecting it.
- If there is a lot of jitter in the video signal input from the video source, the picture on the screen may flicker. In this case, it will be necessary to connect a TBC (time base corrector).

## ⚠ CAUTION

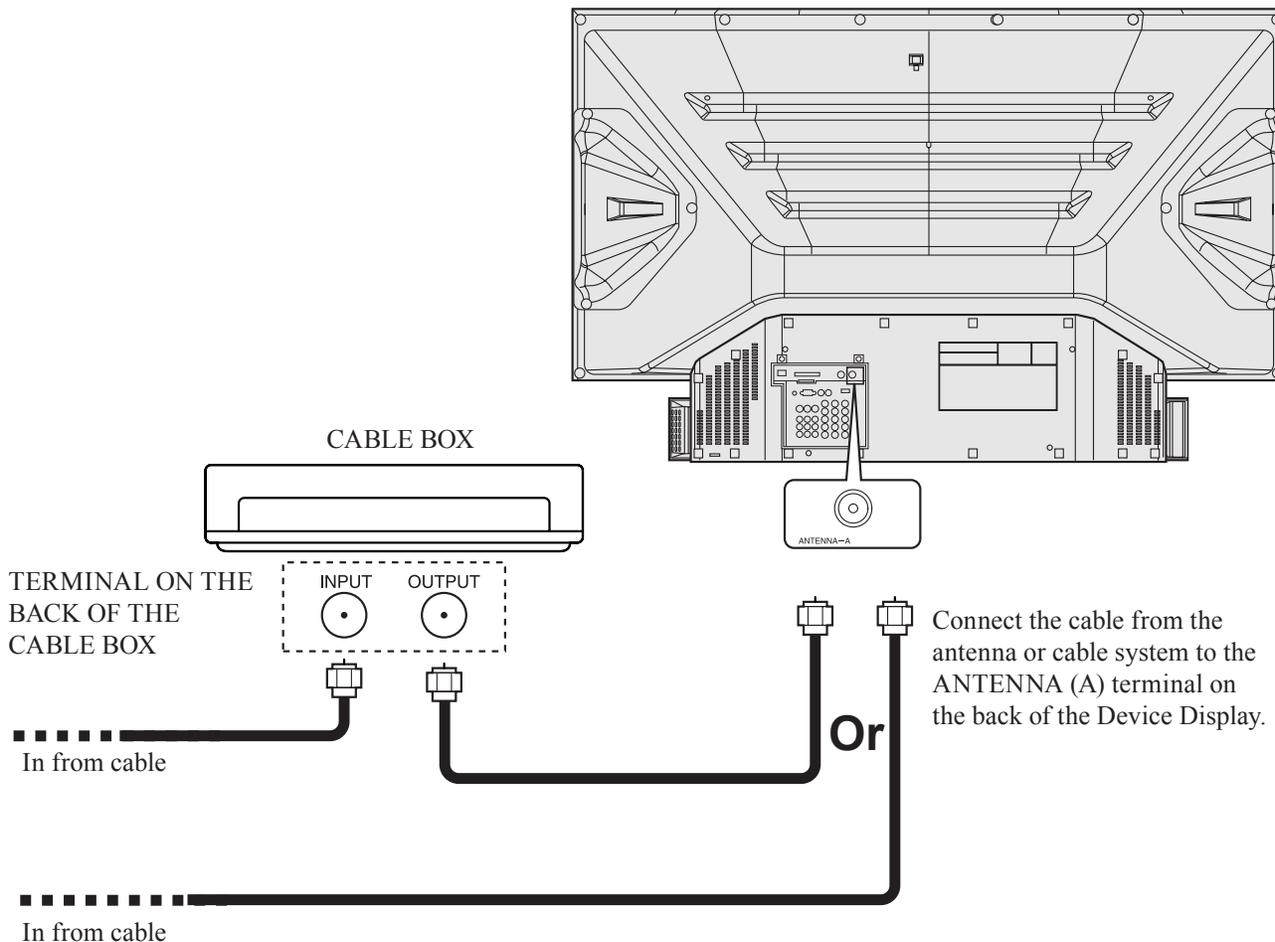
When using “Nut type” RF coaxial cables, tighten with fingers only. Overtightening may damage terminals.

## Connecting the Antenna / Cable to the RF IN Terminal

For proper reception of analog or digital cable channels, a cable service connection is required.

### Cable Connection

Connect the cable supplied by your local cable company to ANTENNA (A) connection on back of unit. Select Cable mode and ANTENNA (A) in SET UP menu under Program Channel.



### Note:

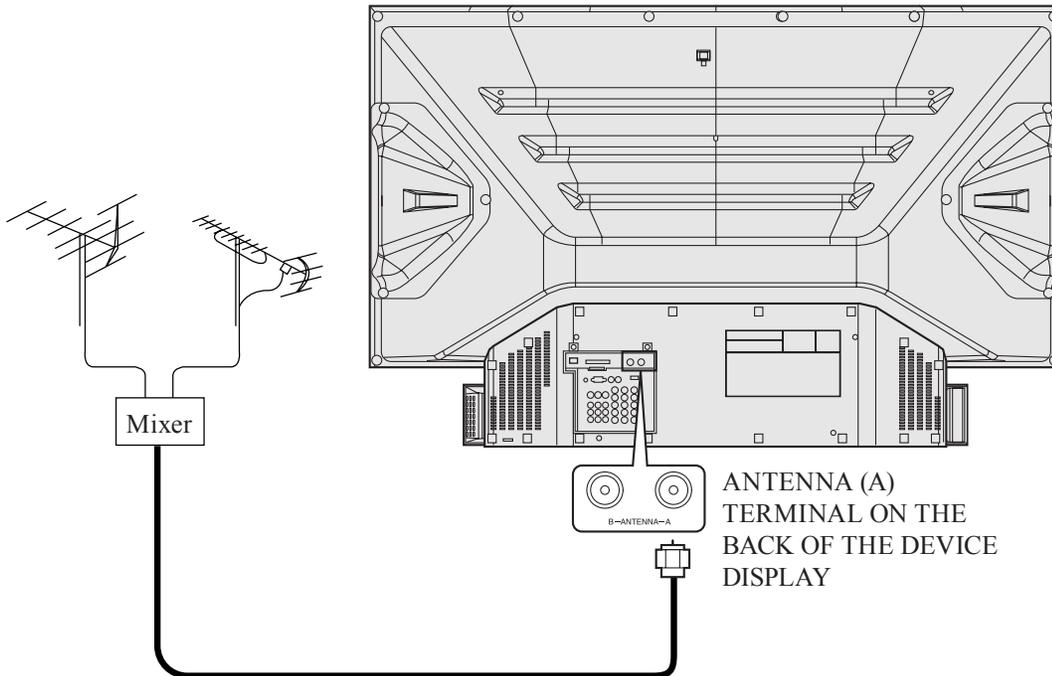
Cable Mode is preset at the factory. Antenna users must change to ANTENNA Mode for ANTENNA (A) in the Setup menu. If you have both Cable and Antenna, the Cable must be connected to ANT A.

## Antenna Connection

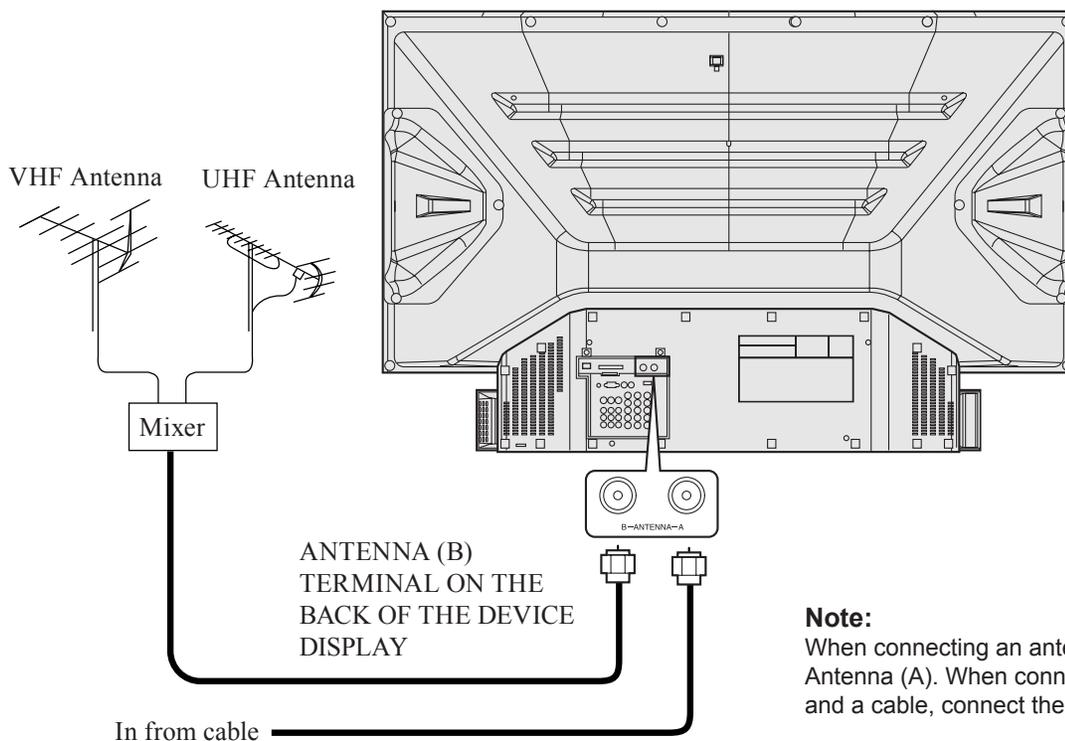
For proper reception of digital and analog VHF/UHF channels, an external antenna is required. For best reception, an outdoor antenna is recommended.

Connect home antenna to either ANT (A) or ANT (B) connection on back of the unit. Select Antenna mode for Cable/Antenna, Cable only, Antenna only or in Input Setup under Program Channel in Setup menu.

Antenna connect only:



Antenna and Cable connect:



**Note:**

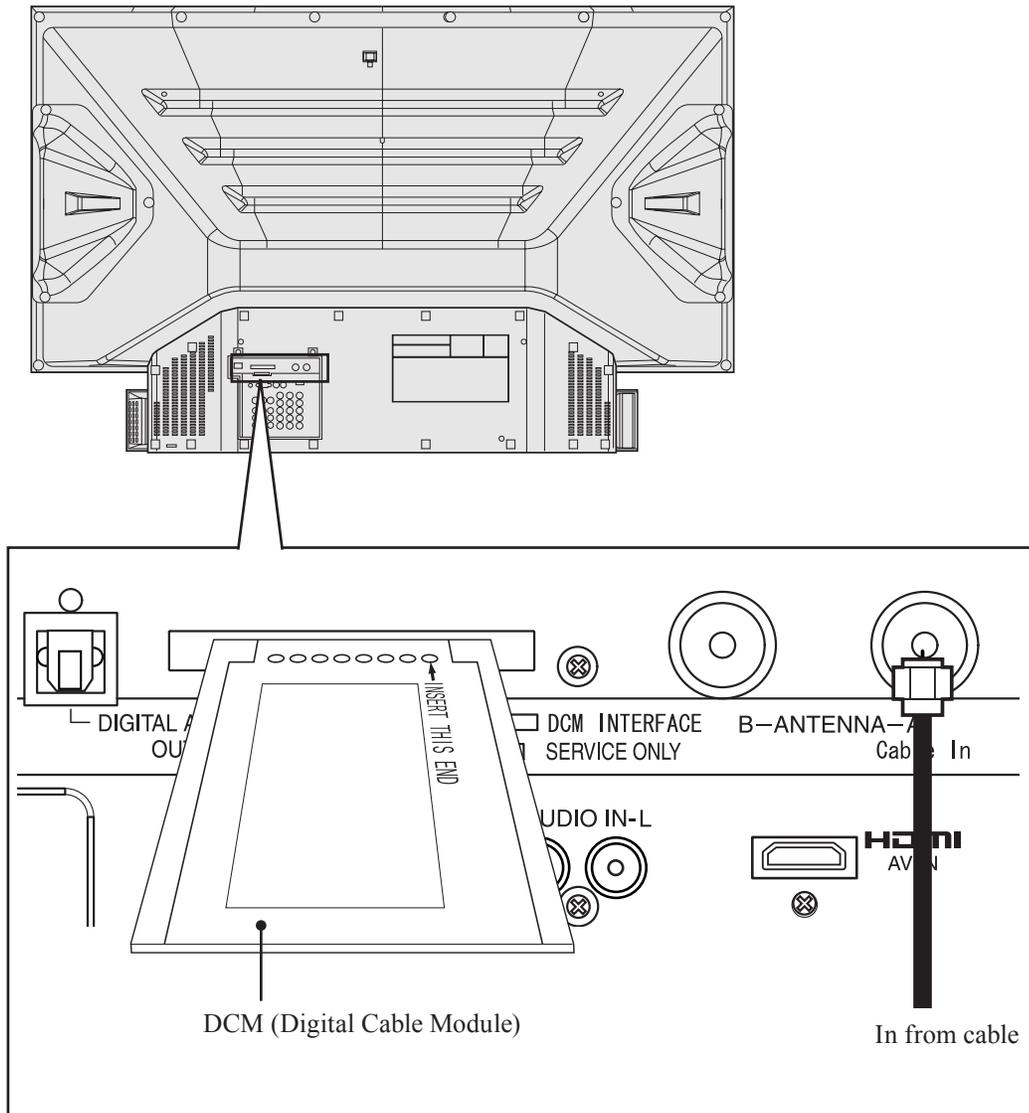
When connecting an antenna only, connect to Antenna (A). When connecting both an antenna and a cable, connect the antenna to Antenna (B).

# Installation

## Digital Cable Module Connection

This module allows you to tune digital and high definition cable channels through the cable antenna. Consult your Cable company on the availability of this module (also called Point of Deployment (POD) module).

- 1 Connect the Cable antenna to ANT A/Cable In input on the back of the unit.
- 2 Insert the DCM (Digital Cable Module) (upper side facing left) into the DCM INTERFACE (POD INTERFACE) slot on the back of the unit.



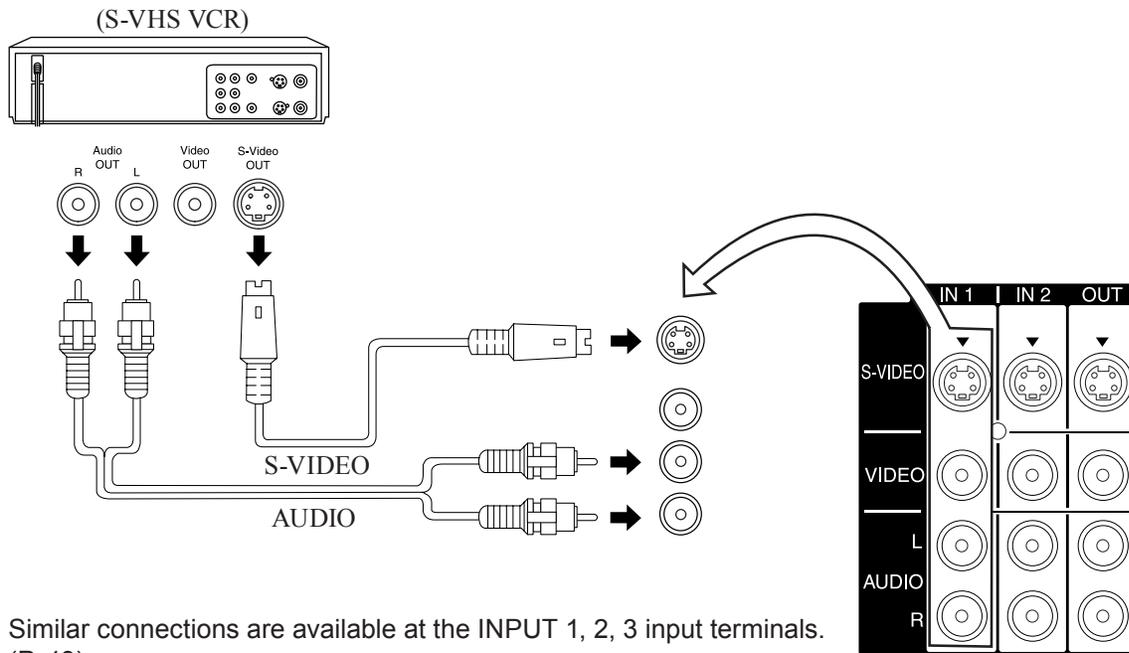
### Notes:

- A Digital Cable Subscription is required. (See page 81)
- Do not insert a PC card into the DCM INTERFACE (POD INTERFACE).
- Choose Cable mode for Antenna (A) in Input Setup.
- Follow the instructions on screen.

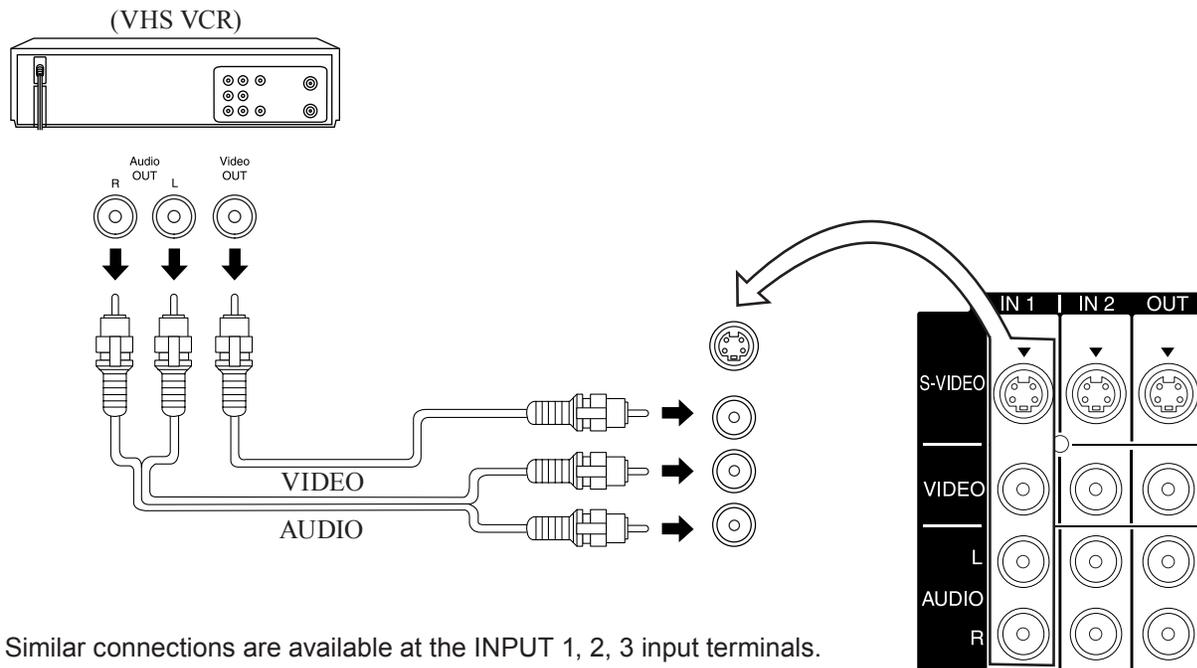
If you experience keyboard or remote control function hang-up when using DCM (Digital Cable Module), unplug the unit and plug it back on and try the controls again. If this condition still exists, please call Panasonic Customer Call Center for further instructions.

# How to connect the “1, 2, 3” Input Terminals

Connects VCRs and other peripheral equipment



Similar connections are available at the INPUT 1, 2, 3 input terminals. (P. 13)



Similar connections are available at the INPUT 1, 2, 3 input terminals.

**Notes:**

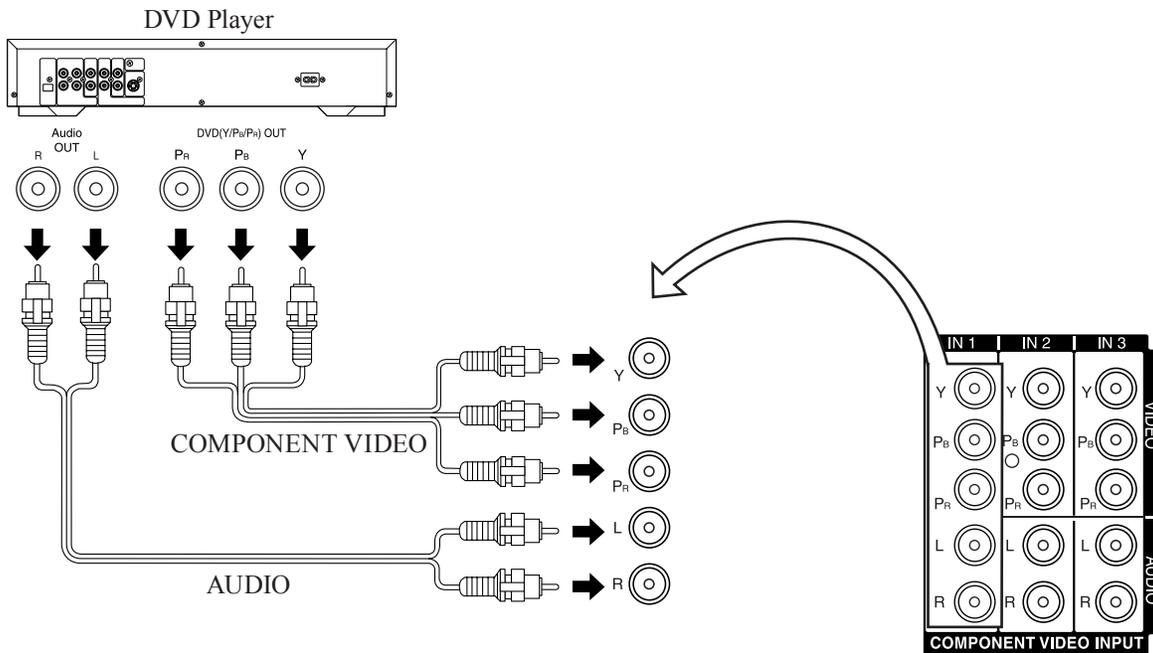
- Input 3 is located on the side of the unit.
- Select the desired VIDEO input position by pressing the TV/VIDEO button. (P. 37)
- When connecting video cables, priority is given to the S-Video cable when the S-Video input terminal and the video input terminal are connected at the same time.

# Installation

## How to connect the COMPONENT VIDEO Input Terminals

Because each Y, PB, and PR signal is input independently, the Component signal allows for more accurate color reproduction.

The Component signal output terminal indication will differ according to the output device (Y, PB, PR). Please read the operating instructions included with the output device.



### Notes:

- Similar connections are available at the COMPONENT VIDEO INPUT 1-3 Terminals.
- Select the desired COMPONENT VIDEO INPUT position by pressing the TV/VIDEO button. (P. 37)
- Component video signals that can be input are 480i, 480p, 720p, and 1080i.

### Component Signals (Y, PB, PR) that can be Input

Mode type		Signal data			Information menu display
		No. of dots (H X V)	Horizontal frequency (kHz)	Vertical frequency (Hz)	
DTV Format Signals	480i	664 X 485	15.73	29.97	480 i
	480p	720 X 483	31.47	59.94	480 p
	720p	1 280 X 720	45.00	60.00	720 p
	*1080i	1 920 X 1 080	33.75	30.00	1080 i

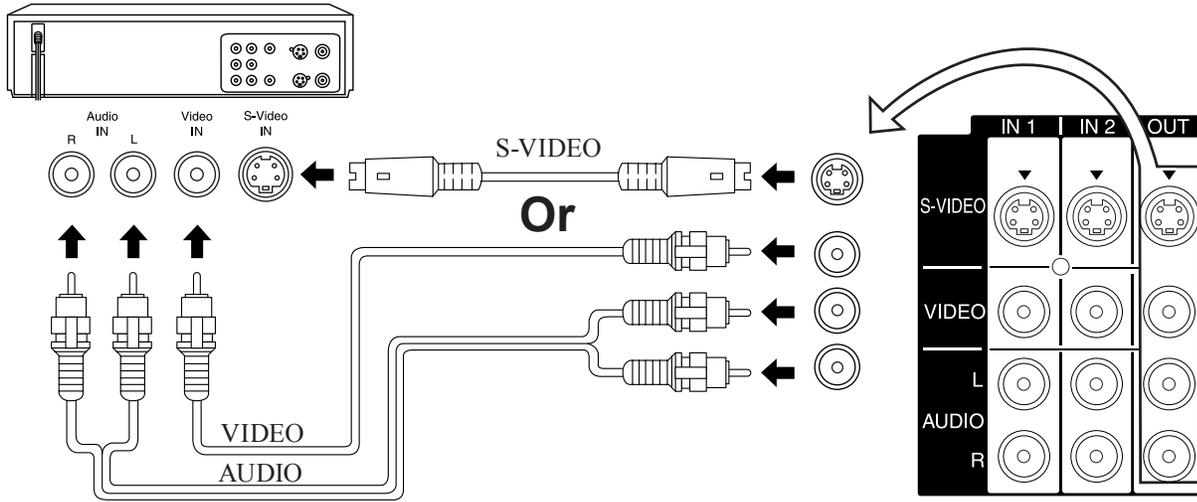
### Note:

Input signals, other than those listed with a \* mark, will give you a beautiful, stable picture.

## How to connect the AV OUT Terminals

You can connect a VCR to the AV OUT terminal to record the program you are viewing on-screen. An external monitor can also be connected to the AV OUT terminals. Connect the VCR as shown below.

Recording Equipment  
(S-VHS /VHS VCR)



### Notes:

- This unit contains Video and Audio Outputs for the purpose of recording television programming to VCR. Due to license restrictions, if a device (STB, DVD, etc.) is connected to the HDMI input of the unit, no video or audio output is allowed.
- AV Out signal is available when receiving digital channel. However, all formats will be down converted to NTSC.
- Never connect the VIDEO IN and OUT terminals to the same video recorder, as this could cause incorrect operation.
- Even if unit is in Split or PIP mode, OUT terminals only output the main picture and sound signals. A sub-picture, including channel search, etc., will not be output.
- AV terminals will not output Y, P<sub>B</sub>, P<sub>R</sub>, RGB/HDMI IN or SD/PC card signals.
- The S-Video OUT terminal outputs the same signal that is input from the S-Video IN terminal and Digital RF channels.
- Certain program content output from the AV Out connector may have the Macrovision signal modification applied to its signal, preventing VCRs from recording this video signal.

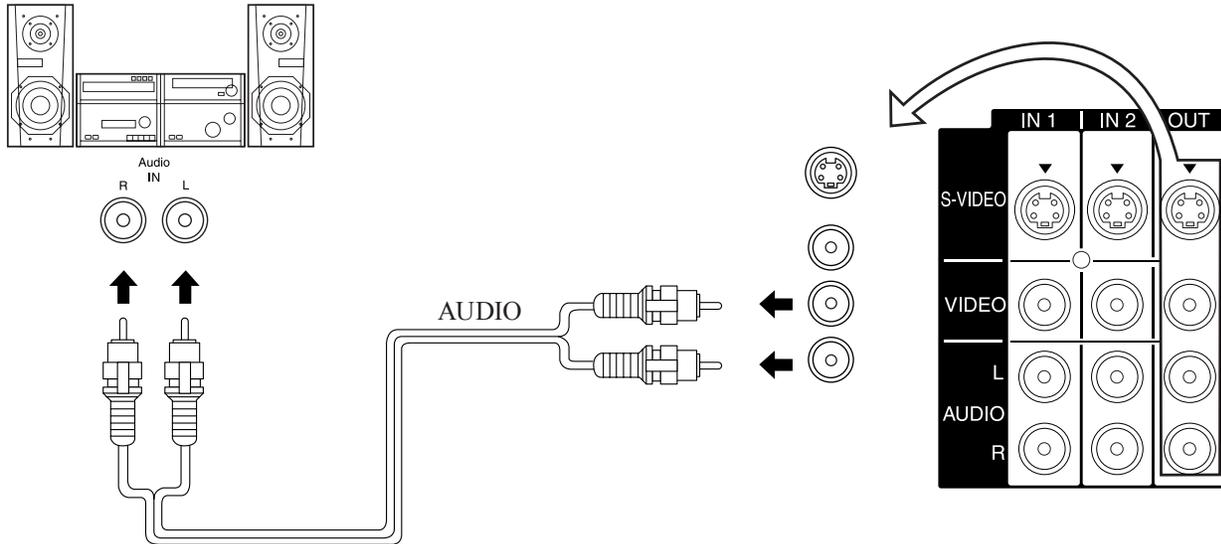
# Installation

## How to connect the Amplifier

### Analog Audio Out

To listen to the audio through a separate stereo system, connect an external audio amplifier to **AUDIO OUT** on back of unit.

Stereo System  
(A Stereo Amplifier and Speakers)



#### Note:

AUDIO OUT terminals cannot be connected directly to external speakers.

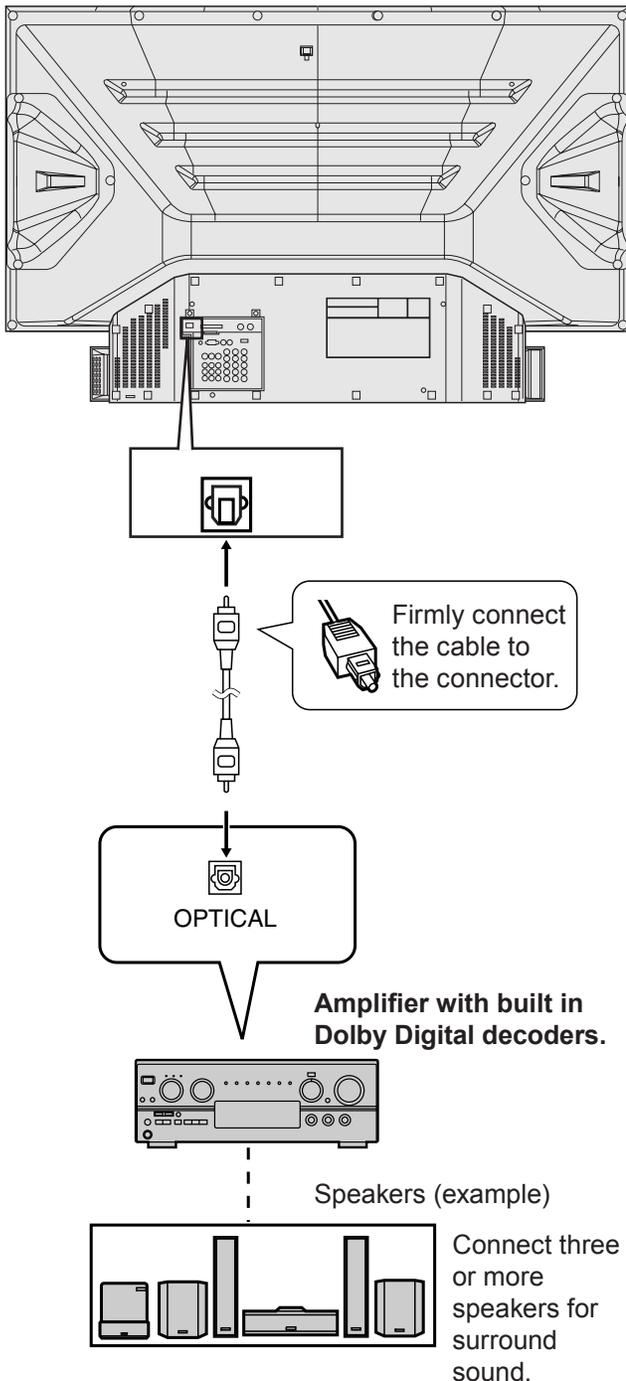
#### Audio Adjustments

- Select Speakers Off in Audio menu under Other Adjust menu.
- Set amplifier volume to the preferred level.

## Digital Audio Out

Use the diagram below to connect the Digital Audio Output of your Device Display to a Dolby Digital decoder.

Dolby Digital 5.1 channel surround sound delivers digital-quality sound. Dolby Digital provides five discrete full-bandwidth channels for front left, front right, center, surround left and surround right, plus a LFE (Low Frequency Effect) subwoofer channel. For a full Home Theater sound experience, an external Dolby Digital decoder and a multichannel amplifier must be connected to the Digital Audio Out jack on the unit.



### Procedure

Connect the Digital Audio cable from the Digital Audio Out jack on the unit to the Digital Audio In connection on the Dolby Digital decoder.

### Note:

When ATSC channel is selected, the output from the Digital Audio Out jack will be Dolby Digital. But, if NTSC channel is selected, the output will be PCM.

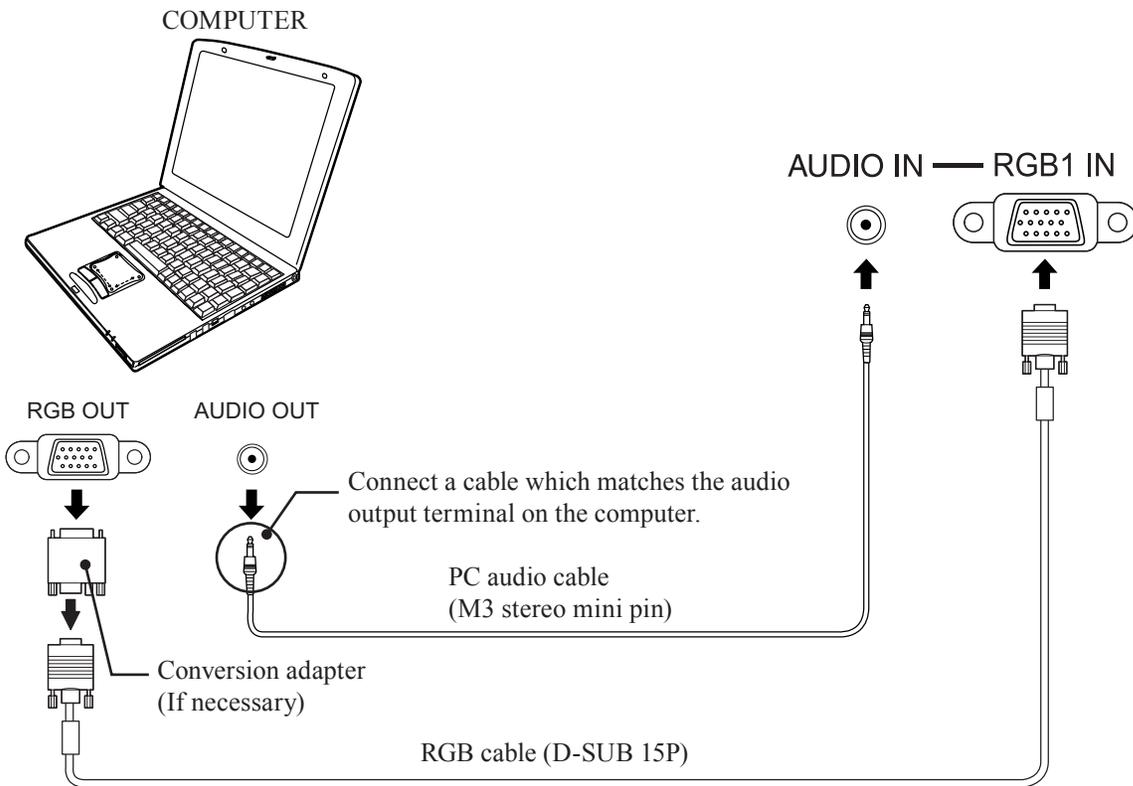


Manufactured under license from Dolby Laboratories. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories.

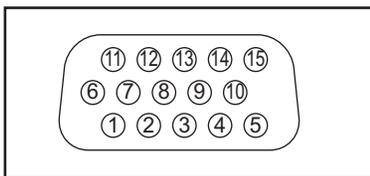
# Installation

## How to connect the RGB IN Terminals

### Connecting a PC to RGB IN



### RGB IN Terminal (D-SUB 15P) Pin Layouts



Pin No.	Signal name
1	R
2	G
3	B
4	NC
5	NC
6	Ground for R
7	Ground for G
8	Ground for B

Pin No.	Signal name
9	NC
10	Ground
11	NC
12	NC
13	HD/CSYNC
14	VD
15	NC

**NC: Not connected**

#### Notes:

- Some PC models cannot be connected to the set. A conversion adapter is required to use the RGB cable (D-SUB 15P) to connect a Macintosh computer to the set. There is no need to use an adapter for computers with PC / AT compatible D-SUB 15P terminal.
- The computer shown in the illustration is for example purposes only. Additional equipment and cables shown are not supplied with this set.
- The picture will become dark if an PC signal with a vertical scanning frequency of 62 Hz is input. To obtain the optimum picture quality with the Device Display, a vertical scanning frequency of 60 Hz is recommended.
- Do not set the horizontal and vertical scanning frequencies for PC signals which are above or below the specified frequency range.
- Select the desired RGB input position by pressing the TV/VIDEO button. (P. 37)
- Similar connections are available at the RGB IN 1, 2 Terminals.

## RGB signals that can be input

The table below lists the different types of RGB signals that can be input. If a signal which differs greatly from any of the types listed below is input, the picture image may not be displayed correctly, or a black background may be displayed. At this time, "signal" will flash in the on-screen display for about 5 seconds.

Mode type		Signal data			Information menu display
		No. of dots (H X V)	Horizontal frequency (kHz)	Vertical frequency (Hz)	
Personal Computer Signals	VGA400 (70 Hz)	640 X 400	31.47	70.08	VGA400 70Hz
	VGA480 (60 Hz)	640 X 480	31.47	59.94	VGA 60Hz
	Macintosh 13"	640 X 480	35.00	66.67	MAC 13
	VESA400 (85 Hz)	640 X 400	37.86	85.08	VESA 85Hz
	VESA480 (72 Hz)	640 X 480	37.86	72.81	VGA 72Hz
	VESA480 (75 Hz)	640 X 480	37.50	75.00	VGA 75Hz
	VESA480 (85 Hz)	640 X 480	43.27	85.01	VGA 85Hz
	SVGA (56 Hz)	800 X 600	35.16	56.25	SVGA 56Hz
	SVGA (60 Hz)	800 X 600	37.88	60.32	SVGA 60Hz
	SVGA (72 Hz)	800 X 600	48.08	72.19	SVGA 72Hz
	SVGA (75 Hz)	800 X 600	46.88	75.00	SVGA 75Hz
	SVGA (85 Hz)	800 X 600	53.67	85.06	SVGA 85Hz
	Macintosh 16"	832 X 624	49.73	74.55	MAC 16
	* XGA (60 Hz)	1 024 X 768	48.36	60.00	XGA 60Hz
	* XGA (70 Hz)	1 024 X 768	56.48	70.07	XGA 70Hz
	* XGA (75 Hz)	1 024 X 768	60.02	75.03	XGA 75Hz
* Macintosh 19"	1 024 X 768	60.24	74.93	MAC 19	
DTV Format Signals	480i	664 X 485	15.73	29.97	480 i
	480p	720 X 483	31.47	59.94	480 p
	720p	1 280 X 720	45.00	60.00	720 p
	*1080i	1 920 X 1 080	33.75	30.00	1080 i

### Notes:

- Input signals, other than those listed with a \* mark, will give you a beautiful, stable picture.
- The D-SUB15P connector can accept RGB (H-V sync separate) and RGB (sync on green). However, it is not guaranteed to display stable color when using RGB (sync on green).
- When used with an external video processor/scaler, it must have RGB (H-V sync separate) output.

# Installation

## How to connect the HDMI input terminal

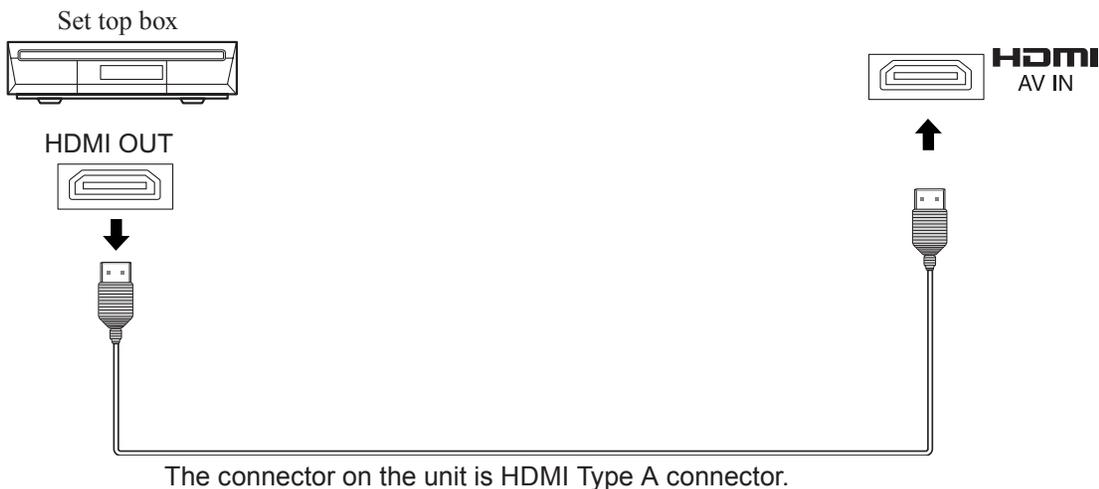
### About HDMI

HDMI is the first all digital consumer electronics A/V interface that supports several uncompressed standard, enhanced and high definition video format as well as all existing multi-channel audio formats. One jack supports both video and audio information. The HDMI/HDCP<sup>1</sup> input can be connected to an EIA/CEA 861/861B<sup>2</sup> compliant consumer electronic device, such as a set top box or DVD player equipped with a HDMI output connection. By inputting a High-bandwidth Digital Content Protection (HDCP) high definition picture source to the HDMI terminal of this unit, high definition pictures can be displayed on the screen in their digital form. The HDMI input terminal is not intended to be used with personal computers. This unit is compatible with 1080i, 720p and 480p formats. Select the output of the connected device to match that of the unit.

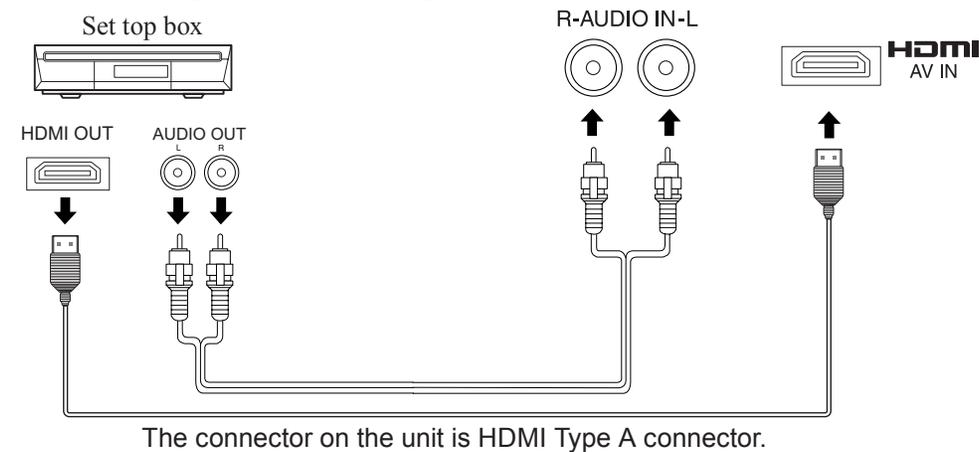
### Connection diagram

Follow the diagram below to connect the unit to a set top box or a DVD player.

#### When audio signal input is digital.



#### When audio signal input is analog.



### Notes:

<sup>1</sup> HDMI/HDCP = High Definition Multimedia Interface / High-Bandwidth Digital Copy Protection.

<sup>2</sup> EIA/CEA-861/861B Profiles compliance covers profiles for transmission of uncompressed digital video including high bandwidth digital content protection.

## Procedure

- 1** Connect the HDMI output from the set top box or a DVD player to the HDMI input on the back of the unit.
  - If you cannot display the picture because your Digital Set Top Box does not have a Digital Out terminal setting, use the Component Video Input (or the S-Video Input or Video Input). In this case, the picture will be displayed as an analog signal.
  
- 2** Press TV/VIDEO on the Remote Control to select HDMI input.

By inputting a High-bandwidth Digital Content Protection high-definition picture source to the HDMI IN terminal of this Device Display, high-definition pictures can be displayed on the screen in their digital form. (This terminal is for use in the future when High-bandwidth Digital Content Protection DVD players and D-VHS are put on the market.)

### Notes:

- Select the HDMI input position by pressing the TV/VIDEO button. (P. 37)
- The HDMI IN terminal can only be used with 1080i, 720p and 480p picture signals.
- If there is no audio, check if the source equipment has PCM output. If not, please use analog connections.
- Be sure HDMI is securely connected. If not, picture noise and/or incorrect picture display may result.
- With HDMI connection, depending on the signal, the picture may be displayed with unnatural colors (as if red and blue are reversed). See UV Timing of Page 53.

## Compatible formats

Video Signal:

The Device display is compatible with following formats. Please set the connecting device to following format.

Display mode	No. of dots	Vertical scanning frequency (Hz)
1080i	1920 x 1080i	59.94 / 60
720p	1280 x 720p	59.94 / 60
480p	720 x 480p	59.94 / 60
	640 x 480p	59.94 / 60

## Audio signal (PCM)

When digital audio is included in the HDMI connection, the compatible sampling frequencies are 48 kHz/44.1 kHz/32 kHz. (See page 55)

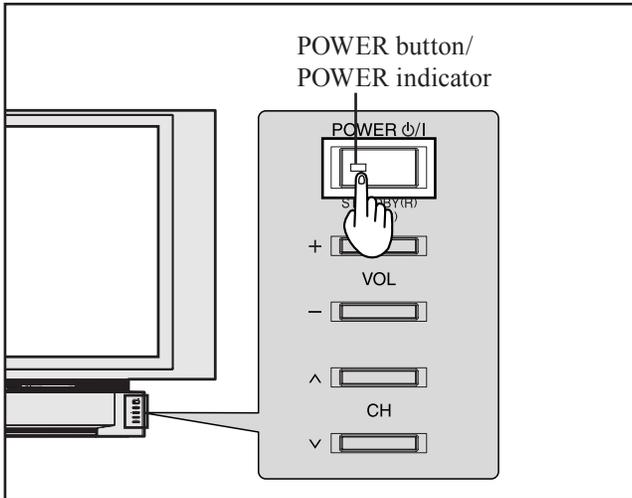
# Power ON / OFF

## Turning the Power ON and OFF

Always be sure to follow the procedure given below to turn the Device Display power ON and OFF.

- The lamp cooling fan will continue to operate for approximately 1 minute after the power is turned off. At the same time, the POWER indicator will blink Red.

**Do not disconnect the power cord from the outlet and do not open the circuit breaker (unless necessary) while the cooling fan is still operating. Do not disconnect the power cord from the power outlet while the power indicator blinks Red.**



### Power ON

Press POWER on Device Display or Remote Control to turn power on.

The Power Indicator blinks Green for about 10 seconds and then turns solid Green.

### Power OFF

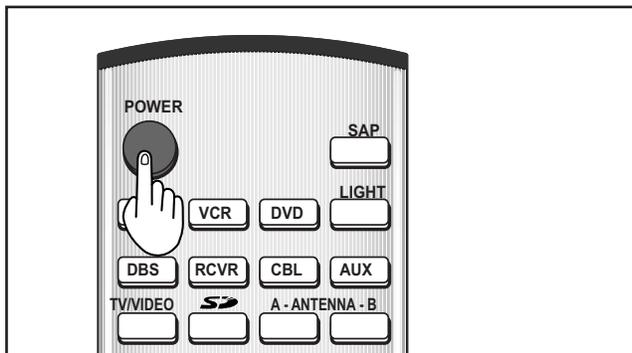
Press POWER on Device Display or Remote Control to turn power off.

Power shuts off after a Black Screen is displayed for a few seconds.

#### Note:

If the POWER button is pressed during the Black Screen display, Power is turned back on.

The Power Indicator blinks Red for about 1 minute and then turns solid Red.



#### Note:

When the AC Cord is unplugged, the internal cooling fan stops operating. In this case, the lamp will be insufficiently cooled and will take a while to turn ON again.

#### The Power Indicator

LED	ACTION
Red	Power – OFF (Standby mode)
Red blink	Power – OFF (Now cooling)
Green	Power – ON
Green blink	Power – ON (Preparing to light lamp)

#### Notes:

- If the POWER button is accidentally turned off during use, after power is turned back on, it may take a short period before the lamp automatically comes on.
- After the unit is turned on, maximum picture brightness will be achieved in 5-10 minutes. This is normal.
- This unit consumes approx. 20 W in OFF condition when plugged into an AC outlet.

# First Time Setup

For your convenience, First Time Set up menu will be displayed on screen when the set is turned on for the first time. If needed, follow the menus and procedures displayed on-screen for setting up the features.



## Input Setup

To select the configuration of RF input depending on the signal source.

### Note:

No video will be displayed in this setup mode.



## Procedure

Press VOL ► to select Cable only, Cable/Antenna, or Antenna only.

Press OK to underline your selection.

When the next screen is displayed, press OK to start the Auto Scan. All available channels with a signal will be programmed into memory.

## Auto Scan

This feature allows you to selectively auto scan channels. You can Scan All, Analog only channels, or Analog & Digital channels.



## Procedure

Press OK to start Auto Scan.

After Auto Scan is completed the unit tunes to the first channel found during auto scan.

### Notes:

- If DCM (Digital Cable Module) is present during the First Time Setup and Antenna (A) is set to cable, Antenna (A) will not be scanned due to the DCM providing the channel map.
- If setup is incomplete, check connection of Antenna/Cable to the RF IN Terminal, then try Auto Scan again. (PP. 30-31)

### Notes:

- Auto scan must be done when you select the input signal for the first time or whenever you change the antenna configuration.
- Depending on conditions, Auto scan may take a while.

# Basic Menu Navigation

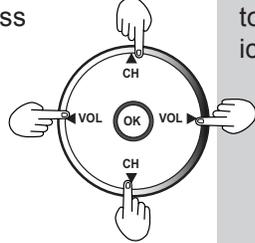


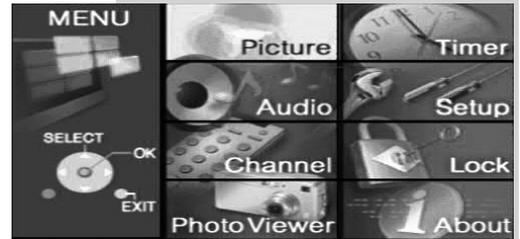
**1** Pressing MENU displays the Main Menu screen.

**MENU** Pressing MENU again displays previous level menu.

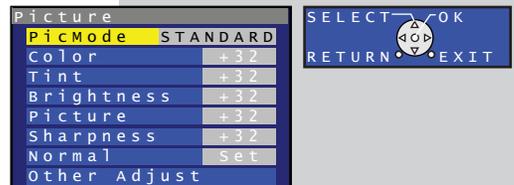
**Note:** Depending on the signal being input, some items may or may not be adjustable and some functions may or may not be available.

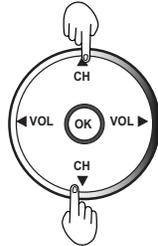
**2**

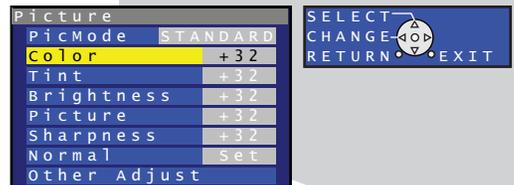
Press  to select the desired icon.



Press  to enter the menu.



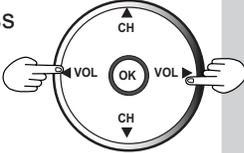
Press  to select desired menu item.



Continued in left column of next page.

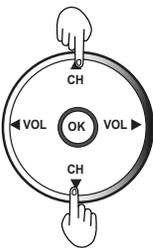
# Basic Menu Navigation

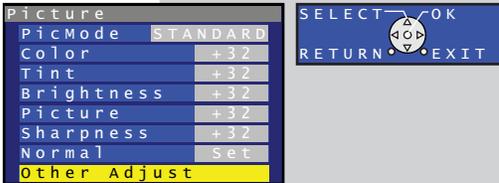
Continued from page 28.

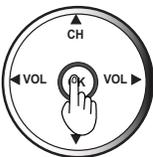
Press  to adjust or set desired menu item.

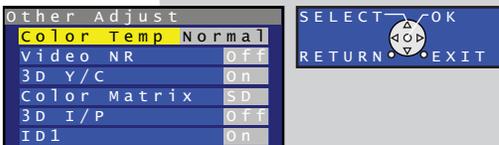


**Note: For Other Adjust sub-menu.**

Press  to select Other Adjust.

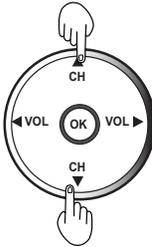


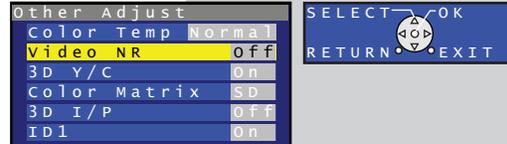
Press  to access Other Adjust sub-menu.



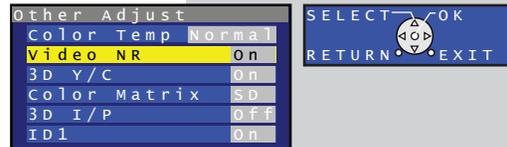
Continued in right column.

Continued from left column.

Press  to select desired sub-menu items.



Press  to select desired sub-menu items.



**Note: To EXIT menus.**

Press **MENU**  repeatedly until normal picture is displayed.



Press **EXIT**  to return to normal picture.



# Tuning channels

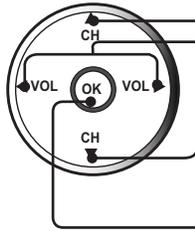
## Automatic channel setting

Automatically searches and adds receivable channels to memory.



Press MENU to display the Main Menu screen.

1

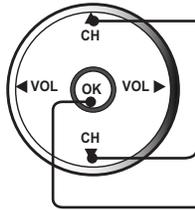


Press to select Setup icon.

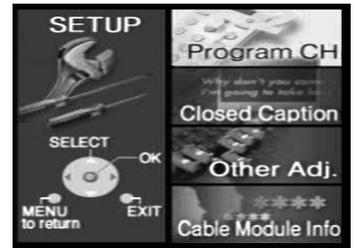


Press to display the options in the Setup menu.

2

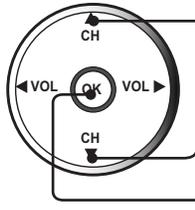


Press to select Program CH icon.



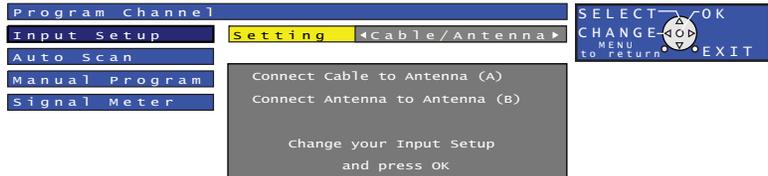
Press to display the Program Channel menu.

3

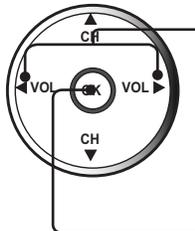


Press to select Input Setup.

Press to enter the sub-menu.



4

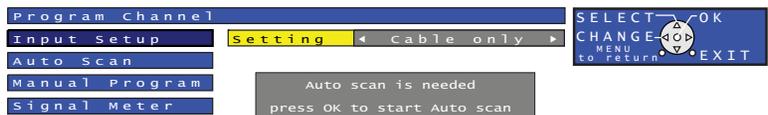


Press to select Cable Only, Cable/Antenna or Antenna Only.

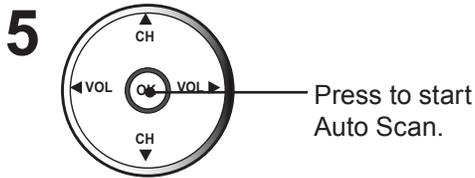
**Note:**

TV or Cable Tuning mode must be set according to your connections.

Press to set.



Continued on the next page.

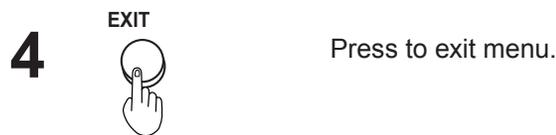
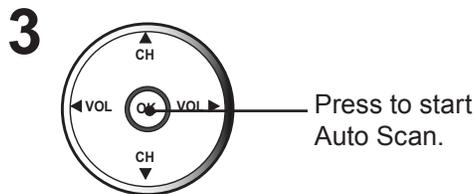
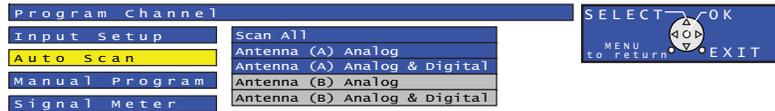
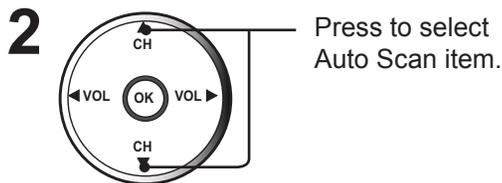


**Notes:**

- If Cable Only, Antenna Only or Antenna/Cable is selected and DCM (Digital Cable Module) is not in, the Auto Scan will perform Scan All.
- If Cable Only is selected and DCM is in, Auto scan will be skipped.
- If Cable/Antenna is selected and DCM is in, Antenna (B) Analog & Digital Auto scan will be performed.

Auto Scan - To automatically Scan All available channels, Antenna (A) Analog, Antenna (A) Analog & Digital, Antenna (B) Analog and Antenna (B) Analog & Digital.

**1** Select Auto Scan and press OK to enter the sub menu.



**Notes:**

- Some channels with very weak signals may be locked into memory. If desired, these channels can be deleted manually using the Manual Program feature.
- Auto scan must be done when you select the input signal for the first time or whenever you change the antenna configuration.

# Tuning channels

## Manual channel setting

Use this procedure when changing setting of receiving channels or changing the channel display.  
To add or delete channels from either channel list (A/B) manually.



Press MENU to display the Main Menu screen.

**1**

Press to select Setup icon.

Press to display the options in the Setup menu.

**2**

Press to select Program CH icon.

Press to display the Program Channel menu.

**3**

Press to select Manual Program.

Press to enter sub-menu.

Program Channel		SELECT	OK
Input Setup	RF Input	Antenna (A)	MENU to return
Auto Scan	Channel Add	A:2	
Manual Program	Channel Del	A:66	
Signal Meter			EXIT

**4**

Press to select RF Input.

RF Input can only be selected when both Antenna (A) and Antenna (B) are connected.

Press to select Antenna (A) or Antenna (B).

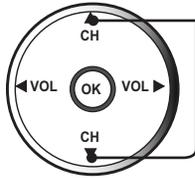
Program Channel		SELECT	OK
Input Setup	RF Input	Antenna (A)	CHANGE MENU to return
Auto Scan	Channel Add	A:2	
Manual Program	Channel Del	A:66	
Signal Meter			EXIT

**5**

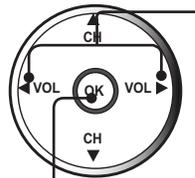
Press to set.

Continued on the next page.

## 6 To add channel



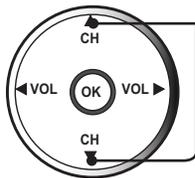
Press to select Channel Add.



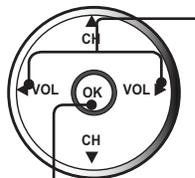
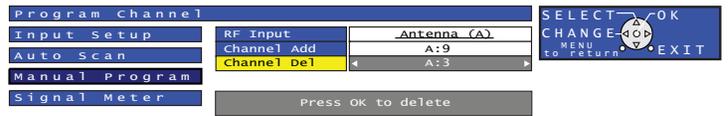
Press to select CH.

Press to add channels to memory.

## To delete channel



Press to select Channel Del.



Press to select CH.

Press to delete channels from memory.

**7** Repeat steps 6 to continue adding or deleting channels.

**8**

EXIT



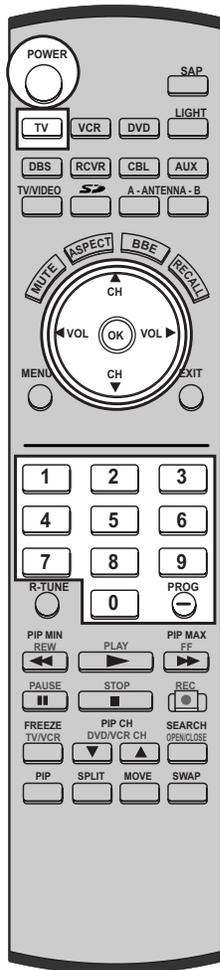
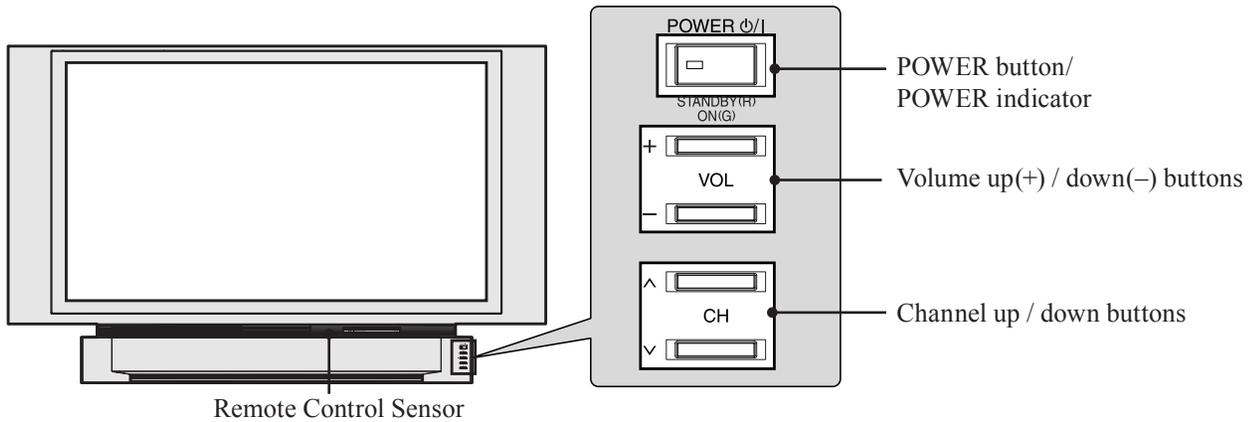
Press to exit menu.

**Note:**

Some channels with very weak signals may be locked into memory. If desired, these channels can be deleted manually using the Manual Program feature.

# Device display operation

Operation can be done from the Device Display.



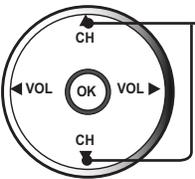
- 1**



Press to operate the Device Display with the Remote Control.
- 2**



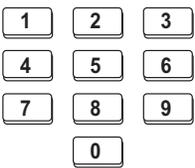
Press to turn the Device Display on.
- 3**



Press to select the desired channel.

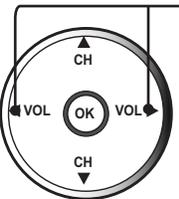
**Note:**  
Refer to "Channel Up/Down Tuning". (See page 36.)

**Or**



Use number keys

**Note:**  
Refer to "Direct Tuning Method". (See next page.)
- 4**



Press to select the desired volume level.



**Notes:**

- The channel number and volume level are stored even after the Device Display is turned off.
- Power consumption can be reduced if the volume level is lowered.

## Channel and Program Tuning

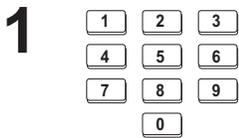
Channel and Program tuning in digital television differs from conventional television. With DTV, many programs can exist within a single 6 MHz channel. These channels behave as sub-channels within a single channel. When tuning to a digital channel, the Device Display will also tune to a program and will indicate the channel and program in the on-screen Channel Banner display.

In order to select channels properly, Auto Scan must be performed (refer to pages 30-31).

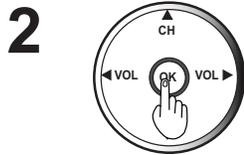
### Direct Tuning Method

Follow the procedure below to directly enter the channel number using the Remote Control number keys.

#### Select analog channel



Press the number keys on the Remote Control to enter the Channel number. Press OK.  
The following is an example of tuning to channel 15.



Direct Tuning Example

Step	Action	Channel Banner Display
1	Press 1	1
2	Press 5	15
3	Press OK	15

#### Select digital channel

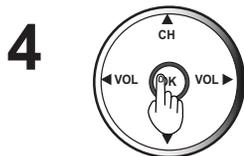
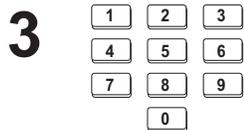


If tuning a digital channel and your channel contains more than one program, press PROG and enter the program (1, 2, 3 etc.) using the number keys. Press OK.  
The following is an example of tuning to channel 15-1.



Direct Tuning Example

Step	Action	Channel Banner Display
1	Press 1	1
2	Press 5	15
3	Press -	15-
4	Press 1	15-1
5	Press OK	15-1



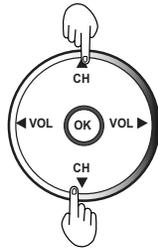
# Device display operation



## Channel Up/Down Tuning

Channel Up/Down Tuning (CH ▲ or CH ▼ buttons) - Tunes to the next or previous available channel or program. Channel Up/Down tuning depends upon the surfing mode (see page 49) you have set in the Channel menu.

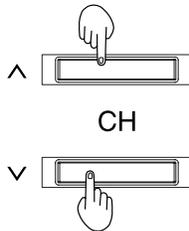
### Remote Control



Press to select the desired channel.

Or

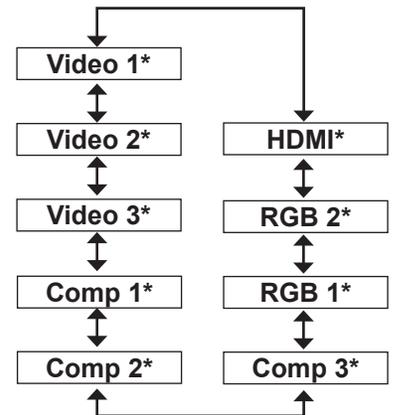
### Device display Unit



Press to select the desired channel.

While an input other than Tuner is displayed, you can change the input mode with the unit's CH Up/Down buttons. (See diagram, right.)

\*If SKIP is set as the Input Label setting of Channel Caption, the mode will not be changed. (See page 69.)



## Rapid Tuning

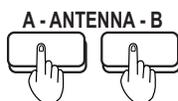
Switches between the current and last channel or program.

### R-TUNE



Press to switch to previously viewed channel, Photo Viewer or input modes.

## Antenna Input (A/B) Tuning



A/B button switches between the two RF antenna inputs, if connected. The last tuned channel in memory of the respective RF input is displayed.

## Changing the input signal

The input source for picture signals can be changed by pressing TV/VIDEO, SD on the Remote Control or CH up/down on the unit.

### Remote Control

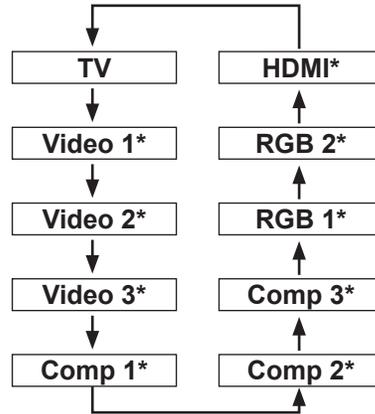


The input mode changes each time this button is pressed.

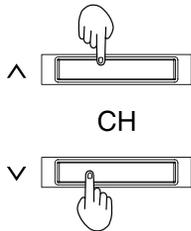
\* If SKIP is set as the Input Label setting of Channel Caption, the mode will not be changed. (See page 69.)



Card input mode (Photo Viewer) is selected.



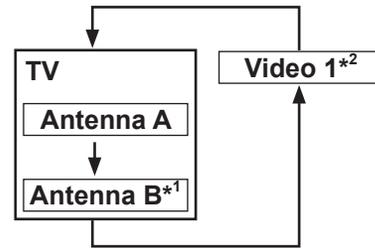
### Device display Unit



By pressing Channel Up/Down buttons together, you can switch between TV mode and an outside input source.

\*1 Changing input is only possible if Cable/Antenna is set as the Input Set setting.

\*2 Input changes to the first outside input source of the Input Label not set to SKIP. For example, if Video 1 is set to SKIP, input is changed to Video 2. See the chart, below (except for Photo mode).



While Photo Viewer is displayed, the channel or outside input source last viewed is redisplayed.

Video 1	Signal of source connected to INPUT 1 is displayed.
Video 2	Signal of source connected to INPUT 2 is displayed.
Video 3	Signal of source connected to INPUT 3 is displayed.
Comp 1	Signal of source connected to COMPONENT VIDEO INPUT 1 is displayed.
Comp 2	Signal of source connected to COMPONENT VIDEO INPUT 2 is displayed.
Comp 3	Signal of source connected to COMPONENT VIDEO INPUT 3 is displayed.
RGB 1	Signal of source connected to RGB IN 1 is displayed.
RGB 2	Signal of source connected to RGB IN 2 is displayed.
HDMI	Signal of source connected to HDMI IN is displayed.
Photo (Photo Viewer)	Signal of source connected to CARD SLOT is displayed.

# Device display operation

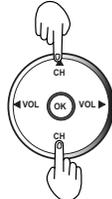


## Unit Status display

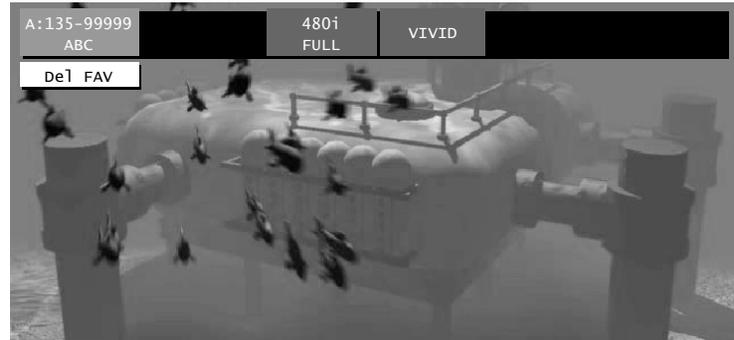


Press the RECALL, Channel UP/DOWN or TV/VIDEO button, except when the MENU screen is displayed, to display current unit status information.

Or

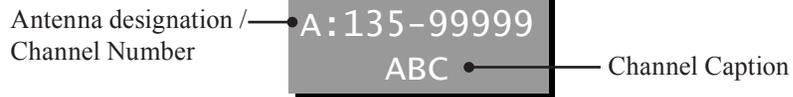


Or



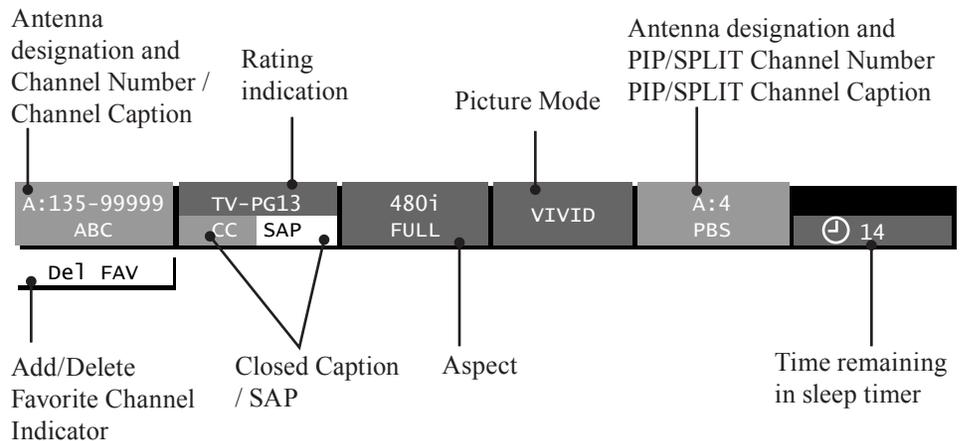
### Channel Banner: Minimized

Press Channel UP/DOWN or TV/VIDEO to minimize the channel banner display. It will display the antenna input, channel number, and the station identification (if available).



### Channel Banner: Maximized

Press RECALL to maximize the channel banner display. While it is displayed, you can add a channel to or delete a channel from the Favorite channel list.



Continued on the next page.

## Add FAV / Del FAV feature

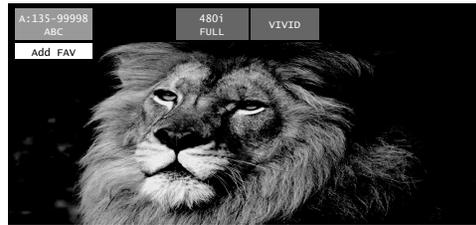
This feature lets you add channels to or delete channels from the Favorite channel list.

**1** Tune to the desired channel to be added or deleted.

## **2** To add a favorite channel

Press RECALL while viewing an unregistered channel to display Add FAV in the CH Banner.

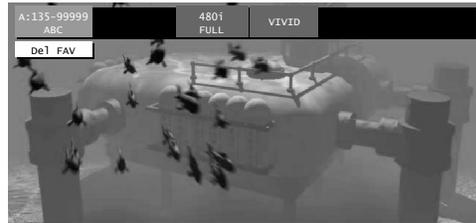
Press OK to add the channel.



## To delete a favorite channel

Press RECALL while viewing a registered channel to display Del FAV in the CH Banner.

Press OK to delete the channel.



### Note:

Please refer to page 49 for more about the Favorite Channel feature.

## Auto shut off

To extend lamp life, if there is no signal to the set's tuner for 5 minutes, the lamp will shut off automatically.

## Invalid operation notification

If an invalid operation is attempted, the mark shown right is displayed.



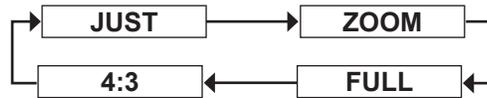
Example: Invalid operation was tried during FREEZE mode.

# ASPECT Controls

The color monitor will allow you to enjoy viewing the picture at its maximum size, including wide screen cinema format picture.



The aspect mode changes each time ASPECT is pressed.



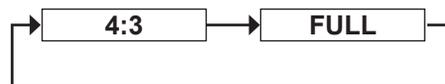
- When a 480p signal is being received, the mode switches between 4:3, ZOOM, and FULL only.



- During PC input, the mode switches between 4:3, FULL and TRUE only.



- When XGA and Mac 19 signal is input, the aspect will be 4:3 and FULL only.



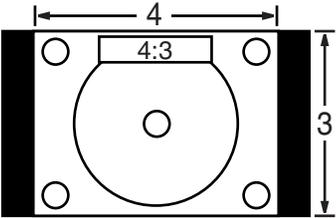
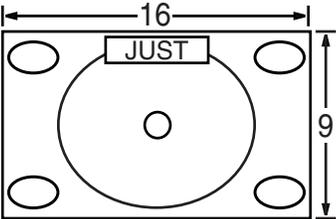
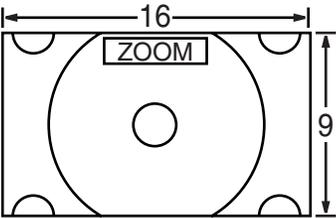
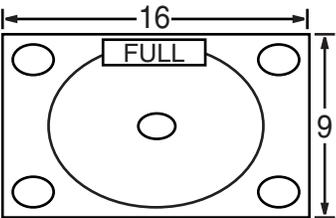
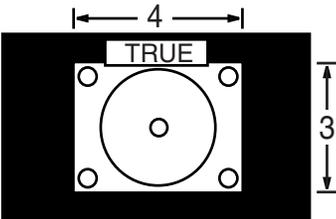
## Notes:

- When a 1080i or 720p signal is being received, the mode is set to FULL, and aspect switching is not possible.
- When input mode is CARD, the mode is set to 4:3, and aspect switching is not possible.

## Notes:

- However, if the mode selected does not match the aspect ratio of the input signal, the original picture quality may be affected.
- If using this Device Display in places, such as cafes or hotels, with the aim of displaying programs for a commercial purpose or for public presentation, please note that by using the aspect ratio (16:9) selection function to change the aspect ratio, you may be infringing on the rights of the original copyright owner of that program under copyright protection laws.
- If a 4:3 picture is projected in wide screen, distortion may occur around the edges so that part of the picture may no longer be visible. We recommend viewing in 4:3 mode so you can enjoy the picture as it was intended to be seen.

# ASPECT Controls

Mode	Picture	Explanation
4:3		<p>4:3 will display a 4:3 picture at its standard 4:3 size.</p>
JUST		<p>JUST mode will display a 4:3 picture at maximum size but with aspect correction applied to the center of the screen so that elongation is only apparent at the left and right edges of the screen. The size of the picture will depend on the original signal.</p>
ZOOM		<p>ZOOM mode magnifies the central section of the picture.</p>
FULL		<p>FULL will display the picture at its maximum size but with slight elongation.</p>
TRUE		<p>You can reduce the image and adjust it to the original image quality. (Except XGA)</p>

**Notes:**

- The screen size changes if ID1 is detected. (P. 75)
- When ASPECT is in ZOOM mode, PIP feature cannot be used. (PP. 44-45)

# Mute / Freeze / SAP



## Sound mute



Useful when answering the phone or receiving unexpected visitors

Press this button to mute the sound. Press again to reactivate sound. Sound is also reactivated when power is turned off or volume level is changed.



### Note:

The audio output from AV OUT is not muted.

## Freezing pictures



Projection can be switched between a frozen (still) picture and a moving picture each time FREEZE on the Remote Control unit is pressed. Press FREEZE again to resume motion.



### Note:

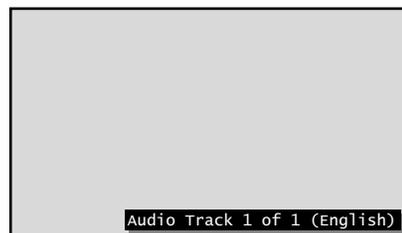
The video output from AV OUT is not frozen.

## Select Audio Mode for TV Viewing

### In digital mode,



Press SAP to select the next audio track (if available) when receiving a digital channel.



Continued on the next page.

## In analog mode,



Press SAP button to select the desired audio mode as described below.  
 (Arrow shows selection.)

- Each press of SAP button will change the audio mode as shown below.
- “SAP” is selected with first press of SAP button.

Example:

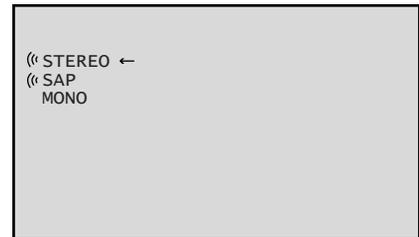


## Receivable Broadcast Types

The following are possible broadcast types with their accompanying on-screen displays. The signal being received is indicated with a “«” mark while the selected audio mode is indicated with an arrow.

### MTS Stereo and SAP broadcast

Multi-channel Television Sound Stereo (main language) and Secondary Audio Program (sub language) broadcasts are both being received simultaneously. Select the STEREO or SAP audio mode.



### MTS Stereo broadcast

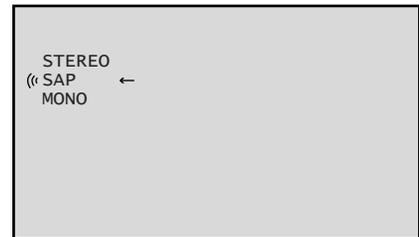
Multi-channel Television Sound Stereo broadcast. Select STEREO audio mode.

- If stereo broadcast is weak and the display flickers, select MONO audio mode for possibly better results.



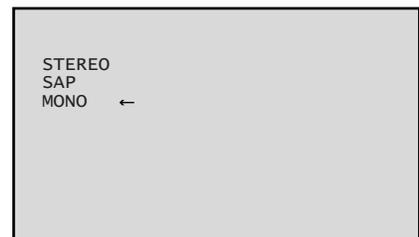
### SAP broadcast

Secondary Audio Program (sub language.)  
 Select SAP audio mode for the sub language.



### MONO broadcast

Normal monaural sound broadcast.



# Picture in Picture (PIP) Screen

This unit includes a two-tuner Picture In Picture (PIP) feature. This allows you to watch two (2) live broadcasts at the same time with or without an external video source, such as a VCR, cable box, etc.

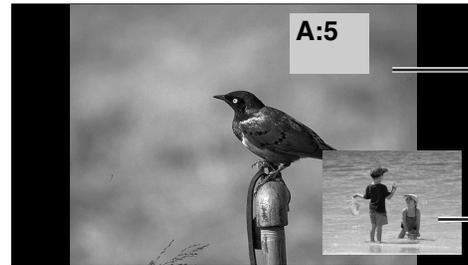


## Display PIP screen



Press to split.

(The previously selected screen appears on the Main.)



Main screen  
(Main picture)

PIP screen  
(Sub picture)

## Returning to one screen

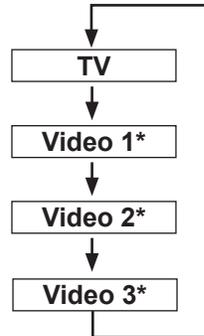


Press to return.

## Select desired input mode of the PIP screen



Press to select the desired input mode.



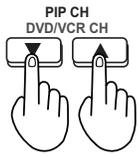
\*If SKIP is set as the Input Label setting of Channel Caption, the mode will not be changed. (See page 69.)

### Notes:

- Sound from the Main screen is output from the speakers on the Device Display set.
- In PIP mode, the Main screen signal is output from the rear monitor output terminal.
- Because Main and PIP screens are processed by individual circuits, image quality may vary slightly.
- PIP mode returns to single screen when the Device Display is turned off.
- Essentially, the Main and PIP screens cannot display the same picture at the same time.
- Only the Analog programming from Antenna (A) and video inputs signal can be viewed in the PIP screen function.
- A component signal cannot be displayed on a PIP screen. Thus, when a component signal is displayed on the Main screen, the SWAP button becomes invalid.
- When ASPECT is in ZOOM mode, PIP feature cannot be used. (PP. 40-41)
- When the RGB, HDMI or Card (Photo Viewer) input mode is selected, PIP feature cannot be used. (P. 37)
- The signal input from Antenna (B) can be displayed on the Main screen only. (It cannot be displayed as a PIP screen.)

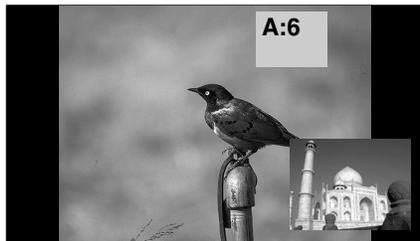
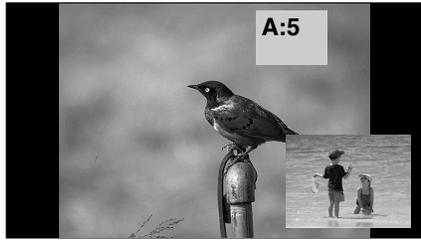
# Picture in Picture (PIP) Screen

## Changing the channel of the PIP screen



Press to select the desired channel.

Example:  
During Main screen NORMAL



## Swapping Main and PIP screens



Press to swap.

Example:  
During Main screen NORMAL



## Selecting the screen size for PIP screen

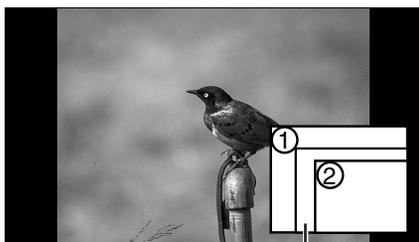
You can choose PIP screen size of 3 magnifications.



Press to large PIP screen size. → ①



Press to small PIP screen size. → ②



Initial size

**Note:**

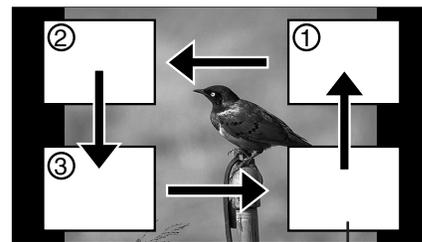
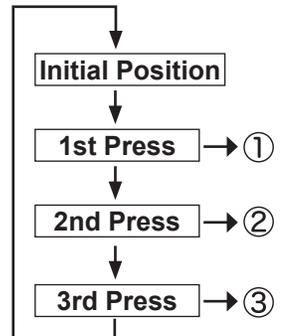
The last size chosen is saved and will not be erased even if the power is turned off.

## Move PIP screen

You can move the PIP screen to four positions.



Press repeatedly to select PIP position.



Initial position

**Note:**

The last position chosen is saved and will not be erased even if the power is turned off.

# Split screen

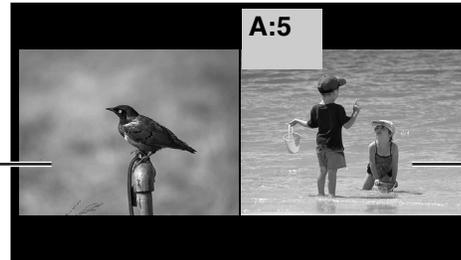


## Splitting the screen



Press to split.  
(The previously selected screen appears on the left.)

Left screen  
(Main picture)



Right screen  
(Sub picture)

## Returning to one screen



Press to return.

## Selecting the screen aspect for split screen.



Press to select modes.

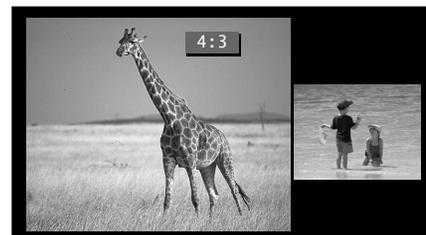


SPLIT SCREEN FULL



SPLIT SCREEN 4:3

(According to the signal, the display may not have an aspect ratio of 4:3.)



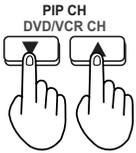
SPLIT SCREEN 4:3

(Example: RGB input)

### Notes:

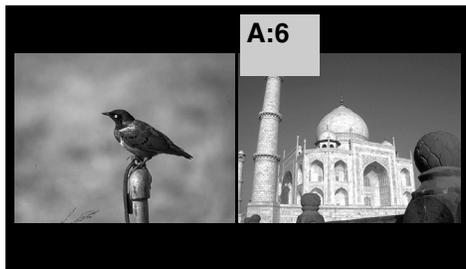
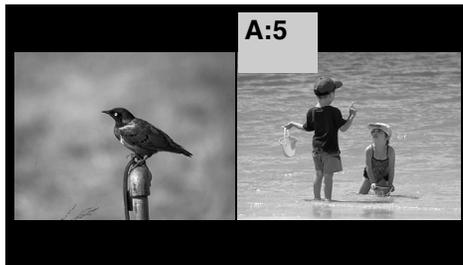
- Sound from the Left screen is output from the speakers on the Device Display set.
- When the screen is split, signals of the Left screen are output from the rear monitor output terminal.
- The left and right screens are processed by individual circuits and, therefore, may vary in image quality.
- Split screen returns to single screen when the Device Display is turned off.
- The right and left screens essentially cannot display the same picture at the same time.
- A split screen which includes an RGB IN signal is fixed as SPLIT SCREEN 4:3. (Example: RGB input is shown right.)
- CARD and HDMI input screen cannot be displayed using the Split Screen function.
- The signal input from Antenna (B) is displayed on the Left screen only. (It cannot be displayed on the Right screen.)

## Changing the channel of the right screen



Press to select the desired channel.

Example:  
During SPLIT SCREEN NORMAL

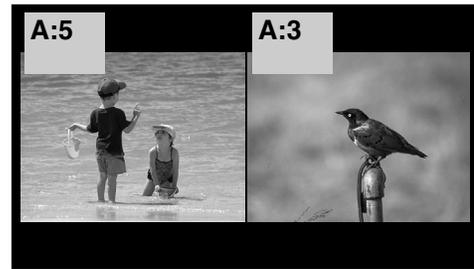
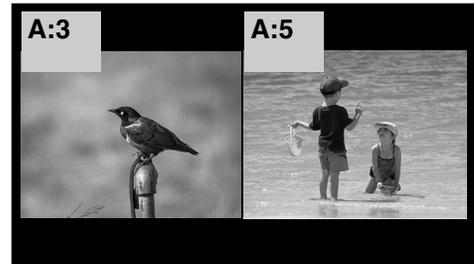


## Swapping left and right screens



Press to swap.

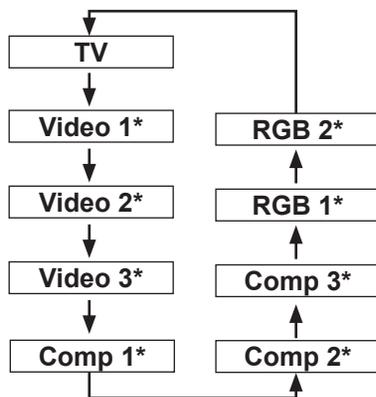
Example:  
During SPLIT SCREEN NORMAL



## Select desired input mode of the Right screen

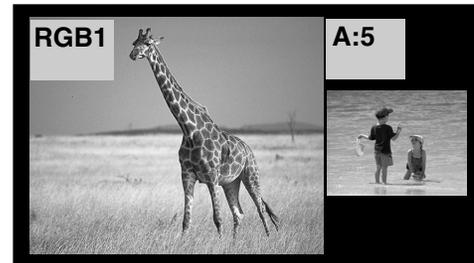


Press to select the desired input mode.



\*If SKIP is set as the Input Label setting of Channel Caption, the mode will not be changed. (See page 69.)

Example:  
During SPLIT SCREEN NORMAL  
(RGB input)

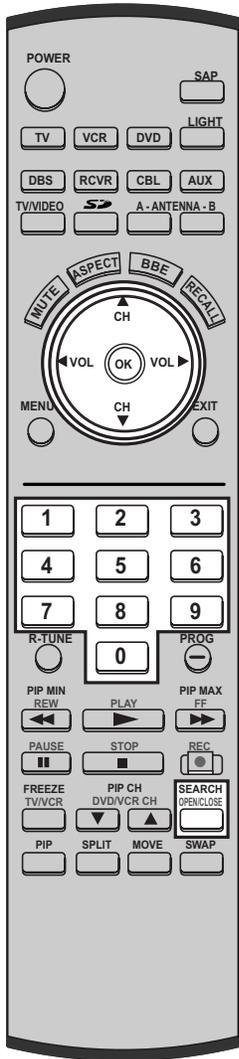


### Note:

Picture quality may change according to the combination of signals input to the left and right screens.

# Searching for the desired channel (Channel search)

Channel search displays each channel, in order, as a paused image. Channels are displayed from the left top to the right bottom in order. When it reaches the right bottom, the next channel is displayed at the left top, overwriting the previously displayed channel.



## Notes:

- To end channel search, press SEARCH/OPEN/CLOSE.
- While using the PIP feature, Channel search is not available.
- Channel search feature works with analog channels only. ATSC channel search is not possible.
- When CARD and HDMI input screen is displayed, no search is possible.
- Channel search feature works only if signal is from Antenna (A).



When SEARCH/OPEN/CLOSE is pressed during single screen.



Example 1



Example 2 (RGB input)



## When a channel button is pressed during channel search.

### Number keys:

Example: When 6 is pressed, channel 6 is displayed in single screen.

### Channel up and down buttons:

When ▲ or ▼ is pressed, the next channel up or down is displayed in single screen.

Example: Select channel 6

Sound from the left screen is output from the speakers on the Device Display set.

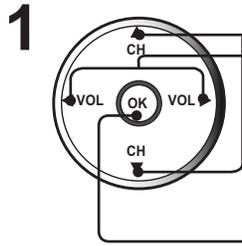


# Favorite Channel Feature

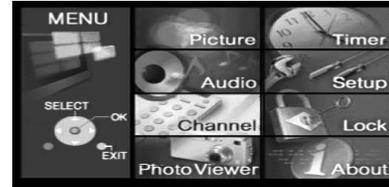
Allows you to create a Favorite channel list from Antenna (A) or Antenna (B).



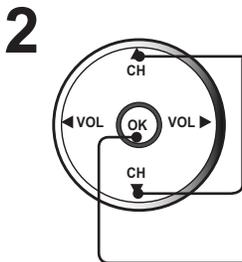
Press MENU to display the Main Menu screen.



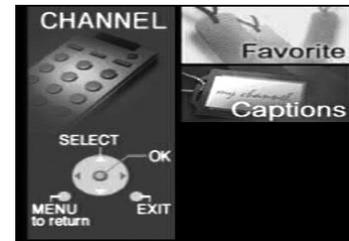
Press to select Channel icon.



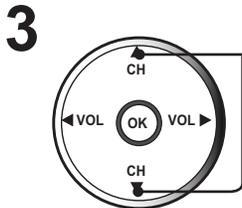
Press to display the options in the Channel menu.



Press to select Favorite icon.



Press to display the Favorite menu.



Press to select each item.

■ **Surf Mode:**

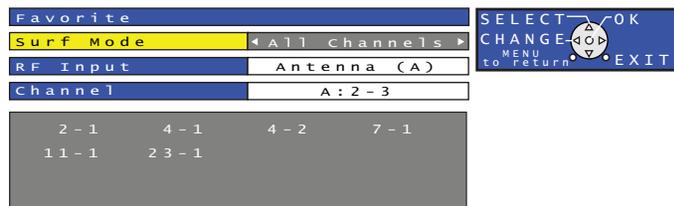
Select Favorite or All Channels with Remote Control ◀ VOL or VOL ▶, then press OK.

■ **RF Input:**

Select Antenna (A) or Antenna (B) with Remote Control ◀ VOL or VOL ▶, then press OK.

■ **Channel:**

Use the Remote Control ◀ VOL or VOL ▶ to select desired channels, then press OK to add. To delete channel, press OK again while channel number is displayed.



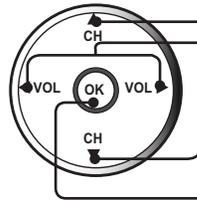
Press to exit menu.

# Picture Adjustments

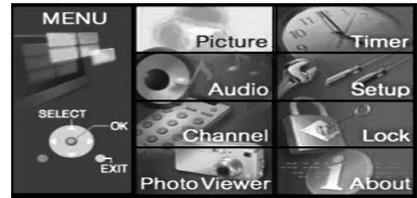


Press MENU to display the Main Menu screen.

1

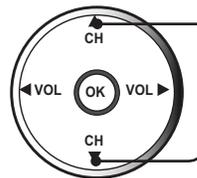


Press to select Picture icon.

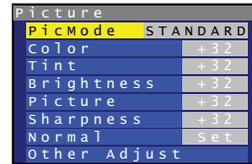


Press to display the Picture screen.

2



Press to select each item.



**Note:**  
Normal is displayed at default.

RGB IN input

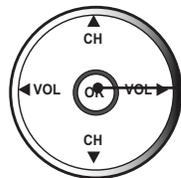


3

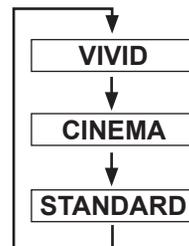
### ■ PicMode:

Lets you choose one of three pre-set Picture Modes that best suits the program you are viewing. Selecting this feature will also affect Color Temperature setting.

- VIVID - This is the default mode, It provides enhanced picture contrast and sharpness for viewing in a well-lit room.
- CINEMA - Select this mode for watching movies in a darkened room. It provides a soft, film-like picture.
- STANDARD - Recommended for normal viewing conditions with subdued room lighting.



Press repeatedly to select PicMode.



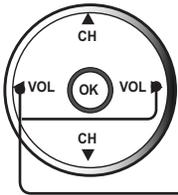
**Note:**

There is little change when PICTURE is increased with a bright picture or reduced with a dark picture.

Continued on the next page.

# Picture Adjustments

- Color:
- Tint:
- Brightness:
- Picture:
- Sharpness:
- Contrast:
- R Level:
- G Level:
- B Level:



Adjust to desired level while viewing picture through the menu overlay. Press MENU or wait a few seconds to return to the previous menu screen.



4



Press to exit menu.

Adjustment item	Button	Adjustment Details	Remarks
Color	Press ► button.	The color becomes deeper.	Except RGB IN
	Press ◀ button.	The color becomes paler.	
Tint	Press ► button.	Flesh tones become greenish.	Except RGB IN
	Press ◀ button.	Flesh tones become reddish.	
Brightness	Press ► button.	The screen becomes brighter.	
	Press ◀ button.	The screen becomes darker.	
Picture	Press ► button.	Picture intensity becomes stronger as both contrast and color levels are adjusted.	Except RGB IN
	Press ◀ button.	Picture intensity becomes weaker as both contrast and color levels are adjusted.	
Sharpness	Press ► button.	The picture quality becomes sharper.	Except RGB IN
	Press ◀ button.	The picture quality becomes softer.	
Contrast	Press ► button.	Only the Highlights of the image become brighter, adding Contrast.	RGB IN only
	Press ◀ button.	The Highlights become less bright, diminishing Contrast.	
R Level	Press ► button.	The red component becomes stronger.	RGB IN only
	Press ◀ button.	The red component becomes weaker.	
G Level	Press ► button.	The green component becomes stronger.	
	Press ◀ button.	The green component becomes weaker.	
B Level	Press ► button.	The blue component becomes stronger.	
	Press ◀ button.	The blue component becomes weaker.	

# Adjusting screen position and size



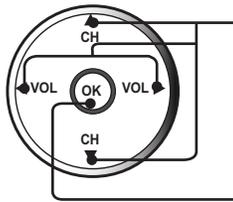
## Notes:

- This Device Display is equipped with various screen modes. If a screen mode with a different aspect from the broadcast program is selected, image will appear differently. Select the proper screen mode with this in mind. Be careful when using this Device Display for commercial purposes or for public use, such as in cafes and hotels. Shrinking and enlarging images by using screen mode switching function (zoom, etc.) may violate copyright laws. Images displayed on a wide screen TV will be cut off or distorted at the edges, when viewing normal aspect images of 4:3 in ZOOM, JUST or FULL mode. Display in 4:3 mode to view the original image intended by the producer.
- For 1080i and 720p input images, screen size cannot be adjusted.
- The adjusted setting will be kept even when the Device Display is turned off.
- The signals output from the VIDEO OUT terminal on the back of the Device Display is not affected when the screen size and position is adjusted.

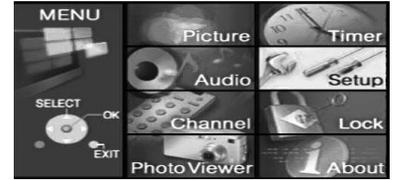


1 Press to select the screen mode.

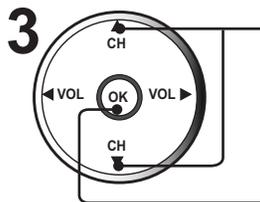
2 Press MENU to display the Main Menu screen.



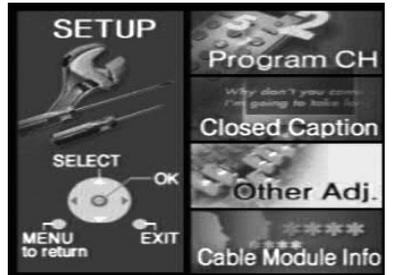
Press to select Setup icon.



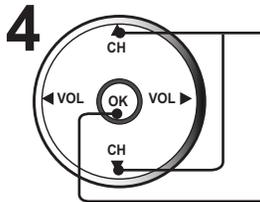
Press to display the options in the Setup menu.



3 Press to select the Other Adj. icon.



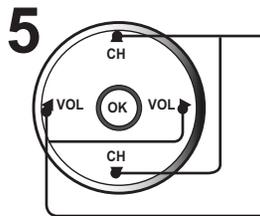
Press to display the Other Adjustment menu.



4 Press to select the Position/Size.

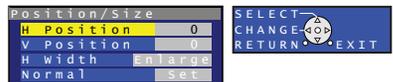


Press to display Position/Size sub-menu.



5 Press to select each item.  
**Note:** Normal is displayed at default.  
Press to set or adjust to desired level. (See next page.)

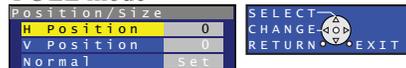
## JUST mode



## 4:3 mode



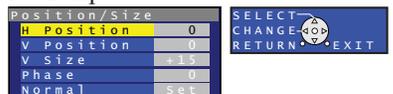
## FULL mode



## ZOOM mode



## RGB input

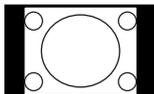
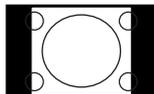
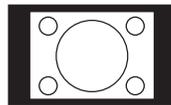
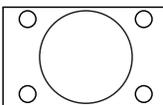
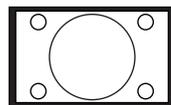


6 Press to exit menu.

# Adjusting screen position and size

Adjustment item	Button	Adjustment Details	Note
<b>H Position</b>	Press ► button.	The image moves to the right.	
	Press ◀ button.	The image moves to the left.	
<b>V Position</b>	Press ► button.	The image moves up.	
	Press ◀ button.	The image moves down.	
<b>H Width</b>	Press OK button.	If noise appears on the ends of the image in Shrink, switch to Enlarge.	Only JUST mode
		If noise appears on the ends of the image in Widen, switch to Narrow.	Only 4:3 mode (Except PC input)
<b>V Size</b>	Press ► button.	Press to enlarge image vertically	Only ZOOM mode
	Press ◀ button.	Press to shrink image vertically	
<b>H Size</b>	Press ► button.	Press to enlarge image horizontally	RGB input
	Press ◀ button.	Press to shrink image horizontally	
<b>Phase</b>	Press ► button. Press ◀ button.	Adjust in order to remove any picture interference or contour blurring which may occur in computer images.	RGB input
<b>UV Timing</b>	Press OK button.	With HDMI connection, depending on the signal, the picture may be displayed with unnatural colors (as if red and blue are reversed). Correct by setting the UV Timing to Invert. (Default is Normal.)	HDMI input

The OVER SCAN menu is added only when a 640 X 480 signal is input from the HDMI Input.

Adjustment item	Button	ASPECT	Overscan: ON (Normal display.)	Overscan: OFF (Picture is displayed smaller so it will fit on the screen.)
<b>Overscan</b>	Press OK button.	4:3 mode	  (Widen) (Narrow)	
		FULL mode		

# Audio Adjustments



Press MENU to display the Main Menu screen.

**1**

Press to select Audio icon.

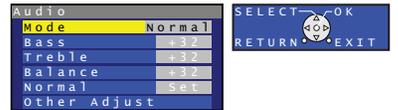
Press to display Audio menu.



**2**

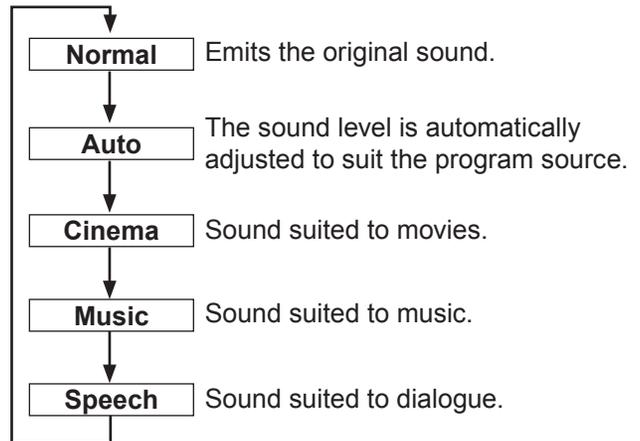
Press to select each item.

**Note:**  
Normal is displayed at default.

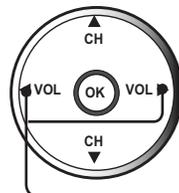


**3** ■ **Mode:**

Press repeatedly to select Mode.



- **Bass:**  
Increase or decrease the bass response.
- **Treble:**  
Increase or decrease the treble response.
- **Balance:**  
Emphasize the left/right speaker volume.



Press MENU or wait a few seconds to return to the previous menu screen



Continued on the next page.

## Other Adjust

While in the Audio menu screen, select Other Adjust and press OK to display the Other Adjust sub-menu.

### ■ Speaker:

This feature is used to turn TV speakers On or Off.

- On - TV speakers operate normally.
- Off - TV speakers off.

### ■ Surround:

Enhances audio response when listening to stereo.

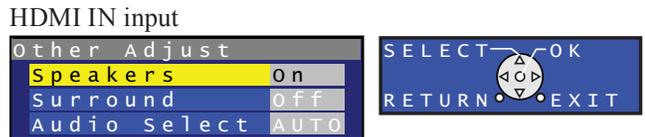
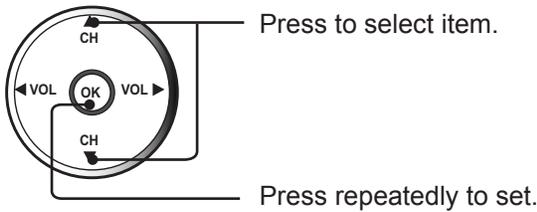
### ■ Audio Select:

Perform input switching of analog audio input and digital audio input when using the HDMI terminal.

AUTO : Automatically performs digital/analog input switching according to the input signal type.

D in (digital) : Forces use of digital audio input signal transmitted via the HDMI terminal.

A in (analog) : Forces use of analog audio input signal transmitted via separate RCA terminals.



4



Press to exit menu.

## Using BBE



BBE sound technology enhances speech intelligibility and restores the dynamic range of musical passages to provide outstanding natural sound.

### Note:

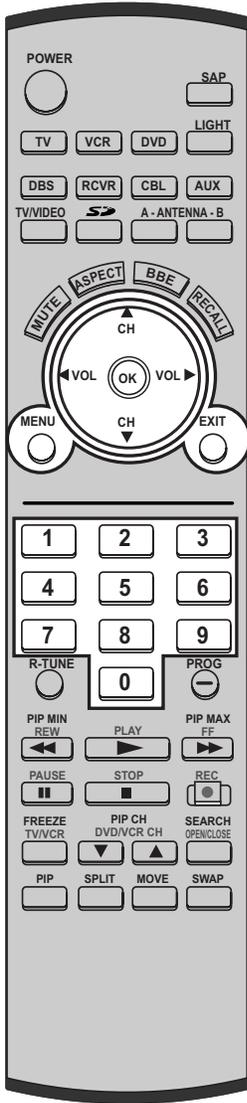
If BBE is ON, Surround cannot be selected.

### Notes:

- Sound signals are output from the rear AUDIO OUT and DIGITAL AUDIO OUT terminal. (See pages 20-21)
- When volume is adjusted or the MUTE button is pressed from the Remote Control, a message will be displayed.
- If the Mode is set to Auto, or if BBE is ON, Bass and Treble cannot be adjusted.

# Lock Feature

This Device Display incorporates V-CHIP technology to block the viewing of movies and television programs according to the rating category. There are two (2) Content Advisory Categories: MPAA (Motion Picture Association of America) and TV Parental Guidelines Ratings. These categories are used as guidelines for blocking the programs. The default mode for the Lock category is the Unlocked state. In this state, you can surf the various categories of the Lock menu. After you have created a password, you are prompted to enter it before you can make any changes in the Lock menu.



## Enter Secret Code

A 4-digit code must be entered to view a blocked program or change rating settings.

Press MENU to display the Main Menu screen.

**1**

Press to select Lock icon.

Press to display the options in the Lock menu.

**2**

Press number keys to enter your secret code.

**Note:**  
Use a code that is easy to remember and record it in a safe place.

Press to save 4-digit code.



**3**

EXIT

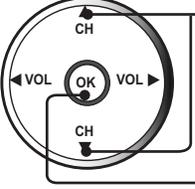
Press to exit menu.

### Notes:

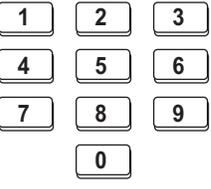
- Once ratings are set, restricted tapes or programs cannot be accessed unless the secret code is entered.
- If you forget your secret code, refer to "Reset User's Memory Functions" on page 62.

## Lock Set

Press MENU to display the Main Menu screen.

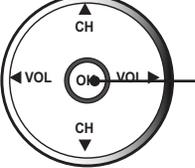
**1**  Press to select Lock icon.  
Press to display the options in the Lock menu.

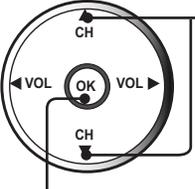


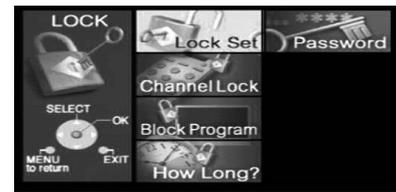
**2**  Press number keys to enter your secret code.

**+**



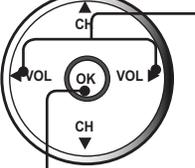
 Press to set.

**3**  Press to select the Lock Set icon.  
Press to display the Lock Set menu.



**4** **Mode:**  
To prevent video games, VCR tapes and all channels and video modes from being viewed. The possible modes are:

- Off - Turns off Lock set functions.
- All - All channels are locked regardless of the rating level.
- Game Lock - Locks out CH 3, 4 and Video inputs.
- Channel Lock - Locks out specific analog and digital channels. Password is required to view any of the locked channels.

 Press to select the desired setting.  
Press to set.



**5**  Press to exit menu.

# Lock Feature



## Channel Lock

This option lets you block out up to four (4) channels from each RF input (Antenna (A) and (B)) regardless of the program rating. Password is required to view these blocked channels.

Press MENU to display the Main Menu screen.

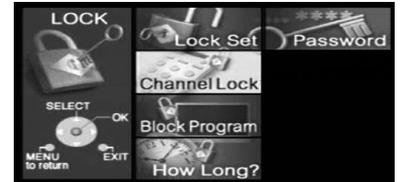
**1** Press to select Lock icon.



Press to display the options in the Lock menu.

**2** Press number keys to enter your secret code and press OK.

**3** Press to select the Channel Lock icon.



Press to display the Channel Lock menu.

**4** ■ **RF Input:**  
Select either Antenna (A) or Antenna (B).

Press to select Antenna (A) or (B).  
 Press to select Channel.

**5** ■ **Channel:**  
Select up to 4 channels to be blocked out regardless of program rating.

Press to select desired channel.  
 Press to enter your selection.  
Up to 4 channels can be blocked, regardless of ratings, from each input.



**6** Press to exit menu.

**Note:**  
To remove a channel number from the list, select that number and press OK button.

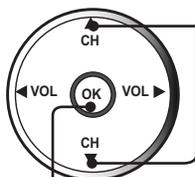
## Block Program

This feature allows you block movies and television programs based on the MPAA and U.S. TV ratings system.

### ■ MPAA:

The MPAA uses standard movie ratings to block unwanted movies from being displayed.

**1**



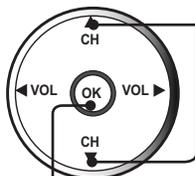
Press to select Lock icon.

Press to display the options in the Lock menu.



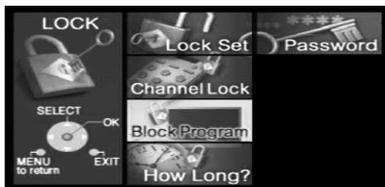
**2** Press number keys to enter your secret code and press OK.

**3**

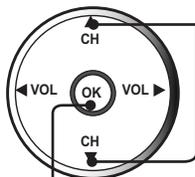


Press to select the Block Program icon.

Press to display the Block Program menu.

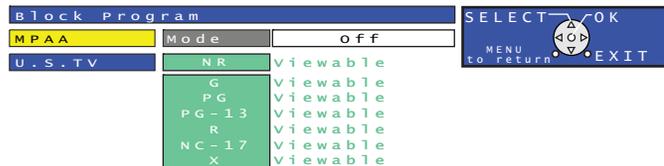


**4**

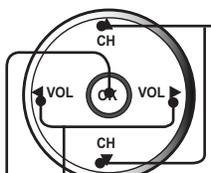


Press to select MPAA.

Press to enter the MPAA field.



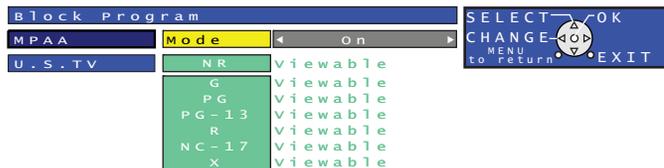
**5** ■ Mode:  
Off: Cannot view NR (not rated) programs.  
On: Can view NR programs.



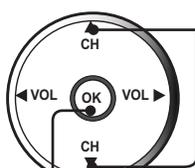
Press to select Mode.

Press to select On or Off.

Press to set.

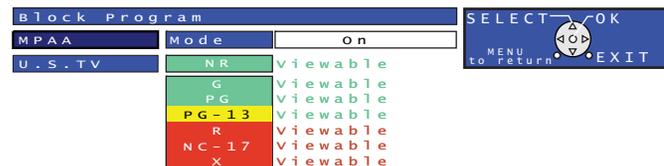


**6**



Press to select the desired rating level.  
(See page 63.)

Press to change the rating limit to "Viewable" or "Blocked".

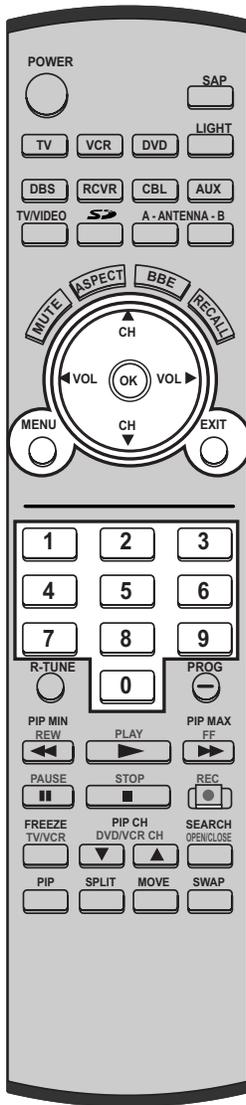


**7**



Press to exit menu.

# Lock Feature



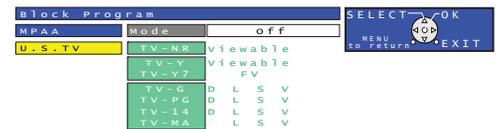
## Block Program (Continued).

### U.S. TV Rating

The TV Parental Guidelines has 7 levels of age-based ratings that can be selected. These 7 levels are split into 2 age-based groups: Youth Age-based Ratings and Guidance Age-based Ratings. Some of these age-based ratings can also have content-based ratings, denoted as D (Dialog), L (Language), S (Sex) and V (Violence). (See page 63.)

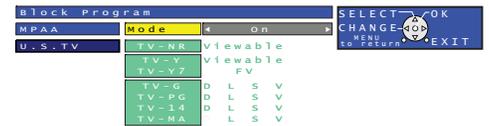
**1** Press number keys to enter your secret code and press OK. In Lock menu, select Block Program and press OK to display the Block Program menu.

**2** Press to select U.S.TV.  
Press to enter the U.S.TV field.

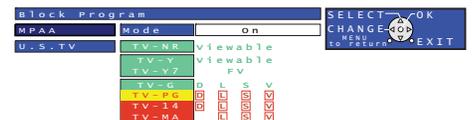


**3** **Mode:**  
Off: Cannot view NR programs.  
On: Can view NR programs.

Press to select Mode.  
Press to select On or Off.  
Press to set.



**4** Press to select the desired rating level. (See page 63.)  
Press to change the rating limit to "Viewable" or "Blocked".



### Notes:

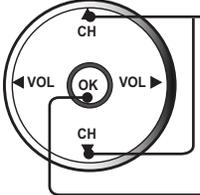
- The ratings, such as TV-PG, TV-14 and TV-MA have content level ratings also. These content levels can be individually blocked. Select the rating level, press VOL ► to select the desired content level and press the OK button to block.
- The TV-NR rating is independent of other ratings.
- If TV-Y is blocked, both TV-Y and TV-Y7 will be blocked. However, if you select TV-Y7, the FV setting can be blocked or unblocked.

**5** Press to exit menu.

## How long?

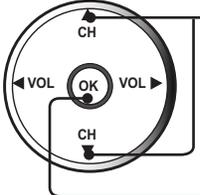
This feature allows you lock the television input sources for a specific period of time. Available selections are: 12 hours, 24 hours, 48 hours or Always.

Press MENU to display the Main Menu screen.

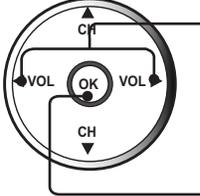
**1**  Press to select Lock icon.  
Press to display the options in the Lock menu.



**2** Press number keys to enter your secret code and press OK.

**3**  Press to select the How Long? icon.  
Press to display the How Long? menu.



**4**  Press to select Time.  
Press to set.



**5**  Press to exit menu.

## Password

You can change your 4 digit password.  
Press number keys to enter your secret code and press OK.  
In Lock menu, select Password and press OK to display the Change Password menu.  
Press number keys to enter a new 4 digit password.



# Lock Feature

## Blocking Messages

Various Blocking messages are displayed on-screen depending upon the type of blocking you have selected in the Lock menu.

### When Game Lock or Channel Lock is selected:

Following message is displayed if you attempt to tune to channels or select video.

**Channel Locked.**  
Press OK to enter password for temporary unlock.

### When the rating level is exceeded

Following message is displayed if the program you are viewing exceeds the set rating level. To view a blocked program, you must enter your password.

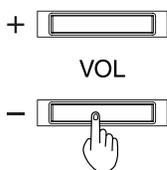
**Rating Limit Exceeded.**  
Press OK to enter password for temporary unlock.

### Note:

Entering the password will override the block condition. However, the ratings selection will be retained.

## Reset User's Memory Functions

Use when moving unit to a new location, or if the secret password is forgotten.



### Procedure

Press the VOL- button on the unit and OK button on the Remote control at same time for more than 5 seconds. When reset is finished, power shuts off automatically.

**And**



## US MOVIES RATINGS:

<b>NR</b>	Not Rated by MPAA.
<b>G</b>	GENERAL AUDIENCES. All ages admitted.
<b>PG</b>	PARENTAL GUIDANCE SUGGESTED. Some material may not be suitable for children.
<b>PG-13</b>	PARENTS STRONGLY CAUTIONED. Some material may be inappropriate for children under 13.
<b>R</b>	RESTRICTED. Under 17 requires accompanying parent or adult guardian.
<b>NC-17</b>	NO ONE 17 AND UNDER ADMITTED.
<b>X</b>	ADULTS ONLY.

## US TV PROGRAMS RATINGS: Chart 1

Age-based Group	Age-based Ratings	Possible Content Selections
NR (Not Rated)	TV-NR	<ul style="list-style-type: none"> <li>Viewable</li> <li>Blocked</li> </ul>
Youth	TV - Y	<ul style="list-style-type: none"> <li>Viewable</li> <li>Blocked</li> </ul>
	TV - Y7	<ul style="list-style-type: none"> <li>FV (Fantasy Violence)</li> <li>Viewable</li> <li>Blocked</li> </ul>
Guidance	TV - G	<ul style="list-style-type: none"> <li>Viewable</li> <li>Blocked</li> </ul>
	TV - PG	<ul style="list-style-type: none"> <li>D, L, S, V (all selected)</li> <li>Any combination of D, L, S, V</li> </ul>
	TV - 14	<ul style="list-style-type: none"> <li>D, L, S, V (all selected)</li> <li>Any combination of D, L, S, V</li> </ul>
	TV - MA	<ul style="list-style-type: none"> <li>L, S, V (all selected)</li> <li>Any combination of L, S, V</li> </ul>

## US TV PROGRAMS RATINGS: Chart 2

<b>TV-NR</b>	Not Rated.
<b>TV-Y</b>	All Children. The themes and elements in this program are specifically designed for a very young audience including children from ages 2-6.
<b>TV-Y7</b>	Directed to older children. Themes and elements in this program may include mild physical or comedic violence or may frighten children under the age of 7.
<b>TV-G</b>	General Audience. It contains little or no violence, no strong language, and little or not sexual dialogue or situations.
<b>TV-PG</b>	Parental guidance suggested. The program may contain infrequent coarse language, limited violence, some suggestive sexual dialogue and situations.
<b>TV-14</b>	Parents strongly cautioned. This program may contain sophisticated themes, sexual content, strong and explicit sexual content.
<b>TV-MA</b>	Mature Audiences only. This program may contain mature themes, profane language, graphic violence and explicit sexual content.
<b>FV</b>	Fantasy/Cartoon Violence.
<b>V</b>	Violence
<b>S</b>	Sex
<b>L</b>	Offensive Language
<b>D</b>	Dialogue with sexual content.

# Closed Caption Feature

The Device Display includes a built-in decoder capable of visually displaying the audio portion of broadcasts which feature Closed Captioning (CC). You can set your preferences for both digital and analog Closed Captioning.



## Notes:

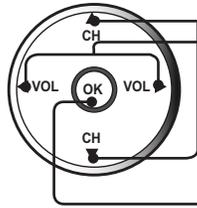
- The closed caption or text signal may be broadcast over C1, C2, or both. Also, text contents can vary so you may wish to try different settings.
- Closed Caption is not displayed if the input signal is COMPONENT VIDEO INPUT of 480p or more, or from RGB IN.

## CC Mode

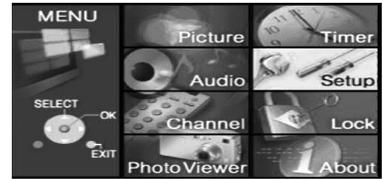
Activates the On-Screen Closed Caption feature. When activated this feature will remain on until OFF is selected in this menu.

Press MENU to display the Main Menu screen.

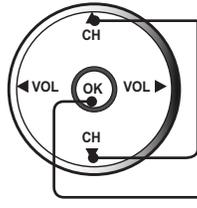
**1** Press to select Setup icon.



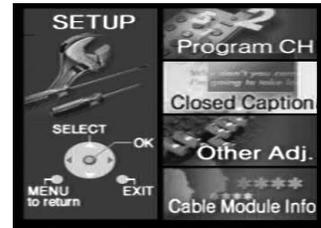
Press to display the options in the Setup menu.



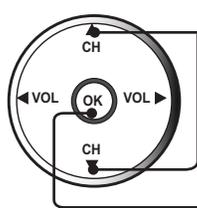
**2** Press to select Closed Caption icon.



Press to display the Closed Caption menu.



**3** Press to select CC Mode.

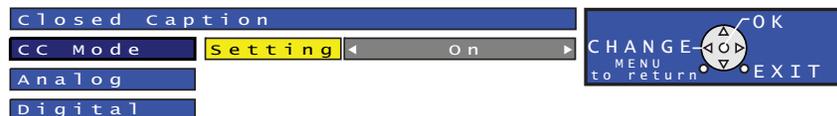


Press to enter the CC Mode field.

**4** Press to select desired setting.

- Off - No display.
- On - Display when available.
- On Mute - Display when audio is muted.

Press to set.



**5** Press to exit menu.

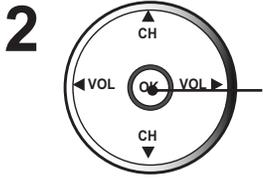


# Closed Caption Feature

## Analog

This option lets you choose the closed caption service you desire.

**1** In Closed Caption menu, select Analog.



Press to select the desired setting: CC1, CC2, CC3, CC4, T1, T2, T3 or T4.



CC1 - For video related information that can be displayed (up to 4 lines of script on the screen where it does not obstruct relevant parts of the picture). Script can be in any language.

CC2 to CC4 - Other modes used for video related information.

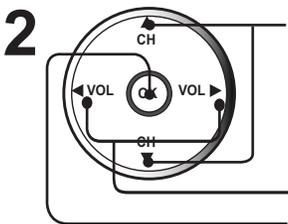
T1 - Blanks out a large portion of the picture on the television screen, and displays program guide or any other information currently being transmitted.

T2, T3, and T4 - Other modes that display information and blank out a large portion of the picture.

## Digital

The Digital Closed Captioning menu allows you to select the way in which you view digital captioning. You can choose the type of closed captioning service, font type, font size, and font style. The colors sub-menu lets you set the color of the font (foreground), text box (background) on which the text is displayed, the font opacity (Fore Opacity), text box opacity (Back Opacity), and the outline of the dropshadow (if selected under style).

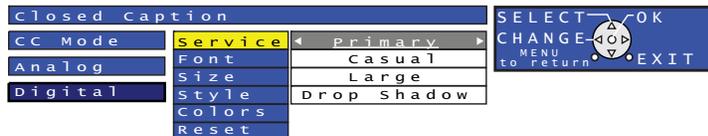
**1** In Closed Caption menu, select Digital.



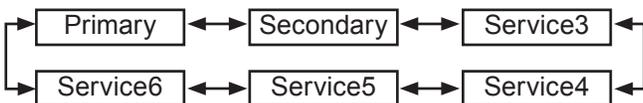
Press to select each item.

Press to select desired setting.

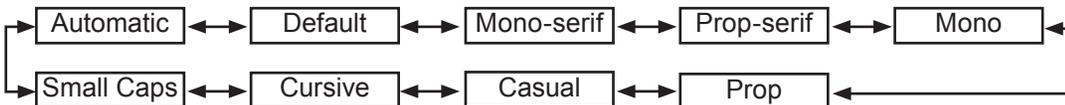
Press to set.



### Service:



### Font:



Continued on the next page.

# Closed Caption Feature

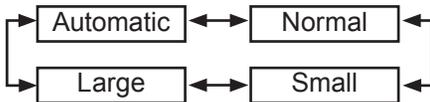


**Note:**

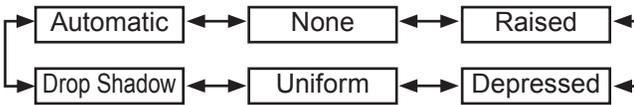
When digital caption is used on digital channel, the VIDEO OUT will also output the CC information. This means, if you tape the program, the CC information will also be recorded on tape. To avoid this, either turn off digital CC or turn on analog CC.

Continued from page 65.

**Size:**

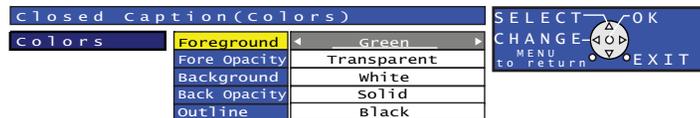
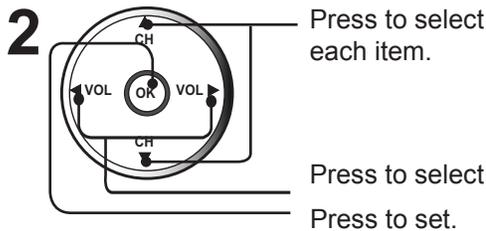


**Style:**

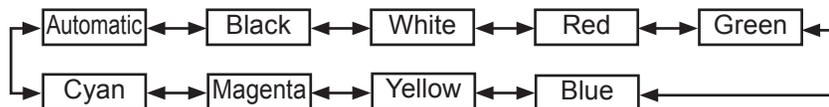


**Colors:**

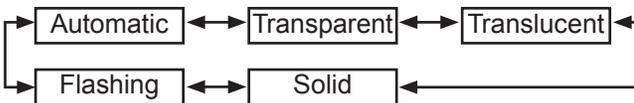
**1** In digital closed captioning sub-menu, select Colors and press OK to display the colors sub-menu.



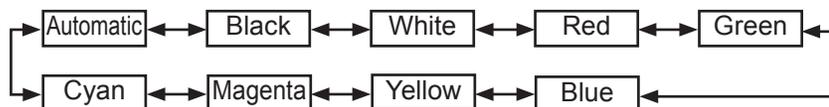
**Foreground**



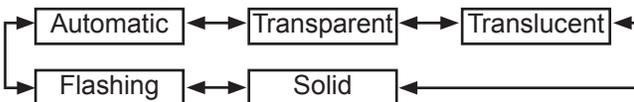
**Fore Opacity**



**Background**



**Back Opacity**



**Outline**



# Channel Caption Feature

To enter preset and manual labels for desired stations. Also, to enter input labels for video inputs.



## ■ Preset Labels:

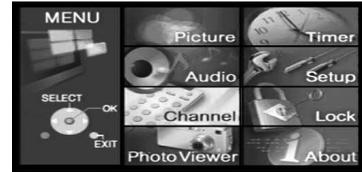
To enter channel numbers for popular TV stations.

Press MENU to display the Main Menu screen.

**1**

Press to select Channel icon.

Press to display the options in the Channel menu.



**2**

Press to select Captions icon.

Press to display the Captions menu.



**3**

Press to select Preset Labels.

Press to enter Preset Labels listed.

Captions			SELECT	OK
Preset Labels	RF Input	Antenna (A)	MENU to return	EXIT
Manual Labels	ABC			
Input Labels	CBS			
	FOX	A: 2-3		
	NBC			
	PBS			
	CNN			
	ESPN			
	HBO			

**4** In the RF Input field, select either Antenna (A) or Antenna (B).

### Note:

Only input with signal will be selectable.

**5**

Press to set.

Press to select desired preset caption.

**6** Press OK to enter the selection. Then use the remote number keys to select desired channel (refer to your local TV guide).

### Note:

To delete a channel number, while selected press ◀ VOL repeatedly until all numbers are removed.

**7**

Press to exit menu.

# Channel Caption Feature (Continued)



## Manual Labels:

To enter numbers and captions manually.

**1** In Channel menu, select Caption and press OK to display the Caption menu.

**2** Press to select Manual Labels.

Press to enter Manual Labels listed.

Captions		SELECT	OK
Preset Labels	RF Input	Antenna (A)	
Manual Labels	Channel	A: 2-3	
Input Labels	Caption	FOX	

**3** Press to select RF Input.

Press to select Antenna (A) or Antenna (B).

Press to set.

### Note:

Only input with signal will be selectable.

**4** Press to select Channel.

Press to select available channel number.

**5** Press to select Caption.

Press to select first character position.

Press to set.

**6** Press to select character (refer to your local TV guide for labeling channels).

Continued on the next page.

# Channel Caption Feature (Continued)

**7** Repeat 4, 5, and 6 until all captions are added. Up to (7) characters per channel.

**8** Use the remote number keys to select desired channel.

**9**  Press to exit menu.

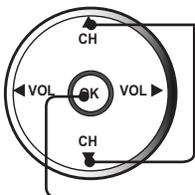
**Note:**

To delete the Channel Caption, highlight the first character and press CH ▲ or CH ▼ until no character is displayed. Move to the next character and repeat the process. After all characters have been deleted, press OK to enter the choice.

**■ Input Labels:**

To label video input connections for onscreen display.

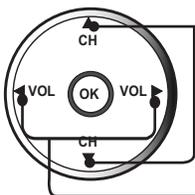
**1** In Channel menu, select Caption and press OK to display the Caption menu.

**2**  Press to select Input Labels.

Captions		
Preset Labels	Component 1	PVR
Manual Labels	Component 2	DVD
Input Labels	Component 3	SKIP
	HDMI	
	Video 1	VCR
	Video 2	GAME
	Video 3	SKIP
	PC/RGB1	
	PC/RGB2	

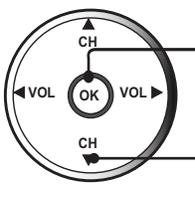


Press to enter Input Labels listed.

**3**  Press to select inputs.

Press to select preset Input Labels for inputs.

Input Labels that are set to SKIP cannot be selected when changing input modes with the TV/VIDEO button, etc.

**4**  Press to set.

Press to select another input, then repeat procedure for adding more labels to inputs.

**Notes:**

- To delete Input labels, select desired input, then press the ◀ VOL or VOL ▶ buttons until no label is displayed. Press the OK button to enter your selection.

**5**  Press to exit menu.

# Color Temp Feature

To increase or decrease Warm (red) and Cool (blue) colors to suit personal preferences.



Press MENU to display the Main Menu screen.

**1**

Press to select Picture icon.

Press to display Picture menu.

**2**

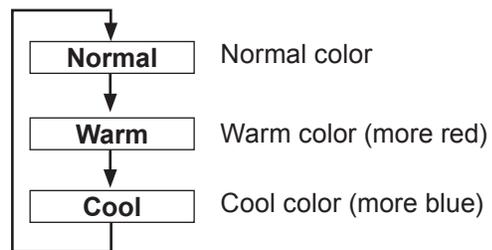
Press to select Other Adjust.

Press to display the Other Adjust sub-menu.

**3**

Press to select Color Temp.

Press to set .



**4**

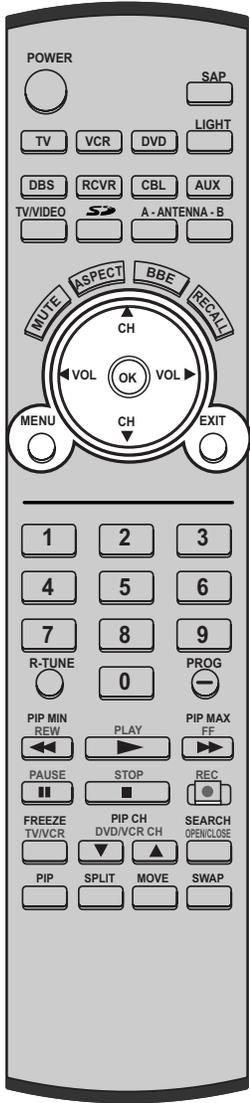
Press to exit menu.

**Note:**

During RGB input, Color Temp changes to Normal.

# Video NR (Noise Reduction) Feature

In the event of weak signal conditions, the Video NR circuitry reduces noise in the luminance channel. It is important to note that Video NR should remain Off for maximum picture detail when receiving a strong signal or viewing high-quality video.



**Note:**  
When an RGB signal is input, Video NR is set to Off only.

Press MENU to display the Main Menu screen.

**1**

Press to select Picture icon.

Press to display Picture menu.

**2**

Press to select Other Adjust.

Press to display the Other Adjust sub-menu.

**3**

Press to select Video NR.

Press to set "On" or "Off".

On: When signal is noisy  
Off: When signal is high-quality

**4**

Press to exit menu.

# 3D Y/C Feature

Accurate separation of the picture's brightness and color signals allows you to enjoy a beautiful picture.

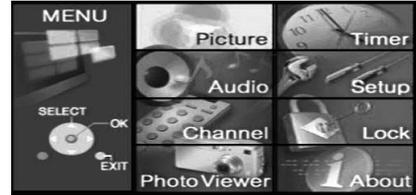


Press MENU to display the Main Menu screen.

**1**

Press to select Picture icon.

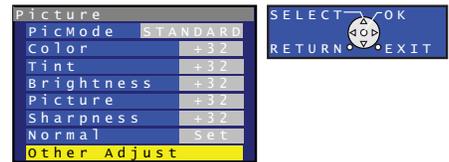
Press to display Picture menu.



**2**

Press to select Other Adjust.

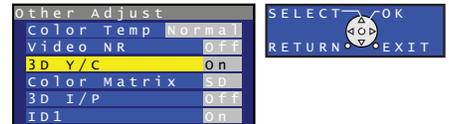
Press to display the Other Adjust sub-menu.



**3**

Press to select 3D Y/C.

Press to set "On" or "Off".



On: Usually set to On.  
 Off: Set to Off if picture appears unnatural.

**4**

Press to exit menu.

# Setting when 480p signals are input through COMPONENT VIDEO INPUT

Adjust 480p signals to achieve a natural color from digital equipment connected to COMPONENT VIDEO INPUT (Y, PB, PR input terminals).

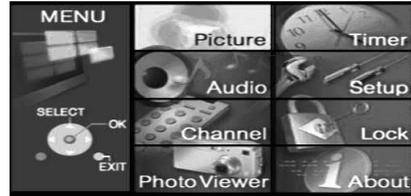


Press MENU to display the Main Menu screen.

**1**

Press to select Picture icon.

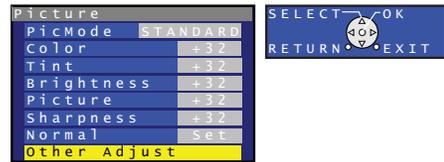
Press to display Picture menu.



**2**

Press to select Other Adjust.

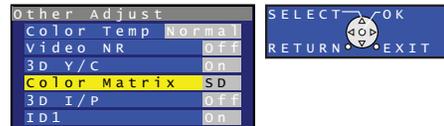
Press to display the Other Adjust sub-menu.



**3**

Press to select Color Matrix.

Press to set "SD" or "HD".



- SD: When the input signal is a normal TV system (NTSC).
- HD: When the input signal is a High-Definition system (HD).

**4**

Press to exit menu.

**Note:**

Color Matrix does not need to be set when using Hi-Definition equipment or 480i output equipment.

# 3D I/P Feature

Film media (taken at 24 frames per second) is faithfully reproduced on the Device Display.

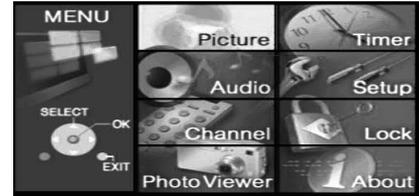


Press MENU to display the Main Menu screen.

**1**

Press to select Picture icon.

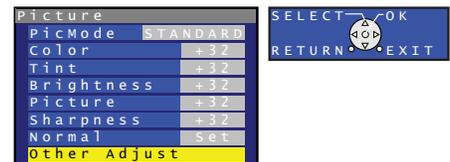
Press to display Picture menu.



**2**

Press to select Other Adjust.

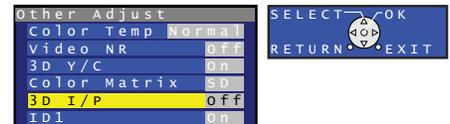
Press to display the Other Adjust sub-menu.



**3**

Press to select 3D I/P.

Press to set "On" or "Off".



On: Recordings created at 24 frames per second are shown in higher quality.

Off: Set to Off if picture appears unnatural.

**4**

Press to exit menu.

# Automatically changing screen size

If the received signal contains screen size specifications in RF, VIDEO INPUT (1-3) or COMPONENT VIDEO INPUT (1-3), the screen size is automatically changed.

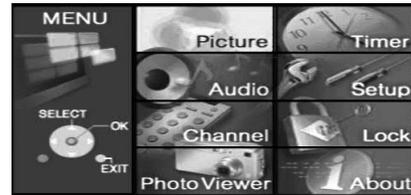


Press MENU to display the Main Menu screen.

**1**

Press to select Picture icon.

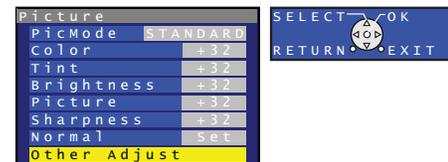
Press to display Picture menu.



**2**

Press to select Other Adjust.

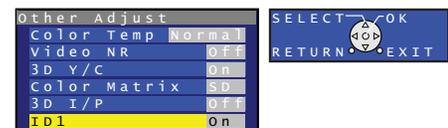
Press to display the Other Adjust sub-menu.



**3**

Press to select ID1.

Press to set "On" or "Off".



- On: When screen size specification signals are detected, screen size is automatically changed.
- Off: The screen size is not automatically changed. (Turn Off if this function does not operate properly.)

**4**

Press to exit menu.

## Notes:

- When ID1 is detected and screen size is changed, Aspect mode will be displayed.
- When displaying split screen, ID1 is not detected.

# RGB IN Input Feature

Set the signal to be input to the Device Display's RGB IN terminal. Most analog RGB IN signals are selected automatically. When RGB input signal is VGA 60Hz from PC or 480p from other equipment, you must manually switch to the desired input.



Press MENU to display the Main Menu screen.

**1**

Press to select Picture icon.

Press to display Picture menu.

**2**

Press to select Other Adjust.

Press to display the Other Adjust sub-menu.

**3**

Press to select desired RGB input.

Press to set "VGA" or "480P".

**4**

Press to exit menu.

VGA : When RGB input signal is VGA 60Hz from PC.  
 480P : When RGB input signal is 480P from other equipment.

# Sleep Timer Feature

The Device Display can be set to shut itself off at a preselected time.

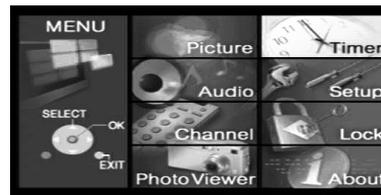


Press MENU to display the Main Menu screen.

**1**

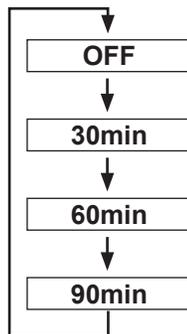
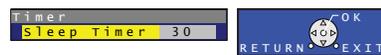
Press to select Timer icon.

Press to display Timer menu.



**2**

Press repeatedly to select the desired time.



**3**

EXIT

Press to exit menu.

**Notes:**

- Pressing the RECALL button with sleep timer set displays remaining time.
- The on-screen display will flash 3, 2 and 1 to indicate the last three (3) remaining minutes prior to turn off.

# Information

You can display the input signal type. Display items differ depending on the input signal.

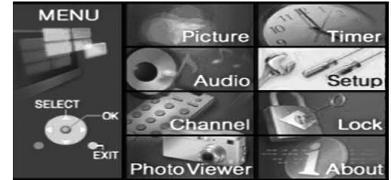


Press MENU to display the Main Menu screen.

**1**

Press to select Setup icon.

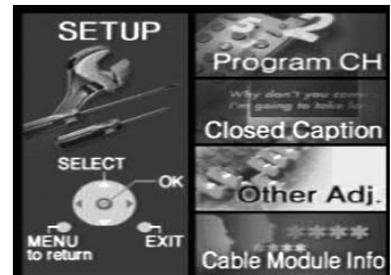
Press to display the options in the Setup menu.



**2**

Press to select the Other Adj. icon.

Press to display the Other Adjustment menu.



**3**

Press to select Information.

Press to display Information screen.



**4**

Press to exit menu.

# Demo Mode Feature

Function demonstrations of this unit are displayed in Demo Mode.

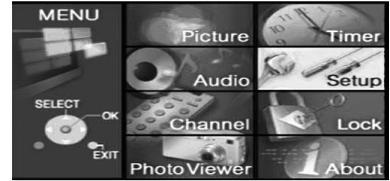


Press MENU to display the Main Menu screen.

**1**

Press to select Setup icon.

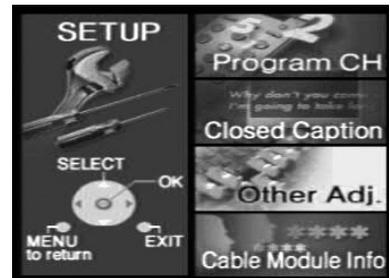
Press to display the options in the Setup menu.



**2**

Press to select the Other Adj. icon.

Press to display the Other Adjustment menu.



**3**

Press to select Demo Mode.

Press to set.



On: Demo Mode is started.  
Off: Demo Mode is canceled.

**4**

Press to exit menu.

**Note:**

Demo Mode setting remains even when power is turned off. To turn off Demo Mode, select Demo Mode : Off in the menu screen.

# Signal Meter Feature

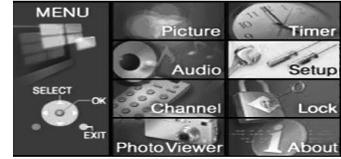
Displays the signal strength of the ATSC digital channel in either Antenna (A) or Antenna (B).



Press MENU to display the Main Menu screen.

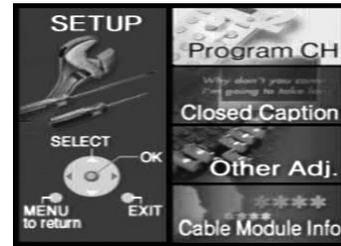
**1** Press to select Setup icon.

Press to display the options in the Setup menu.



**2** Press to select Program CH icon.

Press to display the Program Channel menu.



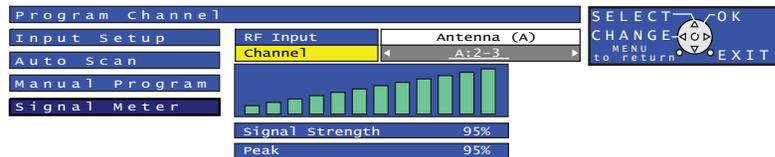
**3** Press to select Signal Meter.

Press to enter sub-menu.

**4** In the RF Input field, select either Antenna (A) or Antenna (B).

**5** Press to select channel number.

Press to display the Signal Strength.



**Note:**

The color of the signal bar usually indicates the strength of the received signal.

- Green - Adequate signal for a good reception.
- Yellow - Poor signal strength.
- Red - Very poor signal strength. (If a strong signal is received, but has enough errors in the digital information, the signal bars will be in red.)

**6** Press to exit menu.

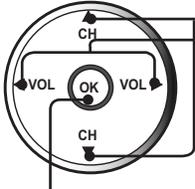
**Note:**  
Signal meter feature is not available for analog channels.

# Cable Module Info

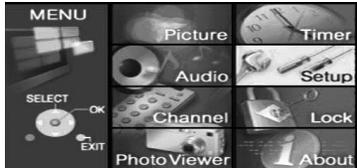
This menu is used to provide information when a DCM (Digital Cable Module) is inserted into the DCM INTERFACE (POD INTERFACE) slot in the back of the projection television. If no DCM is present and you try to access the Cable Module Info, the message "Cable Module not present" will be displayed on screen. To receive the features offered by your cable company, you may have to subscribe to those services.

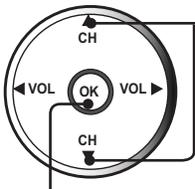


Press MENU to display the Main Menu screen.

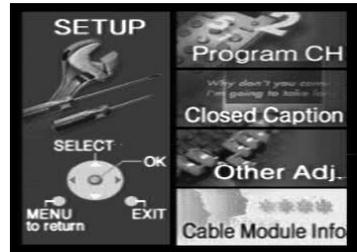
- 

Press to select Setup icon.



Press to display the options in the Setup menu.
- 

Press to select Cable Module Info.



Press to display the Cable Module Info.
- 

Press to exit menu.

**Note:**

Please contact your cable company regarding availability of the DCM (Digital Cable Module). The cable module is needed to receive premium digital services (where available) through the cable input. You may also be able to order call-ahead pay per view events.

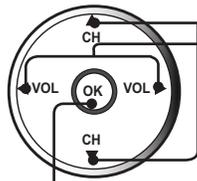
# About Screen

The About screen displays assorted information about the Device Display. Please have this information when calling Customer Care Center.



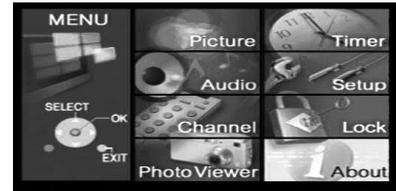
Press MENU to display the Main Menu screen.

1



Press to select About icon.

Press to display About menu.



2

EXIT



Press to exit menu.

# Photo Viewer (SD Card/PC Card)

Still image data (JPEG) made with a digital camera, digital video camera, or PC can be played back using an SD Card/PC Card.

## ⚠ WARNING

As with any small object, SD cards can be swallowed by young children. Do not allow children to handle the SD card.

### Displayable Image Formats:

Baseline JPEG

(80 x 60 ~ 5 120 x 3 840 pixels)

### Notes:

- Some parts of an image may not be displayed or the image may be displayed on a smaller scale depending on the size of the image.
- Only JPEG images can be displayed on this Device Display.

### Card Data Protection

- Do not remove the card while it is being accessed.
- Do not touch the terminals on the back of the SD Card/PC Card.
- Electrical interference, electrostatic discharges and malfunctions of the unit or card may all result in damage to the card or data loss. It is recommended that any important data also be backed up on a PC.
- Stored data should be periodically backed up as a protection against data corruption, data loss or device malfunction. Please note that our company shall not accept any liability for damage or loss of stored data.

### Caution

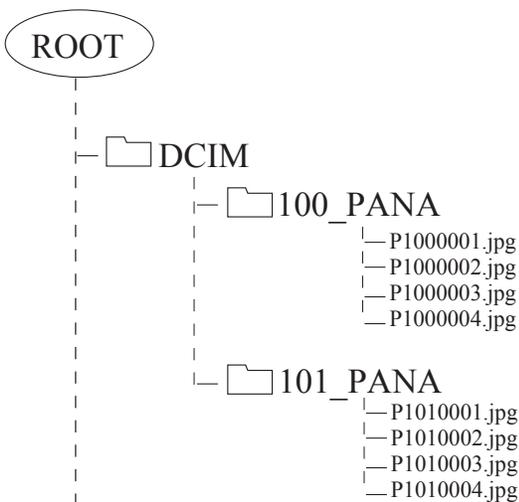
- Always insert card in the correct direction. Failure to do so may result in damage to the card and this unit.
- The SD Card and PC Card are precision devices. Do not subject them to excessive pressure or strong impacts.

### Folders and Files

Digital cameras that are compliant with DCF specifications use folders with a specific structure. The following diagram shows an example of the folder structure.

#### Example:

If the Card file hierarchy is displayed on the PC as shown in diagram at below.



#### DCIM Folder

The digital camera creates this folder automatically.

#### 100\_PANA Folder

Folder names consist of a 3-digit folder number which is followed by five arbitrary characters. Digital camera images are stored within these folders.

JPEG files in the 100\_PANA folder are displayed when a Card, which is structured as shown left, is inserted. To display another folder, see page 85 Index Area Operation.

#### Note:

The folder and file name may vary according to the digital camera being used.

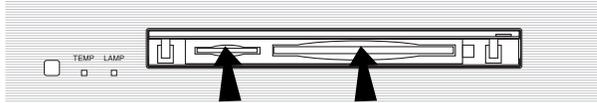
#### P1000001.JPG: DCF File

File names consist of four arbitrary characters followed by a 4-digit file number. DCF files are image files (normally JPEG files) that have been taken by a digital camera.

# Photo Viewer (SD Card/PC Card)

## Insert the Card.

Front Card Slot (P. 12)

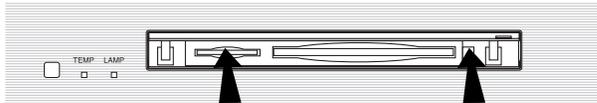


SD Card



PC Card

## Remove the Card.



Press in lightly on SD Card, then release.

Press PC Card EJECT TAB twice.

## Compatible Card

SD Card slot	PC Card slot
SD Card	Compact Flash*
Multi Media Card	Smart Media*
	Memory Stick*
	xD Picture Card*

- The media\* listed in the right column above can be read via the PC Card in the PC Card adaptor.
- Hard disk PC Cards, Flash ATA Cards, and other recorded media cannot be used.
- Place the selected media onto the PC Card and then insert into the PC Card Slot.
- When both an SD Card and PC Card are inserted, the SD Card contents has priority and will be displayed.
- If the Card is unusable, "CARD FORMAT NOT SUPPORTED" is displayed on-screen. Remove the Card only when ACCESS is not displayed.
- If an incompatible JPEG file is displayed (full size file preview), "DATA FORMAT NOT SUPPORTED" is displayed.

## Notes:

- Insert/remove Card while "Card Menu Screen" or "No Card" is displayed.
- Be sure ACCESS is not displayed before Card insertion/removal.
- Fully insert the Card (ACCESS is displayed). Wait until ACCESS goes out before removing.
- Before reinserting a Card after removing it, wait until "NO CARD" is displayed. If there are Cards in both Card Slots, wait until the Card Menu Screen of the other Slot is displayed and ACCESS is no longer displayed before reinserting a Card.

## Card Menu Screen

The screen below is displayed automatically when a card is inserted. If "NO CARD" appears, confirm that a card is correctly inserted.

**Parent Folder**  
Returns currently displayed folder to the parent (previous) folder.

**Subfolder**  
The subfolder of the currently displayed folder is opened.

**Display Page No.**  
When the displayed files/folders fill more than one page, the total number of pages is displayed.

The screenshot shows a menu with options: -MENU-SINGLE SLIDE, SD/PC, SELECT, SET, ACCESS, and PAGE: 1/6. Below the menu is a grid of thumbnails, with one folder named '200\_PANA' highlighted in yellow. A 'JPEG' label is visible in the bottom right of the grid.

**Menu Area**  
Select display method (SINGLE PLAY or SLIDE SHOW). Confirm the displayed card type (SD Card or PC Card).

**ACCESS Indication**  
ACCESS is displayed while data is read.

**Folder Name Area**  
The name of the selected subfolder (framed in yellow) is displayed.

**Index Area**  
Folders and files are displayed here.

**Notes:**

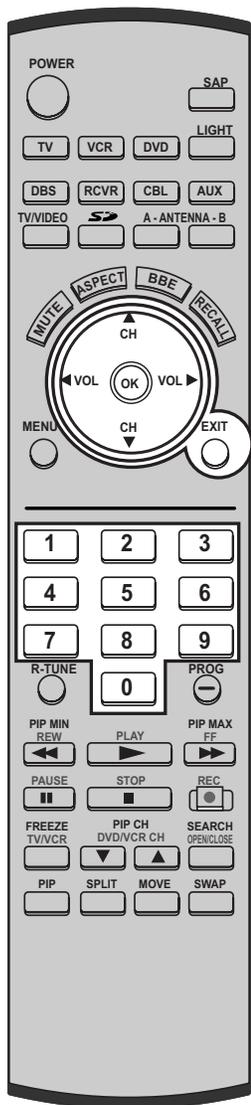
- Up to 1 000 JPEG files can be displayed. (This number may be lower if subfolders, or files other than JPEG are included in the folder.)
- Depending on JPEG file type, "JPEG" will be displayed instead of thumbnail image.

**Note:**  
Only JPEG files can be displayed.

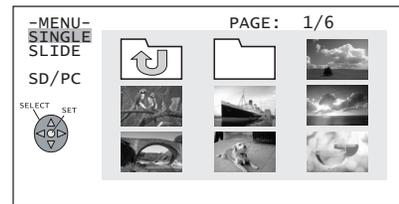
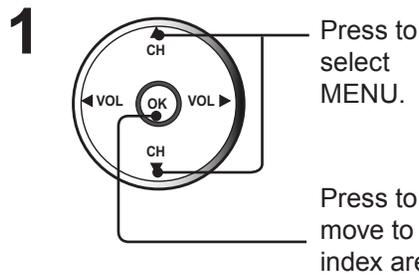
84

For assistance, please call : 1-888-VIEW PTV(843-9788) or, contact us via the web at: <http://www.panasonic.com/contactinfo>

# Photo Viewer (SD Card/PC Card)



## MENU Area Operation



### **SINGLE**

A single image selected from the index area fills the screen. You can also rotate the image and view image information. (PP. 86-87)

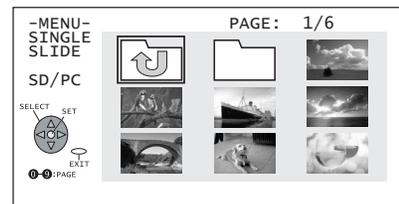
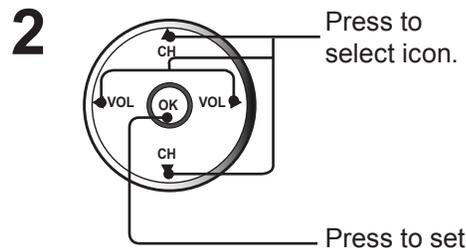
### **SLIDE**

Images are displayed one after another as a slide show. Also, the SPEED and Transition features (p. 87) can be used.

### **SD/PC**

When both an SD Card and PC Card are inserted, the ◀▶ buttons can be used to select a card in the index area.

## Index Area Operation



To select a page directly, enter the page number with the Number Keys, then press OK.

### **Select an Image file.**

Display full size file preview.

### **Select a Subfolder (📁).**

Display files/folders contained in the folder.

### **Select a Parent folder (🏠).**

Make changes to the parent (previous) directory display.

### **Note:**

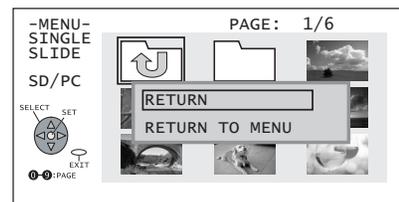
File and folder names will not be displayed correctly if...

- More than 8 characters are used.
- Spaces and special symbols are used. Use care when changing file and/or folder names.

## RETURN Operation

**EXIT** Press EXIT to display RETURN MENU.  
Press ▲▼ to select an item, and press OK.

**RETURN:** Returns to the parent (previous) folder.  
**RETURN TO MENU:** Returns to Menu Area screen.

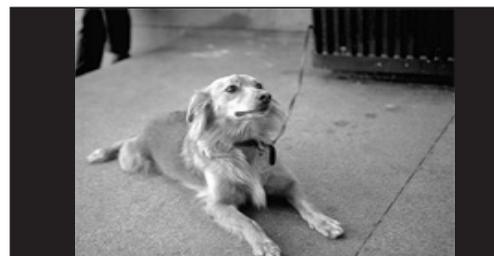
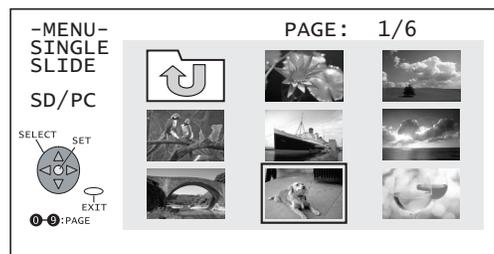


# Photo Viewer (SD Card/PC Card)



## Single Play Mode

- Press **▲▼** to select "SINGLE," and press **OK**.  
 Press **▲▼◀▶** to move cursor to desired file in INDEX AREA.  
 (Press **▲▼◀▶** to display next/previous page of 9 thumbnail files),  
 Press **OK** to display file in full screen size.

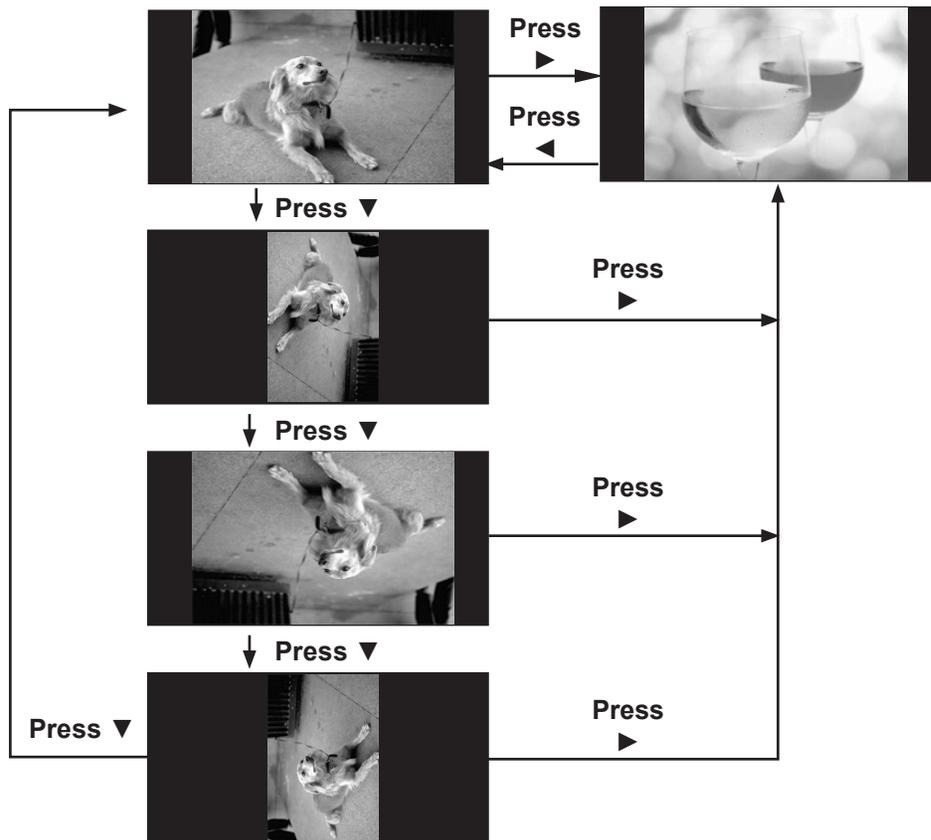


SINGLE VIEW SCREEN

- Press **▶** : The next image is displayed.
- Press **◀** : The previous image is displayed.
- Press **▼** : Each press rotates image 90°.

### Note:

When changing folders or images, the rotation setting is returned to the initial position.



Continued in left column of next page.

Continued from page 86.

## Information Screen Display

Press OK: INFORMATION SCREEN is displayed.  
(Rotation angle is maintained.)

Information Screen



Pressing EXIT returns to SINGLE VIEW SCREEN.

### Note:

If a file name exceeds 8 characters, a file name different from the original is displayed.

## Picture Adjustment

When OK is pressed while the Information Screen is displayed, the Picture Adjust menu (p. 50) is displayed. (Rotation angle is maintained.)

Picture Adjust menu

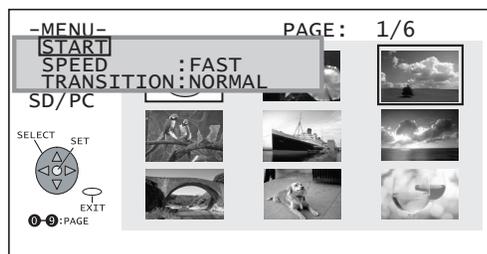


Pressing EXIT returns to SINGLE VIEW SCREEN.

**2** Press EXIT with SINGLE VIEW screen displayed to return to the Index Area menu.

## Slide Show Mode

**1** Press **▲▼** to select "SLIDE," and **press OK**.  
Press **▲▼◀▶** to move cursor to desired file in Index Area.  
(Press **▲▼◀▶** to display next/previous page of 9 thumbnail files).  
**Press OK** to display SLIDE MENU.  
**Press ▲▼** to select an item, and **press OK** repeatedly to set.



[START]  
Starts slide show.

[SPEED]  
FAST:  
Image transition every 2 seconds.  
MEDIUM:  
Image transition every 5 seconds.  
SLOW:  
Image transition every 10 seconds.

### Note:

The display intervals of 2, 5, and 10 seconds do not include file data reading time. The display interval becomes longer depending on the JPEG size.

[Transition]  
NORMAL:  
Image transition one by one.  
WIPE:  
Image transition from top to bottom.  
BLIND:  
Image transition in a series of band-like shapes that resemble window blinds.

**2** START SLIDE SHOW.



Press OK to stop or resume slide show.

**3** Press EXIT to exit this mode.

# Replacing the lamp unit

The lamp unit is sold separately. To purchase a replacement, call the Panasonic accessory department, toll free at: 1-800-332-5368.

Lamp unit Part No. : TY-LA1000

## Lamp unit replacement period

The lamp has a maximum life of about 10 000 hours.

- When the stipulated time is reached, “THE LAMP NEEDS TO BE REPLACED, ...” will be displayed for about 5 minutes.
- The LAMP indicator lights red.

THE LAMP NEEDS TO BE REPLACED, AND THE LAMP HOUR METER NEEDS TO BE RESET.



Due to the characteristics and use conditions of individual lamps, the lamp may cease to light before the stated lamp life.

Influences of frequent lighting, continuous light use for over 24 hours, the number of times lit, the length of time between lightings, etc. may shorten lamp life.

(Because of this, we recommend having a replacement lamp on hand.)

## WARNING

Failure to follow these warnings when replacing the lamp unit could result in personal injury:

- 1) The high-pressure lamp could explode if not properly handled and lamp fragments could cause injury.
- 2) Because the temperature of the lamp unit is elevated immediately after its use, touching it may cause burns. Please allow the lamp to cool before handling or replacing the lamp unit.
- 3) Handle the old lamp unit carefully. It can explode if not handled with care.
- 4) Wear gloves and safety eyeglasses when replacing the lamp unit.
- 5) If replacement of the lamp unit becomes necessary during the operation of the unit, follow the procedure below to turn off the power and wait until the lamp unit cools completely.
  - a. Press the POWER button on the Remote Control unit to turn off the power.
  - b. Wait for about 1 minute until the cooling fan stops.
    - The lamp cooling fan will continue to operate for about 1 minute after turning off the power. Do not unplug the power cord from the outlet until the fan has stopped. Avoid interrupting the power line by using circuit breakers or switchable power strips.
  - c. After the cooling fan has stopped, Unplug the power cord from the outlet.

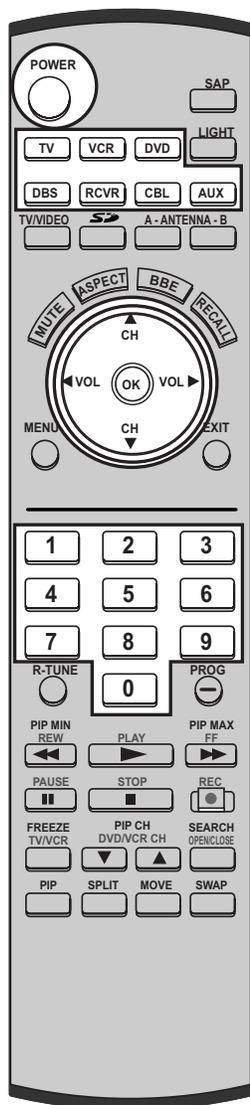
- Please wait more than one hour for lamp replacement.  
**[ If you need to replace the lamp more urgently ]**
- The Device Display has a forced cooling feature. After the POWER button is turned OFF, and sometime during about the first minute of the normal cooling fan operation, press the VOL+ button on the Device Display and the ▲ button on the Remote Control at same time for more than 5 seconds. The cooling fan operates for about 10 minutes.

Refer to the instructions enclosed with the lamp unit (Part No.: TY-LA1000) when replacing the lamp.

# Remote Control Quick Reference Guide (Operating peripheral equipment)

## Programming The Remote

The Universal Remote Control can be programmed to operate many manufacturers' components, using the component function buttons for VCR, DVD, DBS, RCVR or AUX. Follow the procedures for programming your Remote Control with or without a code for the component.



Setting up the remote using the numerical keys.

(When code is known):

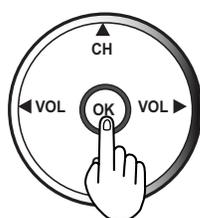
1



Confirm that the external component is plugged and operating. Turn the component off.

Press OK and POWER together, for at least 5 seconds.

+

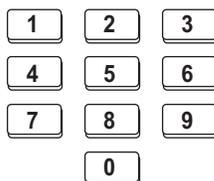


2



Press appropriate component button on the Remote Control VCR, DVD, DBS, RCVR, CBL or AUX (PVR or VCR2)

3



Enter the 3-digit component code using the Remote Control number keys (0 ~ 9 buttons). Press the Remote Control POWER to test the component. If the procedure was successful, the component will turn on.

Device	Operates	Default
TV	TV (Panasonic Only)	Panasonic Code
VCR	VCR (Preset)	Panasonic Code
DVD/CD	DVD and CD (Preset)	Panasonic Code
DBS	DBS STB & CBL STB (Preset)	Panasonic DBS Code
RCVR	Audio Receiver (Preset)	Panasonic RCVR Code
CBL	Cable (Preset)	Panasonic CABLE Code
AUX	Personal Video Recorders, Cassette and VCR2	Panasonic Personal Video Recorder Code

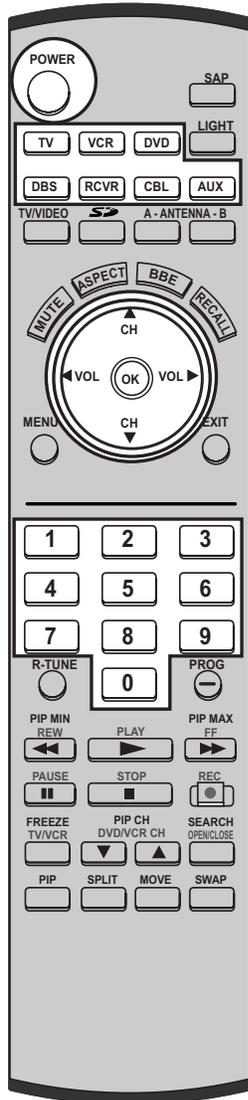
### Notes:

- Determine the manufacturer of the component and look in the table for the code.
- If the component does not operate with the Remote Control, repeat the procedure using another code. (Some brands have multiple codes). If an incorrect code is entered, or if the procedure takes longer than 30 seconds, the programming will fail.

# Remote Control Quick Reference Guide (Operating peripheral equipment)

## Programming Without A Code

This procedure searches all codes and is called the “sequence method.”



Setting to the remote using the step and set method  
(When code is not known):

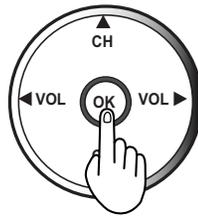
1



Confirm that the external component is plugged in and on. Turn the component off.

Press OK and POWER together, for at least 5 seconds.

+

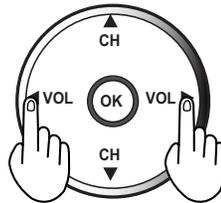


2



Press appropriate component button on the Remote Control.

3

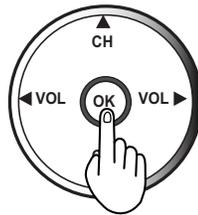


Press VOL ► to move forward to the next code. Press VOL ◀ to move backward. Press the Remote Control POWER to test the component. If the procedure was successful, the component will turn on.

**Note:**

Repeat the above steps until the component code is found. It may take many attempts before the correct code is found.

4



After the code is found, press **OK** to store the code.

### Component Codes

The Universal Remote Control is capable of operating many component brands after entering a code. Some components may not operate because the codes are not available due to limited memory. The Universal Remote Control does not control all features found in each model.

Write the code numbers from tables in this space. This will serve as a reference if you need to program your Remote Control.

**CABLE**

Cable Box

**VCR**

Video Cassette Recorder

**CD**

Compact Disc Player

**DBS**

Digital Broadcast System

**RCVR**

Receiver or Amplifier

**DVD**

Digital Versatile Player



Other Component

Other Component

Other Component

# Remote Control Quick Reference Guide (Operating peripheral equipment)

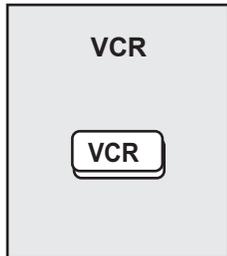
## Infrared Codes Index

The Remote Control is capable of operating many brands of peripheral equipment. Refer to page 89 and 90 for programming procedures.

### Notes:

- The Remote Control memory is limited and therefore some models may not operate. The Remote Control is not designed to control all features available in all models.
- After entering the proper infrared code, press the desired Mode Selection button on the Remote Control. Refer to page 10 to 11 and 94 to 95 for details on operating peripheral equipment using the Remote Control.

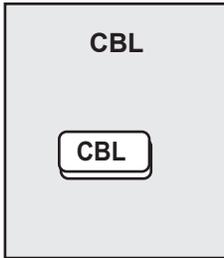
## VCR Infrared Codes Index



Codes For VCR		Codes For VCR (Contd.)	
Brand	Code	Brand	Code
Admiral	335	Optimus	306, 321, 328, 335
Aiwa	332	Orion	320, 326
Akai	314, 315, 316, 329	Panasonic	321, 322, 323, 324
Audio Dynamic	311, 339	Penney	300, 305, 310, 311, 324, 339, 345
Bell & Howell	305, 313	Pentax	300, 311, 345
Broksonic	320, 326	Philco	320, 323, 324, 326, 331, 343
Canon	323, 325	Philips	323, 324, 331
CCE	343	Pioneer	323
Citizen	306	Proscan	300, 301, 302, 323, 324, 331, 333, 345, 346
Craig	305, 306, 329	Quasar	321, 322, 323, 324
Curtis Mathes	324, 345	Radio Shack	305, 309, 324, 333, 336, 340
Daewoo	301, 324, 343	RCA	300, 301, 302, 323, 324, 331, 333, 345, 346
DBX	310, 311, 339	Realistic	305, 309, 324, 336, 340
Dimensia	345	Samsung	302, 304, 333
Emerson	303, 319, 320, 325, 326, 343	Sansui	320, 326, 339, 352
Fisher	305, 307, 308, 309, 313	Sanyo	305, 309, 313
Funai	320, 326, 334	Scott	301, 302, 304, 309, 320, 326, 338, 340, 347, 348
GE	324, 333, 345	Sears	300, 305, 306, 307, 308
Goldstar	306	Sharp	335, 336
Gradiente	334	Shintom	317
Hitachi	300, 323, 345	Signature 2000	335
Instant Replay	323, 324	Singer	337
Jensen	339	Sony	328, 329, 330
JVC	310, 311, 334, 339	Sylvania	323, 324, 331
Kenwood	306, 310, 311, 339	Tashiro	306
LXI	300, 305, 306, 307, 308, 309	Tatung	310, 311, 339
Magnavox	323, 324, 331	Teac	310, 311, 339
Marantz	310, 311, 339	Technics	321, 322, 323, 324
Marta	306	Teknika	324
Memorex	309, 324	Toshiba	301, 346
MGA	338, 340, 341, 347, 348	Vector Research	311
Minolta	300, 345	Wards	306, 309, 335, 336, 344
Mitsubishi	338, 340, 341, 347, 348	Yamaha	305, 310, 311, 339
Multitech	304, 347	Zenith	306, 344
NEC	310, 311, 334, 339		
Olympic	323, 324		

# Remote Control Quick Reference Guide (Operating peripheral equipment)

## CABLE CONVERTER BOX AND DVD, CD PLAYERS Infrared Codes Index



Codes For Cable Box	
Brand	Code
ABC	124
Archer	125, 132
Cableview	105, 132
Citizen	105, 122
Curtis	112, 113
Diamond	124, 125, 132
Eagle	129
Eastern	134
GCbrand	105, 132
Gemini	122
General Instrument/Jerrold	111, 119, 120, 121, 122, 124, 125, 126, 127
Hamlin	112, 118, 140, 141, 142, 145
Hitachi	103, 124
Macom	103, 104, 105
Magnavox	133
Memorex	130
Movietime	105, 132
Oak	102, 137, 139
Panasonic	109, 110, 114
Philips	106, 107, 128, 129, 130
Pioneer	101, 116
Pulsar	105, 132

Codes For Cable Box (Contd.)	
Brand	Code
Puser	132
RCA	115
Realistic	132
Regal	112, 118, 140, 141, 142, 145, 149
Regency	134
Rembrandt	105, 132, 137
Samsung	105
Scientific Atlanta	111, 112, 113
Slmark	101, 105
Sprucer	105, 110
Stargate	105, 110
Televue	101, 105
Texscan	144
Tocom	135
Toshiba	104
Unika	125, 232
Universal	122, 132
Videoway	106
Viewstar	129, 130
Zenith	100, 117
Zenith/Drake Satellite	100



Codes For DVD	
Brand	Code
Denon	100
Ferguson	101
JVC	109
Mitsubishi	105
Nordmende	101
Panasonic	100
Philips	103
Pioneer	102
RCA	101

Codes For DVD (Contd.)	
Brand	Code
Saba	101
Samsung	110
Sharp	108
Sony	104
Technics	100
Thomson	101
Toshiba	103
Yamaha	100
Zenith	107

Codes For CD Player	
Brand	Code
Admiral	226
Aiwa	233, 235
Carver	229
Denon	242
Emerson	239
Fisher	205
Harman/ Kardon	219, 220, 221, 223
Hitachi	207
Jensen	234
JVC	240, 241, 245
Kardon	223
Kenwood	200, 201, 211, 245
LXI/Sears	236
Magnavox	229, 232
Marantz	229
McIntosh	221
Nakamichi	210
Onkyo	214, 215

Codes For CD Player (Contd.)	
Brand	Code
Optimus	208, 218, 220, 222
Panasonic	224, 225, 227
Philips	229, 230
Pioneer	208
Quasar	224, 225, 227
RCA	231, 237, 238, 247
Sansui	210, 246
Sanyo	205
Scott	210, 246
Sharp	242, 243
Sherwood	220
Sony	228
Soundesign	244
Teac	212, 216, 218
Technics	224, 225, 227
Victor	240, 241, 245
Yamaha	202, 203, 204

# Remote Control Quick Reference Guide (Operating peripheral equipment)

## CASSETTE PLAYERS, PERSONAL VIDEO RECORDERS, RECEIVERS, AMPLIFIERS, and DBS Infrared Codes Index

AUX

AUX

Codes For Cassette Decks	
Brand	Code
Aiwa	223, 224, 225
Denon	231
Fisher	203
Jensen	214
JVC	229, 230
Kenwood	200, 207
Marantz	202
Nakamichi	205
Onkyo	208, 209, 213
Panasonic	216, 218

Codes For Cassette Decks (Contd.)	
Brand	Code
Philips	222
Pioneer	204
RCA	226, 227, 228
Sansui	205, 210
Sharp	231
Sony	219, 220
Teac	210, 211, 215
Technics	216, 218
Yamaha	201, 202

Codes For Personal Video Recorders	
Brand	Code
Panasonic Replay TV	100
Philips Tivo	102
Sony Tivo	101

RCVR

RCVR

Codes For Receivers	
Brand	Code
Admiral	120
Aiwa	125, 126
Denon	134, 135, 136
Fisher	104
Garrard	113
Harman Kardon	115, 123
Jensen	129
JVC	132, 133
Kenwood	100, 108
Magnavox	127
Marantz	124
McIntosh	116
Nakamichi	106
Onkyo	109, 114

Codes For Receivers (Contd.)	
Brand	Code
Optimus	103, 127, 130, 131
Panasonic	118, 119, 121
Philips	123
Pioneer	105, 107
Quasar	118, 119, 121
RCA	103, 105, 127, 130, 131
Sansui	103, 111, 139
Sharp	134, 137
Sony	122
Soundesign	138
Teac	111, 112, 113
Technics	118, 119, 121
Victor	132, 133
Yamaha	101, 102

DBS

DBS

Codes For DBS	
Brand	Code
Dish Network (EchoStar)	105, 115, 116
EchoStar	105
Express VU	105, 115
G. E.	106
G.I. (General Instrument)	108
Gradiente	114
Hitachi	103, 111, 112
HNS (Hughes)	103

Codes For DBS (Contd.)	
Brand	Code
Magnavox	101, 102
Panasonic	104
Philips	101, 102
Primestar	108
Proscan	106, 109, 110, 113
RCA	106, 109, 110, 113
Sony	107
Star Choice	103, 108
Toshiba	100
Uniden	101, 102

# Remote Control Quick Reference Guide (Operating peripheral equipment)

## Operating Components with Remote Control

### Note:

Refer to pages 10-11 for programming Remote Control procedure.

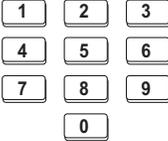
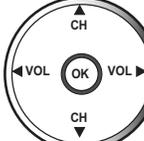
### Operating a VCR

Program the Remote Control to use with VCR.

TO DO THIS...	PRESS
Turn on/off	
Select TV Input mode for VCR	
Change Channels up/down	
Record	
Play	
Stop	
Fast Forward	
Rewind the Tape	
Pause	
Change to TV or VCR Mode	
On screen VCR Display	

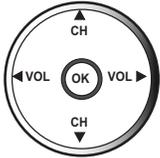
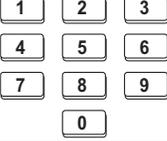
### Operating a CABLE BOX

Program the Remote Control to use with Cable Box.

TO DO THIS...	PRESS
Turn on/off	
Select a Channel	
Change Channels Up/Down	
Back to previous channel	

### Operating a DBS

Program the Remote Control to use with DBS.

TO DO THIS...	PRESS
Turn on/off	
Display DBS menu	
Menu Navigation	
Select a Channel	
Program Information	
Back to previous channel	
Select next page up/down	
Exit menus	

### Operating a DVD

Program the Remote Control to use with DVD.

TO DO THIS...	PRESS
Turn on/off	
Next/Previous Chapter	
DVD Display	
Skip Search Reverse	
Skip Search Fast Forward	
Play	
DVD Open/Close	
Stop	
Still	
Slow +/-	

# Remote Control Quick Reference Guide (Operating peripheral equipment)

## Operating Components with Remote Control

### Operating a Cassette Deck

To operate a cassette deck, the Remote Control must be in AUX mode and be programmed with the appropriate code for your equipment.

TO DO THIS...	PRESS
Turn on/off	POWER 
Receiver Volume Up/Down	
Deck A/B	R-TUNE 
Record	REC 
Play	PLAY 
Stop	STOP 
Fast Forward	PIP MAX FF 
Rewind the Tape	PIP MIN REW 
Pause	PAUSE 

### Operating a Receiver

Program the Remote Control to operate audio receiver.

TO DO THIS...	PRESS
Turn on/off	POWER 
Audio Mute	MUTE 
RCVR. VOI Up Down	
Tuner Pre-set stations Up/Down	
To select AV Inputs or Components:	Press Remote Control number keys AV1: Press 1 AV2: Press 2 AV3: Press 3 AV4: Press 4 CD: Press 5 TUNER: Press 6 PHONO: Press 7 TAPE: Press 8 AUX: Press 9

### Operating a Receiver

Program the remote to operate audio receiver.

TO DO THIS...	PRESS
Surround VOL Down	PIP MIN REW 
Surround VOL UP	PIP MAX FF 
Center CH VOL Up/Down	PIP CH DVD/VCR CH 

### Operating a PVR (Personal Video Recorder)

Program the Remote Control to use with a PVR.

TO DO THIS...	PRESS
Turn on/off	POWER 
Display PVR menu	MENU 
PVR Navigation	
Select a Channel	1 2 3 4 5 6 7 8 9 0
Play	PLAY 
Record	REC 
Pause	PAUSE 
Back to previous channel	R-TUNE 
Exit menus	EXIT 
Replay Zones	R-TUNE 
Quick Skip	SEARCH OPEN/CLOSE 
Return to live	PROG 
PVR CH Up/Down	PIP CH DVD/VCR CH 

### Notes:

- Not all functions listed may be controllable.
- Some TV, Cable Box and DSS Receiver brands require you to turn on the power manually.

# Troubleshooting

Before you call for service, determine the symptoms and make a few simple checks as shown below.

Symptoms		Checks	Page
Power does not turn ON.		• Is the power plug plugged in?	-
No picture even if the power is turned ON. LAMP indicator blinks red.		• Please replace lamp with a new one. Please consult your nearest dealer, if not still repaired.	12, 88
The power turns OFF.	The POWER indicator flashes orange twice every 5 seconds.	• The lamp cover is ajar. Firmly replace the cover.	-
	The TEMP indicator flashes 2 or 4 times every 5 seconds.	• Check whether or not the vents are clogged. • Is the set being used in a location that is hot?	-
	The TEMP indicator flashes 5 times every 5 seconds.	• Please consult your nearest dealer.	-
	Power turns off while another indicator is flashing.	• Please consult your nearest dealer.	-
Remote Control does not function.		• Are the batteries dead or inserted incorrectly?	8
		• Is the remote Control sensor in direct light of fluorescent lamps or other strong sources of light?	-
		• Did you correctly set the Remote Control code?	89
Image shakes.		• Is the antenna or antenna cable old, broken or shorted? • Is the antenna cable connected properly?	- 14-16
Image is not clear.		• Sudden changes in ambient temperature may cause condensation in the internal optics. Condensation should disappear after Power has been ON for a while.	-
Color patches or no color.		• When using a VCR and selecting channels on the TV, is the TV/VIDEO mode for the VCR set to TV?	-
Image appears doubled or tripled.		• Is the antenna facing the right direction?	-
		• Is the antenna receiving any signals reflected off of mountains or buildings.	-
Images disappear at the top and bottom of the screen.		• When using 16:9 image software, there is no picture at the top and bottom of the screen (cinema vision size software, etc.).	-
During ZOOM modes, the image is cut off at the top and bottom.		• Has the screen position been changed? If so, adjust screen positioning.	40-41, 52-53
The Device Display set makes a high whistling sound when the power is ON.		• This is the sound of the internal starting UP. This is not a malfunction.	-
Some parts of the screen are always lit while others do not light up. Some parts of the screen do not light up.		• This is a characteristic of the LCD panel and not a malfunction.	-
Fan is operating even though TV Power is OFF.		• This is because the cooling fan is operating. The fan will stop after about 1 minute.	26
An OSD instructing to replace the lamp is displayed. (The LAMP indicator is lit red.)		• Replace lamp with a new one.	88
Relighting the lamp when it is hot makes a sound.		• This is a characteristic of the lamp and not a malfunction.	-
Leaving stationary images, such as still video images, web pages, or filler bars (used for NORMAL aspect mode), on-screen for an extended period of time can leave ghost images on the screen.		• This is a characteristic of the LCD panel and not a malfunction. Try displaying constantly moving pictures which fill the entire screen, or turn the power OFF for a while to return the screen to normal.	-
An OSD advising "AIR FILTER CLEANING..." is displayed.		• Please consult your nearest dealer.	-
When viewing with HDMI connection, picture is displayed with unnatural colors (as if red and blue are reversed).		• Change UV Timing from NORMAL to INVERT.	53

# Specifications

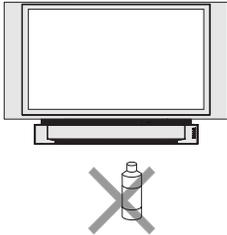
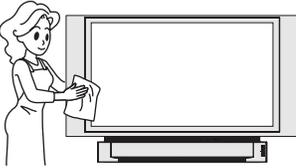
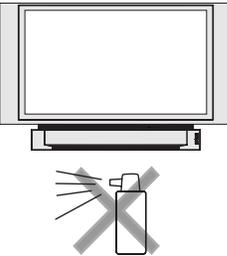
		PT-50LCX63	PT-60LCX63
<b>Power Source</b>		AC 120 V, 60 Hz	
<b>Power Consumption</b>		Power ON: Approx. 240 W (When audio is at maximum) Power OFF: Approx. 20 W (When cooling fan is stopped)	
<b>LCD panels</b>		0.9" Poly silicon TFT LCD panel x 3 921 600 (1 280 x 720) stripe pixels x 3 panels (16:9)	
<b>Display</b>		50-inch, 16 : 9 aspect ratio	60-inch, 16 : 9 aspect ratio
<b>Speaker</b>		2 Speakers 30 W [15 W + 15 W ] (10 % THD)	
<b>HID Lamp</b>		100 W HID (High Intensity Discharge) Lamp	
<b>Channel Capability (ATSC/NYSC)</b>		VHF/UHF 2-69 Cable 1-135	
<b>Input Terminals</b>	RGB INPUT 1-2	RGB analog 0.7 Vp-p (75 Ω) (D-SUB15P) AUDIO 0.5 Vrms (M3 Stereo mini Pin Jack)	
	AV INPUT 1-3	VIDEO 1.0 Vp-p (75 Ω) (RCA Pin Jack) S-VIDEO Y : 1 Vp-p (75 Ω), C : 0.286 Vp-p (75 Ω) (Mini DIN 4 pin) AUDIO L-R 0.5 Vrms (RCA Pin Jack x 2)	
	COMPONENT VIDEO INPUT 1-3	Y 1.0 Vp-p (with sync) (75 Ω) (Pin Jack) PB / PR ± 0.35 Vp-p (75 Ω) (Pin Jack x 2) AUDIO L-R 0.5 Vrms (RCA Pin Jack x 2)	
	HDMI	HDMI type A Connector AUDIO L-R 0.5 Vrms (RCA Pin Jack Type × 2)	
<b>Card slot</b>	SD Card slot	SD Card, Multi Media Card	
	PC Card slot	Compact Flash, Smart Media, Memory Stick, xD Picture Card	
<b>Output signals (AV OUT)</b>		VIDEO 1.0 Vp-p (75 Ω) (RCA Pin Jack) S-VIDEO Y : 1 Vp-p (75 Ω), C : 0.286 Vp-p (75 Ω) (Mini DIN 4 pin) AUDIO L-R 0.5 Vrms (RCA Pin Jack x 2)	
<b>Tuner</b>		ATSC digital tuner with digital cable module	
<b>Dimensions ( W x H x D )</b>		1 416 mm (W) x 897 mm (H) x 389 mm (D) 55-12/16" (W) x 35-5/16" (H) x 15-5/16" (D)	1 637 mm (W) x 1 050 mm (H) x 459 mm (D) 64 7/16" (W) x 41 6/16" (H) x 18 1/16" (D)
<b>Weight (Mass)</b>		38.4 kg (84.7 lbs.) Net	46.8 kg (103.2 lbs.) Net
<b>Operating conditions</b>		Temperature : 0 °C – 35 °C (32 °F - 95 °F) Humidity : 20 % - 80 % (non-condensing)	

**Note:**

Design and Specifications are subject to change without notice. Weight and Dimensions shown are approximate.

# Cleaning

To ensure continued excellent performance by this product, periodic cleaning is recommended.

	<p>The unit contains many plastic parts. For this reason <b>DO NOT</b> use benzine, thinner or other chemicals to clean the unit.</p>		<p>Dust will accumulate on the picture screen. Please wipe with a soft cloth from time to time. If you use a chemically treated cloth, please be careful to follow the instructions that come with the cloth.</p>
	<p><b>DO NOT</b> bring into contact with insecticide or other volatile substances. <b>DO NOT</b> allow the unit to come into contact for extended periods with rubber or vinyl products.</p>		<p>Remove dirt and soiling by wiping with a light cloth. Even if the unit is heavily soiled, do not apply cleaner directly to the unit. Soak a cloth in a solution of neutral cleanser diluted with water. Then wring out the cloth, wipe the unit clean, and finish by wiping with a dry cloth. Do not use any type of cleansers on the picture screen.</p>

# Customer Services Directory

Obtain Product Information and Operating Assistance; locate your nearest Dealer or Servicer; purchase Parts and Accessories; or make Customer Service and Literature requests by visiting our Web Site at:

<http://www.panasonic.com/support>

or, contact us via the web at:

<http://www.panasonic.com/contactinfo>

You may also contact us directly at:

1-800-211-PANA (7262),

Monday-Friday 9 am-9 pm; Saturday-Sunday 10 am-7 pm, EST.

For hearing or speech impaired TTY users, TTY : 1-877-833-8855

## Accessory Purchases

Purchase Parts, Accessories and Instruction Books online for all Panasonic Products by visiting our Web Site at:

<http://www.pasc.panasonic.com>

or, send your request by E-mail to:

[npcparts@panasonic.com](mailto:npcparts@panasonic.com)

You may also contact us directly at:

1-800-332-5368 (Phone) 1-800-237-9080 (Fax Only) (Monday – Friday 9 am to 8 pm, EST.)

Panasonic Services Company

20421 84th Avenue South,

Kent, WA 98032

(We Accept Visa, MasterCard, Discover Card, American Express, and Personal Checks)

For hearing or speech impaired TTY users, TTY : 1-866-605-1277

**Service in Puerto Rico**

*Matsushita Electric of Puerto Rico, Inc. Panasonic Sales Company*

**Factory Servicer:**

*Ave. 65 de Infantería, Km. 9.5, San Gabriel Industrial Park, Carolina, Puerto Rico 00985*

*Phone (787)750-4300 Fax (787)768-2910*

As of October 2003

# Limited Warranty

PANASONIC CONSUMER  
ELECTRONICS COMPANY, DIVISION  
OF MATSUSHITA ELECTRIC  
CORPORATION OF AMERICA  
One Panasonic Way  
Secaucus, New Jersey 07094

PANASONIC SALES COMPANY,  
DIVISION OF MATSUSHITA  
ELECTRIC OF PUERTO RICO, INC.,  
Ave. 65 de Infantería, Km. 9.5  
San Gabriel Industrial Park, Carolina,  
Puerto Rico 00985

## Panasonic Multimedia Device Display Limited Warranty

### Limited Warranty Coverage

If your product does not work properly because of a defect in materials or workmanship, Panasonic Consumer Electronics Company or Panasonic Sales Company (collectively referred to as “the warrantor”) will, for the length of the period indicated on the chart below, which starts with the date of original purchase (“warranty period”), at its option either (a) repair your product with new or refurbished parts, or (b) replace it with a new or a refurbished product. The decision to repair or replace will be made by the warrantor.

CATEGORY	PARTS	LABOR	SERVICE
Digital Device Display	One (1) Year	One (1) Year	In-Home or Carry-In

During the “Labor” warranty period there will be no charge for labor. During the “Parts” warranty period, there will be no charge for parts. You must carry-in your product or arrange for in-home service during the warranty period. If non-rechargeable batteries are included, they are not warranted. This warranty only applies to products purchased and serviced in the United States or Puerto Rico. This warranty is extended only to the original purchaser of a new product which was not sold “as is”. A purchase receipt or other proof of the original purchase date is required for warranty service.

### Carry-in or In-Home Service

For In-Home or Carry-In Service in the United States call 1-888-VIEW-PTV (1-888-843-9788).

For assistance in Puerto Rico call Panasonic Sales Company (787)-750-4300 or fax (787)-768-2910.

In-Home service requires clear, complete and easy access to the product by the authorized servicer and does not include removal or re-installation of an installed product. It is possible that certain in-home repairs will not be completed in-home, but will require that the product, or parts of the product, be removed for shop diagnosis and/or repair and then returned.

### Limited Warranty Limits And Exclusions

This warranty ONLY COVERS failures due to defects in materials or workmanship, and DOES NOT COVER normal wear and tear or cosmetic damage. The warranty also does not cover damages which occurred in shipment, or failures which are caused by products not supplied by the warrantor, or failures which result from accidents, misuse, abuse, neglect, mishandling, misapplication, alteration, faulty installation, set-up adjustments, misadjustment of consumer controls, power line surge, lightning damage, modification, or commercial use (such as in a hotel, office, restaurant, or other business), rental use of the product, service by anyone other than a Factory Servicenter or other Authorized Servicer, or damage that is attributable to acts of God.

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That's all there is to it!

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