Philips
Business
Solutions

EN **User Manual**

TYPE Nr. **BDH4222V**
BDH4223V

PHILIPS

TABLE OF CONTENTS

1. IMPORTANT NOTES AND SAFETY INSTRUCTIONS

1.1 SAFETY INSTRUCTIONS

- Read and keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water.
- Disconnect from the electric outlet before cleaning. Do not use liquid or aerosol cleaners. Clean only with a slightly damp cloth.
- Do not block any of the ventilation openings. Install in accordance with the manufacturers instructions.
- Do not install in direct sunlight, near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Do not defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or third prong are provided for your safety. When the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- Do not remove cover, to prevent electric shock. Refer servicing to qualified service personel only.
- Unauthorized modification of this equipment or usage of an unshielded connecting cable may cause excessive interference.
- Adjust only those controls that are covered by the operating instructions. Improper adjustment of other controls can result in damage which often requires extensive work by a qualified technician to restore the unit to normal operation.
- Use in well-ventilated area and do not block any of the ventilation openings. Install in accordance with the manufacturer's instructions.
- The unit must be operated from the type of power source indicated on the label. If the type of available power is unknown, consult your dealer or local power company.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician. Do not alter the plug; this will defeat the safety feature.
- Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.
- If the picture displayed looks abnormal, turn off the unit and disconnect it from the electric outlet. Verify your signal wire connections and reconnect the display to the electric outlet.
- Only use attachments/accessories specified by the manufacturer.

- Use only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
- This product may contain lead and mercury. Disposal of these materials may be regulated due to environmental considerations. For disposal or recycling information, please contact your local authorities or the Electronic Industries Alliance: www.eiae.org
- Damage Requiring Service:
  The appliance should be serviced by qualified service personnel when:
  - The power supply cord or the plug has been damaged or frayed.
  - Objects have fallen, or liquid has been spilled into the appliance.
  - The appliance has been exposed to rain.
  - The appliance does not appear to operate normally or exhibits a marked change in perfomance.
  - The appliance has been dropped, or the enclosure damaged.
  - Unit does not operate normally when the operating instructions are followed.
- Tilt/Stability:
  - All displays must comply with recommended international global safety standards for tilt and stability properties of its cabinet design.
  - Do not compromise these design standards by applying excessive pull force to the front, or top, of the cabinet which could ultimately overturn the product.
  - Do not endanger yourself, or children, by placing electronic equipment/toys on the top of the set and cause product damage and/or personal injury.
  - Do not place the unit on an unstable cart, stand or table. Or the product may fall, causing serious damage.
- Do not place the unit on a bed, soffa, rug, or similar surfaces.
- Wall or Ceiling Mounting:
  The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.
- Power Lines:
  An outdoor antenna should be located away from power lines.

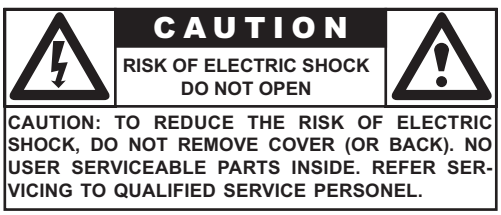
- Outdoor Antenna Grounding:
  - If an outside antenna is connected to the receiver, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges.
  - Section 810 of the National Electric Code, ANSI/NFPA No. 70-1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding connectors, location of antenna-discharge unit, connection grounding electrodes, and requirements for the grounding electrode.
- Object and Liquid Entry:
  Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
- Battery Usage:
  CAUTION: To prevent battery leakage that may result in bodily injury, property damage, or damage to the unit.
  - Install all batteries correctly, with + and - aligned as marked on the unit.
  - Do not mix batteries (old and new or carbon and alkaline, etc.).
  - Remove batteries when the unit is not used for a long time.

1.2 WARNINGS AND PRECAUTIONS

1.2.1 NOTE TO THE 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 must be connected to the grounding system of the building, as close to the point of cable entry as practical.

KNOW THESE SAFETY SYMBOLS



- This lightning flash with arrow-head within a triangle indicates uninsulated material within your unit, which can cause an electric shock. For the safety of everyone in your household, do not remove product cover.

- For the safety of everyone in your household, do not remove product cover. The exclamation point within a triangle calls attention to features for which you mustread the enclosed literature closely to prevent operating and maintenance problems.

WARNING
To reduce the risk of fire or electric shock, this appliance must not be exposed to rain or moisture, and objects filled with liquids, such as vases, must not be placed upon this apparatus.

CAUTION
To prevent electric shock, match wide plug blade to wide slot, and fully insert.

ATTENTION
Pour éviter les chocs électriques, introduire la lame la plus large de la fiche dans la bome correspondante de la prise et pousser jusqu'au fond.

1.3 CLEANING & CARE

- To avoid possible shock hazard, please be sure that the television is unplugged from the electrical outlet before cleaning.
- When cleaning the television screen, take care not to scratch or damage the screen surface (avoid wearing jewelry or using anything abrasive).
- Wipe the front of the screen with a clean cloth dampened with water. Use even, easy, vertical strokes when cleaning.
- Gently wipe the cabinet surfaces with a clean cloth or sponge dampened in a solution of cool clear water. Use a clean dry cloth to dry the wiped surfaces.
- Occasionally vacuum the ventilation holes or slots in the cabinet back.
- Never use thinners, insecticide sprays, or other chemicals on or near the cabinet, as they might cause permanent marring of the cabinet finish.
- Do not allow a still image to be displayed for an extended period of time as this can cause a permanent after-image to remain.

1.4 END-OF-LIFE DISPOSAL

- This Philips product and its packaging contain materials that can be recycled and re-used. Specialized companies can recycle your product to increase the amount of reusable materials and minimize the amounts which need to be properly disposed.
- This product might also use batteries, which should not be thrown away when depleted, but should be handed in and disposed of as small chemical waste.
- Please find out about the local regulations regarding the disposal of the television, batteries, and packaging materials whenever you replace existing equipment.

2. REGULATORY NOTICE

FCC Statement

The Federal Communications Commission Radio Frequency Interference Statement includes the following warning:

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 receptions, 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.

Warning

User must use shielded signal interface cables to maintain FCC compliance for the product. Provided with this moniotr is a detachable power supply cord with IEC320 style terminations. It may be suitable for connection to any UL Listed personal computer with similar configuration. Before making the connection, make sure the voltage rating of the computer convenience outlet is the same as the monitor and that the ampere rating of the computer convenience outlet is equal to or exceeds the monitor voltage rating. For 120 Volt applications, use only UL Listed detachable power cord with NEMA configuration 5-15P type (parallel blades) plug cap. For 240 Volt applications use only UL Listed Detachable power supply cord with NEMA configuration 6015P type (tandem blades) plug cap.

IC Compliance Notice

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations of ICES-003.

Cet appareil Numerique de classe B respecte toutes les exigences du Reglemont NMB-03 sur les equipements produisant des interferences au Canada.

Notice de Conformit IC

Cet appareil numerique de classe B respecte toutes les exigences du Reglement ICES-003 sur les equipements produisant des interferences au Canada.

3. PRODUCT FEATURES

Quiet Fanless Operation
This plasma display is built without any fans for quiet operations suitable for home theater related applications.

Advanced Digital Image Processing
Advanced digital processor with adaptive motion de-interlacing converts all 15KHz signals into progressive scan for a brighter, flicker free image.

3:2 Pull-Down for Film Scan Conversion
Built-in 3:2 pull-down processing can automatically detect and convert film content to properly display with minimal motion artifacts.

3D Comb Filter
Built-in 3D comb filter converts analog signal into a digital signal for more accurate processing, eliminating cross-color interference for superior NTSC video performance.

Dual HD Component Video Inputs
Two high-definition component video inputs with auto-detection capabilities will automatically synchronize the display to match the incoming signal source without manual intervention.

Picture-in-Picture (PIP)
Watch two programs simultaneously using the monitor's picture-in-picture with four selectable window position settings.

Side-by-Side Picture (POP)
Watch two programs silmultaneous by splitting the screen in half.

HDTV Signal Compatible
This display is capable of accepting 1080i and 720p HDTV signals via an external HDTV decoder with DVI or Component Video outputs.

Digital Zoom Modes
Digital zoom modes gets rid of black bars common to non-16:9 aspect ratio movie content.

BBE® Sound Maximizer
Built-in BBE sound processor maximizes the sound quality.

SRS® Sound Processing
Built-in SRS sound processor simulates surround effects with only two speakers.

Selectable Fixed/Variable Audio Outputs
Software selectable fixed or variable audio outputs ensures flexible audio application installations.

Built-in Internal Amplification & Speakers
This display contains an internal 10-watt (5 watts x2) audio amplifier and built-in speakers sufficient for multimedia applications.

DVI Digital Video Interface with HDCP(High-Bandwidth Digital Content Protection)

Standard DVI interface supports the latest in digital video preipherals equipped with DVI v HDCP digital video output(s). This means that digital content can now pass from sources such as set-top-box, directly to this display without digital-to analog conversion that erodes video quality. Direct digital-to digital connection ensures the abolute best in the video quality.

1280x1024 SXGA Support

The onboard digital scaling engine can accept various PC and HDTV signals and digitally map the signals to fit within 1024 x 1024 pixels.

Compatible signals include PC resolutions up to 1280x1024 and HDTV signals including 720p and 1080i.

Discrete Power ON/OFF

Separate Power ON/OFF buttons on the remote control facilitates the recording of IR macros with advanced system setups.

Direct Input Selection Keys

Separate input selection keys on the remote control allows quick and easy selection of various inputs.

Bass Extension Circuitry / Subwoofer Out

Enhance bass performance by adding a separate powered subwoofer to the monitor's subwoofer output.

RS-232 Serial Connection

The RS-232 command set includes front panel lock, input selection, power on/off, volume and other standard RS-232 command controls.

4. UNPACKING AND INSTALLATION

4.1 UNPACKING

- The monitor is packed in a carton, together with the standard accessories. Any other optional accessories will be packed separately.
- The weight of the monitor is approx 36kg. Due to the size and weight it is recommended to move it by 2 people.
- The protectiev glass and the glass substrate are inatalled on the front of the product. Since both glasse can be brokn and scraped easily the product has to be handled with care. Never place the monitor with the glass faced down unless it is protected with pads.
- After opening the carton ensure that the content is in good condition and complete.
- When possible use the handles on the back of the monitor for transport.

4.2 PACKAGE CONTENTS

Please verify that you received the following items with your package content:

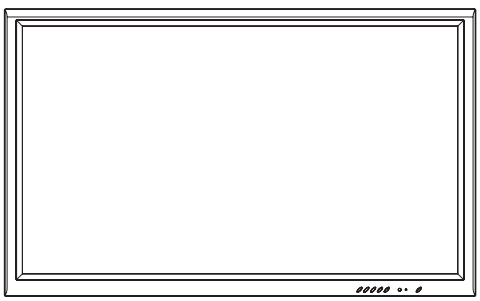
1 Monitor

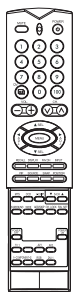
2 Remote Control

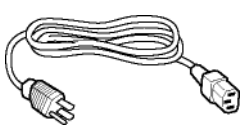
3 CD-ROM with User Manual

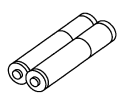
4 Power Cable

5 Batteries







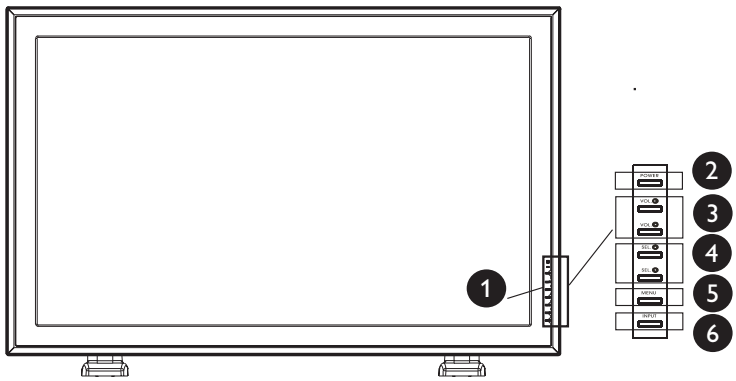


4.3 INSTALLATION NOTES

- Due to the high power consumption, always use the plug exclusively designed for this product. If an extended line is required, please consult your service agent.
- The product should be installed on a flat surface to avoid tipping.The distance between the back of the product and the wall should be maintained for proper ventilation. Avoid installing the product in the kitchen, bathroom or any other places with high humidity so as not to shorten the service life of the electronic components.
- Please ensure the product is installed horizontally. Any 90 degrees clockwise or counter-clockwise installation may induce poor ventilation and subsequent component damage.
- To protect the screen and avoid screen damage, do not display a still picture for a long time.

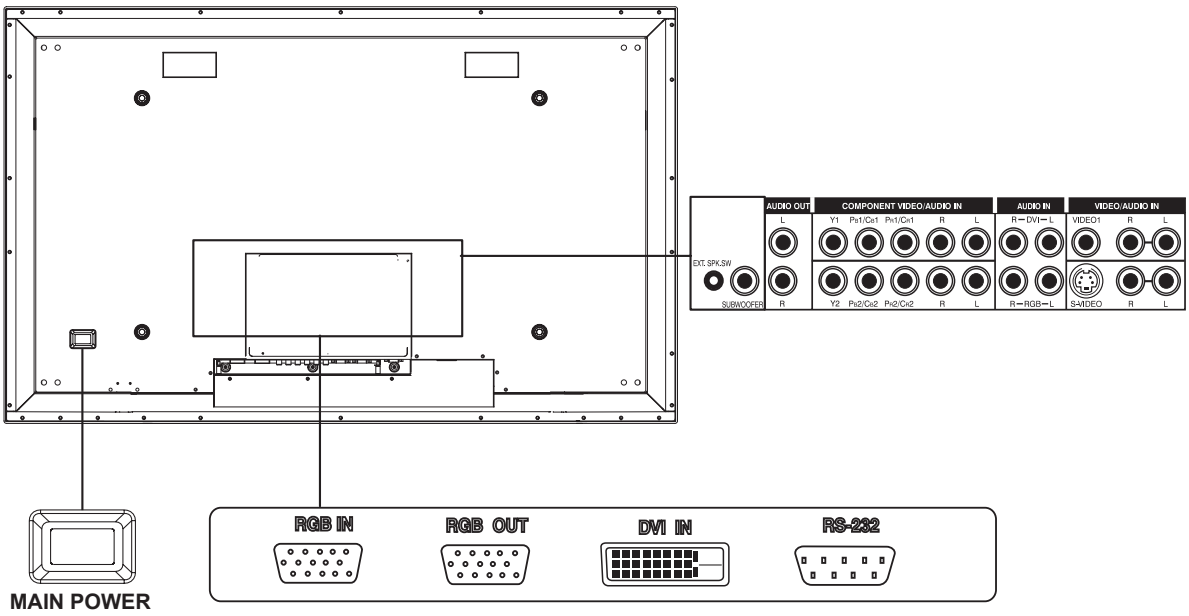
5. PARTS & FUNCTIONS

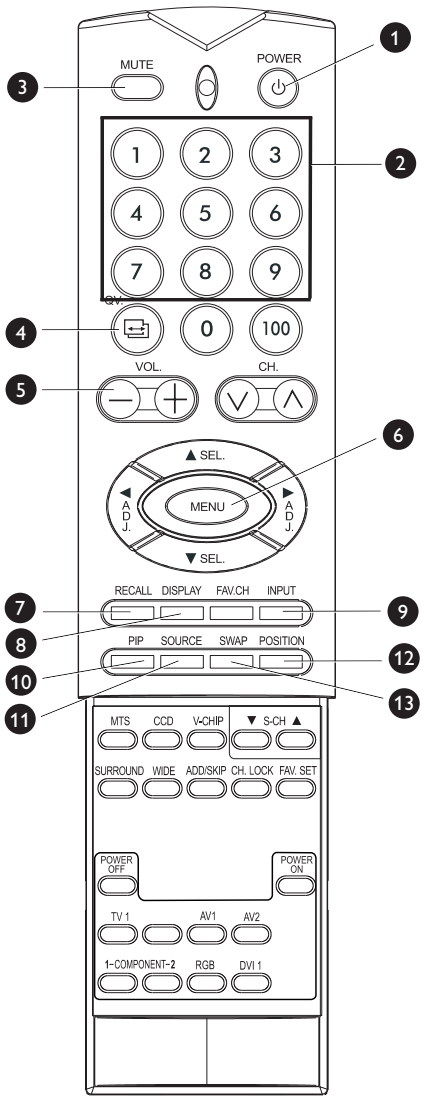
5.1 FRONT VIEW



1. **Status LED**
   - **Not Illumated = No AC Power detected**
     If the main power switch (rear of panel) is turned off, this LED will not illuminate.
   - **Orange = Standby (Power OFF) with AC power detected**
     The LED will illuminate in orange color if the monitor is shut off but the main power cord is plugged into the back of the unit.
   - **Solid Green = Power ON**
2. **Power (Standby) Button**
   Turns power on/off from standby mode. There is a wait period between on/off cycles.
3. **Volume Adjustment Buttons**
   Use these buttons to adjust volume up and down. These keys also serve as navigation and adjustment keys when On Screen Display menu is engaged.
4. **Select Buttons**
   Use these buttons to navigate through the the On Screen Display menu. If an optional TV tuner is installed, these buttons also function as Channel Up/Down.
5. **Menu Button**
   Use this button to engage the On Screen Display menu.
6. **Input Button**
   Use this button to switch between available inputs.

5.2 REAR VIEW


AUDIO OUT
L
R
COMPONENT VIDEO/AUDIO IN
Y1 Pb1/Cb1 Pr1/Cr1 R L
Y2 Pb2/Cb2 Pr2/Cr2 R L
AUDIO IN
R—DVI—L
R—RGB—L
VIDEO/AUDIO IN
VIDEO1 R L
S-VIDEO R L
EXT. SPK.SW
SUBWOOFER
MAIN POWER
RGB IN
RGB OUT
DVI IN
RS-232



5.3 REMOTE CONTROL

1. **Standby Power On/Off**
   Push this button to turn on the monitor from Standby mode. Push it again to turn it off to Standby mode.

2. **Number Keypad**
   Use number keypad to select the TV channel you want to watch. (Only applicable with TV tuner installed.)

3. **Sound Mute On/Off**

4. **QuickView**
   Recalls the last TV channel watched.

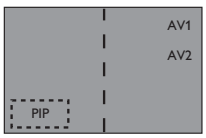
5. **Volume +/-**
   Turns volume up or down.

6. **Menu**
   Activates the OSD menu.

7. **Recall**
   Recalls Factory default settings. (See page 43)

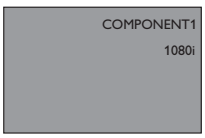
8. **Display**
   Shows the status of the display:

AV Mode (PIP/POP On)



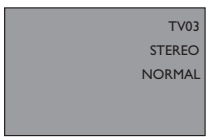
AV1 => Main Source
AV2 => PIP/POPSource

Component Mode



COMPONENT1 => Main Source
1080i => Incoming Signal

TV Mode (w/ Tuner)



TV 03 => Main Source
STEREO => Audio Status
NORMAL => Channel Status

RGB Mode

RGB => Main Source
M:06 => Incoming Sign

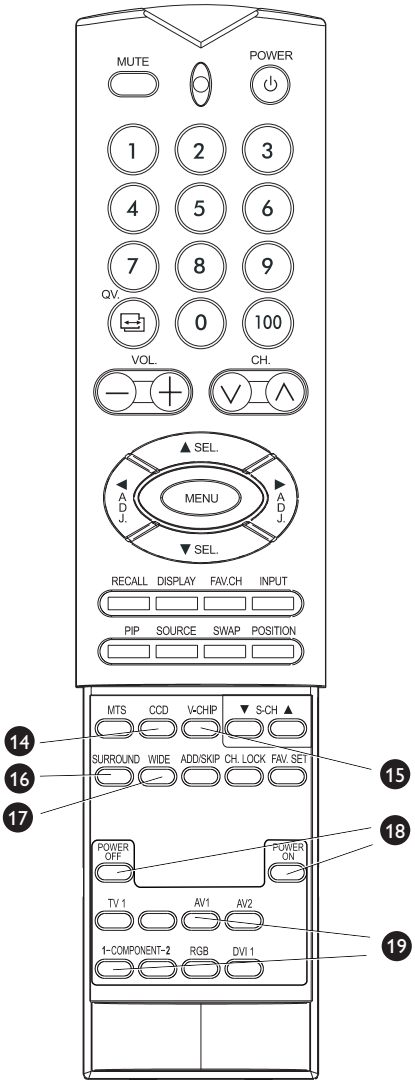
9. **Input Select**
   Selects the input signal modes sequentially. (See page 32)

10. **PIP (Picture-in-Picture Button)**
    Turns on PIP (Picture-in-Picture) mode under DVI input mode. (See page 32).

11. **PIP Source**
    Changes the input source of the PIP among TV/AV Component input sources. (See page 32)

12. **PIP Position**
    Changes the PIP sub-window to 4 different corner locations. (See page 32)

13. **Swap**
    Swaps the main and sub picture windows under PIP or POP modes. (See page 32)



14. Closed Captioning
Turns on Closed Captioning Mode.

15. V-Chip
NOT SUPPORTED.

16. SURROUND

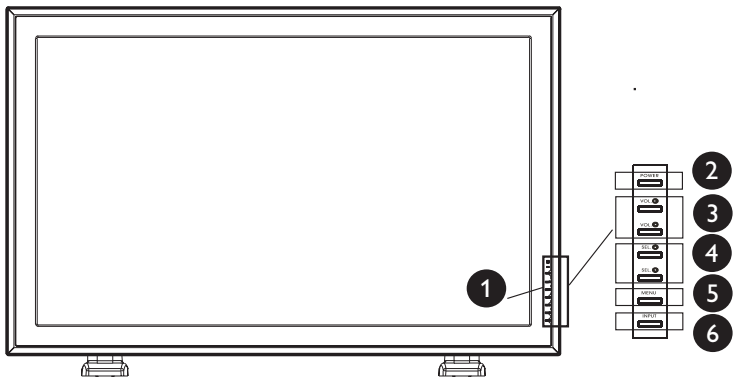
17. WIDE
Toggles between various aspect ratio settings. (See page 34)

18. Discrete Power ON/OFF
Press OFF to send monitor into standby mode. Press ON to power on from standby mode. (See page 34)

19. Direct Input Selection Keys
Directly change input signal selection by pressing the appropriate key.

5. PARTS & FUNCTIONS

5.1 FRONT VIEW



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   Turns power on/off from standby mode. There is a wait period between on/off cycles.
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   Use these buttons to adjust volume up and down. These keys also serve as navigation and adjustment keys when On Screen Display menu is engaged.
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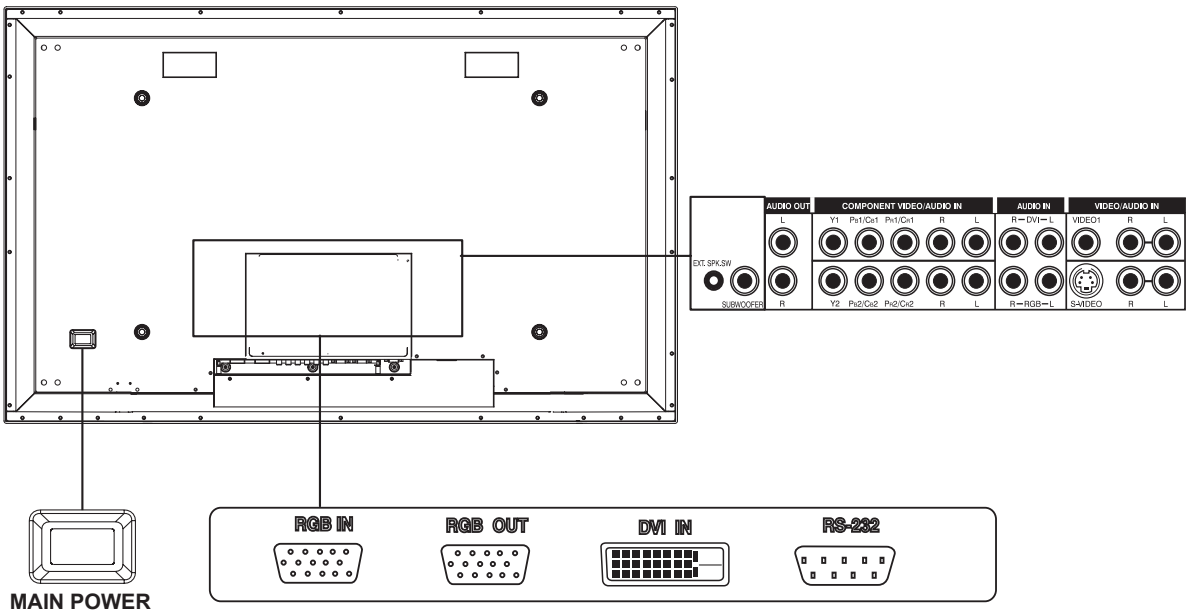
AUDIO OUT
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COMPONENT VIDEO/AUDIO IN
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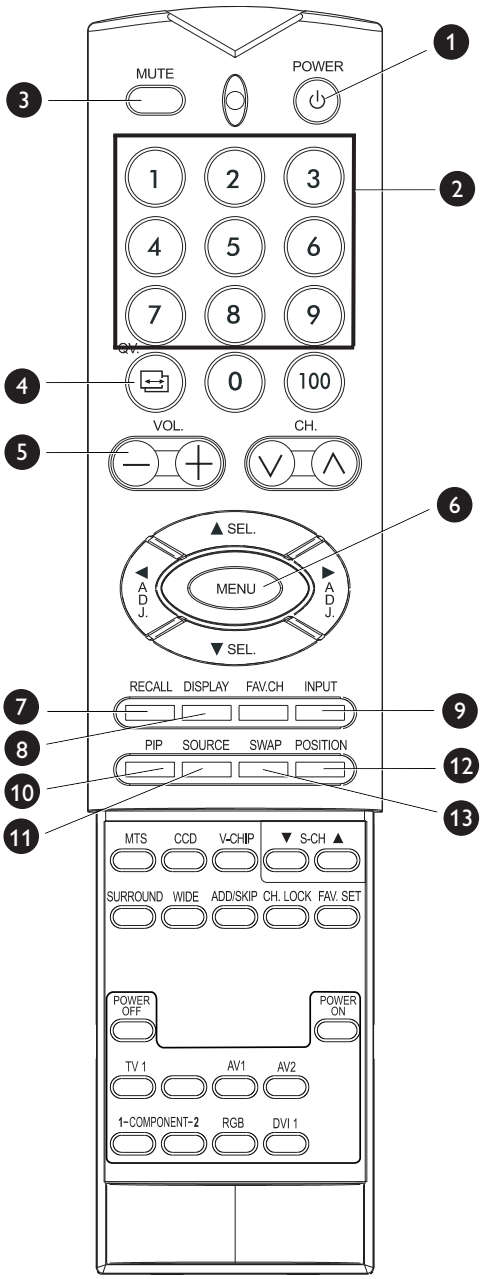
Y2 Pb2/Cb2 Pr2/Cr2 R L
AUDIO IN
R—DVI—L
R—RGB—L
VIDEO/AUDIO IN
VIDEO1 R L
S-VIDEO R L
EXT. SPK.SW
SUBWOOFER
MAIN POWER
RGB IN
RGB OUT
DVI IN
RS-232



5.3 REMOTE CONTROL

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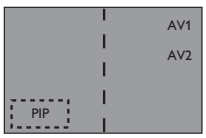
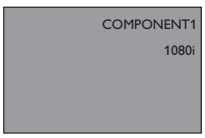


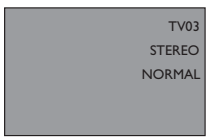
AV1 => Main Source
AV2 => PIP/POPSource

Component Mode



COMPONENT1 => Main Source
1080i => Incoming Signal

TV Mode (w/ Tuner)



TV 03 => Main Source
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RGB Mode

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M:06 => Incoming Sign

9. **Input Select**
   Selects the input signal modes sequentially. (See page 28)
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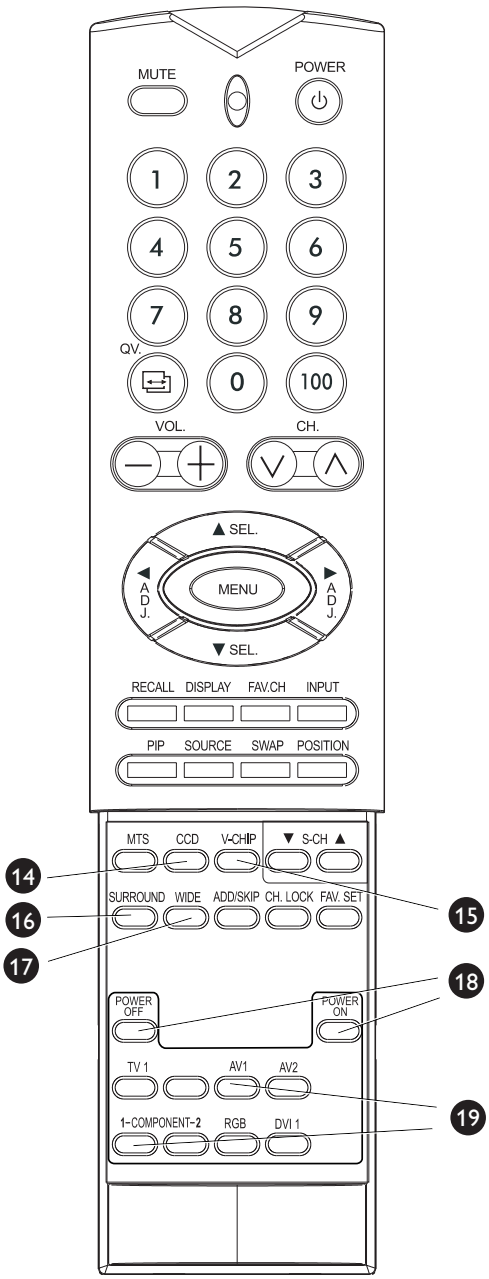

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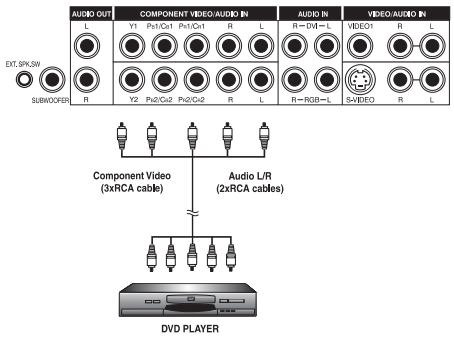
Press OFF to send monitor into standby mode. Press ON to power on from standby mode.

19. Direct Input Selection Keys
Directly change input signal selection by pressing the appropriate key.

6. CONNECTIONS TO EXTERNAL EQUIPMENT

6.1 CONNECTING A DVD PLAYER



Using Component Video Input

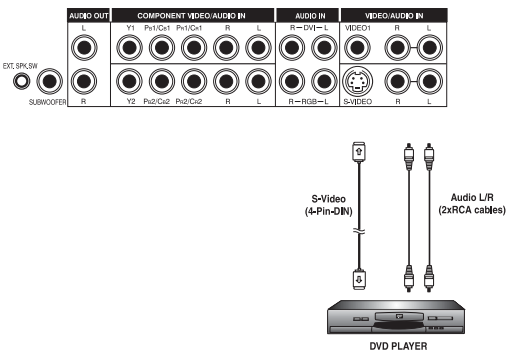
1 Connect the green-colored (labeled as "Y") jack of the DVD to the green-colored "Y1" jack of the monitor.

2 Connect the red-colored (labeled as "PR" or "CR") jack of the DVD to the red-colored "PR1/CR1" jack of the monitor.

3 Connect the blue-colored (labeled as "PB" or "CB") jack of the DVD to the blue-colored "PB1/CB1" jack of the monitor.

4 Connect the red (R) and white (L) audio jacks of the DVD to the R and L audio-in jacks of the monitor.

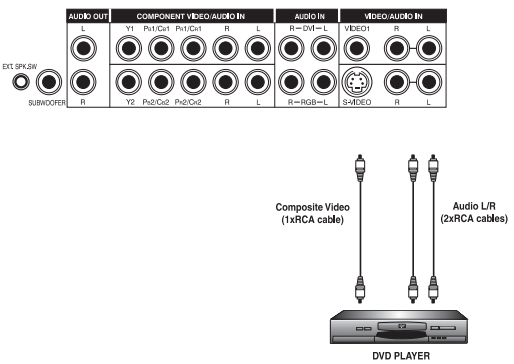
Note:
There are two sets of component inputs provided. You can use either set of component inputs to connect your DVD.



Using S-Video Input

1 Connect the S-Video (4-pin DIN) connector of the DVD to the "S-VIDEO" input of the monitor.

2 Connect the red (R) and white (L) audio jacks of the DVD to the R and L audio-in jacks located next to the S-VIDEO connector.

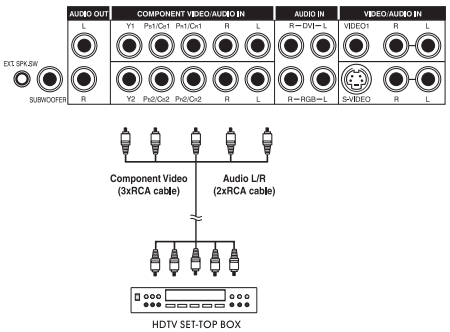


Using Composite (AV) Video Input

1 Connect the "yellow" (video) connector of the DVD to the yellow "VIDEO 1" input of the monitor.

2 Connect the red (R) and white (L) audio jacks of the DVD to the R and L audio-in jacks located next to the yellow "Video 1" connector.

6.2 CONNECTING A HDTV DECODER SET-TOP BOX



Using Component Video Input

1 Connect the green (labeled as "Y") jack of the HDTV Set-top box to the green "Y1" jack of the monitor.

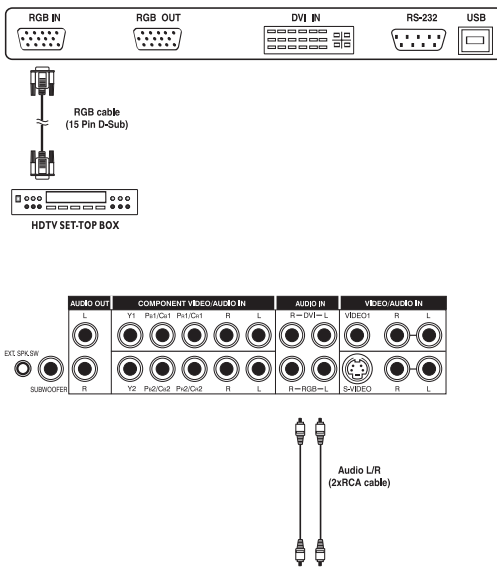
2 Connect the red (labeled as "PR" or "CR") jack of the HDTV Set-top box to the red "PR1/CR1" jack of the monitor.

3 Connect the blue (labeled as "PB" or "CB") jack of the HDTV Set-top box to the blue "PB1/CB1" jack of the monitor.

4 Connect the red (R) and white (L) audio jacks of the HDTV Set-top box to the R and L audio-in jacks of the monitor.

Notes:

- Some HDTV Set-top boxes may not have a Component Video output. Instead, use RGB input method.
- There are two sets of component inputs provided. You can use either set of component inputs to connect your HDTV Set- top box.



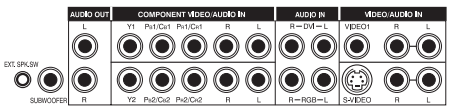
Using RGB Input

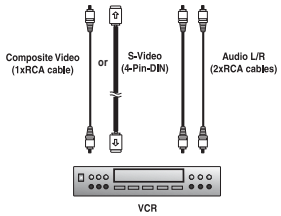
1 Connect the 15-pin D-Sub RGB connector of the HDTV Set-top box to the RGB-IN connector of the monitor.

2 Connect the red (R) and white (L) audio-out jacks of the HDTV Set-top box to the R and L audio-in jacks of the monitor.

Notes:

- Some HDTV Set-top boxes may not have an RGB output. Use Component Video input method if this is the case.
- Upon connecting your HDTV Set-top box to the RGB input of the monitor, it may be necessary to adjust various picture settings on the monitor to correctly match the output of the HDTV Set-top box. This is caused by the different video timings set by various HDTV Set-top box manufacturers.
- This plasma supports 576p, 720p and 1080i under RGB mode.





6.3 CONNECTING A VCR

Using S-Video Input

1 Connect the S-Video (4-pin DIN) connector of the VCR to the "S-VIDEO" input of the monitor.

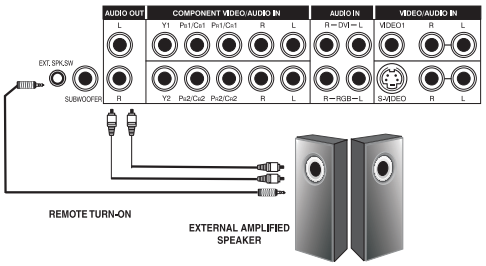
2 Connect the red (R) and white (L) audio jacks of the VCR to the R and L audio-in jacks located next to the S-VIDEO connector.

Using Composite Input

1 Connect the "yellow" (video) out connector of the VCR to the yellow "Video 1" input of the monitor.

2 Connect the red (R) and white (L) audio-out jacks of the VCR to the R and L audio-in jacks located next to the yellow "Video 1" connector.

6.4 EXTERNAL AUDIO CONNECTION

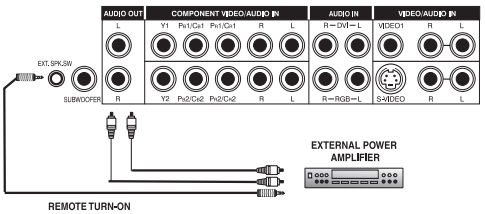


Connecting External Amplified Speakers

This monitor can be connected to an external set of amplified speakers using the AUDIO OUT jacks located on the back of the monitor. In addition, this monitor is equipped with a small 3.5 mm phono style plug for remote turn-on applications that will automatically send a remote turn-on/off signal to the external amplified speakers.

1 Connect the red (R) and white (L) AUDIO OUT jacks to the external amplified speaker.

2 As an option, you may use the remote turn-on plug.
Please note that not all external amplifiers can accept remote-turn on signals.

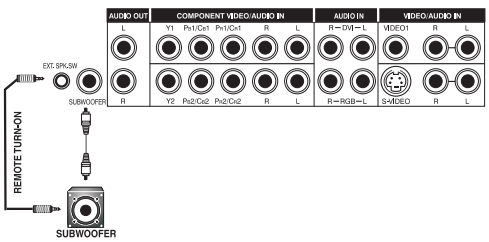


Connecting to an External Amplifier

This monitor can be connected to an external amplifier using the AUDIO OUT jacks located on the back of the monitor. In addition, this monitor is equipped with a small 3.5 mm phono style plug for remote turn-on applications that will automatically send a remote turnon/off signal to the external amplifier.

1 Connect the red (R) and white (L) AUDIO OUT jacks to the external amplifier or receiver.

2 As an option, you may use the remote turn-on plug.
Please note that not all external amplifiers can accept remote-turn on signals.



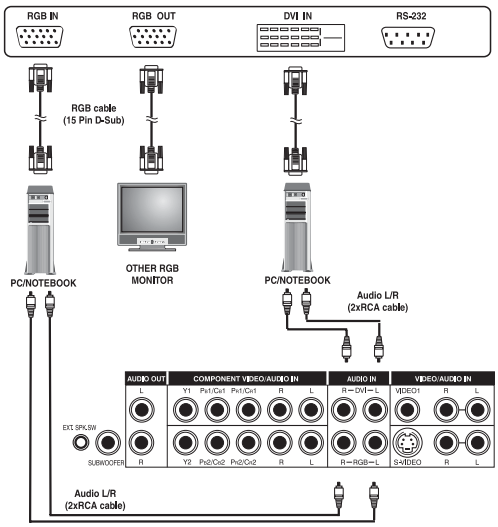
Using the Subwoofer Out (Connecting a Subwoofer)

This monitor is equipped with a subwoofer output for connection of an external amplified subwoofer.

1 Connect an RCA cable to the external subwoofer.

Notes:

- The AUDIO OUT RCA jacks can be set to either Fixed or Variable audio output levels. Please see page 38 for additional explanation of this feature.
- The RCA subwoofer outputs frequencies below 120Hz.
  The subwoofer will use the same Fixed or Variable audio output setting as AUDIO OUT RCA jacks.
- The 3.5mm phono/earphone output level is always used for remote turn on/off applications.



6.5 CONNECTING A PC

Using RGB or DVI Video Input

1 For most PC's, connect the 15-pin D-Sub RGB connector of the PC to the RGB-IN connector of the monitor. If you have a PC that is equipped with a DVI (Digital Visual Interface), you may connect the PC DVI connector from the PC to the DVI-In connector of the monitor.

2 Connect the red (R) and white (L) audio jacks of the PC to the R and L jacks of the monitor. If you are using a DVI interface, simply connect the (R) and (L) audio jacks to the R and L jacks located to the left of the VIDEO 1 connector.

Notes:

- Your PC may have audio jacks in the form of a 3.5mm phono plug. If this is the case, you will need to use a phono-plug to RCA converter cable in order to connect audio.
- A RGB loop-out labeled "RGB Out" will allow another RGB monitor to be connected. The RGB loop-out will display the same signal as the RGB In signal source.
- The physical monitor resolution is a maximum 1024x1024 dots. If the PC's monitor resolution exceeds these maximums, the monitor will have to artificially eliminate dots in order to fit within the physical dot capability of the monitor; therefore, it is possible that the monitor may not be able to show details with adequate clarity.

6.6 RS-232 REMOTE CONTROL CONNECTIONS

RS-232 Serial Terminal Overview

This monitor is equipped with an RS-232 serial terminal for using the monitor with computer controls. The RS-232 serial terminal conforms to the RS-232C interface specification. The computer requires a software application (such as programming language software) which allows the computer to send and receive control data that supports the communications parameters listed below.

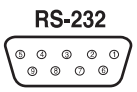
Communications Parameters

These parameters are required to setup communications with the monitor.

Specification	RS-232C
Sync Method	Synchronous
Baud Rate	9600 bps
Parity	None
Character Length	8 Bits
Stop Bit	1 Bits

Pin Layout for RS-232 Terminal

The RS-232C terminal pin layout are as follows:



Pin 1	Received Line Signal Detector (Data Carrier Detect)
Pin 2	Received Data (RXD)
Pin 3	Transmit Data (TXD)
Pin 4	Data Terminal Ready (DTR)
Pin 5	Signal Ground
Pin 6	Data Set Ready (DSR)
Pin 7	Request To Send (RTS)
Pin 8	Clear To Send (CTS)
Pin 9	Ring Indicator

Basic Format for Command Parameters

In order to transmit data from the computer to the monitor, the data must be sent in 1-byte-hex format.

The command code (see page 25) must first be sent to the monitor, followed by the desired value setting in hexadecimal format.
The steps below show an example of how the monitor input can be changed to RGB:

1 Send 1-byte for command 91 (input select) to the monitor in hex format 0x91.

2 Send 1-byte for the value of the RGB input. In this example, send 0x06.

3 The monitor will then respond back to the PC with a 1-byte value to confirm the setting.

Notes:

- To connect a PC to the monitor's RS-232 port, you must use a "straight-thru" RS-232 cable where pins 2 (RX) and 3 (TX) are not reversed at one end.
- If there are no data to be sent, then the parameter signal does not need to be sent.

- If multiple commands are transmitted, make sure to wait for the response signals of the monitor before sending the next command.

  The following are response command signals:

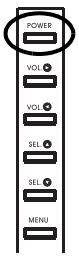
Response	Error
80 70	MODE ERROR
80 71	ITEM ERROR
80 72	FORMAT ERROR

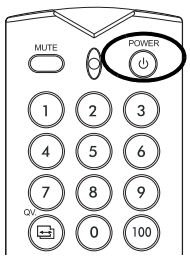
Command Parameters

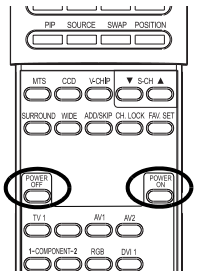
These remote control commands are available to send to the monitor using RS-232.

Item	Cmd	Data	Details
Read	80	81-A7	Reads the monitor current settings for command 81 thru A7
Volume	81	01-64H	Set between 01-64H
Power On/Off	83	00-01	00=Off; 01=On
Brightness	85	01-64H	
Contrast	86	01-64H	
V-Size	87	01-64H	
V-Position	88	01-64H	
H-Size	89	01-64H	
H-Position	8A	01-64H	
Color	8E	01-64H	
Tint	8F	01-64H	
Sharpness	90	01-64H	
Input Select	91	00-07	00=TV; 01=AV1; 02=AV2; 03=AV3; 04=Component 1; 05=Component 2; 06=RGB; 07=DVI
Recall	92	00	00=Initiate recall
Mute On/Off	95	00-01	00=Off; 01=On
PanelKey Lock	96	00-01	00=Off; 01=On
Language	97	00-02	00=English; 01=French; 02=Spanish
Color Temp	98	00-03	00=High; 01=Mid; 02=Low; 03=6500D
Bass	9A	01-64H	
Treble	9B	01-64H	
Balance	9C	01-64H	
Woofer	9D	00-01	00=Off; 01=On
BBE	9E	00-01	00=Off; 01=On
Surround	9F	00-02	00=Off; 01=3D Stereo; 02=3D Mono
RF Input	A0	00-01	00=Air; 01=Cable
Full Search	A1	00	00=Initiate full search
MTS	A4	00-02	00=Stereo; 01=Mono; 02=SAP
Zoom	A5	00-05	00=16:9; 01=Panorama; 02=4:3; 03=Zoom1; 04=Zoom2; 05=Zoom3
PIP/POP	A7	00-03	00=Normal; 01=PIP; 02=POP1; 03=POP2 (4:3); 04=POP3 (16:9)

7. BASIC FUNCTIONS







7.1 POWERING ON / OFF

Make sure the monitor is plugged into the wall outlet and the main AC switch located in the rear of the monitor is switched to ON position. If the power is plugged in and the AC switch is on, the STATUS LED will illuminate in orange color.

Using Front Panel or Remote Control

1 Press the POWER button on the front panel or the remote control. => The monitor will now turn on after a brief pause. The STATUS LED will now turn green to indicate power on status.

2 Turn off the power by pressing the POWER button on the front panel or the remote control again.

Using Discrete Power ON/OFF Keys

The discrete POWER ON/OFF keys sends two discrete signals to the monitor.

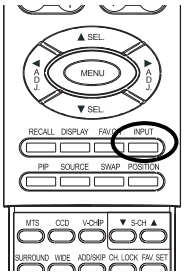
1 Turn on the power by pressing the POWER ON button. If the monitor is turned on already, pressing this button will have no effect.

2 Turn off the power by pressing the POWER OFF button. If the monitor is already turned off, pressing this button will have no effect.

Status LED:

- **Not Illumated = No AC Power detected**
  If the main power switch (rear of panel) is turned off, this LED will not illuminate.
- **Orange = Standby (Power OFF) with AC power detected**
  The LED will illuminate in orange color if the monitor is in standby mode.
- **Solid Green = Power ON**

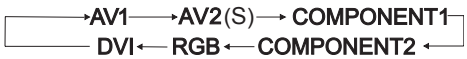
7.2 SELECTING SIGNAL SOURCE



Using Front Panel or Remote Control

1 Press the INPUT key on the front panel of the monitor, or press the INPUT key on the remote control.

- Pressing the INPUT key will cycle the monitor thru all available input signal sources in the following order:

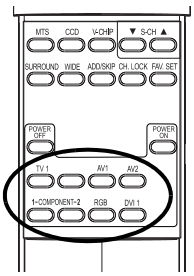


Notes:

Some of the Direct Input Selection keys will not be applicable for this monitor.

For AV mode, use AV1.

For S-Video, use AV2.



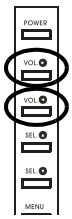
Using Direct Input Selection Keys on the Remote Control

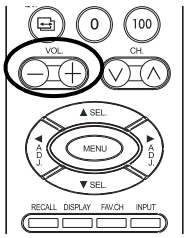
If you prefer not to cycle thru all available inputs, you can use the Direct Input Selection keys of the remote control.

1 Select the input that you would like to switch to.

2 Press the Direct Input Selection key for that input.

7.3 ADJUSTING SOUND VOLUME

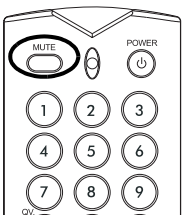




Using Front Panel or Remote Control

1 To turn up sound volume, press VOLUME + on either the front panel of the monitor or on the remote control.

2 To turn down sound volume, press VOLUME - on either the front panel of the monitor or on the remote control.



Using MUTE

1 If you would like to turn off the volume on a temporary basis, press the MUTE key.

2 When the monitor's volume is muted, the monitor will display "MUTE" on the upper right corner of the screen.

3 To turn off the mute mode, press the MUTE key or the VOLUME +/- button again.

Notes:

- If the monitor's built-in speakers are turned off using the OSD, then volume controls will not affect volume generated by the built-in speaker.
- Volume controls are valid when audio output is set to "variable". (See page 38) If the audio output is set to "fixed", then volume control is not active.

7.4 UNDERSTANDING HDTV

What is Digital Television or DTV?

Digital TVs are televisions that can receive and display digital television broadcasts sent using any one of three following categories:
HDTV (High Definition TV), EDTV (Enhanced Digital TV), and SDTV (Standard Definition TV).

What is the Difference Between HDTV, EDTV, and SDTV?

HDTV, EDTV, and SDTV are three grades of televison or monitors. They reference the maximum resolution capability of a digital television or monitor to fully display digital broadcasts without having to "down-convert" the actual signal content to fit the monitor's display limitations.

The resolution requirements for each of the three DTV classifications and an explanation of the specifications are described below:

HDTV HIGH DEFINITION TELEVISION

Vertical Res.[1]	Horizontal Res.[2]	Aspect Ratio[3]	Scan Method[4]
1080 lines	1920 dots	16:9 Wide	Interlaced
720 lines	1280 dots	16:9 Wide	Progressive

HDTV grade televisions and monitors are capable of displaying a maximum of either 1080 lines using interlaced scan method or 720 lines using progressive scan method.l

EDTV ENHANCED DEFINITION TELEVISION

Vertical Res.[1]	Horizontal Res.[2]	Aspect Ratio[3]	Scan Method[4]
480 lines	640 dots	4:3 Wide	Progressive

EDTV grade televisions and monitors are capable of displaying a maximum of 480 lines using progressive scan method. All resolutions higher than 480 lines must be reduced to 480 lines in order to be displayed. Progressive scan method reduces flicker; however, picture quality may not necessarily outperform 480 interlaced when viewed at normal viewing distances.

SDTV STANDARD DEFINITION TELEVISION

Vertical Res.[1]	Horizontal Res.[2]	Aspect Ratio[3]	Scan Method[4]
480 lines	640 dots	4:3 Wide	Interlaced

SDTV grade televisions and monitors are capable of displaying a maximum of 480 lines using interlaced scan method. All resolutions higher than 480 lines must be reduced to 480 lines in order to be displayed.

1. Vertical Resolution (Scan Lines)
Vertical scan lines refer to the number of horizontal lines a TV or monitor can display to create an image. As the number of lines increase, more information is displayed, resulting in better picture quality.

2. Horizontal Resolution
Each horizontal line in a TV or monitor is made up of individual dots (pixels). The higher the number of pixels, the finer the TV picture becomes. Horizontal pixel measurements using today's technology can range from 250 for a VCR to as much as 500 for a DVD player.

3. Aspect Ratio
Aspect ratio identifies the ratio of the TV screen's width over its height. A 16:9 aspect ratio refers to a wide-screen picture format, while a 4:3 refers to a standard "square" TV format.

4. Scan Mode
Interlaced scanning is a method that creates a TV picture with alternating lines of information and is the cause for flickering. Progressive scanning is a method that creates a TV picture with consecutive lines of information that results in flicker-free picture quality.

How is a HDTV/EDTV/SDTV Different from a HDTV/ EDTV/SDTV Monitor?

In order to receive digital broadcasts, a digital "receiver" or "decoder" must be used to receive and decode digital broadcast signals.
Digital decoders can be built into the monitor itself or they may come in the form of a set-top box that is added separately to the monitor.
HDTV/EDTV/SDTV Monitors are digital monitors without a digital decoder built into the television whereas HDTV/EDTV/SDTV Televisions are displays with a decoder built-in. HDTV/EDTV/SDTV Monitors give you the flexibility to add a digital decoder in the future when digital broadcasts are more prevalent.

What is "Down-Convert"?

Down-convert takes place when a digital broadcast signal exceeds the display capabilities of the monitor and the broadcast signal is reduced to match the monitor's limited display capabilities. For example, if a TV station broadcasts a digital program using 1080 lines (1080i format) while the monitor can only display 480 lines, the signal is reduced or down-converted to only 480 lines, resulting in lesser information being displayed.

This plasma monitor is HDTV compatible. This means that this monitor can display up to 720 lines using progessive scan format; and 1080 lines using interlace scan format.

What is "Up-Convert"?

Up-convert takes place when a HDTV set up box display capabilities exceed the digital broadcast signal and the broadcast signal is increased to match the TV's display capabilities. For example, if a TV station broadcasts a digital program using 480 lines and the HDTV set up box is able to display 1080 lines, the signal is increased or “up-converted” to match the TV.

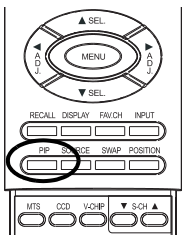
This monitor includes advanced digital processing where all traditional analog television and video formats (NTSC / PAL) in the form interlaced signals are up-converted to 480 lines progressive scan method. Please note that up-conversion may result in some picture artificacts because information is being artificially added to the picture.

Is This Plasma Monitor Compatible with HDTV set up box?

This plasma monitor is compatible with HDTV set up box. In order to receive HDTV broadcasts, you will need to use a "HDTV decoder" or "HDTV set-top box" with component video output, RGB video or DVI output. Please consult your local sales representative prior to purchasing a HDTV decoder or HDTV set-top box.

8. ADVANCED FUNCTIONS

8.1 PICTURE-IN-PICTURE (PIP) / SIDE-BY-SIDE PICTURE (POP)

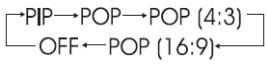


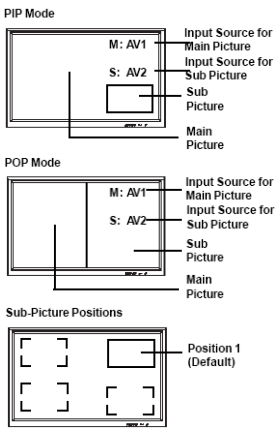
Turn On PIP or POP Mode

1 Press the PIP key once on the remote control to activate in PIP mode.

2 Press the PIP again to switch to POP mode.

3 Press the PIP key sequentially will cycle between:



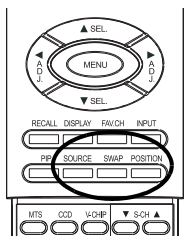


In PIP mode, a small window is displayed in one of the four corners. The OSD on the upper right corner will denote the input selected for main picture (large screen) and the sub-picture (small screen) displayed.

In POP mode, the screen will be split in half. The screen on the left side is the main picture and the screen on the right is the sub-picture. The OSD on the upper right corner will denote the input signal source for both the main and sub-pictures.

Notes:

- POP (4:3) Mode will preserve 4:3 aspect ratio for both images displayed in the POP windows.
- POP (16:9) Mode will preserve 16:9 aspect ratio for both images displayed in the POP windows.
- All PIP and POP related settings are also accessible using the On-Screen menu Display.



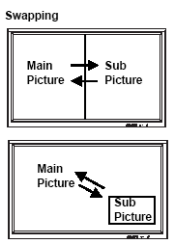
Changing the Sub-Picture Position in PIP Mode

Once the PIP mode is turned on;

1 Press the POSITION key to switch position.

2 Press the POSITION key repeatedly to cycle through all four corners of the screen.

This function is not applicable under POP mode.



Switching Main and Sub-Pictures (SWAP)

You can swap the main picture and subpicture using the SWAP key.

1 Press the SWAP key once to swap.

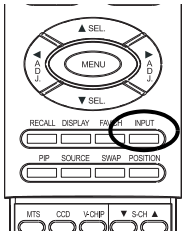
2 Press the SWAP key again to switch back.

Changing the Input Source for Sub-Picture

Once the PIP or POP mode is turned on;

1 Press the SOURCE key to change the sub-picture's input source

2 Press the SOURCE key repeatedly to cycle through all available inputs for the subpicture.



Changing the Input Source for Main Picture

1 Press the INPUT key or any of the DIRECT INPUT KEYS to change.

Notes:

- PIP mode can only be turned on if the monitor's input is set to: AV1, AV2 (S-Video), Component 1 and 2. If the monitor's main input is set to RGB or DVI, the PIP and POP will not function.
- If the monitor's input is set to Component 1 or Component 2, the PIP will only turn on if the input signal source is compatible with 15KHz signals such as 480i and Y/CB/CR signals.
- When changing input source for sub-pictures to Component 1 and Component 2, only 15KHz compatible signals such as 480i and Y/CB/CR will result in a video picture display. If another signal other than 15KHz is detected, the sub-picture may display distorted video signals.
- Once PIP is turned off, the next time you return on PIP mode, the position of the sub-window will start at default position.

Accessing PIP and POP Modes Modes using OSD

To access these modes using OSD:

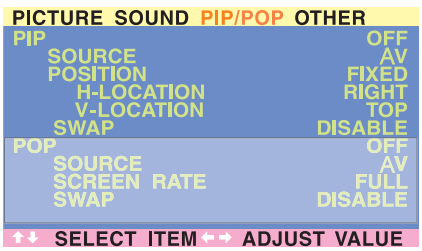
1 Press the MENU +/- keys on the remote or on the front control panel of the monitor.

2 Use the ADJ +/- keys to switch to "PIP/POP" Menu.

3 Make sure that the "Picture" OSD menu below is displayed.

4 Use the MENU +/- keys to move up and down to choose the sub-category you wish to change.

5 Use the ADJ +/- keys to actually change the setting.

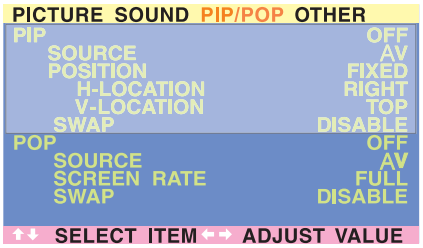


PIP options:

- PIP On/Off
- Input Source Selection
- PIP Window Position

  Choose between FIXED or VARIABLE windows position:
  - If set to FIXED, the PIP window can be set in any of the four corners of the screen. Use H-LOCATION and V-LOCATION to set the position of the window.
  - If set to VARIABLE, the PIP window can be variably set to anywhere on the screen using H-LOCATION and V-LOCATION.
- PIP Window SWAP

  By default, the OSD will always display DISABLE. To swap the main and sub windows, use the ADJ +/- key to swith to ENABLE. Once the swap is complete, the OSD will return to display DISABLE.



POP options:

- POP On/Off
- Input Source Selection
- Screen Rate (Aspect Ratio Control)

  When POP (Side-by-side) picture is turned on, you can change the aspect ratio for the image displayed:
  - Choose FULL to show a full screen image. The displayed image may appear distorted because the monitor has to manipulate the image so that it fits within the smaller window.
  - Choose 4:3 to show an image in native 4:3 aspect ratio within the POP windows. Small black bars are added in order to maintain a true 4:3 aspect ratio.
  - Choose 16:9 to show an image in wide-screen aspect ratio within the POP windows. Small black bars are added in order to maintain a true 16:9 aspect ratio.
- PIP Window SWAP
- By default, the OSD will always display DISABLE. To swap the main (left) and sub (right) windows, use the ADJ +/- key to swith to ENABLE. Once the swap is complete, the OSD will return to display DISABLE.

8.2 WIDESCREEN (16:9 ASPECT RATIO) VIEWING MODES

Understanding Widescreen Modes

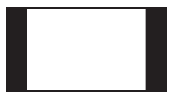
This plasma monitor is capable of displaying a widescreen image on the native 16:9 aspect ratio screen. However, not all available broadcast or video content fits perfectly in a widescreen (16:9) format resulting in unused screen space. Please use the following guidelines to determine suitable widescreen viewing modes available that best support the type of broadcast / video content you wish to display. All widescreen viewing modes are available by pressing the WIDE key. Pressing the WIDE key will repeatedly cycle through:

4:3 → PANORAMA → 16:9 ZOOM1
16:9 ← 16:9 ZOOM3 ← 16:9 ZOOM2

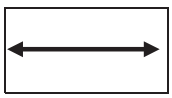
For 4:3 Aspect Ratio (Square) Content

Content from VCR, and some DVD's are formatted using a "square" 4:3 format.

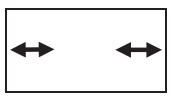
Then we recommend the following three viewing options:



- **4:3 (NORMAL)**
  In 4:3 mode, the original 4:3 image is preserved but black bars are added to the the extra space on the left and right.



- **16:9 (FULL)**
  The original 4:3 image is proportionally stretched to fill the entire screen.

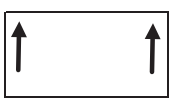


- **PANORAMA**
  The original 4:3 image is expanded in both the horizontal and vertical directions. The center of the picture is almost normal while the edges are considerably expanded.

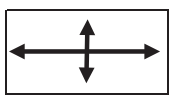
For Widescreen Content

Many popular DVD titles are "anamorphic" (widescreen); however, there are two predominant "anamorphic" (widescreen) aspect ratios: 2.35:1 and 1.85:1. When a 2.35:1 content is displayed on this 16:9 widescreen monitor, you will notice smaller black bars on top or bottom of the screen. When a 1.85:1 content is displayed, you will still see black bars, but not as large as 2.35:1.

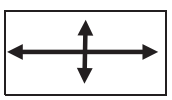
If you do not want to see the black bars when playing back a widescreen movie, you can set to ZOOM 2 or ZOOM 3 to fully stretch the image.



- **ZOOM: 1**
  Zoom1 shifts the image up to faciliate the display of subtitles.



- **ZOOM: 2**
  Zoom 2 is set to stretch 1.85:1 content to full screen eliminating the black bars.



- **ZOOM: 3**
  Zoom 3 is set to stretch 2.35:1 content to full screen eliminating the black bars.

Notes:

- 4:3 and Panorama modes are not available when zoom mode is activated.
- When using Component 1 and Component 2 inputs to display 576p, 1080i or 720p, Panorama mode is not available.
- When using RGB or DVI inputs, only 4:3 and 16:9 modes are available.
- Do not stay in 4:3 mode for an extended period, as this may cause a permanent after-image to remain on your screen.

Accessing Widescreen Viewing Modes using OSD

To access these modes using OSD:

1 Press the MENU +/- keys on the remote or the front control panel of the monitor.

2 Make sure that the "Picture" OSD menu is displayed.

3 Use the MENU +/- keys to navigate to SCREEN WIDTH and use the ADJ +/- keys to switch between: 16:9, 4:3, PANORAMA, ZOOM1, ZOOM2, ZOOM3.

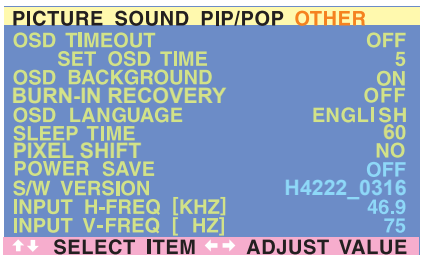
8.3 ON-SCREEN DISPLAY (OSD) SETTINGS

Accessing OSD Settings Menu

You can set various OSD display settings from the OSD menu.

1 Press the MENU +/- keys on the remote or the front control panel.

2 Use the ADJ +/- keys to navigate to "OTHER" OSD sub-menu as displayed below.

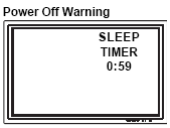


Settings menu options:

- **OSD Timeout**
  Turns on OSD timer when set to ON. When set to ON, the OSD will automatically disappear from the display if no key action is detected for the set number of seconds. If set to OFF, then OSD will remain on the screen.
- **OSD Time Setting**
  Sets the number of seconds the OSD will remain active on the display before turning itself off. OSD TIMEOUT must be set to ON for this setting to function.
- **OSD Background**
  Set to OFF if you want a transparent setting. Set to ON if you want a blue background.
- **Burn in Recovery**
  Set to ON, if you want a full white screen to recover burn-in effects
- **Pixel Shift**
  Set between 1 and 5 will give a picture shift

Note:
To prevent permanent after-image, we strongly suggest setting the "OSD TIMEOUT" to ON.

8.4 SLEEP TIMER SETTINGS



Setting Sleep Timer Using OSD

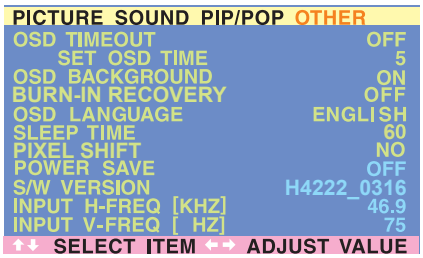
To set the sleep timer using the OSD screen:

1 Press the MENU +/- keys on the remote or the front control panel.

2 Use the ADJ +/- keys to navigate to "OTHER" OSD sub-menu as displayed below.

3 Use the MENU +/- keys to navigate to SLEEP

4 Use the ADJ +/- keys to set to ON.
The monitor will function normally until the 1-minute mark. At the 1-minute mark, the sleep timer will display a second by second countdown clock to notify you that the monitor is about to turn off.



Sleep Timer options:

- **Sleep Timer On/Off**
  To turn on sleep timer, switch to ON position. To turn OFF sleep timer, switch to OFF.

- **Timer Setting**
  Use the ADJ +/- keys to set the turn-off timer from 1 to 120 minutes in steps of 20 minutes.

8.5 VARIABLE AND FIXED AUDIO OUTPUT

Setting Output Using OSD

You can set the type of output this monitor outputs from its audio output jack located in the rear of the monitor. By using an OSD based switch, you can easily choose between variable or fixed audio outputs.

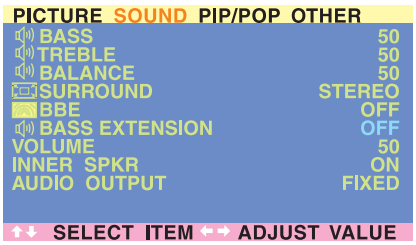
To set the audio output setting:

1 Press the MENU +/- keys on the remote control or the front control panel of the display.

2 Use the ADJ +/- keys to navigate to “SOUND” OSD sub-menu.

3 Use the MENU +/- keys to select the AUDIO OUTPUT option.

4 Use the ADJ +/- keys to change setting between FIXED or VARIABLE.



Audio Output

Sets the type of audio output sent from the audio output jacks located in the rear of monitor.

- **VARIABLE**
  When set to Variable, audio output is affected by the monitor’s internal audio controls including bass, treble, surround, BBE, bass extension, and volume.

- **FIXED**
  When set to Fixed, the audio output bypasses the monitor’s internal audio control so that functions such as bass, treble, surround, BBE, bass extension, and volume controls have no effect.

8.6 SOUND ADJUSTMENTS

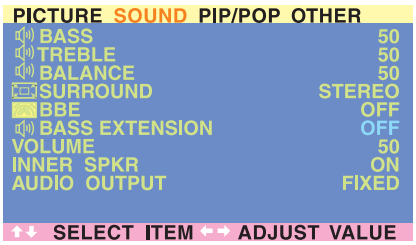
Sound Adjustments Using OSD

Sound adjustments are available to enhance the sound performance of the monitor. These adjustments will affect the monitor's built-in speakers and the AUDIO OUTPUT jacks when set to "Variable".
To access sound adjustments:

1 Press the MENU +/- keys on the remote or the front control panel.

2 Use the ADJ +/- keys to navigate to "SOUND" OSD sub-menu.

3 Use the MENU +/- keys to select the various options described in this section.



Sound Adjustment options:

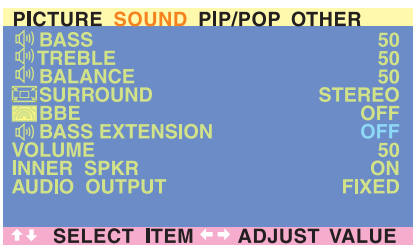
- **BASS**
  Adjusts the BASS level of the sound. For more bass response, increase the BASS level.

- **TREBLE**
  Adjusts the TREBLE level of the sound. For more vocal and high frequency response, increase the TREBLE level.

- **BALANCE**
  Adjusts the BALANCE level between LEFT and RIGHT channels.
  A value of 50 is the center point between LEFT and RIGHT.
  To shift the sound towards the RIGHT, increase the value up to 100.
  To shift the sound towards the LEFT, reduce the value down to 1.

- **SRS® Surround Sound and BBE® Sound Maximizer circuitry**
  Use SRS Surround Sound to simulate a surround sound effect if you are not using a multi-channel sound setup.
  Use the BBE Sound Maximizer when using the monitor to playback live performance related audio programs.

Note:
When BBE is switched ON, then the BASS and TREBLE levels are set to a default Auto-level.



Switching OFF Built-In Speakers

This monitor is equipped with built-in speakers. You can switch the internal speakers ON or OFF using the OSD. Because these speakers are general purpose, you may consider switching them OFF during hi-fidelity playback of movies or other content.

- **INNER SPEAKER ON/OFF**
  Set to ON or OFF to turn the monitor's internal speakers on or off. This setting will not affect AUDIO OUTPUT jacks.

- **BASS EXTENSION**
  Bass extension extends the level of BASS output by the monitor. This function is automatically set to OFF if the internal speakers are turned ON to protect the internal speaker from damage. This function will affect the BASS performance only through AUDIO OUTPUT jacks and when the AUDIO OUTPUT setting is set to VARIABLE.

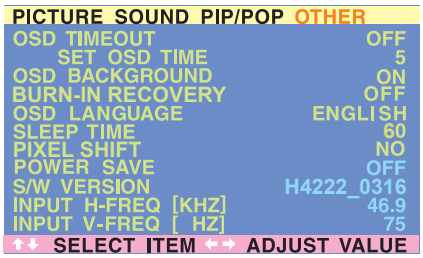
8.7 SIGNAL FREQUENCY INFORMATION DISPLAY

Displaying Frequency of Signal

This plasma monitor is capable of displaying the frequency level of the signal being displayed. To see signal frequency information:

1 Press the MENU +/- keys on the remote or the front control panel.

2 Use the ADJ +/- keys to navigate to the "OTHER" OSD sub-menu.



- **INPUT H-FREQ (KHZ)**
  Displays the horizontal signal frequency of the signal currently displayed.
- **INPUT V-FREQ (HZ)**
  Displays the vertical signal frequency of the signal currently displayed.

When Using AV1 and AV2 Inputs

Horizontal	Vertical	Format
15.7	60	NTSC Video
15.6	50	PAL Video

8.8 PICTURE ADJUSTING

8.8.1 FOR AV

Accessing Picture Adjustment Mode

Various picture adjustments can be set using the Picture Adjustment OSD menu. To access the OSD menu:

1 Press the MENU +/- keys on the remote or the front control panel.

2 The first menu displayed is the PICTURE menu. Make sure that the "Picture" OSD menu is displayed.

3 Use the MENU +/- keys to move up and down to choose the option you wish to adjust. An explanation of each adjustment is listed below.

4 Use the ADJ +/- keys to change the setting.

Notes:

- These controls are available when input selection is set to: AV1 and AV2 (S).
- To restore picture settings to the factory defaults, simply press the RECALL key on the remote control.

.Table below shows an explanation of the picture adjustments available for AV:

	**CONTRAST** Increases or decreases the level of white in the video picture. Increasing contrast will make white areas of the video picture brighter. Contrast works in conjuction with Brightness.
	**BRIGHT** Enhances the level of dark areas in the video picture such as night scenes and shadow scenes. Increasing brightness will make dark areas more visible.
	**COLOR** Adjusts the color saturation of the video picture. Increasing color will make the color more intense. Reducing color setting will make the color less intense.
	**TINT** Adjusts the color of fleshtones. Increase in the right direction will shift the picture with more green in appearance. Decreasing setting in left direction will shift the picture with more red in appearance.
	**SHARPNESS** Ajusts the amount of detail enhancement to the video picture. Increasing the setting will enhance the edges of objects in the video picture. Decreasing the setting will reduce enhancement.
	**COLOR TEMPERATURE** Adjusts the white balance. There are tree settings to choose: COOL; NORMAL,WARM. .
	**CLOCK PHASE** Fine-tunes the monitor to perfectly synchronize the video's signal source.
	**SCREEN WIDTH** Selects the various screen width modes. See page 34 for more information.)
	**NOISE REDUCTION** Adjusts the Noice level. There are four settings to choose: OFF; IOW; MEDIUM;HIGH.

8.8.2 FOR COMPONENT VIDEO

Accessing Picture Adjustment Mode

Various picture adjustments can be set using the Picture Adjustment OSD menu. To access the OSD menu:

1 Press the MENU +/- keys on the remote or the front control panel.

2 The first menu displayed is the PICTURE menu. Make sure that the "Picture" OSD menu is displayed.

3 Use the MENU +/- keys to move up and down to choose the option you wish to adjust. An explanation of each adjustment is listed below.

4 Use the ADJ +/- keys to change the setting.

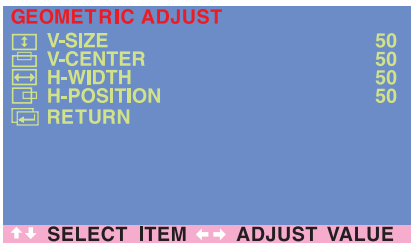
Notes:

- These controls are available when input selection is set to Component 1 and Component 2 inputs.
- To restore picture settings to the factory defaults, simply press the RECALL key on the remote control.

Table below shows an explanation of the picture adjustments available for Component Video:

	CONTRAST Increases or decreases the level of white in the video picture. Increasing contrast will make white areas of the video picture brighter. Contrast works in conjuction with Brightness.
	BRIGHT Enhances the level of dark areas in the video picture such as night scenes and shadow scenes. Increasing brightness will make dark areas more visible.
	COLOR Adjusts the color saturation of the video picture. Increasing color will make the color more intense. Reducing color setting will make the color less intense.
	TINT Adjusts the color of fleshtones. Increase in the right direction will shift the picture with more green in appearance. Decreasing setting in left direction will shift the picture with more red in appearance.
	SHARPNESS Adjusts the amount of detail enhancement to the video picture. Increasing the setting will enhance the edges of objects in the video picture. Decreasing the setting will reduce enhancement.
	COLOR TEMPERATURE Adjusts the white balance. There are tree settings to choose: COOL; NORMAL,WARM.
	CLOCK PHASE Fine-tunes the monitor to perfectly synchronize the video's signal source.

	SCREEN WIDTH Selects the various screen width modes. See page 34 for more information.
	NOISE REDUCTION Adjusts the Noice level. There are four settings to choose: OFF; lOW; MEDIUM;HIGH
	GEOMETRIC ADJUST Opens the Geometric Adjust sub-menu.



Accessing Geometric Adjustment Mode

Various geometric adjustments can be set using the Geometric Adjustment OSD menu. To access the Geometric Adjust sub-menu:

1 Press the MENU +/- keys on the remote or the front control panel.

2 The First menu displayed is the Picture menu. Make sure that the "Picture" OSD menu is displayed.

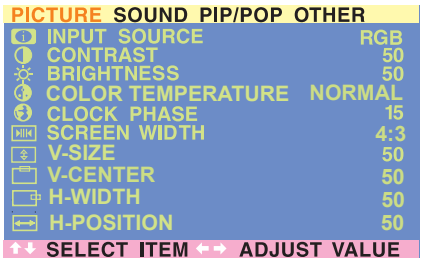
3 Use the MENU +/- keys to set the selection to "ON". As soon as you press the button, the Geometric Adjust sub-menu will be displayed.

4 Press the ADJ +/- keys to move up and down to choose the option you wish to adjust. An explanation of each adjustment is listed below.

5 Use the ADJ +/- keys to change the setting.

Table below shows an explanation of the available geometric adjustments:

	V-SIZE Changes the vertical size of the picture. Increase to enlarge the picture size in the vertical direction. Decrease to reduce the picture size in the vertical direction.
	V-CENTER Changes the vertical position of the picture. Increase to shift the picture up. Decrease to shift the picture down.
	H-WIDTH Changes the horizontal size of the picture. Increase to enlarge the picture size in the horizontal direction. Decrease to reduce the picture size in the horizontal direction.
	H-POSITION Changes the horizontal position of the picture. Increase to shift the picture to the right. Decrease to shift the picture to the left.
	RETURN Return to "PICTURE" OSD menu.



8.8.3 FOR RGB / DVI

Accessing Picture Adjustment Mode

Various picture adjustments can be set using the Picture Adjustment OSD menu. To access the OSD menu:

1 Press the MENU +/- keys on the remote or the front control panel.

2 The first menu displayed is the PICTURE menu. Make sure that the "Picture" OSD menu is displayed.

3 Use the MENU +/- keys to move up and down to choose the option you wish to adjust. An explanation of each adjustment is listed below.

4 Use the ADJ +/- keys to change the setting.

Notes:

- These controls are available when input selection is set to: RGB or DVI inputs.
- To restore picture settings to the factory defaults, simply press the RECALL key on the remote control.

Table below shows an explanation of the picture adjustments available for RGB/DVI:

	CONTRAST Increases or decreases the level of white in the video picture. Increasing contrast will make white areas of the video picture brighter. Contrast works in conjuction with Brightness.
	BRIGHT Enhances the level of dark areas in the video picture such as night scenes and shadow scenes. Increasing brightness will make dark areas more visible.
	COLOR TEMPERATURE Adjusts the white balance. There are tree settings to choose: COOL; NORMAL,WARM.
	CLOCK PHASE Fine-tunes the monitor to perfectly synchronize the video's signal source.
	SCREEN WIDTH Changes the screen width modes between 4:3, OR 16:9. See page 34 for more information.
	V-SIZE Changes the vertical size of the picture. Increase to enlarge the picture size in the vertical direction. Decrease to reduce the picture size in the vertical direction.

	**V-CENTER** Changes the vertical position of the picture. Increase to shift the picture up. Decrease to shift the picture down.
	**H-WIDTH** Changes the horizontal size of the picture. Increase to enlarge the picture size in the horizontal direction. Decrease to reduce the picture size in the horizontal direction.
	**H-POSITION** Changes the horizontal position of the picture. Increase to shift the picture to the right. Decrease to shift the picture to the left.

9. OPTIONAL ACCESSORIES

The following accessories are available and may be purchased from your local sales representative:

- Wall Mount
- Composite Video Cable (RCA)
- S-Video Cable (Mini-DIN)
- Component Video Cable (RCA to RCA)
- Audio Cable (RCA Cable)
- RGB Cable

10. TECHNICAL SPECIFICATIONS

10.1 SPECIFICATIONS

Display Panel

Screen Size	42"
Aspect Ratio	16:9
Number of Pixels	1024 (Horizontal, RGB Trio) x 1024 (Vertical)
Pixel Pitch	0.90 x 0.90 mm
Luminance	1100 cd/m^2 , at 1% white window pattern

Power Source

Input Voltage	100 ~ 240 Vac; 50/60 Hz
Input Current	3.5 A
Inrush Current	60 Ap-p/ 20 ms max.
Power Consumption	380±10% Watts (at 110 Vac/ color bar pattern)
Stand-by & Power Save	6 Watts max. (at 110 Vac)

Connections

Connector Types	RCA Jacks for audio, video, Y/C_B/C_R and Y/P_B/P_R 4-pin DIN S-terminal for S-Video 9-pin Sub-D for RS-232 15-pin Sub-D for RGB 24-pin DVI

Video/S-Video Signal

Type	Analog
Polarity	Positive
Amplitude	Video 1 Vp-p (with sync), S-Video Y=1 Vp-p C=0.286 Vp-p
Frequency	H: 15.734 kHz V: 60 Hz (NTSC) H: 15.625 kHz V: 50 Hz (PAL)
Input Impedance	75 ohms

Y/C_B/C_R or Y/P_B/P_R Signal (Component 1 & 2)

Type	Analog	
Polarity	Positive	
Amplitude	Y: 1 Vp-p (with sync) C_B/P_B: 0.7 ± 0.1 Vp-p C_R/P_R: 0.7 ± 0.1 Vp-p	
Frequency		
Y/C_B/C_R	H: 15.734 kHz	V: 60 Hz (NTSC)
	H: 15.625 kHz	V: 50 Hz (PAL)
Y/PB/PR: HDTV	H: 31 kHz	V: 60 Hz (480p)
	H: 45 kHz	V: 60 Hz (720p)
	H: 33 kHz	V: 60 Hz (1080i)
	H: 37.5 kHz	V: 50 Hz (720p)
	H: 31.25 kHz	V: 50 Hz (576p)
	H: 28.125 kHz	V: 50 Hz (1080i)

RGB Signal

Type	TTL
Polarity	Positive or Negative
Amplitude	RGB: 0.7 Vp-p
Frequency	H: support to 31k ~ 91 kHz V: support to 50 ~ 85 Hz

DVI Signal

Type	Digital
Polarity	Positive or Negative
Frequency	H: support to 31k ~ 63 kHz V: support to 50 ~ 85 Hz

Audio Signal Analog 500 mV_{rms} / more than 22 kohms

Pin Assignments for Sub-D Connector (In/ Loop Out)

1 - RED	6 - RED GND	11 - GND
2 - GREEN	7 - GREEN GND	12 - SDA
3 - BLUE	8 - BLUE GND	13 - H-SYNC
4 - GND	9 - NC	14 - V-SYNC
5 - GND	10 - GND	15 - SCL

Pin Assignments for 24-pin DVI Connector (Digital only))

1 - TMDS Data 2-	9 - TMDS Data 1-	17 - TMDS Data 0-
2 - TMDS Data 2+	10 - TMDS Data 1+	18 - TMDS Data 0+
3 - TMDS Data 2/4 Shield	11 - TMDS Data 1/3 Shield	19 - TMDS Data 0/5 Shield
4 - TMDS Data 4-	12 - TMDS Data 3-	20 - TMDS Data 5-
5 - TMDS Data 4+	13 - TMDS Data 3+	21 - TMDS Data 5+
6 - DDC Clock	14 - +5 V Power	22 - TMDS Clock Shield
7 - DDC Data	15 - Ground (for +5 V)	23 - TMDS Clock+
8 - Not Connected	16 - Hot Plug Detect	24 - TMDS Clock-

RGB/DVI for VESA Standard

Mode No.	Resolution	Refresh Rate (Hz)	Horizontal Frequency (kHz)	Vertical Frequency (Hz)	V-sync Polarity (TTL)
1	640x480 (VGA)	60	31.500	59.940	-
2	640x480 (VGA)	72	37.861	72.809	-
3	640x480 (VGA)	75	37.500	75.000	-
4	640x480 (VGA)	85	43.269	85.008	-
5	800x600 (SVGA)	56	35.156	56.250	
6	800x600 (SVGA)	60	37.879	60.317	
7	800x600 (SVGA)	72	48.077	72.188	
8	800x600 (SVGA)	75	46.875	75.000	
9	800x600 (SVGA)	85	53.674	85.061	
10	1024x768 (XGA)	60	48.364	60.004	
11	1024x768 (XGA)	70	56.476	70.069	
12	1024x768 (XGA)	75	60.023	75.029	
13	1024x768 (XGA)	85	68.677	84.997	
14	1280x1024 (SXGA)	60	63.981	60.020	
15*	1280x1024 (SXGA)	75	79.976	75.025	
16*	1280x1024 (SXGA)	85	91.146	85.024	
17	720x400 (DOS)	70	31.469	70.087	
18	720x576p (EDTV)	50	31.25	50.000	
19	1280x720p (HDTV)	60	45.000	60.000	
20	1920x1080i (HDTV)	60 (i)	33.750	60.000	
21	640x350 (VGA)	70	31.469	70.087	
22	852x480 (WVGA)	60	31.413	59.835	
23	640x480 (Apple)	67	35.000	66.667	
24	832x624 (Apple)	75	49.725	74.550	
25	1152x870 (Apple)	75	68.681	75.062	
26	1920x1080i	50	28.125	50.000	
27	1280x720p (HDTV)	50	37.5	50.000	

* These modes are not supported in DVI mode.

$Y/P_B/P_R$ for Component 1 and 2

Mode	Resolution	Refresh Rate
1	640x480p	60
2	1920x1080i	60
3	1280x720p	60
4	720x576p	50
5	1920x1080i	50
6	1280x720p	50

Max. Resolution Up to 1280x1024

Dimensions & Weight

	With Stand Without Speakers	Without Stand Without Speakers
Width	1081 mm	1081 mm
Height	722 mm	677 mm
Depth	220 mm	95 mm
Weight	80.5 lbs/ 36.5 kg	77.6 lbs/ 35.2 kg

Operating Conditions

Temperature	0 ~ 40°C (32 ~104°F)
Relative Humidity	20 ~ 80%
Pressure	800 ~ 1114 hPa

Operating Conditions

Temperature	-5 ~ 45°C
Relative Humidity	20 ~ 90%
Pressure	700 ~ 1114 hPa
Vibration	X/Y/Z 0.5G/ 10 ~ 55 Hz (sweep)/ 10 minutes

Acoustics

(IHF A-weighted 1 meter)	40 dB max.

Sound

Residual hum (at max. Volume)	500 µW max.
Practical max. audio output (at 10% THD max.)	1.0 Vp-p 1 kHz input 5 W +5 W max. /12 ohms
Sound distortion (at 250 mW 1 kHz)	1% max.
Audio output (input at 1.4 Vp-p	>= 1.0 Vp-p

Reliability Requirement

The MTBF is 20,000 hrs under operation at 25 ± 5°C (Half luminosity, motion picture).

Emission Requirement

The unit meets the EMI limits in all screen modes, as qualified by FCC, class B, part 15.

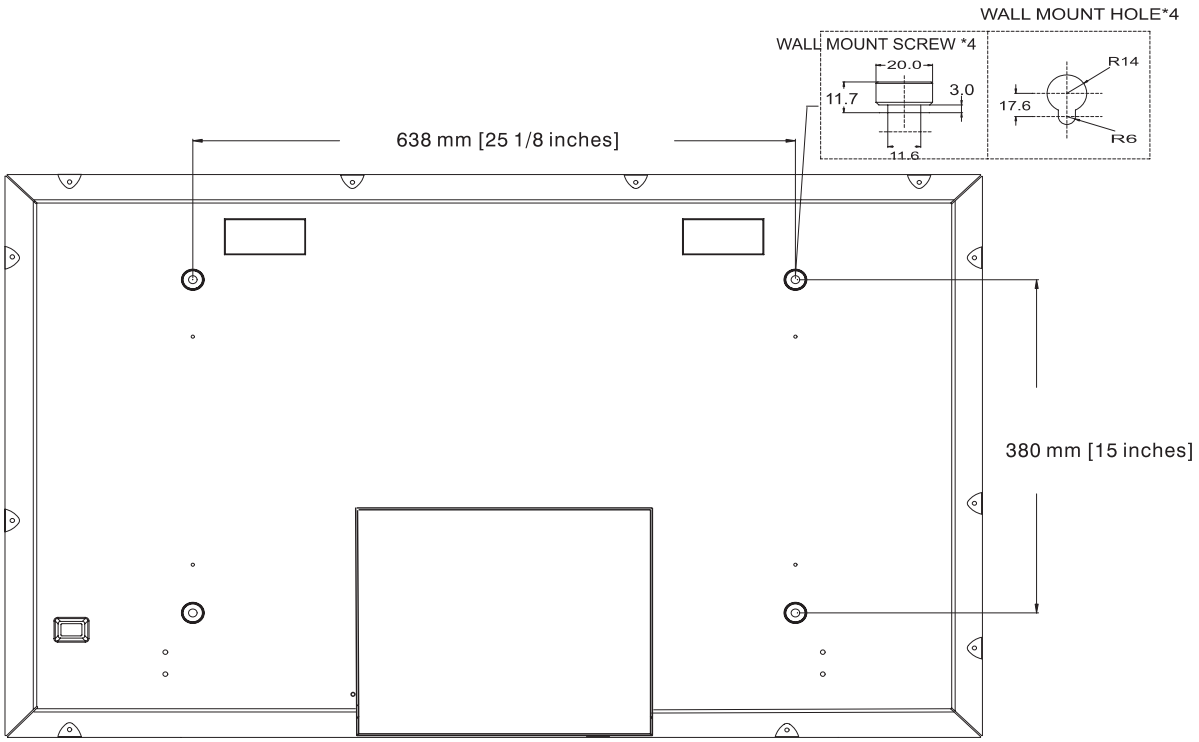
Power Management

Mode	H-sync	V-sync	Video	Power dissipation
Normal	Pulse	Pulse	Active	Normal power
Stand-by	No pulse	No pulse	No video	Power off
Power saving	Pulse	No pulse	Blanked	Less than 6 Watts
	No pulse	Pulse		

This Plasma monitor is Energy Star compliant when used with a computer equipped with DPMS.

10.2 MOUNTING MATERIALS

(Fixed and Flexible Wall Mounts, Ceiling Mounts, etc.)



Notes:

- Follow mount bracket instruction included in mounting kit
- This type of equipment is to be installed by qualified installers; please contact with authorized dealer for installation.

11. CLEANING AND TROUBLESHOOTING

11.1 CLEANING

Cautions When Using the Plasma Monitor

- Do not bring your hands, face or objects close to the ventilation holes of the plasma monitor. Top of plasma monitor is usually very hot due to the high temperature of exhaust air being released through the ventilation holes. Burns or personal injuries may occur if any body parts are brought too close. Placing any object near the top of the monitor could also result in heat related damages to the object as well as the monitor itself.
- Be sure to disconnect all cables before moving the plasma monitor. Moving the monitor with its cables attached may damage the cables and thus case fire or electric shock danger.
- Disconnect the power plug from the wall outlet as a safety precaution before carrying out any type of cleaning or maintenance procedure.

Front Panel Cleaning Instructions

- The front of the monitor has been specially treated. Wipe the surface gently using only a cleaning cloth or a soft, lint-free cloth.
- If the surface is particular dirty, soak a soft, lint-free cloth in a mild detergent solution. Wring the cloth to remove excess liquid. Wipe the surface of the monitor to remove dirt. Then use a dry cloth of the same type to dry.
- Do not scratch or hit the surface of the panel with fingers or hard objects of any kind.
- Do not use volatile substances such as insect sprays, solvents and thinners.

Cabinet Cleaning Instructions

- If the cabinet becomes dirty, wipe the cabinet with a soft, dry cloth.
- If the cabinet is extremely dirty, soak a lint-free cloth in a mild detergent solution. Wring the cloth to remove as much moisture possible. Wipe the cabinet. Use another dry cloth to wipe over until the surface is dry.
- Do not allow any water or detergent to come into contact with the surface of the monitor. If water or moisture gets inside the unit, operating problems, electrical and shock hazards may result.
- Do not scratch or hit the cabinet with fingers or hard objects of any kind.
- Do not use volatile substances such as insect sprays, solvents and thinners on the cabinet.
- Do not place anything made from rubber or PVC near the cabinet for any extended periods of time.

11.2 TROUBLESHOOTING

Symptom	Possible Cause	Remedy
No picture is displayed	1 The power cord is disconnected. 2 The main power switch on the back of the monitor is not switched on. 3 The selected input has no connection. 4 The monitor is in standby mode in RGB mode.	1 Plug in the power cord. 2 Make sure the power switch is switched on. 3 Connect a signal connection to the monitor. 4 Press any key on your keyboard.
Interference displayed on the monitor or audible noise is heard	Caused by surrounding electrical appliances, cars/motorcycles or fluorescent lights.	Move the monitor to another location to see if the interference is reduced.
Color is abnormal	The signal cable is not connected properly.	Make sure that the signal cable is attached firmly to the back of the monitor.
Picture is distorted with abnormal patterns	1 The signal cable is not connected properly. 2 The input signal is beyond the capabilities of the monitor.	1 Make sure that the signal cable is attached firmly. 2 Check the video signal source to see if it is beyond the range of the monitor. Please verify its specifications with this monitor's specification section
Display image doesn't fill up the full size of the screen	1 If under RGB mode, the H-Size and V-Size is incorrectly set. 2 If under AV1, AV2, or Component with 480i input, the 4:3 WIDE mode is switched on.	1 Use H-Size and V-Size to adjust the size of the video. 2 Use the WIDE key to scroll through various full screen modes.
Can hear sound, but no picture	Improperly connected source signal cable. 1.	Make sure that both video inputs and sound inputs are correctly connected.
Can see picture but no sound is heard	1 Improperly connected source signal cable. 2 Volume is turned all the way down. 3 MUTE is turned on.	1 Make sure that both video inputs and sound inputs are correctly connected. 2 Use VOLUME +/- to hear sound. 3 Switch MUTE off by using the MUTE button.
Some picture elements do not light up	Some pixels of the plasma monitor may not turn on	This monitor is manufactured using an extremely high level of precision technology; however, sometimes some pixels of the monitor may not display. This is not a malfuction. Please see the enclosed warranty card for more information.
After-Images can still be seen on the monitor after the monitor is powered off. (Examples of still pictures include logos, video games, computer images, and images displayed in 4:3 normal mode)	A still picture is displayed for an over extended period of time.	Do not allow a still image to be displayed for an extended period of time as this can cause a permanent after-image to remain on the monitor.

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12. LIMITED WARRANTY (EUR)

Two Year Free Labor

Two Year Free Parts

WHO IS COVERED?

You must have proof of the date purchased to receive warranty service. A sales receipt or other document showing the date that you purchased the product is considered proof of purchase.

WHAT IS COVERED?

Warranty coverage begins the day you buy your product. For two years thereafter, all defective parts will be repaired or replaced and labor is free. After two years from the day of purchase, you pay for the replacement or repair of all parts, and for all labor charges. All parts, including repaired and replaced parts, are covered only for the original warranty period. When the warranty on the product expires, the warranty on all replaced and repaired parts also expires.

WHAT IS EXCLUDED?

Your warranty does not cover:

- labor charges for removal, installation or setup of the product, adjustment of customer controls on the product, and installation or repair of antenna systems outside of the product.
- product repair and/or part replacement because of misuse, accident, unauthorized repair or other cause not within the control of Philips Consumer Electronics Europe.
- reception problems caused by signal conditions or cable or antenna systems outside the unit.
- a product that requires modification or adaptation to enable it to operate in any country other than the country for which it was designed, manufactured, approved and/or authorized, or repair of products damaged by these modifications.
- incidental or consequential damages resulting from the product. (Some states do not allow the exclusion of incidental or consequential damages, so the above exclusion may not apply to you. This includes, but is not limited to, prerecorded material, whether copyrighted or not copyrighted.)
- modifications or adaptations to enable the product to operate in any country other than the country for which it was designed, manufactured, approved and/or authorized, or the repair of products damaged by these modifications.
- normal wear and tear (decreased light output of PDP module) over the product's lifetime.
- phosphor burn. Do not display static images for prolonged periods, otherwise phosphor burn might appear on part of the panel.
- limited quantity of cells (fine pixel elements) that do not produce light, or that remain lit after they should have turned off.

WHERE IS SERVICE AVAILABLE?

Warranty service is available in all countries where the product is officially distributed by Philips Consumers Electronics Europe. In countries where Philips Consumers Electronics Europe does not distribute the product, the local Philips service organization will attempt to provide service (although there may be a delay if the appropriate spare parts and technical manual(s) are not readily available).

MAKE SURE YOU KEEP ...

Please keep your sales receipt or other document showing proof of purchase. Attach it to this owner's manual and keep both nearby. Also keep the original box and packing material in case you need to return your product.

BEFORE REQUESTING SERVICE ...

Please check your owner's manual before requesting service. Adjustments of the controls discussed there may save you a service call.

TO GET WARRANTY SERVICE, OR IF YOU HAVE QUESTIONS ...

Please contact Philips at one of the telephone numbers below:

Austria 01 5465 75603

Belgium 02 275 0701

Cyprus 800 92256

Denmark 35 25 87 61

Finland 09 2290 1908

France 03 8717 0033

Germany 0696 698 4712

Greece 00800 3122 1223

Ireland 1 601 1161

Italy 02 4827 1153

Luxembourg 26 84 3000

Netherlands 053 482 9800

Norway 22 70 82 50

Poland 00800 311 1338

Portugal 800 831 363

Spain 917 456 246

Sweden 08 632 0016

Switzerland 02 2310 2116

United Kingdom 0207 949 0069

Repair must be performed by an authorized service center or a factory service center. If you do not live near a factory service center, contact your dealer. If your dealer is an authorized service center, he will arrange repair.

REMEMBER ...
Please record the model and serial numbers found on the product below. Also, please fill out and mail your warranty registration card promptly.
It will be easier for us to notify you if necessary.

MODEL # _

SERIAL # _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _wo_ _ _

13. LIMITED WARRANTY (USA)

One Year Free Labor

One Year Free Parts

WHO IS COVERED?

You must have proof of the date purchased to receive warranty service. A sales receipt or other document showing the date that you purchased the product is considered proof of purchase.

WHAT IS COVERED?

Warranty coverage begins the day you buy your product. For one year thereafter, all defective parts will be repaired or replaced and labor is free. After one year from the day of purchase, you pay for the replacement or repair of all parts, and for all labor charges. All parts, including repaired and replaced parts, are covered only for the original warranty period. When the warranty on the product expires, the warranty on all replaced and repaired parts also expires.

WHAT IS EXCLUDED?

Your warranty does not cover:

- labor charges for removal, installation or setup of the product, adjustment of customer controls on the product, and installation or repair of antenna systems outside of the product.
- product repair and/or part replacement because of misuse, accident, unauthorized repair or other cause not within the control of Philips Consumer Electronics North America.
- reception problems caused by signal conditions or cable or antenna systems outside the unit.
- a product that requires modification or adaptation to enable it to operate in any country other than the country for which it was designed, manufactured, approved and/or authorized, or repair of products damaged by these modifications.
- incidental or consequential damages resulting from the product. (Some states do not allow the exclusion of incidental or consequential damages, so the above exclusion may not apply to you. This includes, but is not limited to, prerecorded material, whether copyrighted or not copyrighted.)
- modifications or adaptations to enable the product to operate in any country other than the country for which it was designed, manufactured, approved and/or authorized, or the repair of products damaged by these modifications.
- normal wear and tear (decreased light output of PDP module) over the product's lifetime.
- phosphor burn. Do not display static images for prolonged periods, otherwise phosphor burn might appear on part of the panel.
- limited quantity of cells (fine pixel elements) that do not produce light, or that remain lit after they should have turned off.

WHERE IS SERVICE AVAILABLE?

Warranty service is available in all countries where the product is officially distributed by Philips Consumers Electronics North America. In countries where Philips Consumers Electronics North America does not distribute the product, the local Philips service organization will attempt to provide service (although there may be a delay if the appropriate spare parts and technical manual(s) are not readily available).

MAKE SURE YOU KEEP ...

Please keep your sales receipt or other document showing proof of purchase. Attach it to this owner's manual and keep both nearby. Also keep the original box and packing material in case you need to return your product.

BEFORE REQUESTING SERVICE ...

Please check your owner's manual before requesting service. Adjustments of the controls discussed there may save you a service call.

TO GET WARRANTY SERVICE U.S.A.,
PUERTO RICO OR US VIRGIN ISLANDS ...

Please contact Philips at:

1-877-835-1838

or an authorized service center to arrange repair. (In U.S.A., Puerto Rico and U.S.Virgin Islands, all implied warranties, including implied warranties of merchantability and fitness for a particular purpose, are limited in duration to the duration of this express warranty. But, because some states do not allow limitations on how long an implied warranty may last, this limitation may not apply to you.)

TO GET WARRANTY SERVICE IN CANADA ...

Please contact Philips at:

800-661-6162 (French Speaking) (within Canada only)

800-531-0039 (English Speaking)

(In Canada, this warranty is given in lieu of all other warranties. No other warranties are expressed or implied, including any implied warranties of merchantability or fitness for a particular purpose. Philips is not liable under any circumstances for any direct, indirect, special, incidental or consequential damages, howsoever incurred, even if notified of the possibility of such damages.)

REMEMBER ...

Please record the model and serial numbers found on the product below. Also, please fill out and

mail your warranty registration card promptly. It will be easier for us to notify you if necessary.

MODEL # _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

SERIAL # _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _wo_ _ _