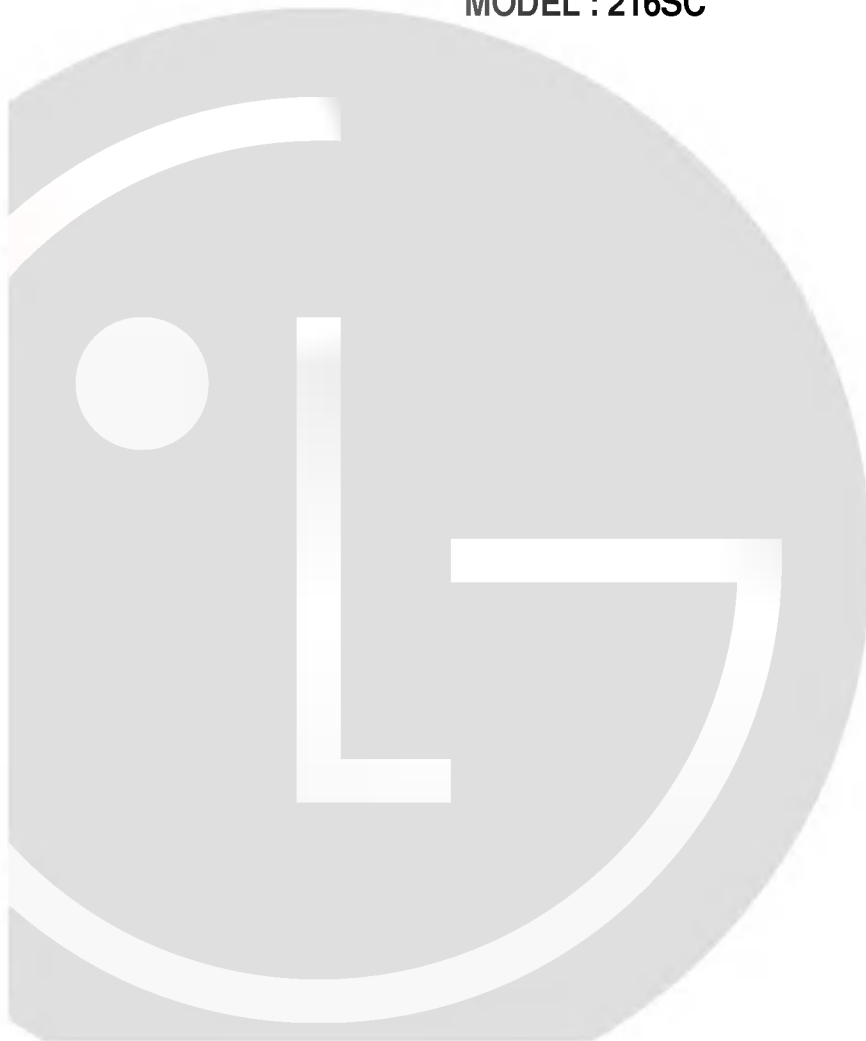




Color Monitor

USER GUIDE
MANUEL D'UTILISATION

MODEL : 216SC



FCC Compliance Statement

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception (which can be determined by turning the equipment off and on), the user is encouraged to try to correct the interference by using one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the 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.

Caution: Changes or modifications not expressly approved by LG Electronics Inc. for compliance could void the user's (or your) authority to operate the equipment. Only peripherals (digital input/output devices, terminals, printers, etc.) certified to comply with the Class B limits may be attached to this monitor. Operation with non-certified peripherals is likely to result in interference to radio and TV reception.

Only shielded signal cables may be used with this System.

Canadian D. O. C. Notice

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

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Environmental Labelling of Personal Computers

TCO'95내용

TCO'95내용

TCO'95 Environmental Requirements

TCO'95내용

Shipping Package

The packaging material can be recycled, or you can save it to return the monitor to a service center for repair or disposal.

CFC Compounds in Distribution Packaging

Cushioning material used for shipping finished monitors are not manufactured with nor do they contain any CFC compounds.

Design for Disassembly/Recycling

These monitors have been designed for easy end-of-life disassembly and recycling. Fasteners are generally of the same type for efficient disassembly. Components made of different materials can be easily separated and plastics have been identified using international symbols to aid in recycling.

Monitor Disposal

WARNING

If you need to dispose of a monitor, ask a qualified service representative for the proper procedure. Improper disposal could result in personal injury from implosion.

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Introduction

Thank you for purchasing an LG high resolution monitor. It will give you high resolution performance and convenient reliable operation in a variety of video operating modes.

Features

The monitor is a 21-inches(20 inches viewable) intelligent, microprocessor based monitor compatible with most analog RGB (Red, Green, Blue) display standards, including IBM PC®, PS/2®, Apple®, Macintosh®, Centris®, Quadra®, and Macintosh II family. It can also be used with a Sun SPARC workstation as well as other sources using the 5 BNC connectors. The monitor provides crisp text and vivid color graphics with VGA, SVGA, XGA, and VESA Ergo modes (non-interlaced), and most Macintosh compatible color video cards when used with the appropriate adapter.

The monitor's wide compatibility makes it possible to upgrade video cards or software without purchasing a new monitor.

Digitally controlled auto-scanning is done with the microprocessor for horizontal scan frequencies between 30 and 96 kHz, and vertical scan frequencies between 50 and 160 Hz. The microprocessor-based intelligence allows the monitor to operate in each frequency mode with the precision of a fixed frequency monitor.

The microprocessor based digital controls allow you to conveniently adjust a variety of image controls by using the OSD (On Screen Display).

The monitor has 32 memory locations for display modes, 9 of which are factory preset to popular video modes. 8 of these are accurately aligned to popular standards, and one is pre-loaded to align the image within user mode. In addition, there are 24 user storable modes, for a total of 32 memory modes.

This monitor is capable of producing a maximum horizontal resolution of 1600 dots and a maximum vertical resolution of 1200 lines. It is well suited for CAD work and sophisticated windowing environments.

For greater user health and safety, this monitor complies with the stringent Swedish TCO'95 requirements for low radiation emissions.

For low cost of monitor operation, this monitor is certified as meeting the EPA Energy Star requirements, and utilizes the VESA Display Power Management Signalling (DPMS) protocol for power saving during non-use periods.

Monitor Registration

The model and serial numbers are found on the rear of this unit. These numbers are unique to this unit and not available to others. You should record requested information here and retain this guide as a permanent record of your purchase. Staple your receipt to this page.

Date of Purchase : _____
Dealer Purchased From : _____
Dealer Address : _____
Dealer Phone No. : _____
Model No. : _____
Serial No. : _____

Notice

All rights reserved. Reproduction in any manner, in whole or in part, is strictly prohibited without the written permission of LG Electronics Inc.

Trademark Acknowledgments

LG is a trademark of **LG Electronics Inc.**

IBM is a registered trademark and **VGA** is a trademark of International Business Machines Corporation.

WARNING : To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture.

AVERTISSEMENT : Ne pas placer cet appareil dans un endroit humide. Cela peut entraîner un incendie ou une décharge électrique.

Important Precautions

This unit has been engineered and manufactured to assure your personal safety, but improper use can result in potential electrical shock or fire hazard. In order not to defeat the safeguards incorporated in this monitor, observe the following basic rules for its installation, use, and servicing. Also follow all warnings and instructions marked directly on your monitor.

On safety

1. Use only the power cord supplied with the unit. In case you use another power cord, make sure that it is certified by the applicable standards (UL/CSA or VDE) if not being provided by the supplier.
2. Operate the monitor only from a power source indicated in the specifications of this manual or listed on the monitor. If you are not sure what type of power supply you have in your home, consult your dealer.
3. Overloaded AC outlets and extension cords are dangerous. So are frayed power cords and broken plugs. They may result in a shock or fire hazard. Call your service technician for replacement.
4. **DO NOT OPEN THE MONITOR.** There are no user serviceable components inside. There are Dangerous High Voltages inside, even when the power is OFF. Contact your dealer if the monitor is not operating properly.
5. To avoid personal injury :
 - Do not place the monitor on a sloping shelf unless properly secured.
 - Use only a stand recommended by the manufacturer.
 - Do not try to roll a stand with small casters across thresholds or deep pile carpets.
6. To prevent Fire or Hazards:
 - Always turn the monitor OFF if you leave the room for more than a short period of time. Never leave the monitor ON when leaving the house.

-
- Keep children from dropping or pushing objects into the monitor's cabinet openings. Some internal parts carry hazardous voltages.
 - Do not add accessories that have not been designed for this monitor.
 - During a lightning storm or when the monitor is to be left unattended for an extended period of time, unplug it from the wall outlet.
 - Do not bring magnetic devices such as magnets or motors near the picture tube.

On installation

1. Do not allow anything to rest upon or roll over the power cord, and do not place the monitor where the power cord is subject to damage.
2. Do not use this monitor near water such as near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool.
3. Monitors are provided with ventilation openings in the cabinet to allow the release of heat generated during operation. If these openings are blocked, built-up heat can cause failures which may result in a fire hazard. Therefore, NEVER:
 - Block the bottom ventilation slots by placing the monitor on a bed, sofa, rug, etc.
 - Place the monitor in a built-in enclosure unless proper ventilation is provided.
 - Cover the openings with cloth or other material.
 - Place the monitor near or over a radiator or heat source.

On cleaning

- Unplug the monitor before cleaning the face of the picture tube.
- Use a slightly damp (not wet) cloth. Do not use an aerosol directly on the picture tube because overspray may cause electrical shock.

On repacking.

- Do not throw away the carton and packing materials. They make an ideal container in which to transport the unit. When shipping the unit to another location, repack it in its original material.

Connecting the Monitor

On the back of the monitor are three plug-in connections; one for the AC power cord, and the others for the signal cable from the video card.

1. AC Power Connection

One end of the AC power cord is connected into the AC power connector on the back of the monitor. The other end is plugged into a properly grounded three-prong AC outlet. The monitor's auto-sensing power supply can automatically detect 100-120V AC or 200-240V AC, 50 or 60Hz.

2. Signal Cable Connection

The connectors for the signal cable are located on the back of the monitor. The BNC and 15 pin VGA connectors on the back of the monitor allow for a wide variety of video controllers to be connected to the monitor. Examples of signals that might be sent to the monitor include signals from IBM PC and compatibles, Apple Macintosh, Centris, Quadra, and SPARC workstations.

The supplied signal cable consists of 15 pin VGA connectors at both ends, suitable for connections to an IBM PC or compatible.

Other generic cables or adapters may be used for connections to your equipment, as long as they meet the compatible signal requirements to activate this monitor (see page A24 for specifications). For Apple Macintosh use, a separate plug adapter is needed to change the 15 pin high density (3 row) D-sub VGA connector on the supplied cable to a 15 pin 2 row connector. Examples of typical connections are shown below. Select the connection example that fits your needs.

Connecting to any IBM VGA PC Compatible System

Figure 3 shows the signal cable connections from the monitor to the Video Graphics Array (VGA) port typical in an IBM PC or PC compatible. This also applies to any graphics video card for PC-CAD or workstation that has a 15 pin high density (3 row) D-Sub connector.

1. Power off both the monitor and PC.
2. Connect the 15 pin VGA connector of the supplied signal cable to the output VGA video connector on the PC and the matching input connector on the rear of the monitor. The connectors will mate only one way. If you cannot attach the cable easily, turn the connector upside down and try again. When mated, tighten the thumbscrews to secure the connection.
3. Power ON the PC, then the monitor.
4. If you see the **NO SIGNAL DETECTED** message, check the signal cable and connectors.
5. After using the system, power OFF the monitor, then the PC.

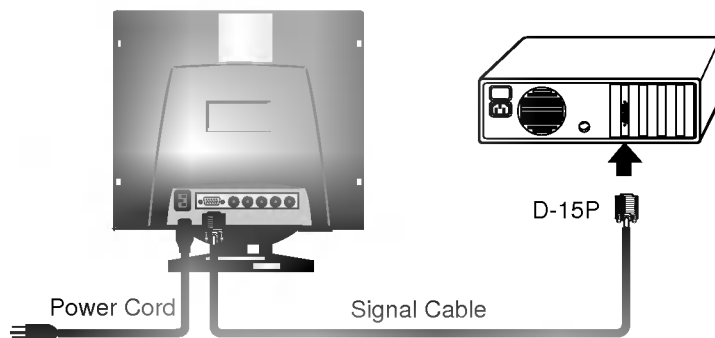


Figure 3

Connecting to an Apple Macintosh II, Centris, and Quadra

Figure 4 shows the connection to an Apple Macintosh, using a separately purchased adapter.

1. Power OFF both the monitor and the PC.
2. Connect the 15 pin VGA connector of the supplied signal cable to the matching input on the back of the monitor. Tighten the thumbscrews to secure the connection.
3. Locate the appropriate MAC to VGA adapter block at your local computer store. This adapter changes the high density 3 row 15 pin VGA connector to the correct 15 pin 2 row connection to mate with your MAC. Attach the other end of the signal cable to the side of the adapter block with 3 rows.
4. Connect the attached adapter block/signal cable to the video output on your MAC.
5. Power ON the PC, then the monitor.
6. If you see the **NO SIGNAL DETECTED** message, check the signal cable and connectors.
7. After using the system, power OFF the monitor, then the PC.

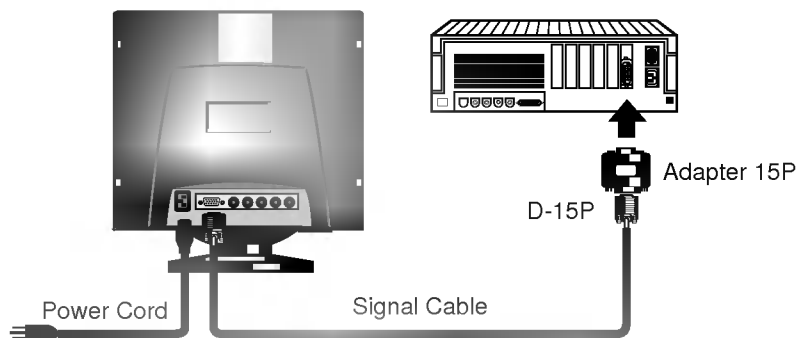
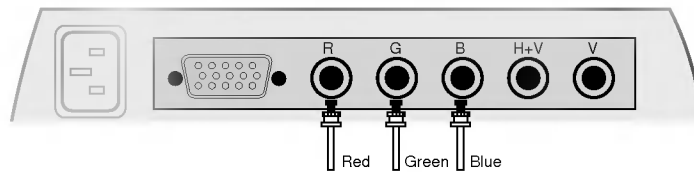


Figure 4

Notes on using the BNC connectors with other types of video cards. Follow the example that fits your needs.

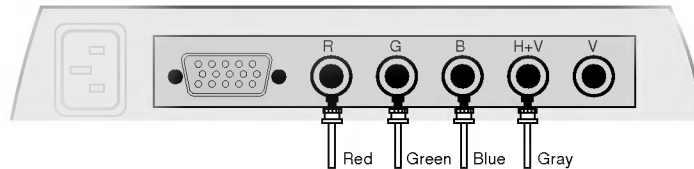
1. In case of composite sync on green video signal (Sync On Green):

Connect R,G and B video signals to BNC receptacles on the back of the monitor, respectively.



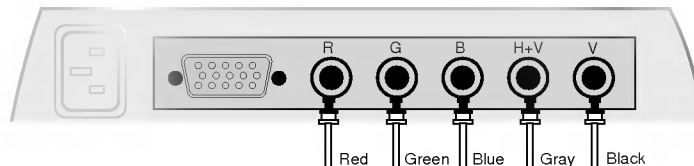
2. In case of external composite sync signal:

Connect R, G and B video signals and Composite sync signal to BNC receptacles on rear panel, respectively.



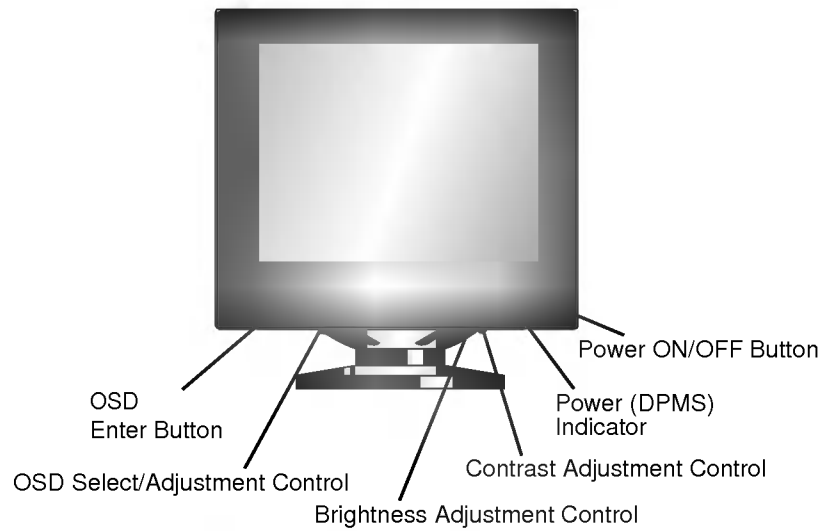
3. In case of separate horizontal and vertical sync signals:

Connect R, G and B video signals and horizontal and vertical sync signals to BNC receptacles on rear panel respectively.

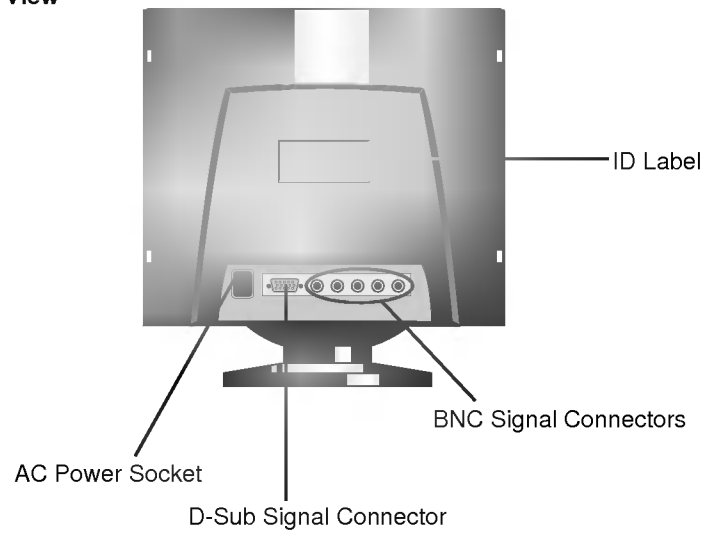


Location and Function of Controls

Front View

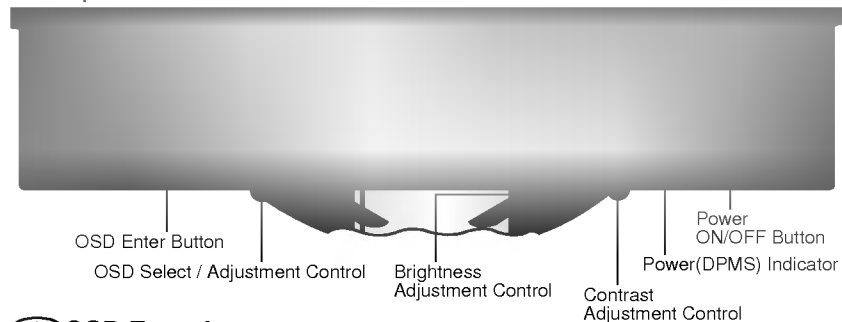


Rear View



Control Panel Function

All functions are adjusted from the microprocessor-based digital controls. Buttons on the front of the monitor allow you to adjust the image easily through an OSD menu. As you choose controls, the selected icon shows you what the chosen control will do. These pictures give you immediate understanding of the controls. The following is a description of use for each button.



OSD Enter button

Use this button to start/enter and exit from the On Screen Display (OSD). If there is no OSD on the screen, One click(press) of this button will show the Main Menu. To remove the display, either wait 10 seconds. If you are in a submenu, a single click will back you out to the Main Menu display, and then will exit the menu.

OSD Select/Adjustment Control

Use this knob for selecting (highlighting) an OSD icon to be adjusted. It is also used for selecting the level of the selected item to be adjusted.

Brightness Adjustment Control



Used to adjust the brightness of the screen. Move the thumbwheel located beneath this indicator to increase or decrease the display brightness.

Contrast Adjustment Control



Adjust the display to the contrast desired. Move the thumbwheel located beneath this indicator to increase or decrease the display contrast.

○ **Power(DPMS) Indicator**

This Indicator lights up green when the monitor operates normally. If the monitor is in DPM (Energy Saving) mode (stand-by/suspend/power off), this indicator color changes to amber.





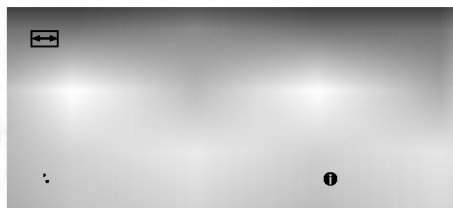
Power ON/OFF Button

This button is used to turn the monitor on and off.

On Screen Display (OSD) Control Adjustment

Making adjustments to the image size, position and operating parameters of the monitor are quick and easy with the On Screen Display Control system, using only the Enter button and Adjustment Control knob. A quick example is given below to familiarize you with the use of the controls. Following this section is an outline of the available adjustments and selections you can make using the OSD.

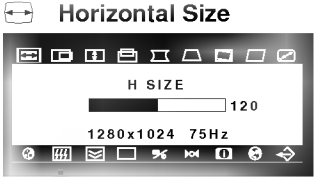
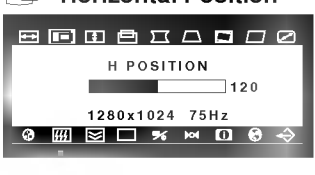
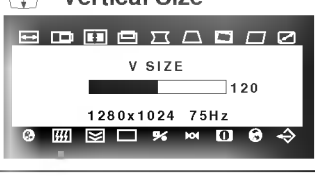
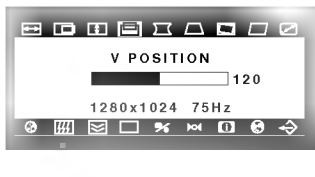
Note: (Monitor and PC should be ON, with an image or prompt on the screen.) Rotating the Adjustment Control knob clockwise one click will present you with the Main Menu of the On Screen Display system, with the first item  **highlighted** (red color). The main picture area will also show the selected icon and a brief description (here H-SIZE). If you turned the control more than one click, a different icon may be **highlighted** (red color). Move the control until the  icon is selected. The OSD system should look like :

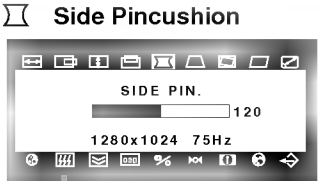
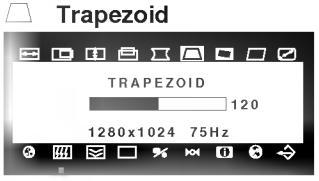
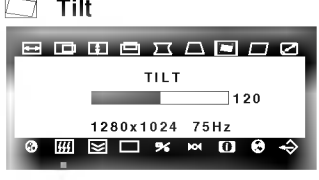
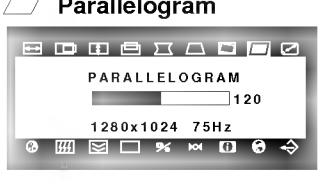


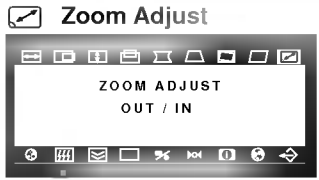
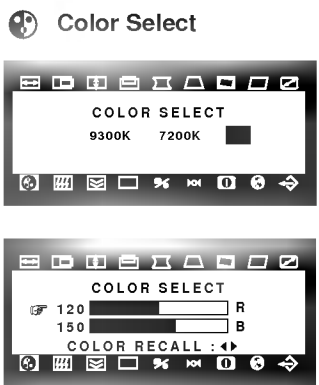
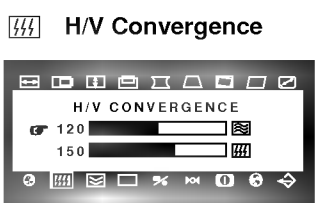


OSD Adjustment and Selection Items

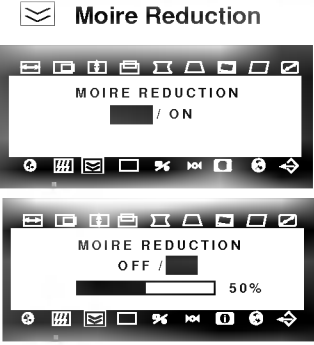


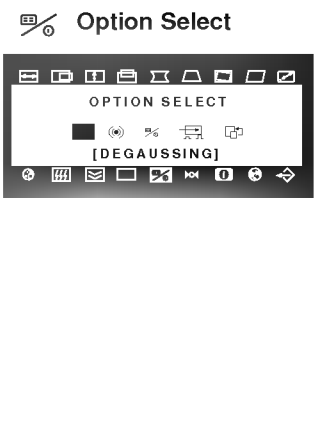





You were introduced to the procedure of selection and adjusting an item using the OSD system.

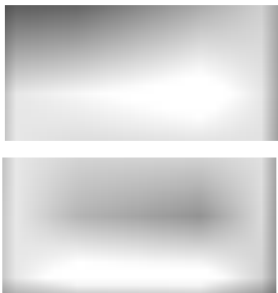
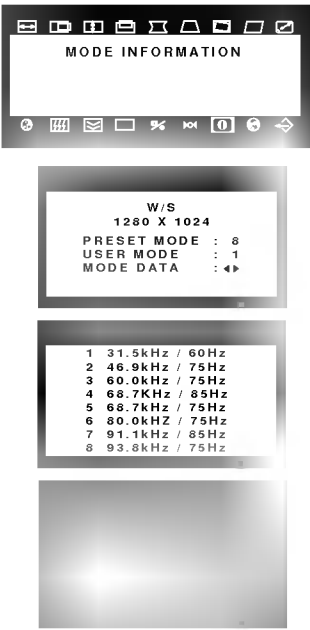
Listed below are the icons, icon names, and icon descriptions of the items that are shown on the Menu.




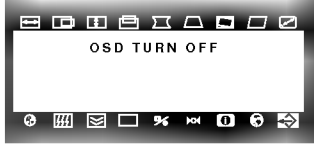
OSD Adjust	Description
 <p>The image shows the OSD menu for 'Horizontal Size'. It features a horizontal slider bar with the label 'H SIZE' above it and the value '120' to its right. Below the slider, the resolution '1280x1024' and frequency '75Hz' are displayed. The menu is surrounded by various navigation icons.</p>	<p>To adjust image width.</p> <ul style="list-style-type: none"> ◀ Decreases the size of the screen image. ▶ Increases the size of the screen image.
 <p>The image shows the OSD menu for 'Horizontal Position'. It features a horizontal slider bar with the label 'H POSITION' above it and the value '120' to its right. Below the slider, the resolution '1280x1024' and frequency '75Hz' are displayed. The menu is surrounded by various navigation icons.</p>	<p>To move picture image left and right.</p> <ul style="list-style-type: none"> ◀ Moves the screen image left. ▶ Moves the screen image right.
 <p>The image shows the OSD menu for 'Vertical Size'. It features a vertical slider bar with the label 'V SIZE' to its left and the value '120' to its right. Below the slider, the resolution '1280x1024' and frequency '75Hz' are displayed. The menu is surrounded by various navigation icons.</p>	<p>To adjust image height.</p> <ul style="list-style-type: none"> ◀ Decreases the size of the screen image. ▶ Increases the size of the screen image.
 <p>The image shows the OSD menu for 'Vertical Position'. It features a vertical slider bar with the label 'V POSITION' to its left and the value '120' to its right. Below the slider, the resolution '1280x1024' and frequency '75Hz' are displayed. The menu is surrounded by various navigation icons.</p>	<p>To move image up and down.</p> <ul style="list-style-type: none"> ◀ Moves the screen image up. ▶ Moves the screen image down.

OSD Adjust	Description
 <p>Side Pincushion</p> <p>1280x1024 75Hz</p>	<p>To correct the bowing in and out of the image.</p> <ul style="list-style-type: none"> ◀ Curves the image's edges inwards. ▶ Curves the image's edges outwards.
 <p>Trapezoid</p> <p>1280x1024 75Hz</p>	<p>To correct geometric distortion.</p> <ul style="list-style-type: none"> ◀ Makes the screen image narrower at the top. ▶ Moves the screen image wider at the top.
 <p>Tilt</p> <p>1280x1024 75Hz</p>	<p>To correct image rotation.</p> <ul style="list-style-type: none"> ◀ Tilts the screen image left. ▶ Tilts the screen image right.
 <p>Parallelogram</p> <p>1280x1024 75Hz</p>	<p>This control adjusts for a skewing of the screen image.</p> <ul style="list-style-type: none"> ◀ Tilts the screen image rightward. ▶ Tilts the screen image leftward.

OSD Adjust	Description
 <p>Zoom Adjust</p> <p>ZOOM ADJUST OUT / IN</p>	<p>To adjust Horizontal and Vertical image size simultaneously.</p> <ul style="list-style-type: none"> ◀ Smaller the image size. ▶ Bigger the image size.
 <p>Color Select</p> <p>COLOR SELECT 9300K 7200K</p> <p>COLOR SELECT 120 R 150 B COLOR RECALL : ◀▶</p>	<p>To select color temperature, 9300K/ 7200K/ USER. Select the desired color temperature or select user to set your own color levels. Allow for specific adjustments to Red and Blue(R/B). This consists of the Decreases and Increases function.</p> <ul style="list-style-type: none"> ◀ Decreases the amount of color in the image. ▶ Increases the amount of color in the image.
 <p>H/V Convergence</p> <p>H/V CONVERGENCE 120 150</p>	<p>This item allows you to adjust the MISCONVERGENCE. Selecting , you'll control the horizontal static convergence. Selecting , you'll control the vertical static convergence.</p>

OSD Adjust	Description
 <p>The image shows two screenshots of the 'Moire Reduction' OSD menu. The top screenshot shows 'MOIRE REDUCTION' with a slider set to 'ON'. The bottom screenshot shows 'MOIRE REDUCTION' with a slider set to 'OFF' and a '50%' label next to the slider bar. Both screenshots include a navigation bar at the top and a control bar at the bottom with various icons.</p>	<p>This item allows you to reduce the moire (Moire is caused by interference Horizontal Scan Line with the periodical dot screen). It is normally OFF. If you want to adjust it, select ON using the adjustment control and push the Enter Button.</p>
 <p>The image shows the 'OSD Adjust' OSD menu. It features the text 'OSD ADJUST' and a small square icon representing the current OSD position. The menu includes a navigation bar at the top and a control bar at the bottom with various icons.</p>	<p>This item lets you adjust the OSD position. After selecting the OSD icon using the Adjustment Control, push the Enter button. The OSD will be displayed as shown left. Select an icon using the Enter button. Rotate the Adjustment Control to modify existing position. When you have finished, use the exit () icon to return to main menu to take another selection.</p>
 <p>The image shows the 'Option Select' OSD menu. It lists five options: 'Manual Degaussing', 'Beep ON/OFF', 'Signal Input', 'Video Level', and 'Exit'. The 'Manual Degaussing' option is currently selected. The menu includes a navigation bar at the top and a control bar at the bottom with various icons.</p>	<p>This item gives access 5 elements; Manual Degaussing, Beep ON/OFF, Signal Input, Video Level and Exit. Press the Enter Button to select the desired item to change.</p> <ul style="list-style-type: none"> ■  : Used to demagnetize the picture to give a move account image and color. ■  : To select Beep ON or Beep OFF. ■  : To select D-sub or 5 BNC. ■  : To select input signal level(0.7V or 1.0V). ■  : To disappear of the OSD on the screen.

OSD Adjust	Description
<p>Mode Recall</p> 	<p>If the monitor is operating in a factory preset mode, this control will reset the image to the factory preset mode. But If the monitor is operating in a user mode, this control has no effect.</p>
<p>Mode Information</p> 	<p>To inform users of preset and user mode data.</p> <p>This item provides information about the stored video modes. After highlighting (red color) the mode information icon, press Enter. Rotate the Adjustment Control to see the desired video mode information. The mode information screens give you some information regarding industry resolution terminology, resolution, and memory mode number.</p>

OSD Adjust	Description
<p data-bbox="411 600 662 631">  Language Select </p> 	<p data-bbox="746 609 1200 757"> To choose the language in which the control names are displayed. OSD Menus are available in five language: English, German, French, Spanish and Italian. </p>
<p data-bbox="411 878 630 909">  OSD Turn Off </p> 	<p data-bbox="746 891 1177 922">To disappear of the OSD on the screen.</p>

Self Diagnostics

The monitor has a **SELF DIAGNOSTICS** OSD feature that pops up when there may be possible causes of non-operation. The OSD would highlight a possible reason the display is not showing an image. An example of this may be when you turn on the monitor with no signal cable attached. The monitor will display the **SELF DIAGNOSTICS** OSD with the **CHECK INPUT SIGNAL**. This would be a clue for you to check the signal connections.



DDC (Display Data Channel)

DDC is a communication channel over which the monitor automatically informs the host system (PC) about its capabilities. This monitor has two DDC function; DDC1, DDC2B. DDC1 and DDC2B carry out uni-directional communication between the PC and the monitor. Under these situations, the PC sends display data to the monitor but not commands to control the monitor settings.

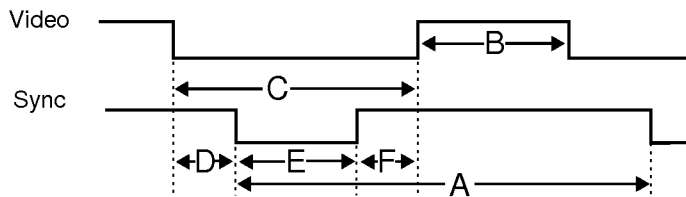
Note :

- PC must support DDC functions to do this.
- If you using the 5 BNC connectors with other types of video cards, this monitor has not support DDC function.
- Some older computer systems are not compatible with the DDC standard. If your monitor is displaying a monochrome image or the wrong resolution, need to change with a DDC compatible VGA card.

Video Memory Modes

The monitor has 32 memory locations for display modes, 9 of which are factory preset to popular video modes. 8 of these are accurately aligned to popular standards, and one is pre-loaded to align the image within user mode.

Factory Preset Timing Signal Chart



		Mode1	Mode2	Mode3	Mode4	Mode5	Mode6	Mode7	Mode8	Mode9
H O R I Z O N T A L	Polarity	-	+	+	+	-	+	+	+	-
	Frequency	kHz 31.467	46.875	60.023	68.677	68.681	79.976	91.146	93.750	31.469
	Total Period	uS 31.778	21.333	16.660	14.561	14.560	12.504	10.971	10.667	31.777
	Data Period	uS 25.422	16.162	13.003	10.836	11.520	9.481	8.127	7.901	25.422
	Blanking	uS 6.356	5.171	3.657	3.725	3.040	3.023	2.844	2.765	6.356
	Front Porch	uS 0.636	0.323	0.203	0.508	0.320	0.119	0.406	0.316	0.636
	Pulse Width	uS 3.813	1.616	1.219	1.016	1.280	1.067	1.016	0.948	3.813
	Back Porch	uS 1.907	3.232	2.235	2.201	1.440	1.837	1.422	1.501	1.907
V E R T I C A L	Polarity	-	+	+	+	-	+	+	+	+
	Frequency	Hz 59.941	75.000	75.029	84.997	75.062	75.025	85.024	75.000	70.087
	Total Period	mS 16.683	13.333	13.328	11.765	13.322	13.329	11.761	13.333	14.268
	Data Period	mS 15.253	12.800	12.795	11.183	12.667	12.804	11.235	12.800	12.711
	Blanking	mS 1.430	0.533	0.533	0.583	0.655	0.525	0.527	0.533	1.557
	Front Porch	mS 0.318	0.021	0.017	0.015	0.043	0.012	0.011	0.011	0.413
	Pulse Width	mS 0.063	0.064	0.050	0.044	0.044	0.038	0.033	0.032	0.064
Back Porch	mS 1.049	0.448	0.466	0.524	0.568	0.475	0.483	0.491	1.080	
Resolution		640 x480	800 x600	1024 x768	1024 x768	1152 x870	1280 x1024	1280 x1024	1600 x1200	720 x400
Recall		YES	YES	YES	YES	YES	YES	YES	YES	NO

- Mode 9 is preset to align the image within user mode.

User Modes

Modes 10-32 are empty and can accept new video data. If the monitor detects a new video mode that has not been present before or is not one of the preset modes, it stores the new mode automatically in one of the empty modes starting with mode 10.

If you use up the 23 blank modes and still have more new video modes, the monitor replaces the information in the user modes starting with mode 9.

Recalling Display Modes

When your monitor detects a mode it has seen before, it automatically recalls the image settings you may have made the last time you used that mode.

You may, however, manually force a recall of each of the eight preset modes by pressing the Recall button. All preset modes are automatically recalled as the monitor senses the incoming signal.

The ability to recall the preset modes is dependent on the signal coming from your PC's video card or system. If this signal does not match any of the factory modes, the monitor automatically sets itself to display the image.

Energy Saving Design

This monitor complies with the EPA's Energy Star program, which is a program designed to have manufacturers of computer equipment build circuitry into their products to reduce power consumption during time of non-use.

This monitor also goes into its energy saving mode if you exceed the monitor's operating limits, such as the maximum resolution of 1600x1200 or the frequency refresh rates of 30-96 kHz horizontal or 50-160 Hz vertical. When this monitor is used with a Green or EPA Energy Star PC, or a PC with a screen blanking software following the VESA Display Power Management Signalling (DPMS) protocol, this monitor can conserve significant energy by reducing power consumption during periods of non-use. When the PC goes into the energy saving mode, the monitor will go into a suspended operation state, indicated by the Power LED light changing from a green color to an amber color. After an extended period in the suspended mode, the monitor will then enter a semi-OFF mode to conserve more energy. In the semi-OFF mode or DPMS OFF mode as we call it in our specifications, the Power LED will still show an amber color. When you awaken your PC by hitting a key or moving the mouse, the monitor will also awaken to its normal operating mode, indicated by the green Power LED light. By following these conventions, the power consumption can be reduced to the following levels:

Power Consumption

Mode	Hori. Sync	Verti. Sync	Video	Power Consumption	LED Color
Normal(Max.)	On	On	Normal	≤ 140W	Green
Stand-by	Off	On	Off	≤ 15W	Amber
Suspend	On	Off	Off	≤ 15W	Amber
Off	Off	Off	Off	≤ 5W	Amber

Troubleshooting

Symptom	Possible Causes
<p>Self diagnostics message on back raster appear.</p>	<ul style="list-style-type: none"> ■ The signal cable is not connected.
<p>The power LED is illuminated amber.</p>	<ul style="list-style-type: none"> ■ Display power management mode(Move mouse to awaken PC). ■ Check the computer power and graphics adapters configuration. ■ The frequency of the sync input is outside the operating range of the monitor. Monitor Input Limits Horizontal : 30 - 96 kHz Vertical : 50 - 160Hz ■ The signal cable is incorrectly configured or connected refer to the page <i>Signal Connector Pin Assignment</i>, for reference. ■ Try power code OFF and ON.
<p>Image is not correctly shaped.</p>	<ul style="list-style-type: none"> ■ A new mode is selected. ■ User control has not yet been adjusted. Use the controls to adjust image. Refer to <i>Location and Function of controls</i>.

Service

1. Unplug the monitor from the wall outlet and refer servicing to qualified service personnel when:
 - The power cord or plug is damaged or frayed.
 - Liquid has been spilled into the monitor.
 - The monitor has been exposed to rain or water.
 - The monitor does not operate normally following the operating instructions. Adjust only those controls that are covered in the operating instructions. An improper adjustment of other controls may result in damage and often requires extensive work by a qualified technician to restore the monitor to normal operation.
 - The monitor has been dropped or the cabinet has been damaged.
 - The monitor exhibits a distinct change in performance.
 - Snapping or popping from the monitor is continuous or frequent while the monitor is operating. It is normal for some monitors to make occasional sounds when being turned on or off, or when changing video modes.
2. Do not attempt to service the monitor yourself, as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
3. When replacement parts are required, have the service technician verify in writing that the replacements used have the same safety characteristics as the original parts. Use of manufacturer specified replacements can prevent fire, shock, and other hazards.
4. Upon completion of any service or repairs to the monitor, ask the service technician to perform the safety check described in the manufacturer's service manual.
5. When a video monitor reaches the end of its useful life, improper disposal could result in a picture tube implosion. Ask a qualified service technician to dispose of the monitor.

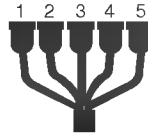
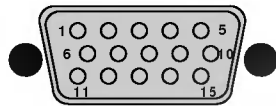
Specifications

Sync Signal Types

Priority	Type	H. Sync	V. Sync
1	Separate Sync.	H. Sync.	V. Sync.
2	Composite Sync.	H/V. Sync.	N.C
3	Sync. On Green	N.C	N.C

(N.C : No Connection)

Signal Connector Pin Assignment



Pin	Signal (D-Sub)
1	Red
2	Green
3	Blue
4	Ground
5	Self-Test
6	Red Ground
7	Green ground
8	Blue Ground
9	NC
10	Ground
11	Ground
12	SDA
13	H. Sync
14	V. Sync
15	SCL

Pin	Signal (5-BNC)	Color
1	Red	Red
2	Green	Green
3	Blue	Blue
4	H. Sync (H or H+V)	Gray
5	V.sync	Black

Specifications

Picture Tube

- 21 inches (20 inches viewable)
- 90 degree deflection
- 0.28mm dot pitch high contrast, dark face
- W-ARAS(Wide-Band Anti-Reflection and Anti-Static Charge Coating) low surface resistance(TCO).

Sync Input

- Horizontal Frequency : 30-96 kHz (Automatic)
- Vertical Frequency : 50-160 Hz (Automatic)
- Input Form : Separate TTL, Positive/Negative
Composite, Positive/Negative
- Signal Input : 15pin D-Sub Connector/5 BNC Connector

Video Input

- Display Area : 390 x 290 mm/15.35 x11.4 inches (HxV)
- Input Form : Separate, RGB Analog, 0.7Vp-p/75 ohm,
SOG(Sync On Green)

Power Input

- AC 100-120/200-240 V 60/50 Hz 2.0/1.0 A

Dimensions (with tilt/swivel stand)

- Width : 498 mm/19.6 inches
- Height : 510 mm/20.0 inches
- Depth : 516 mm/20.3 inches

Weight

- Net : 31.0 kg (68.34 lbs)

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Monitor Limited Warranty for the United States and Canada

LG Electronics U.S.A., Inc. will repair or at its option replace, without charge, your product which proves to be defective in material or workmanship under normal use, during the warranty period listed below from the date of original purchase. **This warranty is good only to the original purchaser of the product during the warranty period as long as it is in the U.S. including Alaska, Hawaii and U.S. Territories**

WARRANTY PERIOD			
<u>MODEL #</u>	<u>LABOR</u>	<u>PARTS</u>	<u>HOW SERVICE IS HANDLED</u>
	3 YEARS	3 YEARS	Call 1-800-243-0000, 24 hrs a day, 7 days per week, please have your product type (Monitor, TV, VCR) and ZIP code ready.
		<u>CRT</u> 3 YEARS	

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THE ABOVE WARRANTY DOES NOT APPLY:

- ¶U To damages or problems which result from delivery or improper installation.
- ¶U To damages or problems which result from misuse, abuse, accident, alteration, or incorrect electrical current or voltage.
- ¶U To service calls, which do not involve defective workmanship or material, such as head cleaning and expaining the operation of the unit.

Therefore these costs are paid by the consumer.

CUSTOMER ASSISTANCE NUMBERS:

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 - **Retain your Sales Receipt to prove date of purchase.**
 - Copy of your Sales Receipt must be submitted at the time warranty service is provided.
- To Obtain Product or Customer Assistance:**
 - Call 1-800-243-0000 (Mon-Fri 8am-5pm CST)
Push Appropriate Menu Code.
- For Your Nearest Authorized Service Center:**
 - Call 1-800-243-0000, 24 hrs a day, 7 days per week, please have your product type (Monitor, TV, VCR) and ZIP code ready.
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