LG
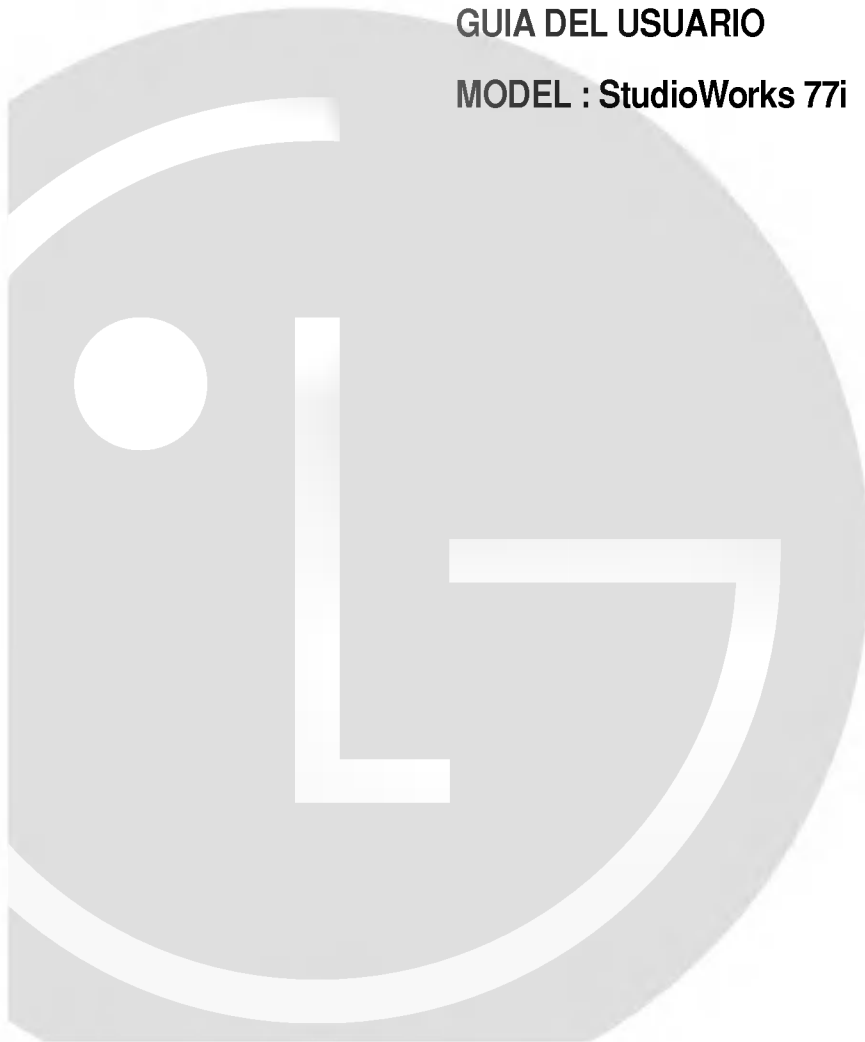
Colour Monitor

USER GUIDE
BENUTZERHANDBUCH
MANUEL D'UTILISATION
GUIDA UTENTE
GUIA DEL USUARIO

MODEL : StudioWorks 77i

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.

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Table of Contents

Introduction

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

Features
The StudioWorks 77i is a 17-inch (15.9 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. 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 adaptor.

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 70KHz, and vertical scan frequencies between 50 and 160Hz. 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 adjust conveniently a variety of image controls by using the OSD (On Screen Display).

The monitor is shipped with 12 factory pre-programmed video modes that are permanently resident, and another 12 are set at the factory, but may be overwritten to make more room. In addition, there are 25 user storable modes, for a total of 49 memory modes.

This monitor is capable of producing a maximum horizontal resolution of 1280 dots and a maximum vertical resolution of 1024 lines. It is well suited for CAD work and sophisticated windowing environments.

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.

1

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 here.

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

Notice

Trademark Acknowledgments

GoldStar 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.

2

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 with 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 two 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 connector for the signal cable is located on the back of the monitor. The 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 and Quadra.

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 22 for input 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.

Connection 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** message, check the signal cable and connectors.

5.After using the system, power OFF the monitor, then the PC.
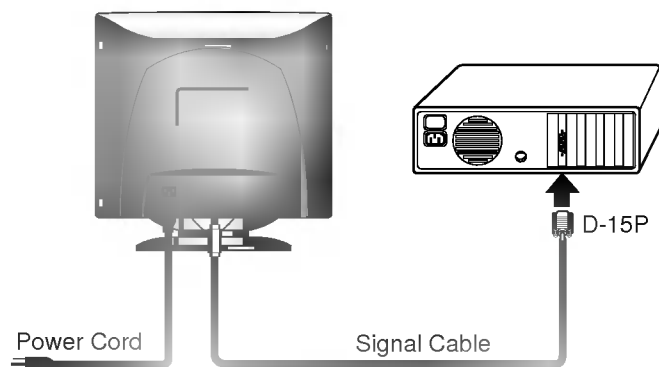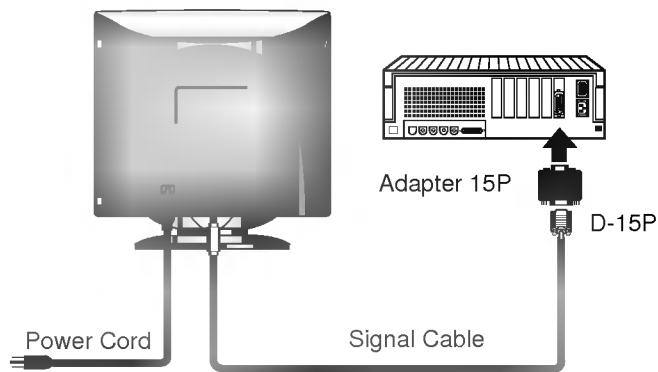

Power Cord   Signal Cable   D-15P

Figure 3.

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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. 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.

3. Connect the attached adapter block/signal cable to the video output on your MAC.

4. Power ON the PC, then the monitor.

5. If you see the **NO SIGNAL** message, check the signal cable and connectors.

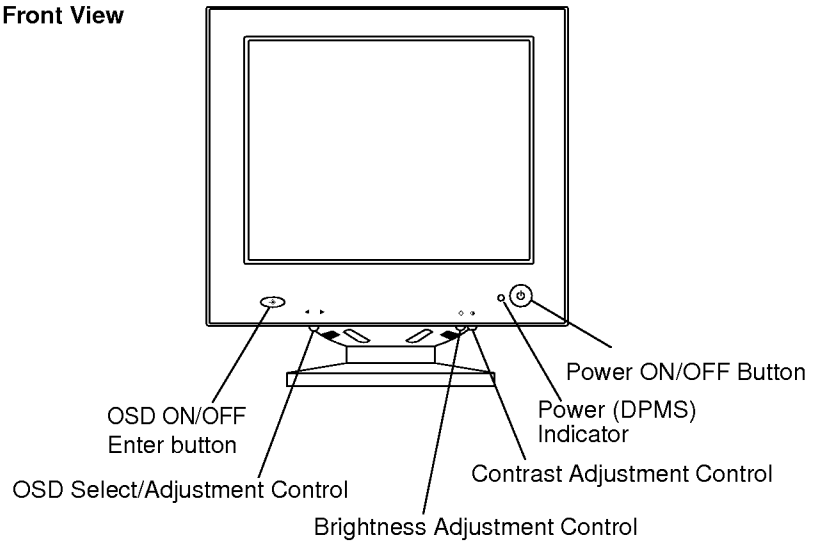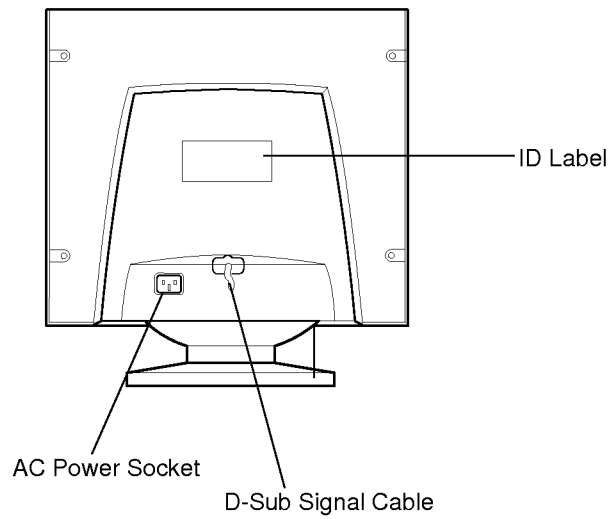6. After using the system, power OFF the monitor, then the PC.

Adapter 15P

D-15P

Power Cord

Signal Cable

Figure 4.

Location and Function of Controls

Front View

Power ON/OFF Button

OSD ON/OFF
Enter button

Power (DPMS)
Indicator

OSD Select/Adjustment Control

Contrast Adjustment Control

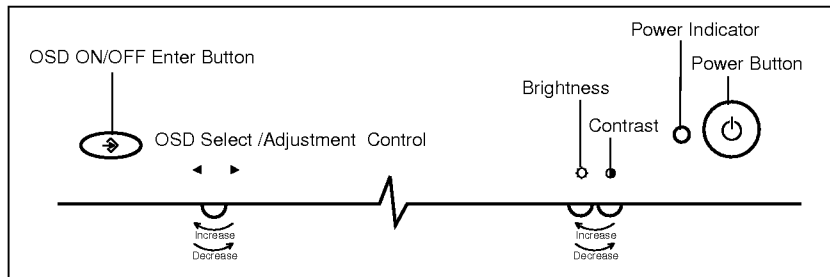Brightness Adjustment Control

Rear View

ID Label

AC Power Socket

D-Sub Signal Cable

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Control Panel Function

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.

Power ON/OFF Enter button
This button is used to turn the monitor ON and OFF.

Power 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.

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

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

↦ OSD ON/OFF 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 press of this button will show the Main Menu.

◄ ► OSD Select/Adjustment Control
Use this buttons for selecting (highlighting) an OSD icon to be adjusted. It is also used for selecting the level of the selected item to be adjusted.

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On Screen Display (OSD) Control Adjustment

Making adjustments to the image size, position, and operating parameters of the monitor is quick and easy with the On Screen Display Control system, using only the ENTER button and Adjustment Control buttons. 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). A single press of the ENTER button will present you with the Main Menu of the on screen display system with the first (⬚) highlighted.
The main picture area will also show the select icon (   )and next icon (◄ ►).

1.The OSD system should look like:

2.To adjust H Position (⬚), Press the enter button once.
   The display will look like:

   When you are done, Press the main button (   )once to return to main menu to make another selection.

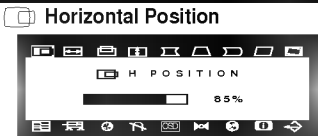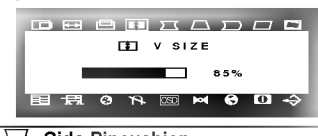3.You want to move the next icon, Adjust the next button (◄ ►)control.
   The display will look like:

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
On Screen Display(OSD) Selection and Adjustment

You were introduced to the procedure of selection and adjusting an item using the OSD system.
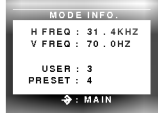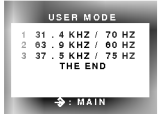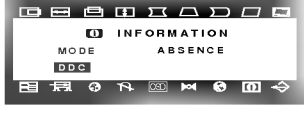
Listed below are the icons, icon names, and icon descriptions of the items that are shown on the Menu.

OSD Adjust	Description
Horizontal Position H POSITION 85%	To move picture image left and right. ◀ Moves the screen image left. ▶ Moves the screen image right.
Horizontal Size H SIZE 85%	To adjust image width. ◀ Decreases the size of the screen image. ▶ Increases the size of the screen image.
Vertical Position V POSITION 85%	To move image up and down. ◀ Moves the screen image up. ▶ Moves the screen image down.
Vertical Size V SIZE 85%	To adjust image height. ◀ Decreases the size of the screen image. ▶ Increases the size of the screen image.
Side Pincushion SIDE PINCUSHION 85%	To correct the bowing in and out of the image. ◀ Curves the image's edges inwards. ▶ Curves the image's edges outwards.
Trapezoid TRAPEZOID 85%	To correct geometric distortion. ◀ Makes the screen image narrower at the top. ▶ Moves the screen image wider at the top.

OSD Adjust	Description
Side pincushion balance 	To correct the balance of both sides bowling. ◀ Curvature of the sides to the right. ▶ Curvature of the sides to the left.
Parallelogram 	This control adjusts for a skewing of the screen image. ◀ Tilts the screen image rightward. ▶ Tilts the screen image leftward.
Tilt 	To correct image rotation. ◀ Tilts the screen image left. ▶ Tilts the screen image right.
Moire Reduction 	This item allows you to reduce the moire. It is normally **OFF**. If you want to adjust it, select **ON** using the adjustment control and push the Enter Button. When you are done, Press the Enter button once to return to More Reduction menu to make another selection. If you have finished using the OSD after you have returned to Moire Reduction menu, you can use the Enter button to EXIT the OSD. **NOTE:**The screen image may shake slightly while the moire reduction function is **ON**. Switching the **OFF** will improve image stability and clarity at the expense of slightly greater moire.
Video Input Level 	This item is used to select the monitor's input signal level. The normal level used for most PC's is 0.7V. After highlighting this icon, press the enter button. Select the desired level with the adjustment control to highlight the desired level. Press the enter way when done.

OSD Adjust	Description
Color Select	To select color temperature, 9300 ^{o}K/ 6550 ^{o}K/ USER and CURVE. Select the desired color temperature or select user to set your own color levels. Allow for specific adjustments to Red, Green and Blue(R/G/B). This consists of the Decreases and Increases function. ◀ Decreases the amount of color in the image. ▶ Increases the amount of color in the image. **Curve color** setting is adjusters at the factory to the display's color temperature. Temperature range is from 6000 ^{o}K to 9950 ^{o}K. So, user easily color set whitout adjustments Red, Green and Blue(R/G/B).
Degauss	Used to demagnetize the picture to give a move accurate image and color.
OSD OSD control	This item gives access to 3 elements : Timer, Horizontal position and Vertical position. Press the select button to select the desired item to change. **Timer** will be controled OSD display time from 5 second to 120 second. To correct OSD image's Horizontal position and Vertical position. **Horizontal position** : To move image right and left. **Vertical position** : To move image up and down.

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OSD Adjust	Description
▶◯◀ **Recall** ▶◀ RECALL SELECT: ◈ NEXT: ◀▶	If the monitor is operating in a factory preset mode, this control will reset the image to the factory preset mode. If the monitor is operating in a user mode, this control has no effect.
✪ **Language Select** ✪ LANGUAGE **ENGLISH** DEUTSCH FRANÇAIS ESPAÑOL ITALIANO	To choose the language in which the control names are displayed. OSD Menus are available in five language : **English, German, French, Spanish and Italian.**
ⓘ **Mode Information** ⓘ INFORMATION **MODE** ABSENCE DDC MODE INFO. H FREQ : 31 . 4KHZ V FREQ : 70 . 0HZ USER : 3 PRESET : 4 ◈ : MAIN USER MODE 1 31 . 4 KHZ / 70 HZ 2 63 . 9 KHZ / 60 HZ 3 37 . 5 KHZ / 75 HZ THE END ◈ : MAIN PRESET MODE 1 43 . 2 KHZ / 85 HZ 2 47 . 0 KHZ / 75 HZ 3 49 . 8 KHZ / 75 HZ 4 53 . 7 KHZ / 85 HZ THE END ◈ : MAIN ⓘ INFORMATION MODE **ABSENCE** DDC ⓘ INFORMATION MODE ABSENCE **DDC**	This item gives access to 3 elements : Mode, Absence and DDC function. The message does not disappear until you click the select key again. **MODE** To inform users of preset and user mode data. **ABSENCE** This message indicates the monitor is **ON PROCESSING** even through you are away for some time due to another matter. **DDC** To select the DDC 2B⊕, DDC2AB, DDC1/2B and OFF function.
⟳ **Exit** ⟳ EXIT EXIT: ◈ NEXT: ◀▶	To disappear of the OSD on the screen.

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Power Management System

This monitor incorporates new circuitry for lowering energy usage during idle time, following the Display Power Management Signalling (DPMS) guide lines of the Video Electronics Standards Association (VESA), and is certified as exceeding the EPA's Energy Star program for reduced power usage.
For the power savings feature to operate, the monitor must be used with either a PC having power saving circuitry. The monitor has three power-saving states, and the power saving operation is indicated by the power indicator on the front panel.
When the power indicator is green, operation is normal. When the power indicator is Amber, the monitor is in a power saving mode. If the power indicator is Amber and you wish to use the PC again, move your mouse pointer or touch a keyboard button. When the monitor is not in use, save energy by turning it off.

Image Adjustment

This monitor has a microprocessor-based On Screen Display (OSD) control system for adjusting the following items: Horizontal size, horizontal position, vertical size and position, side pincushion and trapezoid, Rotation, and color levels. When you make adjustments to any of the above items, the microprocessor will automatically memorize the adjustments you made. Your settings will be maintained even if you turn off the monitor and turn it on again at some later time.
NOTE: The only time you may need to adjust the image settings again is in the event you change video modes (for example, you may go from a 640x480 video mode in DOS to an 800x600 video mode for windows). In this event, you may need to adjust the image controls again to meet the image display you desire. Now the microprocessor will memorize the new image settings you made in the 800x600 video mode, having already stored your 640x480 image settings before. From now on, when you switch between a 640x480 mode and an 800x600 mode, the monitor will recall each of the specific image settings you made in each of these modes. More on image memory modes in the video memory modes section.

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Video Memory Modes

This multi-synchronous auto-scanning monitor can automatically detect and display several video modes falling within the monitor's scanning range of 30-70kHz Horizontal and 50-160Hz Vertical. In the PC area, this relates to a maximum flicker-free usable resolution of 1280x1024 at a non-interlaced refresh rate of 60Hz Vertical.
For convenience, the monitor has a 49 mode memory, of which 12 modes come from the factory preset to popular video modes as described below.

Mode	Display Mode	Horizontal Frequency	Vertical Frequency	Polarity		Comments
				Horiz sync	Verti sync	
1	640 x 400	31.47 kHz	70 Hz	-	+	Factory fixed, but may be updated by user's setting.
2	640 x 480	31.47 kHz	60 Hz	-	-	
3	640 x 480	37.50 kHz	75 Hz	-	-	
4	800 x 600	37.88 kHz	60 Hz	+	+	
5	640 x 480	43.27 kHz	85 Hz	-	-	
6	800 x 600	46.87 kHz	75 Hz	+	+	
7	832 x 624	49.75 kHz	75 Hz	-	-	
8	800 x 600	53.67 kHz	85 Hz	+	+	
9	1024 x 768	60.02 kHz	75 Hz	+	+	
10	1280 x 1024	63.98 kHz	60 Hz	+	+	
11	1152 x 870	68.68 kHz	75 Hz	-	-	
12	1024 x 768	68.68 kHz	85 Hz	+	+	

Modes 25-49 are empty and can accept new video data.

If the monitor detects one of the above signals from your computer's video card, it will recall that mode and any stored image adjustments you may have made before. If the monitor detects a new video mode that had not been present before or is not one of the above listed factory presets, it will store a new mode automatically in one of the blank (empty) memory modes (in this example, mode 25). When you now adjust the OSD controls to your preference, these image settings will also be stored in mode 25. Whenever your video card or PC switches to the mode that the monitor recognizes as mode 25, your personal image settings will also be recalled.

A note about the video memory modes:

There is a total of 49 video memory modes, generally more modes than you will use at any one time. Of these 49 modes, 12 are permanent, factory fixed modes that cannot be changed, and another 12 are set at the factory, but may be overwritten to make more room. The remaining 25 modes are left blank (empty). If you use up the 25 blank modes and still have more new video modes, the monitor will store information in the other 12 soft preset modes for the new mode storage. If additional new modes are encountered, the monitor will delete the lowest memory mode and add the new mode.

If you use a video card that has a number of resolutions and frequencies that do not correspond to any of the monitor video modes set at the factory, here's what will happen:

1) As the monitor encounters new video data, if you adjust the image control icons, the monitor will save the new information in the next available empty mode (mode 25 if this is the first new data encountered).

2) If you have used up modes 25-49 with 25 new video modes, and the monitor encounters another mode (50th mode), it will store the new data in mode 25 and the old data of mode 25 is deleted.

   In addition, If the monitor encounters 51th new video data, the old data of mode 26 is deleted and 51th data will replace the mode 26, with above method, when this monitor encounters new mode, it can update from mode 25 to mode 49 sequentially and continuously.

Example: All 49 modes are filled with following data

Factory fixed   Soft presets   data
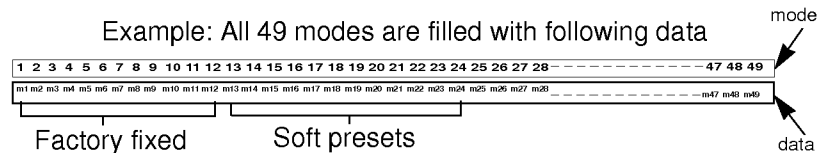
When new data is encountered

Factory fixed   "m25"old mode 25 deleted
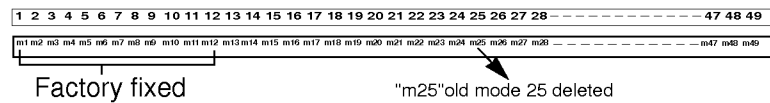
Because the monitor is designed this way, you will always have the most recent 37 video modes generated by your graphics card available with your own image settings recalled automatically.

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Low Radiation Compliance (MPR II)

This monitor meets one of the strictest guidelines available today for low radiation emissions, offering the user extra shielding and an anti-static screen coating. These guidelines, set forth by a government agency in Sweden, limit the amount of emission allowed in the Extremely Low Frequency (ELF) and Very Low Frequency (VLF) electromagnetic range.

Self Diagnostics

SELF DIAGNOSTICS
CHECK SIGNAL CABLE
NO SIGNAL

This monitor can sense when there is a possible problem present, and informs you of this condition by presenting you with a **SELF DIAGNOSTICS** OSD. This OSD may pop up when it is **On** but no signal is detected. In this case the message **CHECK SIGNAL CABLE** will be high lighted, alerting you to check the signal cable connections.

DDC (Display Data Channel)

DDC OPTION	
2 B ⊕	2 AB
1 / 2 B	OFF
⬥ : MAIN	
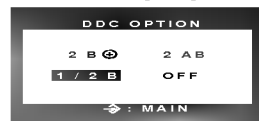
DDC is a communication channel over which the monitor automatically informs the host system (PC) about its capabilities.This monitor has three DDC function; DDC2B ⊕ , DDC2AB and DDC1/2B. DDC2B ⊕ and DDC2AB carry out uni-directional communication between the PC and the monitor. Under these situations, the PC sends display data to the monitor but not commands to control the monitor settings. DDC1/2B has the function of bi-directional communication. For example, the PC can fetch screen data from monitor and adjust the screen with the PC keyboard.

NOTE: PC must support DDC functions to do this.

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Why LGE'S Ultra-Contrast?

1. We adopted 43.5% Dark Tint Glass to improve contrast:
◆ Dark Tint Glass increases contrast.
◆ Transmission depends on the thickness of glass.

2. We highly up-graded contrast without brightness impairment:
◆ Sputtering coating with 6-layers dielectric structure give the Anti-Reflection effect, Anti-Static effect.

3. The lowest Reflectivity gives the best contrast.
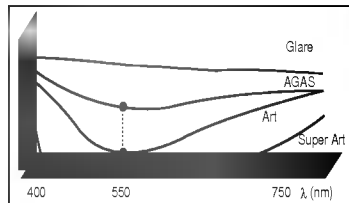
Types	Reflectivity	Reflection Performance	Resolution
Super Art Coating	Under 0.3%	excellent	excellent
Art Coating	1.3%	good	good
AGAS Coating	2.5%	good	better
Glare		bad	excellent
Other coating types (compotitors)	0.5%-1.5%	good	good

4. The full compliance to TCO 95 by tube itself without compensation circuit in monitor.

Types	MPR-II	TCO92	TCO95
VLEF	Under 2.5V/m (50cm ahead)	Under 1V/m (30cm ahead)	Under 1V/m (30cm ahead)
Emission	O	O	O
Energy Saving	X	O	O
Safety	X	O	O
Ergonomic	X	X	O
Environment	X	X	O

* TCO : The Swedish Confederation of Employees
* VLEF : Very Low Frequency Electrical Field

5. Comparison of contrast and brightness.
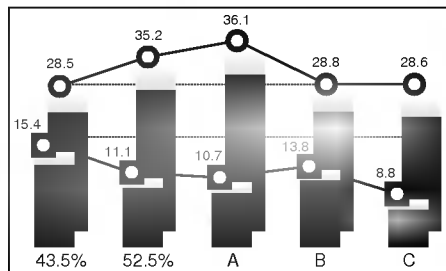
	Contrast Ratio	Brightness	Legibility
U-Contrast	155%	100%	Excellent
A Maker	110%	145%	Good
Other Type	100%	130%	Good

* Test Conditions
Brightness (FL) : 1k = 500 uA,
under scan (310 x 230)
Contrast ratio : 500 Lux

6. Performance
◆ Clear colors for windows working.
◆ Vivid images for graphic environment.
◆ Real-like effect for MPEG.
◆ More enjoyable for Multi-Media Game.

Troubleshooting

Symptom: Self diagnostics message.

Possible causes:

■The signal cable is not connected.

Symptom: OUT OF FREQUENCY message appears.

Possible causes:

```
OUT OF FREQUENCY
HF : 120 . 8 KHZ
VF : 110 . 1 HZ
OPERATING FREQUENCY
HF : 30 - 70 KHZ
VF : 50 - 160 HZ
POWER MANAGEMENT 20 SEC.
```
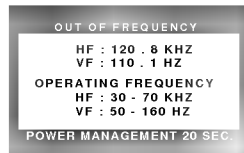
■The frequency of the sync input is outside the operating range of the monitor.

*Horizontal Frequency: 30KHz-70KHz
*Vertical Frequency: 50Hz-160Hz

Use the graphics board's utility software to change the frequency setting (Refer to the manual for graphics board).

Symptom: The power LED is illuminated amber.

Possible causes:

■Display power management mode.
■These is no sync signal.
■The signal cable is not fastened securely.
■Check the computer power and graphics adapter configuration.

Symptom: The image on the SCREEN is not centered, or too small, or not a rectangle shape.

Possible Causes: Image adjustment not been done yet in the current operating mode. Use the SELECT and ◀ or ▶ buttons to set the image to your liking.

Symptom: The monitor doesn't enter the power saving off mode (Amber).

Possible Causes: Computer video signal is not VESA DPMS standard. Either the PC or the video controller card is not using the VESA DPMS power management function.

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.

Input Specifications

Specifications

Sync signal types

Type	H. Sync	V. Sync
Separate Sync	H. Sync	V. Sync
Composite Sync	H/V. Sync	N.C

(N.C : no connection)

D P M (Display Power Management)

Mode	H. Sync	V. Sync	Video	Power Consumption	LED Color
Normal	On	On	On	$\leq 120W$	Green
Stand-by	Off	On	Off	$\leq 15W$	Amber
Suspend	On	Off	Off	$\leq 15W$	Amber
Off	Off	Off	Off	$\leq 5W$	Amber

Signal connector pin assignment
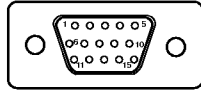
Pin	Separate Sync
1	Red
2	Green
3	Blue
4	Ground
5	Self-Test
6	Red Ground
7	Green Ground
8	Blue Ground
9	NC
10	Ground
11	Ground
12	SDA
13	Horiz.Sync
14	Vert.Sync
15	SCL

*NOTE: No. 5 Pin have to ground on the PC side.

Specifications

Picture tube
17 inch (15.9 inches viewable) FST, Non-glare, 90 degree deflection, Darkface, 0.28 mm dot pitch, Ultra Contrast CDT

Sync Input
Horizontal Freq.: 30KHz - 70KHz (Automatic)
Vertical Freq.   : 50Hz - 160Hz (Automatic)
Input Form   : Separate, Composite, TTL, Positive/Negative
Signal input   : 15 pin D-Sub connector

Video Input
Display Area   : 12.2" x 9.06" / 310 x 230mm (H x V)
Input Form   : Separate, RGB Analog, 0.7 Vp-p/75 ohm, positive
Resolution   : 1280 x 1024, 60Hz

Power Consumption: 120 Watts max
15 Watts suspend mode, stand-by mode
5 Watts DPMS-Off mode

Power input
100-240VAC 50/60Hz 2.0A

Dimensions (W x H x D)
412 x 428.5 x 431mm/16.2 x 16.9 x 17.0 inches

Weight (net)
17.0kg/37.5lbs

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WARRANTY PERIOD

MODEL #	LABOR	PARTS	HOW SERVICE IS HANDLED
	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.
		CRT 3 YEARS	

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- To damages or problems which result from misuse, abuse, accident, alteration, or incorrect electrical current or voltage.
- 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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→ Copy of your Sales Receipt must be submitted at the time warranty service is provided.

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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.

All Customers In Canada Please Call
→ (905)-670-0650

Input Specifications

Sync signal types

D P M (Display Power Management)

Signal connector pin assignment