

APPENDIX G :

USER'S MANUAL

Important Precautions

This unit has been engineered and manufactured to ensure your personal safety, however improper use may result in potential e shock or fire hazards. In order to allow the proper operation of all safeguards incorporated in this display, observe the following basic rules for its installation, use, and servicing.

On Safety

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 national standards if not being provided by the supplier. If the power cable is faulty in any way, please contact the manufacturer or the nearest authorized repair service provider for a replacement.

The power supply cord is used as the main disconnection device. Ensure that the socket-outlet is easily accessible after installation.

Operate the display only from a power source indicated in the specifications of this manual or listed on the display. If you are not sure what type of power supply you have in your home, consult with your dealer.

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.

Do not Open the Display.

- There are no user serviceable components inside.
- There are Dangerous High Voltages inside, even when the power is OFF.
- Contact your dealer if the display is not operating properly.

To Avoid Personal Injury :

- Do not place the display on a sloping shelf unless properly secured.
- Use only a stand recommended by the manufacturer.

To Prevent Fire or Hazards:

- Always turn the display OFF if you leave the room for more than a short period of time. Never leave the display ON when leaving the house.
- Keep children from dropping or pushing objects into the display's cabinet openings. Some internal parts carry hazardous voltages.
- Do not add accessories that have not been designed for this display.
- During a lightning storm or when the display is to be left unattended for an extended period of time, unplug it from the wall outlet.

Important Precautions

On Installation

Do not allow anything to rest upon or roll over the power cord, and do not place the display where the power cord is subject to damage.

Do not use this display near water such as near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool.

Displays 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 display on a bed, sofa, rug, etc.
- Place the display in a built-in enclosure unless proper ventilation is provided.
- Cover the openings with cloth or other material.
- Place the display near or over a radiator or heat source.

Do not rub or strike the Active Matrix LCD with anything hard as this may scratch, mar, or damage the Active Matrix LCD permanently.

Do not press the LCD screen with your finger for a long time as this may cause some afterimages.

Some dot defects may appear as Red, Green or Blue spots on the screen. However, this will have no impact or effect on the display performance.

If possible, use the recommended resolution to obtain the best image quality for your LCD display. If used under any mode except the recommended resolution, some scaled or processed images may appear on the screen. However, this is characteristic of the fixed-resolution LCD panel.

On Cleaning

- Unplug the display before cleaning the face of the display screen.
- Use a slightly damp (not wet) cloth. Do not use an aerosol directly on the display screen because over-spraying 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.

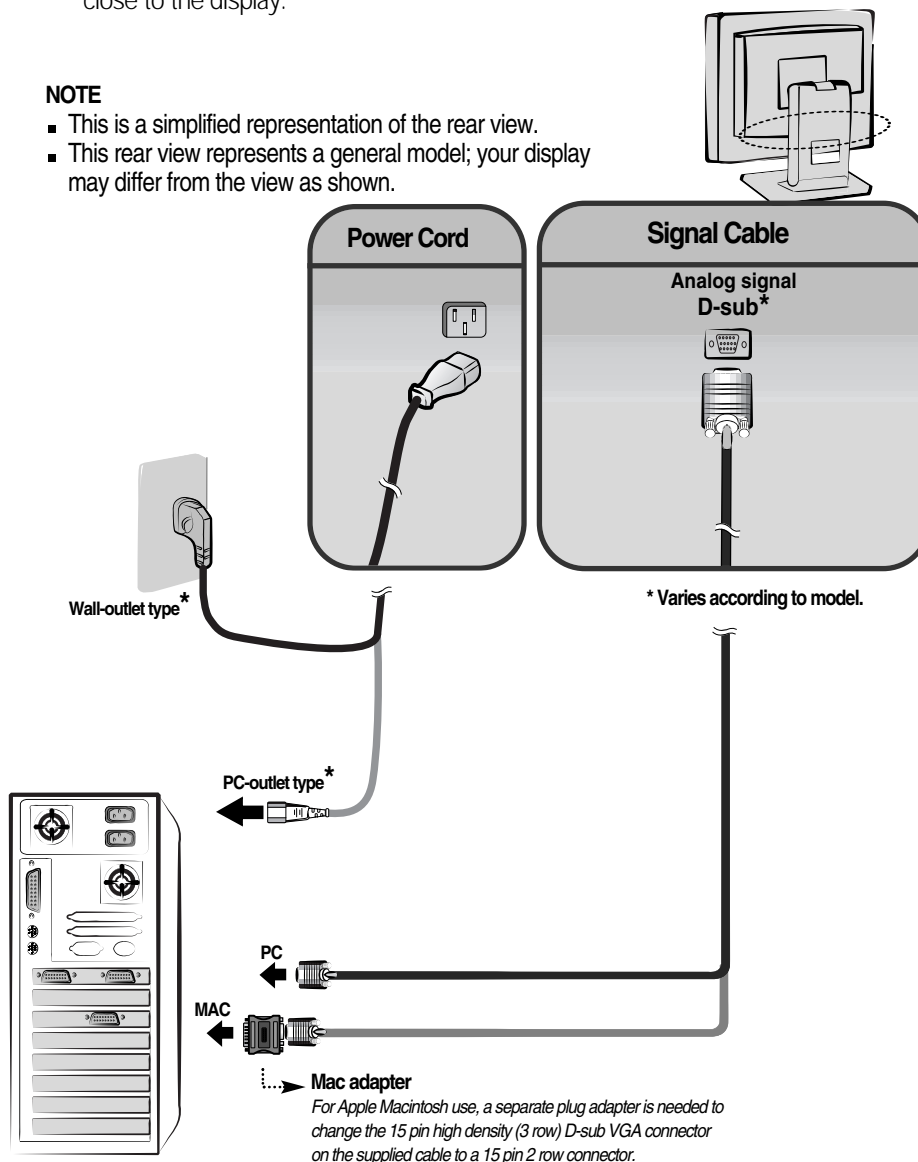
Connecting the Display

Using the Computer

1. Connect the signal cable. When attached, tighten the thumbscrews to secure the connection.
2. Connect the power cord into a proper power outlet that is easily accessible and close to the display.

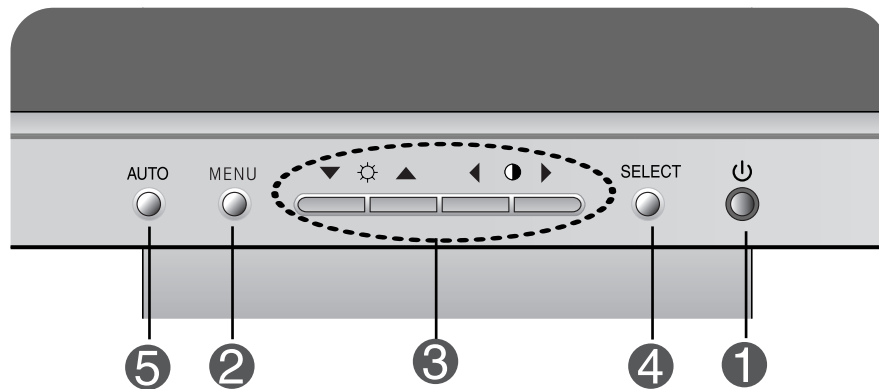
NOTE

- This is a simplified representation of the rear view.
- This rear view represents a general model; your display may differ from the view as shown.



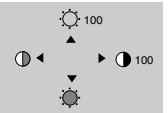



Control Panel Functions

Front Panel Controls



Control	Function
1 Power Button	Use this button to turn the display on or off.
Power (DPMS) Indicator	This Indicator lights up green when the display operates normally. If the display is in DPM (Energy Saving) mode, this indicator color changes to amber.
2 MENU Button	Use this button to enter or exit the On Screen Display.
3 ▼▲◀▶ Buttons	Use these buttons to choose or adjust items in the On Screen Display.
4 SELECT Button	Use this button to enter a selection in the On Screen Display.

Control Panel Functions

Control	Direct Access Function
	<p>3 ▼▲◀▶ Bring up Contrast and Brightness adjustment.</p>
	<p>5 AUTO adjustment function</p> <p>When adjusting your display settings, always press the AUTO button before entering the On Screen Display(OSD). This will automatically adjust your display image to the ideal settings for the current screen resolution size (display mode). The best display mode is 1280x1024.</p>
 	<p>CONTROLS LOCKED/UNLOCKED : MENU and ▶</p> <p>This function allows you to secure the current control settings, so that they cannot be inadvertently changed. Press and hold the MENU button and ▶ button for 3 seconds: the message “CONTROLS LOCKED” appears.</p> <p>You can unlock the OSD controls at any time by pushing the MENU button and ▶ button for 3 seconds: the message “CONTROLS UNLOCKED” will appear.</p>

On Screen Display (OSD) Control Adjustment

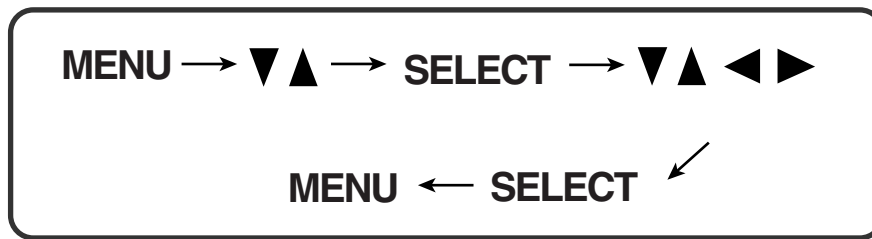
Screen Adjustment

Making adjustments to the image size, position and operating parameters of the display is quick and easy with the On Screen Display Control system. A short example is given below to familiarize you with the use of the controls. The following section is an outline of the available adjustments and selections you can make using the OSD.

NOTE

- Allow the display to stabilize for at least 30 minutes before making image adjustments.

To make adjustments in the On Screen Display, follow these steps:



- 1 Press the **MENU** Button, then the main menu of the OSD appears.
- 2 To access a control, use the **▼** or **▲** Buttons. When the icon you want becomes highlighted, press the **SELECT** Button.
- 3 Use the **▼ ▲ ◀ ▶** Buttons to adjust the item to the desired level.
- 4 Accept the changes by pressing the **SELECT** Button.
- 5 Exit the OSD by Pressing the **MENU** Button.

On Screen Display(OSD) Selection and Adjustment

The following table indicates all the On Screen Display control, adjustment, and setting menus.

Main menu	Sub menu		Reference
BRIGHTNESS CONTRAST	BRIGHTNESS	●	To adjust the brightness and contrast of the screen
	CONTRAST	●	
COLOR	PRESET	9300K	To customize the color of the screen
		6500K	
	R/G/B(User Color)	●	
	GAMMA	●	
POSITION	V POSITION	●	To adjust the position of the screen
	H POSITION	●	
TRACKING	CLOCK	●	To improve the clarity and stability of the screen
	PHASE	●	
SETUP	LANGUAGE*	●	To customize the screen status for a user's operating environment
	IMAGE SIZE*		
	OSD POSITION*	●	
	FACTORY RESET*	●	
● : Adjustable			

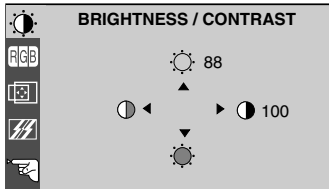
NOTE

- The order of icons may differ depending on the model (A7~A9).
- * This function is available for designated models only.

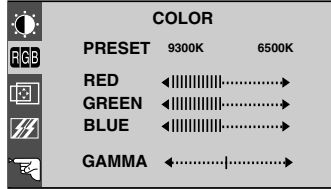
On Screen Display(OSD) Selection and Adjustment

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

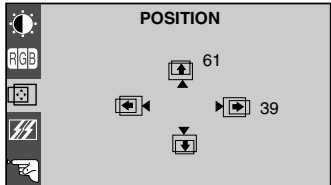
To adjust the brightness and contrast of the screen

OSD Adjust	Description
 <p>The screenshot shows the 'BRIGHTNESS / CONTRAST' OSD menu. It features a vertical sidebar with icons for brightness/contrast, RGB, geometry, and gamma. The main area has a central sun icon with '88' above it, flanked by left and right arrows. Below it are two circular sliders: the left one is partially filled and labeled '100', and the right one is empty.</p>	<p>BRIGHTNESS To adjust the brightness of the screen.</p> <p>CONTRAST To adjust the contrast of the screen.</p>

To customize the color of the screen

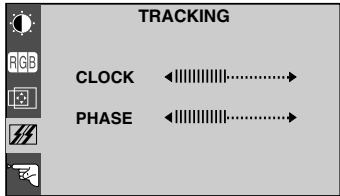
OSD Adjust	Description
 <p>The screenshot shows the 'COLOR' OSD menu. It has a vertical sidebar with icons for color, RGB, geometry, and gamma. The main area shows 'PRESET' with '9300K' and '6500K' options. Below are 'RED', 'GREEN', and 'BLUE' sliders, each with a horizontal bar and arrows. At the bottom is a 'GAMMA' slider with a horizontal bar and arrows.</p>	<p>PRESET 9300K/6500K Select the screen color. • 9300K: Slightly bluish white. • 6500K: Slightly reddish white.</p> <p>RED GREEN BLUE Set your own color levels.</p> <p>GAMMA Set your own gamma value. (-50~50) On the monitor, high gamma values display whitish images and low gamma values display high contrast images.</p>

To adjust the position of the screen


OSD Adjust	Description
 <p>The screenshot shows the 'POSITION' OSD menu. It has a vertical sidebar with icons for position, RGB, geometry, and gamma. The main area shows a central image icon with '61' above it, flanked by left and right arrows. Below it are two square sliders: the left one is partially filled and labeled '39', and the right one is empty.</p>	<p>Vertical Position To move image up and down.</p> <p>Horizontal Position To move image left and right.</p>

On Screen Display(OSD) Selection and Adjustment

To improve the clarity and stability of the screen

OSD Adjust	Description
 <p>The screenshot shows the 'TRACKING' OSD menu. It has a vertical sidebar with icons for brightness, contrast, tracking, and a select button. The main area shows 'CLOCK' and 'PHASE' settings, each with a horizontal bar of vertical lines and a double-headed arrow for adjustment.</p>	<p>CLOCK To minimize any vertical bars or stripes visible on the screen background. The horizontal screen size will also change.</p> <p>PHASE To adjust the focus of the display. This item allows you to remove any horizontal noise and clear or sharpen the image of characters.</p>

To customize the screen status for a user's operating environment

OSD Adjust	Description
 <p>The screenshot shows the 'SETUP' OSD menu. It has a vertical sidebar with icons for brightness, contrast, tracking, and a select button. The main area shows 'LANGUAGE' (English), 'IMAGE SIZE' (Full), 'OSD POSITION' (a small square icon), and 'FACTORY RESET' (No). At the bottom, it displays '1024x768@60Hz' and 'PRESET MODE'.</p>	<p>LANGUAGE* To choose the language in which the control names are displayed.</p> <p>IMAGE SIZE* This function displays the image in its original size or enlarged size so as to fit in the full screen of the LCD panel.</p> <p>OSD POSITION* To adjust position of the OSD window on the screen.</p> <p>FACTORY RESET* Return to all factory default settings except "LANGUAGE". If you don't want to reset the monitor, use the ◀ ▶ button to select NO and then press the SELECT button.</p>

NOTE

- * This function is available for designated models only. PAGE A7

Troubleshooting

Check the following before calling for service.

No image appears	
● Is the power cord of the display connected?	<ul style="list-style-type: none">• Check and see if the power cord is connected properly to the power outlet.
● Is the power indicator light on?	<ul style="list-style-type: none">• Press the Power button.
● Is the power on and the power indicator green?	<ul style="list-style-type: none">• Adjust the brightness and the contrast.
● Is the power indicator amber?	<ul style="list-style-type: none">• If the display is in power saving mode, try moving the mouse or pressing any key on the keyboard to bring up the screen.• Make sure if the power is on.• Try to turn on the PC.
● Do you see an "INPUT SIGNAL OUT OF RANGE" message on the screen?	<ul style="list-style-type: none">• This message appears when the signal from the PC (video card) is out of horizontal or vertical frequency range of the display. See the 'Specifications' section of this manual and configure your display again.
● Do you see a "NO SIGNAL" message on the screen?	<ul style="list-style-type: none">• This message appears when the signal cable between your PC and your display is not connected. Check the signal cable and try again.

Do you see a "CONTROLS LOCKED" message on the screen?	
● Do you see "CONTROLS LOCKED" when you push MENU button?	<ul style="list-style-type: none">• You can secure the current control settings, so that they cannot be inadvertently changed. You can unlock the OSD controls at any time by pushing the MENU button and ▶ button for 3 seconds: the message "CONTROLS UNLOCKED" will appear.

Display image is incorrect	
<ul style="list-style-type: none"> ● Display Position is incorrect. 	<ul style="list-style-type: none"> • Press the AUTO button to automatically adjust your display image to the ideal setting. If the results are unsatisfactory, adjust the image position using the H position and V position icon in the on screen display. • Check Control Panel --> Display --> Settings and see if the frequency or the resolution were changed. If yes, readjust the video card to the recommend resolution.
<ul style="list-style-type: none"> ● On the screen background, vertical bars or stripes are visible. 	<ul style="list-style-type: none"> • Press the AUTO button to automatically adjust your display image to the ideal setting. If the results are unsatisfactory, decrease the vertical bars or stripes using the CLOCK icon in the on screen display.
<ul style="list-style-type: none"> ● Any horizontal noise appearing in any image or characters are not clearly portrayed. 	<ul style="list-style-type: none"> • Press the AUTO button to automatically adjust your display image to the ideal setting. If the results are unsatisfactory, decrease the horizontal bars using the PHASE icon in the on screen display. • Check Control Panel --> Display --> Settings and adjust the display to the recommended resolution or adjust the display image to the ideal setting. Set the color setting higher than 24 bits (true color).
<ul style="list-style-type: none"> ● The screen color is mono or abnormal. 	<ul style="list-style-type: none"> • Check if the signal cable is properly connected and use a screwdriver to fasten if necessary. • Make sure the video card is properly inserted in the slot. • Set the color setting higher than 24 bits (true color) at Control Panel - Settings.
<ul style="list-style-type: none"> ● The screen blinks. 	<ul style="list-style-type: none"> • Check if the screen is set to interlace mode and if yes, change it to the recommend resolution. • Make sure the power voltage is high enough, It has to be higher than AC100-240V 50/60Hz.

Troubleshooting

Have you installed the display driver?

● **Have you installed the display driver?**

- Be sure to install the display driver from the display driver CD (or diskette) that comes with your display. Or, you can also download the driver from our web site: <http://www.lge.com>.

● **Do you see an "Unrecognized monitor, Plug&Play (VESA DDC) monitor found" message?**

- Make sure to check if the video card supports Plug&Play function.

Specifications

Display	18.1 inches (45.97cm) Flat Panel Active matrix-TFT LCD Anti-Glare coating 18.1 inches viewable 0.28 mm pixel pitch	
Sync Input	Horizontal Freq.	30 - 83kHz (Automatic)
	Vertical Freq.	56 - 75Hz (Automatic)
	Input Form	Separate TTL, Positive/Negative Composite TTL Positive/Negative SOG (Sync On Green)
Video Input	Signal Input	15 pin D-Sub Connector
	Input Form	RGB Analog (0.7Vp-p/75ohm)
Resolution	Max	VESA 1280 x 1024@75Hz
	Recommend	VESA 1280 x 1024@60Hz
Plug&Play	DDC 2B	
Power Consumption	Normal	: 53W
	Stand-by/Suspend	≤ 3W
	DPMS Off	≤ 3W
Dimensions & Weight (with tilt stand)	Width	40.6 cm / 15.98 inches
	Height	43.1 cm / 16.97 inches
	Depth	22.3 cm / 8.78 inches
	Net	7.8 kg (17.19 lbs)
Tilt Range	Tilt	-5° ~ 30°
	Swivel	360°
Power Input	AC 100-240V 50/60Hz 1.0A	
Environmental Conditions	Operating Conditions	
	Temperature	10°C to 35 °C
	Humidity	10 % to 80 % non-Condensing
	Storage Conditions	
	Temperature	-20°C to 60 °C
	Humidity	5 % to 95 % non-Condensing
Tilt Stand	Attached(O), Detached ()	
Signal cable	Attached(), Detached (O)	
Power cord	Wall-outlet type or PC-outlet type	
Regulations	TCO99	

NOTE

- Information in this document is subject to change without notice.

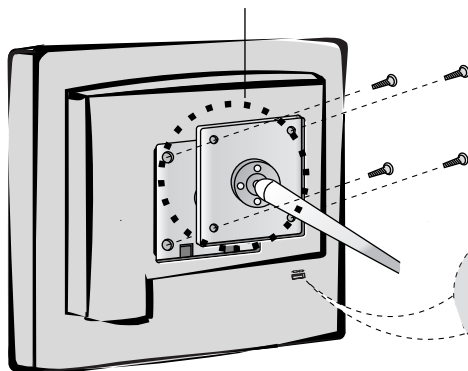
Specifications

Preset Modes (Resolution)

	Display Modes (Resolution)		Horizontal Freq. (kHz)	Vertical Freq. (Hz)
1	VGA	640 x 350	31.469	70
2	VGA	720 x 400	31.468	70
3	VGA	640 x 480	31.469	60
4	VESA	640 x 480	37.500	75
5	VESA	800 x 600	37.879	60
6	VESA	800 x 600	46.875	75
7	MAC	832 x 624	49.725	75
8	VESA	1024 x 768	48.363	60
9	VESA	1024 x 768	60.123	75
10	MAC	1152 x 870	68.681	75
11	VESA	1152 x 900	61.805	65
12	VESA	1280 x 1024	63.981	60
13	VESA	1280 x 1024	79.976	75

VESA wall mounting

Connected to another object (stand type and wall-mounted type. This monitor accepts a VESA-compliant mounting interface pad.)



Kensington Security Slot- optional

Connected to a locking cable that can be purchased separately at most computer stores

Regulatory Information

FCC Compliance Statement

This equipment has been tested and found to comply within the limits of 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 on and off), 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 the party responsible 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.

NOTICE

The regulations are applied only to the products with the ID LABEL indicating specific requirements.

Canadian DOC 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.

NOTICE

The regulations are applied only to the products with the ID LABEL indicating specific requirements.

CE Conformity Notice (for Europe)

Products with the "CE" Marking comply with the EMC Directive(89/336/EEC) and LOW VOLTAGE Directive (73/23/EEC) issued by the Commission of the European Community.

Compliance with these directives implies conformity to the following European Norms :

- EN 55022:1998 ; Radio Frequency Interference
- EN 55024:1998 ; Electromagnetic Immunity
- EN 61000-3-2 ; Power Line Harmonics
- EN 61000-3-3 ; Voltage Fluctuations
- EN 60950 ; Product Safety

NOTICE

The regulations are applied only to the products with the ID LABEL indicating specific requirements.

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 antistatic 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.

TCO95



Congratulations!

You have just purchased a TCO'95 approved and labelled product! Your choice has provided you with a product developed for professional use. Your purchase has also contributed to reducing the burden on the environment and to the further development of environmentally-adapted electronic products.

Why do we have environmentally labelled computers?

In many countries, environmental labelling has become an established method for encouraging the adaptation of goods and services to the environment. The main problem as far as computers and other electronic equipment are concerned is that environmentally harmful substances are used both in the products and during their manufacture. Since it has not been possible so far for the majority of electronic equipment to be recycled in a satisfactory way, most of these potentially damaging substances sooner or later enter Nature.

There are also other characteristics of a computer, such as energy consumption levels, that are important from both the working and natural environment viewpoints. Since all types of conventional electricity generation have a negative effect on the environment (acidic- and climatic-influencing emissions, radioactive waste, etc.), it is vital to conserve energy. Electronic equipment in offices consumes an enormous amount of energy, since it is often routinely left running continuously.

What does the environmental labelling involve?

This product meets the requirements for the TCO'95

Regulatory Information cont.

scheme, which provides for international environmental labelling of personal computers. The labelling scheme was developed as a joint effort by the TCO (The Swedish Confederation of Professional Employees), Naturkyddsforeningen (The Swedish Society for Nature Conservation), and NUTEK (The National Board for Industrial and Technical Development in Sweden), and SEMKO AB (an international certification agency).

The requirements cover a wide range of issues: environment, ergonomics, usability, emission of electrical and magnetic fields, energy consumption and electrical and fire safety.

The environmental demands concern, among other things, restriction on the presence and use of heavy metals, brominated and chlorinated flame retardants, CFCs (freons), and chlorinated solvents. The product must be prepared for recycling, and the manufacturer is obliged to have an environmental plan, which must be adhered to in each country where the company implements its operational policy.

The energy requirements include a demand that the computer and/or display, after a certain period of inactivity, shall reduce its power consumption to a lower level, in one or more stages. The length of time to reactivate the computer shall be reasonable for the user.

Labeled products must meet strict environmental demands, for example, in respect of the reduction of electric and magnetic fields, along with physical and visual ergonomics and good usability.

The following is a brief summary of the environmental requirements met by this product. The complete environmental criteria document may be ordered from:

TCO Development Unit
Linnegatan 14, S-11494 Stockholm, Sweden
FAX +46-8 782 92 07
E-mail (Internet): development@tco.se

Current information regarding TCO'95 approved and labelled products may also be obtained on the Internet using the address: <http://www.tco-info.com/>

TCO'95 is a co-operative project between:



Naturskydds
foreningen



NUTEK

SEMKO

Närings- och teknikutvecklingsverket

Environmental requirements

Brominated flame retardants are present in printed circuit boards, cabling, casings, and housings, and are added to delay the spread of fire. Up to 30% of the plastic in a computer casing can consist of flame-retardant substances. These are related to another group of environmental toxins, PCBs, and are suspected of giving rise to similar harm, including reproductive damage in fish-eating birds and mammals. Flame retardants have been found in human blood, and researchers fear that they can disturb fetus development.

Bio-accumulative¹ TCO'95 demands require that plastic components weighing more than 25 grams must not contain flame retardants with organically bound chlorine or bromine.

Lead can be found in picture tubes, display screens, solder, and capacitors. Lead damages the nervous system and in higher doses causes lead poisoning. The relevant bio-accumulative TCO'95 requirement permits the inclusion of lead, as no replacement has yet been developed.

Cadmium is present in rechargeable batteries and in the color-generating layers of certain computer displays. Cadmium damages the nervous system and is toxic in high doses. The relevant bio-accumulative TCO'95 requirement states that batteries may not contain more than 25 ppm (parts per million) of cadmium. The color-generating layers of display screens must not contain any cadmium.

Mercury is sometimes found in batteries, relays and switches. Mercury damages the nervous system and is toxic in high doses. The relevant bio-accumulative TCO'95 requirement states that batteries may not contain more than 25 ppm of mercury and that no mercury is present in any of the electrical or electronic components concerned with the display unit.

CFCs (freons) are sometimes used for washing printed circuit boards and in the manufacture of expanded foam for packaging. CFCs break down ozone and thereby damage the ozone layer in the atmosphere, causing increased reception on Earth of ultra-violet light with consequent increased risks of skin cancer (malignant melanoma). The relevant TCO'95 requirement: Neither CFCs nor HCFCs may be used during the manufacture of the product or its packaging.

¹ Bio-accumulative means that the substance accumulates within living organisms.

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.

Regulatory Information cont.

TCO'99



Congratulations!

You have just purchased a TCO'99 approved and labelled product! Your choice has provided you with a product developed for professional use. Your purchase has also contributed to reducing the burden on the environment and also to the further development of environmentally adapted electronics products.

Why do we have environmentally labelled computers?

In many countries, environmental labelling has become an established method for encouraging the adaptation of goods and services to the environment. The main problem, as far as computers and other electronics equipment are concerned, is that environmentally harmful substances are used both in the products and during their manufacture. Since it is not so far possible to satisfactorily recycle the majority of electronics equipment, most of these potentially damaging substances sooner or later enter nature.

There are also other characteristics of a computer, such as energy consumption levels, that are important from the viewpoints of both the work (internal) and natural (external) environments. Since all methods of electricity generation have a negative effect on the environment (e.g. acidic and climate-influencing emissions, radioactive waste), it is vital to save energy. Electronics equipment in offices is often left running continuously and thereby consumes a lot of energy.

What does labelling involve?

This product meets the requirements for the TCO'99 scheme which provides for international and environmental labelling of personal computers. The labelling scheme was developed as a joint effort by the TCO (The Swedish Confederation of Professional Employees), Svenska Naturskyddsforeningen (The Swedish Society for Nature Conservation) and Statens Energimyndighet (The Swedish National Energy Administration).

Approval requirements cover a wide range of issues: environment, ergonomics, usability, emission of electric and magnetic fields, energy consumption and electrical and fire safety.

The environmental demands impose restrictions on the presence and use of heavy metals, brominated and chlorinated flame retardants, CFCs (freons) and chlorinated solvents, among other things. The product must be prepared for recycling and the manufacturer is obliged to have an environmental policy which must be adhered to in each country where the company implements its operational policy.

The energy requirements include a demand that the computer and/or display, after a certain period of inactivity, shall reduce its power consumption to a lower level in one or more stages. The length of time to reactivate the computer shall be reasonable for the user.

Labelled products must meet strict environmental demands, for example, in respect of the reduction of electric and magnetic fields, physical and visual ergonomics and good usability.

Below you will find a brief summary of the environmental requirements met by this product. The complete environmental criteria document may be ordered from:

TCO Development

SE-114 94 Stockholm, Sweden

Fax: +46 8 782 92 07

Email (Internet): development@tco.se

Current information regarding TCO'99 approved and labelled products may also be obtained via the Internet, using the address: <http://www.tco-info.com/>

Environmental requirements

Flame retardants

Flame retardants are present in printed circuit boards, cables, wires, casings and housings. Their purpose is to prevent, or at least to delay the spread of fire. Up to 30% of the plastic in a computer casing can consist of flame retardant substances. Most flame retardants contain bromine or chloride, and those flame retardants are chemically related to another group of environmental toxins, PCBs. Both the flame retardants containing bromine or chloride and the PCBs are suspected of giving rise to severe health effects, including reproductive damage in fish-eating birds and mammals, due to the bio-accumulative* processes. Flame retardants have been found in human blood and researchers fear that disturbances in foetus development may occur.

The relevant TCO'99 demand requires that plastic components weighing more than 25 grams must not contain flame retardants with organically bound bromine or chlorine. Flame retardants are allowed in the printed circuit boards since no substitutes are available.

Cadmium**

Cadmium is present in rechargeable batteries and in the colour-generating layers of certain computer displays. Cadmium damages the nervous system and is toxic in high doses. The relevant TCO'99 requirement states that batteries, the colour-generating layers of display screens and the electrical or electronics components must not contain any cadmium.

Regulatory Information cont.

Mercury**

Mercury is sometimes found in batteries, relays and switches. It damages the nervous system and is toxic in high doses. The relevant TCO'99 requirement states that batteries may not contain any mercury. It also demands that mercury is not present in any of the electrical or electronics components associated with the labelled unit.

CFCs (freons)

The relevant TCO'99 requirement states that neither CFCs nor HCFCs may be used during the manufacture and assembly of the product. CFCs (freons) are sometimes used for washing printed circuit boards. CFCs break down ozone and thereby damage the ozone layer in the stratosphere, causing increased reception on earth of ultraviolet light with e.g. increased risks of skin cancer (malignant melanoma) as a consequence.

Lead**

Lead can be found in picture tubes, display screens, solders and capacitors. Lead damages the nervous system and in higher doses, causes lead poisoning. The relevant TCO'99 requirement permits the inclusion of lead since no replacement has yet been developed.

* Bio-accumulative is defined as substances which accumulate within living organisms

** Lead, Cadmium and Mercury are heavy metals which are Bio-accumulative.

EPA (U.S.A only)

ENERGYSTAR is a set of power-saving guidelines issued by the U.S. Environmental Protection Agency(EPA).



EPA POLLUTION PREVENTER

As an ENERGY STAR Partner LG Electronics U.S.A.,Inc. has determined that this product meets the ENERGY STAR guidelines for energy efficiency.

NOM MARK (Mexico only)



GOST MARK



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Internet Address:<http://www.lg.ru>

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