APPENDIX H

: USER'S MANUAL



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 representation and its shielded is ignally tables may be when their this SASTEM 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

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:: 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.

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

- EN 55022 ; Radio Frequency Interference
- EN 50082-1:1992 ; Electromagnetic Immunity • EN 60555-2
- EN 60555-2 ; Power Line Harmonics
 EN 60555-3 ; Voltage Fluctuations
 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 (TCO95 applied model only)



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.

■■■ Regulatory Information cont.

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 as enormous amount of energy, since it is often routinely left running continuously.

What does the environmenal labelling involve?

This product meets the requirements for the TCO'95 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),

Naturckyddsföreningen (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.

Labelled 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:





NUTEK

SEMKO

Naturskydds föreningen

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 fisheating birds and mammals. Flame retardants have been found in human blood, and researchers fear that they can disturb fetus development.

Bio-accumulative ¹ 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

■■■ Regulatory Information cont.

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 intermational 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.

.. TCO'99 (TCO'99 applied model only)



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. With the growing manufacture and usage of electronic equipment throughout the world, there is a recognized concern for the materials and substances used by electronic products with regards to their eventual recycling and disposal. By proper selection of these materials and substances, the impact on the environment can be minimized.

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. Electronic equipment in offices is often left running continuously, resulting in unnecessary consumption of large amounts of energy and additional power generation. From the standpoint of carbon dioxide emissions alone, it is vital to save energy.

What does labelling involve?

The product meets the requirements for the TCO'99 scheme which provides for international and environmental labelling of personal computers and/or displays.

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).

■■■ Regulatory Information cont.

Approval requirements cover a wide range of issues: ecology, ergonomics, emission of electrical and magnetical fields, energy consumption and electrical safety.

Ecological criteria impose restrictions on the presence and use of heavy metals, brominated and chlorinated flame retardants, and other substances. The product must be prepared for recycling and the manufacturing site(s) shall be certified according to ISO14001 or EMAS registered.

Energy requirements include a demand that the system unit 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 system unit shall be reasonable for the user.

Labelled products must meet strict environmental demands, for example, in respect of the reduction of electrical and magnetical fields as well as work load and visual ergonomics.

Below you will find a brief summary of the ecological requirements met by this product. The complete ecological criteria document can be found at TCO Development's website http://www.tcodevelopment.com or may be ordered from:

TCO Development

SE-114 94 STOCKHOLM, Sweden

Fax: +46 8 782 92 07 Email : development@tco.se

Information regarding TCO'99 approved and labelled products may also be obtained at

http://www.tcodevelopment.com

Ecological requirements

Flame retardants

Flame retardants may be present in printed wiring board laminates, cables, and housings. Their purpose is to prevent, or at least to delay the spread of fire. Up to 30% by weight of the plastic in a computer casing can consist of flame retardant substances. Many flame retardants contain bromine or chlorine, and these flame retardants are chemically related to PCBs (polychlorinated biphenyls). Both the flame retardants containing bromine or chlorine and the PCBs are suspected of giving rise to health effects, including reproductive damage in fish-eating birds and mammals, due to the bio-accumulative* processes when not disposed of in accordance with strict standards for disposal.

TCO'99 requires that plastic components weighing more than 25 grams shall not contain flame retardants with organically bound bromine or chlorine. Flame retardants are allowed in the printed wiring board laminates due to the lack of commercially available alternatives.

Cadmium**

Cadmium is present in rechargeable batteries and in the colour-generating layers of certain computer displays. TCO'99 requires that batteries, the colour-generating layers of display screens, and the electrical or electronics components shall not contain any cadmium.

Mercury**

Mercury is sometimes found in batteries, relays and switches. TCO'99 requires that batteries shall 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. There is however one exception. Mercury is, for the time being, permitted in the back light system of flat panel monitors as there today is no commercially available alternative. TCO aims on removing this exception when a mercury free alternative is available.

Lead**

Lead can be found in picture tubes, display screens, solders and capacitors. TCO'99 permits the use of lead due to the lack of commercially available alternatives, but in future requirements TCO Development aims at restricting the use of lead.

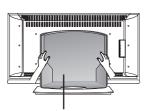
* Bio-accumulative is defined as substances which accumulate in living organisms.
**Lead, Cadmium and Mercury are heavy metals

which are bio-accumulative.

Name and Function of the Parts

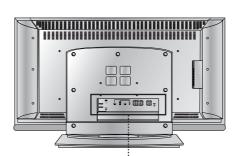
* The product image in the user's guide could be different from the actual image.

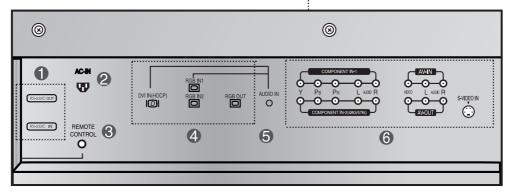
Rear View



Back Cap

- Open the back cap before you install the product.





- RS-232C Serial Ports
- Power Connector : Connect the power cord
- **③** Wired Remote Control Port
- 4 PC Signal Inputs
- **6** PC Sound Jack
 - : Connect the audio cable to the *LINE OUT jack of the PC sound card.
- AV Ports

*LINE OUT

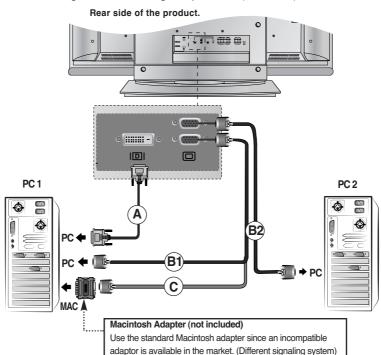
A terminal used to connect to the speaker including a built-in amplifier (Amp). Make sure that the connecting terminal of the PC sound card is checked before connecting. If the Audio Out of PC sound card has only Speaker Out, reduce the PC volume.

If the Audio Out of the PC sound card supports both Speaker Out and Line Out, convert to Line Out using the card jumper of the program (Refer to the Sound Card Manual).

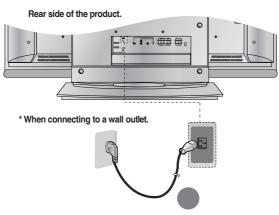
Connecting to External Devices

■■■ When Connecting to your PC

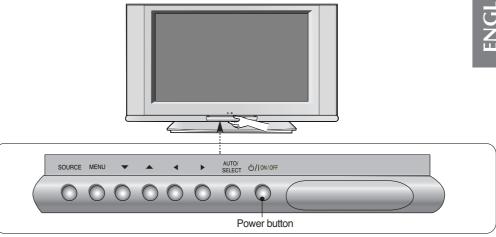
- First of all, see if the computer, product and the peripherals are turned off. Then, connect the signal input cable.
 - (A) When connecting with the DVI signal input cable.
 - (B1) When connecting with the D-Sub signal input cable. (IBM compatible PC1)
 - (B2) When connecting with the D-Sub signal input cable. (IBM compatible PC2)
 - (C) When connecting with the D-Sub signal input cable. (Macintosh)



2 Connect the power cord.



(A) Turn on power by pressing the power button on the product.



- (B) Turn on the PC.
- Select an input signal.

 Press the SOURCE button on the remote control to select the input signal.

Or, press the SOURCE button at the front side of the product.

When connecting with a DVI-D signal input cable.
 Select DVI: DVI-D digital signal.

When connecting with a D-Sub signal input cable.

(B1)(C) · Select RGB1 : 15-pin D-Sub analog signal.

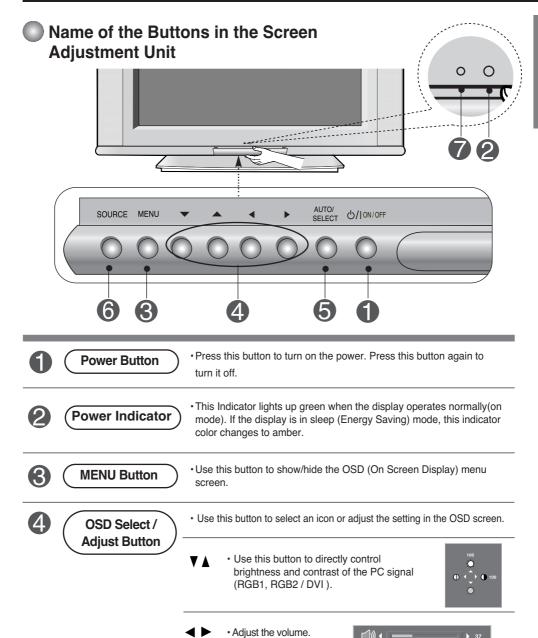
• Select RGB2: 15-pin D-Sub analog signal.





- How to connect to two computers.
 Connect the signal cables (DVI and D-Sub) to each computer.
 Press the SOURCE button in a remote control to select the computer to use.
- Directly connect to a grounded power outlet on the wall or a power bar with a ground wire.

Selecting and Adjusting the Screen



Selecting and Adjusting the Screen

Name of the Buttons in the Screen Adjustment Unit



AUTO/SELECT Button

[For PC Analog signal]

1) Auto in progress

(Only 1920X1080 Mode)

2)

Auto in Progress For optimal display change change resolution to 1920X1080

[Other signals]

•The current signal and mode information will be displayed.

6

SOURCE Button

SOURCE → V A → AUTO/SELECT

• Select the input signal

AV Composite Video
S-Video Separate Video
Component 1 HDTV
Component 2 DVD

RGB1 15-pin D-Sub analog signal 15-pin D-Sub analog signal

DVI DVI digital signal







· The unit that receives the signal from the remote control.



OSD Menu

Icon	Function Description		
PICTURE	Adjusts screen brightness, contrast and color that you prefer.		
SOUND	Adjusts the audio function.		
SPECIAL	Adjusts the screen status according to the circumstances.		
SCREEN	Adjusts the screen video.		
PIP/POP/PBP	Adjusts PIP/POP/PBP mode function.		



OSD(On Screen Display)
The OSD function enables you to adjust the screen status conveniently since it provides graphical presentation.

Troubleshooting

No image is displayed

- Is the product power cord connected?
- Is the power indicator light on?
- Power is on, power indicator is green but the screen appears extremely dark.
- Is the power indicator amber?
- Does the 'Out of range' message appear?
- See if the power cord is properly connected to the outlet.
- · See if the power switch is turned on.
- · Adjust brightness and contrast again.
- If the product is in power saving mode, move the mouse or press any key.
- The signal from the PC (video card) is out of the vertical or horizontal frequency range of the product. Adjust the frequency range by referring to the Specifications in this manual.
 - * Maximum resolution

RGB1 / RGB2 : 1920 X 1080 @60Hz DVI : 1920 X 1080 @60Hz

- Does the 'Check signal cable' message appear?
- The signal cable between PC and product is not connected. Check the signal cable.
- Press the 'SOURCE' menu in the remote Control to check the input signal.

'Unknown Product' message appears when the product is connected.

- Did you install the driver?
- Install the product driver, which is provided with the product, or download it from the web site. (http://www.lge.com)
- See if the plug&play function is supported by referring to the video card user manual.

'Controls locked' message appears.

- The 'Controls locked' message appears when pressing the Menu button.
- The control locking function prevents unintentional OSD setting change due to careless usage. To unlock the controls, simultaneously press the Menu button and ▶ button for several seconds. (You cannot set this function using the remote control buttons. You can set this function in the product only.)



- * Vertical frequency: To enable the user to watch the product display, screen image should be changed tens of times every second like a fluorescent lamp. The vertical frequency or refresh rate is the times of image display per second. The unit is Hz.
- * Horizontal frequency: The horizontal interval is the time to display one vertical line. When 1 is divided by the horizontal interval, the number of horizontal lines displayed every second can be tabulated as the horizontal frequency. The unit is kHz.

The screen image looks abnormal.

- Is the screen position wrong?
- D-Sub analog signal Press the "AUTO" button in the remote control to automatically select the optimal screen status that fits into the current mode. If adjustment is not satisfactory, use the Position OSD menu.
- See if the video card resolution and frequency are supported by the product. If the frequency is out of range, set to the recommended resolution in the Control Panel – Display – Setting menu.
- Do thin lines appear on the background screen?
- D-Sub analog signal Press the "AUTO" button in the remote control to automatically select an optimal screen status that fits into the current mode. If adjustment is not satisfactory, use the Clock OSD menu.
- Horizontal noise appears or the characters look blurred.
- D-Sub analog signal Press the "AUTO" button in the remote control to automatically select an optimal screen status that fits into the current mode. If adjustment is not satisfactory, use the Phase OSD menu.
- Unable to adjust the horizontal/vertical position in the Zoom menu.
- See if the Zoom value is set to 0. If it is, you cannot adjust the H/V Position value.
- Screen size is automatically adjusted when connected to the PC.
- If the screen size is not full when connected to the PC, execute the PIP/POP/PBP to change to full screen mode.
- Brightness differs in the main and sub screen when connected to the PC.
- You cannot adjust brightness and tint in the PIP/POP/PBP Screen menu for the sub-screen among PIP/POP/PBP menus. Therefore, brightness can be different for the sub-screen.
- The screen is displayed abnormally.
- The proper input signal is not connected to the signal port. Connect the signal cable that matches with the source input signal.

After-image appears on the product.

- After-image appears when the product is turned off.
- If you use a fixed image for a long time, the pixels may be damaged quickly. Use the screensaver function.

Troubleshooting

The audio function does not work.

No sound?

- · See if the audio cable is connected properly.
- · Adjust the volume.
- · See if the sound is set properly.
- No sound is available when the PIP/POP/PBP mode is engaged.
- Sound is too dull. Sound is too low.

- · See if the Sound is set to On in the PIP/POP/PBP
- · Select the appropriate equalize sound.
- · Adjust the volume.

The screen size function in the OSD menu does not work.

- The screen size function in the OSD menu does not work.
- · See if the PIP/POP/PBP function is in use. If the PIP/POP/PBP function is in use, the screen size function may not work.

Screen color is abnormal.

- Screen has poor color resolution (16 colors).
- · Set the number of colors to more than 24 bits (true
- Select Control Panel Display Settings Color Table menu in Windows.
- Screen color is unstable or monocolored.
- Check the connection status of the signal cable. Or, re-insert the PC video card.
- Do black spots appear on the screen?
- Several pixels (red, green, white or black color) may appear on the screen, which can be attributable to the unique characteristics of the LCD panel. It is not a malfunction of the LCD.

Specifications

The product specifications can change without prior notice for product improvement.

LCD Panel 55 inches (139.7 cm) TFT (Thin Film Transistor)

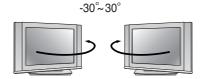
LCD (Liquid Crystal Display) Panel Visible diagonal size: 139.7 cm 0.630 mm (Pixel Pitch)

Power Rated Voltage AC 100-240V~ 50/60Hz 3.5A

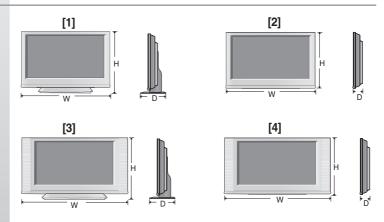
Power Consumption On Mode : 350W

Sleep Mode : $\leq 3W$ Off Mode : $\leq 3W$

Stend range



Dimensions &Weight



Width x Height x Depth

[1] 1375.4 cm (541.5 inches) x 943.2 cm (371.34 inches) x 320.0 cm (125.98 inches)

 $\textbf{[2]}\ 1375.4\ cm\ (541.5\ inches)\ x\ 878.0\ cm\ (345.67\ inches)\ x\ 143.0\ cm\ (56.30\ inches)$

[3] 1612.0 cm (634.6 inches) x 943.2 cm (371.34 inches) x 320.0 cm (125.98 inches)

[4] 1612.0 cm (634.6 inches) x 878.0 cm (345.67 inches) x 143.0 cm (56.30 inches)

Net

[1] 68.5 kg (151.01 lbs) [2] 55.0 kg (121.25 lbs)

[3] 72.9 kg (160.71 lbs) [4] 59.7 kg (131.61 lbs)

NOTE

Information in this document is subject to change without notice.

Specifications

The product specifications can change without prior notice for product improvement.

Video Signal	Max. Resolution	RGB1 / RGB2 : 1920 X 1080 @60Hz DVI : 1920 X 1080 @60Hz – It may not be supported depending on the OS or video card type.		
	Recommended Resolution	RGB1 / RGB2 : WSXGA 1920 X 1080 @60Hz DVI : WSXGA 1920 X 1080 @60Hz – It may not be supported depending on the OS or video card type.		
	Horizontal Frequency	30 - 83 kHz		
	Vertical Frequency	56 - 85 Hz		
	Synchronization Type	Separate/Composite/SOG (Sync On Green)/Digital		
Input Connector		15-pin D-Sub type, DVI-D (digital), S-Video, Composite Video, HDTV, DVD, RS-232C		
Environmental Conditions	Operational Condition Storage Condition	Temperature: 5° C $\sim 35^{\circ}$ C , Humidity: $10\% \sim 80\%$ Temperature: -20° C $\sim 60^{\circ}$ C , Humidity: $5\% \sim 95\%$		

* Applicable only for models that support the speakers

Audio	RMS Audio Output Input Sensitivity Speaker Impedance	10W+10W(R+L) 0.7Vrms 8Ω

NOTE

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

PC Mode – Preset Mode

Preset mode		Horizontal Frequency (kHz)	Vertical Frequency (Hz)		Preset mode	Horizontal Frequency (kHz)	Vertical Frequency (Hz)
1	VGA 640 x 350	31.469	70	11	VESA 1024 x 768	60.123	75
2	VGA 720 x 400	31.468	70	12	VESA 1024 x 768	68.68	85
3	VGA 640 x 480	31.469	60	13	VESA 1280 x 720	44.772	60
4	VESA 640 x 480	37.500	75	14	VESA 1360 x 768	47.72	60
5	VESA 640 x 480	43.269	85	15	VESA1280 x 1024	63.981	60
6	VESA 800 x 600	37.879	60	16	VESA1280 x 1024	79.98	75
7	VESA 800 x 600	46.875	75	17	VESA 1920 x 1080	66.587	60
8	VESA 800 x 600	53.674	85				
9	MAC 832 x 624	49.725	75				
10	VESA 1024 x 768	48.363	60				

Power Indicator

Mode	Product	
On Mode	Green	
Sleep Mode	Amber	
Off Mode	-	

Specifications

VESA wall mounting

Connected to another object (stand type and wall-mounted type.) This product accepts a VESA-compliant mounting interface pad.- (**optional**) For further information, refer to the VESA Wall Mounting Instruction Guide.

