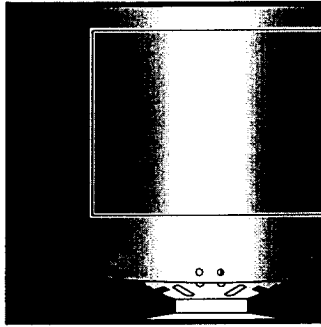


Colour Monitor

User's Guide

Model:SB912BU



Please read this manual carefully before operating your set.
Retain it for future reference.
Record model number and serial number of the set.
See the label attached on the back cover and quote this
information to your dealer when you require service.



AGENCY REGULATORY NOTICE

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 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.

**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.

**CE
Conformity
Notice**



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 ; Radio Frequency Interference
- EN 50082-1:1992 ; Electromagnetic Immunity
- EN 60555-2 ; Power Line Harmonics
- EN 60555-3 ; Voltage Fluctuations
- EN 60950 ; Product Safety

Environmental Labelling of Personal Computers



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.

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.

Table of Contents

Introduction	
Features	A1
Monitor Registration	
Notice	A2
Trademark Acknowledgments	A2
Important Precautions	
On Safety	A3
On Installation	A4
On Cleaning	A4
On Repacking	A4
Connecting the monitor	
Connection to any IBM VGA PC compatible system	A5
Connecting to an Apple Macintosh PC	A6
Making use of USB(Universal Serial Bus)	
USB Connection	A7
USB-Monitor software function	A9
Location and Function of Controls	
Front View	A10
Rear View	A10
Control Panel Function	
OSD Enter Button	A11
OSD Exit Button	A11
OSD Select/Adjustment Buttons	A11
Brightness Adjustment Control	A11
Contrast Adjustment Control	A11
Power (DPMS) Indicator	A11
Power ON/OFF Button	A11
On Screen Display (OSD) Control Adjustment.....	A12
On Screen Display (OSD) Selection and Adjustment	A13
Video Memory Modes	
Display Modes (Resolution)	A19
User Modes.....	A19
Recalling Display Modes.....	A19
Energy Saving Design	
Power Consumption.....	A20
MPR II, Self Diagnostics and DDC	
Low Radiation Compliance (MPR II).....	A21
Self Diagnostics	A21
DDC (Display Data Channel).....	A21
Troubleshooting and Service	
Troubleshooting	A22
Service	A23
Specifications	
Specifications	A24

Introduction

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

Features

- The monitor is a 19 inches (18.0 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.
- USB (Universal Serial Bus) ports at the back of the monitor are prepared for the USB cable and hub. You can easily and flexibly connect USB-designed devices-such as a mouse, keyboard or printer- to the monitor for true Plug and Play function.
- 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 110kHz, and vertical scan frequencies between 50-200Hz. 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).
- This monitor is capable of producing a maximum horizontal resolution of 1600 dots and a maximum vertical resolution of 1200 lines. It is well suited for CAD work and sophisticated windowing environments.
- For 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.

Video Memory Modes

The monitor has 38 memory locations for display modes, 12 of which are factory preset to popular video modes.

Display Modes (Resolution)

	Display Modes (Resolution)		Horizontal Freq.(kHz)	Vertical Freq.(Hz)
1	VESA	720 x 400	31.469	70
2	VESA	640 x 480	31.469	60
3	VESA	640 x 480	43.269	85
4	VESA	800 x 600	53.674	85
5	VESA	1024 x 768	48.363	60
6	VESA	1024 x 768	68.677	85
7	VESA	1280 x 1024	63.981	60
8	VESA	1280 x 1024	79.976	75
9	VESA	1280 x 1024	91.146	85
10	VESA	1600 x 1200	93.750	75
11	VESA	1600 x 1200	100.00	80
12	VESA	1600 x 1200	106.25	85

User Modes

Modes 1-26 are empty and can accept new video data. If the monitor detects a new video mode that has not been present before or is not one of the preset modes, it stores the new mode automatically in one of the empty modes starting with mode 1.

If you use up the 26 blank modes and still have more new video modes, the monitor replaces the information in the user modes starting with mode 1.

Recalling Display Modes

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

You may, however, manually force a recall of each of the 12 preset modes by pressing the Recall button. All preset modes are automatically recalled as the monitor senses the incoming signal.

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

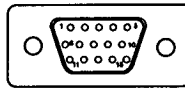
Specifications

Sync Signal Types

Type	H. Sync	V. Sync	Green
Separate Sync	H. Sync	V. Sync	-
Composite Sync	H/V Sync	-	N.C
Sync On Green	-	-	H/V Sync

(N.C : No Connection)

Signal Connector Pin Assignment



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

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

Specifications

Picture tube

- 19 inches (18.0 inches viewable) FST, 90° deflection
- 0.26 mm dot pitch, Non-glare, Darkface
- AR-ASC (Anti-Reflective Anti-Static Coating)

Sync Input

- Horizontal Frequency : 30 - 110kHz (Automatic)
- Vertical Frequency : 50 - 200Hz (Automatic)
- Input Form : Separate, Composite, SOG(Sync On Green), Positive/Negative,
- Signal input : 15 pin D-Sub Connector

Video Input

- Input Form : Separate, RGB Analog, 0.7 Vp-p/75 ohm, Positive
- Resolution(max) : 1600 x 1200, 85Hz

Power Input

- AC 94-132/196-264V 50/60Hz 3.0A

Dimensions (with tilt/swivel stand)

- Width : 458 mm
- Depth : 409.5 mm
- Height : 455.5 mm

Weight

- Net : 23kg

Environment

- Operating condition
 - Temperature : 10°C to 35°C
 - Humidity : 10% to 90% non-condensing
- Storage condition
 - Temperature : 0°C to 60°C
 - Humidity : 5% to 90% non-condensing

Information in this document is subject to change without notice and does not represent a commitment on the part of LG Electronics Inc.