

■ ***ELSA ECOMO™ 20DFP99***

User Manual

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Preface

Thank you for placing your trust in this ELSA product.

With the *ELSA ECOMO 20DFP99* you have selected one of ELSA's high-end monitors. ELSA products are subject to the highest of standards in production and quality control which are the foundation for consistently high product quality. This monitor was especially designed for the demands of professional users, and distinguishes itself with an extraordinary degree of reliability.



If you have questions to the topics covered in this manual or require additional help, our online services are at your disposal around the clock. The complete range of support and services provided by ELSA can be found in the 'Advice and Help' chapter.

In very urgent cases the ELSA Support Hotline can be reached under the following numbers:

Germany	Aachen	+49-241-606-6135
Austria	Vienna	+43-136 02 77 1180
Belgium	Brussels	+32-2 643 55 85
Denmark	Copenhagen	+45-8 233 28 29
France	Paris	+33-170 91 70 70
Italy	Milan	+39-2 75 41 96 35
Netherlands	Amsterdam	+31-20 654 52 98
Spain	Madrid	+34-91 375 30 22
Switzerland	Zurich	+41-1 439 53 60
United Kingdom	London	+44-171 294 01 14

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Introduction

General information

Complying to the new Digital Flat Panel (DFP) video standard in a large 18.1" SXGA screen, the *ELSA ECOMO 20DFP99* represents the latest state-of-the-art in digital display technology. It is built around an active-matrix, Thin Film Transistor (TFT) LCD panel with an 18.1" Viewable Image Size (VIS), capable of a 1280 x 1024 maximum resolution.

The *ECOMO 20DFP99*, due to small footprint coupled with crisp, sharp display quality, is ideal for those who prefer more desktop working space and the highest video performance on a large screen size. For compatibility to variety of mounting applications, the *ECOMO 20DFP99* complies with the VESA FPM PMI (Flat Panel Monitor Physical Mounting Interface) Standard.

Key features

- 18.1" TFT Liquid Crystal Display
- Anti-glare and hard coating treatment
- Super wide viewing angle
- Pure digital signaling for superior video performance
- Digital Flat Panel (DFP) Standard MDR 20-pin input
- 24-bit, 16 million displayable colors
- VESA FPM PMI Standard compliant mounting interface
- Light weight, compact design (10kg)
- VESA DPMS compatible power saving
- Universal AC/DC adapter
- DDC2B Plug&Play compatible
- Self-powered USB hub (1 upstream port and 4 downstream ports)
- Kensington type security lock anchor for theft prevention

Checklist

Before operating this monitor, please ensure that all the items listed below are included in your package:

- The *ELSA ECOMO 20DFP99* monitor
- Warranty statement
- Power cord (from AC outlet to AC/DC adapter)

- AC/DC adapter
- MDR 26 to 20-pin signal cable
- USB cable
- ELSA driver and utilities CD
- ELSA DFP graphics board

Safety precautions

Power

Use the type of power indicated on the marking label.

Adapter

Only use an adapter designed for the LCD monitor (POTRANS UP06031120 or UMEC UP0451E-12P).



Use of another type of adapter will result in malfunction and/or danger.

Plugs

- Do not remove any parts of the monitor's three-pronged power plug.
- Disconnect the power plug from the AC outlet when the monitor will not be used for an indefinite period of time.

Power and extension cords

- Use the proper power cord with correct plug type. If the power source is 120V AC, use a power cord that has UL and CSA approvals. If the power source is a 240V AC supply, use the tandem (T blade) type attachment plug with ground conductor power cord that meets the respective European countries' safety regulations, such as VDE for Germany.
- We recommend using the power cord supplied with the product. However, if another type of power cord is required, H05VV-F or VW-1, 18AWG x 3G should be used.
- Do not overload wall outlets or power cords. Be sure that the total of all units plugged into the wall outlet does not exceed 7 amperes.
- Be sure that the total ampere rating of all units plugged into the extension cord does not exceed the rating of the cord.
- If the monitor power supply cord requires a connection to the PC instead of the wall outlet, this equipment is to be used with an UL approved computers which has receptacle rate of 100~240V AC, 50/60Hz, 2.0A (minimum).

- Do not place anything on the power cord. Do not locate the product where a person may walk or trip over the cord.

Environment

- Place the monitor on a flat and leveled surface.
- Place the monitor in a well-ventilated area.
- Keep the monitor away from:
 - Rain or water
 - Excessive heat, cold or humid area
 - Areas exposed to direct sunlight
 - Dusty surroundings
 - Equipment that generates strong magnetic fields

CE conformity and FCC radiation standard

CE

This equipment has been tested and found to comply with the limits of the European Council Directive on the approximation of the laws of the member states relating to electromagnetic compatibility (89/336/EEC) according to EN 55022 class B.

FCC

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the Federal Communications Commission (FCC) Rules.

CE and FCC

These limits are designed to provide reasonable protection against radio frequency interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. It may interfere with radio communications if not installed and used in accordance with the instructions. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception (this can be determined by turning this equipment off and on), the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the distance between this equipment and the receiver.
- Connect the equipment to an outlet on a circuit other than that to which the receiver is connected.
- Consult your dealer or an experienced radio/TV technician.
- Caution: To comply with the limits for an FCC Class B computing device, always use a shielded signal cable.



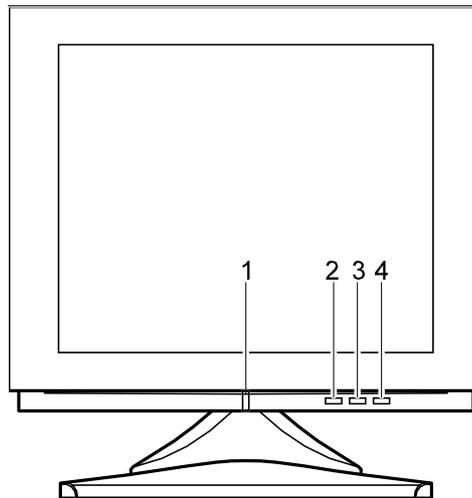
Caution to the user: The Federal Communications Commission warns the user that changes or modifications to the unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Controls and functions



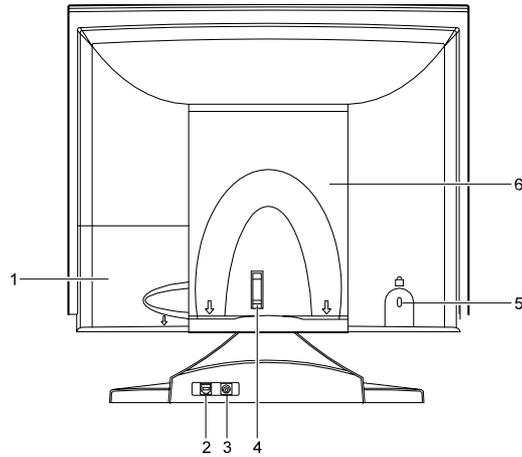
Save the shipping carton and packing material for storage or in case shipping the unit is needed in the future. Place the LCD downward on its face when storing it back into the carton.

Front view



- ❶ Power LED: This indicator illuminates when the power is turned on.
- ❷ Power button: This button is used to power down to enter the standby “soft-off” mode of the monitor.
- ❸ ☀▼ button: This button is used to decrease the brightness of the image.
- ❹ ☀▲ button: This button is used to increase the brightness of the image.

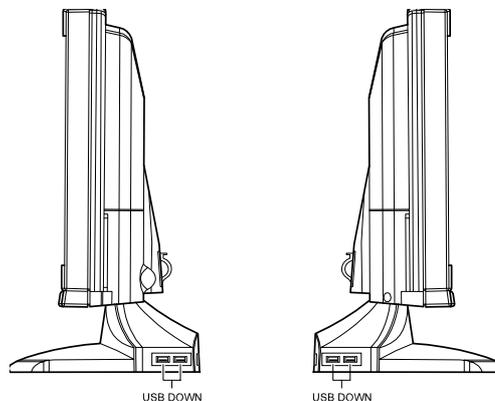
Rear view



- ❶ Connector box
- ❷ USB upstream: This upstream port is for connecting to an USB downstream connector on your PC or another USB hub.
- ❸ DC power In: This is for connecting the AC/DC adapter.
- ❹ Wire holder: This is for holding the signal cable.
- ❺ Lock anchor: This is an anchor hole for Kensington type security lock.
- ❻ VESA Mounting Interface
- ❼

Left/right view

The USB downstream ports are for connecting USB devices.



Installation



When you disconnect the cord/cables, always pull by the connector, not the cord.

Installing the DFP graphics board

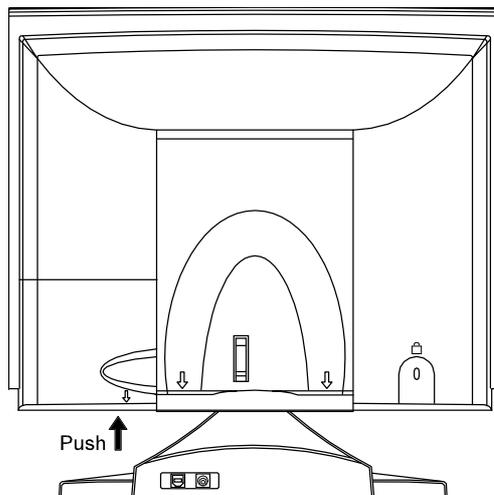
Please refer to the card's installation guides. The DFP graphics board is an optional item in your monitor package and it may not be included depending on the configuration you have ordered.

Connecting the LCD monitor

You can either stand the monitor on the desktop (with the base) or hang it on the wall or other surfaces (without the base) using a VESA FPMPMI compliant mounting device.

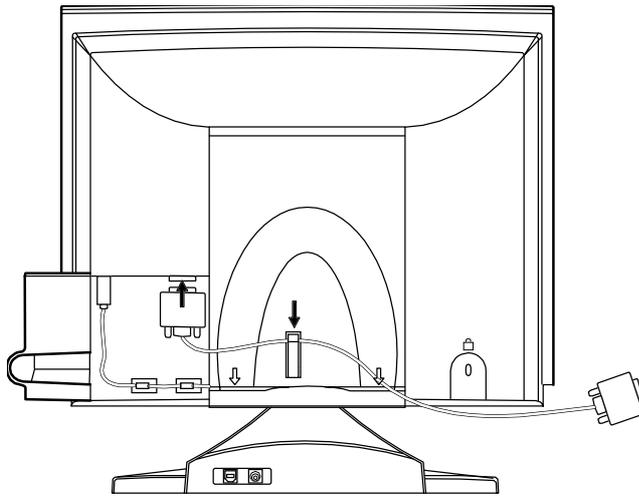
With the Base

- ① Push the button at the bottom of the door to open the connector box.



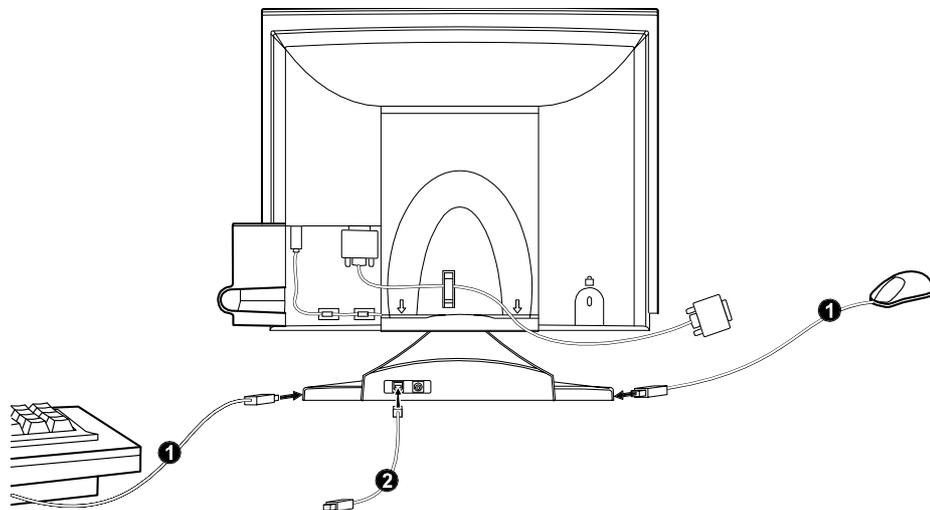
- ② Connect one end of the signal cable (MDR26) to the monitor and the other end (MDR20) to the MDR connector of the graphics board.

Then, insert the cable to the wire holder.



③ If needed:

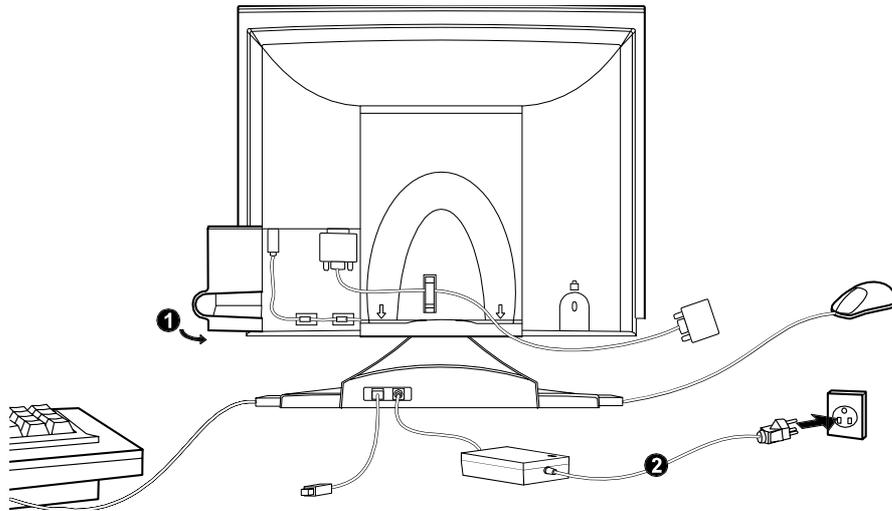
- Connect the USB devices (mouse, keyboard, etc.) to the downstream ports. (1)
- Connect the square B-type (square shape) connector of the USB cable to the upstream port of the monitor and the other end (flat A-type) to the computer or another USB hub. (2)



④ Close the door of the connector box. (1)

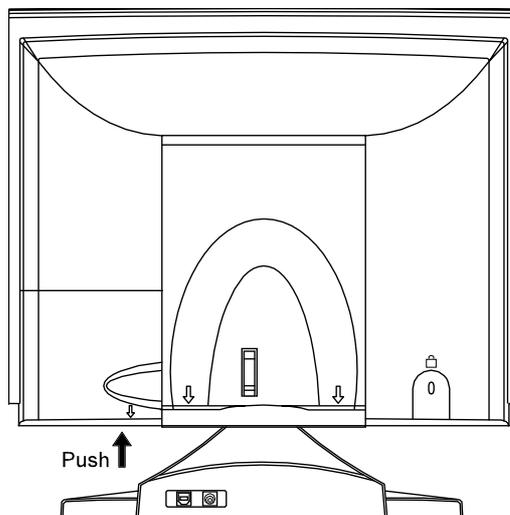
Connect the DC end of the AC/DC adapter to the monitor and the AC end to the wall outlet. (2)

Then, turn on the computer.

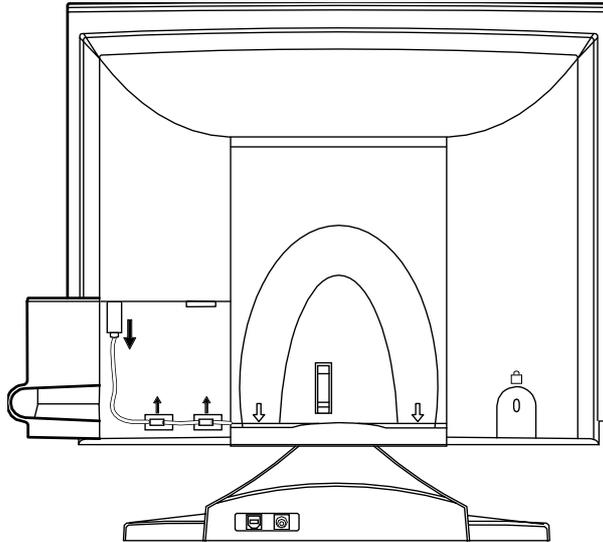


Without the base

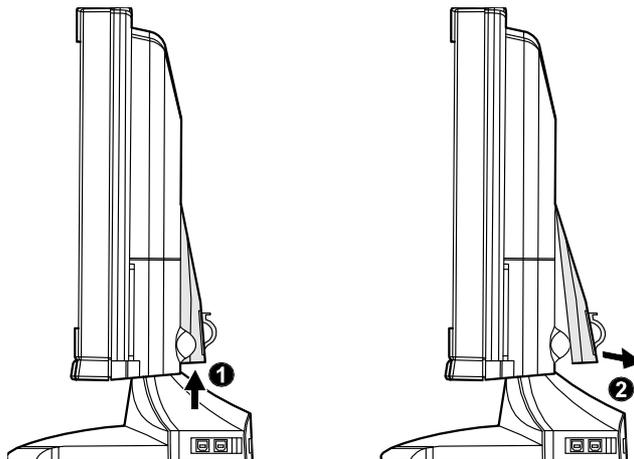
- ① Push the button at the bottom of the door and swing it out slowly to open the connector box.



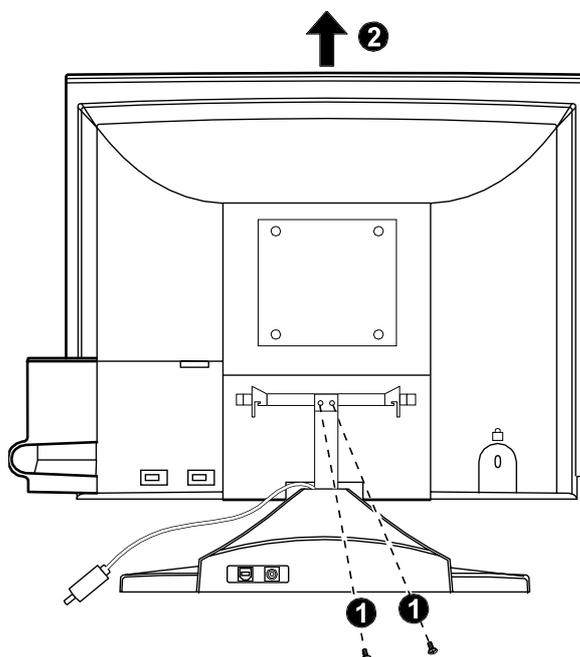
- ② Unplug the DC power cable and free it from the wire holders.



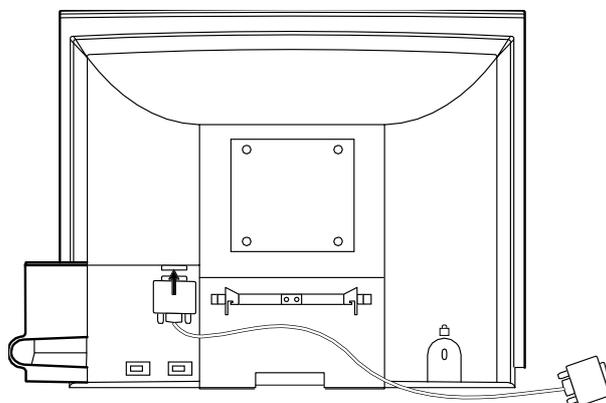
- ③ To open the cover over the VESA mounting interface, push the two buttons at the bottom of the cover (①), and then pull it out at a small angle (②).



- ④ Unscrew the two screws (①), and pull the panel up to free the panel from the base (②).

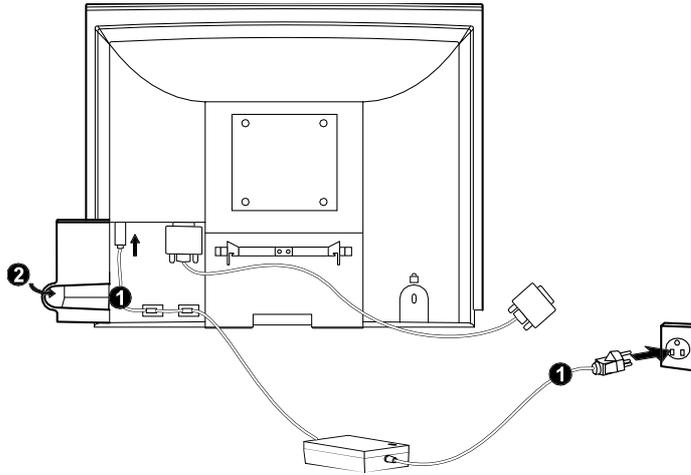


- ⑤ Connect one end of the signal cable (MDR 26-pin) to the monitor and the other end (MDR 20-pin) to the MDR connector of the computer.



- ⑥ Connect the DC end of the AC adapter to the monitor and connect the AC end to the wall outlet. (①)

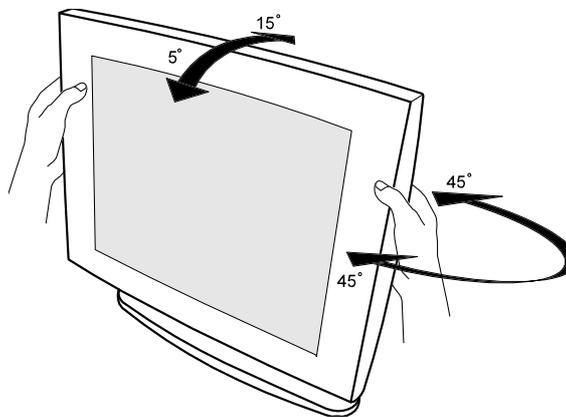
Close the door of the connector box. (2)



- ⑦ Mount the panel on a VESA™ FPMPMI™ compliant mounting device. Then, turn on the computer.

Adjusting display angle (with the base)

For viewing clarity, you can tilt the LCD right or left (up to 45 degrees), forward (up to 5 degrees), or backward (up to 15 degrees).



Do not touch the screen surface when you tilt the monitor.

Troubleshooting

The monitor does not respond after you turn on the system

- Check if the monitor is turned on.
- Turn off the power and check the monitor power cord and signal cable for proper connection.
- Please make shure to use the latest BIOS version and drivers for the DFP graphics board.

The characters on the screen are dim

- Refer to the 'Controls and functions' section to adjust the brightness.

The screen is blank

- During operation, the monitor screen may automatically power down due to the power saving feature. Move the mouse or press any key to see if the screen comes back.
- Refer to the 'Controls and functions' section to adjust the brightness.

Do not disassemble the monitor. Contact your dealer if service is needed.



Timing guide

Due to its digital design and the implementation of the new digital standard interface, the *ECOMO 20DFP99* will support resolutions used in the Digital Flat Panel (DFP) Standard up to 1280 x 1024. The Monitor also supports lower resolutions (1024 x 768, 800 x 600, 640 x 480, etc.) by scaling these lower resolution modes up to the 1280 x 1024 resolution required by the monitor. Scaling of lower resolutions is performed at the personal computer to ensure all resolutions can be displayed full-screen on the Monitor.

Specifications

LCD Panel	18" TFT LCD module, anti-glare and hard coating
Pixel Dimension	0.2805mm x 0.2805mm

Monitor

Effective display size	18.1" (46cm diagonal)
Resolution (max./native)	SXGA 1280 x 1024
Displayable colors	24-bit, 16 million colors
Brightness	200Cd/m ² (typical)
Contrast ration	230:1 (typical)
Viewing angles	± 70° horizontal, 70° up, 40° down
Response time	45ms (typical)
User controls	Power, brightness
USB	1 upstream port, 4 downstream ports
Plug & Play	DDC2B
Interface	DFP (Digital Flat Panel)
Cable	DFP MDR 26/20 signal cable

AC adapter

Universal power supply	Input: 100~240V AC, 60/50Hz
Maximal power consumption (ON mode)	48W
Power saving mode	< 5W

Dimension & weight

Size	18.1" x 18.4" x 6.8" (460mm x 467mm x 173mm)
Weight	22.0lbs. (10Kg)

Environments

Temperature	Operating: 5°C~35°C, Storage: -20°C~55°C
Humidity	Operating: 10%~80% (non-condensing) Storage: 90% (non-condensing)
Altitude	Operating: up to 10,000ft, storage: up to 30,000ft

Certifications

UL, FCC-DOC, TCO'99, CUL, CE, TÜV/GS



Specifications are subject to change without prior notice due to our policy of continuous product improvement. ELSA AG shall not be liable for technical or editorial errors or omissions contained herein; nor for incidental or consequential damages whatsoever resulting from furnishing, performance or use of this material.

The USB function under Windows

What does USB stand for?

USB stands for “Universal Serial Bus” and defines a new interface standard which is clearly more convenient for the PC user. This increased convenience concerns the connection and configuration of peripheral devices. Up to 127 peripherals such as keyboard, mouse, modem removable drives and digital cameras for videoconferencing can be connected to a USB system. With USB, each peripheral device is configured automatically.

The USB standard defines a uniform connector type, making special cables, proprietary connectors and interfaces and special installation software unnecessary. This eliminates the all-too-well-known cable spaghetti that can result and the risk of hardware damage due to an incorrect connection. The fact that all the devices can be connected to each other—similar to a network—is also a great advantage. It means a high degree of flexibility when planning the layout of the devices: Not all peripheral devices have to be connected centrally to the computer.

Who can use USB?

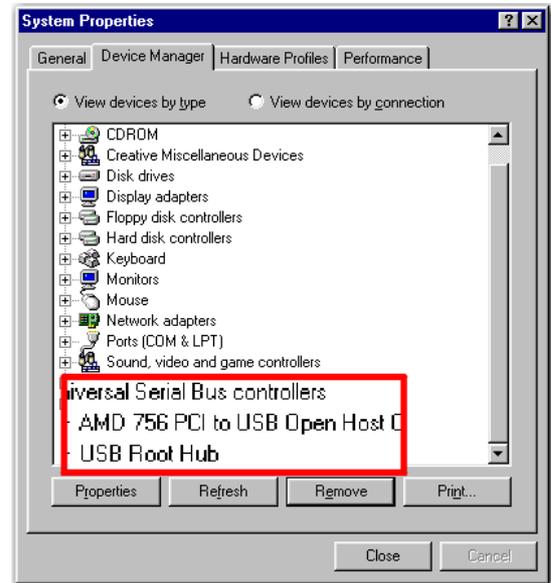
The USB function is available to you if your hardware and operating system support USB. In this case, it is the Windows system that checks the hardware, sets up the USB and controls the attached devices.

USB support is already integrated in Windows 98. This may be different with older versions of Windows 95. Not all Windows 95 versions support USB.

Checking for USB support

Open up the Control Panel by selecting **Start** ► **Settings** ► **System**. In the Device Manager view the list of devices available in the system.

The Windows system Device Manager shows you whether the USB controller is installed or not.



For further information on USB please refer to www.usb.org.

Appendix



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 color-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 color-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.

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

** Lead, cadmium and mercury are heavy metals which are bio-accumulative.

ELSA-ServiceDirect for *ELSA ECOMO*TM monitors

3-year warranty including ELSA-Onsite

As of the purchase date 01.01.1998, ELSA grants a three-year warranty on *ELSA ECOMO*¹⁾ monitors including ELSA-ServiceDirect. ELSA strives to offer its customers top product quality with its extensive quality assurance measures. If, however, the customer makes a complaint, this service program guarantees perfect support and repair procedures to minimize any inconvenience. As well as repairs carried out free of charge, the following ServiceDirect services are offered within the extended scope of the warranty.

ELSA-Onsite: 3 years of onsite service for ELSA monitors—free of charge

You can avail of the numerous advantages of our onsite services for *ELSA ECOMO* monitor throughout Europe²⁾. If you discover a fault with your monitor, you first contact our support team. If your monitor requires repairs within the warranty period of three years, you are provided with a replacement unit within 24 hours³⁾ which we deliver to your workplace. Your repaired monitor will be returned to you as soon as possible. The advantage of this offer is that you have no downtime or transport expenses. ELSA's customer service ensures that all transporting procedures are dealt with in the correct manner.

Your direct contact partner at ELSA-ServiceDirect

As an ELSA customer, you will receive support and advice from ELSA's customer service at all stages of the warranty services being carried out.

The ELSA support hotline is the first number to dial if you discover a malfunction or fault on your monitor.

ELSA Monitor Support Hotline
+49-(0)241-606-6131

If you have general questions on ServiceDirect, on the progress of repair work, contact the ELSA infoline.

ELSA Infoline
+49-(0)241-606-5111

1) Applies to all *ELSA ECOMO* monitors purchased after January 1, 1998.

2) For *ELSA ECOMO 21H97*, a 4 week DoA warranty is granted outside of Germany instead.

3) Provided that the complete documentation reaches the ELSA support team by 11.00 a.m. by mail or directly via the computer graphics faxline—Tel.: +49-(0)241-606-6399. Please note that warranty services are only granted for faults which are covered within the framework of our General Terms of Warranty, valid for the Federal Republic of Germany (refer to our Internet site: www.elsa.com).

If the ELSA service cannot find fault with the unit claimed to be defective, we will invoice you for EUR 102.26 plus V.A.T. to cover inspection costs and replacement of the unit.

Warranty conditions

The ELSA AG warranty, valid as of June 01, 1998, is given to purchasers of ELSA products in addition to the warranty conditions provided by law and in accordance with the following conditions:

1 Warranty coverage

- a) The warranty covers the equipment delivered and all its parts. Parts will, at our sole discretion, be replaced or repaired free of charge if, despite proven proper handling and adherence to the operating instructions, these parts became defective due to fabrication and/or material defects. Also we reserve the right to replace the defective product by a successor product or repay the original purchase price to the buyer in exchange to the defective product. Operating manuals and possibly supplied software are excluded from the warranty.
- b) Material and service charges shall be covered by us, but not shipping and handling costs involved in transport from the buyer to the service station and/or to us.
- c) Replaced parts become property of ELSA.
- d) ELSA are authorized to carry out technical changes (e.g. firmware updates) beyond repair and replacement of defective parts in order to bring the equipment up to the current technical state. This does not result in any additional charge for the customer. A legal claim to this service does not exist.

2 Warranty period

The warranty period for ELSA products is six years. Excepted from this warranty period are ELSA color monitors and ELSA videoconferencing systems with a warranty period of 3 years. This period begins at the day of delivery from the ELSA dealer. Warranty services do not result in an extension of the warranty period nor do they initiate a new warranty period. The warranty period for installed replacement parts ends with the warranty period of the device as a whole.

3 Warranty procedure

- a) If defects appear during the warranty period, the warranty claims must be made immediately, at the latest within a period of 7 days.
- b) In the case of any externally visible damage arising from transport (e.g. damage to the housing), the transport company representative and ELSA should be informed immediately. On discovery of damage which is not externally visible, the transport company and ELSA are to be immediately informed in writing, at the latest within 7 days of delivery.
- c) Transport to and from the location where the warranty claim is accepted and/or the repaired device is exchanged, is at the purchaser's own risk and cost.
- d) Warranty claims are only valid if the original purchase receipt is returned with the device.

4 Suspension of the warranty

All warranty claims will be deemed invalid

- a) if the device is damaged or destroyed as a result of acts of nature or by environmental influences (moisture, electric shock, dust, etc.),
- b) if the device was stored or operated under conditions not in compliance with the technical specifications,

- c) if the damage occurred due to incorrect handling, especially to non-observance of the system description and the operating instructions,
- d) if the device was opened, repaired or modified by persons not authorized by ELSA,
- e) if the device shows any kind of mechanical damage,
- f) if in the case of an ELSA Monitor, damage to the cathode ray tube (CRT) has been caused especially by mechanical load (e.g. from shock to the pitch mask assembly or damage to the glass tube), by strong magnetic fields near the CRT (colored dots on the screen), or through the permanent display of an unchanging image (phosphor burnt),
- g) if, and in as far as, the luminance of the TFT panel backlighting gradually decreases with time, or
- h) if the warranty claim has not been reported in accordance with 3a) or 3b).

5 Operating mistakes

If it becomes apparent that the reported malfunction of the device has been caused by unsuitable software, hardware, installation or operation, ELSA reserves the right to charge the purchaser for the resulting testing costs.

6 Additional regulations

- a) The above conditions define the complete scope of ELSA's legal liability.
- b) The warranty gives no entitlement to additional claims, such as any refund in full or in part. Compensation claims, regardless of the legal basis, are excluded. This does not apply if e.g. injury to persons or damage to private property are specifically covered by the product liability law, or in cases of intentional act or culpable negligence.
- c) Claims for compensation of lost profits, indirect or consequential detriments, are excluded.
- d) ELSA is not liable for lost data or retrieval of lost data in cases of slight and ordinary negligence.
- e) In the case that the intentional or culpable negligence of ELSA employees has caused a loss of data, ELSA will be liable for those costs typical to the recovery of data where periodic security data backups have been made.
- f) The warranty is valid only for the first purchaser and is not transferable.
- g) The court of jurisdiction is located in Aachen, Germany in the case that the purchaser is a merchant. If the purchaser does not have a court of jurisdiction in the Federal Republic of Germany or if he moves his domicile out of Germany after conclusion of the contract, ELSA's court of jurisdiction applies. This is also applicable if the purchaser's domicile is not known at the time of institution of proceedings.
- h) The law of the Federal Republic of Germany is applicable. The UN commercial law does not apply to dealings between ELSA and the purchaser.