ELSA ECOMO™117LCD

User Manual

Preface

Thank you for placing your trust in this ELSA product. With the *ECOMO 117LCD* 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 Hotline can be reached under the following number:
+49-241-606-6135

Contents

Introduction

In order to give you a quick overview, this chapter provides you with important operational advice and general information about your new LCD monitor.

Monitor Features

■ The *ECOMO 117LCD* is compatible with most analog RGB signals (red, green, blue). It displays text and graphics in conjunction with VGA, SVGA, XGA (non-interlaced) and the common Macintosh-compatible color graphics boards.

■ Auto-Scanning is performed digitally by a microprocessor. The monitor automatically synchronizes itself to any horizontal frequencies between 31.4 kHz and 60.2 kHz and vertical frequencies between 56.0 Hz and 85.1 Hz. The micro-processor-based control mechanism allows the monitor to operate in any frequency mode with the precision of a fixed frequency monitor.

■ In addition to the preprogrammed monitor display standards, the *ECOMO 117LCD* also provides the option of saving user-specific settings for these and other timings.

■ The *ECOMO 117LCD* supports a maximum resolution of 1024 horizontal pixels by 768 vertical lines on IBM-based systems. Therefore, it is ideal also for window-orientated user interfaces such as Windows.

■ The *ECOMO 117LCD* includes the DDC1 and DDC2B functions. DDC (Display Data Channel) is a transmission channel by which the monitor can automatically inform the computer of its capabilities (e.g. supported graphics modes with the corresponding timings). The system can only perform this function if both the monitor and the computer (the graphics board) are support with the DDC function.

■ The *ECOMO 117LCD* has a multilevel power save function which reduces power consumption when the monitor is not in use.

Operating Instructions

Setup and Operation

Please keep the following in mind when setting up and using the monitor:

■ To avoid straining your eyes, do not placing the monitor in front of a bright background or where sunlight or other light sources shine directly onto the monitor. To ensure the best ergonomical position, the monitor should be below eye-level.

■ Do not cover the monitor's air vents. Make sure that there is sufficient ventilation so that heat from the monitor can properly dissipate.

■ Avoid exposing the monitor to damp and dust as this can cause fire or electric shock hazard.

■ Ensure that neither the monitor, nor any other heavy item is placed on the power supply cord. A damaged power supply cord can cause fire or short circuits.

■ When transporting the monitor, handle it with care.

■ Do not shake or scratch the monitor because it is fragile.

Cleaning the Monitor

Please follow these guidelines when cleaning the monitor:

■ Always remove the power plug from the socket before cleaning.

■ Clean the display and the casing with a soft cloth.

■ If the monitor requires more than dusting, clean it with a mild cleaning solution and a soft cloth.

Do not clean the device with benzene, thinner or other volatile substances because the surface could get damaged. Never leave the monitor in contact with rubber or vinyl products for an extended time period.

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. The *ELSA ECOMO 117LCD* has the following FCC IDs: BGBLXA520W.

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 to 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 the signal cable which is supplied to the *ECOMO 117LCD*.

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.

Unpacking and Connecting

Is it all There?

Once you have unpacked the *ECOMO 117LCD* you should check if anything is missing. The scope of supply includes:
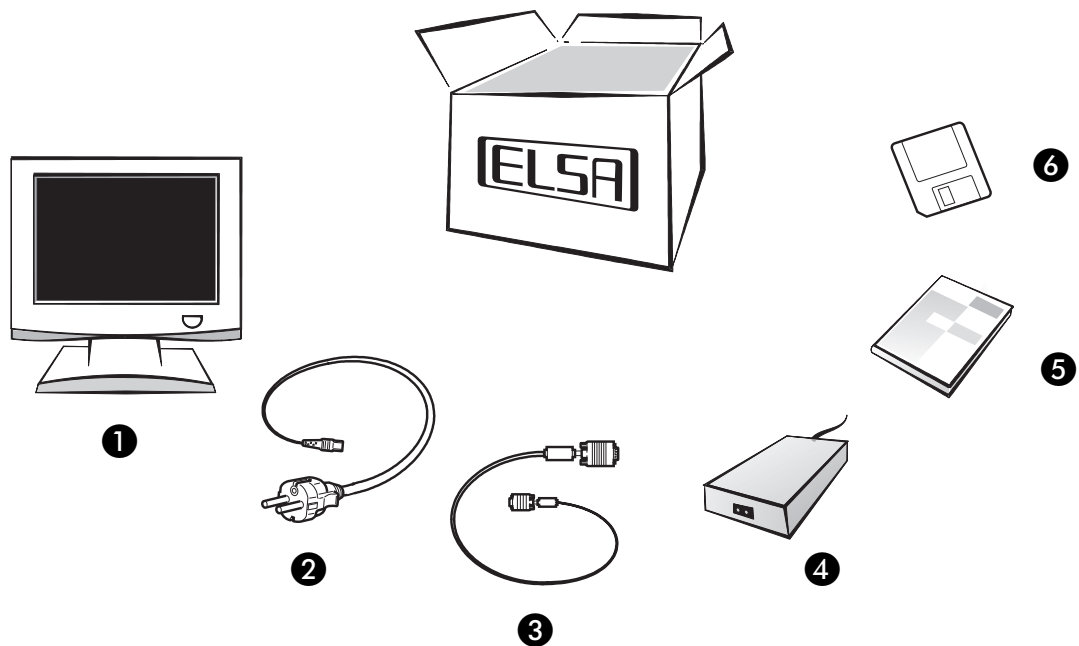
❶ Monitor *ELSA ECOMO 117LCD*

❷ Power supply cord

❸ Video signal cable

❹ Power supply adapter

❺ User's Guide

❻ Diskette

Cable Connections

1 Position the monitor so that you can view the rear of the device.

2

Release the upper flap, pull it upwards and remove the flap from its hinges.
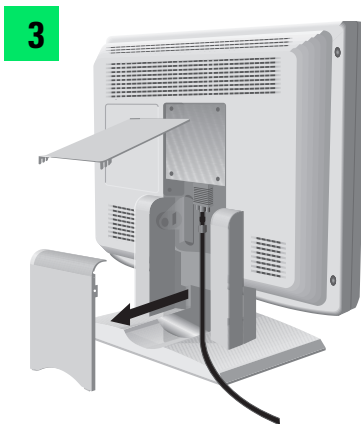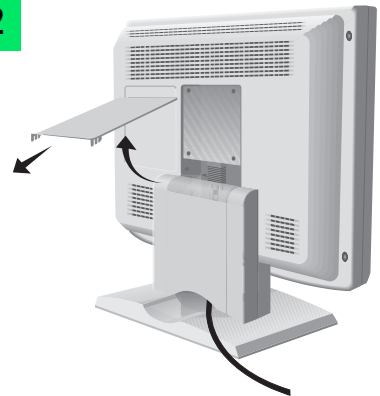
3

Now remove the lower flap by slightly pressing it.

4

Connect the video signal cable and the power supply cord to the connectors below the flap opening.

Connect the power supply cord with the power supply adapter and the power socket.
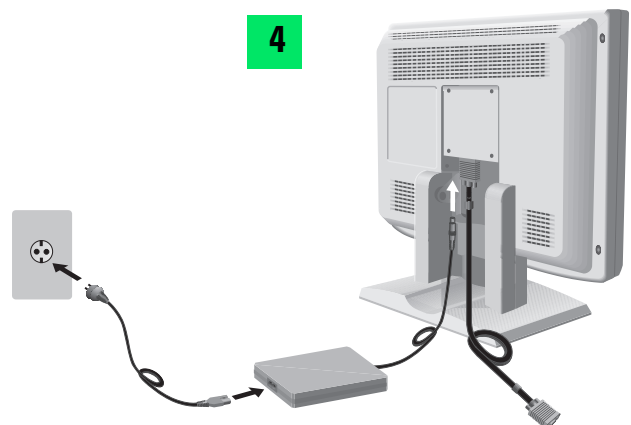
The monitor's power supply adapter remains active when the device is switched off. Therefore, the power socket should be close to the device and easily accessible. Do not use the power supply adapter for other devices as this can cause damage or fire!

Connection to the Computer

The *ECOMO 117LCD* can be connected to any computer with a VGA-compatible graphics board using the supplied video signal cable. It can also process all analog RGB signals that "normal" tube-based monitors support. Apple Macintosh graphics boards and most graphics boards from other manufacturers can be connected by means of a corresponding adapter.

Connection to an IBM-compatible System

① First, ensure that the monitor and the computer are switched off.

② Connect the 15-pin connector on the video signal cable to the corresponding socket on the computer's graphics board.

View of the 15-pin connector on the video signal cable.
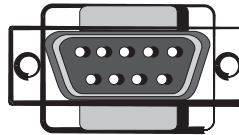
③ Switch on the computer first and then the monitor. Conversely - when you have completed your work– switch off the monitor first and then the computer.

Connection to a Macintosh System

Proceed in the same way for a Macintosh computer. However, you require a special ELSA adapter. Place this adapter between the connector on the graphics board and the connector on the video signal cable.

View of the 15-pin connector on the video signal cable.
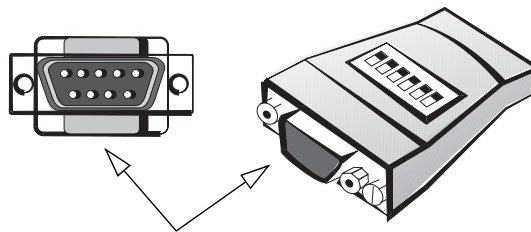
Connection to the port on a Macintosh computer

Chapter 13, 'Registration and Configuration' will tell you what to do next.

Operating and Adjusting

Due to its LCD technology the *ECOMO 117LCD* generates a geometrically perfect image that normally does not require correction after Auto-Setup (→page 13) has been run. If you wish to perform manual adjustments use the controls on the *ECOMO 117LCD*.

Controls on the Front

There is a row of keys on the front of your monitor with which you can perform the fine adjustment of the display in the OSD menu.
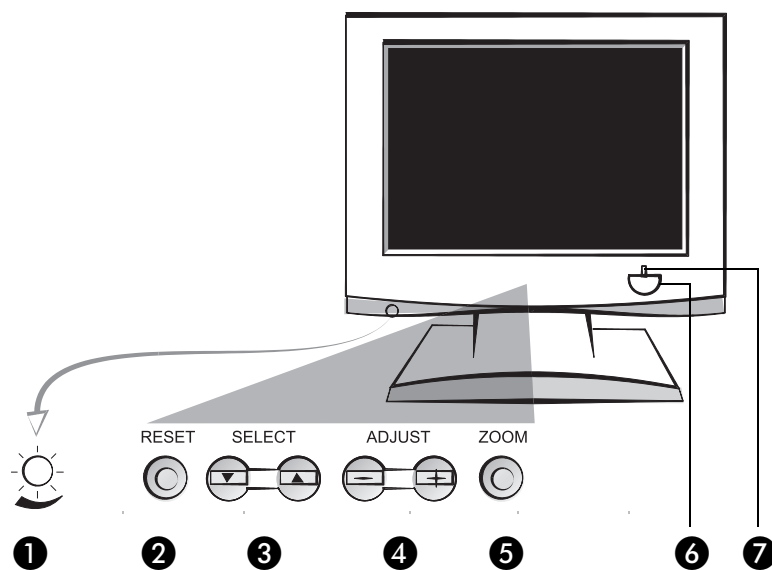
	Function
❶	**Adjust VR knob** – You can increase the brightness of the display by turning the knob clockwise. The Adjust VR knob can also be used for making adjustments in the OSD menu.
❷	**Reset –** Resets values to the factory default settings.
❸	**Select –** You can select the individual positions on the OSD menu with these keys.
❹	**Adjust** – You can modify the settings on the selected OSD menu page with these keys.
❺	**Zoom** – With this key you can toggle between 1:1 display and full-screen display in resolutions lower than 1024x768.
❻	**Power switch** – Switches the monitor on and off.
❼	**Power indicator**– This indicator lights up when the monitor is switched on.

The Connections at the Rear
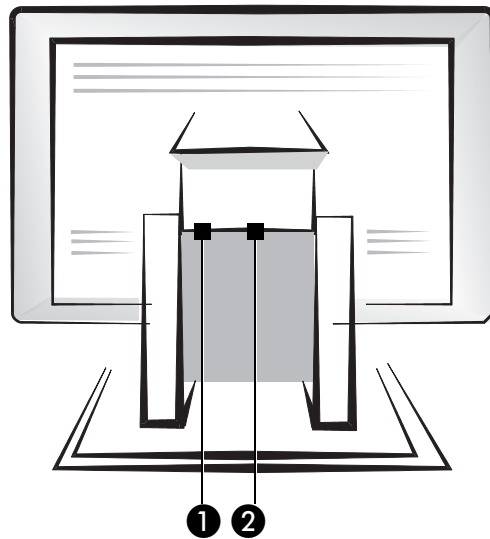
	Function
❶	**Power socket** – Plug the power supply cord in here.
❷	**Graphics port** – Use this socket to connect the monitor to the connector on the graphics board.

The On Screen Display Menu

The On Screen Display menu– On Screen Display (OSD) menu – is a useful utility for the precise configuration and adjustment of the display on your monitor If you press one of the SELECT or ADJUST keys on the monitor's keypad, the OSD menu will appear on the screen. Use the keys to access the individual menu pages within the OSD menu.

What you need to know

You must know the keys for navigating between the different pages and within a particular page. Keep the following in mind if you wish to adjust the display on the monitor:

The OSD menu window is always divided into two panes. In the left pane you can select the desired page, in the right pane you adjust the settings or set the switches to ON or OFF.

With the SELECT arrow keys you can move the selection in the left pane up and down...

△

POWER-SAFE

ADJUST-VR

OSD-POSI

OSD-TIME

▽

CENTER

LEFT   RIGHT
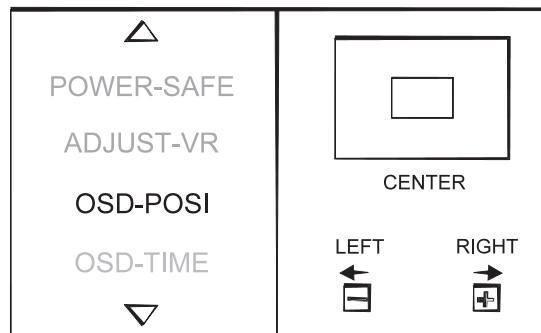
...and with the ADJUST plus and minus keys you can

change the values and settings in the right pane of the menu page.

Keys	Name	Function
▼ ▲	SELECT	Selecting the different menu pages or menu options
− +	ADJUST	Adjusting the settings or switching between two different settings

For an overview of all menu pages in the form of a table, please refer to page 17.

Registration and Configuration

You learnt how to operate the keypad and the On Screen Display menu on page 11, 'The On Screen Display Menu' . This chapter will explain how you should continue.

Registration with the Operating System

The monitor can be registered with some operating systems. The advantage is that the system can be supplied with the monitor's particulars, thereby enabling an optimum interaction between the computer system and the monitor.

Registration under Windows 95/NT

After you connect the monitor and start Windows 95/NT the system normally detects the new device and requests the manufacturer's driver diskette. Place the enclosed diskette in the disk drive and follow the instructions in the Windows dialog boxes. Select the diskette drive where the corresponding information file (INF) for the *ECOMO 117LCD* is located.

If the monitor is not recognized or an error message is displayed, switch the computer off. Let Windows boot in 'Safe Mode'. Refer to your graphics board's manual for instructions on configuring the system settings for your graphics board.

Adjusting the Display

Because different graphics boards have different signal characteristics it is usually necessary to adjust the display settings. This process has to be performed only once, after the monitor is connected to the computer.

The *ECOMO 117LCD* has an Auto-Setup function. This function automatically optimizes the display on the monitor. Two different modes are available:

Mode 1

The following parameters are automatically optimized during Auto-Setup:

- V-POSITION,
- H-POSITION,
- CLOCK and
- CLOCK-PHASE

Mode 2

The following parameters are automatically optimized during Auto-Setup:

■ CONTRAST and

■ BLACK-LEVEL

You should definitely run Auto-Setup in both modes before making any manual adjustments.

Performing Auto-Setup in Mode 1

① Switch on the computer and the monitor

② Check the current resolution values. You can do this by selecting the INFORMATION page on the OSD menu (➜page 19).

③ Press both SELECT keys to switch off the OSD menu. The Auto-Setup function can be performed only when the OSD menu is inactive.

④ Place the enclosed diskette in the disk drive and start

under Windows	under the Macintosh operating system
the file `TESTPRN.EXE`	the 'test-mac' program on your desktop. Note that 'PC Exchange' must be installed on your system.

⑤ Press the RESET key. Auto-Setup will start up and automatically configure the settings for the monitor's display within approx. 30 seconds. During this time the message AUTO SETUP will blink on your monitor.

Please note that Auto-Setup works only with the pattern on the test picture. Displaying the OSD menu or other components of programs during Auto-Setup can lead to unsatisfactory results.

After the process has completed, press either a mouse button or a key on the keyboard to end the test program. You may then remove the diskette from the drive.

If Auto-Setup does not determine the correct display settings even after several runs, you must perform the adjustments manually. To do this you must also start the test program as under ④. Proceed as described on page 18, 'Parts of the display on the monitor are flickering or blurry' .

Performing Auto-Setup in Mode 2

① Place the enclosed diskette in the disk drive and start

under Windows	under the Macintosh operating system
the file `TESTPRN.EXE`	the 'test-mac' program on your desktop. Note that 'PC Exchange' must be installed on your system.

② Select the page CONTRAST or BLACK-LEVEL in the OSD menu.

③ Press the RESET key. Auto-Setup will start up and automatically configure the settings for the monitor's display within approx. 5 seconds. During this time the message AUTO SETUP will blink on your monitor.

After the process has completed, press either a mouse button or a key on the keyboard to end the test program. You may then remove the diskette from the drive.

Adjustments and Modifications

This chapter will discuss the adjustments and different settings that can be configured by means of the On Screen Display menu. Please feel free to experiment and try out different settings. You can return to the default settings any time by using the RESET button.

You will find a description of the OSD menu and how to operate it on page 11, 'The On Screen Display Menu' .

Overview

The following table is an overview of all pages on the OSD menu.

	Menu page	Function	User's Guide
▽	BRIGHTNESS	Adjusts background brightness	Page 18
△▽	CONTRAST	Adjusts the contrast	Page 18
△▽	BLACK-LEVEL	Sets the desired black-level	Page 18
△▽	V-POSITION	Sets the vertical position of the display	Page 18
△▽	H-POSITION	Sets the horizontal position of the display	Page 18
△▽	CLOCK	Sets the clock frequency	Page 18
△▽	CLOCK-PHASE	Sets the phase of the clock frequency	Page 18
△▽	COLOR	Adjusts the PRESET and USER color temperatures. The USER setting allows color intensity to be individually adjusted for red, green and blue (RGB)	Page 19
△▽	POWER-SAVE	Activates the power saving function	Page 19
△▽	ADJUST-VR	Definition of control dial function	Page 19
△▽	OSD-POSI	Positions the OSD menu on the screen	Page 19
△▽	OSD-TIME	Regulates the display time for the OSD menu	Page 19
△▽	RESOLUTION	Serves to manually select the resolution	Page 19
△▽	HELP	Online help for the OSD menu	–
△▽	INFORMATION	Displays the currently activated frequencies and preset numbers	Page 19
△	ADJUST-LOCK	Locks the OSD menu	Page 20

Problems and Solutions

Displayed characters are difficult to recognize or illegible

Brightness, Contrast and Black-Level

With these settings you can regulate brightness and contrast. You can make these changes using the OSD menu or by adjusting the Adjust-VR knob to the bottom left of the monitor.

By changing the black-level setting you can achieve a similar effect as by adjusting the contrast. You can regulate the black-level and thereby adjust the legibility of the characters.

You should make any adjustments according to your subjective perception of the display and taking into account your environment including prevailing lighting conditions.
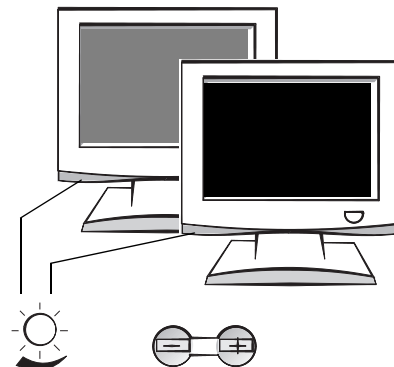
You can reset the values to their original settings by simultaneously pressing the plus and minus keys.

The position of the display is to be changed.

V-Position, H-Position

With these settings you can define the position of the display on the monitor. V-Position controls upward and downward movements and H-Position determines movements towards the left or right.
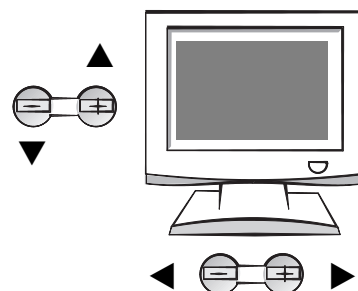
Parts of the display on the monitor are flickering or blurry

Clock, Clock-phase

The settings of CLOCK and CLOCK-PHASE are directly interdependent. Use the program on the included diskette to improve the image. You must definitely run Auto Setup beforehand (➞page 13).

The graphics board produces an analog graphics signal that is temporarily stored in a buffer of the LCD monitor. However, the LCD monitor can only process digital signals. This is where the analog-digital converter comes into play. It generates digital signals for the LCD monitor from the analog information.

The CLOCK and CLOCK-PHASE settings serve to adjust the conversion of the analog information into the digital signal for the *ECOMO 117LCD*.

How to adjust displayed colors to match colors on a printout

Color,
Color Balance

The COLOR menu item initially allows you to choose between default system settings and a custom setting of the color values (CUSTOM). Once you select CUSTOM, further options for color balance present themselves (BALANCE). Select the color area (R,G,B) by using the keys and change the intensity.

You can reset the values to their default setting by simultaneously pressing the plus and minus keys.

Power save mode

Power Save

This item on the OSD menu allows you to define whether or not the monitor should be operated in the power saving mode. Set this option to either OFF or ON. You will find more information about the power save mode in Chapter 'Technical data' on page 21.

The Adjust-VR knob as a general control dial

Adjust-VR

All settings and values on the pages of the OSD menu can be configured with the ADJUST keys. At this point you can also define whether or not these values should also be modifiable by using the Adjust-VR knob. If you set the selection to the ▽ symbol (blue) the knob is activated to regulate the settings on the other menu pages. If no OSD menu is active, the Adjust-VR knob continues to serve as a brightness control dial.

Adjusting the display of the OSD menu

OSD-Posl
OSD Time

You can set both the position and the display time-period of the OSD menu on the monitor. The display time-period can be set to a value between 1 and 15 seconds.

You can reset the values to the default settings by simultaneously pressing the plus and minus keys.

Changing the resolution

Resolution

Seven different resolutions are available in this page. Note that the visible part of the display will be reduced if you select a lower resolution. In this case the display may not use the entire area of the monitor. To enlarge the display, use the ZOOM key on the front of the monitor.

Which resolutions and frequencies does the monitor support?

Information

This page on the OSD menu provides you with information about the current resolution, horizontal and vertical frequencies (FH, FV) and whether the signal used is a USER or PRE-SET timing.

Locking the On Screen Display menu

Adjust lock

You can block access to the pages of the OSD menu. If you press a key after locking the menu, the message LOCKED will be displayed. You can then only regulate the brightness of the monitor display.

To remove the lock, press the minus key first and then one of the SELECT or ADJUST keys. When the OSD menu is removed from the display, you can access the ADJUST-LOCK page again and remove the lock by pressing the minus key.

Press both these keys simultaneously to access the 'ADJUST LOCK' page.

Then press this key to lock the OSD menu.

Technical Data

LCD monitor	Monitor	38cm / 15",
	Display area	304.1mm x 228.1mm
	Panel	Active matrix
	Resolution	1024 pixels x 786 lines
	Pixel pitch	0.297mm
	Color depth	64
	Color filters	R, G, B vertical stripe type
	Face finish	anti-reflective, antistatic coating
	Viewing angle	approx. 70° horizontal, -60° – +40° vertical
Input signal	Video	0.7V RGB analog
	Synchronization	2.5 – 5,0V separate horizontal/vertical synchronization
	Input impedance	75Ω (video) 1kΩ (sync)
Frequency range	Horizontal: 31.4 – 60.2kHz, vertical: 56 – 85.1Hz	
Brightness	200cd/m^2 for full white video signal	
Input connector	VGA D-Sub connector, 15-pin	
Voltage	Power plug, AC 100–120V/220-240V ±10%, 50-60Hz, 40W (max.)	
Operating conditions	Temperature Humidity	5° – 35°C 10 – 90% relative humidity
Cabinet	392 x 374 x 160mm (width x height x depth)	
Weight	approx. 5.3kg, excluding power supply and connection cords	
Tilt base	Tilt angle	-5° – +35°
Approvals/	Safety (CE)	EN 60950 (TÜV GS), IEC 950, UL 1950 (UL), CSA C22.2 No.950 (C-UL)
Regulations	EMV (CE/FCC)	EN 55022 class B, EN 50082-1, FCC-ID: BGBLXA520W
	Others	TCO '95 VESA DPMS EPA Energy Star * MPR-II CE logo ISO 9241-3 ‚ ISO 9241-8 (TÜV Ergonomics approved) ZH1/618 (TÜV/GS) NUTEK Spec. 803299/94

* As an Energy Star Partner, ELSA AG has determined that this product meets the Energy Star guidelines for energy efficiency.

The Power Save Function

The *ECOMO 117LCD* corresponds to the VESA and EPA Energy Star guidelines and the strict NUTEK requirements. If the monitor is connected to a graphics board that meets the VESA DPMS requirements the *ECOMO 117LCD* automatically reduces power consumption to three levels. The power save function must be enabled by means of the OSD menu (➜page 19).

The following table provides an overview:

Mode	Synchronization signal		Reactivation	Power indi-cator
	Horizontal	Vertical		
Standby	no	yes	immediate	On/Off (3:1)
Suspend	yes	no	approx. 3 seconds	On/Off (3:1)
Power Off	no	no	approx. 3 seconds	On/Off (3:1)

Factory Default Settings

To minimize the user's configuration effort, some display standards were already preset by the factory. If the monitor detects one of these standards, the position and size of the display will be adjusted automatically. Up to 15 more timings can be saved in addition to the factory-set timings (PRESET). To be recognized as a new timing, a video signal must differ from all timings already saved in terms of horizontal frequency by a minimum of 1 KHz, vertical frequency by a minimum of 5 Hz or synchronization signal polarity.

Preset timing	Horizontal fre-quency (kHz)	Vertical fre-quency (Hz)	Polarity	
			H	V
640 x 480	35.0	66.7	–	–
832 x 624	49.7	74.6	–	–
1024 x 768	60.2	74.9	–	–
640 x 350	31.4	70.0	+	–
640 x 480	31.5	59.9	–	–
640 x 480	37.5	75.0	–	–
640 x 480	43.3	85.0	–	–
800 x 600	35.1	56.0	+	+
800 x 600	37.9	60.3	+	+
800 x 600	48.1	72.2	+	+
800 x 600	46.9	75.0	+	+
800 x 600	53.7	85.0	+	+
1024 x 768	48.4	60.0	–	–
1024 x 768	56.5	70.1	–	–
1024 x 768	58.1	72.1	–	–

The VGA-D-Sub Socket

Pin Assignments
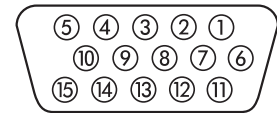
Pin	Signal	Pin	Signal
1	red	9	+5V
2	green	10	Sync ground
3	blue	11	ground
4	ground	12	bi-directional data (SDA, DDC1/2B)
5	DDC ground	13	horizontal synchronization
6	red ground	14	vertical synchronization
7	green ground	15	Data clocking rate (SCL, DDC2B)
8	blue ground		

The *ECOMO 117LCD* produces analog signals according to the RS-170 regulation. Synchronization information is transmitted separately.

Graphics connector of the Apple-Macintosh computer
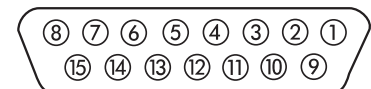
Pin assignments

Pin	Signal	Pin	Signal
1	Ground RED	9	Video BLUE
2	Video RED	10	Sense 2
3	C-Sync	11	C & V Sync. ground
4	Sense 0	12	V-Sync.
5	Video GREEN (mono video)	13	Ground BLUE
6	Ground GREEN	14	H-Sync. ground
7	Sense 1	15	H-Sync.
8	unused		

H-Sync. = line frequency, V-Sync. = refresh frequency

Troubleshooting

Before you refer to ELSA support please check the connections and settings below.

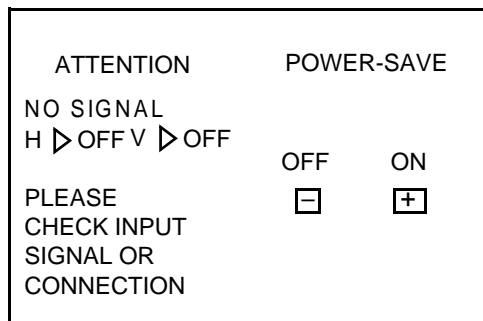| Problem		Check	What should I do?
No picture	LED on	Are contrast and brightness set to minimum levels?	Increase brightness and contrast values or press the reset button
	LED off	– Is the power switch on? – Is the power supply cord correctly connected?	Check indicator on front of device and power supply cord connection
	LED blinking	– Is the video signal cable connected? – Is the computer switched on?	Check display on front of device and power supply cord connection
Abnormal display	Unstable display	Is the input signal frequency outside the permissible range?	Check specifications of the graphics board and the monitor.
	Display is not centered or not correct size	– Perform the Auto-Setup function – Sometimes the monitor will not provide a full-screen display because of the signal timing used. In this case, change the resolution or the vertical frequency of the graphics board. – To ensure that the modified values are saved wait a few seconds before changing the input signal or switching off the monitor.	Check the individual pages in the On Screen Display menu.
	The diskette cannot be read	Is PC Exchange installed on your Macintosh?	Installing PC Exchange

Messages on Display

If the monitor detects no synchronization signal, an incorrect input connection or an input frequency outside its frequency range, the following warnings will be displayed on the display.

In such a case please check the connections of the video signal cable and the settings of your graphics board. These should lie within the permissible ranges.
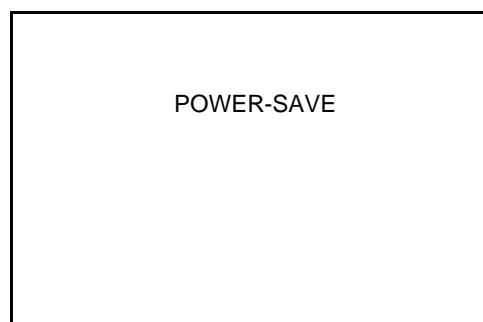
POWER-SAVE Function is 'Off'

If the POWER-SAVE function is off and there is no synchronization signal, the following message is displayed:

```
ATTENTION          POWER-SAVE

NO SIGNAL
H ▷ OFF V ▷ OFF
                    OFF      ON
PLEASE
CHECK INPUT          ⊟        ⊞
SIGNAL OR
CONNECTION
```

POWER-SAVE Function is 'On'

The first message is displayed if you press any key while the POWER-SAVE function is active. The second message is displayed two seconds before the POWER-SAVE function is activated.

```
ATTENTION          POWER-SAVE

NO SIGNAL
H ▷ OFF V ▷ OFF
                    OFF      ON
PLEASE
CHECK INPUT          ⊟        ⊞
SIGNAL OR
CONNECTION
```

```
POWER-SAVE
```
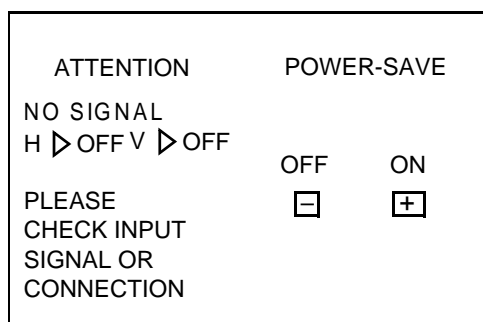
POWER-SAVE Function either 'On' or 'Off'

If the signal frequency is outside the possible range the following message is displayed:

```
ATTENTION

   SIGNAL FREQUENCY IS
   OUT OF RANGE

FH ▷ 96.8KHz    FV ▷ 73Hz

   PLEASE CHANGE SIGNAL
   TIMING
```
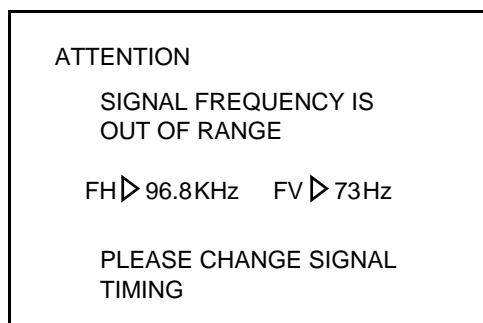
Appendix

TCO '95 -
Ecological Requirements for Personal Computers

Congratulations! You have just purchased a TCO '95 approved and labeled 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-Labeled Computers ?

In many countries, environmental labeling 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 climate-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 Labeling Involve ?

This product meets the requirements for the TCO '95 scheme, which provides for international environmental labeling of personal computers. The labeling scheme was developed as a joint effort of the TCO (The Swedish Confederation of Professional Employees), Naturskyddsforeningen (The Swedish Society for Nature Conservation) and NUTEK (The National Board for Industrial and Technical Development in Sweden).

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 restrictions 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.

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

■ TCO Development Unit
11494 Stockholm
Sweden

Fax: +46-87829207
EMail (Internet): development@tco.se
http://www.tco-info.com/

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, PCB, 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-accumulative* 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 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 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 (parts per million) of mercury. The relevant bio-accumulative* TCO '95 demands require 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 stratosphere, 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 manufacture of the product or its packaging.

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

Advice and Help

If you encounter any problems during the installation or operation of your ELSA product, please consult this manual first.

If you have further questions, you can contact our Support team. Ensure that you can provide the following information.

■ Exact model name of your ELSA monitor.

■ The type of graphics board and the BIOS version (displayed when starting the computer).

■ Operating systemand hardware environment.

Who to Contact?

First you should contact the dealer where you bought your ELSA product. If there are still questions remaining, contact one of the following:

■ **ELSA on the Internet**

The ELSA Internet WWW site	www.elsa.com	
ELSA LocalWeb	+49-241-93 88 00	
(ELSA's dial-up WWW site:	ISDN	X75, V120, PPP
no Internet provider required!)	Analog	V.90, V.34
	Protocol	PPP oder MLPPP
	User name	guest
	No password	

■ **ELSA Support Faxline**

By fax to the ELSA support faxline   +49-241-606-6399

■ **ELSA by Mail**

Or write to ELSA

ELSA AG
Computergrafik Support
Sonnenweg 11

52070 Aachen
Germany

■ **ELSA Support Hotline**

If very urgent, call the   +49-241-606-6135
ELSA support hotline

Mondays to Fridays from: 9.00 am until 5.00 pm (CET)

■ **ELSA World Wide**

You can contact the ELSA subsidiaries:

ELSA Inc.

2231 Calle De Luna	Phone:	+1-408-919-9100
Santa Clara		+1-800-272-ELSA
California CA 95054	Fax:	+1-408-919-9120
USA		

ELSA Asia Inc.

7F-11, No. 188, Sec. 5	Phone:	+886-22-7685730
Nanking East Road	Fax:	+886-22-7660873
Taipei 105		
Taiwan		
R.O.C.		

ELSA Japan Inc.

Mita Suzuki Building 3F	Phone:	+81-3-5765-7391
5-20-14 Shiba, Minato-ku	Fax:	+81-3-5765-7235
Tokyo 108-0014		
Japan		

The ELSA LocalWeb

The ELSA LocalWeb provides direct access to ELSA's local Internet server, and contains the same information as the Internet web server www.elsa.com. Here you will find information about all ELSA products, the latest drivers, software and documentation, and you have the opportunity to put questions to our sales and support departments via the ELSA news server. To access the ELSA LocalWeb, you need a dialer program (e.g. the Dial-up Network in Windows 95) and an Internet browser.

To make a connection, first start the dialer software. Where information for the DNS server is requested, enter the IP address as 172.22.1.2. The user name is guest; no password is necessary. With a successful connection active, the browser software can be started.

Driver Updates

The latest versions of the ELSA drivers are always available for download from our Internet WWW site www.elsa.com or our LocalWeb and via direct FTP from ftp.elsa.com. You will also find lots of information and answers to frequently asked questions (FAQs). You might also consider the newsgroups on our Webpages. Before you contact the ELSA Support team, please make sure that you are using the latest driver versions.

Repair?

If you are not sure whether your ELSA expansion board is defective or if the problem is just a driver which is incorrectly installed, please call the ELSA support hotline before you send the board for repair. Should you need to send in the ELSA expansion board to be

repaired, please use suitable packing material and the original box to prevent damage during transport. In addition, please include a copy of the original purchase receipt as well!

You can help reduce the repair time by including a detailed description of the fault with the device, which will help us track down the error source.

Warranty Conditions

The ELSA AG warranty, valid as of 01.01.98, 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 36 months. 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.

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