

miroCRYSTAL 40SV

Hardware Manual



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VDOK-40SV-100

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For your own safety

In the interest of your own safety and the flawless functioning of your new product and computer system please note the following:

- Before opening the computer make sure that the power plug is disconnected from the main socket.
- Computer components such as graphics boards are sensitive to static charge. Divert any electrostatic charge from your person before touching the components with your hands or any tools.
- Make sure that the components you want to add to the computer are in compliance with the computer's characteristics.
- Only use a shielded cable to connect the monitor to the computer.
- If you use a VGA monitor, this monitor must support a 35 kHz horizontal scan rate. The horizontal scan rate of a multifrequency monitor can range from 35 to 100 kHz. To use the **TrueColor mode** a multifrequency monitor is required.
- Make sure that your graphics board is **in compliance with the slot**.



For changes that have occurred after the manual has been printed, refer to the README files on the disks supplied with your system!

About the manual

This manual explains how to install the miroCRYSTAL 40SV board in your computer. The quick installation chart overleaf provides an overview for the hardware and software installation.

In the margins are subheadings and ideograms to help you quickly find your way through this manual.



Important text passages are marked with the «hand» and this format.

Bullets mark step by step instructions:

- Insert the graphics board into the slot.

All keyboard commands appear in this font:

install <↵>

<↵> represents the enter key.

Menus, commands, options or buttons which the user can select are written in *italics*.

Quick installation chart

The following quick installation chart provides a hardware and software installation overview.

Hardware

Hardware

1. Check the system requirements, make copies of the supplied disks.
2. If necessary, check and/or change the DIP switch and the jumper settings.
3. Open the computer.
4. Depending on its bus type install graphics board into the VL or PCI slot.
5. Connect the monitor.

Software

Software

6. Install miro drivers for miroCRYSTAL 40SV. The order of the installation is not obligatory.



miro•win (Windows)

The miro•win disks are needed.

Insert *miro•win High speed drivers for Windows1/2 disk*.

In the Windows Program Manager in the *File* menu select *Run....*

Depending on your disk drive enter **a:install** or **b:install**.

Follow the instructions given by the installation program.

If necessary, configure installed drivers.



miro•win (CAD)

The miro•win disks are needed.

Insert *miro•win High speed drivers for CAD 1/1 disk*.

Depending on your disk drive enter **a:install** or **b:install**.

Follow the instructions given by the installation program.

If necessary, configure installed drivers.



miro•proof

The miro•proof disks are needed.

Insert *miro•proof* disk.

In the Windows Program Manager in the *File* menu select *Run....*

Depending on your disk drive enter **a:install** or **b:install**.

Follow the instructions given by the installation program.



miro•plus

The miro•plus disks are needed.

Insert desired *miro•plus* disk.

Install driver and/or tools.

If necessary, configure installed drivers.

Overview

Features

With miroCRYSTAL 40SV, miro offers graphics boards, which were designed especially for professional use under Windows and DOS: The graphics boards meet all requirements concerning page layout, illustration and color image editing.

q Graphics acceleration

The operating speed of a graphics system is essential especially for professional purposes. The operating speed is determined by the graphics processor. The miroCRYSTAL 40SV graphics boards are equipped with S3 graphics processors to improve the performance of applications running under Windows and DOS. The miroCRYSTAL 40SV board is equipped with the 16-bit Vision964 graphics processor.

q Video memory

The miroCRYSTAL 40SV has 4 MB of High-Speed VRAM.

q Fast bus systems

There is a **V**(esa) **L**(ocal) bus version and a **P**(eripheral) **C**(omponent) **I**(nterconnect) version of the board.

q Drivers

miroCRYSTAL 40SV includes all of the necessary drivers to achieve the maximum performance from your system. In addition, the miro tools are provided.

System requirements

To install miroCRYSTAL 40SV, your computer system has to meet the following requirements:

Computer

- for VL bus: a 386, 486, Pentium computer or compatible with a VL Local Bus slot
- for PCI bus: a 486 or Pentium computer or compatible with a PCI Local Bus slot.

Monitor

High-resolution multifrequency monitor supporting a horizontal scan frequency of at least 35 kHz with separate horizontal and vertical syncs. To receive all the benefits from miroCRYSTAL 40SV, you need a multifrequency monitor, which supports a horizontal scan frequency of 64 kHz or more. miro offers suitable monitors.

Delivery scope

Before beginning the miroCRYSTAL 40SV installation, please make sure your package is complete:

- Graphics board
- Installation disk(s)
- Documentation
- *optional*
Monitor, shielded monitor cable.



Graphics boards are sensitive to static charge. To avoid damage that may occur by static charge, leave the graphics board in its antistatic packaging until installation. Keep the packaging for possible future transportation.

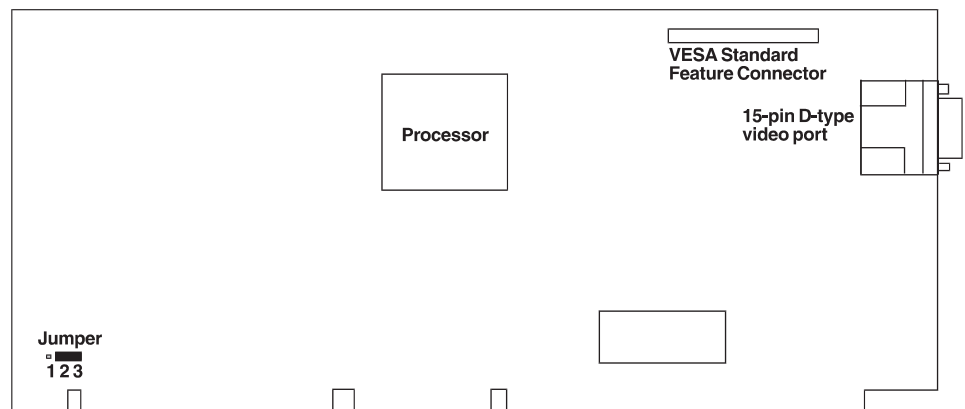
Hardware installation

Hardware settings

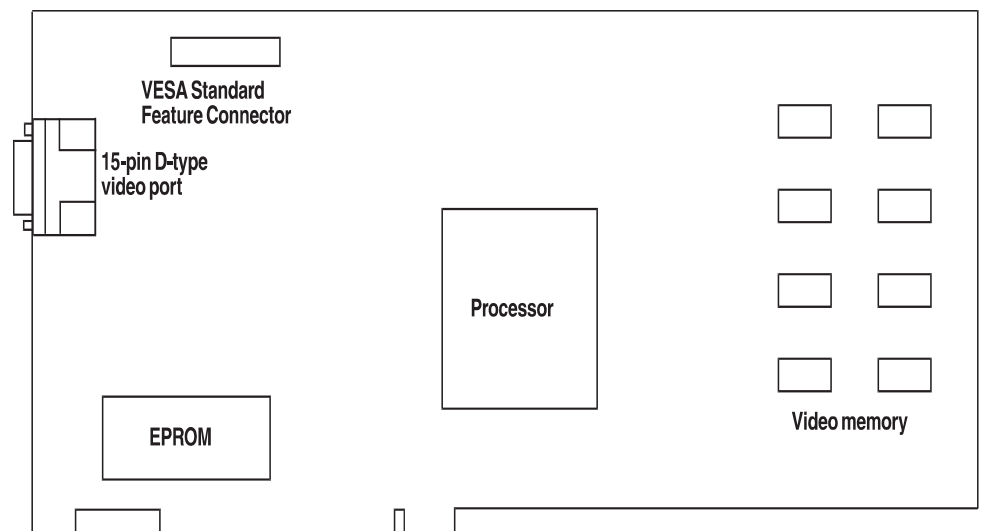
Before the installation, however, any existing VGA board or a motherboard VGA has to be removed from the computer or disabled.

miroCRYSTAL 40SV: Board layout

VL



PCI



Installing miroCRYSTAL 40SV

The only tool you need for the installation is a screwdriver. Proceed as follows:

- Turn off your computer and all peripheral devices. Disconnect the computer from the power supply and all other components.
- Loosen the screws of the computer's cover and remove it.
- Discharge yourself of static charge by touching the power unit casing.
- If necessary, remove the VGA board from the computer or disable the motherboard VGA.
- According to your graphics board select a free VL or PCI slot. Remove the slot's cover at the back of the computer. Save the screws of the cover.
- Depending on the bus type, carefully insert the graphics board into the VL or PCI slot by holding the board at the top and gently pushing both ends into the slot at the same time. Press onto the upper edge of the board to make sure it is firmly seated in the slot.



Don't force the board into the slot! You run the risk of bending the contacts. If the board does not fit easily, pull it back out, and try again.

- Fasten the board's bracket at the back of the computer using the screws you saved from the shield.
- Put the cover back on the computer and reconnect the peripheral devices.
- Connect the monitor with the 15-pin D-type socket. If you are in doubt about how to connect your monitor, please refer to the monitor documentation.
- Reconnect the computer and the monitor to the power supply.

How to go on?

After you have installed your graphics board, you can proceed with the software installation and with the installation and configuration of the application drivers.

For a detailed description of the miro drivers and miro tools please refer to the corresponding Software Manuals.

Technical data

Bus system

- miroCRYSTAL 40SV for VESA Local Bus:
VESA Local Bus
- miroCRYSTAL 40SV for PCI Local Bus:
PCI Local Bus

Compatibility

- VGA register-compatible

Graphics processor

miroCRYSTAL 40SV

- S3 VISION964 for VESA Local Bus
50 MHz clock frequency
- S3 VISION964 for PCI Local Bus
33 MHz clock frequency

Video memory

- 4 MB VRAM

Power supply

- +5 V, max. 1 A
- +12 V, max. 0.01 A

Video modes

Resolution	Maximum vertical refresh rate					
	100 kHz	85 kHz	64 kHz	58 kHz	48 kHz	35 kHz
1408 x 1024	70 Hz	70 Hz	–	–	–	–
1280 x 1024	75 Hz	75 Hz	60 Hz	45 Hz i	45 Hz i	–
1152 x 864	94 Hz	90 Hz	70 Hz	–	–	–
1024 x 768	100 Hz	100 Hz	75 Hz	70 Hz	60 Hz	43 Hz i
800 x 600	100 Hz	100 Hz	77 Hz	77 Hz	77 Hz	56 Hz
768 x 576	100 Hz	100 Hz	100 Hz	75 Hz i	80 Hz i	60 Hz
640 x 480	100 Hz	100 Hz	100 Hz	89 Hz	89 Hz	70 Hz

i = This resolution is only possible in the interlaced mode.

Video timings

- Horizontal scan frequency:
31 kHz to 100 kHz, depending on operating mode
- Vertical scan frequency:
60 Hz to 100 Hz, non interlaced, depending on operating mode
- 14.75 MHz to 135 MHz, depending on operating mode (miroCRY-STAL 40SV)

Options

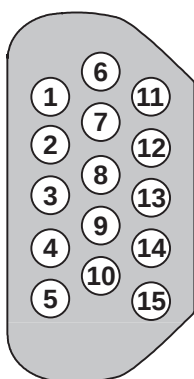
- Monitor, shielded monitor cable

Appendix

15-pin D-type video port

The miroCRYSTAL 40SV graphics board is equipped with a 15-pin D-type connector to which the video cable attaches. The other end of the video cable connects to the monitor.

The following illustration and the table show the video output and the corresponding pin allocation:



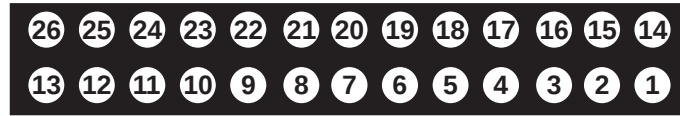
15-pin D-type connector

Pin No.	Pin Allocation
1	Red
2	Green
3	Blue
4	Monitor ID bit 2
5	Ground (analog)
6	Ground (red)
7	Ground (green)
8	Ground (blue)
9	Free
10	Ground (sync.)
11	Monitor ID bit 0
12	Monitor ID bit 1
13	HSync
14	VSyn
15	Free

VESA Standard Feature Connector

The miroCRYSTAL 40SV graphics board can be used together with a video overlay board. Therefore you need the VESA Standard Feature Connector.

The following table provides a pin allocation overview.



VESA Standard Feature Connector

Pin No.	Pin Allocation
1	Pixel data P0
2	Pixel data P1
3	Pixel data P2
4	Pixel data P3
5	Pixel data P4
6	Pixel data P5
7	Pixel data P6
8	Pixel data P7
9	Clock
10	Reserved
11	HSync
12	VSynC
13	Ground
14	Ground
15	Ground
16	Ground
17	Enabling signal
18	Enabling signal
19	Enabling signal
20	Free
21	Ground
22	Ground
23	Ground
24	Ground
25	Free
26	Free



The pin application of the VESA Standard Feature Connector has been adjusted for the miroCRYSTAL 40 SV/PCI board, so that this board can be connected 1:1 to another graphics board via a flat ribbon cable.

miroCRYSTAL 40SV address range

For the miroCRYSTAL 40SV graphics board to run without problems you have to avoid address conflicts. Make sure that the addresses used by miroCRYSTAL 40SV are not also assigned to other components of your computer system.

– I/O address range

miroCRYSTAL 40SV occupies the address range of standard VGA **03B0h-03DFh** and parts of the 8514/A I/O address range.

These address ranges are normally not used by standard system hardware and therefore address conflicts are unlikely to happen.

The following table shows the I/O address areas that can be selected and used by miroCRYSTAL 40SV.

0E2E8h	
042E8h	04AE8h
082E8h	08AE8h
092E8h	09AE8h
0A2E8h	0AAE8h
0B2E8h	0BAE8h
046E8h	04EE8h
086E8h	08EE8h
096E8h	09EE8h
0A6E8h	0AEE8h
0B6E8h	0BEE8h

– Additional VGA addresses

In addition the following addresses are used:

VGA video memory	VGA BIOS
0A0000h - 0BFFFFh	0C0000h - 0C7FFFh



