

# **miroCRYSTAL VRX**

## **USER'S GUIDE**

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## **User's Guide**

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700640

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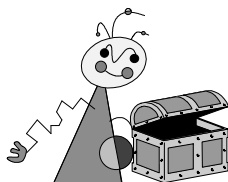
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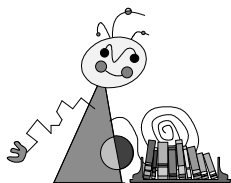
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# About the User's guide

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This User's guide explains how to install and use the miroCRYSTAL VRX hardware and software.

## Subheadings

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



Important text passages are marked with the “notepad” and this format.

Numbers mark step by step instructions:

1. Start Windows.

Bullets mark instructions for optional steps the order of which is not important.

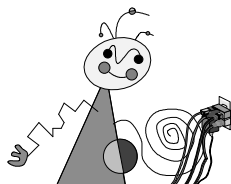
- Insert the board into the slot.

All keyboard commands appear in this font:

**install <↵>**

<↵> represents the enter key.

Menus, commands, options or buttons are written in *italics*.



# For your own safety

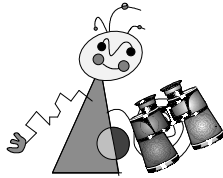
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In the interest of your own safety and the flawless functioning of your new product and computer system please note the following:

- ♦ Computer components are sensitive to static charge. Divert any electrostatic charge from your person before touching the components with your hands or any tools.
- ♦ Before opening the computer make sure that the power plug is disconnected from the main socket.



For changes that have occurred after the manual has been printed, refer to the README file/s on the CD-ROM supplied with your system!



## SYSTEM REQUIREMENTS

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

### Hardware

#### *Computer:*

Pentium computer (recommended: Pentium 90 MHz) with an empty master PCI slot (PCI-system 2.1 or higher) and CD-ROM drive.

*Memory:* At least 8 MB memory (recommended: 16 MB).

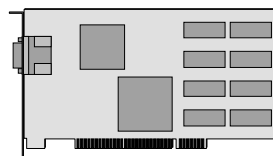
*Monitor:* Standard VGA monitor. To receive all the benefits from the graphics board, you need a monitor which is especially suited for your graphics board.

### Software

Windows 95.

## PACKAGE CONTENTS

Before beginning the miroCRYSTAL VRX installation, please check to make sure your package is complete\*:



miroCRYSTAL VRX\*\*



CD-ROM containing drivers, applications, online documentation

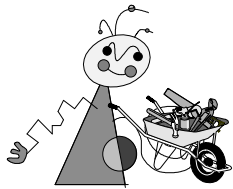


User's Guide

If any parts are missing, please contact your reseller. You will find the **complete software** and online **documentation** on CD-ROM. Diskettes are not included in the package contents.

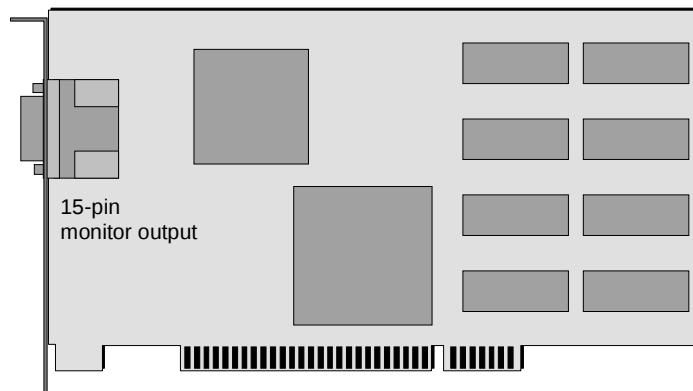
\* Depending on the delivery scope, the actual package contents may be different from the package contents listed in the manual.

\*\* For model and serial number of your miro board, refer to the label on the board.



# Hardware installation

## INSTALLING miroCRYSTAL VRX

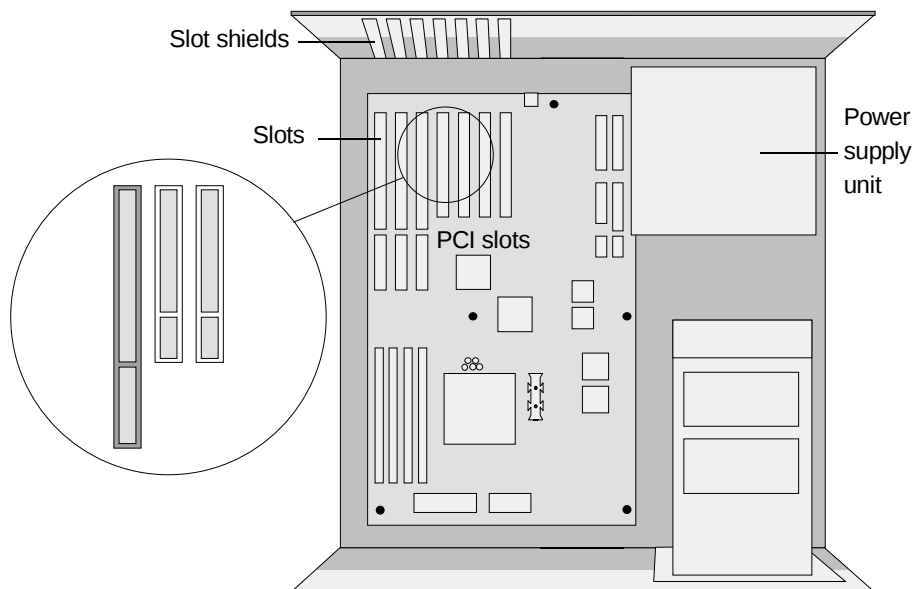


Boards are sensitive to static charge. To avoid damage that may occur by static charge, leave the graphics board in its antistatic packaging until installation. Keep the packaging for possible future transportation.



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

- 1. Discharge yourself.**  
Discharge yourself of static charge by touching the power unit casing.
- 2. Turn off the computer.**  
Turn off your computer and all peripheral devices. Disconnect the computer from the power supply and all necessary components.
- 3. Loosen the screws.**  
Loosen the screws of the computer's cover and remove it.
- 4. Removing/disabling VGA.**  
Remove an existing VGA board from the computer or disable the motherboard VGA.
- 5. Select a slot.**  
Select a free PCI (busmaster) slot. Most PCI expansion slots are made of white plastic, and can be recognized as shorter, two hole slots near the back of the computer.

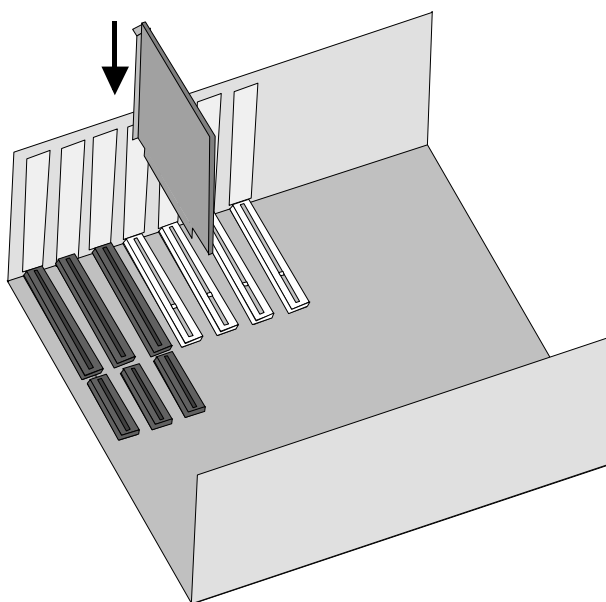


**6. Remove the cover.**

Remove the slot's cover at the back of the computer. Save the screws of the cover.

**7. Insert the miro board.**

Carefully insert the graphics board into the 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.



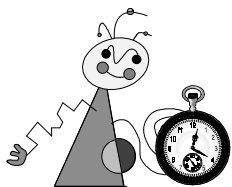
Don't force the board into the slot! You run the risk of bending the contacts. If the board does not fit easily, pull it back out, and try again.

**8. Fasten the bracket.**

Fasten the board's bracket at the back of the computer using the screws you saved from the shield.

**9. Connect the peripherals and the power cord.**

Put the cover back on the computer and reconnect the peripheral devices. Connect the power cord to the wall outlet.



# Quick installation

This quick installation guide is only directed to experienced Windows 95 users. To be able to follow the instructions, the Windows 95 **Autostart** function must **not** be **disabled**. If this is the case, proceed as described in the “Software installation” section as of page 6.

In case of problems, please always proceed as described in the “Software installation” section.

## WINDOWS 95 (RELEASE AUGUST 95)

Once you have installed the miroCRYSTAL VRX board in your computer, Windows 95 detects the board as a new hardware component.

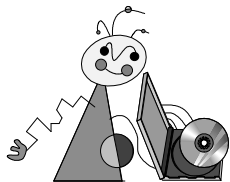
- Select a driver from a list of alternative drivers.
- Select *Display adapters*, click *OK*.
- Select *Standard display types* and *Standard Display Adapter (VGA)*. Click *OK*
- Confirm a restart by clicking *Yes*.
- Insert the miro Autostart CD into your CD-ROM drive.
- Select the language for the installation. Click *OK*.
- Select the components you want to install. Click *Next*.  
The miro drivers are now being installed on your hard disk, DirectX are installed on your hard disk.
- Click *Finish*.  
The *Display Properties* window appears.
- Click the *Change Display Type...* button and in the next window the *Change...* button next to the graphics adapter.
- Click the *Have Disk...* button and then *Browse...*
- Enter the drive letter of your CD-ROM drive and click *OK*.
- Click *OK*.  
The **MIRODISP . INF** and **MIROMON . INF** files are copied to your hard disk.
- *miroCRYSTAL VRX* has been selected. Click *OK*  
The remaining miro files are now being copied to the Windows system directory.
- Click *Close*.
- Select the *Resolution*, *Color palette*, and the *Font size*.  
If you are using a high resolution, you should select *Large Fonts*.
- Click *Apply* and restart Windows.

Now the installation of your miro board has been completed successfully.

## WINDOWS 95 (OSR 2)

After starting Windows 95, Windows 95 searches for drivers for new hardware.

-  Confirm the computer restart by clicking *Yes*.
-  Insert the miro Autostart CD into the CD-ROM drive.
-  Select the language. Click *Next*.
-  Select the components you want to install, click *Next*.  
The miro drivers and the miroWINTOOLS are copied to your hard disk, DirectX will be installed on your hard disk.
-  Click *Finish*. The *Display Properties* window appears.
-  Click the *Advanced Display Properties...* button and in the next window in the *Adapter* tab the *Change...* button.
-  Click the *Have Disk...* button and then *Browse...* .
-  Enter the drive letter of your CD-ROM drive and click *OK*.
-  Click *OK*. Now, the **MIRODISP . INF** and **MIROMON . INF** files are copied to your hard disk.
-  miroCRYSTAL VRX has been selected. Click *OK*.  
The remaining miro files will be copied to the Windows system directory.
-  Click *Apply* and *OK*.
-  Select the *Resolution*, *Color palette*, and the *Font size* (  
Select *Large Fonts* so that all special characters are available
-  Click *Apply* and restart Windows.



# Software installation

The course of the installation depends on which Windows 95 version you use.

You can check which Windows 95 version you use by entering the DOS command **ver**. The Windows 95 OSR 2 (OEM-Service-Release 2) version the version number Windows 95. [Version 4.00.1111]; the August Windows 95 Release has the version number Windows 95. [Version 4.00.950].

For detailed information on how to use the DOS **ver** command refer to the appendix in the section “Identifying the Windows 95 version” (page I).

To install miroCRYSTAL VRX, please continue to read the section for your Windows 95 version.

## WINDOWS 95 (RELEASE AUGUST 95)

Once you have installed the miroCRYSTAL VRX board in your computer, the board will be detected as a new hardware component.

After Windows 95 starts, the *New hardware found* dialog box will appear.



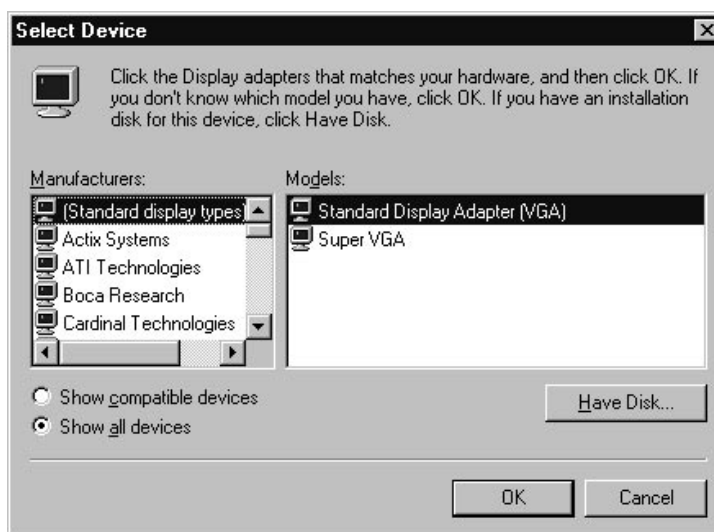
If the *New hardware found* dialog box does not appear because Windows 95 could not find one or more files, abort the installation here and install Windows 95 for VGA as is described in the appendix in the “Configuring Windows 95 for VGA” section on page II.

Then start the installation beginning with step 5.



1. Select the *Select from a list of alternative drivers*.
2. From the list box in the next window dialog box select the option for display adapters and click **OK**.

3. In the *Select device* window, select *Standard display types* and *Standard Display Adapter (VGA)*. Click *OK* to close the window.



4. Confirm a restart by clicking *Yes*.

After you restarted the computer miroCRYSTAL VRX has been installed with the original Microsoft drivers for the standard VGA mode. The miro drivers have to be installed after that.

5. Insert the miro Autostart CD-ROM in your CD-ROM drive.

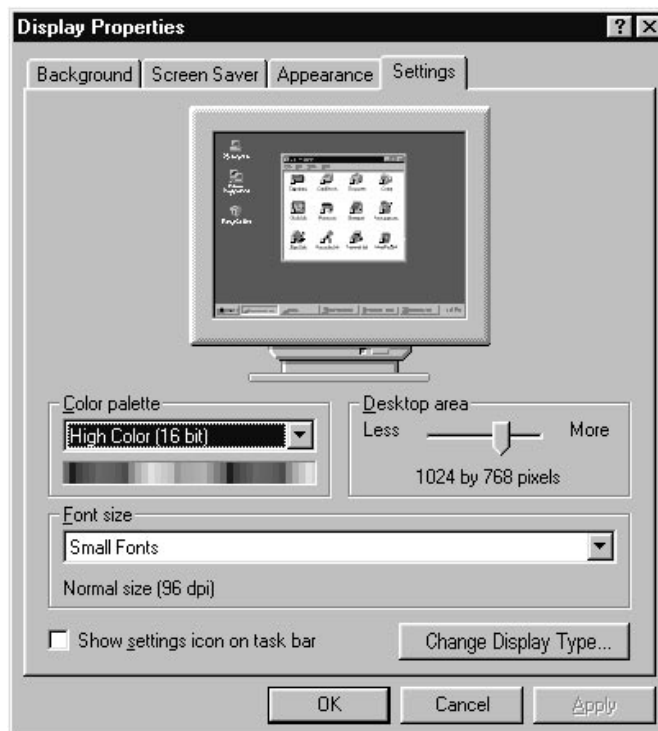
The miro installation program will start automatically.

6. Select the language you want to use for the installation. Click *OK*.
7. In the *Module selection* window select the components you want to install: *miro driver for Windows 95*, *DirectX 3.0*, *miroWINTOOLS*, *Showcase Demo*.

In any case install DirectX 3.0 even if there has been installed an earlier DirectX version on your computer. Click *Next*.

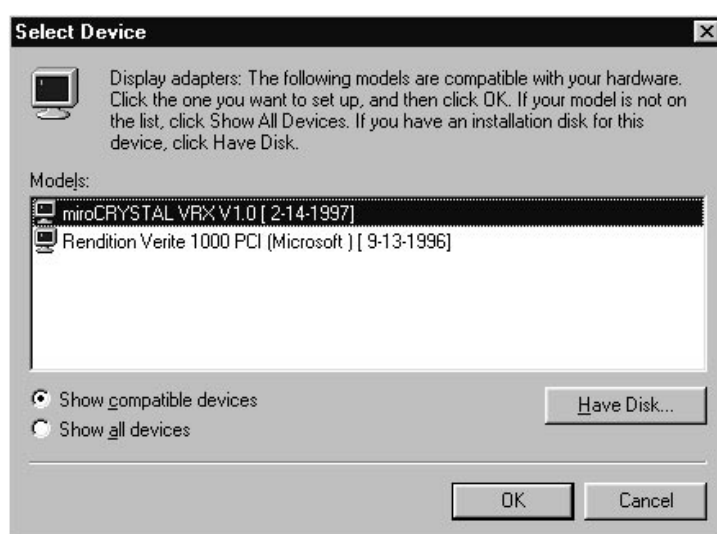
The miro drivers and the miroWINTOOLS are now being installed on your hard disk. DirectX is installed on your hard disk. If there is already a newer DirectX version on your hard disk, a dialog window appears which tells you that you can leave this window by clicking *OK*. Your DirectX version will not be overwritten. If no or an older DirectX version is installed on your computer DirectX will be installed without any comments.

8. Click *Finish* to open the *Display Properties* window and the *Settings* tab where you can do further settings.



Together with the *Display Properties* windows the miro online help will be started automatically which tells you what to do next.

9. Click the *Change Display Type...* button and in the next window the *Change...* button next to the graphics adapter.
10. Click the *Have Disk...* button and then *Browse...*
11. Enter the drive letter of your CD-ROM drive (e.g. d:, e:, etc.) and click *OK*.
12. Click *OK* again to copy the **MIRODISP.INF** and **MIROMON.INF** files to your hard disk.
13. In the *Select Device* window now miroCRYSTAL VRX has been selected. Click *OK* to confirm your choice.



The remaining miro files are now being copied to the Windows system directory.

14. After everything has been copied click on *Close*.

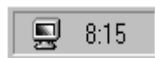
15. Now that you are back in the *Display Properties* window, you can change the *Resolution*, *Color palette* (number of colors) and the *Font size* (letter size on the desktop). If you want to use special characters, you should select *Large Fonts*.
16. Click *Apply* and restart Windows.

Now the installation of your miro board has been completed successfully. After restarting Windows 95 the *miroCRYSTAL VRX Control* icon appears on the right-hand side of the task bar, you can use to start the miro tools:

- ♦ *miroCRYSTAL VRX Information*
- ♦ *miroCRYSTAL VRX Palette*
- ♦ *miroCRYSTAL VRX Refresh*

and the Online manual.

To do so, click the icon.



For further information on the tools, refer to the online help. To be able to use the online help, call *miroCRYSTAL VRX Control* or click the *Start* menu and the *Programs*, *miroCRYSTAL VRX* and *miroWINTOOLS* icon.

## WINDOWS 95 (OSR 2)

After you installed the *miroCRYSTAL VRX* board, Windows 95 identifies the *miroCRYSTAL VRX* board as a new hardware component.

After starting Windows 95, Windows 95 searches the drivers for the new hardware.



If the *New hardware found* dialog box does not appear because Windows 95 could not find one or more files, abort the installation here and install Windows 95 for VGA as is described in the appendix in the “Configuring Windows 95 for VGA” section on page II.

1. If Windows 95 found drivers for the new hardware component, confirm the computer restart by clicking *Yes*.

After you restarted the computer *miroCRYSTAL VRX* has been installed with the original Microsoft drivers for the standard VGA mode. The *miro* drivers have to be installed after that.

2. Insert the *miro* CD-ROM in your CD-ROM drive.

The *miro* installation program will start automatically.



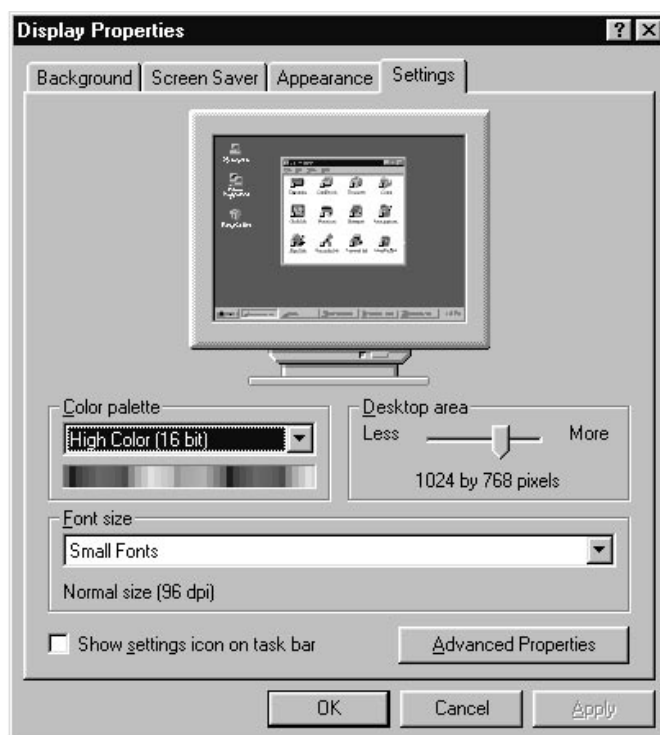
If the *miro* installation program will **not** be started automatically or if you want to start the *miro* installation program at a later time, select the *Start* menu and the *Run...* command. Enter **d:\miro\_win** where **d:\** is the drive letter for your CD-ROM drive. Click *OK* to start the *miroSETUP-Manager*. The *miroSETUP-Manager* starts the *miro* installation program.

3. Select the language you want to use for the installation. Click *OK*.
4. In the *Module selection* window select *miro drivers for Windows 95*, *DirectX 3.0*, *miroWINTOOLS*, *Showcase Demo*.

In any case install DirectX 3.0 even if there has been installed an earlier DirectX version on your computer. Click *Next*.

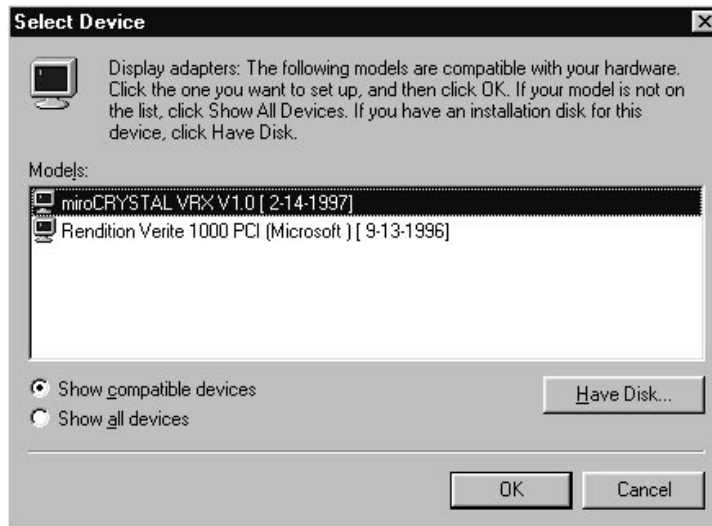
The miro drivers are now being installed on your hard disk. If there is already a newer DirectX version on your hard disk, a dialog window appears which tells you that you can leave this window by clicking *OK*. Your DirectX version will not be overwritten. If no or an older DirectX version is installed on your computer DirectX will be installed without any comments.

5. Click *Finish* to open the *Display Properties* window and the *Settings* tab where you can do further settings.



Together with the *Display Properties* windows the miro online help will be started automatically which tells you what to do next.

6. Click the *Advanced Display Properties...* button and in the next window in the *Adapter* tab click the *Change...* button.
7. Click the *Have Disk...* button and then *Browse...*
8. Enter the drive letter of your CD-ROM drive (e.g. d:, e:, etc.) and click *OK*.
9. Click *OK* again to copy the **MIRODISP.INF** and **MIROMON.INF** files to your hard disk.
13. In the *Select Device* window now miroCRYSTAL VRX has been selected. Click *OK* to confirm your choice.



The remaining miro files are now being copied to the Windows system directory.

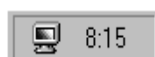
11. After everything has been copied click on *Apply* and *OK*.
12. Now that you are back in the *Display Properties* window, you can change the *Resolution*, *Color palette* (number of colors) and the *Font size* (letter size on the desktop). If you want to use the special characters, you should select *Large Fonts*.
13. Click *Apply* and restart Windows.

Now the installation of your miro board has been completed successfully. After restarting Windows 95 an icon appears on the right-hand side of the task bar, you can use to start the miro tools:

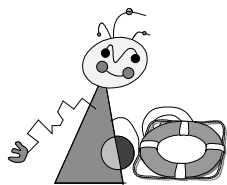
- ♦ miroCRYSTAL VRX Information
- ♦ miroCRYSTAL VRX Palette
- ♦ miroCRYSTAL VRX Refresh

and the online manual.

To do so, click the icon.



For further information on the tools, refer to the online help. To call the online help use the *miroCRYSTAL VRX Control* or the *Start* menu and the *Programs*, *miroCRYSTAL VRX* and *miroWINTOOLS* programs.



# Troubleshooting

## OVERVIEW

Most troubleshooting information can be found in the miroCRYSTAL VRX online help. You find the online help in the *miroCRYSTAL VRX* program group by clicking the *Start* menu and *Programs*.

However, you may encounter a problem that prevents you from starting your computer or running Windows 95 properly. We will deal with those problems here.

## SYSTEM CRASHES WHEN RUNNING WINDOWS 95



*Does the system crash during the automatic installation procedure or when using the VGA driver?*



On some systems, the original VGA driver file VGA.DRV will cause the system to crash, or lock up during this installation procedure. If you encounter such a problem, follow these steps. (This procedure usually cannot be done from within Windows 95 because the VGA.DRV file is being used by the system software.)



1. Restart your system in the MS-Prompt mode. You can do this as follows: When you see the *Starting Windows 95* text message, press the <F8> key. You will be given a menu. Select the *Command prompt only* item and press the enter key.
2. Copy the VGA.DRV file from the VGA directory on the miroCRYSTAL VRX CD to the SYSTEM folder within Windows 95. For example, on a typical system, type:

**copy d:\disksets\utils\vga.drv c:\windows\system**  
and press <Enter>.

3. Restart your system normally.



*Does the system not boot with an ISA network card?*



Some systems may crash when booting Windows because of resource conflicts with PCI and ISA devices. If a resource conflict (e.g. IRQ selection) occurs, you should try to use the Windows 95 Device Manager to determine the conflict. Then try one of the following:



1. Have Windows 95 try to manage your resources, by first removing your network card and restarting Windows 95. Windows should assign the correct resources to the miroCRYSTAL VRX card without any conflicts. Then shut down Windows and re-install your network card.
2. Change the resource setting on the ISA card by running its configuration program or changing a jumper.
3. Manually configure the PCI device using the *Windows Device Manager*.

## PERIPHERALS PROBLEMS



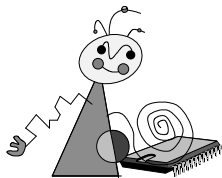
*Are you able to run your applications successfully within Windows, but cannot use a mouse, joystick, sound card, or other hardware device in DOS?*



Many computer systems are sold with only Windows configured. Mice and other pointing devices (such as Joysticks), sound cards, and other peripheral hardware can often be run by Windows without being fully installed or configured. To operate in DOS, however, they must be fully installed and configured.



Refer to your product manual for installation and configuration instructions should you have a hardware peripheral that functions in Windows mode but not in DOS mode. Completing the installation and configuration of the malfunctioning hardware device will usually solve the problem.



# Technical data

## GENERAL

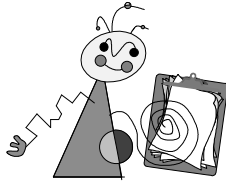
|                            |                                                                                                                                                                                                                     |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Graphics engine</b>     | Rendition Vérité V1000L, programmable RISC, 64 bit data path, Triangle set-up                                                                                                                                       |
| <b>Memory technology</b>   | 4 MB EDO RAM, band width: 448 MB/s                                                                                                                                                                                  |
| <b>Board feature</b>       | PCI 2.1 Local Bus, DMA busmastering, integrated VGA, chip power management; DPSM/BIOS and DDC, programmable Flash BIOS, external Brooktree BT485 DAC                                                                |
| <b>2D features</b>         | BitBLT, line draw, polygon fill, HW cursor                                                                                                                                                                          |
| <b>Video features</b>      | VESA 2.0 compatible, color space conversion, bi-linear filtering, interpolation, YUV modes; packed 4:2:2, multiple Video Windows                                                                                    |
| <b>General 3D features</b> | Inverse texture mapping, local texture cache, perspective correction, MIP-mapping, texture compression; sub-pixel/sub-accuracy, video as texture, clipping, composite textures, animated textures, texture lighting |
| <b>Filtering</b>           | Point-sampling, bi-linear / tri-linear filtering                                                                                                                                                                    |
| <b>Blending</b>            | Anti-aliasing, dithering, transparency, fogging (depth cueing) per vertex, OpenGL blending functions - full, chroma key, chroma range and arithmetic blending                                                       |
| <b>API Support</b>         | DirectDraw, Direct3D, Speedy3D, RenderWar                                                                                                                                                                           |

## VIDEO MODES

| Resolution  | Colors [bpp] | Refresh Frequency [Hz] |       |       |       |       |       |       |        |        |              |
|-------------|--------------|------------------------|-------|-------|-------|-------|-------|-------|--------|--------|--------------|
|             |              | 35kHz                  | 48kHz | 58kHz | 64kHz | 78kHz | 85kHz | 93kHz | 100kHz | 107kHz | max. refresh |
| 1408 x 1024 | 16           | -                      | -     | -     | 60    | 70    | 70    | 70    | 70     | 70     | 70           |
| 1408 x 1024 | 8            | -                      | -     | -     | 60    | 70    | 70    | 70    | 70     | 70     | 70           |
| 1280 x 1024 | 16           | -                      | -     | -     | 60    | 70    | 75    | 75    | 75     | 75     | 75           |
| 1280 x 1024 | 8            | -                      | -     | -     | 60    | 70    | 75    | 75    | 75     | 75     | 75           |
| 1152 x 864  | 16           | -                      | -     | 60    | 70    | 85    | 85    | 85    | 85     | 85     | 85           |
| 1152 x 864  | 8            | -                      | -     | 60    | 70    | 85    | 90    | 90    | 90     | 90     | 90           |
| 1024 x 768  | 32           | -                      | 60    | 70    | 70    | 70    | 70    | 70    | 70     | 70     | 70           |
| 1024 x 768  | 16           | -                      | 60    | 70    | 75    | 90    | 100   | 100   | 100    | 100    | 120          |
| 1024 x 768  | 8            | -                      | 60    | 70    | 75    | 90    | 100   | 100   | 100    | 100    | 120          |
| 800 x 600   | 32           | -                      | 75    | 90    | 100   | 100   | 100   | 100   | 100    | 100    | 100          |
| 800 x 600   | 16           | -                      | 75    | 90    | 100   | 100   | 100   | 100   | 100    | 100    | 200          |
| 800 x 600   | 8            | -                      | 75    | 90    | 100   | 100   | 100   | 100   | 100    | 100    | 200          |
| 640 x 480   | 32           | 60                     | 90    | 100   | 100   | 100   | 100   | 100   | 100    | 100    | 150          |
| 640 x 480   | 16           | 60                     | 90    | 100   | 100   | 100   | 100   | 100   | 100    | 100    | 200          |
| 640 x 480   | 8            | 60                     | 90    | 100   | 100   | 100   | 100   | 100   | 100    | 100    | 200          |



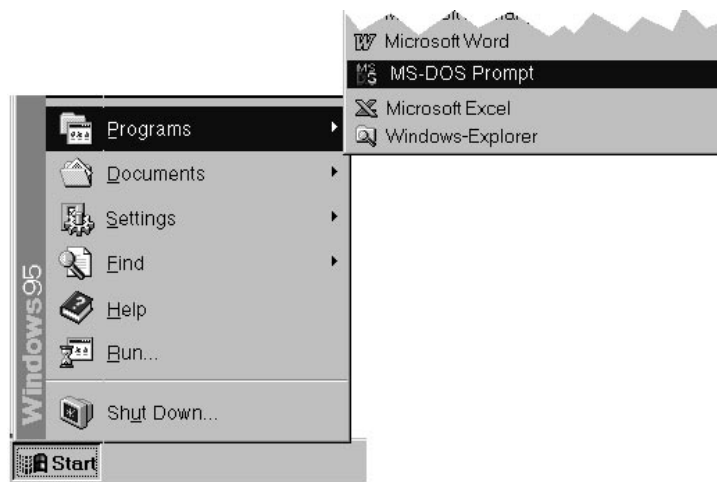
If you want to use the maximum refresh rate, please read the corresponding section in the online manual.



## IDENTIFYING THE WINDOWS 95 VERSION

To identify the installed Windows 95 version, you have to start the MS-DOS Prompt.

1. In the *Start* menu, select the *Programs* command and the *MS-DOS Prompt*.



2. In the *MS-DOS Prompt* window type **ver**, and press <Enter>. The installed Windows 95 version will be displayed.



The Windows 95 OSR 2 (OEM-Service-Release 2) version has the version number Windows 95. [Version 4.00.1111]; the August Windows 95 Release has the version number Windows 95. [Version 4.00.950].

3. Close the *MS-DOS Prompt*.

# CONFIGURING WINDOWS 95 FOR VGA

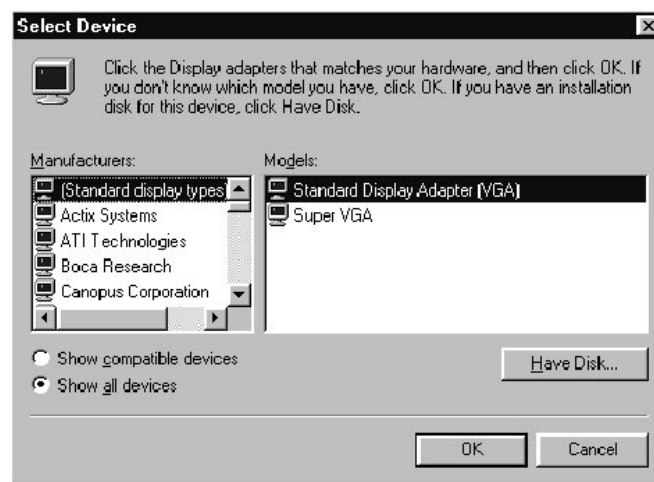
When difficulties occur with the installation of miro drivers for Windows 95, install Windows 95 for VGA and install the miro drivers again.

To configure Windows 95 for VGA:

1. Click the right mouse button while the mouse is pointing at an empty area of the Windows 95 desktop. The following menu will appear:



2. Click on *Properties*.  
The *Display Properties* window appears.
3. Select the *Settings* tab, and then select the *Change Display Type...* button. The *Change Display Type* window will open.
4. Select the *Change* button in the *Change Display Type* window (August 95 Release) or *Advanced Display Properties* (OSR2).
5. Under *Adapter* click the *Change...* button.  
The *Select device* dialog box appears.



6. Select the *Show all devices* radio button, then select (*Standard display types*) and *Standard Display Adapter (VGA)*.
7. Click the *OK* button, the *Close* button, and the *Close* button again in the *Display Properties* window.
8. When the *Systems Settings Change* window appears, select *Yes* to restart Windows 95.

# miroCRYSTAL VRX AND WINDOWS 3.1X

Installing and setting up miroCRYSTAL VRX for Windows 3.1

1. Start your computer in DOS, change to VGA Mode:
2. In DOS, change the directory to C:\WINDOWS. You can do this by typing  
**cd\windows<↵>.**
3. In the Windows directory type  
**setup<↵>.**
4. Select the *Display* option by moving the cursor keys. When *Display* is highlighted press <Enter>.
5. Select the option *Other (Requires disk provided by...)*. and press <Enter>.
6. Insert the miroCRYSTAL VRX-CD into the CD-ROM drive.
7. Type  
**d:\disksets\win31,**  
where **d:\** is the letter of your CD-ROM drive, and press <Enter>.
8. Press <Enter> to accept the selected *miroCRYSTAL VRX 3.1 Display Drive*.
9. Press <Enter> again, to accept the desired system configuration.  
Have the Windows 3.1x diskettes/CD-ROM ready and insert them into the diskette/CD-ROM drive.  
Setup installs the drivers you selected. As soon as the installation has been completed, you get back to the DOS level.
10. Type **win** to start windows with the new display settings.



At the Windows start-up an error message appears because the Vérité V1000L processor has been designed for Windows 95 and does not support Windows 3.1x. Ignore the error message.

## Changing User Settings

To open the Display Properties Control:

1. Open the *Main Group*.
2. Double click on the *Control Panel*.
3. Double click on the *Vérité Properties* icon. This will bring up the Display Properties Control.

### Changing the resolution

1. Follow the above instructions on opening the *Display Properties Control*.
2. Under the *Desktop Area* box there is a slide bar.
3. With a mouse click on the arrows of the slide bar to increase or decrease the desktop size.

**Changing the color depth**

1. Follow the above instructions on opening the *Display Properties Control*.
2. Under the *Color Palette* box there is a pull down menu.
3. Click on the down arrow and this will drop down the menu.
4. Make the desired selection.

**Changing the refresh rate**

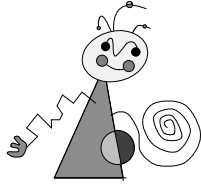
1. Follow the above instructions on opening the *Display Properties Control*.
2. Under the *Refresh Frequency* box there is a pull down menu.
3. Click on the down arrow and this will drop down the menu.
4. Make the desired selection and be sure to test the selection with *Refresh test*.

**Changing the font size**

1. Follow the above instructions on opening the *Display Properties Control*.
2. Under the *Font Size* box there is a pull down menu.
3. Click on the down arrow and this will drop down the menu.
4. Select the desired fontsize.

**Accepting the settings**

- After you made all settings, click *OK* to accept the settings. After restarting your system the settings will be available.



# FCC Compliance Statement

## FOR YOUR OWN SAFETY

NOTE: Shielded cables should be used for a composite interface. This is to ensure continued protection against radio frequency interference.

## FCC WARNING STATEMENT

NOTE: 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 one or more of the following measures:

- ♦ Reorient or relocate the receiving antenna.
- ♦ Increase the separation between the equipment and 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 authority to operate the equipment.

Shielded interface cable must be used in order to comply with the emission limits.

## LABEL WARNING

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

miro Computer Products AG miroCRYSTAL VRX



Tested To Comply  
With FCC Standards

FOR HOME OR OFFICE USE



## KONFORMITÄTSERKLÄRUNG DECLARATION OF CONFORMITY

Geräteart: **Grafikkarte**  
Type of equipment: Graphics board

Produkt / Product: **miroCRYSTAL VRX**

Das bezeichnete Produkt stimmt mit den Vorschriften folgender EU- Richtlinie(n) überein:  
The aforementioned product complies with the following European Council Directive(s):

**89/336/EWG**

Richtlinie des Rates zur Angleichung der Rechtsvorschriften der Mitgliedstaaten über die elektromagnetische Verträglichkeit  
Council Directive 89/336/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility

Zur vollständigen Einhaltung dieser Richtlinie(n) wurden folgende Normen herangezogen:  
To fully comply with this(these) Directive(s), the following standards have been used:

**EN50081-1:1992**

CISPR 22:1987/EN 55002:1987, Class B

**EN 50082-1:1994**

EN61000-4-2, 4kV Contact Discharge, 8kV Air Discharge  
EN61000-4-3, 80-1000MHz 3V/m (before modulation), 1kHz, 80% AM  
EN61000-4-4, 1kV on AC ports, 0,5 kV on signal lines 5/50nSec, 5kHz, Rep. Freq.

Dieser Erklärung liegt zugrunde: **Prüfbericht(e) des EMV-Prüflabors**  
This certification is based on: Test report(s) generated by EMI-test laboratory

Aussteller / Holder of certificate: **miro Computer Products AG**  
**Carl-Miele-Str. 4**  
**D - 38112 Braunschweig**

Braunschweig, **19.02.1997**  
(Ort / Place) (Datum / Date)

Executive Vice President