

miroCRYSTAL 20PV avi

User's Manual



This miro manual is printed on chlorine-free paper.

miroCRYSTAL 20PV avi

User's Manual



miroCRYSTAL 20PV avi

User's Manual

Version 1.0/E. September 1994

VDOK-20PV-100

© miro Computer Products AG 1994

All rights reserved.

No part of this manual may be reproduced or transferred to other media without explicit written permission from miro Computer Products AG, Braunschweig, Germany.

IBM AT® is a trademark of International Business Machines Corp., VGA™ is trademark of International Business Machines Corp.

miro™ is a trademark of miro Computer Products AG.

Pentium™ is a trademark of Intel Corp.

VL Bus™ is a trademark Video Electronics Standards Association.

Windows™ is a trademark of Microsoft Corp.

Windows NT™ is a trademark of Microsoft Corp.

OS/2™ is a trademark of International business Machines Corp.

miro Computer Products AG has written this manual to the best of its knowledge, but does not guarantee that the programs/systems will fulfill the desires of the user.

No warranty is made as to the specifications of features.

miro retains the right to make alterations to the content of the manual without the obligation to inform third parties.

All tenders, sales, supply and manufacturing contracts from miro, including consultancy, installation and other contractual performance are subject exclusively to the General Sales and Delivery Terms of miro.

Contents

For your own safety	iii
About the manual	iv
Quick installation chart	v

Part I: Hardware

Overview 1

Before you start...	2
---------------------	---

Hardware installation 3

Installation of miroCRYSTAL 20PV avi	3
Preparing the installation	3
Board layouts	3

Technical data 5

Part II: Software

Installation 7

miroSUPERSCREEN 13

miroMONITOR SELECT 15

miroTINT CONTROL 17

miroSIZE CALIBRATION 20

miroSCOPE 22

miroGTI 12 VGA 23



Appendix

Glossary I

15-pin D-type video port V

VESA Standard Feature Connector VI

miroCRYSTAL 20PV avi address range VII

FCC Compliance Statement X

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.
- Do not use any cable that supplies the power through the computer.
- You need a multifrequency monitor that supports a 35 kHz horizontal scan frequency.
- 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** file on the disks supplied with your system!

About the manual

This manual explains how to install the miroCRYSTAL 20PV avi 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

1. Check the system requirements, make copies of the supplied disks.
2. Open the computer.
3. Depending on its bus type install graphics board into the VL or PCI slot.
4. Connect the monitor.

Software

5. Insert *Video for Windows Runtime disk # 1/2*.
Depending on your disk drive enter **a:setup** or **b:setup**.
Follow the instructions given on the screen.
6. Install miro drivers for miroCRYSTAL 20PV avi. The order of the installation is not obligatory.



miro•win (Windows drivers)

The miro•win disk is needed.

Insert *miro•win High speed drivers for Windows; Install disk # 1/1* 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 (OS/2 drivers, Windows NT drivers)

The miro•plus disks are needed.

Insert *miro•plus High speed drivers for OS/2; Install disk # 1/1* or

miro•plus High speed drivers for Windows NT; Install disk # 1/1.

Install drivers and/or tools.

If necessary, configure installed drivers.



Overview

With **miroCRYSTAL 20PV avi** miro offers a graphics board, which is designed especially for professional use under Windows and DOS: The graphics board meets all requirements concerning page layout, illustration and color image editing.

q **Video memory/resolutions**

The miroCRYSTAL 20PV avi has 2 MB VRAM and offers a 1152 x 864 pixels resolution with 65.536 colors.

q **Graphics acceleration**

Both boards are based on state-of-the-art processor technology. The board is equipped with the Weitek P9100 high-performance graphics processor and displays graphics at a very high speed.

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 **Multimedia acceleration**

To be able to run digital video applications, the hardware includes the Weitek Video Power P9130 video chip. The hardware improves digital video playback: the chip scales video continuously up to a size of 1280 x 1024 pixels without causing «jerks» and dropping frames. When enlarging video images the individual pixels are not simply duplicated, but the additional pixels are calculated (interpolation). This leads to a very good image quality even at high resolutions.

q **Drivers**

miroCRYSTAL 20PV avi includes all of the necessary drivers to achieve the maximum performance from your system. In addition, the miro tools are provided.

Before you start...

System requirements

To install miroCRYSTAL 20PV avi, 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 35 kHz to 100 kHz. To receive all the benefits from the miro graphics board, you need a multifrequency monitor, which supports a horizontal scan frequency of 64 kHz or more.

Delivery scope

Before beginning the miroCRYSTAL 20PV avi installation, please make sure your package is complete.

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

If parts are missing, please contact your dealer.



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.

VGA in the computer

A VGA component is integrated on the graphics board. If you want to use this VGA you have to deactivate an already present motherboard VGA before you begin to install the miro graphics board. An already installed VGA board must be removed.

Hardware installation

Installation of miroCRYSTAL 20PV avi

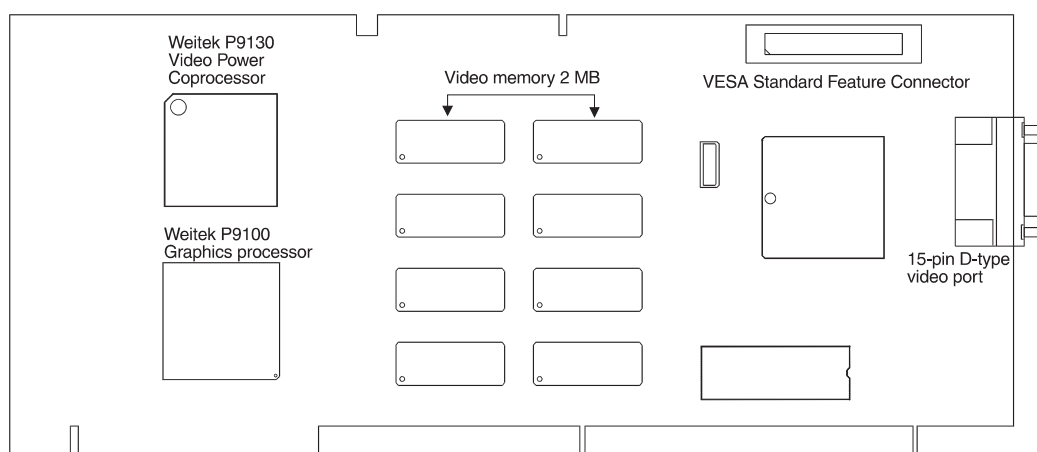
Preparing the installation

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

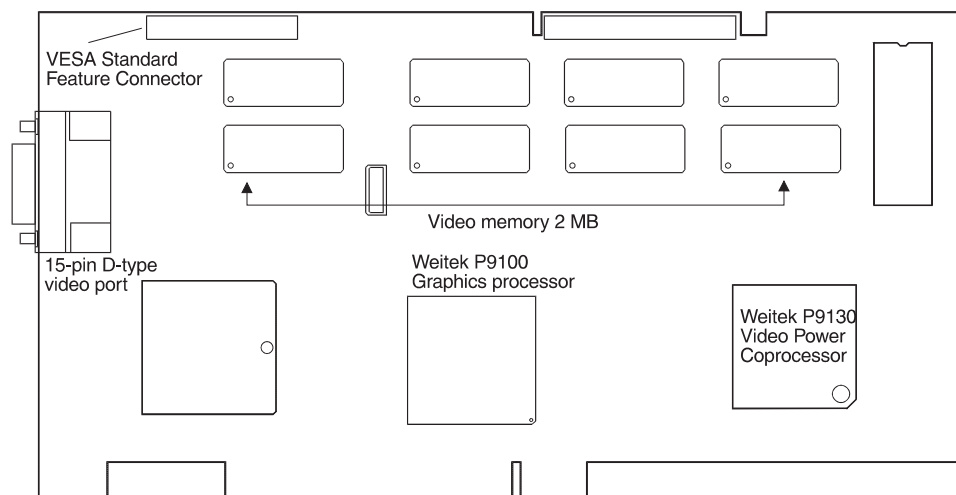
- Turn off your computer and all peripheral devices. Disconnect the computer from the power supply and all other components.
- Loosen the screws of the computer's cover and remove it.
- Discharge yourself of static charge by touching the power unit casing.
- If necessary, remove the VGA board from the 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.

Board layouts

The following illustrations describe the board layout of the miroCRYSTAL 20PV avi board.



miroCRYSTAL 20PV avi/VL



miroCRYSTAL 20PV avi/PCI



Important: Only one VGA may be active in your computer, either the **miroCRYSTAL VGA** **or** another VGA logic (be it another VGA board or an onboard VGA integrated on the motherboard).

Installing the graphics board

- 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.

Technical data

Bus system

- miroCRYSTAL 20PV avi for VESA Local Bus:
VESA Local Bus
- miroCRYSTAL 20PV avi for PCI Local Bus:
PCI Local Bus
- Video Power 9130 on-board

Compatibility

- VGA register-compatible

Graphics processor

- Weitek P9100 for VESA Local Bus
50 MHz clock frequency
- Weitek P9100 for PCI Local Bus
33 MHz clock frequency

Video memory

- 2 MB VRAM

Power supply

- +5 V, max. 2 A
- +12 V, max. 0.01 A

Video modes

Video memory	2 MB VRAM	
256 colors at	1408 x 1024	70 Hz
	1280 x 1024	75 Hz
	1152 x 864	90 Hz
	1024 x 768	100 Hz
	800 x 600	100 Hz
	768 x 576	100 Hz, TV
	640 x 480	100 Hz, TV
65536 colors at	1152 x 864	80 Hz
	1024 x 768	100 Hz
	800 x 600	100 Hz
	768 x 576	100 Hz, TV
	640 x 480	100 Hz, TV
16.7 mill. colors at	800 x 600	90 Hz
	768 x 576	90 Hz, TV
	640 x 480	100 Hz, TV

Video timings

- Horizontal scan frequency:
31 kHz to 85 kHz, depending on operating mode
- Vertical scan frequency:
70 Hz to 100 Hz, non interlaced, depending on operating mode
- Pixel frequency:
15 MHz to 135 MHz, depending on operating mode

Options

- Monitor, shielded monitor cable

Part II: Software

Installation

Overview

After having installed the miro graphics board in your computer, you can install the miro drivers for Windows and CAD applications and select your monitor/s.



Before beginning with the installation, make backup copies of the supplied installation disk(s) using the DOS **DISKCOPY** command. Keep the original disks in a safe place and only use the copies.

Package contents

Please make sure that your miro•win software package is complete:

- miro•win disks (*miro•win High speed drivers for Windows*)
- documentation
- available as an option:
miro•win High speed drivers for CAD (miroGTI 12 VGA)

If any parts are missing, please consult your dealer.

miro drivers and miroWINTOOLS

General

Requirements

To install the software correctly, **Windows** has to be installed for **VGA**. In addition, you need 3 MB memory.

To play back digital video...

To play back digital video AVI drivers are required. The supplied Video for Windows Runtime disk contains these drivers and a Setup program.



Note: Please, do the installation of the Video for Windows drivers prior to the installation of the miro drivers for Windows.

- Insert the *Video for Windows Runtime disk # 1/2*.
- Depending on your disk drive enter **a:setup** or **b:setup** and follow the instructions given by the installation program.



Windows drivers

The miro Windows drivers were especially developed for Windows users. Together with the miro graphics boards the drivers allow to fully utilize this graphical user interface and the applications based on it. In addition to accelerating Windows, the drivers offer high resolutions and a TrueColor mode.

miroWIN-TOOLS

The miro•win disks also include the miroWINTOOLS which can be copied to the hard disk during the installation. For a detailed description of the miroWINTOOLS, refer to the corresponding chapters in this manual.

The miroWINTOOLS offer a range of functions to adapt your Windows desktop to your liking.

In addition, a magnifying glass for Windows and a tool to convert TrueType fonts into a DOS format are provided.

Furthermore, the miroWINTOOLS contain a tool to control the monitor's tint and a tool to adjust the monitor image for DTP applications so that it displays page previews in a one to one measurement to the final print-out.

Installation

The miro Windows drivers and the miroWINTOOLS are always installed from the floppy disk.

Result of the installation

The required files will be copied to your hard disk into the Windows directory and, if possible, to the Windows system directory. The miro tools will be located in the *miroWINTOOLS* Program Group.

If you only install the Windows drivers, only miroMONITOR SELECT, miroSUPERSCREEN and miroTINT CONTROL will be located in the *miroWINTOOLS* Program Group. They can always be started after the installation. The installation program modifies the WIN.INI, SYSTEM.INI and CONTROL.INI files.

Disks

The following disks are needed:

miro•win High-speed drivers for Windows; Install disk #1/1.

Installing



- Start Windows.
- Insert the *miro•win High-speed drivers for Windows; Install disk #1/1* into the disk drive.
- Select in the Program Manager the *File* and the *Run...* command.
- Depending on your disk drive enter:
a:install or
b:install
and click *OK*.

After starting the installation program the *Language Selection* menu appears in English (default setting).

OK/Cancel

Click *OK* to go on with the installation program and *Cancel* to exit the program.

- Select the board for which you want to install the Windows drivers and click *OK*.



Make sure to select the correct board.

The *Only uninstall all software* option deletes all files that have been copied during a previous installation.

- Select the items you want to install.
 - *Windows 3.1 driver software* and/or
 - *additional miroWINTOOLS* (miroTINT CONTROL, miroSIZE CALIBRATION, miroSCOPE, ...) and/or
 - *miro wallpaper*



Installation Program: Installing the drivers



- When prompted to do so, insert the required disk into the disk drive.

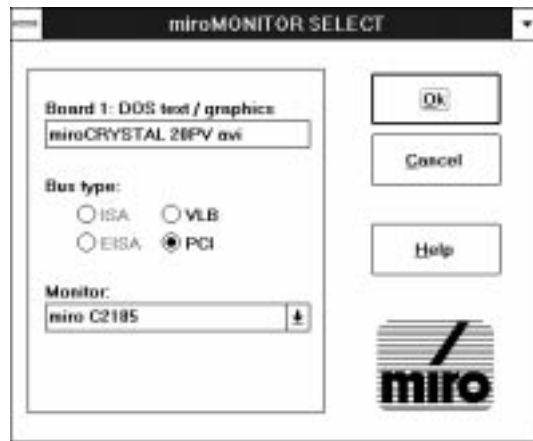
If you **only** installed the **miroWINTOOLS**, the installation ends after the files have been copied. To exit the installation program, click *OK*. You are now in the Windows Program Manager.

After having completed the **miro Windows driver installation** the miroMONITOR SELECT tool is started.

miroMONITOR SELECT

miroMONITOR SELECT allows to select the monitor.





miroMONITOR SELECT

- Check if you have installed the correct miro graphics board using the installation program.
- Check the specified bus type of your miro graphics board and, if necessary, change the bus type.
- Open the *Monitor type* list box and select your monitor.
If your monitor is not in the list, select the monitor with the next smaller horizontal scan frequency.



An incorrect selection can seriously damage your monitor. If you are in doubt, refer to your monitor documentation.

- Accept the settings by clicking *OK*. miroSUPERSCREEN is automatically started.

miroSUPERSCREEN

For a detailed description of **all** miroSUPERSCREEN functions refer to the «miroSUPERSCREEN» chapter in this manual.

- After specifying all settings, quit miroSUPERSCREEN with *OK* and restart Windows.

Where to find what?

A detailed description of the miroWINTOOLS is contained in this manual.



The Windows *miroWINTOOLS* Program Group contains the *Information* icon. Double-click the icon to get current information.



Double-clicking the *Information* icon only works if in the *Accessories* group the *Notepad* editor has been installed.

System software and CAD drivers

General

After having installed your miro graphics board in your computer, you can install the system software and the miro drivers and, if necessary, configure the drivers.

1. Install the system software and the drivers you need for your applications, using the installation program.
2. **Then**, configure the installed drivers, if necessary.

For detailed information on the configuration and the functions of the individual miro drivers, refer to the corresponding chapters in this Software Manual.

Installation

The system software and the miro drivers are always installed from the DOS level and from floppy disk.

Result of the installation

The files needed for the installation and configuration of the graphics board and the drivers are copied to your hard disk

- into the system directory of your miro graphics board (e.g. C:\CRYS_20PV for miroCRYSTAL 20PV avi) and
- into the application directories (e.g. C:\ACAD for AutoCAD).

To install the miro drivers, proceed as follows:



- Insert miro•win High speed drivers for CAD # 1/1 disk in the disk drive.
- Depending on your disk drive enter:

a:install <↵> or

b:install <↵>

After starting the installation program the Language Selection menu appears in English (default setting). Accept the default setting with the enter key or overwrite it. Now, you are in the Main Menu.

The installation program is operated via the keyboard. The bottom line shows the keys to operate the installation program.



To mark a menu item, move the cursor bar to the menu item using the arrow keys and press the space key. To perform the action, press <↵>. Presettings (YES/NO) can be changed using the space key.

<↵>/<Esc>

Press <↵> to proceed in the installation program, press <Esc> to end the program.

- Select the miro graphics board for which you want to install the CAD drivers.



Make sure to select the correct board.

- By clicking the enter key you go to the «Driver Selection» menu.
- Select the desired drivers for your applications (e.g. AutoCAD 12); change the presettings from *NO* to *YES* using the space key.

The *Only uninstall all software* option deletes all files copied to the hard disk during a previous installation.



Do not forget to set the presettings of the desired miro drivers from *NO* to *YES*. To install the desired drivers, press the enter key **after** you have changed the presettings of **all** selected drivers.

Drive/directory

To install the system software for the miro graphics board and the selected miro drivers, the installation program needs to know to which drive and to which directory the software and the drivers are to be copied.

- Accept or overwrite the default settings.

By default, the system software is copied to the system directory of your miro graphics board, the miro application drivers are copied to the drive of the applications.



The installation program modifies the AUTOEXEC.BAT file. The original version is saved under AUTOEXEC.BAK.

Configuring the drivers

After having installed the miro drivers, these have to be configured. Detailed information on the configuration and a detailed description of the functions are contained in this manual.

miroSUPERSCREEN

miroSUPERSCREEN configures the Windows desktop for miro graphics boards. **miroSUPERSCREEN** is a permanent part of the miro driver installation. However, you can also start it individually anytime to do a separate configuration.

miroSUPERSCREEN Desktop Configuration configures the resolution, number of colors, selects the screen fonts, and starts the **miroTINT CONTROL** tool.



Installation

Not all miro graphics boards can utilize the complete range of **miroSUPERSCREEN** functions. The functions which are not supported are dimmed and cannot be selected.

miroSUPERSCREEN is installed with the **miro•win** disks. After successfully completing the installation the icon for **miroSUPERSCREEN** appears in the **miroWINTOOLS** Program Group.

miroSUPERSCREEN Desktop Configuration



To activate the **miroSUPERSCREEN** Desktop Configuration, double-click the icon.

The window is divided into three groups: *Resolution*, *Settings*, and *Number of Colors*.

The following describes the function of each group.

Resolution

Here you can specify the resolution for the monitor connected to the installed board. The listbox shows the current resolution. The resolutions for which the Windows 3.1 drivers supplied by miro have been installed are available.

Number of Colors

Here you can change the number of colors for your Windows desktop. The current number of colors is marked. Depending on the resolution the options which cannot be selected are dimmed.



When changing the resolution **and** the number of colors in the single-screen mode, always set the resolution before setting the number of colors.

Settings

In *Settings* you find the following buttons:

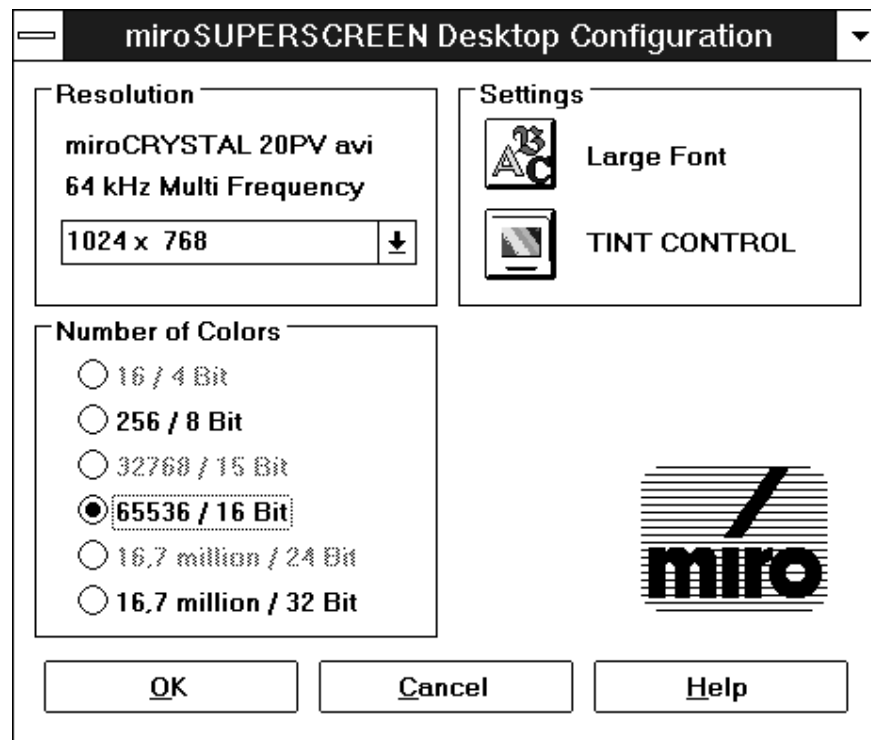
Large Font

Here you can change the screen fonts for the Windows desktop. Usually high-resolution graphics systems use 8514/A fonts (*Large font*). In case you want to use smaller fonts, you can select VGA fonts (*Small font*).

To select the *Small font* option, VGA fonts must first be installed. This is al-



ways the case, if Windows has been installed once for VGA. If the *Large font* option cannot be selected, select a high-resolution miro driver using Windows Setup. Then, you will be requested to install 8514/A fonts with the help of the Windows installation disks.



miroSUPERSCREEN Desktop Configuration

TINT CONTROL

Here the application miroTINT CONTROL, which allows you to control the monitor's tint, is started. This application is described in the chapter «miroTINT CONTROL».

miroMONITOR SELECT

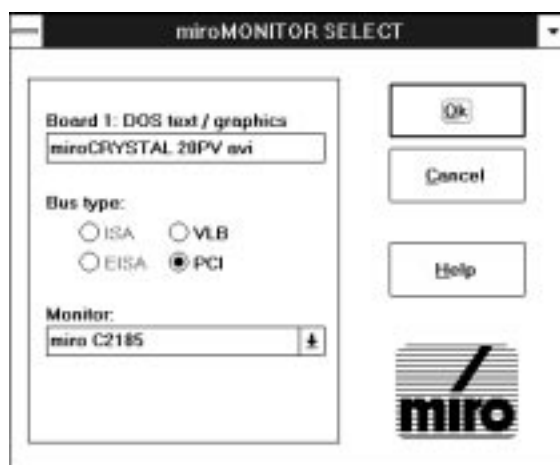
miroMONITOR SELECT allows to select your monitor.

During the Windows driver installation miroMONITOR SELECT has been copied to the hard disk and located in the miroWINTOOLS Program Group. If you have selected the miro Windows drivers for the miroTWINFACE mode, miroMONITOR SELECT offers the suitable extended options.



- Double-click the miroMONITOR SELECT icon to start the tool. The miroMONITOR SELECT dialog box appears.

miroMONITOR SELECT dialog box



miroMONITOR SELECT

Graphics board

The *Board* list box shows the installed graphics board.

If the board in the list box is not the same as the actual board installed in your computer, a message tells you when leaving miroMONITOR SELECT that the installed software does not correspond to the installed hardware.

- If you want to repeat the installation, press YES to get to the *Execution of the install program* dialog box. Then, you can start the installation program again and install the software of the correct board.
- To start the installation program insert the *miro•win High-speed drivers for Windows; Install disk #1/1* into the disk drive, overwrite/accept the default setting A:\INSTALL.EXE, and start the installation program. For further information refer to the chapter «Installation» in this manual.

Changing the bus type

Check and – if necessary – change the bus type of the installed board under *Bus type*.



Changing the monitor

To change the selected monitor:

- Open the *Monitor type* list box and select your monitor.
If your monitor is not in the list, select the monitor with the next smaller horizontal scan frequency.



An incorrect selection can seriously damage your monitor. If you are in doubt, refer to your monitor documentation.

miroTINT CONTROL

miroTINT CONTROL changes the monitor's tint.

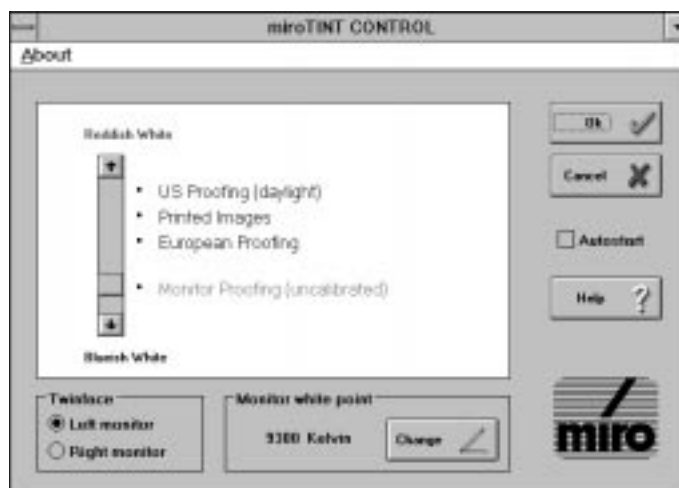
To start miroTINT CONTROL ...



- a) ... click miroTINT CONTROL under *Settings* in miroSUPERSCREEN.
or
- b) ... click the miroTINT CONTROL icon in the Windows Program Group *miroWINTOOLS*.

Then, the miroTINT CONTROL dialog box appears.

miroTINT CONTROL dialog box



miroTINT CONTROL



Not all miro graphics boards can utilize the complete range of miroTINT CONTROL functions. The functions which are not supported are dimmed and cannot be selected.

Slider

The slider adjusts the monitor's tint continuously (color temperature) between a bluish and a reddish white.

Presettings

The presettings listed on the right hand side of the slider are reference points for controlling the tint and can be directly clicked. The selected presetting appears green.

- *US Proofing (Daylight)* corresponds to alternate daylight.
- *Printed Images* corresponds to the color temperature used in the photo reproduction of color images.



- *European Proofing* corresponds to the color temperature often used for European color proofing boxes
- *Monitor Proofing* corresponds to the color temperature computer monitors are usually adjusted to, thus allowing for a brilliant color representation.

**Color temperature of the monitor's white point
Change**

Here the color temperature of the monitor's white point is given, which is usually factory-set to 9300 K. If your monitor has another white point click *Change*.

After clicking *Change* a dialog box appears. Here you can specify the monitor's white point to a value between 5500 K and 10.000 K. To quit this dialog box click *OK*.

OK

Clicking *OK*, shrinks miroTINT CONTROL to an icon. The current settings remain active.

Cancel

By clicking *Cancel* the last setting made in miroTINT CONTROL is canceled. miroTINT CONTROL is shrunked to an icon.

Autostart

When checking the Autostart check box the settings are activated every time Windows is started.

System menu

miroTINT CONTROL can be closed using the system menu (top left window corner). When closing the tool the settings are not active anymore.



The miroTINT CONTROL settings are only active as long as the tool is opened.

Help

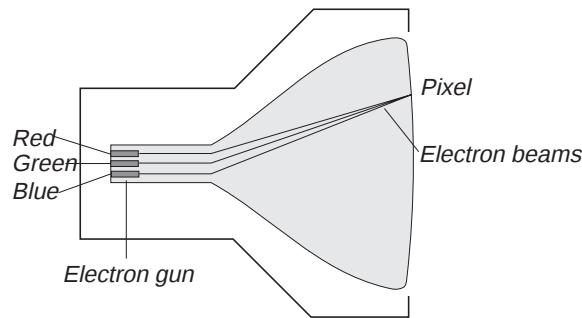
Help starts the help function of miroSUPERSCREEN.

Explanations

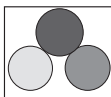
How is a color image created on your monitor?

The inside of a color monitor CRT is coated with a fluorescent coating consisting of different phosphor substances (red, green, and blue).

Three electron guns generate electron beams controlling one color (red, green, and blue). The electron beams scan the screen line by line, when hitting the phosphors they emit light.



How a color monitor works



Switching the electron beam on and off creates a dot matrix which creates a monitor image. The individual dots are called pixels (=picture element). Each pixel has a red, a green, and a blue phosphor, a so-called triple. If all three phosphors are illuminated with equal intensity, the pixel appears white.

What is the white point?

White is created when the red, green and blue pixel areas are illuminated with equal intensity.

Due to internal monitor tolerances and the phosphor used for the picture tube a pure »white« input signal of the monitor ($R = G = B = 100\%$) does not result in a white image. The light intensity of blue may for example be weaker as the intensity of red and white thus appears reddish.

Also the spectral components of daylight are not constant. At different places on earth and at different daytimes the daylight may be more toward red or toward blue.

Instead of describing the monitor's white point using the intensities of the primary colors (red, green and blue) (e.g. $R = G = 100\%$; $B = 95\%$), the color shift is described as color temperature. Thus the white point is described as single number without specifying all components individually.

What is color temperature?

The term color temperature describes the relation between a color of a body and its temperature (for example white-hot iron is hotter than red-hot iron). The concept of color temperature is based on a «black radiator», the color of which changes in proportion to its temperature. The color temperature is given in *Kelvins*. A high color temperature results in a color more towards blue, while a low color temperature results in a color more towards red.

miroSIZE CALIBRATION

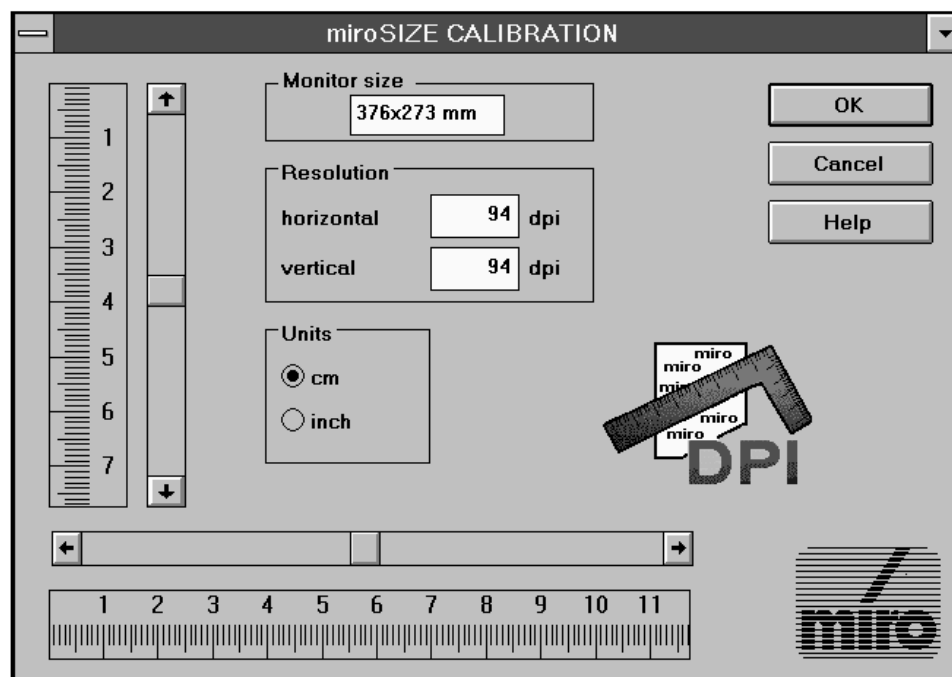
miroSIZE CALIBRATION adjusts the dots per inch (DPI) on your monitor so that one inch or one centimeter on the monitor matches exactly one inch or one centimeter on the print-out. miroSIZE CALIBRATION is especially useful when a true-to-scale display is necessary: DTP and CAD applications.

Starting miroSIZE CALIBRATION

- Click the miroSIZE CALIBRATION icon in the miroWINTOOLS Program Group.

The miroSIZE CALIBRATION dialog box appears.

miroSIZE CALIBRATION dialog box



miroSIZE CALIBRATION

To adjust the DPI number on your monitor, do the following:

- Select the desired measurement unit (inch or centimeter).

- Hold a normal ruler beside the ruler in the dialog box to the left of the horizontal sliders. Adjust the ruler in the dialog box using the scroll bars so that it matches your ruler.
- Repeat this for the vertical ruler.
- Click *OK*.

While you adjust the rulers the values under *Resolution* and *Monitor size* change automatically.

The miroSIZE CALIBRATION settings are only valid for applications which are started after using miroSIZE CALIBRATION.

To activate the settings each time after Windows has been started:

- Drag the miroSIZE CALIBRATION icon into the Windows-Start-up group. In the Program Manager under *Properties... Run Minimized* has to be selected for the miroSIZE CALIBRATION icon.

If the resolution has been changed, miroSIZE CALIBRATION has to be readjusted.

miroSCOPE



miroSCOPE is a kind of magnifying glass.

miroSCOPE enlarges the area around the current cursor position. This function is especially useful, if you edit drawings and pictures and if you want to view an enlarged section of your drawing/picture. In addition, you have the possibility to copy the enlarged section to the Windows Clipboard.

During the Windows driver installation the miroSCOPE application has been copied automatically to your hard disk and has been located in the Program Group *miroWINTOOLS*.

Starting miroSCOPE

- Start miroSCOPE by double-clicking the application icon.

Then, the miroSCOPE application window appears. To activate the magnifying glass function another window than the miroSCOPE window has to be active and the cursor has to be located outside the miroSCOPE window. The miroSCOPE window is always on top even if you drag another window above it or run an application in the Full Screen mode. You can alter the size of the window as you desire.

Functions

The pulldown menus of miroSCOPE offer you the following functions:

Settings

Zoom factor:

Here you can set the zoom factor. The higher the zoom factor, the more will an area around the current cursor position be enlarged.

Hotkey:

Here you can select the hotkeys for freezing the image in the miroSCOPE window and for reactivating it. The option *None* deactivates the hotkey.

Sensibility:

Here you can adjust how often the zoomed content of the miroSCOPE window shall be refreshed. The minimum is 50 milliseconds which refreshes the image 20 times per second. The maximum is 32767 which refreshes the image every 32 seconds. We recommend a default setting of 100.

Copy

With this function you copy the current content of the miroSCOPE window to the Windows Clipboard.

Help

Here you find an information window and the on-line help.



miroGTI 12 VGA

Overview: miroGTI 12 VGA

miroGTI 12 VGA* is a display and rendering driver which stores the picture sent by AutoCAD in a displaylist. miroGTI 12 VGA is compatible with the Autodesk Device Interface (ADI) 4.2 and supports AutoCAD 11/12, including the Advanced Modeling Extension (AME) and the Advanced Visualization Extension Render (AVE). miroGTI 12 VGA runs in the Protected Mode of the 80386/80486 processors, offering maximum speed.

A variety of enhanced features contributes to even more user-friendliness:

- 32-bit support in the displaylist**,
- menu-driven driver configuration**,
- Color Manipulation Tool**,
- font selection, hotkey configuration, miroTEXTSCREEN (configurable)**,
- screensaver,
- miroSPOTVIEW (magnifying glass),
- FASTZOOM,
- possibility to set the display and rendering resolution**.

Configuring AutoCAD for miroGTI 12 VGA

Before using miroGTI 12 VGA with your AutoCAD program, you have to reconfigure AutoCAD in a way that the application uses the driver.

- Start AutoCAD with the **-r** parameter (only for the initial configuration).
- In the configuration menu select the item for the video configuration.
- In the video configuration menu select the miroGTI 12 VGA driver.
- Answer AutoCAD's default questions concerning the driver configuration.

* available as an option ** not available for AutoCAD 11





If you want to configure your digitizing tablet under AutoCAD, turn off the *Zoom* and the *Pan* menu.

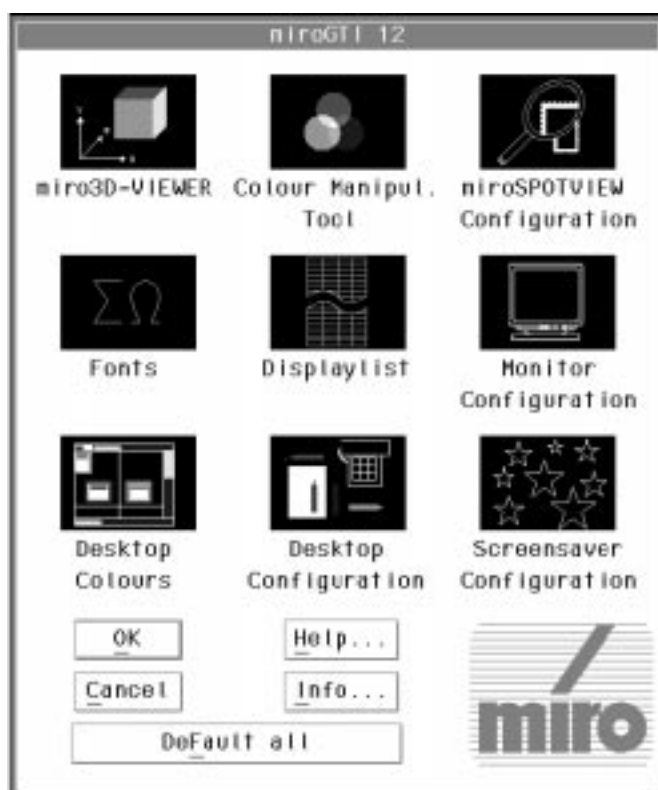
After the configuration the AutoCAD screen menu appears. The menu is complemented by some additional miroGTI 12 VGA functions. Among others the miroGTI 12 VGA main menu can be called up there (not for AutoCAD 11) giving you access to all driver features. miroGTI 12 VGA, installed with a default configuration, can be configured individually to your liking. AutoCAD 11 is configured after the video configuration in the miroGTI 12 VGA dialog.

miroGTI 12 VGA main menu

Calling the main menu

You can call the driver's main menu in different ways:

1. by clicking *miroGTI* in the AutoCAD/miroGTI 12 VGA screen menu,
2. by simultaneously pressing the <CTRL> and <L> keys,
3. by typing the commands **ami_gti**, **ami_local** or **ami_menu**.



miroGTI 12 VGA main menu

The miroGTI 12 VGA main menu allows to

- call the miro tool miro3D-VIEWER (see «miro3D-VIEWER»),
- call the Color Manipulation Tool (see «Color Manipulation Tool»),
- configure the driver as you desire (see «Additional configuration»).

Dialog boxes

The miroGTI 12 VGA is configured with the help of dialog boxes. Concerning the design and functionality these boxes correspond to the AutoCAD dialog boxes. Each dialog box offers a context-sensitive help feature, displaying the information you need on the screen.

The settings done in the miroGTI 12 VGA main menu take effect without system restart.

miro3D-VIEWER



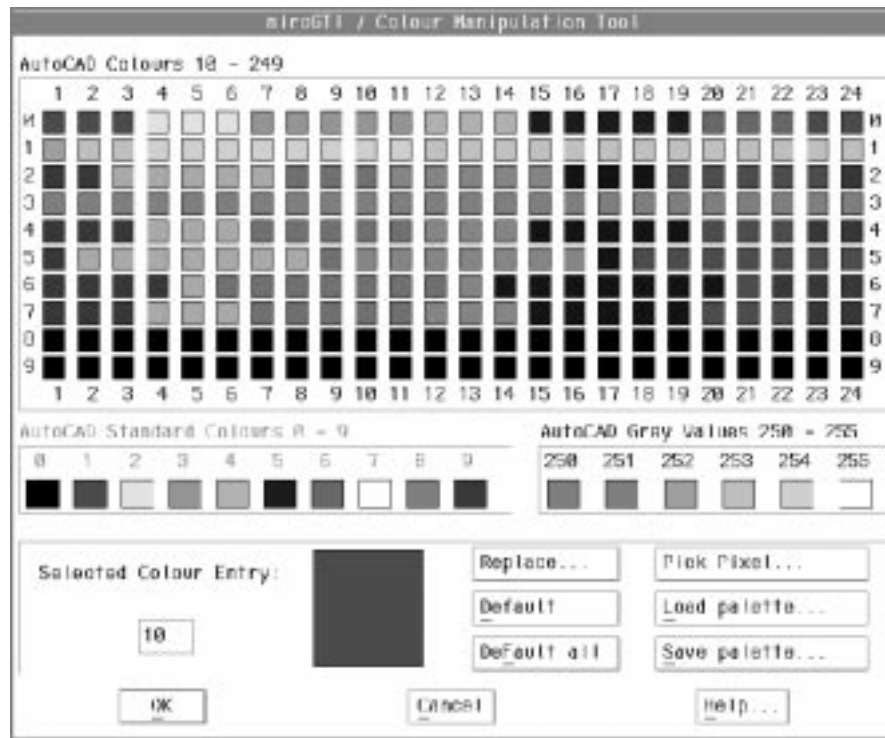
Here the miro3D-VIEWER is called (only if the miro•cad package has been installed). The miro3D-VIEWER is described in detail in the miro•cad Software Manual.

Color Manipulation Tool



The *Color Manipulation Tool* lets you mix up to 246 colors (256 minus 10 AutoCAD colors) out of a palette of 16.7 mill. to your liking. The new colors can be saved in a file. That can be very helpful if you want the colors of a rendered graphics to be displayed as true to the original as possible.

Having called the tool by clicking the icon in the miroGTI 12 VGA main menu a matrix with the colors to be changed appears.



miroGTI 12 VGA: Color manipulation tool

Color palette

If you are working with the *Color Manipulation Tool* for the first time, the color palette contains the AutoCAD default colors, each of which is provided with an index (from 0 to 255). You may change the mixture of each color index.

Defining a new color palette

The AutoCAD colors 0 to 9 are fixed colors and cannot be changed therefore; the rest may be replaced by different ones.

Changing the color

You can select the color you want to replace by clicking the suitable color square in the matrix or by directly entering the color index in the text field *Selected Color Entry*. In the bottom part of the main menu you will see the selected color in a window.

The *Color* button in the *Replace* dialog box offers the possibility to roughly adjust the color. Then, you can finely adjust the color by blending the new color using a palette of 16.7 million colors. The fine adjustment is based on either of two color models:

1. the RGB color model (**R**ed, **G**reen, **B**lue)
2. the HLS color model (**H**ue, **L**ightness, **S**aturation)

RGB color model

You can modify the portions of the primary colors Red (**R**), Green (**G**) and Blue (**B**) using the scroll bars. With the color window you can check the effect on the color.

HLS color model

The HLS color system is based on the model of a double cone. On the surface of the cone there are all displayable colors (**H**ue) with a Saturation (**S**) of 100 %. When you move towards the axis of the cone the color portion decreases until there is only a gray shade left. If the height within the cone is modified, also the lightness (**L**) of the color changes.

Using the hue scroll bar (**H**) you move around the circle of the cone defined by the saturation (**S**) and move through the whole color spectrum. The color you start with (0°) is identical with the color you end up with (360°). The primary colors are located at the following angles:

red = 0°, yellow = 60°, green = 120°, cyan = 180°, blue = 240°, magenta = 300°.

Using the scroll bar for lightness (**L**) you move linearly from the lowest lightness portion (0) – that is the color black – to the highest brightness portion (1.0) that is the color white.

Using the scroll bar for saturation (**S**) you move linearly from the lowest color saturation (0) to the highest color saturation (1.0).

Pick pixel

This option makes an electronic pipette available that allows you to determine the color of an object. The color appears in the window to the right of the text panel *Selected color*. Now you can edit the color as explained in *Editing a Color*.

Do this:

- Open the miroGTI 12 VGA main menu and click the *Color Manipulation Tool* icon.
- Choose the command *Pick pixel ...*

Now you have returned to the Drawing Editor; the cursor has the shape of a small square.

- Move the cursor to the color you want to pick and press the left key button once.

Then, you go back to the *Color Manipulation Tool*. The color you chose appears in the preview box.

With objects such as lines that are only a few pixels wide you might have to try more than once to pick the color you want. Try a FASTZOOM first, then pick the color.

Change the color as explained under «Changing the color».



Creating a new CLUT file

Any color changes you make will affect all areas of a drawing for which you selected that color. Do not change the standard palette. Instead, save changes as a new palette under *Save Palette*.

You can save the modified colors in a separate color table in a CLUT file using *Save Palette* and load them at any time using the *Load Palette* dialog box.

Additional configuration



The miroGTI 12 VGA main menu allows you to configure the driver after your liking.

miroSPOTVIEW configuration



This option allows you to change the size, position and the zoom factor of miroSPOTVIEW in a dialog box. After starting AutoCAD, the position of miroSPOTVIEW is set by using the sliders for the x- and the y-coordinates. Alternatively, you can enter the x- and the y-coordinate in the respective text box. The miroSPOTVIEW size is determined by using the size slider or entering a value in the *Size* text box. The zoom factor is specified by using the respective slider or by entering the value in the *Factor* text box. The zoom factor is independent of the size of the miroSPOTVIEW window and can be set to values between 1 and 100.

Fonts



Selecting this option lets you choose a different screen font for the text on the entire AutoCAD screen. A list of available screen fonts is displayed. The number in the text box *Codepage* specifies the codepage which AutoCAD currently uses.

A codepage is a defined alphanumeric character set. Under MS DOS a codepage is used for installing country-specific character sets. The name of the current and the new font is shown in the dialog box as well. During the installation the available fonts have been copied to the directory with the system files. Using the miro font compiler makes it possible to choose Windows TrueType fonts and create the corresponding fonts for your graphics board.

Displaylist

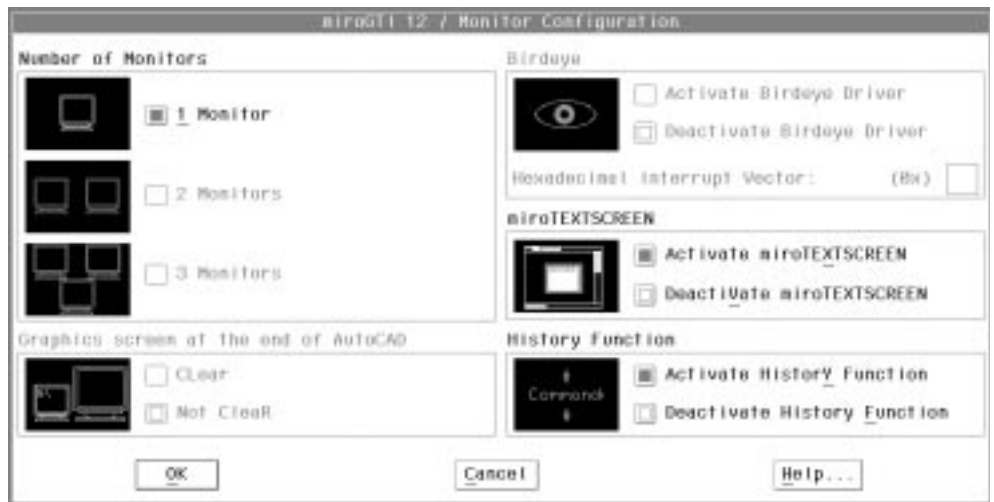


The displaylist functions of miroGTI 12 VGA can be enabled or disabled. If you have deactivated the displaylist functions, the driver behaves like a normal ADI driver.

Monitor configuration



After having selected this icon the following dialog box appears:



Monitor Configuration menu



Not all miro graphics boards can utilize the complete range of miroGTI 12 VGA functions. The functions which are not supported are dimmed and cannot be selected.

miroTEXTSCREEN (only for single-screen configuration or dual-screen configuration with enabled Birdeye)

Activates/deactivates *miroTEXTSCREEN*. When activating *miroTEXTSCREEN* command outputs appear on the *miroTEXTSCREEN* which usually appear on the AutoCAD textscreen. The *miroTEXTSCREEN* window can be moved on the screen. If the window contains more than 25 lines the window contents can be scrolled. By pressing any key, you go to the last line.



The DOS text does not appear on the *miroTEXTSCREEN* but on the AutoCAD screen.

History Function

Activates/deactivates the history function. The history function records all commands that have been entered.

When the function is activated you can scroll ten lines upwards/downwards and search for certain commands. The commands found can then be carried out. The hotkeys for these commands can be selected in the *Desktop Configuration* dialog box (select *Desktop Configuration* in the miroGTI 12 VGA main menu and select *Hotkey Configuration* under *Hotkey*).

Examples

You want to find all commands beginning with **re**.

- Enter **re**.
- Press <CTRL> and the left arrow key (or the hotkey) to find all commands entered beginning with **re**.



If you look for commands after a found command, press the <CTRL> and the right arrow key (or the hotkey).

- If you want to carry out a command you found, press <CTRL> and <END>, if you want to delete it press <CTRL> and (or the hotkeys).

Desktop colors

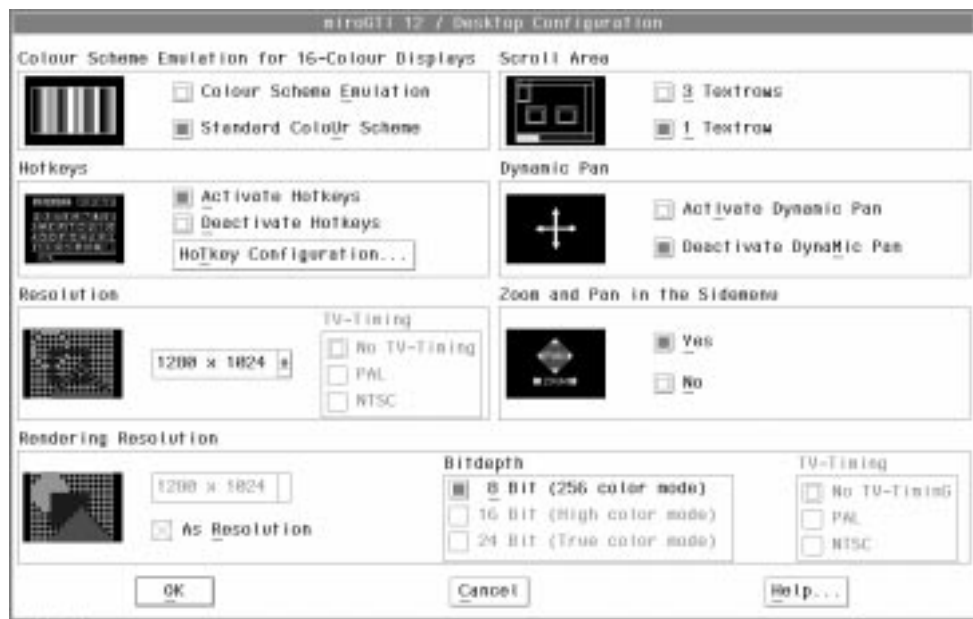


This item allows you to choose colors for the AutoCAD screen area (graphics area, alert box, menu bar, cursor etc.) after your liking. The configurable screen elements which can take on a different color are shown in a graph.

Desktop configuration



This dialog box allows to configure your AutoCAD 12 screen, for example the color scheme emulation, use of the hotkeys, resolution, etc. miroGTI 12 VGA allows you to make these changes without having to leave AutoCAD 12 or the drawing editor.



miroGTI 12: Desktop configuration



Color Scheme Emulation for 16-Colour Displays

Selecting *Color Scheme Emulation* lets the colors from 0 to 15 look the same way as with a 16-colors driver.



Scroll Area

This option lets you extend the scrolling area to 3 lines (normally 1 line).



Hotkeys:

Here you can activate/deactivate the hotkeys for the miroGTI 12 VGA functions. Click the *Hotkey Configuration* button to go to the dialog box which configures the hotkeys.

The *Hotkey Configuration* dialog box lets you configure the hotkeys for miroSPOTVIEW, Zoom-/Zoom+, Fastzoom and the History Function (*Line up/down, 10 Lines up/down, History up/down, Delete command/Send command*).

To select a hotkey, proceed as follows:

- Select the function you want to choose a hotkey for e.g. miroSPOTVIEW.
- Click on *Assign Hotkey*.
- Select the desired keys. First select *Normal*, *Shift*, *Ctrl* or *Alt* and then select the desired key from the list box.

Default lets you select the default hotkey for a special function. *Default all* selects the default hotkeys for all functions. Some key combinations are not available because AutoCAD already uses them.



Dynamic Pan

If you want to use the real-time pan function (Dynamic Pan) of miro-QUICKVIEW you have to activate the function here.



Resolution

Use this option to change the resolution, if do not want to use the default.



Zoom und Pan in the Sidemenu

If you want to use applications which take up much space in the AutoCAD screen menu, you can turn off the zoom and pan menu here.



Rendering Resolution

With the miroGTI 12 VGA you can select an individual rendering resolution. In the *Desktop Configuration* the listbox shows the current rendering resolution. If there are multiple entries you can select the resolution you want or enter one via the keyboard.



You can only do this if the *As Resolution* switch is Off.

Activate the switch *As Resolution* if you want to accept the listed resolution and if your graphics system supports this resolution. If you want to use another resolution, deactivate the check box. You can also use the 640 x 480 and the 768 x 576 resolutions in the PAL TV timing. For the 768 x 576 resolution also the NTSC timing is available for some graphics boards.

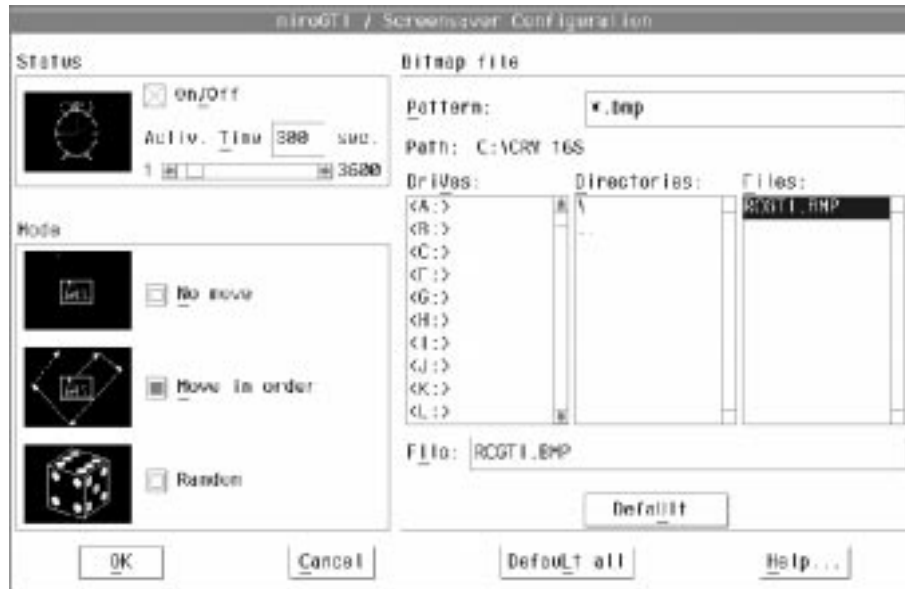
The *Bit depth* buttons for 8, 16 and 24 bits, allow you to set the bit depth of the current rendering resolution, provided the switches are enabled.

If the *As Resolution* check box is enabled, this button is switched off at bit depths higher than 8 bits and the *Rendering Resolution* listbox is enabled.

Screensaver configuration



In the dialog box you can select the following options:



miroGTI 12 VGA: Screensaver configuration

- Length of pause until Screensaver is activated,
- Operating mode: *No move*, *Move in order* and *Random*,
- Selection of a Bitmap in the Windows .BMP format.

The screensaver is only active when the display list is set to *ON* in the *Configuration* menu.

The *Default* button selects the RCGTI.BMP default bitmap. *Default all* sets the screensaver to its default configuration (Status: ON/Activ. Time: 300 sec./Mode: Move/ RCGTI.BMP).

Default configuration

The *Default all* button resets the values to the defaults. These are:

Displaylist:	activated
Number of monitors:	one
Birdeye:	deactivated
Color scheme emulation:	deactivated
Scroll area:	one line
Zoom and Pan in side menu:	activated
Hotkeys:	activated (default configuration)

Dynamic Pan:	deactivated
Rendering Resolution:	<i>As Resolution</i>



In case you want to replace miroGTI 12 VGA by a newer driver version, this has to be configured again.

Using miroGTI 12 VGA

Overview

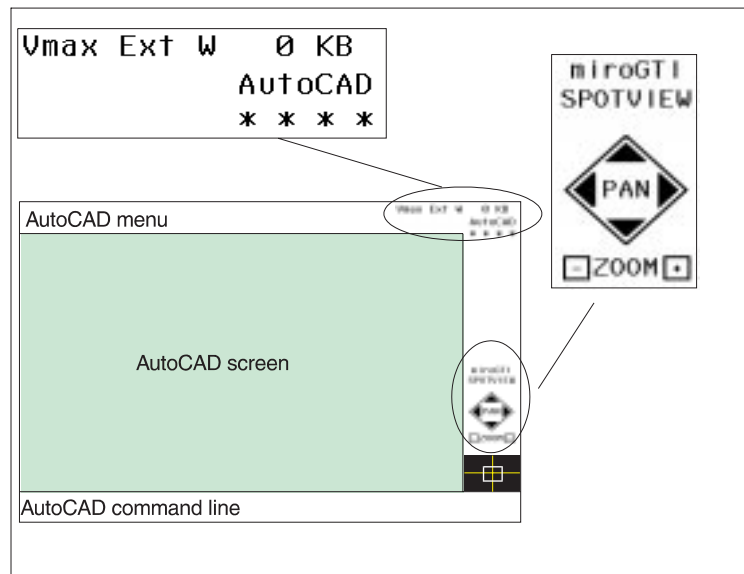
The miroGTI12 driver offers additional functions increasing the efficiency when working with AutoCAD:

- miroSPOTVIEW is a function which enlarges the area where the cursor is located in a split second and avoids having to perform a time-consuming zoom;
- FASTZOOM allows you to edit zoomed drawing details;
- miroQUICKVIEW: due to the implementation of two display buffers (Double Buffering) miroQUICKVIEW makes absolutely flicker-free zooming and panning possible.

In addition to the functions mentioned above, miroGTI 12 VGA offers an accelerated delete mode. All deleted vectors are marked in the displaylist as deleted, the driver automatically searches through the displaylist looking for deleted vectors and decreases it in size. The memory which is now no longer occupied is released. Thus, the displaylist remains relatively compact and occupies less memory. Deleted elements no longer flash during regens.

AutoCAD/miroGTI 12 VGA screen menu

After you have started the program the AutoCAD screen you are used to will have some additional functions.



AutoCAD/miroGTI 12 VGA screen menu

The menu items miroGTI 12 VGA offers allow you to control the program and to check its status. In addition to the current color you can check the display-list size as well as the size and position of the current detail on the screen.

Status check

Displaylist size indicator

In the upper right-hand corner of the screen you see the *displaylist size indicator* which tells you how much amount of memory is occupied by the displaylist.

Display of the current detail

In the bottom part of the screen you will see either the miro logo or the size and position of the current detail. In this case a white frame states the greatest expansion of the current display list. A crosshair shows the middle, a white rectangle the size of the current viewport.

The miro logo is shown instead of the current detail if the displaylist ZOOM factor equals 1. The same holds true when you are dealing with a so-called non-zoomable viewport. This special marker is only assigned by AutoCAD 11/12, for example for presentations in perspective.



Function control

Vmax

The zoom command *Vmax* corresponds to the AutoCAD 12 command **Zoom Vmax** (Zoom to Virtual Screen Maximum). This command lets you zoom out as far as possible on the current viewport's virtual screen without regenerating your drawing completely.

Ext

The zoom command *Ext* corresponds to the AutoCAD 12 command **Zoom Extents**. In opposition to the *Vmax* command which displays the whole drawing area even if only a small portion of it has any entities the command *Ext* uses only the drawing extents and not the limits. In this way, the largest possible section including all entities can be displayed on the screen.

The feature **miroQUICKVIEW** (Double-Buffering/ management of two display buffers) enables a *Zoom Extents* redraw in zero seconds without flicker. This redraw without any delay is possible if the image is stored in the second display buffer, that is the first zoom operation is carried out at a normal speed. A 10-pixel-wide edge will remain between the drawing and the window frame.

W

The zoom command **W** is analog to the AutoCAD command **Zoom Window**. You can specify the area you want to be displayed enlarged in a bird's eye window.

After activating the command, you will see a birdeye window in the upper right half of the screen (when entering the command as the text command **ami_zoomw** the bird's eye window appears where the cursor is). Move the cursor to the desired position on the drawing. Mark a corner point of the window by pressing the pick button; instead of the crosshair cursor you will now see a zoom box. The size of the zoom box is modified by moving out of the center of the box. Draw the zoom box so that it has the desired size and mark the second corner point by clicking the pick button again: you will see the zoom area in the specified size. You can abort the zoom function with the key combination **<CTRL>** and **<L>**.

In the Birdeye window the four zoom details selected last are saved and marked with a white frame. If you want to activate a detail selected before again, click with the right mouse key into the corresponding white frame and this detail is shown.

You can also activate the **ZOOM W** command by clicking onto the **miro** logo in the *AutoCAD/miroGTI screen menu*.



If the cursor is located in the status line of the *AutoCAD/miroGTI 12 VGA screen menu*, you cannot enter AutoCAD commands.

miroGTI

By clicking this menu item you switch to the *main menu*.

Pan

When you point the cursor to the arrow symbols and press the pick button the detail is moved 1/3 in the direction of the arrow.

Zoom-

When you point the cursor to the **(-)** symbol and press the *pick* button, the driver goes to the next lower zoom level. To get the new zoom factor, the old zoom factor is multiplied by 0.7. The reference point for decreasing is the center of the drawing.

Zoom+

When you point the cursor to the **(+)** symbol and press the pick button, the driver goes to the next higher zoom level. To get the new zoom factor, the old zoom factor is multiplied by 1.4. The reference point for increasing is the center of the drawing.



miroGTI 12 VGA commands

There are different ways to control miroGTI 12 VGA: selecting the commands directly from the AutoCAD/miroGTI 12 VGA screen menu, using the hotkeys, or entering the commands over the keyboard. The following table lists the keyboard commands.

Keyboard commands

The functions marked with (*) can be used with AutoLISP programs.

Put an apostrophy in front of some miroGTI 12 VGA functions to use them in the so-called transparent mode. That is they can be used even if another AutoCAD command is in progress.

The following table lists the keyboard command and their equivalents:

Keyboard command	Equivalent to ...	Description
ami_clean oder ami_clean_list	-	Displaylist is compressed
ami_gti or ami_local ami_menu (*)	<CTRL> + <L> keys AutoCAD side menu: miroGTI	Opens miroGTI 12 main menu
ami_down; ami_up; ami_right; ami_left	AutoCAD-Screen menu: PAN	Pan down; Pan up; Pan to the right; Pan to the left
ami_in	ZOOM+ in AutoCAD side menu	Zoom with next higher zoom level around the drawing's center
ami_out	ZOOM- in AutoCAD side menu	Zoom with next lower zoom level around the drawing's center
ami_draw (*)	AutoCAD: 'REDRAW	Regeneration of the screen (only current viewport)
ami_zoom<factor>	AutoCAD: 'ZOOM number	Zoom with certain zoomfactor; examples: ami_zoom1, ami_zoom3, ami_zoom15
ami_zoomext	AutoCAD: 'ZOOM extents; AutoCAD status line: Ext	Zoom onto the drawing extents (without REGEN)
ami_zoomvmax	AutoCAD: 'ZOOM Vmax AutoCAD status line: Vmax	Zoom into the virtual screen (only current viewport; without REGEN)
ami_zoomw	AutoCAD: 'ZOOM window; AutoCAD status line: W	Area of the drawing to be zoomed (overview at cursor position) is specified
ami_spoton (*)	-	Starting miroSPOTVIEW
ami_spotoff (*)	-	Quitting miroSPOTVIEW
ami_birdclean (*)	-	Redraw on second monitor (miroMULTIVIEW)
ami_panon (*)	miroGTI 12 main menu/ Desktop Configuration Dynamic Pan	Activating Dynamic Pan
ami_panoff (*)	miroGTI 12 main menu/ Desktop Configuration Dynamic Pan	Deactivating Dynamic Pan
ami_fastzoom (*)	<CTRL> +<F1>	Switching FASTZOOM on/off
ami_miro3d	miroGTI 12 main menu/ miro3D-VIEWER	Switches miro3D-VIEWER on (optional)
ami_hoton	miroGTI 12 main menu/ Desktop Configuration Hotkey	Switches on hotkeys
ami_hotoff	miroGTI 12 main menu/ Desktop Configuration Hotkey	Switches off hotkeys

miroSPOTVIEW

miroSPOTVIEW allows to enlarge a part of a drawing without having to call the ZOOM command. After starting miroSPOTVIEW the miroSPOTVIEW window (a dialog box with a crosshair) appears at the position specified during the configuration. In addition to the position, the window size and the zoom factor to be used for enlarging a part of a drawing can be specified via the miroGTI 12 VGA main menu.

Turning on/off

You can turn miroSPOTVIEW on/off in three different ways (using the <F2> key is only possible when it has been enabled during the configuration):

- use the miroGTI 12 VGA screen menu,
- use the defined hotkey (default <F2>)
- use the **amispot_on** (on) or **amispot_off** (off) keyboard commands.



If *FASTZOOM* is enabled, you cannot call up miroSPOTVIEW via the AutoCAD/miroGTI 12 VGA screen menu, instead press the hotkey.

Moving miroSPOTVIEW

To move the miroSPOTVIEW window click the title bar of the miroSPOTVIEW window with your pointing device and while holding the pick button down move it towards the part of the drawing to zoom. Each time AutoCAD loads the miroSPOTVIEW window will appear at the default position specified during the configuration.

Changing the zoom factor

When the cursor is located in the miroSPOTVIEW window, you can use the following keys:

<F3> key	Zoom factor decreases: to get the new zoom factor the old zoom factor is multiplied by 0.7
<F4> key	Zoom factor increases: to get the new zoom factor the old zoom factor is multiplied by 1.4

Be sure to distinguish between the relative Zoom (the zoom factor is dependent on the current viewport) and the absolute Zoom (the zoom factor is dependent on view of the whole drawing = V_{max}). When zooming within the miroSPOTVIEW window the zoom factor always depends on the current viewport.



If you make the miroSPOTVIEW window bigger than the default size it has when starting AutoCAD 12, the zoom factor of the relative zoom appears to the right of the windows title (from 1.x to 100).

Selecting/pasting/deleting

miroSPOTVIEW is not active for a short while while selecting, pasting, and deleting objects.

FASTZOOM

With FASTZOOM you can work on a small segment of your drawing and still use all AutoCAD 12 functions.



You need a three-button device (e.g. a mouse) to use FASTZOOM, because the middle button activates FASTZOOM.

- Activate FASTZOOM by pressing <CTRL> and <F1>.

This combination has a toggle function, that is you can turn FASTZOOM on and off. When FASTZOOM is on, the SPOTVIEW display in the *AutoCAD/miroGTI screen menu* changes to FASTZOOM.

- Move the cursor to the middle of the segment you want to maximize.
- Press the middle mouse button once to determine the center of the segment you want to maximize. Now, use the mouse to open the square until the area is marked (the square will be shown as an *AutoCAD box* with crossing lines).
- Click the left mouse button once to confirm your selection.

Now you can make the changes you want; all AutoCAD functions are available.

- After you have made all your changes, return to the original position by clicking the center button a second time.



FASTZOOM remains on until you press <STRG> and <F1> again.

miroQUICKVIEW

miroQUICKVIEW makes panning and zooming possible without any flicker. The prerequisite for miroQUICKVIEW is the so-called Double Buffering feature, which means that the video memory consists of two display buffers. The current drawing is stored in both buffers, thus existing in duplicate. During zooming and panning in the buffer which is currently not active (not visible) the next image is redrawn. miroQUICKVIEW switches between both buffers practically without any delay. Thus, zooming and panning is performed without any flicker. To use the functions of miroQUICKVIEW, the function keys (hotkeys) have to have been activated during the configuration.



Zooming with miroQUICKVIEW

The miroQUICKVIEW zoom is operated using the function keys <F3> and <F4>. By pressing <F3> and moving the mouse you can zoom out of the drawing and no flicker occurs. By pressing <F4> and moving the mouse, you can zoom into the drawing. The miroQUICKVIEW zoom is turned off by pressing the keys <F3> or <F4> or by clicking the mouse.

Panning with miroQUICKVIEW

To pan with miroQUICKVIEW, the real time pan function (Dynamic pan) must be enabled. Move the crosshair cursor to the sensitive marginal area of the viewport. After you are in this sensitive area for nearly one second the crosshair cursor becomes a compass cursor for a short while. The compass cursor tells you that you can now start to pan by pressing the pick button or by moving out of the sensitive area. If the cursor position is on the right edge, the drawing is moved to the left. If the cursor position is on the upper edge, the drawing will move down etc. After one second the compass cursor becomes a crosshair cursor again, and you can work in the sensitive area as usual. If you want to abort panning, press the pick button. If you want to pan once more, first move the cursor out of the sensitive area, then into it, and proceed as is described.

miroGTI 12 VGA: Error messages

If one of the following error messages appears on your screen, use this list to find the probable cause and correct the problem.

AutoCAD can't zoom or pan now

- Probable causes:
 - a) During an AutoCAD command which does not permit ZOOM and PAN you tried to zoom or move the detail.
 - b) You tried to zoom a viewport AutoCAD 12 had declared non-zoomable.

- Correction: none

Event queue overflow

- Cause: Internal driver error
- Correction: None

Birdeye Driver wrong or not found, birdeye will not be shown!

- Cause: Error during the installation.
- Correction: Reinstall the Birdeye driver, make sure the value of the Birdeye driver interrupt vector corresponds to the one asked for during the configuration.

Hardware not found, defect or not initialized

- Cause: defective graphics board, bus conflict or graphics board not initialized.

- Correction: Check if the program OCTOINI.EXE is called in the AUTO-EXEC.BAT file. Try to display a test picture on the monitor by executing the program TESTPIC.EXE. If this should fail, contact your dealer.

Videomode has changed – please end AutoCAD immediately

- Cause: During AutoCAD Shell the videomode of the miro graphics board was changed.
- Correction: None. Save your work immediately and leave AutoCAD.



Appendix

Glossary

This glossary contains the most important concepts from the field of computer hardware. Cross-references are marked by this symbol .

Address	All memory positions in a computer have numbers (addresses). Through these addresses each memory position can be addressed directly. Some addresses are reserved for certain  hardware components and must not be used. If two hardware components use the same address, there is a address conflict.
ANSI	American National Standards Institute. ANSI character set ( Font): used by Microsoft Windows and Windows applications. The character assignation only differs slightly from the assignation of the  ASCII character set.
ASCII	American Standards Committee of Information Interchange. ASCII character set ( Font): standard character set used by IBM and compatible computers. The ASCII character set consists of 256 characters, the first 128 of which are standardized.
AUTO-EXEC.BAT	A special DOS  batch file which is processed automatically after the computer has been started. The file contains among other things commands which load the country-specific keyboard driver ( Driver), set the time or load programs automatically.
Batch file	A  DOS file where a sequence of commands is processed one after the other.
BIOS	Basic Input Output System. Number of basic input and output commands stored in a  ROM, PROM or EPROM. The  operating system uses these commands. The basic task of the BIOS is to control the data input and output. After starting the system the ROM BIOS performs some tests (checking the  interfaces, the disk drives, etc.).
Bit	Binary Digit. Smallest information unit in a computer. One bit can take on two states: «0» and «1», two bits can take on $2^2=4$ states and three bits $2^3=8$, etc. In a computer those states are realized by «0 V» (no current = 0) and «5 V» (current = 1). To display a character (letter, number etc.), 8 bits = 1  byte are required.
Bus	In a computer, busses provide for the communication between the  processor and the installed hardware (hard disk, graphics board, etc.). Depending on the bus width, the bus transfers a different amount of information. An 8-bit bus can transfer 8  bits (=  byte = one character) at a time.



Byte	One byte consists of eight  bits. One byte represents exactly one character (letter, number etc.). The characters are binary-coded with «zero» (0) and «one» (1). The character «E» has the  ASCII code «01000101» or «45h» (hexadecimal).
CGA	C olor G raphics A dapter (IBM). Graphics board which displays four colors in the graphics mode.
Clock frequency	Rate at which individual commands are processed in a processor. The higher the  clock frequency, the quicker the commands are processed.
CLUT	C olor L ook U p T able. Color table which contains all indexed color values.
Color depth	Number of  bits used to represent the color information for each  pixel. At a black and white display 1 bit color depth displays $2^1=2$ colors. At a color depth of 8 bits $2^8=256$ colors are available and at 24 bits $2^{24}=16,277,216$ ( TrueColor) colors are available.
CONFIG.SYS	A  DOS configuration file which is processed automatically when the system starts. The CONFIG.SYS file includes  drivers which control the output to the monitor and the keyboard and the mouse.
DIP switch	D ual I ndependent P ackage switch. A row of small switches designed to make certain hardware presettings.
DOS	D isk O perating S ystem. The most common  operating system for PCs (P ersonal C omputer). MS DOS is the M icrosoft version of DOS.
Driver	Programs which integrate the hardware (e.g. driver for a CD-ROM drive) in the computer and which adapt the software to the hardware (e.g. driver for a graphical user interface, such as Microsoft Windows). The software then uses the features of the graphics board.
EGA	E nhanced G raphics A dapter (IBM), graphics board which displays 16 colors in the graphics mode.
EISA bus	E xtended I ndustry S tandard A rchitecture. 32-bit bus: The EISA bus can transfer an amount of data of 33  MB per second at a  clock frequency of 8.33 MHz.
Fixed-frequency monitor	Monitor operating at a very small frequency range ( multifrequency monitor).
Font	Character set in a certain type, size and style, e.g. Times New Roman 11, normal; Times New Roman 11, italics; Times New Roman 11, bold; Times New Roman 11, bold, italics.
Graphics board	Graphics boards are the «link» between the computer and the monitor. Without a graphics board no image appears on the screen. Graphics boards operate in two modes: the text mode and the graphics mode. In the text mode only  ASCII characters are displayed. The ASCII character set includes some simple «graphical» characters to display simple graphics. The graphics mode uses individual  pixels. The more pixels are available (the higher the  resolution) the more detailed characters and graphics can be displayed.

Hardware	The hardware includes all computer components which are «hard», such as the monitor, the hard disk, the keyboard, the mouse and the printer.
HGC	H ercules G raphics C ard, monochrome (black and white) graphics board.
Horizontal scan rate	Number of horizontal scans of the electron beam per second required to create a new line. The higher the  resolution the higher the required horizontal scan rate.
Interface	Link between two parts of a system or between two systems where information, pulses and signals are adapted in a way that the receiving part can understand the sending part. For example, signals which the computer sends to the printer have to be adapted by an interface so that the printer «understands» what it has to print.
Interlaced	Image refreshing technique: the screen is subdivided into lines. When refreshing the image first all even lines and then all odd lines are refreshed.
ISA bus	I nternational S tandard A rchitecture. 16-bit bus which transfers 8  MB of data per second at a  clock frequency of 8 MHz.
Jumper	Jumpers can set up or interrupt electrical leads. To establish electrical leads with a jumper, the jumper has to be mounted, to interrupt the lead the jumper has to be removed.
KB	1 KB (Kilobyte) is equal to 1024  bytes. Here «K» (kilo) is always equal to «1024».
MB	1 MB (Megabyte) equals 1024  KB.
MDA	M onochrome D isplay A dapter. Monochrome (black and white) graphics board.
Multifrequency monitor	A multifrequency monitor adapts itself automatically to different frequencies supplied by the graphics board ( fixed-frequency monitor) and can display different  resolutions.
Operating system	The operating system provides for the communication between  hardware,  software and the user. The tasks of the operating system are among others the file and the program management.
Parallel interface	The parallel or Centronics  interface transfers data through an 8-bit data line. This means that 8  bits (1  byte) can be transferred at a time. The transfer through the parallel interface is considerably faster than the transfer through the  serial interface, over long distances the parallel data transfer is, however, more susceptible to interference. Parallel interfaces are designated by LPT and a number (e.g. LPT1).
PCI Local Bus	P eripheral C omponent I nterconnect. Local Bus concept by IBM: 32-bit bus, a PCI bus can transfer 132 MB per second at a  clock frequency of 33 MHz.
Pixel	Picture element. Pixels are the smallest elements of a monitor image ( resolution).
RAM	R andom A ccess M emory. An RAM is a read-write memory component from which data can be read and to which data can be written any time. The

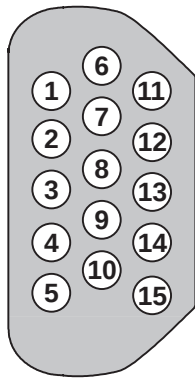
computer memory is equipped with RAM components. The memory is a so-called «volatile» memory meaning that the memory contents are removed as soon as the computer is switched off.

Refresh rate	Also vertical scan rate. Number of image refreshes per second measured in Hertz (Hz). The higher the vertical scan rate the less flicker.
Resolution	Number of  horizontal and vertical pixels. 1408 x 1024 means that 1408 horizontal pixels and 1024 vertical pixels are displayed on the monitor. The higher the resolution the more details the monitor can display.
ROM	Read Only Memory. A ROM is a memory component which can only be read but which cannot be modified. The ROM's contents remain in the component also after the computer has been switched off. All functions which have to be available immediately after switching the computer on, e.g. the data for the system test, the character output on the screen, etc. are stored in ROM components. There are also PROMs (P rogrammable R OM) EPROMs (Erasable P ROM) and EEPROMs (E lectric E PROM).
Serial interface	Also RS232. The serial interface transfers data through a data line bit by bit (all  bits of a  byte one after the other). The serial data transfer is considerably slower than the transfer through the  parallel interface but it is less susceptible to interference. Serial interfaces are designated by COM and a number (e.g. COM1).
Software	General term for all programs a computer can run (system programs, application programs,  drivers etc.) and files.
TrueColor	16.7 million colors can be displayed at a time ( color depth).
VESA	V ideo E lectronic S tandards A ssociation. Committee founded in 1988 in the USA which establishes common standards for the computer technology.
VESA Local Bus	Bus concept defined by the  VESA committee: 32-bit bus operating at a  clock frequency of up to 50 MHz. At a clock frequency of 33 MHz the VL bus transfers up to 132  MB per second.
VGA	V ideo G raphics A rray (IBM), graphics board which displays 256 colors in the graphics mode.

15-pin D-type video port

The miroCRYSTAL 20PV avi 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:



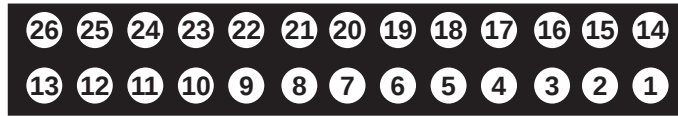
15-pin D-type connector

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

VESA Standard Feature Connector

The miroCRYSTAL 20PV avi 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 allocation of the VESA Standard Feature Connector has been adjusted for all miro PCI boards, so that these boards can be connected 1:1 to another graphics board via a flat ribbon cable.

miroCRYSTAL 20PV avi address range

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

- **I/O address range**

miroCRYSTAL 20PV avi occupies the address range of standard VGA **03B0h-03DFh** and the I/O address **046E8h**.

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

- **I/O addresses for the board's configuration range**

miroCRYSTAL occupies the addresses **9100h** and **9104h** for the configuration.

- **Additional VGA addresses**

In addition the following addresses are used:

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



FCC Compliance Statement

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.

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.

