miro 40PV video

User's Manual

GP

This miro manual is printed on chlorine-free paper.

miro 40PV video

User's Manual

miro 40PV video
User's Manual
Version 1.0/E. October 1994
VDOK-40PV-100

Contents

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.
- Avoid address conflicts!

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 miro 40PV video board in your computer.

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.*

1. Overview

What is miro 40PV video?

The powerful miro 40PV video graphics board has all capabilities regarding accelerated digital video playback.

miro 40PV video also allows to digitize, compress and edit single-frames and video sequences.

The Weitek VideoPower P9130 chip allows to display digitized video sequences in real-time. The video sequences are displayed in scaleable windows.

Where to use the board?

miro 40PV video digitizes video, that is it converts video into a computer-understandable format. miro 40PV video can be used in all areas where the PC processes digital video, for example:

- with Desktop Publishing
  miro 40PV video allows to digitize single-frames which then can be integrated in your publications using appropriate layout software.
- with Electronic Publishing
  with miro 40PV video you can easily create publications for CD-ROM disks integrating single-frames, digital video, and computer animations.
- when creating presentations
  miro 40PV video is the right tool to professionally digitize complete video sequences and to edit and integrate the video clips in presentations.

System components

The miro 40PV video features are the result of perfectly tuned hardware and software:

Hardware

The miro 40PV video **hardware** consists of:

– a high-performance graphics processor

– a high-performance video processor

Software

The miro 40PV video **software** consist of:

– Runtime version of Video for Windows 1.1d

– miro•win Highspeed Drivers for Windows

– miro 40PV video driver for Video for Windows
(AVI driver which allows to capture and play back video sequences and to digitize single-frames)

– miroWINTOOLS

– VideoStudio 2.0 (compatible with Video for Windows)

What does miro 40PV video offer?

Outstanding features of the miro 40PV video system are the video quality, the performance and the editing capabilities for digital video:

q **Video memory/resolution**
miro 40PV video has 4 MB of video memory and offers a maximum resolution of 1600 x 1280 pixels at 65.536 colors and 1280 x 1024 pixels at 16,7 million colors.

q **Graphics acceleration**
The board is based on state-of-the-art processor technology.
miro 40PV video is equipped with the P9100 high-performance graphics processor by Weitek and accelerates the graphics output considerably.

q **Multimedia acceleration**
For digital video applications the Weitek VideoPower P9130 video processor is integrated on the miro 40PV video board. This processor offers a digital overlay and an optimal playback: the processor scales video to any size up to 1600 x 1280 pixels — without jerky playback and frame losses. When enlarging video the pixels are not just multiplied but the additional pixels are calculated (interpolation), this technique achieves a very good image quality even at high resolutions.

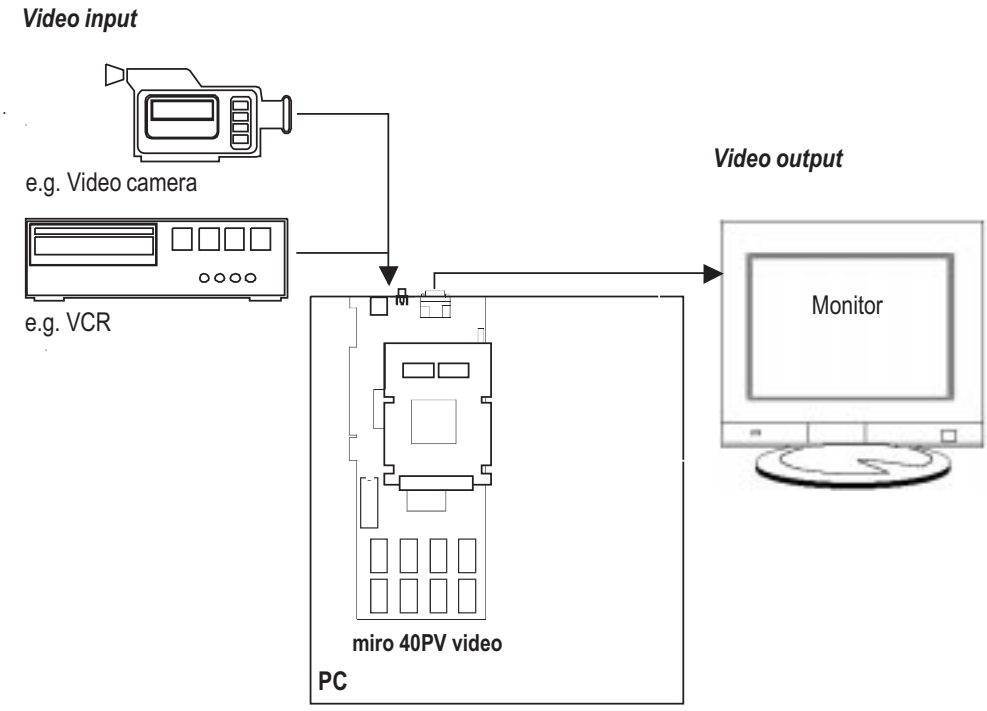
q **DCI**
Video for Windows 1.1d supports Microsofts brand-new DCI technology (**D**evice **C**ontrol **I**nterface). DCI allows the video software to directly

access the miro 40PV video hardware and to accelerate the image refresh considerably. The GDI (**G**raphics **D**evice **I**nterface) which was responsible for the image refresh up to this time is omitted.

q **Ergonomics**
When working with concentration with a publishing system, the publishing system has to meet high requirements with respect to ergonomics. miroMAGIC 40PV video offers a flicker-free display of up to 100 Hz. miroMAGIC 40PV video supports VESA Power Management.

q **Fast bus systems**
miro 40PV video is available for the **P**(eripheral) **C**(omponent) **I**(nterconnect) bus standard.

q **Video sources and video formats**
miro 40PV video connects to all current video sources (VCR, video camera, TV tuner, videodisk, still-video camera) generating composite video or S-video signals (e.g. VHS, S VHS, Hi8, Video 8). The boards support the NTSC, the PAL and the SECAM TV standards.



- **Optimal quality**
  Video is scanned with a wide color bandwidth at a ratio of 4:2:2, thus the color quality of S-video signals is maintained. Video is digitized at a maximum resolution which depends on the TV standard (for NTSC 640 x 480 pixels, for PAL or SECAM 768 x 576 pixels).

- **High performance**
  The performance of a video digitizing board depends on the frame size, the frame rate and the color depth. When built in in fast computers equipped with a fast hard disk miro 40PV video digitizes NTSC video at a resolution of 384 x 288 pixels with a frame rate of up to 30 frames per second with 16.7 million colors. Higher resolutions are possible at a lower frame rate.

- **True Color and real-time**
  Single-frames and video sequences are digitized at a color depth of 24 bits (16.7 million colors=True Color) in real-time.

- **Digital video editing**
  miro 40PV video offers all the possibilities of a digital video studio: digital video cutting, filters, overlap effects, integration of computer graphics and computer animations and morphing effects (using suitable software). miro 40PV video only uses one VCR for video editing where normally two or three VCRs are needed.

- **VideoStudio**
  The miro 40PV video package contents include VideoStudio. VideoStudio is an application which captures, edits and plays back digital video under Windows.

- **Filter**
  miro 40PV video offers a motion filter for still-video larger than 320 x 240 pixels (NTSC). This motion filter allows still-video to be played back without distortions and minimizes horizontal and vertical «staircase effects» in color transitions and moiré effects in real-time.

- **miro 40PV video and miroVIDEO DC1**
  In combination with miroVIDEO DC1, miro 40PV video offers an optimal solution for digitizing and editing single-frames and video sequences on the PC. miroVIDEO DC1 uses the miro 40PV videos digital overlay as preview function.

2. Before you start

System requirements

Before you install miro 40PV video, make sure that your system meets the following requirements:

Hardware

Computer
486 , Pentium PC or compatible computer with PCI Local Bus slot

Memory
at least 4 MB; sufficient hard disk capacity (at least 100 MB free)

Monitor
Standard VGA monitor.

To fully utilize the miro 40PV video features, miro recommends a high-resolution multifrequency monitor.

Please note: The system configuration described above gives the minimum requirements. If you plan to use your miro 40PV video system to generate video sequences, faster processors, larger hard disks and more memory increase the performance and the efficiency. The following example illustrates the amount of data to be processed: To digitize video in real-time with 25 frames per second and a resolution of 384 x 288 pixels, the resulting amount of data to be processed is 5.4 MB/s at a color depth of 16 bits.

Video source
You can connect any video source to miro 40PV video which generates a composite video or an S-video NTSC, PAL or SECAM signal, independently of the video system (e.g. VHS, S-VHS, Hi8, Video 8, still-video). To connect the miro 40PV video board to a video source, you need also a suitable cable (composite or S-video cable).

Audio:
If you wish to create video sequences with sound, your computer must be capable to record sound: for example it has to be equipped with a Windows-compatible sound board.

Software Windows 3.1 or later;
recommended: Windows for Workgroups 3.11 or later.

Existing VGA An existing VGA board in your computer has to be removed prior to the miro 40PV video installation, a motherboard VGA has to be disabled.

Package contents

Before installing the miro 40PV video system make sure that the miro 40PV video package is complete. It consists of:

- miro 40PV video*
- Disk set including
  - miro Windows drivers
  - miro 40PV video drivers for Video for Windows
  - miroWINTOOLS
- Runtime version Video for Windows 1.1d
- VideoStudio 2.0
- documentation.

If any parts are missing, please consult your dealer.

Computer components are sensitive to static charge. To avoid damage, leave the miro 40PV video board in its antistatic packaging until installation.

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

3. Installing miro 40PV video

Quick installation

When installing the hardware and the software please keep the following order:

U Insert miro 40PV video

U Connect video source(s)

< Install VideoStudio 2.0

< Install Video for Windows 1.1d

< Install Windows drivers, AVI drivers and miroWINTOOLS.

Please read the detailed instructions in the corresponding sections. For information on how to install an expansion board, please refer to your computer's documentation.

Inserting miro 40PV video

Proceed as follows:

- Switch off the computer and all peripheral devices. Pull out the power cord and disconnect all other cables.
- Loosen the screws of the computer's cover and remove the cover. Discharge yourself from electrostatic charge by touching the power supply.
- Select a free slot for miro 40PV video.

For PCI computers lead A of the slot has to be assigned an interrupt which you have to specify later during the configuration. To do so, you have to set a jumper in some cases, in other cases enter the interrupt in the BIOS setup of the computer. Please refer to your computer's manual.

- Remove the slot shield at the back of the computer. If necessary, remove the screws at the cover.
- Insert the board carefully in the slot. Hold the board at the top edge and push both ends simultaneously into the slot. Press the boards top edge to make sure that the board is seated in the slot firmly.

If the board cannot be inserted without problems, do not force the board into place. The contacts at the connector could bend. Instead, pull the board out carefully and try again.

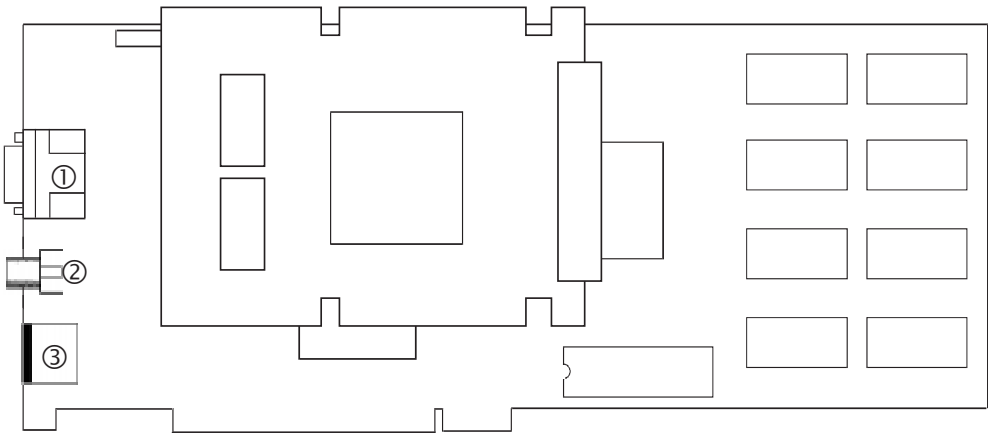
- Tighten the screws and reassemble the computer's casing. Reconnect the cables.

Connecting the video source

miro 40PV video has a composite video input and an S-video input enabling to connect twoe video sources in parallel. The software switches between the video inputs.

The composite video input is an RCA female connector, the S-Video input is a 4-pin Mini DIN female connector.

The following illustrations show the miro 40PV video video inputs:



① 15-pin video port
② Composite video input
③ S-Video input

- If it has an S-video output, connect your video source to the miro 40PV video S-video input using a suitable cable.
- Connect the video sources with a composite video output to the miro 40PV video composite video input.

Installing VideoStudio

VideoStudio and miro 40PV video allow to digitize, edit and play (from hard disk) single-frames and video sequences.

If you install VideoStudio after Video for Windows 1.1d, make sure to install VideoStudio without AVI Runtime system. Otherwise you overwrite the AVI drivers which have been already installed.

Installation

To install VideoStudio, proceed as follows:

- If you have not done so already, start Windows.

- Insert the installation disk in the disk drive.
- In the *Program Manager* select the *Run...* command from the *File* menu.
- Depending on your disk drive, enter **a:\setup**<↵> or **b:\setup**<↵>.
- Follow the instructions on the screen.

For further information on VideoStudio, refer to the VideoStudio User's Manual.

Installing Video for Windows

Video for Windows 1.1d supports the new Microsoft Windows DCI technology (**D**evice **C**ontrol **I**nterface). DCI allows the video software to directly access the miro 40PV video hardware and to accelerate the image refresh considerably. The GDI (**G**raphics **D**evice **I**nterface) which was responsible for the image refresh up to this time is omitted.

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.

To install Video for Windows, proceed as follows:

- If you have not done so already, start 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 on the screen.

For further information on Video for Windows, refer to the Video for Windows User's Manual.

Installing the miro software

The miro 40PV video package contents include Windows drivers, two drivers for capturing, compressing, decompressing and playing back video sequences (AVI drivers) and the miroWINTOOLS.

The Windows driver, the capture and playback driver and the miroWINTOOLS will be copied during the installation to the hard disk into the Windows or the Windows system directory.

AVI driver

If you have already installed another capture board than miroVIDEO DC1, the corresponding entry in the SYSTEM.INI file deactivates the old AVI driver.

In the SYSTEM.INI file in the [drivers] section the old entry msvideo1=<olddriver.drv> is replaced by the new entry e.g. msvideo1=mirocap.drv (msvideo1 is always the device number of the active capture driver, in this example it is the miro driver). The old capture driver gets a new device number, e.g. msvideo5=<olddriver.drv>. The installation program informs you about the new device number during the miro 40PV video configuration.

For information on how to use your old capture board, refer to chapter 4 »Using miroMAGIC 40PV video«.

Windows drivers

To install the miro Windows drivers, Windows has to be installed and configured for **VGA**. If necessary, configure Windows for VGA. To do so, call setup under DOS in the Windows directory or start the *Control Panel* under Windows and change the resolution.

miroWINTOOLS

For a detailed miroWINTOOLS description, refer to the corresponding chapters in this manual.

The miroWINTOOLS are located in the miroWINTOOLS program group.

If you only install the Windows drivers, only the miroMONITOR SELECT, the miroSUPERSCREEN and the miroTINT CONTROL tools are located in the miroWINTOOLS program group. They can always be started after the installation.

Installation

To install the software, proceed as follows:

- If you have not done so already, start Windows.
- Insert the miro•win Highspeed Drivers for Windows disk into the disk drive.
- In the *Program Manager* select the *File* menu item and the *Run...* command.
- Depending on your disk drive, enter **a:\install** or **b:\install** and click *OK*.

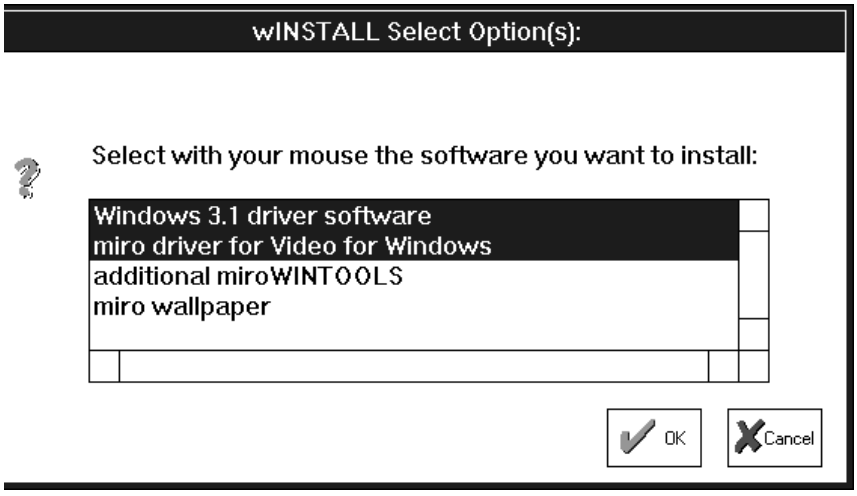
At the beginning of the installation program the *Language Selection* menu appears.

OK/Cancel Click *OK* to proceed with the installation program, click *Cancel* to close the program.

- Select your miro board to proceed with the installation, *Only uninstall all software* removes installed miro 40PV video software from the hard disk.

Software which has been installed already can only be deleted, if Windows has been configured for VGA. If necessary, quit the installation program to configure Windows.

- Select the items you want to install:
  - *Windows 3.1 driver software* and/or
  - *miroWINTOOLS* and/or
  - *miro Driver for Video for Windows* and/or
  - *miro wallpaper*.



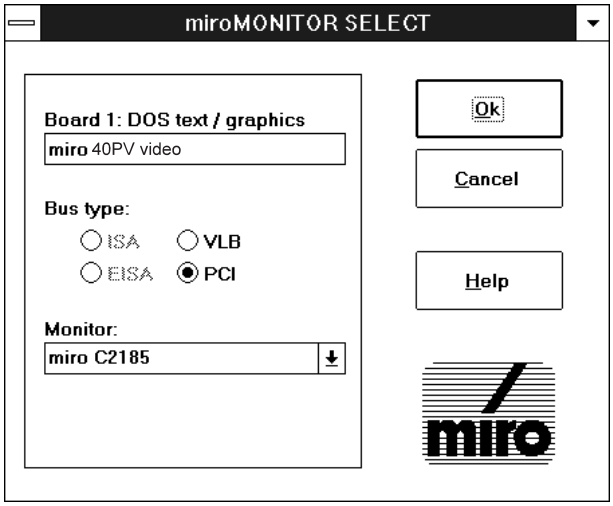
The driver and the tools are copied to the Windows system directory and to the directory you specified.

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.



- 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.

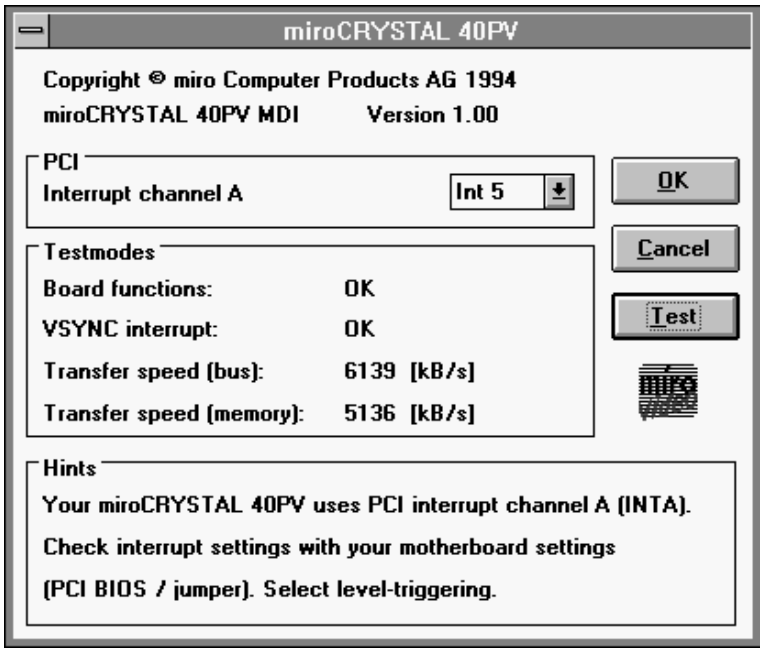
miroSUPERSCREEN

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 re-start Windows.

Configuring miro 40PV video

After having restarted Windows the miro 40PV video window automatically appears.



- Assign the interrupt number to channel A which you specified during the installation by setting the jumper on the motherboard or by modifying the BIOS setup.
- Configure the miro 40PV video capture driver by clicking *Test*.
  - *Board functions*
    miro 40PV video runs through an automatic self-test.
    If the error message «HW occupied» appears, an application currently uses the miro 40PV video capture driver. Close this application and start the configuration program again. To do so, open the *Driver* item from the Windows *Main Group* and the *Control Panel* and double-click the *miro 40PV video capture driver*.

– *VSYNC Interrupt*
The configuration program returns «OK», if a correct interrupt number has been specified. If this is not the case, the correct interrupt number has to be set with the jumper on the motherboard or entered in the BIOS setup.
– *Transfer speed (bus)*
The data transfer rate of the bus is measured in KB/s.
– *Transfer speed (memory)*
The rate at which data is transferred through the bus and at which data is written to the memory is measured in KB/s.

- Click *OK* to close the configuration window.

If no miroVIDEO DC1 board has been installed, the installation is now complete (for miroVIDEO DC1 the miroVIDEO DC1 Hardware Setup window appears).

Result of the installation

Now, the installation is complete. As a result the MDI.DLL, MIROCAP.DRV and MIROVIXL.DRV files have been copied to the Windows system directory (default: C:\WINDOWS\SYSTEM). The SYSTEM.INI file and the CONTROL.INI file have been supplemented (if necessary, a new device number has been allocated to an already present video capture device in the SYSTEM.INI file).

The miroWINTOOLS have been installed in the miroWINTOOLS program group. 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.

Restarting the configuration program

To start the configuration program later, open the *Control Panel* in the Windows *Main Group*, open *Drivers* and double-click the *miro 40PV video capture driver*.

4. Using miro 40PV video

After the miro 40PV video installation you can capture or capture and compress single-frames or video sequences in the miroVIDEO-XL format using the *VideoCapture* application from *VideoStudio*.

miro 40PV video allows to compress video sequences with an image size of 384 x 288 pixels, a frame rate of 25 fps and a color depth of 24 bits to a data rate of 625 KB/s. In this way, hard disks with a write speed from 1 MB/s under Windows can capture video sequences without dropping frames. Standard hard disks can capture smaller formats without dropping frames.

The digitized video sequences can be played back afterwards in real-time at a size of up to 1600 x 1280 (scaleable) in True Color. You achieve the best results with video sequences saved in the miroVIDEO-XL format.

Digitizing with an already installed capture board

Installing miroMAGIC 40PV video deactivated the capture driver (except for miroVIDEO DC1) which has already been installed. If you want to digitize video sequences with your old capture board, call the capture program (VidCap or Video Capture) with the **-d device number** parameter .
If the entry in the SYSTEM.INI file is msvideo**5**=<olddriver.drv>, start the program with the **-d5** parameter.

To specify the parameter, mark the icon of the capture program in the corresponding program group, select the *File* menu and the *Properties* command and enter **-d device number** after the the program call.

Examples

To facilitate working with miro 40PV video, two examples are given which describe how to capture a single-frame and a video sequence. The details are given in the following. For a detailed description of the VideoStudio functions, refer to the VideoStudio manual.

Capturing single-frames in brief

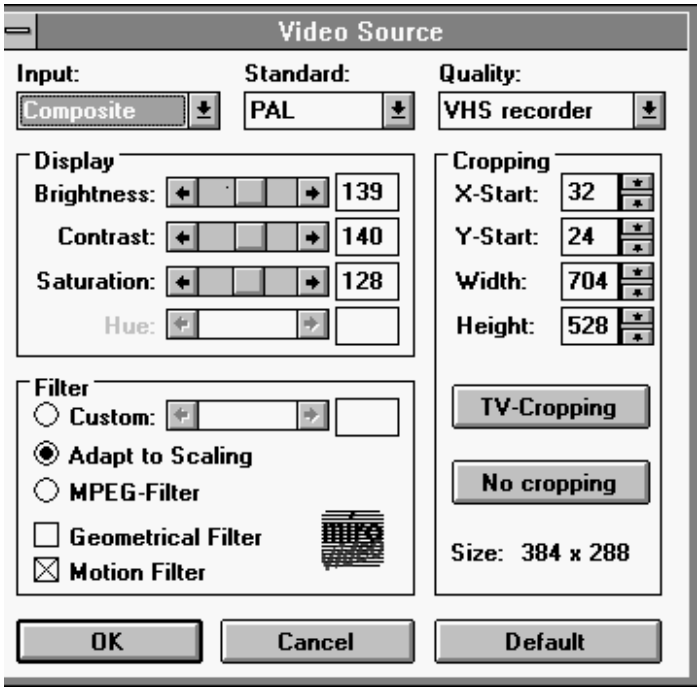
- Switch on the video source
- Start *iPhoto Plus* from *VideoStudio*
- Start *VideoCapture* from *VideoStudio*
- Select *Video Source* under *Setup*
- Select the video input *(Input)* and, if neccessary, the video standard *(Standard)* and the device *(Quality);* for motion video select *Motion Filter;* to confirm, click *OK*
- Under *Setup* select *Video Format*
- Under *Image Dimensions* select *Full* and under *Image Format* select *24 bit RGB*; to confirm, click *OK*
- Under *Capture* select *Single Frame* and *to iPhoto Plus*

Capturing video sequences in brief

- Switch on the video source
- Start *VideoCapture* from *VideoStudio*
- Select *Video Source* under *Setup*
- Select the *Input* and, if required, the video standard *(Standard)* and the device *(Quality)*; select *Default*
- Under *Setup* select *Video Format*
- Select *320 x 240* and *miroVIDEO-XL*; to confirm click *OK*
- Under *Capture* select *Video*; enter *30 fps* (for NTSC) and *File*, to confirm, click *OK*

Setup/Video Source

The *Setup* menu item and the *Video Source* command select the video source and the video quality.



Video input

Here the miro 40PV video **video input** is selected to which a video source is connected: composite or S-video, tuner or internal (see illustration on page 8). If you select another video source, call again *Setup* and *Video Source*.

Standard

Here the **TV standard** of the video source is selected. Normally, miro 40PV video recognizes the standard automatically. Depending on the TV standard (NTSC or PAL/SECAM), there are other selectable image dimensions in the *Video Format* dialog box.

Quality

Here the connected **video device** is selected. It is not absolutely necessary to select one, but it may improve the image quality.

Display

Here the **Brightness**, the **Contrast**, the **Saturation** and the **Hue** (for NTSC) can be adjusted. Changes can be viewed instantly in the video image.

Filter

– *Custom*:
This filter can be set to values between 0 and 8. For high scaling factors (set in *Video Format* under *Image Dimensions*) a high value is useful, for low factors a low value should be set. Example: At the scaling factor 2 every second pixel and every second line are «removed» and so-called moiré effects emerge. The filter eliminates these effects and improves the image quality. At the value 0 the pixels are transferred unchanged. At the value 8 the video image is soft-focussed considerably.

– *Adapt to Scaling:*
  This filter adapts itsself to the scaling size, for scaled images this usually results in an optimal image quality.

– *MPEG Filter*:
  The MPEG filter offers the possibility to filter images according to the MPEG standard.

– *Geometrical Filter:*
  Additional geometrical filter.

– *Motion Filter:*
  If the size of the scaled video image is larger than 384 x 288 pixels and larger than half of the cropping height, no non-interlaced video image can be captured, but only an interlaced one. To eliminate negative effects occuring with moving interlaced images, the Motion Filter can be switched on. For still-images this filter should be switched off.

Cropping:
The cropping function cuts off a defined margin of the video image.

– *X-Start:* Horizontal margin cut off from the video image.

– *Y-Start:* Vertical margin cut off from the video image.

– *Width:* Width of the cropped video image.

– *Height:* Height of the cropped video image.

– *TV Cropping:* Cuts 32 pixels off the horizontal margin and 24 pixels off the vertical margin. Depending on the video standard a video image has a resolution of 640 x 480 pixels (NTSC) or 768 x 576 pixels (PAL/SECAM). Many video sources generate distortions at the image margin. The *TV Cropping* function cuts off this margin.

– *No Cropping:*
  No Cropping shows the whole video image in the full resolution. However, the distortions in the image margin are also shown.

– *Default:*
  Default sets the *Display* settings to average values and selects *Adapt to Scaling* and *Motion Filter* under *Filter* and *TV Cropping* under *Cropping*.

Setup/Video Format

The *Setup* menu item and the *Video Format* command open the *Video Format* window.

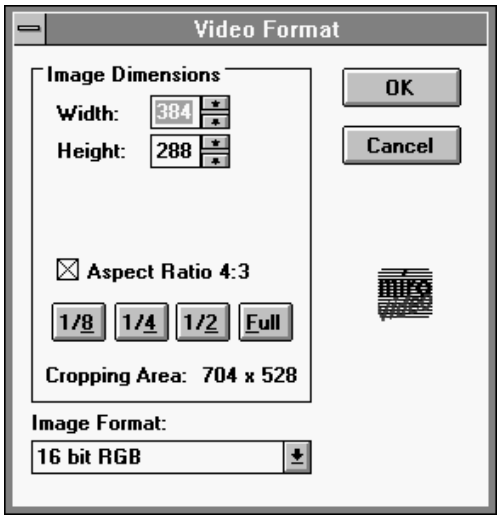


Image Dimensions

In the image dimension list *(Image Dimensions*) you can select the resolution. The buttons allow to select different image sizes. If the size is larger than 384 x 288 pixels, the «Interlaced» and «Still image only» messages appear and the images can only be digitized interlaced as single-frames.

Aspect Ratio 4:3
The video image is captured maintaining the aspect ratio and avoiding geometrical distortions.

Image Format

The *Image Format* box offers three settings: *16 bit RGB, 24 bit RGB* and *miroVIDEO-XL*.

– *16 Bit RGB*
Video is captured with 32,768 colors uncompressed (high image quality and frame rate, suitable for video sequences). Select a 32,768 color graphics mode for this format.

– *24 Bit RGB*
Video is captured in True Color (16.7 million colors; high image quality, low frame rate; suitable for single-frames). Select a TrueColor color graphics mode for this format.

– *miroVIDEO-XL*
Video is captured and compressed with fixed compression factors of 6 or 12 enabling you to save hard disk space. Fast hard disks can record video sequences with 384 x 288 pixels and 25 fps.

miro 40PV video & miroVIDEO DC1

miro 40PV video and miroVIDEO DC1 work together perfectly. In this combination, miro 40PV video operates as graphics board and digital overlay.

To install both systems, miro recommends the following:

- Install the miro 40PV video hardware as is described in this manual.
- If necessary install VideoStudio 2.0.
- Install Video for Windows 1.1d.
- Install the miro Windows drivers and the miroWINTOOOLS.

  If you had installed a miroVIDEO DC1 board and if you want to install a miro 40PV video board now, the *miroVIDEO DC1-Hardware Setup* window appears during the installation after the miro 40PV video configuration window. Here you can select the active capture driver (*miroVIDEO DC1* or *Other*).
- Insert the board carefully in the computer. Consult the miroVIDEO DC1 User's manual.
- Install and configure the miroVIDEO DC1 MJPEG capture driver as is described in the chapter «Installing miroVIDEO DC1 AVI drivers».

  In the *miroVIDEO DC1 Hardware Setup* window you can specify which of the two miro boards is to be the active capture device (miroVIDEO DC1 or Other). The default is always miroVIDEO DC1 independent of the order of installation.
- Connect the video inputs/outputs of miro 40PV video and miroVIDEO DC1. Depending on the operating mode miroMAGIC 40PV video and miroVIDEO DC1 cn be configured differently (see next page).

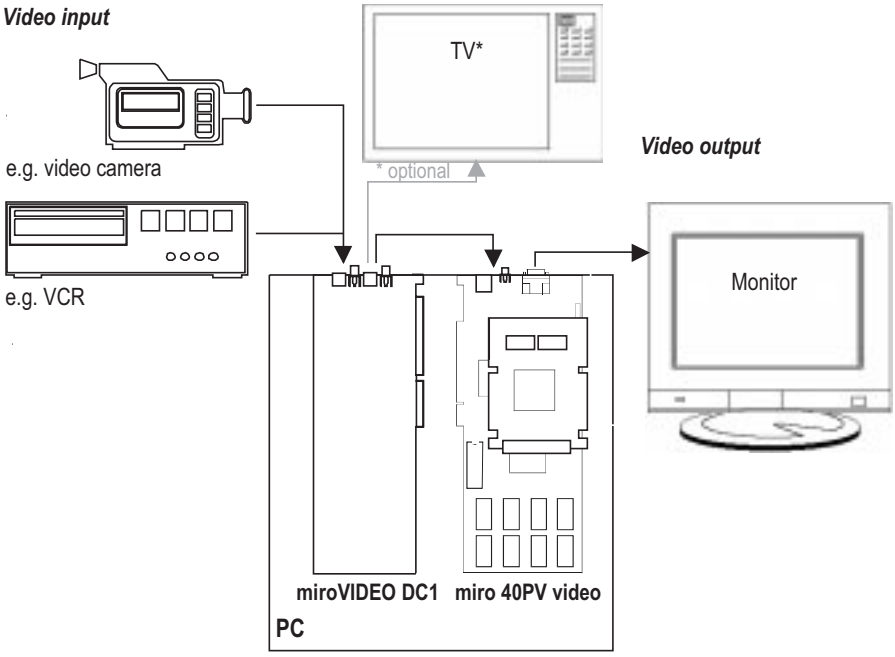
Always connect inputs/outputs of the same type: Connect the S-Video outputs to the S-Video inputs and the composite outputs to the composite inputs.V

Video Capture

In the *Overlay Control* dialog box select the cable type connecting miroVIDEO DC1 to miro 40PV video. Proceed as is described in the miroVIDEO DC1 User's manual, chapter 4 in the paragraph »miroVIDEO DC1 and miroVIDEO 20TD live«. The digital video is displayed in the miro 40PV video digital overlay.

Digitizing with miroVIDEO DC1 and miro 40PV video

If a miro 40PV video board is installed in your computer in addition to miroVIDEO DC1 and miro 40PV video operates as graphics board, miro 40PV video can substitute a TV.



Connections

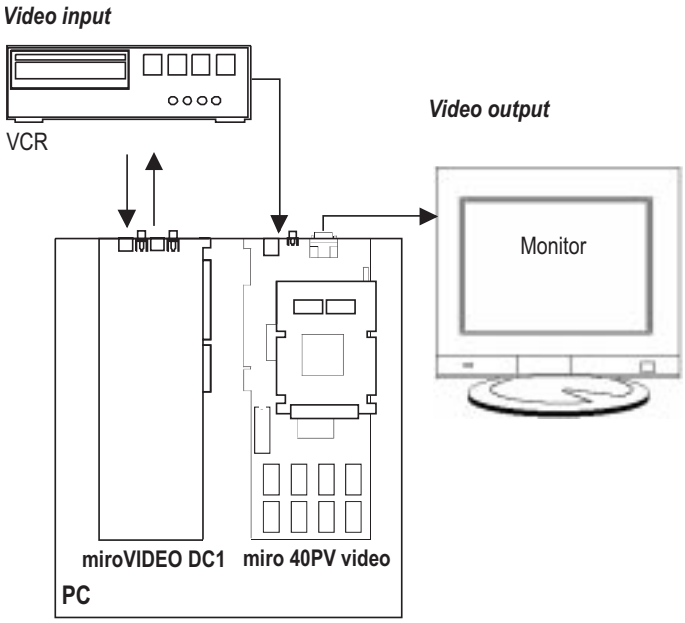
The miroVIDEO DC1 input connects to a suitable video source, the miroVIDEO DC1 output connects to the video input of miro 40PV video.
The computer monitor connects to the video output of miro 40PV video.

Function

- miroVIDEO DC1 digitizes and compresses the input signal and saves the signal to the hard disk.
- The miro VIDEO DC1 output signal is routed to the miro 40PV video input signal (or to a TV monitor connected to miro 40PV video).
- The miro 40PV video board outputs the video sequence in VHS quality to the computer monitor as a digital overlay.

Digitizing and recording with miroVIDEO DC1 and miroMAGIC 40PV video

If a miro 40PV video board is installed in your computer operating as graphics board, miro 40PV video can substitute a TV.



Connections

The miroVIDEO DC1 video input and output connect to the same VCR. To make the connection, use a S-video cable, if your VCR has a S-video input.

The second VCR output connects to the miro 40PV video input. The monitor connects to the miro 40PV video output.

The second VCR output can be the VCR's **SCART connector**. For these connections an adapter is required.

Function

- **miroVIDEO DC1 digitizes and compresses the input signal and saves the signal to the hard disk.**
- **You can edit the video sequences on the computer using suitable software.**
- **miroVIDEO DC1 outputs the final video to the VCR which then records the video in VHS quality.**

During all steps described above you can check the interim results in the miro 40PV video digital overlay in VHS quality.

After making the connections, you can can fully utilize both miro boards: The digital overlay is always displayed by the miroMAGIC 40PV video.

5. miroWINTOOLS

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.

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 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.

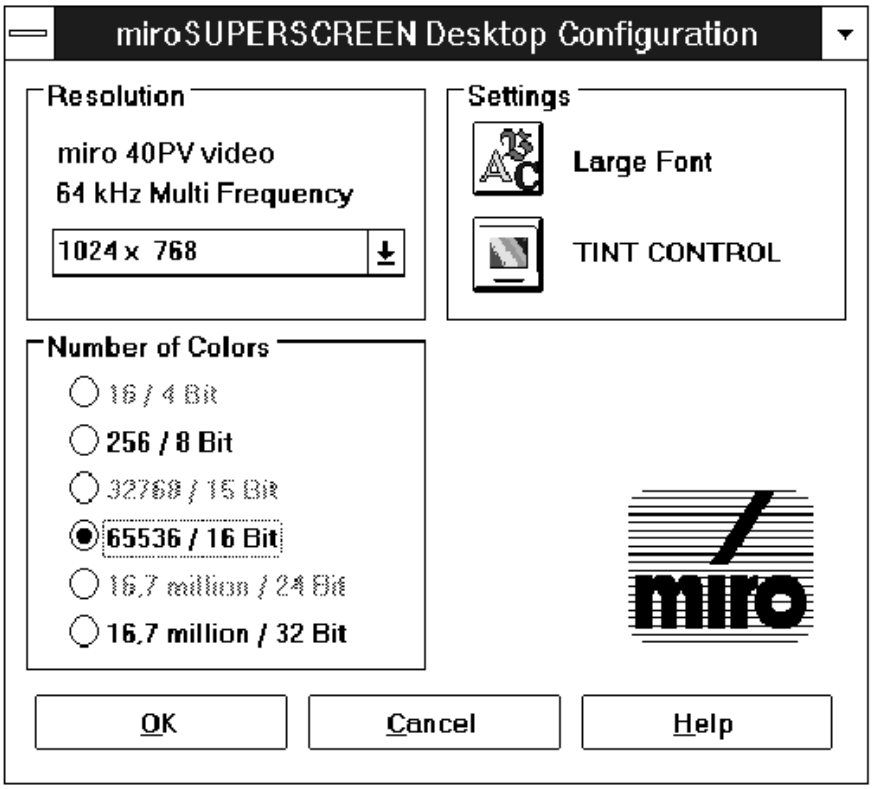
When changing the resolution **and** the number of colors in the single-screen mode, always set the resolution before setting the number of colors.

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 always 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 decribed in the chapter «miroTINT CONTROL».

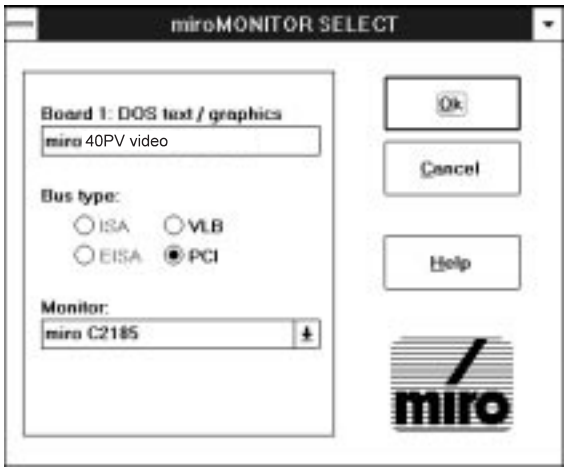
miroMONITOR SELECT

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.

- 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

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*.

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 cancelled. miroTINT CONTROL is shrinked 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.

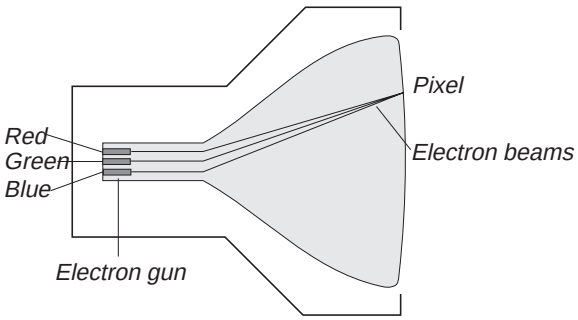
Help

Help starts the help function of miroSUPERSCREEN.

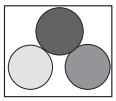
Explanations

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 whithout 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

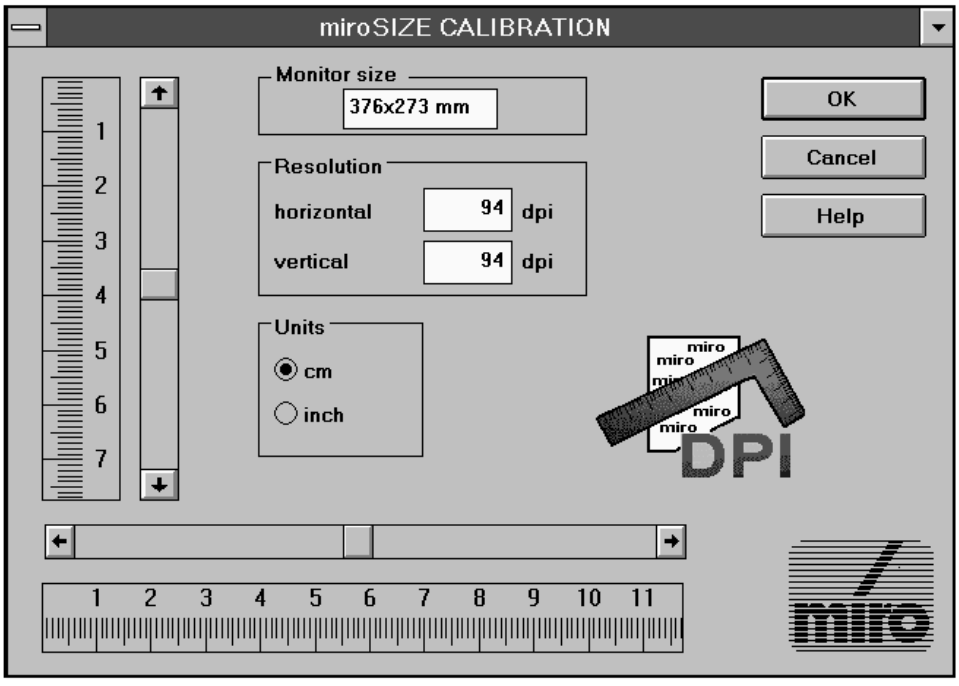
miroSIZE CALIBRATION adjusts the dots per inch (DPI) on your monitor so that one inch or one centimeter on the monitor matches exactly one inch or one centimeter on the print-out. miroSIZE CALIBRATION is especially useful when a true-to-scale display is necessary: DTP and CAD applications.

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 postion 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.

Technical data

Bus system

- PCI Local Bus

Compatibility

- VGA register-compatible

Processor

- Graphics processor: Weitek P9100
- Video processor: Weitek P9130

Video memory

- 4 MB VRAM

Power supply

- +5 V, max. 2 A
- +12 V, max. 0.1 A

Video modes

256 colors at		65536 colors at		16.7 million colors at	
1600 x 1280	65 Hz	1600 x 1280	65 Hz	-	-
1600 x 1200	70 Hz	1600 x 1200	70 Hz	-	-
1408 x 1024	80 Hz	1408 x 1024	80 Hz	-	-
1280 x 1024	80 Hz	1280 x 1024	80 Hz	1280 x 1024	75 Hz
1152 x 864	90 Hz	1152 x 864	90 Hz	1152 x 864	80 Hz
1024 x 768	100 Hz	1024 x 768	100 Hz	1024 x 768	100 Hz
800 x 600	100 Hz	800 x 600	100 Hz	800 x 600	100 Hz
640 x 480	100 Hz	640 x 480	100 Hz	640 x 480	100 Hz

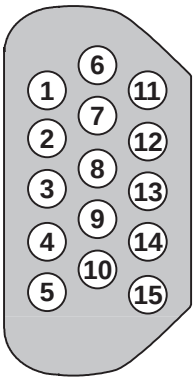
Video timings

- 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

15-pin D-type video port

The miro 40PV video 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:



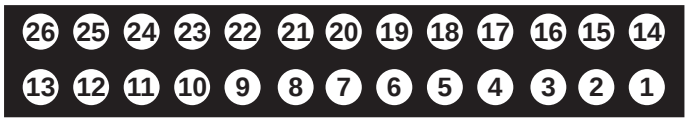
15-pin D-type connector

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 miro 40PV video 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.

miro 40PV video address range

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

– **I/O address range**
  miro 40PV video 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**
  miro 40Pv video 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

Appendix

Glossary

This glossary contains the most important concepts from the field of computer hardware and multimedia.

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 — **A**merican **N**ational **S**tandards **I**nstitute. 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 — **A**merican **S**tandards **C**ommittee of **I**nformation **I**nterchange. 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.

AUTOEXEC.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.

AVI — Abbreviation for **A**udio **V**ideo **I**nterleaved, standard format for digital video (🕮 Video for Windows).

Batch file — A 🕮 DOS file where a sequence of commands is processed one after the other.

BIOS — **B**asic **I**nput **O**utput **S**ystem. 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 (chekking the 🕮 interfaces, the disk drives, etc.).

Bit — **Bi**nary Digi**t**. 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).

CD-ROM CD-ROMs are mass storage media for digital data, such as 🕮 digital video. CD-ROMs can only be read.

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.

CODEC Abbreviation for **Co**mpressor/**Dec**ompressor, compresses (packs) and decompresses (unpacks) image data.
There are different compression methods (🕮 software CODECs and 🕮 hardware CODECs).

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.

Color palette Number of colors the graphics system can generate.

Composite video Composite video encodes all image information in one signal.

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.

Data rate Data per second, e.g. amount of data which a mass storage medium (hard disk or CD-ROM) saves/plays back per second or the amount of data of a video sequence per second.

Digital video Digital video stores information bit by bit in a file (in contrast to analog storage media).

DIP switch **D**ual **I**nline **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**icro**s**oft 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.

Hardware CODEC — Compression method which creates compressed digital video sequences. These video sequences need special additional hardware to be recorded/played back and offer a better image quality than data compressed with software CODECs.

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.

IDE — Also AT bus, common hard disk interface for PCs.

Image compression — Method to reduce the amount of data of digital image and video files.

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».
Laserdisk	Medium which stores analog video. Information on laserdisks can only be read, but not changed.
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.
Non-interlaced	Image refresh method, where the complete image is generated without skipping lines. A non-interlaced image flickers much less than an 🕮 interlaced image.
NTSC	Abbreviation for **T**elevision **S**ystem **C**ommittee. Color TV standard spread in the USA using 525 lines and 60 image fields per second.
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.
PAL	Abbreviation for **P**hase **A**lternation **L**ine. Color TV standard developed in Germany using 625 lines and 50 image fields per second.
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).
Pixel	Abbreviation for *picture element*. Pixels are the smallest elements of a monitor image.
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.

Resolution The number of pixels (🕮 pixels) which can be displayed on the monitor horizontally and vertically. The higher the resolution, the more details can be displayed.

RGB Abbreviation for **R**ed, **G**reen and **B**lue, the basic colors of additive color mixing. RGB describes the method used in computer technology where image information is transferred by dividing it into the three basic colors.

ROM **R**ead **O**nly **M**emory. 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 immidiately 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 **ROM**) EPROMs (**E**rasable **PROM**) and EEPROMs (**E**lectric **EPROM**).

S-VHS Improved standard for home VCRs using S-Video signals to improve the color reproduction(🕮 Y/C).

S-Video With S-Video signals the brightness (luminance) and the color information are transferred separately (chrominance) (🕮 Y/C).

Scaling Adaptation to the desired image size.

SCSI Abbreviation for **S**mall **C**omputers **S**ystem **I**nterface. The SCSI is used as hard disk interface for high-performance PCs because of its high 🕮 data rate.

SECAM Abbreviation for **Sé**quentiel **C**ouleur **à M**émoire.
Color television system developed on the basis of the 🕮 NTSC system operating with 625 lines and 50 image halves per second.

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.

Software CODEC Compression method to compress digital video sequences which can be played back without special hardware. The quality of these sequences depends on the performance of the complete system. VHS quality is not achieved.

Still-Video Method where cameras digitally store photographs on floppy disks or in the computer memory.

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.

VHS — Abbreviation for **V**ideo **H**ome **S**ystem.
System commonly used for home VCRs to record and play back images and sound using a 1/2" tape. VH systems use 🕮 composite signals consisting of brightness and color information.

Video decoder — Converts analog signals into digital information.

Video encoder — Converts digital information into analog signals.

Video for Windows — Video for Windows is a Microsoft Windows system extension which allows to record, to store and to play back video sequences from hard disk (🕮 digital video).

Video scan rate — Frequency with which the video signal is scanned.
The higher the video scan rate the higher the image quality and the lesser the flicker.

Video-8 — Video system using a 8 mm tape.
Video 8 recorders generate a 🕮 composite signal.

Y/C — Y/C is a signal consisting of two components: **Y** = Brightness information, **C** = Color information.

YUV — Color model where Y delivers the brightness information and U and V the color information.

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.

Index