# MIRAGE VIDEO

## User Manual


Part Number 1740 2080.2
Rel. 0296.3
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## FCC Compliance

This board has been tested and found to comply with the limits for a Class B digital device, persuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in residential installation. This device 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.

## Installing the Software from Diskettes

You have received the SPEA software on CD. It is also possible that your package also includes 3.5" diskettes. This manual describes the installation from the SPEA CD as this is the most common method. If you intend to install from the diskettes, please take note of the README files on these disks and the starting instructions on the diskette labels.

### Important Note

You must **imperatively** read the README file on the SPEA CD and all the documentation supplied with your graphics board before installing it! If you fail to do so SPEA can not accept any responsibility for claims that may be caused as a consequence.
To see the README file, put the CD in your drive and change to the ...\SPEA\INSTALL\<BOARD> directory. Then type:
SHOW README.ENG

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# General Information

## Symbols and Conventions

The following symbols and syntax conventions are used in this manual:

**Warning:** This section contains a warning or important information.

**Note:** This section contains useful hints.

**DOS commands** are written in capital letters, example:

```
E:
SPEA.EXE
```

If not defined in another way, all DOS commands must be confirmed with the ENTER or RETURN key.
**Example:** Examples e.g. for commands are indicated by this format.
**Screen messages** are shown in `Courier`.
**Cross references** to other parts of the manual are shown in *italics*.
**Directory names** mentioned in this manual are exemplary and written in capital letters. This document refers to your CD drive as E: Please enter the relevant letter for your system.

## Delivery Scope Checklist

Your SPEA package should contain the following items:

- the graphics or multimedia board
- the SPEA CD, including software drivers and documentation

## SPEA CD

The SPEA software is supplied the SPEA CD. The current utility software and various drivers are available around the clock and can be downloaded from the SPEA Bulletin Board (Mailbox) or CompuServe (GO SPEA).

## Last-Minute Changes - README file

Our software is constantly being improved and updated. The latest information is contained in a file README.
The README file appears on the screen automatically during the software installation.
You can however also read this file at any time from your CD with the command:

```
E:\SPEA\INSTALL\<BOARD>   (e.g. \SPEA\INSTALL\MIRP64)
SHOW README.ENG
```

## Warranty

You have a 3 year warranty for your SPEA graphics card. To ensure your warranty, it is necessary that you keep the invoice of the graphics card. If your graphics card is damaged, contact your local retailer first.
Your board is a complex electronic device and can only be repaired by authorized technical personnel with the required equipment. Do **not** attempt to change or repair any parts of this product. Doing so will render your warranty invalid.

## Support

The following support services are offered by SPEA Software AG:

- technical support (telephone, SPEA ExpertLine)
- Online information and software updates per modem (SPEA Mailbox, CompuServe)
- software updates via the SPEA CD

Further information concerning these support services can be found in the 'SPEA Customer Care section at the end of this manual.

## Company Address

SPEA Software AG
Moostr. 18B
D-82319 Starnberg

Tel: +49 81 51 26 60
Fax: +49 81 51 21 258

# Introduction

Your SPEA board is a high-resolution, VGA compatible graphics accelerator specially designed to speed up applications running in graphics-intensive environments such as Windows and OS/2.

An upgradeable MPEG module (not part of the standard delivery scope) gives you the additional possibility to playback MPEG files using hardware decoding methods with a sustained frame rate of 30 fps (NTSC) or 25 fps (PAL).

## Graphics Board Features

- advanced S3 Trio64V graphics processor (32 bit graphics engine) for PCI 2.x bus systems
- standard of 2 MB EDODRAM onboard
- TrueColor (16.7 million simultaneous colors displayed) at 800 x 600
- maximum (non-interlaced) display resolution of 1280 x 1024 (256 colors)
- chip-integrated drawing functions to optimize graphics oriented applications
- Power management (DPMS) software included to use the VESA specified modes to reduce power consumption
- enhanced driver software for most major applications
- Green PC and 'Plug and Play' support
- Scaling of digital Video like MPEG or Video for Windows
- Supports MPEG software playback

## Software for your Board

Various software drivers for standard applications as well as useful utilities are supplied with your board.

**Standard Software Delivery**

- Intuitive menu-guided installation program
- SPEA DOS utilities (e.g. hardware test program)
- SPEA BigWin enhanced accelerator driver for Windows 3.x
- SPEA BigWinNT enhanced accelerator driver for Windows NT
- SPEA BigWin95 enhanced accelerator driver for Windows® 95
- SPEA Windows tools
- SPEA's video remote control software MediaStation
- SPEA BigBlue driver for OS/2.x
- Driver software for the following applications:
  - MPEG Decoder Software

**Additional Software**

Other drivers which become available for your hardware will be available via CompuServe, Internet and the SPEA Mailbox or on subsequent CD's.

## Using more than one Board

SPEA offers special dual screen packages with hardware and software included. If you are interested in using Windows with double-width resolutions or AutoCAD with a secondary graphics monitor, please ask your distributor for more information about the current SPEA dual screen packages.

## Troubleshooting

Your board is a complex electronic device and can only be repaired by authorized technical personnel with the required equipment. Do not attempt to change or repair any parts of this product. Doing so will render your warranty invalid.
To read the latest troubleshooting tips from the SPEA ExpertLine, please start the program SPEA.EXE from your SPEA CD and click on the option 'Product Information'. An online help is started that contains an option 'Support and Drivers', click on this. The following menu contains the item 'Troubleshooting Tips from the SPEA ExpertLine'. Select this and then a topic as required.

Problems related specifically to VideoCD's can be found further on in this manual.

# Hardware Installation

## Installing the SPEA Board

**Requirements**

1. IBM compatible computer (80486/Pentium®) with PCI version 2.x bus system.
2. One free PCI bus system expansion slot.
3. MS-DOS operating system, version 5.0 or higher, Windows 3.1x, Windows® 95, Windows NT or OS/2.
4. Screwdriver

**Warning!** Prevent static electric damage. Static charges can cause severe damage to microcircuits, but here are some easy ways to see that it doesn't happen:

Hold the SPEA card on its edges only. Don't touch edge connectors or exposed circuitry.
Leave the SPEA card in the anti-static protective bag until ready to install it in your computer.
If possible, ground your body when handling the SPEA card. The metal power supply housing is generally considered the best place to ground yourself.
Do not place the SPEA card on a metal surface.
Make the least possible movement to avoid building up static electricity from your clothing, carpets and furniture.

### Monitor Compatibility

The boards of the SPEA series offer high performance in resolutions, refresh rates and colors. Especially the ergonomic SPEA refresh rates up to 100 Hz give absolutely flicker free performance. The SPEA boards are optimally configured to be combined with the SPEA MultiSync monitors.
Of course SPEA boards can also be connec-ted to other VGA or high resolution MultiSync monitors. Please be aware of the fact, that you can only get use of the full power of the graphics board if the horizontal (kHz) and vertical (Hz) refresh rates of your monitor are as high as required by the graphics board.

**Example:** The technical specifications of a multisync monitor could be as follows: max. resolution 1280 x 1024; max. horizontal fre-quency 50 kHz; max. vertical frequency (refresh rate) 90 Hz.
If you wish to use one of the video modes listed in the file BIOS.TXT included with this product, then all three of the above mentioned parameters may not exceed the specifications of this monitor.
In our example, the mode 1024 x 768 with a horizontal frequency of 48.5 kHz and a refresh rate of 60 Hz may be selected, whereas the next higher refresh rate of 70 Hz (at the same resolution) is not possible, as the required horizontal frequency is 56.5 kHz in this case, which exceeds the specifications of the monitor.

**Warning!** If you permanently use your monitor with frequencies that are too high you may damage the monitor.

Before you start to change the refresh rate with programs described in this manual (e.g. SPTUNE, V7SETUP, V7SETNT, V7SETOS2), check your monitor manual for its technical data (horizontal and vertical refresh rate, possible resolutions).

Set your monitor to analog mode. You may need a new cable or a 9- to 15-pin cable adapter to use this mode.
Check your monitor owner's manual for further information.

## If you're using COM 4

If you are using COM 4, e.g. for a **modem** or another peripheral device, then note that SPEA graphics boards which have an S3 processor (e.g. the MIRAGE and MERCURY series) use the same I/O address, namely 02E8 hex.

For this reason it is **vital** that you reconfigure the other device to another port. Failing to do so will cause an address conflict and problems with both devices up to a system crash.

## Typical System Configuration

A typical configuration environment your board is described as follows:

- Pentium-90 Tower, PCI bus, 90 MHz, 8 MB, doublespeed CD drive
- SPEA 2085 MS Monitor

## Preparing your Computer

**Please note, that the applications you want to install SPEA drivers for have to be already completely installed (for Standard VGA (640 x 480) on your system prior to using the SPEA software. It is a good idea to do this before removing an existing graphics adapter as not every application permits the configuration of the video mode used from the DOS plane.**

## Changing your PC's BIOS SETUP

If a board other than a VGA board was previously installed, it is necessary to change the PC's hardware configuration. This is sometimes done by changing a jumper on the motherboard after removing the old board (check your motherboard or PC manual) although it more common to change your PC's BIOS SETUP.
**Exception:**
If you have a system with a EGA/VGA display adapter built onto the motherboard. In this case, the on-board EGA/VGA display adapter **must** be disabled before installing the SPEA card.
Please check your PC manual to find the location of the corresponding switch.

**Warning!** Simultaneously using two active VGA/EGA units in one PC will inevitably lead to system failure!

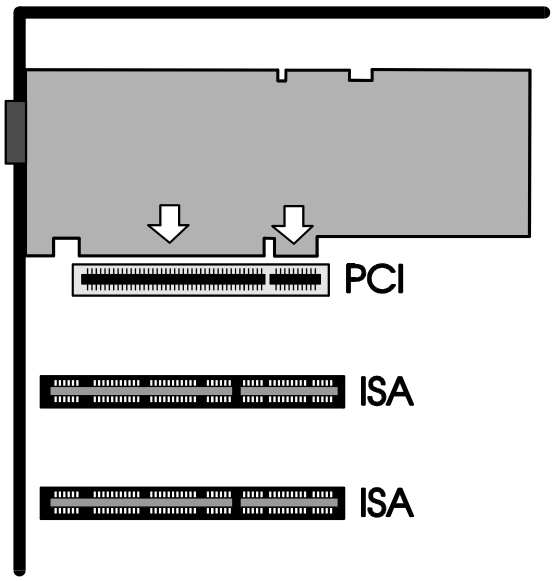
If your system doesn't have to be re-jumpered for a VGA board then first proceed with the following installation steps and then run your BIOS SETUP program and select 'VGA' (else 'IBM VGA') as your graphics board type. Check your PC manual for information on its BIOS SETUP.

1. Switch off your computer and all external options (printer, display, and others) and unplug all power cords from the electrical source.
2. Remove the cover mounting screws and save them for later.
3. Remove the cover of the computer.

## Installing the SPEA Board

The SPEA card  is installed in a PCI expansion slot.

1. Select a free expansion slot and remove its metal slot cover. Save the screw to secure the graphics card later.
2. Hold the card by the edges and press it firmly into the expansion slot.




*Installation in a PCI expansion slot*

**Note** The following step is very important in order to ground your SPEA graphics card properly

3. Align the slot in the mounting bracket of the SPEA card with the screw hole in the rear panel of the computer case. Use the screw you removed from the expansion slot cover or the previously installed video adapter to secure the SPEA card in place.
4. Secure ribbon cables and gently push them down and out of the way before you replace the system cover.
5. Replace the computer cover. Secure it with the screws you removed earlier.
6. Reconnect any peripheral equipment cables you may have disconnected.
7. Securely attach your monitor cable to the 15-pin VGA output connector on the board. The other end is hooked up to the monitor as decribed in the manual of the monitor manufacturer.

## Additional Instructions

Please switch on your monitor before you switch on your computer. Doing it the other way around could damage your monitor.

The SPEA board has been designed to 'plug & play' without any modifications being made to the default switch or jumper settings. If however, it appears that the card is not performing optimally, you can change the settings. Refer to the section*: Technical Details* for more information.
Note that your monitor is running in standard modes and that higher refresh rates etc. are not available at this stage of the installation! It is necessary to run the tuning programs (SPTUNE.EXE, V7SETUP.EXE, V7SETNT or V7SETOS2) in order to optimize the board's output signals for use with specific monitors. These programs are described further on in this manual.

## Hardware Compatibility: the PCI Bus and the Graphics Board

The functionality of a graphics system depends mainly on two components: the graphics board and the mainboard.
If either the design of the PCI mainboard is not compliant with the approved PCI specifications you could experience problems with the graphics board.

SPEA has successfully tested the SPEA series graphics boards in PCI bus mainboards with a clock rate of 90 Mhz.

## After Installing the SPEA Board

If you have correctly installed the SPEA board, the DOS messages will then appear on your monitor when the boot procedure is finished.
If your system does NOT boot as it should, check again to see that the installation instructions were properly followed, or refer to the section titled *Troubleshooting.*

# Software Installation - DOS

**Please note, that the applications you want to install SPEA drivers for have to be already completely installed (for Standard VGA (640 x 480) on your system prior to using the SPEA software. It is a good idea to do this before removing an existing graphics adapter as not every application permits the seperate configuration of the video mode used from the DOS prompt.**

**Note:** Our software is constantly being improved and updated. The latest information is contained in the README file previously described.

Please check the exact directory names and paths of your applications, as you may be asked for these during the software installation of the SPEA drivers.

## Installing the Basic Software and Utilities

In order to use your board in your PC it is necessary to install a package of basic programs, regardless of the operating system in use. Please execute the following steps in order to install the basic software.

1. Put the SPEA CD in drive E: and start the installation (from E:) as follows:

   call SPEA.EXE from the DOS prompt

2. Choose `English (E)` as your language for the installation.
3. A menu is displayed with the options `'Product Information'`, `'Manuals'` and `'Installation'`.
4. Select the `Installation` option.
5. Confirm your hardware if necessary.
6. You will see a list software drivers available for installation.
7. Select the first option `'Drivers & Utilities'`.
8. You will now be asked for the disk drive and directory names where the SPEA software should be copied (default: C:\SPEA\GDC).
9. Accept the default name and follow the instructions on the screen. The installation program will automatically copy all the necessary files onto your hard disk.
10. A README file appears on the screen during the installation. Please read this file!

The basic software is now installed. To install and configure the drivers you need for the different operating systems and applications you are using, please read the relevant sections that follow (in this chapter).

Please note that the respective applications will still be displayed with a resolution of 640x480 until reconfigured. Higher resolutions, color depths and refresh rates are set using a tuning program named SPEAtune (see following section).

# DOS Utilities

The SPEA Utilities help you to configure or optimize your system environment to get full use of all features supported by SPEA.
These utilities are not mandatory, but very useful in many cases.

## SPEAtune - Monitor / Graphics Board Tuning

**Who is SPEAtune intended for?**
If you use a SPEA graphics board and you do not have a SPEA monitor, you can use SPEAtune to test the display on your multiscan monitor to save up to 6 optimized monitor settings (if your monitor does not offer this facility).
SPEAtune is not needed if you are using a SPEA multiscan monitor as these devices are already optimized (tuned) for harmonized use with a SPEA graphics board and therefore already give the best performance possible.

**What can you use SPEAtune for?**
SPEAtune enables you to match the maximum screen refresh rate (vertical frequency) of your monitor. You can test the different values (Hz) with a test image to find the best results before saving one value.
You can test and save one monitor frequency value (x kHz horizontal frequency, x Hz vertical frequency) for each video mode the graphics board supports. For example:
80.8 kHz (horizontal) / 100 Hz (vertical) for 1024 x 768 x 256

**Using SPEAtune**
11. Start SPEAtune from the DOS level and the directory C:\SPEA\GDC with the following call:

    SPTUNE

    You will see a menu driven program for selection.
    Use the help button to receive context sensitive help for all menu options.
12. Adjust monitor frequency - monitor frequency setup
    Select a vertical refresh rate your monitor is capable of (`Monitors`)
    Use the option `Test image` to check the display quality of various test images and resolutions with the chosen refresh rate.
    Save the new setting and exit the monitor frequency setup.
13. Image tuning - Tuning Setup

**Note:** This menu item is only necessary if your monitor is not able to store various display settings with different resolutions.

You may want to modify some of the parameters that define the display of your monitor (e.g. change sync polarity) or change the display position or increase or decrease the display size. These changes can be done in the Tuning Setup menu.

Start the Tuning Setup. Select a refresh rate and the number of colors. The optimal refresh rate is selected automatically (shown in yellow), it depends on the monitor frequency you selected in the monitor frequency setup.

Start the Tuning image via the tuning button. Modify some parameter - if necessary - (e.g. change sync polarity, change display position). Save the new setting by exiting the tuning image via the RETURN key. If you have modified the parameter and saved the new setting this entry appears at the end of the list in yellow with the remark `user`.

**Note:** You can store a maximum of 6 user-defined settings.

Proceed as shown above for all resolutions and number of colors you want to work with and exit the Tuning Setup afterwards via the `Save` button to save all modifications.

## If you change the monitor

Please note that you have to readjust the vertical refresh rate (via the menu `Monitors`) in case you change your monitor.

**Warning!** If you permanently activate your monitor with a refresh rate that is too high for your monitor, you may damage it! If you are not sure about the monitor frequencies your monitor supports, inform yourself about the resolution and refresh capabilities in your monitor manual.

The vertical refresh rates are automatically assigned to the chosen monitor frequencies (see also VGA table in the file BIOS.TXT on the CD or in your SPEA directory).

**Important!** If you have stored user defined settings with a former monitor these user defined settings remain even if you change the monitor. The current version of SPEAtune does not allow the user to simultaneously reset all the settings made.

Delete obsolete settings as follows:

14. activate the Tuning Setup after you have changed the monitor frequency.
15. search the user defined setting and activate the frequencies list.
16. click to the lowest possible frequency in the active list, start the tuning image and save the tuning image without any changes by the RETURN key.

The user defined setting is now deleted and the optimal refresh rate for your monitor is selected.

## VESA Modes

VESA display mode support is normally provided in the on-board BIOS. Those modes not supported directly are supported via a TSR program (e.g. **V7**MIR**VBE**.COM) which is automatically loaded when the system is booted (by a call in your AUTOEXEC.BAT). Applications and games can be executed without any further steps.

## V7HFREQ - Higher Refresh Rates under DOS

V7HFREQ.COM is a very useful program which allows you to set higher refresh rates than 60Hz under DOS. If you selected the utilities option during the software installation, you will find the program in your SPEA\GDC directory. It is also automatically installed via a corresponding call in your AUTOEXEC.BAT file.
To see an overview of all the possible parameters and options available, start the program from your SPEA directory with the call:

```
V7HFREQ ?
```

## S3TEST.EXE - Testing your Hardware

S3TEST allows you to test SPEA hardware which incorporates an S3 processor. Start the program from your SPEA directory with the following call:

```
S3TEST
```

You will see various display tests for about 7 seconds before a list with the checked parts of your system appears.
To continue the program, press the space bar. You will see about 15 different screen displays to show you the various resolution and color abilities of your SPEA graphics card. Note that the program also displays information about the processor version ('step').
To cancel the program at any time press the CTRL + C keys.

# Software Installation - Windows 3.1x

## Installing the Basic Software and Utilities

In order to use your board in your PC it is necessary to install a package of basic programs, regardless of the operating system in use. Please execute the following steps in order to install the basic software.

1. Put the SPEA CD in drive E: and start the installation (from E:) as follows:

   Start the Program Manager, select `'File' 'Run'` then SPEA.EXE from the CD

2. Choose `English (E)` as your language for the installation.
3. A menu is displayed with the options `'Product Information'`, `'Manuals'` and `'Installation'`.
4. Click on the `Installation` button.
5. Confirm your hardware if necessary.
6. You will see a list software drivers available for installation.
7. Select the first option `'Drivers & Utilities'`.
8. You will now be asked for the disk drive and directory names where the SPEA software should be copied (default: C:\SPEA\GDC).
9. Accept the default name and follow the instructions on the screen. The installation program will automatically copy all the necessary files onto your hard disk.
10. A README file appears on the screen during the installation. Please read this file!

The basic software is now installed. To install and configure the drivers you need for the different operating systems and applications you are using, please read the relevant sections that follow (in this chapter).

Please note that the respective applications will still be shown in 640x480 resolution. Higher resolutions or color depths are set using a corresponding tuning program (V7SETUP.EXE).

## Windows 3.1x Driver (BigWin)

**Note:** You must have already installed the basic software from the CD before continuing.

1. Put your SPEA CD in drive E:
2. Start Windows and the Program Manager, select `'File' 'Run'` then SPEA.EXE from the CD.
3. Click on the `Installation` button.
4. Confirm your board if necessary and select the Windows driver (BigWin) option shown.
5. Simply follow the instructions on the screen.
6. A program named V7SETUP is automatically started.
7. Make any changes necessary for your system and when finished, click on `OK`.
8. Restart Windows as suggested in the next dialogue box. This ends the installation.

You can reconfigure your graphics display from now on using the SPEA V7SETUP menu and various Windows tools.

# Software Installation - Windows NT

## Installing the Basic Software and Utilities

In order to use your board in your PC it is necessary to install a package of basic programs, regardless of the operating system in use. Please execute the following steps in order to install the basic software.

1. Put the SPEA CD in drive E:
2. Start WindowsNT and login as Administrator
3. Start the installation (from E:) as follows:

   start the Program Manager, select `'File' 'Run'` then SPEA.EXE from the CD

4. Choose `English (E)` as your language for the installation.
5. A menu is displayed with the options `'Product Information'`, `'Manuals'` and `'Installation'`.
6. Click on the `Installation` button.
7. Confirm your hardware if necessary.
8. You will see a list software drivers available for installation.
9. Select the first option `'Drivers & Utilities'`.
10. You will now be asked for the disk drive and directory names where the SPEA software should be copied (default: C:\SPEA\GDC).
11. Accept the default name and follow the instructions on the screen. The installation program will automatically copy all the necessary files onto your hard disk.
12. A README file appears on the screen during the installation. Please read this file!

The basic software is now installed. To install and configure the drivers you need for the different operating systems and applications you are using, please read the relevant sections that follow (in this chapter).

Please note that the respective applications will still be shown in 640x480 resolution. Higher resolutions or color depths are set using a corresponding tuning program (V7SETNT.EXE).

## Windows NT (BigWinNT Driver)

**Note:** You must have already installed the basic software from the CD before continuing.

1. Put your SPEA CD in drive E:
2. Start WindowsNT and login as Administrator.
3. Start Windows and the Program Manager, select `'File' 'Run'` then SPEA.EXE from the CD.
4. Click on the `Installation` button.
5. Confirm your board if necessary and select the Windows NT driver option shown.
6. Simply follow the instructions on the screen.
7. A program named V7SETNT is automatically started.
8. Make any changes necessary for your system and when finished, click on `OK`.
9. Restart Windows as suggested in the next dialogue box. This ends the installation.

You can reconfigure your graphics display from now on using the SPEA V7SETNT menu and various Windows tools.

# Software Installation - Windows® 95

## Installing the Basic Software and Utilities

In order to use your board in your PC it is necessary to install a package of basic programs, regardless of the operating system in use. Please execute the following steps in order to install the basic software.

1. Put the SPEA CD in drive E: and start the installation (from E:) as follows:

   Click on the START button in the task bar, select the option `'Run'` and then select SPEA.EXE from the root directory of the CD

2. Choose `English (E)` as your language for the installation.
3. A menu is displayed with the options `'Product Information'`, `'Manuals'` and `'Installation'`.
4. Click on the `Installation` button.
5. Confirm your hardware if necessary.
6. You will see a list software drivers available for installation.
7. Select the first option `'Drivers & Utilities'`.
8. You will now be asked for the disk drive and directory names where the SPEA software should be copied (default: C:\SPEA\GDC).
9. Accept the default name and follow the instructions on the screen. The installation program will automatically copy all the necessary files onto your hard disk.
10. A README file appears on the screen during the installation. Please read this file!

The basic software is now installed. To install and configure the drivers you need for the different operating systems and applications you are using, please read the relevant sections that follow (in this chapter).

Please note that the respective applications will still be shown in 640x480 resolution. Higher resolutions or color depths are set using a corresponding tuning program (V7SETUP.EXE).

**Note:** You can also install the Windows® 95 driver via the Standard Windows® 95 Installation Program. Therefore, start the corresponding .INF file from the SPEA CD (the file name corresponds to the board name, e.g. MIRVTV.INF). But please be aware that if you do so, the additional SPEA utilities like SPEA MediaStation a.s.o. will NOT be installed.

## Windows® 95 (BigWin95 Driver)

**Note:** You must have already installed the basic software from the CD before continuing.

1. Put your SPEA CD in drive E:
2. Start Windows® 95, click on the START button in the task bar , select the option `'Run'` and then select SPEA.EXE from the root directory of the CD
3. Click on the `Installation` button.
4. Confirm your board if necessary and select the Windows® 95 driver option shown.
5. Simply follow the instructions on the screen.
6. A program named V7SETUP is automatically started.
7. Make any changes necessary for your system and when finished, click on `OK`.
8. Restart Windows® 95 as suggested in the next dialogue box. This ends the installation.

You can reconfigure your graphics display from now on using the SPEA V7SETUP menu and various Windows tools.

# SPEA WinTools (Windows Utilities)

SPEA offers its customers various tools which can be used to simplify or enhance the use and configuration of the Windows environment.

## SPEA V7SETUP (Driver Configuration)

- ☑ Windows 3.1x (V7SETUP)
- ☑ Windows NT (V7SETNT)
- ☑ Windows®95 (V7SETUP)
- ☑ OS/2 Windows Session (V7SETOS2)

### What is SPEA V7SETUP?

SPEA V7SETUP is a program with various options to configure the driver for the monitor being used (e.g. resolution, colors, refresh rates) and your **Windows applications.** V7SETUP exists in different versions for the main software platforms (V7SETNT for Windows NT and V7SETOS2 for OS/2). Monitor settings for DOS applications are made using a corresponding program, e.g. SPTUNE.

### How is SPEA V7SETUP used?

Double click on the SPEA icon in the SPEA program group. The self-explanatory dialog box then will appear.
Configure your system keeping the specifications of your monitor in mind.

**Warning!** You can damage your monitor if you select a refresh rate that is too high for it! Read your monitor manual refresh rate information.

Changes made via SPEA V7SETUP are only activated after Windows has been restarted.
The test button is only active for the current color depth mode. If you change the settings it will be deactivated. Restart Windows with the new settings and call SPEA V7SETUP again, the button will be active again.

## MPEG File Playback

To playback MPEG files you have to either

- install the hardware MPEG decoder module for the MIRAGE VIDEO (for detailled information see part 5 in this manual)
  or
- if you do not use a hardware MPEG decoder module you have to playback the MPEG files with the Software MPEG decoder supplied with the SPEA CD.

In any case, to playback the MPEG files use SPEA's menu guided remote control software SPEA MEDIASTATION, described in the next section in this manual.

## Hardware MPEG Decoder or Software MPEG Decoder?

- If the MIRAGE VIDEO has no hardware MPEG decoder onboard, the processor's workload is enlarged and the playback quality is not as good as it could be with the hardware MPEG decoder module. Therefore, a Pentium 90 is the minimun system requirement. With a hardware MPEG decoder the **processor's workload is reduced** and you will obtain a sustained frame rate of 30 fps (NTSC) or 25 fps (PAL).
- With the Hardware module the playback of TrueColor Video CDs is possible.
- besides the MPEG playback other applications can be executed (multitasking)
- With the MPEG module the MIRAGE VIDEO will become MPC3 compatible
- Via the SPEA Movie Bus you can connect the MIRAGE VIDEO with other boards (e.g. the Video editing board SPEA CRUNCH IT).

# SPEAenergy (DPMS Power Management)

☑ Windows® 3.1x
(In Windows® 95 this option is integrated under the 'control panel' - screen option)

## What is SPEAenergy?

SPEAenergy is a power management utility (DPMS) for Windows.
DPMS is a specification drawn up by VESA which defines modes for reducing the power consumption of monitors and video devices.
You can use SPEAenergy to reduce power consumption by defining time-out values, e.g. for the deactivation of certain circuit elements which reduce the power consumption level in stages (e.g. from 120 W to 100 W to 30 W to 5W).

**Note:** You must have a monitor that supports DPMS.

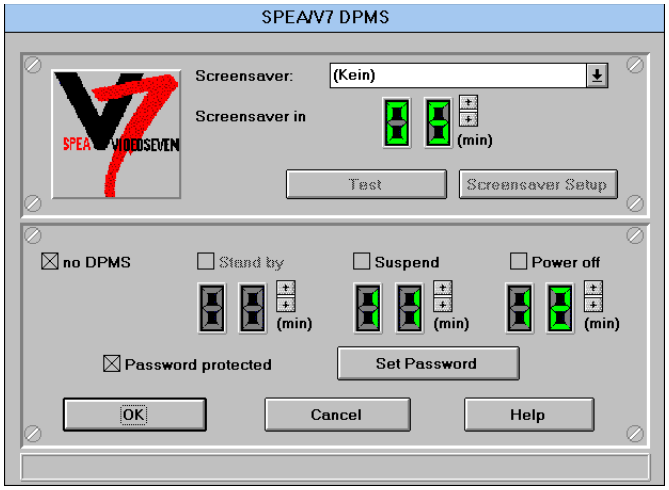
Via a dialog box you can activate 4 different DPMS modes.
The 4 DPMS modes are: ON, STAND-BY, SUSPEND and OFF.

## How is SPEAenergy installed?

The SPEAenergy icon will be automatically placed in the SPEA program group during the Windows installation routine.

## How is SPEAenergy used?

Start SPEAenergy by double clicking on the SPEAenergy icon. A self-explanatory dialog box appears for defining your settings. If you need help, consult the online help integrated in the program.
If you want to finish SPEAenergy you have to close the SPEAenergy icon that is residently placed at the bottom of your monitor display.



# SPEAview (Virtual Screen)

☑ Windows 3.1x
☑ Windows®95

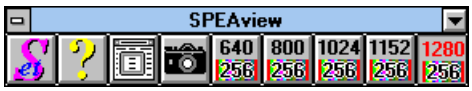
## What is SPEAview?

SPEAview is a powerful utility for Windows which can be used to assign specific graphics modes to certain Windows applications, to change display modes quickly and to activate the virtual screen mode. The program is automatically installed in connection with the V7SETUP. You will find it in the SPEA program group.
To start the program, double click on the SPEAview icon.

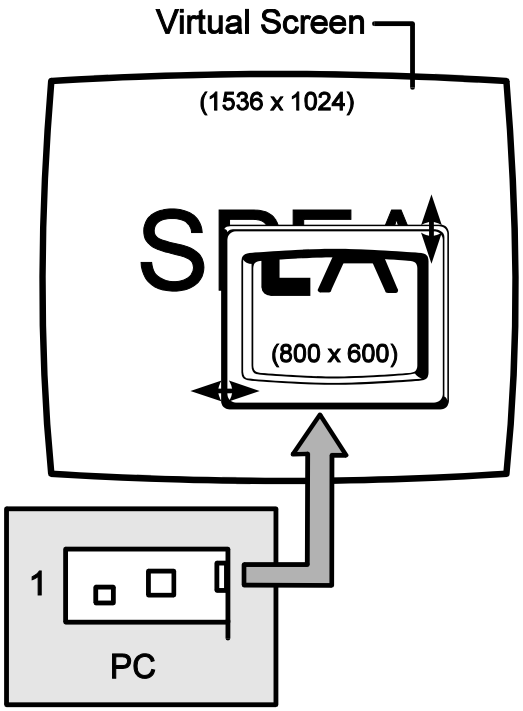
## How is SPEAview used?

With SPEAview you can:

- change the resolution without leaving Windows (Set button)
- assign a resolution and color depth to different Windows applications (Set button)
- use the `Virtual` button to activate the virtual screen option. When activated, the visible section of your board's display memory can be changed by moving the mouse cursor to one of the edges of the monitor display.
- use the `Camera` button (Bird's eye) to see or control which part of the active image you have displayed on the screen when working with the Virtual Screen feature.
- define which of the offered features you want to display in the menu bar of SPEAview and where the menu bar should appear when the program is activated (with the `Set` button in the menu bar).




- use the ? button to call online help about the program.



## SPEAdometer (board refresh rate tuning)

SPEAdometer is used to increase the refresh rate of your board under Windows within safe limits. Performance boosts up to 60% are possible with SPEAdometer.
The menu is self-explanatory but if you should need further information consult the integrated online help.

## WinTune (Display Trimming)

WinTune is a utility used to change the display position and size quickly and easily. The program is installed automatically during the installation of SPEA's BigWin driver for Windows and is self-explanatory. You can use the online help available if you need assistance with the program.

# Watching TV via SPEA's MediaStation

## SPEA MediaStation's Functionality

SPEA MediaStation is a remote control software, which can be used for several different functionalities. SPEA's MediaStation enables you to receive TV programs, playback videos from Video CD (or from a video recorder) as well as to replay a variety of multimedia file formats as MPEG, AVI etc.
Depending on the mode you are in, SPEA's MediaStation, changes the optical appearance of the remote control, corresponding to the functions required for each mode.

## How is SPEA MediaStation used?

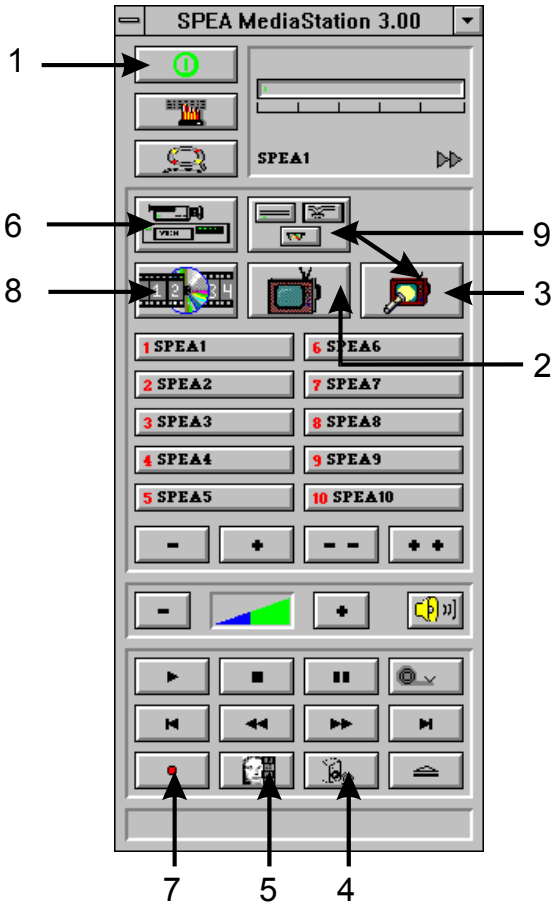
- SPEA MediaStation's possibilities with are very diverse, depending on whether you want to watch TV, playback a VideoCD, a video or a multimedia file. For this reason we have restricted a description to the most important features of the remote control with the intention of **'getting you started'**.
- A detailed **online help** is available with the program so that you easily can work with SPEA MediaStation without a long training period.
- Another big help for orientation is the cursor position function: each time you move the mouse cursor over a button the corresponding functionality is **described in the bottom line of the remote control**. You can check each all button without the actually testing their effects.
- In addition, you will already know a lot about some buttons as they are identical to the ones on the remote control for your TV or your video recorder at home.

**Warning**! SPEA MediaStation's remote control buttons may look different. The following description refers to the individual buttons on the remote control. If one of the buttons is not available on *your* MediaStation remote control, your SPEA board does not support the corresponding feature (e.g. TV Tuner or Video In).

## Starting MediaStation

Click on the SPEA MediaStation icon in the SPEA Program group:


A remote control appears on the screen, the corresponding 'TV' can be obtained as follows:




## Switching on the TV

**Button 1 (see illustration)**
If you click on this button, the TV appears on the monitor.
You will see different symbols at the top of the TV. These symbols are used to modify the TV size. The meaning of the symbols is described in the online help.

**Button 2, 3 and 4 (see illustration)**
These buttons are not implemented for MIRAGE VIDEO TV.

## Recording Film sequences (from Video In or from TV)

**Button 5 (see illustration)**
This button is used to open another dialogue box where you can make further settings if you want to record a film sequence via MediaStation from Video In or TV and to save this as an AVI file.

**What you should know about recording film sequences**

- A recording lasting approximately 10 seconds needs about 4 MB space on your hard disk

- Recordings into a RAMDRIVE are smoother than those made directly onto a hard disk. They do not playback faster but jump less than hard disk recordings.
- The best AVI playback results are achieved with the 120 x 160 resolution.
- The best video recordings are achieved with an additional video hardware compression board as the SPEA CRUNCH IT.

## Using Video In

**Button 6 (see illustration)**
Requirements are:
- a video cassette recorder is active in standby mode
- a film is currently being played back

## Capturing Single Frames - 'Snapshots' from Videos

**Button 7 (see illustration)**
Requirements - see Button 6.
Besides capturing single frames via this button/dialogue box, you can also produce snapshots by moving the mouse over the image in the TV and then clicking the right mouse button while the film is being played back. This also opens the same dialogue box.

**Recording Film sequences (from Video In or TV Programs)**
See description above - TV Tuner reception mode.

## Selecting Video CD

**Button 8 (see illustration)**
If you click on this button, another dialogue box is opened to select a VideoCD.
If you have selected and confirmed a VideoCD, the remote control changes its appearance in some area (see online help).

## MPEG / AVI Playback

**Button 9 (see illustration)**
Opens a dialogue box that lets you select files from your hard disk. Select the desired files and and start the file either by double-clicking on the file name in this dialogue box (this is the fastest way) or via the remote control once you have assigned a file to a channel button on the remote control.

## General Notes / Restrictions

- You can playback VideoCD's which are explicitly labelled 'Video CD' and 'CD-i' with SPEA MediaStation. Please make sure that your CD ROM drive also supports one of these CD formats.
- Handle VideoCD's with great care. Due to the nature of the data they contain, they are much more sensitive to surface damage than ordinary music CDs.
- Standard MPEG-1 and AVI files can be played back with SPEA MediaStation.

## Volume and Playback Speed while using the XING MPEG Decoder

- The playback volume (with XING MPEG Decoder playback) is primarily controlled by the Windows Media Player program. If you turn the volume off here, then the remote control volume will have no effect! If you are using a sound board which has a separate volume control, make sure that this is not muted or turned down! To change the Media Player settings it is necessary to close the MediaStation remote control first!
- The speed of film files is fixed and can only be reduced in steps. Changes to the Windows Media Player have no effect.

It is possible to capture a single frame of an AVI, MPEG or other playable file in two ways:

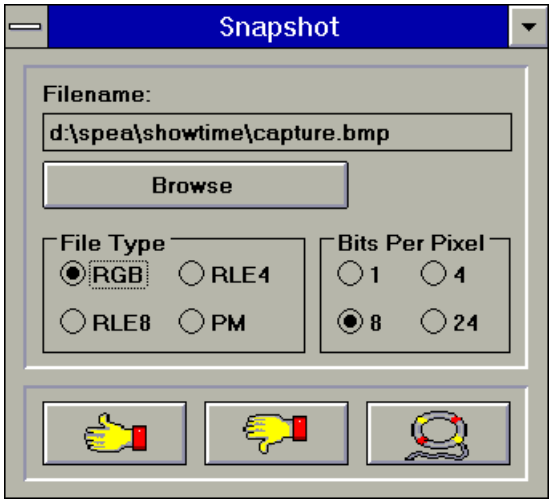
**With SPEA's MediaStation**

Requirement: Video In is active on the TV window.

17. Click on the Pause button when the frame you want to capture appears on the TV.
18. With the << and >> buttons or via the track bar you can exactly select the desired frame.
19. As soon as the frame is shown, click on the Record button.

**Note:** Instead of clicking on the Pause button and then on the Record button you can also click with the right mouse button ON the active TV, the result is the same.

The following dialogue box appears where you can define the snapshots. More information is available in the online help of the dialogue box.




20. As soon as you click on the OK button a snapshot will be saved as BMP file.

You can edit this Bitmap file in programs like e.g. Paintbrush.

**With a Windows Hotkey function**

21. Start the playback of the file you want to capture a frame of
22. Pause or stop the playback when you reach the frame you need
23. Click on the MediaStation TV window frame
24. Hit the combination ALT + Print

The window is then captured into the Windows Clipboard. Using Paintbrush (for example) you can then edit the picture and if necessary remove the border of the captured image that looks like a TV frame.

# Software Installation - OS/2

## Installing the Basic Software and Utilities

In order to use your board in your PC it is necessary to install a package of basic programs, regardless of the operating system in use. Please execute the following steps in order to install the basic software.

25. Put the SPEA CD in drive E: and start the installation (from E:) as follows:

    Start OS/2, open an OS/2 window and start the program SPEAOS2 from the CD

26. Choose `English (E)` as your language for the installation.
27. A menu is displayed with the options `'Product Information'`, `'Manuals'` and `'Installation'`.
28. Click on the `Installation` button.
29. Confirm your hardware if necessary.
30. You will see a list software drivers available for installation.
31. Select the first option `'Drivers & Utilities'`.
32. You will now be asked for the disk drive and directory names where the SPEA software should be copied (default: C:\SPEA\GDC).
33. Accept the default name and follow the instructions on the screen. The installation program will automatically copy all the necessary files onto your hard disk.
34. A README file appears on the screen during the installation. Please read this file!

The basic software is now installed. To install and configure the drivers you need for the different operating systems and applications you are using, please read the relevant sections that follow.

Please note that the respective applications will still be shown in 640x480 resolution. Higher resolutions or color depths are set using a corresponding tuning program (V7SETOS2.EXE).

Continue on the following page.

# OS/2 (BigBlue Driver )

**Installation Requirements**
OS/2 has to be installed and runs with standard VGA driver with the board in the OS/2 environment and in a Windows session as well.

**Special Driver Features**
The BigWin driver can be installed in the Windows Session in all available resolutions and also with color depth higher than 256 colors.
Also if the BigWin is configured in another resolution than the OS/2 environment it is possible to switch between both desktops without any problems.

**Installation**
35. Start OS/2.
36. Put the SPEA CD in your CD drive.
37. Open an OS/2 window.
38. Change to the CD drive.
39. Enter at the prompt:

    SPEAOS2

40. Select `English (E)` as your language.
41. Select the option `'Drivers and utilities for SPEA Software products'`.
42. In the following lists confirm that the board identified is correct.
43. Select the OS/2 driver listed.
44. Accept the name CONTINUE.CMD as proposed.
45. Follow the instructions on the screen.
46. The program CONTINUE.CMD starts the program V7SETOS2, which is very similar to the Windows configuration program V7SETUP. The menu is self-explanatory. If you have any doubts about the function of any of the menu options, consult the integrated online help.

# Other Applications

## MS-Flight Simulator 5.x

| | |
|---|---|
| **Note:** | You must have already installed the basic software from the CD before continuing. |
| | To run Microsoft Flight Simulator 5.x you should select `'SVGA > VESA 1.2 compatible'` when configuring the display preferences. |
| **Note**: | You must ensure that the TSR for VESA mode support for your board is already loaded! (e.g. for MIRAGE P-32: V7MIRVBE.COM). Check by viewing your AUTOEXEC.BAT or by entering the following call from the DOS prompt:<br>MEM /C/P |

## AutoCAD DOS & Windows (SPEA BigFocus)

SPEA's BigFocus driver is supplied for use with AutoCAD 13 running under DOS or Windows. The driver includes all the 3D viewer functionality contained in the 3D-World and 3D-Win packages normally retailed as seperate add-on products (e.g. performance boost, button-click fast rendering, view and layer manipulation, spyglass lense, bird's-eye view, view export and various animation possibilities). Check the BIGFOCUS.ENG file installed in your SPEA directory after the software driver installation for the latest information on driver features.
The main menu (DOS) and SPEA toolbar (Windows) are self-explanatory but if you should need further information consult the integrated online help.

### BigFocus DOS Installation

| | |
|---|---|
| **Note:** | You must have already installed the basic software from the CD before continuing. |

47. Put your SPEA CD in drive E:
48. Change to the CD drive and type:
    SPEAINST.BAT
49. If not already marked, select your board in the list which appears.
50. Click on the `Installation` button (on the right).
51. Confirm your board again.
52. Select the BigFocus driver for your version of AutoCAD from the list shown.
53. This ends the primary installation.

**Reconfiguring AutoCAD DOS for BigFocus:**
Start AutoCAD with the -r parameter and select the menu item `'Configure video display'`.
You will be asked whether you wish to change the current configuration. Confirm this.
Select the BigFocus driver from the list that is shown.
Save your changes.

## BigFocus Windows Installation

| **Note:** | You must have already installed the basic software from the CD before continuing. |
|---|---|

54. Put your SPEA CD in drive E:
55. On the DOS prompt, change to the CD drive and type:
    SPEAINST.BAT
56. If not already marked, select your board in the list which appears.
57. Click on the `Installation` button (on the right).
58. Confirm your board again.
59. Select the BigFocus driver for AutoCAD for Windows from the list shown.
60. Accept the name CONTINUE.BAT for the batch file as proposed.
61. End the primary installation and change to the root of your hard disk.
62. Type CONTINUE.BAT. The Windows and the installation program SETUP.EXE are automatically started.
63. Follow the instructions on the screen. The installation routine will decompress and copy various files onto your harddisk.

An important file will also be created on your hard disk: DSBIGFOC.INI
DSBIGFOC.INI contains an important entry that you may need to change to accomodate for your hardware (see 'GDIByPass' in the online help).

**Reconfiguring AutoCAD for Windows to use BigFocus:**

64. Start ACADWIN, Select "`Options`", "`Configure`", and when selecting the display driver choose:
    `SPEA BigFocus - Accelerated Display Driver - by SPEA AG.`
65. Save your changes.

# Technical Details

## Optional MPEG Module

If you want also to intensively use the multimedia features of the MIRAGE VIDEO, it is advisable to upgrade the board with the additional Hardware MPEG Decoder module. Please contact your dealer for purchasing the module (order nr. at SPEA: M10.2082.000).

### What is the MPEG module?

The MPEG module is an upgrade kit you can put on the MIRAGE VIDEO containing:

- the S3 Scenic / MX2 Video / Audio Decoder
- and the SPEA Movie Bus.

### What are the advantages of this module?

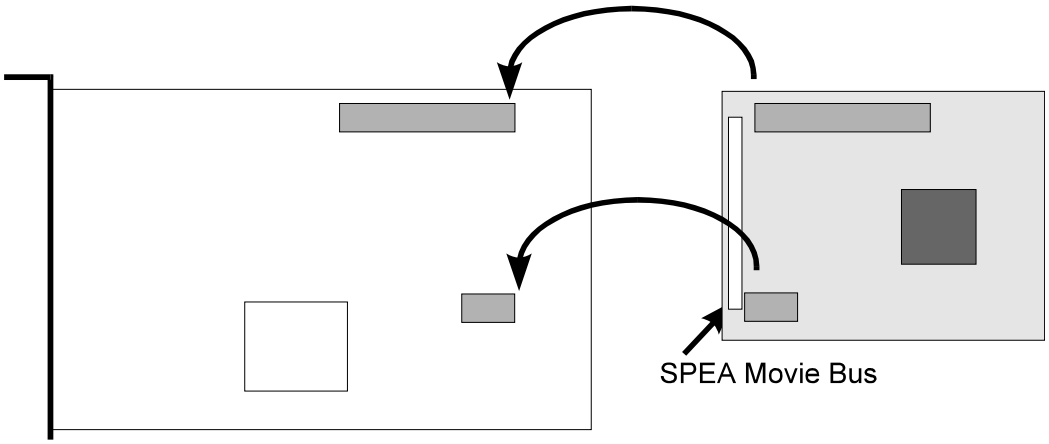
- If the MIRAGE VIDEO has no hardware MPEG decoder onboard, the processor's workload is enlarged and the playback quality is not as good as it could be with the hardware MPEG decoder module. Therefore, a Pentium 90 is the minimun system requirement. With a Hardware MPEG decoder the **processor's workload is reduced** and you will obtain a sustained frame rate of 30 fps (NTSC) or 25 fps (PAL).
- With the Hardware module the playback of TrueColor Video CDs is possible.
- besides the MPEG playback other applications can be executed (multitasking)
- With the MPEG module the MIRAGE VIDEO will become MPC3 compatible
- Via the SPEA Movie Bus you can connect the MIRAGE VIDEO with other boards (e.g. the Video editing board SPEA CRUNCH IT).

## Installation of the MPEG Module on the MIRAGE VIDEO

To install the MPEG module of the MIRAGE VIDEO proceed as follows:

66. If the board has already been installed in your system switch off your computer and all external options and unplug all power cords from the electrical source.
67. Ground your body before handling the module (for example by touching the metal power supply housing of your PC).
68. Remove the PC cover slot and securely remove the MIRAGE VIDEO from its expansion slot.
69. Hold the MPEG module on its edges only, not on its pin connector.
70. Fit the upgrade module on the graphics board as shown below.
71. Now reinstall the board as described in Part 2 in this manual.

After you have installed the board with the module in your system, continue with the Software Installation.




*Putting the MPEG-Module on the MIRAGE VIDEO*

**If you haven't installed the MIRAGE VIDEO in your system yet and you did not work with it,** follow the Software Installation instructions in Part 3 (for Windows 3.1x) or Part 4 (for Windows® 95) in this manual. The MPEG module will automatically be registered by the system.

**If the MIRAGE VIDEO has already been installed in your system and you have already worked with it**, you only have to execute the Software Installation for the MPEG module.
Call the program V7SETUP from the SPEA Program group, the program automatically detects and installs the MPEG module.

## Pinout of the SPEA Movie Bus

The MIRAGE VIDEO is equipped with a digital video bus connector. This **is not a Feature Connector**, but the 'SPEA Movie Bus'.
This connector can be connected with the multimedia board SPEA CRUNCH IT.
The default pinout of this connector is:

| Pin | Function | Pin | Function |
|---|---|---|---|
| 1 | SCL (bi) | 2 | GND |
| 3 | SDA (bi) | 4 | ODD (bi) |
| 5 | FEIN (in) | 6 | FEOUT |
| 7 | HREF (bi) | 8 | GND |
| 9 | HS (bi) | 10 | VS (bi) |
| 11 | LLC2 (bi) | 12 | GND |
| 13 | CREF (bi) | 14 | GND |
| 15 | LLC (bi) | 16 | GND |
| 17 | UV0 (bi) | 18 | UV1 (bi) |
| 19 | GND | 20 | UV2 (bi) |
| 21 | UV3 (bi) | 22 | GND |
| 23 | UV4 (bi) | 24 | UV5 |
| 25 | GND | 26 | UV6 (bi) |
| 27 | UV7 (bi) | 28 | GND |
| 29 | Y0 (bi) | 30 | Y1 (bi) |
| 31 | GND | 32 | Y2 (bi) |
| 33 | Y3 (bi) | 34 | GND |
| 35 | Y4 (bi) | 36 | Y5 (bi) |
| 37 | GND | 38 | Y6 (bi) |
| 39 | Y7 (bi) | 40 | GND |

The connector pin numbers are marked on the circuit board itself.

Three operation modes are possible with the MIRAGE VIDEO:

72. video in (e.g. video cassette recorder, TV Tuner etc.) is active
73. video decoder is active
74. an external board is active

The function of the pinout of the SPEA Movie Bus changes for each mode.

If you need more detailed information about the pinout (and its changes) of the SPEA Movie bus, you can request a technical specification from SPEA Software AG (address to 'Customer Support').

## Technical Data

Processor: S3 Trio64V (PCI)
2 MB EDODRAM
HighColor (65,536 simultaneous colors) up to 1024 x 768, 85 Hz n.i.
TrueColor (16.7 mill. simultaneous colors) up to 800 x 600
Dotclock: according to video mode (see BIOS.TXT in your SPEA\GDC directory).
Current consumption: +5V, typ. 750 mA, + 12V typ. 40 mA
Audio Line out on 3,5 mm mini phone jack to hook up with powered speakers or a soundboard

## Memory Addresses

It is necessary to make sure that all I/O and memory addresses reserved for the graphics board are not used by other hardware devices.

Your board uses the following addresses:
I/O addresses:

| | |
|---|---|
| Standard VGA I/O | 3B0-3DF |
| Graphics Engine | *x*2E8-*x*2EA |

Memory addresses:

| | |
|---|---|
| Video RAM | A000-BFFF |
| | |
| PCI Bus: | |
| Video ROM | **C000-C7FF*** |

* During the boot procedure the board uses a 64k memory block (C000 - CFFF)!

**Note**:
Please note that some fax and modem cards also use the address 2E8 (COM 4). In this case deactivate COM 4 and use another address for the corresponding hardware device.

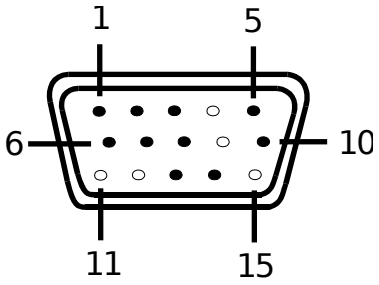
**PCI bus information:**
In contrast to an ISA or VL bus graphics board, the your PCI hardware requires double the amount of memory (64 kB instead of 32 kB Video ROM*) during the boot procedure*. It is possible that memory areas are used which are also addressed by other devices.
If you install devices with an own BIOS-ROM (e.g. SCSI-, ESDI controller or network card) please be aware of the fact that the memory area from C000 - CFFF may not be addressed. In this case it is necessary for you to change the BIOS address of the other device (depending on the corresponding device via jumper or DIP switch).

## Video Modes

Tables containing the video modes your board can handle can be found in the file BIOS.TXT on the SPEA CD. This file is installed in your new SPEA directory during the software installation if you selected the option `'Utilities'`.

## VGA Output Connector

| Pin | Function |
|---|---|
| 1 | Red |
| 2 | Green |
| 3 | Blue |
| 4 | Not used |
| 5 | ground |
| 6 | Red Return (ground) |
| 7 | Green Return (ground) |
| 8 | Blue Return (ground) |
| 9 | Key (no pin) |
| 10 | Sync Return (ground) |
| 11 | not used |
| 12 | not used |
| 13 | Horizontal Sync (+) |
| 14 | Vertical Sync (-) |
| 15 | Not used |




*Pinning of the 15-pin Sub-D VGA Output*

## VESA-Compatible Feature Connector

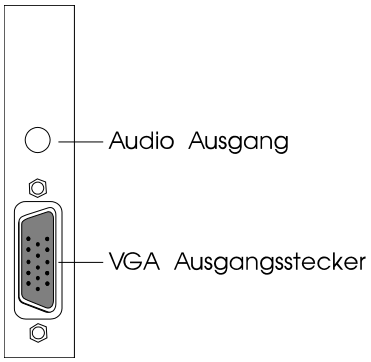
The auxiliary VESA-compatible connector can be used to allow pass-through VGA to a coprocessor card that does not directly support VGA.

| Pin | Function | Pin | Function |
|---|---|---|---|
| 1 | Ground | 2 | Pixel Data 0 |
| 3 | Ground | 4 | Pixel Data 1 |
| 5 | Ground | 6 | Pixel Data 2 |
| 7 | (See Note) | 8 | Pixel Data 3 |
| 9 | (See Note) | 10 | Pixel Data 4 |
| 11 | (See Note) | 12 | Pixel Data 5 |
| 13 | Unused | 14 | Pixel Data 6 |
| 15 | Ground | 16 | Pixel Data 7 |
| 17 | Ground | 18 | Pixel Clock |
| 19 | Ground | 20 | Blanking |
| 21 | Ground | 22 | Horizontal Sync |
| 23 | Unused | 24 | Vertical Sync |
| 25 | No Pin (key) | 26 | Ground |

**Note:**
7, 9, and 11 are inputs to the DAC. All are active LOW.
7: External Pixel data
9: External Sync and Blanking
11: External Pixel Clock

## Audio Out Connector

Line out to 3,5 mm mini phone jack



# Troubleshooting

## Problems with CD ROM Drives

If you have problems with your CD ROM drive consider the following general notes:

There are three types of CD-ROM available, that confirm to different standards, and are not therefore compatible with each other. They are as follows:
**Yellowbook**: Conventional CD-ROM
**Greenbook:** Used for linear video, typically used in Philips CD-I players (384 lines)
**Whitebook:** Used for digital video VideoCD (352 lines).

Warning! To play **VideoCDs** with the SPEA SHOWTIME PLUS you must have a Whitebook type CD-ROM drive. As the VideoCD format of data is very new, older type CD-ROM drives may not be able to read the data. If you do have problems reading data from a VideoCD, you may find that a software update for your CD-ROM drive will help.

- Only use CDs explicitly labelled 'VideoCD'.
- Check that SMARTDRV.EXE is being loaded *before* MSCDEX.EXE (AUTOEXEC.BAT)
- Use the latest driver version for your CD ROM drive; it is possible that older driver versions are not able to read the VideoCD format.
- To read CDs you need about 500 KB conventional memory. You may see an error message that the CD cannot be read or messages that the SPEA MCI driver does not work correct. In this case, delete or REM out all drivers you don't need urgently from your CONFIG.SYS and AUTOEXEC.BAT file and restart your system.
- Only use CD ROM drives that support the default reading access and fulfill the ISO 9000 rules. A list of CD ROM drives tested by SPEA can be found in the README file in the SPEA directory.

## Problems with VideoCDs

As Video CD is a very new technology, it is likely that many of you are using the format for the first time. In the same way that you encounter picture problems with VHS tape recordings, you can encounter comparable problems in the VideoCD format. This section describes various symptoms and their causes.

Picture display problems can be internal to the quality of the pictures on the VideoCD. Not all VideoCDs have the same picture quality, and thus the resulting picture quality as playback may not be constant for all VideoCDs.
**Macro-blocking:** Also known simply as 'blocking' or 'jagging', is caused by a lack of bits (binary digits) to store all the information, and happens when the VideoCD movie is created. The area of the picture for which there is insufficient information (bits) will be displayed as simple 8x8 or 16x16 blocks.
**Unreal stillness:** This is when an object (such as a tree in the background) appears to absolutely motionless. This can happen during VideoCD creation, where the object is moving so slightly as for the motion to be ignored by the movie conversion process.
**Digital rain:** This term describes a number of undesirable picture effects. One example of this is a small stationary object that appears in one frame, then disappears for a few frames, then reappears. This and other effects tend to be more apparent in earlier VideoCDs than ones more recently created.
**Mosquitoes:** This effect can occur especially at the edges of moving objects, due to the number of bits of data concentrated about the point of movement. If can give the impression of a heat-haze or fuzziness in the picture.

The picture quality of VideoCDs made in America can vary from those made in Europe. American manufacturers favour sharper image, which can be clearer but be more prone to the above problems. European manufacturers favour a softer image, which can look more pleasing, and be less prone to the above problems.

**Note:**
A VideoCD cover that is not marked 'VideoCD' is not suitable for use with the Whitebook CD-ROM standard, and will therefore not be compatible with your system. Unfortunately, VideoCD labelling is not as consistent as it might be, so check with the sales staff before making your purchase.

# Glossary

***ANSI**:* American National Standards Institute.

***ASCII**:* American Standards Committee on Information Interchange. A standard used by IBM and compatible computers to represent numbers and characters in binary form.

***Analog Display**:* A monitor that uses variable color control voltages to display a very large number of colors but requires very few inputs.

***AUTOEXEC.BAT***: A batch file that directs the activities performed by the computer during system startup.

***BIOS**:* Stands for Basic Input-Output System. Code in your computer's ROM (Read Only Memory) that provides the power-on self test and other operating functions.

***Booting/Booting Up**:* Starting the computer. There are two types. Warm Booting is accomplished by simultaneously pressing the CTRL/ALT/DEL keys and can occur only when the computer is running. A cold boot requires activation of the ON/OFF switch.

***Color Display**:* A type of monitor capable of displaying information in color. It is often called an RGB (red, green, blue) monitor, referring to the signals needed to drive it.

***CONFIG.SYS**:* An ASCII file that is created to provide the computer with special information about applications and hardware.

***Default Mode***: The capabilities, resolutions and display mode the system operates with when you start your computer.

***Digital Display**:* Also called TTL. A type of monitor that switches signals ON or OFF to determine display color. Types of digital displays include the IBM Enhanced Color Display or Monochrome Display.

***DIP Switch**:* Dual Inline Package switch; a series of tiny, two position switches which allow users to select and change options on computer boards, printers, and other peripherals.

***Driver**:* Part of a software program that interacts with a particular piece of equipment in your computer system (i.e. video boards, printers, and keyboards). Drivers are often loaded by your config.sys at system boot.

***EMS**:* Enhanced Memory Specification. Originally developed to break the DOS 640K limit, it is now used as a general term for types of add-in memory.

***Enhanced Color Display (ECD)***: The IBM Enhanced Color Display capable of 640 x 350 resolution.

***Expansion Slot**:* An electrical connection within the computer used for the addition of expansion boards (such as video adapters).

***Fixed Frequency Monitor**:* An analog monitor which can only sync to a very narrow range of scan frequencies.

***Hexadecimal Notation**:* A base-16 numbering system that uses numbers and letters. The hexadecimal sequence begins: 1 2 3 4 5 6 7 8 9 A B C D E F, then 10, 11 etc.

***Horizontal Frequency**:* The rate at which a monitor displays each scan line. Usually measured in kilohertz (kHz).

***I/O Port**:* Input/Output port. An address used to access a hardware device.

***Interlaced Display**:* A monitor that refreshes every other scan line every other pass of the screen. A non- interlaced monitor refreshes the entire screen (every scan line) every pass of the screen.

***Interrupt Request (IRQ)**:* Signal used by a device, such as a mouse, to inform the CPU that it is present and functioning.

***Jumper**:* A small plastic plug that fits over a pair of pins. When the plug straddles two pins it makes an electrical connection. The computer makes decisions based on whether the connection is made or not. A group of jumper pins is called a jumper block.

***Multi-frequency Monitor**:* A type of monitor that supports a wide range of horizontal scanning frequencies and vertical refresh frequencies. This type of monitor accepts inputs from many different video display adapters.

***Palette**:* A selection of colors from which to choose. The MIRAGE P-32 provides as many as 16.7 million simultaneous colors from a palette of 16.7 million. This capability is sometimes referred to as TrueColor. It is believed that the human eye can discern no more than 16.7 million colors.

***Peripheral Equipment**:* Auxiliary equipment connected to a computer (e.g. monitor, printer, keyboard, etc.).

***Pixel**:* Short for picture element; the smallest field displayed on the monitor; could be compared to the dots which form images in photos printed in newspapers. Also called pel.

***Primary Display**:* The monitor that is active when you power on your system.

***RAM**:* Random Access Memory; memory that can be read from and written to.

***ROM**:* Read Only Memory; memory space in your computer for storing permanent operating instructions.

***Resolution**:* Number of pixels displayed on the monitor. The higher the resolution, the crisper and sharper the images appear.

***Secondary Display**:* The monitor connected to the graphics card that is co-resident with another card/monitor in your computer system. Is not active upon booting your system.

***Sync:*** The stable condition that exists when two repetitive events maintain a constant time relationship; your monitor is in sync with the signals from your board when the display is correct and stable.

***Terminate and Stay Resident (TSR)**:* Programs that are run once then remain in memory in order to be activated by a sequence of key strokes or a 'hotkey.' It is possible that a TSR may take up too much memory and cause conflicts with other programs.

***TrueColor:*** The ability to display 16.7 million simultaneous colors. It is believed that the human eye can discern no more than 16.7 million colors. See 'palette'.

***Vertical Frequency**:* The rate at which the monitor screen is refreshed. Usually measured in hertz (Hz).

***VGA**:* The IBM Video Graphics Adapter.

***Video Connector**:* The standard 15-pin monitor output connector located on the board,

***Video Electronics Standards Association (VESA)**:* industry-wide consortium organized to standardize graphic modes Your graphics board supports the VESA standards.

# Customer Care Center

An optimal PC system doesn't only include the right hardware and software that you purchased with your SPEA product, it also offers practical, professional service. By making your choice for SPEA you have opted for top-level support, available to you in a number of different forms.

## How to ...

get **information** about existing and new SPEA products
get **technical support** if you have trouble installing, configuring or using a SPEA product
get the latest software **(updates)** or optional software for your SPEA product
use your **guarantee** if necessary

The following services are available:

- SPEA Mailbox (BBS)
- CompuServe / Internet
- SPEA CD
- SPEA ExpertLine
- Hardware Guarantee

## SPEA Mailbox (BBS)

SPEA customers and products users have 24-hour modem access to our Bulletin Board system, the SPEA Mailbox, via the following telephone numbers:

**SPEA Mailbox:**
+49 8151 / 1 29 21 (... 28.800 baud)

+49 8151 / 26 62 41 (... 14.400 baud)

+49 8151 / 2 11 96 (... 19.200 baud, Zyxel)

+49 8151 / 7 80 01 (ISDN)

## CompuServe / Internet

### CompuServe

The SPEA Forum in CompuServe is accessed with the command:

GO SPEA

### Internet

The Internet services are available via the following address:

http://www.vobis.de/bbs/firmen/spea

## SPEA CD

Information about new developments and product improvements at SPEA as well as the latest software releases and user documentation is available via the SPEA CD, which is **updated on a monthly basis.** The CD can be obtained from your retailer or national distributor.

## SPEA ExpertLine

Questions about SPEA products which users outside of Germany may have are best directed to local retailers or the national representative. If this should not suffice, you can consult the SPEA ExpertLine with its extensive service offers via the following **fax** number:

+49 8151 / 21 258

Note that you will also find important technical notes and information in the manuals and README files, delivered with all SPEA products. Many questions can be answered by reading the tips and notes documented there.

## SPEA Hardware Service

SPEA products are subjected to intensive tests and fulfill the highest quality standards. Nevertheless, you have the benefit of additional security with an extended guarantee for SPEA  graphics boards. In the unlikely event of you needing to use your guarantee, please contact your local distributor or retailer for help and advice.

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