miroMAGIC

miroMAGIC plus

Basic Manual

miroMAGIC plus.
Basic Manual.
Version 2.0/E. November 1992.

For your own Safety...

In the interest of your own safety and the flawless functioning of your new product and computer system pay attention to the following notes:

- 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 you before touching the components with your hands or any tools.

- Make sure that the components you want to connect to or add to your computer are in compliance with the computer's characteristics.

- Only use a shielded cable to hook up the monitor to the computer.

- Only use the power cable we supply to hook up the monitor to the computer. Do not use any cable that supplies the power through the computer.

- **In the single screen configuration:** You need to have a high resolution multi frequency monitor, that supports a horizontal frequency of at least 31 kHz.
  If you want to use Windows in **True Color** mode you always need a high resolution multi frequency monitor.

Please note:
Developments that emerged after the deadline for this manual, and which ate therefore not incorporated here, are dealt with in the **INFO.ENG** file on the disks supplied.

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About the manuals

The printed miroMAGIC plus system documentation consists of two parts: The Basic Manual and the Application Manual. Check the **INFO.ENG** files you find on the supplied disks for any changes that have occured since the printing of the manuals. Also, some of the programs you receive have quite detailed, integrated **on-line help**.

How to start

The fastest way to get your system running is to first familiarize yourself with the **Basic Manual** you are reading just now. This describes the hard- and software installation of your miroMAGIC plus board.

Then refer to the **Application Manual** to tune your miroMAGIC plus system to the requirements of your applications. There you learn everything you need to know about the installation and use of the driver software supplied with your miroMAGIC plus board.

Conventions

In the margins you see subheadings as well as ideograms, which are to help you find your way through this manual more quickly.

Important text passages which point out what is imperative to do (or not to do!) in a given situation are marked with the ideogram you see in the margin.

All **commands** the user is to enter over the keyboard appear in this font:

install< >

The < > symbolizes the <Enter> key.

The addition **h** defines a hexadecimal number. The number **2E8h** for example stands for the hexadecimal number 2E8.

Quick installation charts

Experienced users who are in a hurry to get started can refer to the following page for an overview of the installation. When in doubt read the detailed explanations elsewhere in the manuals.

Quick installation chart

	miroMAGIC plus
Install hardware, select monitor	• Check system requirements, If necessary deactivate an existing VGA!
	• Set the DIP switch!
	• Disconnect computer from power; disconnect all cables; install miroMAGIC plus in your computer; **only in a single screen configuration with existing VGA:** Connect VGA and miroMAGIC plus with the loop-through cable; reassemble casing!
	• Connect monitor(s)!
	• **Start miroMAGIC installation program with** install< >, follow the instructions on the screen!
Install Windows 3 drivers	• **Start the miroMAGIC plus installation program; choose** Install driver: Windows 3.0 **or** Windows 3.1 **from the Main Menu and follow the instructions on the screen; start Windows SETUP and reconfigure Windows for the driver you want!**
Install Autodesk drivers: **miroGTI4** **miroGTI 12** **miroADI** **miro3D** **MAGICGEN**	• Choose the item **Install driver: ...** for your application (AutoCAD, AutoShade, AutoSketch, 3D Studio or Generic CADD) from the Main Menu of the miroMAGIC installation program, follow the instructions on the screen and leave the installation program! Call **MAGIC.BAT** with command line parameter for your application. For 3D Studio edit the file 3DS.SET (s. Application Manual)! Configure the driver in the Autodesk program!
Install other drivers	• Start the miroMAGIC plus installation program, choose the item **Install driver: ...** for your application, follow the instructions on the screen and reconfigure your application!

1. Introduction

miro's new **miroMAGIC plus** is a powerful graphics board. Teamed with a matching large screen monitor it becomes a top-of-the-line graphics system. These characteristics set the miroMAGIC plus apart:

q **Speed**

No doubt about it: one of the most important aspects when working with professional graphics systems is the speed with which you can generate drawings or enlarge details. miroMAGIC plus works with the latest in graphics processors, the C&T graphics coprocessor 82C481. It gives extremely fast redraws. When executing graphics routines the highly integrated graphics processor is many times faster than the PC's CPU. Implementing more complex graphics routines releaves the CPU.

q **Resolutions/Colors**

The miroMAGIC plus offers you an 8-bit mode (256 colors) with max. 1280 x 1024 pixels, a 16-bit mode (32.768 colors) with max. 1024 x 768 pixels, and a 24-bit mode (16.7 mill. colors) with a resolution of max. 768 x 512 pixels.

q **VGA on board**

The integrated VGA allows you to work in a *single* or *dual screen configuration* using only one graphics board, allowing you to boot your computer and work with DOS programs in VGA mode without the need for a second VGA board. If you do install another miroMAGIC plus you get the *triple screen configuration* which is the mode of choice of people working with High End CAD. The integrated miroMAGIC plus VGA offers the standard VGA (640 x 480) and the Super-VGA resolution (800 x 600).

If you want to use a VGA already installed in your computer, you can turn off the miroMAGIC plus VGA.

q **Multimedia**

With the optionally availabe miroVIDEO- Converter you get several video ouput possibilities, for example recording animations on a VCR.

q 8514/A register compatibility

The miroMAGIC plus boards are register compatible with the 8514/A standard and thus allow you to use programs which directly access the board's register (such as Windows 3). These programs run at top speed.

q Software compatibility

The miroMAGIC plus boards have a standardized software interface, the 8514/AI (Adapter Interface). With this AI you can immediately use application programs which are based directly on this interface.

q **Drivers**

miroMAGIC plus covers the entire spectrum of graphics applications. In addition to the powerful display list driver the delivery scope of the miroMAGIC plus also includes high-quality CAD, 8514/A, and Windows drivers.

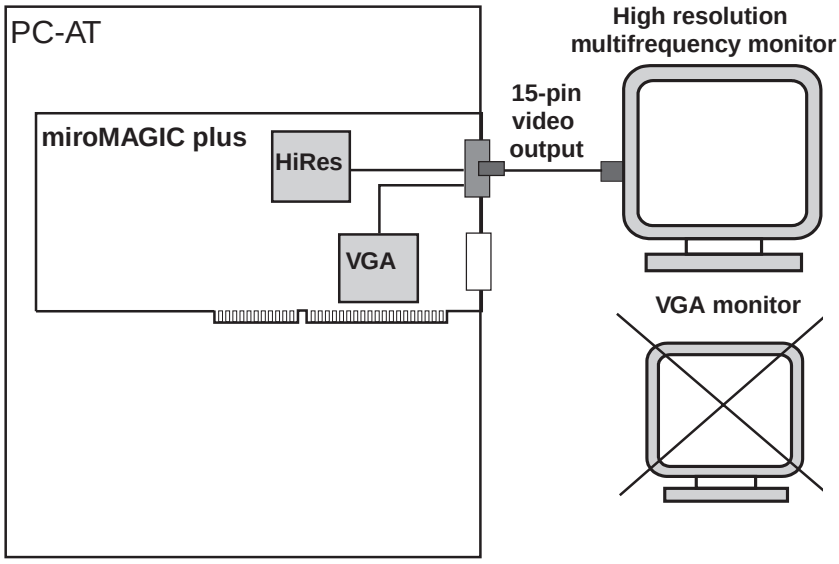
2. miroMAGIC plus Hardware

2.1 Before you start ...

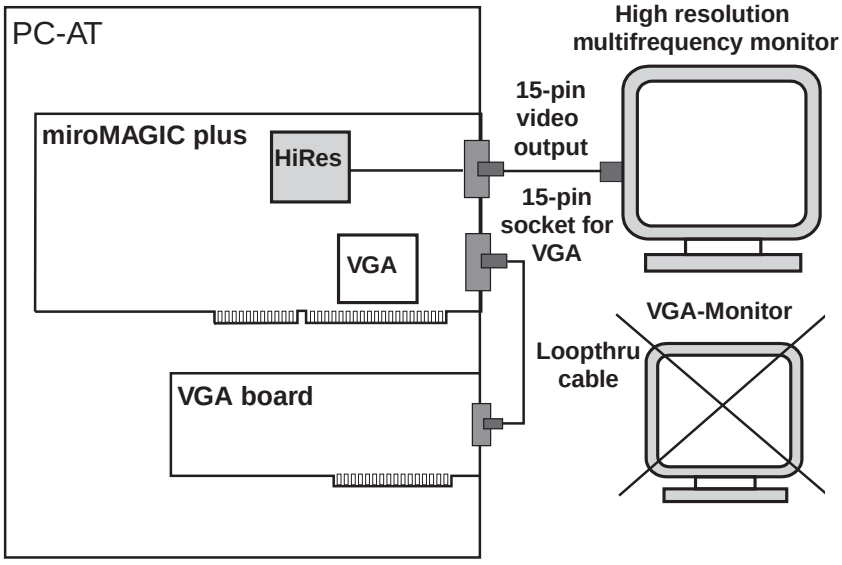
System configurations

miroMAGIC plus offers a wide range of possibilities. It can be operated in the single-, in the dual, and, if two miroMAGIC plus boards are installed in your computer, in the triple-screen configuration. The following illustrations will give you an overview:

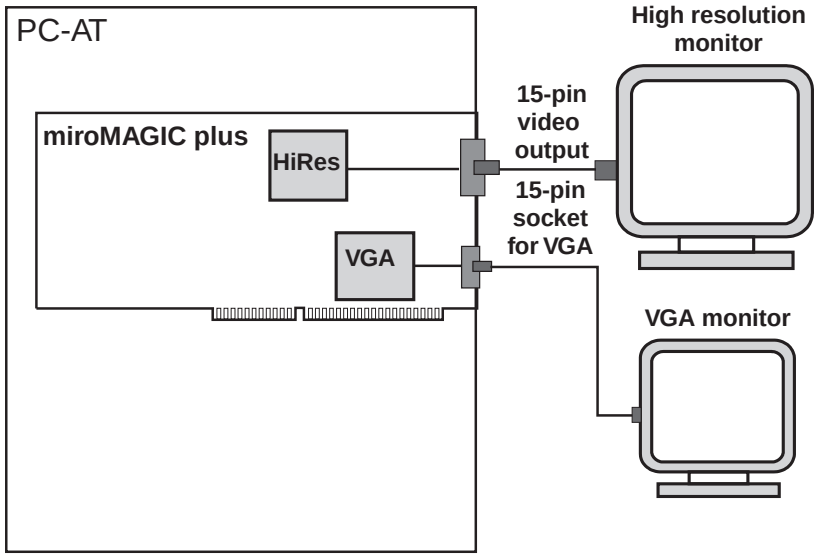
A. Single screen configuration with miroMAGIC plus VGA



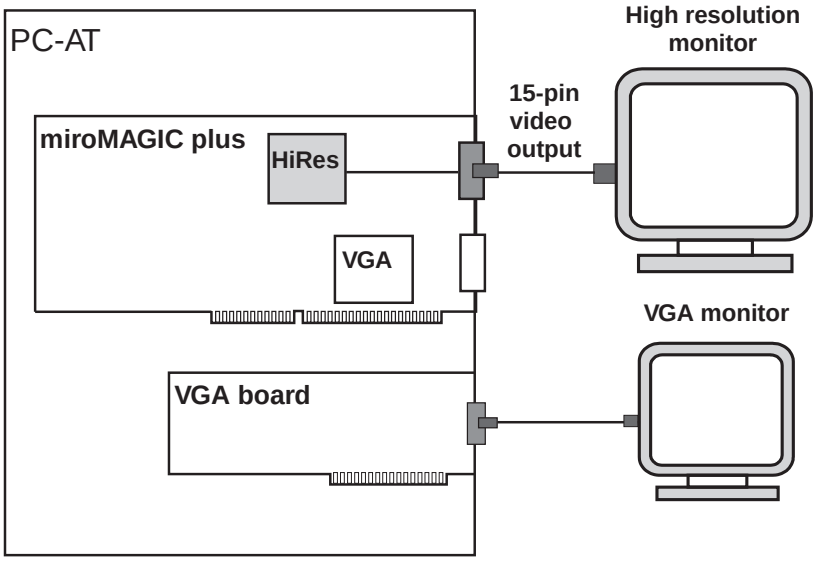
B. Single screen configuration with existing VGA



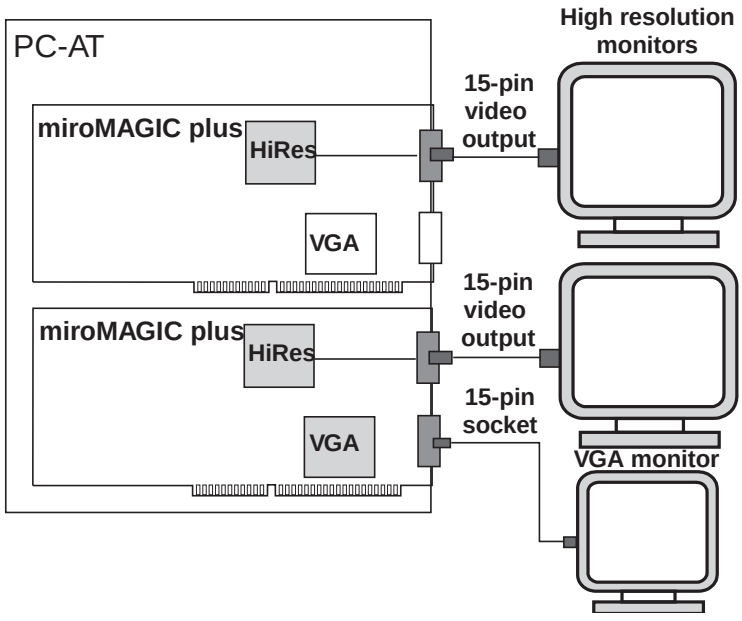
C. Dual screen configuration with miroMAGIC plus VGA



D. Dual screen configuration with existing VGA



E. Triple screen configuration with miroMAGIC plus VGA



Single screen configurations

A.:
In this configuration miroMAGIC plus is connected to a multifrequency monitor**.**

Using the miroMAGIC plus VGA, the image created by the miroMAGIC plus VGA is looped through to the high-resolution monitor automatically; you do not need to hook up any extra cables.
The VGA as well as the high-resolution image are shown on the monitor connected to the miroMAGIC plus.

B.:
In this configuration miroMAGIC plus is connected to a multifrequency monitor**, too.**

Instead of the miroMAGIC plus VGA a VGA board already installed in your computer or a motherboard VGA is used. The 15-pin VGA socket of the miroMAGIC plus board and the socket of the existing VGA are connected with the help of the cable for analog loopthru. The high resolution monitor is connected to the 15-pin video output of the miroMAGIC plus board. Switching back and forth between VGA presentation and high resolution graphics presentation takes place automatically.

Dual screen configurations

C.:
In this configuration miroMAGIC plus with its high resolution is run in addition to a standard VGA system; in this case the miroMAGIC plus VGA is used. Each system has its own monitor.

The VGA monitor is connected to the 15-pin VGA sokket of miroMAGIC plus.

D.:
In this configuration miroMAGIC plus is run in addition to a standard VGA system as well. The high resolution monitor is connected to the miroMAGIC plus. The VGA monitor is connected to an already existing VGA or motherboard VGA.

Triple screen configurations

E.:
Some applications (MicroStation, PC-DRAFT) support the triple screen configuration. To use this, two miroMAGIC plus boards have to be installed in your computer. Please note that both high-resolution monitors have to be of the same type.

As an alternative to the configuration shown in the illustration you can use – instead of the miroMAGIC plus VGA – an already existing VGA.

If you want to use the miroMAGIC plus VGA, you have to remove a VGA board which is possibly installed in your computer. A motherboard VGA has to be deactivated. In any case only one VGA must be active!

The miroMAGIC plus package

Before you begin the installation check to make sure your miroMAGIC plus package is complete. This is what should be included:

– miroMAGIC plus graphics board

– a set of disks

– documentation

– *optional:*
monitor, shielded monitor cable, cable for analog loopthru, miroVIDEO-Converter

If parts are missing, please contact your dealer.

System requirements

To install miroMAGIC plus, your computer has to meet the following requirements:

Computer
IBM AT or compatible computer with a free 16-bit slot (also 8-bit slot or EISA bus).

Operating system
MS-DOS as of version 3.x.

Monitor
For the single screen configuration
High resolution multi frequency supporting a horizontal frequency of at least 31 kHz with separate horizontal and vertical syncs.

For the dual screen configuration
High resolution fixed frequency or multi frequency monitor. The second monitor should be a standard monitor matching the VGA board.

For the triple screen configuration
High resolution fixed frequency or multi frequency monitor. In addition a VGA monitor that is connected to the miroMAGIC plus VGA or an already existing VGA.

In True Color mode
If you want to run applications in True Color mode (16.7 million colors), you **always** need a **multi frequency monitor**, that is in the single as well as in the dual screen configuration.

DIP switch

On the board you find a DIP switch (8 settings). The configuration of the DIP switch determines the defaults of the miroMAGIC plus.

VGA in the computer

A VGA component is integrated on the miroMAGIC plus board. If you want to use this miroMAGIC plus VGA instead of an already present motherboard VGA, you have to deactivate the motherboard VGA before you begin to install the miroMAGIC plus board. A VGA board present in

the host system must be removed. For more details check the sections ”Before you start...“ and ”Setting the DIP switch“.

Adress conflicts

miroMAGIC plus is exceptionally reliable. Still, to make sure your system can work perfectly, address conflicts must be avoided!

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Before you begin with the installation make sure that the addresses occupied by miroMAGIC plus are not also occupied by another expansion board in your computer.

For detailed information on the address range used by miroMAGIC plus, refer to appendix A.

Often the I/O address range 2E0h-2EFh used by the miroMAGIC plus boards is also used by network cards (for example ARCnet). Since the miroMAGIC plus boards' address cannot be changed, you have to switch the network card's I/O address (preferably to the 300h to 340h range) before you start to install miroMAGIC plus. You also have to set the networks card's driver (for example Novell IPX.COM) to the new address. Thirdly, you have to choose a free interrupt (for example IRQ5).

EISA configuration file

If you want to install your miroMAGIC plus board in a computer with an EISA Bus you can configure it for your miroMAGIC card. You find the configuration file !MIRO100.CFG **you need for it on the installation disk. Use the EISA Configuration Utility supplied with your computer for the configuration. For details check your computer's manual.**

Electrostatic charge

Graphics boards are very sensitive to electro-static charge. To avoid damage caused by electrostatic charges, do not remove the board from its antistatic bag until you are actually ready to install it. Also save the bag for future transports.

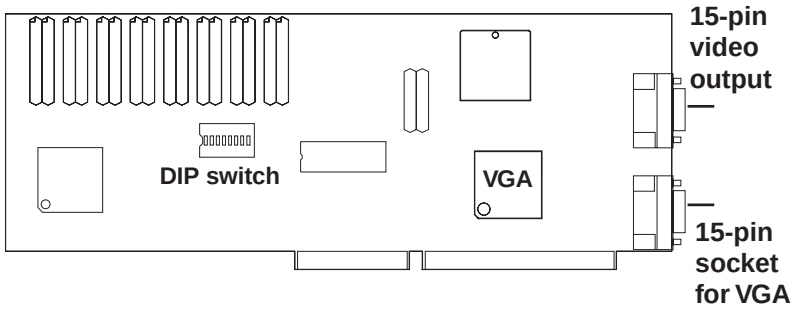
2.2 Setting the DIP switch

After you have decided what system configuration you want to work with the DIP switch (8 settings) of your miroMAGIC plus board has to be set.

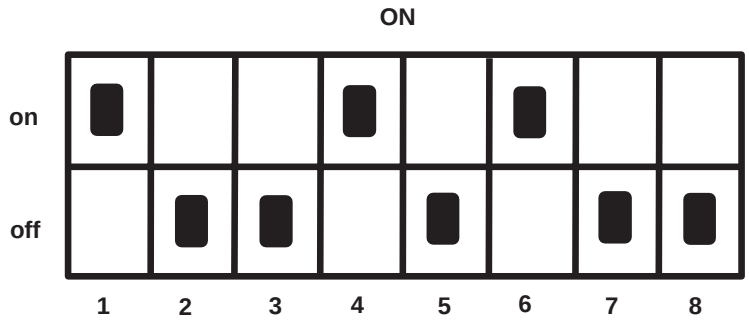
The following illustration shows the location of the DIP switch:

Default setting

The settings of the DIP switch determine important standard settings for the miroMAGIC plus boards. The following illustration shows the miroMAGIC plus boards' settings done at the factory. The DIP switches are set up for a configurtion with an activated miroMAGIC plus VGA.



Board layout miroMAGIC plus



DIP switch of miroMAGIC plus

The switches have been assigned particular functions:

Switch 1

Depending on how switch 1 is set, the onboard VGA of the miroMAGICplus is either turned on or off. The default setting is "on". Note the following:

– on**: miroMAGIC plus VGA is on. This applies to the system configurations** A **and** C **(see pp 2-1).**

– **off**: miroMAGIC plus VGA is off. This applies to the system configurations **B** and **D** (see pp 2-1) and to a triple screen configuration in which an VGA already existing in the host system (without illustration) is used.

If you use the system configuration **E** this switch has to be set to "on" on the miroMAGIC plus board with the VGA activated. On the other miroMAGIC plus board this switch has to be set to "off".

Switches 2-6

Switches 2-6 relate to the board's memory equipment. These switches were set up correctly at the factory and should not be changed.

Switches 7-8

The settings of switch 7 and 8 depend on whether you have one or two miroMAGIC plus boards installed in your computer.

– **One miroMAGIC plus board**: Switch 7 and 8 have to be in the **off** position.

– **Two miroMAGIC plus boards**: If you have two miroMAGIC plus boards installed in your computer, like with system configuration **E** (see p. 2-2), configure the DIP switch as follows:

	Board 1	Board 2
Switch 7	on	off
Switch 8	off	on

2.3 Installing the board

After you have decided which system configuration you prefer and have configured the DIP switch accordingly, you can install your miro graphics board. The only tool you need is a screwdriver. Proceed as follows:

- Turn off your computer and all peripheral devices connected to it. Disconnect the computer from the mains supply and also disconnect all other cables.
- Loosen the screws of the computer's cover and remove it.
- Discharge yourself of a possible static charge by touching the power unit casing.
- **If you want to use the miroMAGIC plus VGA:** Remove the VGA board present in the computer or disable any VGA integrated on the motherboard.
- Select a free 16-bit slot (8 bit- or EISA slot). Remove the slot's cover at the back of the computer. If necessary, loosen the screws of the cover and save it.
- Carefully insert the board in the slot by holding the card at the top and gently pushing both ends down into the slot at the same time. Press onto the upper edge of the board to make sure it sits securily in the slot.

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

- Fasten the board's bracket to the back of the computer using the screw you saved from the shield.

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- **Only with the system configuration B:**
  Connect the 15-pin D-type connector of the loopthrough cable with the 15-pin D-type socket of the miroMAGIC plus labelled **VGA**. The other end of the cable should be connected with the 15-pin D-type socket of your VGA board or the VGA socket of your motherboard VGA (miroMAGIC plus VGA has to be deactivated by setting the DIP switch).

- **Put the cover back on the computer and reconnect the peripheral devices.**

Connecting the monitor(s)

Please note the following:

Each miroMAGIC plus board has two 15-pin D-type sokkets. On no account should they be mixed up.

– A **VGA monitor** may only be connected to the 15-pin socket labelled **VGA**. For the location of the port, refer to the figure on page 2-7.

– **To connect the high resolution monitor with the graphics board, use a proper suitable shielded monitor cable.**

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- **Turn off the computer and the monitor.**

- **Connect the 15-pin connector of the video cable coming from the high resolution monitor to the 15-pin socket of the miroMAGIC plus board labelled** HR**. Tighten the screws.**

- **Connect the BNC connectors of the video cable with the corresponding ports of the monitor (see table). Close the bayonet socket with a quarter turn to the right.**

BNC plug of the cable	Monitor connector
red	VIDEO IN: R
green	VIDEO IN: G
blue	VIDEO IN: B
yellow	V
black	H/HV

- Only with the system configurations C and E:
  If you use the miroMAGIC plus VGA in the dual or triple screen configuration, connect the 15-pin connector of the VGA cable to the 15-pin socket labelled VGA of the miroMAGIC plus board. Fasten the screws on the connector.

- Only with the system configuration D:
  Connect the 15-pin connector of the VGA cable to the 15-pin socket of your VGA board/ motherboard VGA (miroMAGIC plus VGA has to be deactivated by setting the DIP switch).

- Reconnect the monitor(s) to the mains supply.

Your miroMAGIC plus system is in working order as soon as you have installed the hardware: a 8514/A compatible mode with 1024 x 768 pixels at a refresh rate of 88 Hz, interlaced.


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3. Software Installation

3.1 In general

After you have installed your hardware, you can proceed to the software with the installation program you will find on the installation disk. This program is going to perfectly adjust your miroMAGIC plus board and the monitor to each other. In addition, it installs the driver software on your hard disk. The Application Manual gives a detailed explanation of the installation of the application drivers.

The first part of the documentation gives you information about the installation program itself as well as about selecting and adjusting a monitor.

The miroMAGIC plus disks are not copy-protected. If you haven't done so already, you should make backup copies of the miroMAGIC plus disk(s) with the DOS command **DISKCOPY.** Keep the original disks in a safe place and only work with the copies.

3.2 The installation program

The installation takes place interactively: a dialog leads you through the program while you are answering questions. The installation program is designed in several languages: choose the language you are most comfortable with to do the installation. To make the whole process as uncomplicated as possible, the program offers a context-related help feature, making the information you need available to you on the screen. You may use the mouse or keyboard to access the menu.

This is what you need to install the software:

– the miroMAGIC plus installation disk

– the Windows 3 installation disks if you want to install the driver for Windows 3.

Calling the program

Proceed as follows to start the installation program:

- Put the installation disk in your disk drive.

- Switch to the disk drive and start the installation program by entering:
  install< >

After having started the installation program, the menu **Language Selection** will appear in German, its default setting. Choose the language you want and switch to the **Main Menu** by choosing the option **Continue** and pressing <Enter>.

Only with the initial installation: Before you come into the Main Menu, you will be advised by a screen message to eliminate any address conflicts *before* starting the installation.

Masks +

All the masks of the installation program follow the same pattern. Each one is divided into four segments:

– **Title bar**:
The Title bar tells you which mask you are just reading.

– **Action window** (on the left):
The Action window gives you the available options. Here you also have to enter the text the installation program needs as additional information.

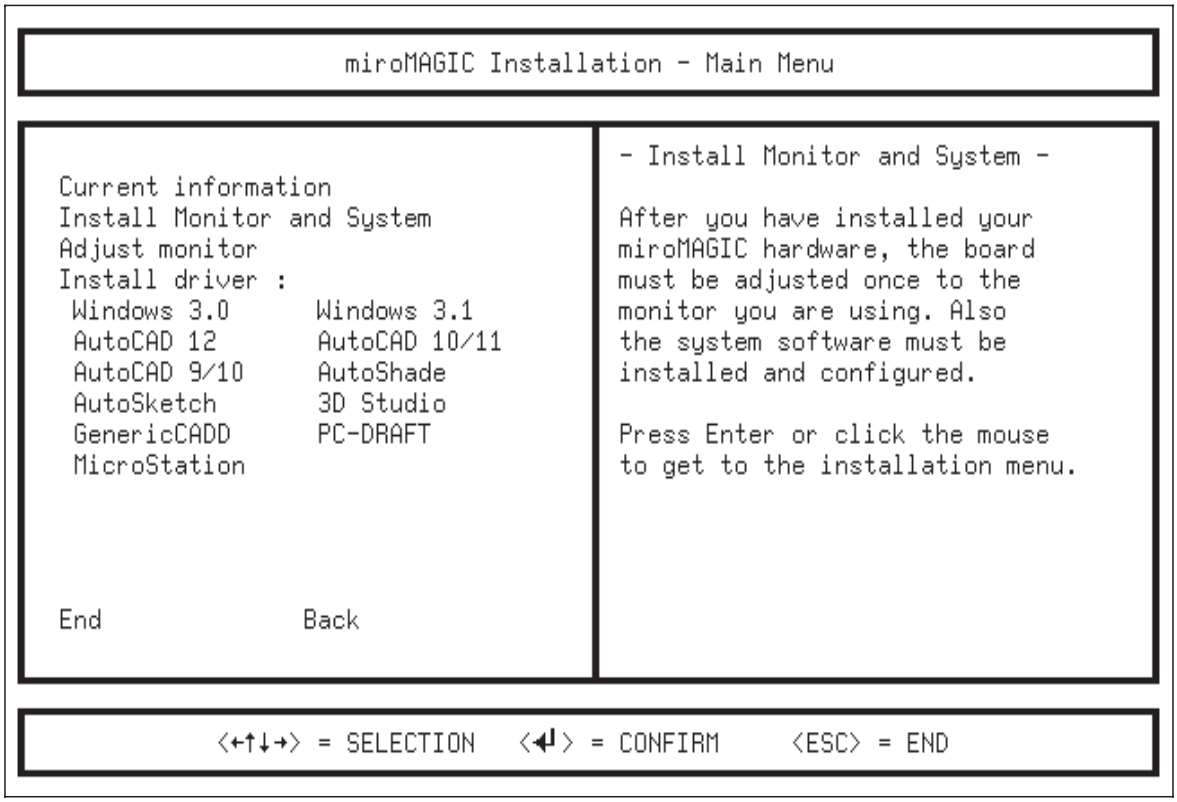
– **Help window** (on the right):
The Help window offers information about the item you chose.

– **Bottom line**:
In the bottom line you will find a list of the keys to control the program.

Main Menu

In the Main Menu you find the following items:

– **Current information:**
This menu item in the Main Menu tells you of possible changes that have occured since this manual was printed. This text is identical with the INFO.ENG file on the miroMAGIC plus Installation disk. Use the arrow symbols at the right edge and bottom screen to scroll through the text.



Main Menu of the installation program

– **Install monitor and system:**
With this option you install the system files and select the monitor.

– **Adjust monitor:**
With this option you can check and – if necessary – correct the image position and size with the help of a test picture. You have the possibility to save the modified parameters in a file.

– **Install drivers: ... :**
With this menu item you install the drivers for your application on your hard disk. Since the number of drivers increases constantly, the Main Menu may look different than the figure shown above. For details on the installation and the operation of the supplied drivers, refer to the Application Manual.

Please perform the installation steps in the order as they appear in the Main Menu, that is first install the monitor and the system, then adjust the monitor and at last install the application drivers.

3.3 Installing monitor and system

The first installation step is installing the miroMAGIC plus system files.

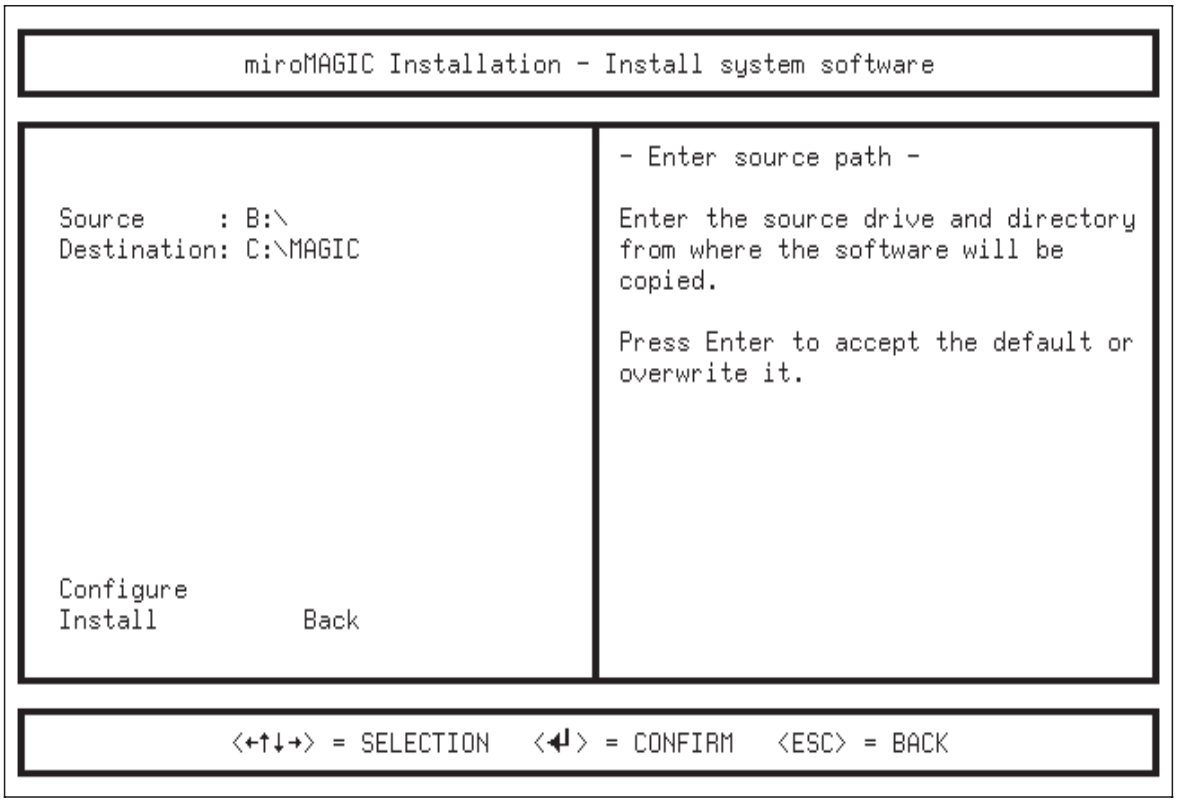
- In the Main Menu select the item **Install Monitor and System**.

Install system software

Now, the menu **Install system software** appears. Here the installation program needs the drive and the path for the directory to be created for the miroMAGIC plus system files (default is **C:\MAGIC**).

- To accept the default press the <Enter> key or overwrite the default and then press <Enter>.

- Select the option **Install** and then press <Enter>.



Installation program: Install system software

As a result of the installation the subdirectory C:\MAGIC will be created on your hard disk and the miroMAGIC plus system files are copied into it; here the most important ones:

– **MAGICINI.EXE**: You have to load this file before you call the applications. It initializes your miroMAGIC plus before every system start-up so that your applications run, non- interlaced, in the standard 8514/A resolution. During the installation the file AUTOEXEC.BAT will be changed in such a way that it contains the program call

C:\MAGIC\MAGICINI.EXE. If there is no file called AUTOEXEC.BAT on your computer, it will be created automatically in the main directory C:\. After the installation is finished you have to reboot to activate the changes.

– **TESTPIC.EXE**: With this program you create a test picture and thus are able to check right away whether or not your miroMAGIC plus system works properly.

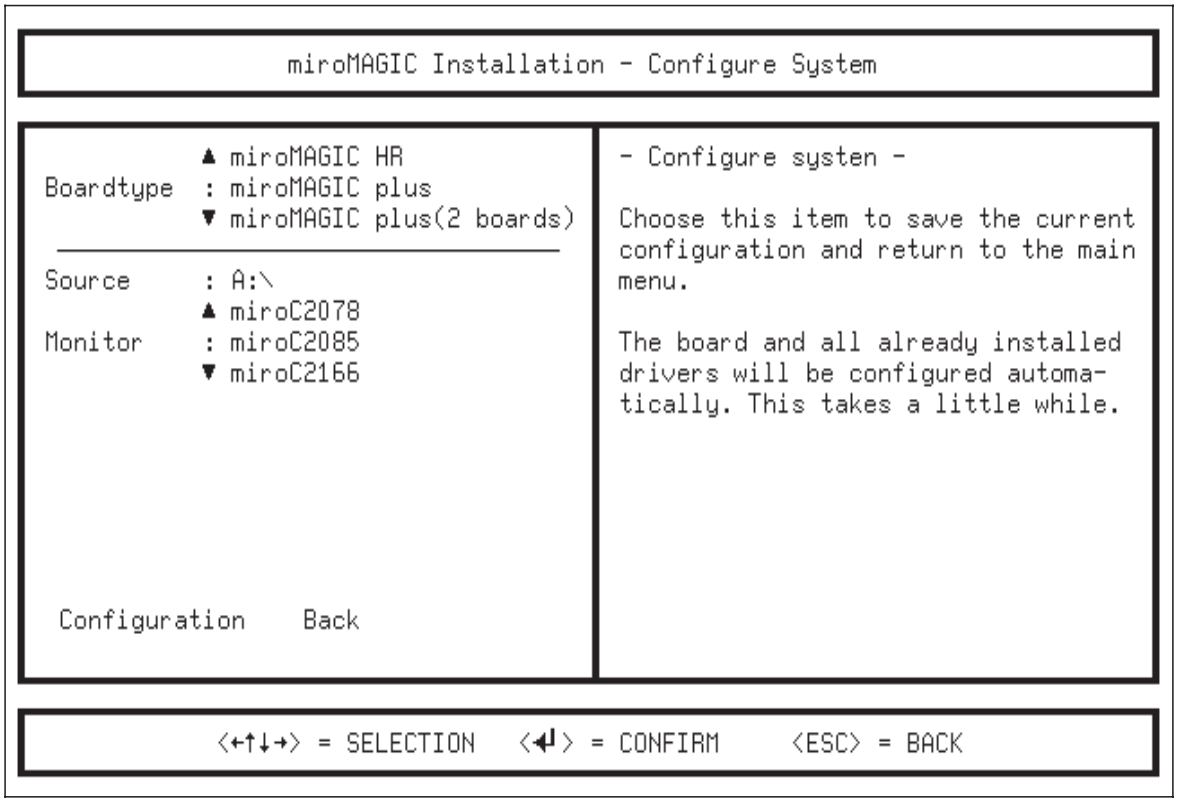
– **HDILOAD.EXE**: The program **HDILOAD.EXE** is copied into the directory **C:\HDIPCDOS**. Before you call applications whose graphics drivers address the Adapter Interface (AI) you must load HDILOAD.EXE.

– **MAGIC.BAT**:
The batch file MAGIC.BAT is copied into the root directory C:\. This batch file tells certain applications (e.g. AutoCAD applications) the name and the path of the driver supplied by miro by setting an environment variable. MAGIC.BAT must not be renamed or moved into another directory. For more information on MAGIC.BAT, refer to the Application Manual.

All monitor files are copied into the subdirectory **C:\MAGIC\MONITORS** which is also created during the installation.

Configure System

After the installation has been completed, the menu **Configure System** appears.



Installation program: Configure System

This menu consists of three items:

– **Board type:**
The board type is automatically recognized by the installation program. Here you don't have to enter anything.

– **Source:**
Here you have to enter the drive and the directory from where the monitor files should be copied.

– **Monitor:**
Here you have to enter your monitor.

- Enter the drive and the directory from where the monitor files should be copied: either the disk drive or C:\MAGIC depending whether you have installed your monitor already or not.

- Select your monitor from the list. Use the arrow symbols s and t to scroll through the list. Press the <Enter> key to mark your monitor.

  The name of the monitor you use is not in the list:
  Choose a monitor with a horizontal frequency that equals the maximum horizontal frequency of your monitor. Refer to your monitor's user manual to find the necessary information.

  Example: When you use a multi frequency monitor with a maximum horizontal frequency of 64 kHz select **64 kHz multi frequency** from the list.
  If you can't find exactly the same horizontal frequency in the list choose the monitor with the next lower value.

  In your computer two miroMAGIC plus boards are installed:
  Select the option **miroMAGIC plus (2 boards)** and select the monitors connected to them.*

- Select the menu item **Configure**.

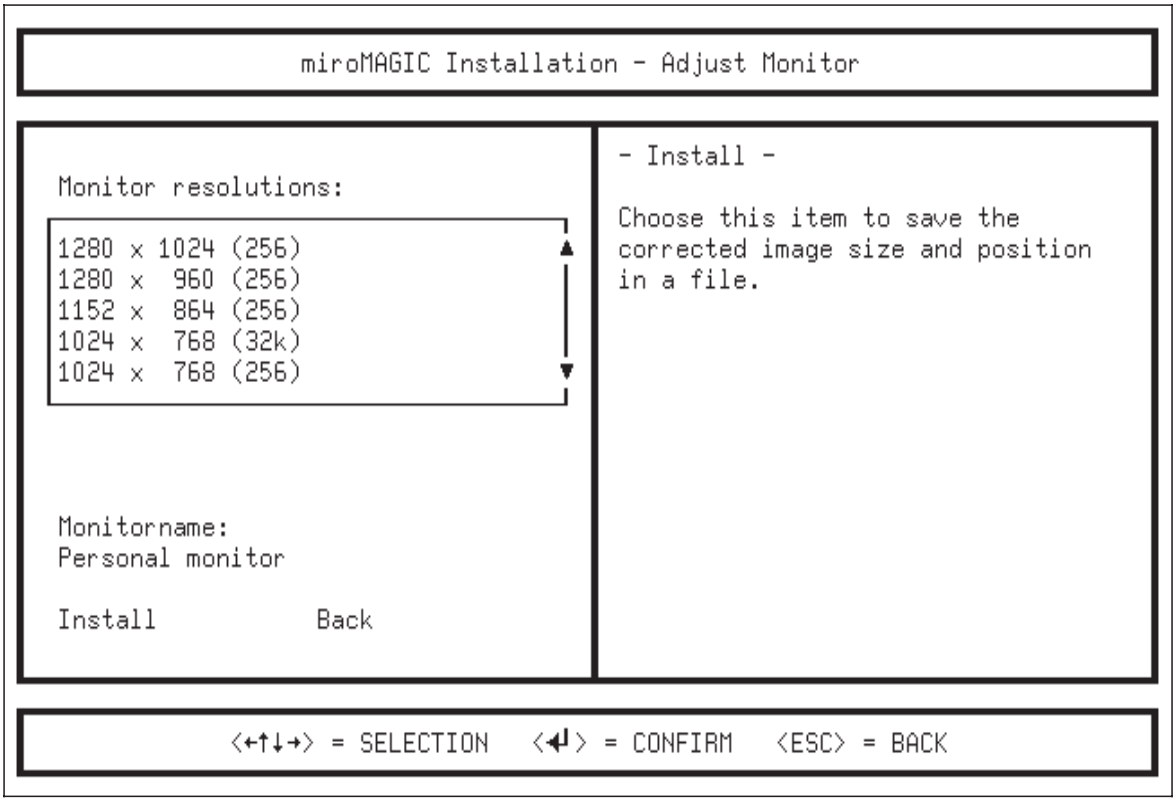
3.4 Adjusting monitor

- In the Main Menu select the item **Adjust monitor**

With this option you can check and – if necessary – correct the image position and size with the help of a test picture. You have the possibility to save the modified parameters in a file.

Within the corresponding menu you will see the monitor you chose and the possible resolutions with the number of colors to be displayed.

* The possibility to select two different monitors for two miroMAGIC plus boards, will in future be supported by certain drivers. As to now, only two monitors of the same type can be connected (see also Application Manual).



Installation programm: Adjust monitor

For each resolution you can call a test picture and correct postion and size if you want to:

- Mark the desired resolution, press the <Enter> key and a test picture appears.

- Now use the direction keys to change the picture's position. If you hold down the <Control> key you can change the picture's size with the direction keys. Press the <Enter> key to accept the settings; press the <Esc> key to reject the setting.

Note: If you use a **fixed frequency monitor** you should not modify the image size. This would result in a change of the horizontal frequency and an asynchronous image.

- Use the <Enter> key to get the test picture for the next resolution. Press the <Esc> key to abort the monitor adjusting.

Also, it is possible to save the new settings in a file. To do so, create a name for your settings (maximally 39 characters). Proceed as follows:

- One after the other, set position and size for each resolution, as described above.

- Overwrite the monitor name, if you want to choose a name for your settings.

- Activate the option **Install** so that your monitor timing will be saved in a file.
  The file name is created by taking the first six characters of the name you assigned plus two digits. The monitor selection list accepts the name.

- The option **Back** cancels all changes and returns to the main menu.

4. Using miroMAGIC plus

4.1 In general

The delivery scope of your miroMAGIC plus system includes powerful drivers for Windows 3 and Autodesk applications on your miroMAGIC plus system. Refer to the Application Manual for details about the installation and use of the driver software.

Since the miroMAGIC plus boards are 8514/A compatible, you are free to also work with many application programs for which we do not supply drivers, as long as these applications support the 8514/A standard. Of course it is mandatory that your application supports the 8514/A standard. What makes this possible is the Adapter Interface which was copied during the installation into the directory **C:\HDIPCDOS.** The corresponding font files are also in this directory.

Before you start your application call the MAGICINI.EXE – if you haven't done so already – and load the Adapter Interface with the command **hdiload**< >. The resolution of 1024 x 768 pixels meets the 8514/A standard ergonomically!

4.2 In case of problems

Problems that crop up when you are working with your miroMAGIC plus system can usually be traced back to a faulty installation or a combination of diverse hardware components.
The following list will help you find the cause of the problem and its solution.

Again: Avoid address conflicts!

To avoid conflicts in the first place – we already pointed out in another part of the manual – it is imperative to check for address conflicts before you install your miroMAGIC plus board. Appendix A shows the addresses occupied by your miroMAGIC plus.

Furthermore, if you install additional expansion boards (such as ARCnet) **after** having installed the miroMAGIC plus, you have to make sure that the other board(s) do not access the addresses occupied by miroMAGIC plus.

Checking the hardware installation

Nevertheless, if you do experience problems, check the installation of the miroMAGIC plus hardware first:

- Make sure the miroMAGIC plus board is properly seated in its slot.
- Check all cable connections!
- Install the miroMAGIC plus in another suitable slot!

Checking compatibility

Our miroMAGIC plus should not be incompatible to any standard expansion boards, such as interface boards. Still, just in case the miroMAGIC plus board and another (odd) expansion board installed in your computer are not compatible, remove the cards in question one after the other and check, whether your system is working trouble-free now.

Deactivating the Memory Manager

If you still can't get your system to function properly check whether software for memory management was installed in your computer, and if so, disable the Memory Manager and test your miroMAGIC plus system once more.

4.3 Equipment maintenance

To make sure your miroMAGIC plus graphics system will work perfectly for years to come, pay attention to the following care instructions:

- Do not subject the monitor to direct sunlight. Avoid excessive exposure to heat, dust, or humidity.

- Turn the monitor off when you are not working at it.

- Make sure there is sufficient ventilation; don't place such things as books or magazines on or near the monitor.

- Don't set up the monitor near devices that eminate magnetic fields, such as magnets, speaker systems, printers, or disk drives. Magnetic fields might cause distorted representations on the screen.

- Transport monitor and graphics only in their original packaging.

- Use a household glass cleaner and a clean cloth on your screen. Do not spray the cleaner onto the screen, since the fluid could run into the casing and damage the monitor.

- Pull the monitor's power cable. Use a damp, but not wet, lintfree cloth for cleaning. Do not use aerosol sprays, solvents or other harsh cleaning agents which might damage the surface.


miro

5. Specifications

Bus system

– ISA AT bus ; compatible with 8-bit slot and EISA bus

Compatibility

– IBM 8514/A register compatible
– VGA register compatible
– VGA loopthru analog
– XGA loopthru analog

Graphics coprocessor

– C&T 82C481
– 48 MHz clock frequency

Video Modes

Resolution	Colors	Refresh rate
1280 x 1024	256	60 - 75 Hz
1280 x 960	256	60 - 80 Hz
1152 x 864	256	60 - 85 Hz
1024 x 768	32.768, 256	60 - 100 Hz
768 x 512	16.7 mil., 32.768, 256	60 - 100 Hz,TV
640 x 480	16.7 mil., 32.768, 256	60 - 100 Hz, TV

miroMAGIC plus VGA

– up to 800 x 600 pixels with 16 colors
– 256 KByte DRAM
– VGA can be turned off

Video memory

– 2 MByte VRAM

Video timing

– Horizontal frequency:
  15 kHz to 80 kHz
– Vertical frequency:
  50 Hz to 100 Hz, non-interlaced
– Pixel frequency:
  15 MHz to 135 MHz

Options

– Monitor, shielded monitor cable
– Video outputbox
– cable for analog loopthru

Radio Interference

– Amtsblattverfügung Nr. 243/1991
– FCC class “A”

Appx. A: Address Range

The following register definition gives an overview of the address range of the miroMAGIC plus boards.

Of the addressable 16 bit the lower 10 bit are allocated for the base address, the upper 6 bit code the card's register. Your miroMAGIC plus board's I/O port uses the base address 2E8, according to 8514/A specifications.

CLUT

Furthermore, there are the I/O addresses of the Color Look Up Table.
Here is an overview of the addresses:

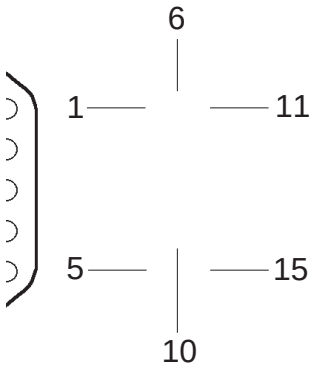
Address	
x2E8h	8514/A
2EAh	RAMDAC (CLUT)
2EBh	RAMDAC (CLUT)
2ECh	RAMDAC (CLUT)
2EDh	RAMDAC (CLUT)

VGA

If the miroMAGIC plus VGA is activated, VGA addresses will be occupied in additon to the ones listed above. These are:

I/O addresses	03Cxh
	03Dxh
VGA video memory	A000h - BFFFh
VGA-BIOS	C000h - C7FFh

Important: If your miroMAGIC plus board occupies an I/O address which is also used by another part of your hardware, you will have an address conflict. To avoid possible damage, change the I/O address of the hardware component in question.

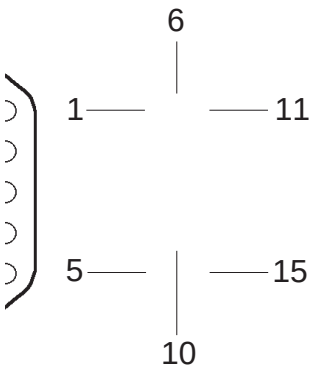


15-pin video output

Appx. B: 15-pin Video Output

The miroMAGIC plus board is equipped with a 15-pin D-type connector to which you connect the video cable to the high resolution monitor.

The following illustration and table show the socket and corresponding pin assignment:



15-pin socket for VGA

Pin no.	Assignment
1	red
2	green
3	blue
4	monitor ID bit 2
5	free
6	ground (red)
7	ground (green)
8	ground (blue)
9	free
10	ground (sync)
11	monitor ID bit 0
12	monitor ID bit 1
13	HSync
14	VSync
15	free

Appx. C: 15-pin Connector for VGA

Beneath the video output connector you'll find a 15-pin VGA connector. The VGA monitor or with analog loopthru the cable coming from the VGA board has to be hooked up to this.

The following illustration and table show the socket and corresponding pin assignment:

Pin no.	Pin assignment	
	miroMAGIC plus VGA	Analog loopthru
1	red	
2	green	
3	blue	
4		blue
5		HSync
6	ground	ground
7	ground	ground
8	ground	ground
9		ground
10	ground	ground
11		red
12		green
13	HSync	
14	VSync	
15		VSync

Appx. D: MAGICINI.EXE Parameters

The program for initializing miroMAGIC plus can be called up with the following parameters:

Parameter	Explanation
-?	Overview over all parameters
-AL	Analog loopthru will be set
-DS	Dual screen configuration will be set; video memory is deleted and the high-resolution monitor is activated.
-DL	Digital Loopthrough is set.
-K1	Board 1 is activated.
-K2	Board 2 is activated.
-L	Calls the “It’s a miroMAGIC” animation

Appx. E: Setting the TV Mode

If you own a video encoder such as the miroVIDEO-Converter and want to show a computer image on your TV or record it with your VCR, your miroMAGIC plus graphics board must run in TV mode. You can switch to TV mode with the help of the installation program (from version 3.1). First though, the miroMAGIC plus board must be installed in your computer and the miroVIDEO-Converter must have been connected according to the instructions in the documentation.

If you have not installed the monitor files for the TV mode already, you need the installation disk. If you have already installed the monitor files for the TV mode once (the monitor selection list contains the item miroVIDEO-Converter), you can start the installation program directly from the hard disk (usually from the directory C:\MAGIC).

This is what you need to do:

- **Start the installation program from the hard disk (usually C:\MAGIC) or, if this is an initial installation, from the installation disk by entering:**

  install < >

- **Perform the steps described in** 3.3 Install monitor and system **and – if desired – adjust the TV monitor as described in** 3.4 Adjust monitor**. From the monitor list select the item** miroVIDEO-Converter**.**

- **Only for Windows:**
  If you are working with Windows you have to choose a resolution suitable for the TV mode (640 x 480 pixels; 768 x 512 pixels) via Windows' Setup program.

- **Start you application which will now run over the TV/VCR.**

To switch back to your high-resolution computer monitor, proceed like this: select your computer monitor with the help of the installation program and, if you are working with Windows, choose the suitable resolution and number of colors with the Setup program.

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