

miroMEDIA 3D **miroMEDIA 3D TV**

USER'S GUIDE

ME



miroMEDIA 3D/miroMEDIA 3D TV

User's Guide

Version 1.0/GB June 1996

700463

© miro Computer Products AG 1996

All rights reserved.

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

IBM AT® is a registered trademark of International Business Machines Corp.

miro™ is a registered trademark of miro Computer Products AG.

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

Pentium™ is a trademark of Intel Corp.

TRIO64V+™ and ViRGEV™ are trademarks of S3 Incorporated.

VGA™ is a trademark of International Business Machines Corp.

Video for Windows™ is a trademark of Microsoft Corp.

Windows® is a registered trademark of Microsoft Corp.

Windows NT™ is a trademark of Microsoft Corp.

InstallShield® is a registered trademark of InstallShield Corporation.

InstallScript™, DemoShield™, and the Stirling logo™ are trademarks of InstallShield Corporation.

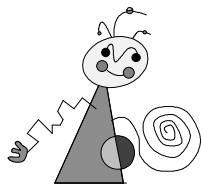
miro manuals are printed on chlorine-free paper using environmentally safe ink.

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

No warranty is made as to the specifications of features.

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

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

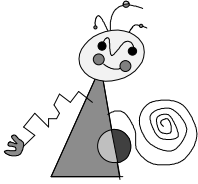


Contents

FCC COMPLIANCE STATEMENT	iii
FOR YOUR OWN SAFETY	iii
FCC WARNING STATEMENT	iii
CAUTION	iii
LABEL WARNING	iii
OVERVIEW	1
FEATURES	1
SYSTEM REQUIREMENTS	2
PACKAGE CONTENTS	3
CONNECTORS	3
miroMEDIA 3D CONNECTORS	4
miroMEDIA 3D TV CONNECTORS	5
HARDWARE INSTALLATION	6
INSTALLING miroMEDIA 3D	6
INSTALLING miroMEDIA 3D TV UPGRADE	7
CONNECTING THE miroMEDIA 3D TV	8
SOFTWARE INSTALLATION	9
miroSETUP-MANAGER	9
miro drivers and applications	9
The miro installation program	10
Documentation	12
USING miroMEDIA 3D TV	13
TECHNICAL DATA	14
miroMEDIA 3D	14
miroMEDIA 3D TV UPGRADE	15
APPENDIX	I
15-PIN D-TYPE VIDEO PORT	I
miroMEDIA 3D ADDRESS RANGE	II
miroMEDIA 3D TV UPGRADE: INTERNAL CONNECTORS	III
SUPPORT/SERVICE	IV
Support	IV

Service	V
GLOSSARY	VI
MONITOR SELECTION	XI
DOS TOOLS	XII
miroVGA2TV	XII
miroTEST	XIV
miroDETECT	XVI
miro SUBSIDIARIES	XVII

INDEX



FCC Compliance Statement

FOR YOUR OWN SAFETY

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

FCC WARNING STATEMENT

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

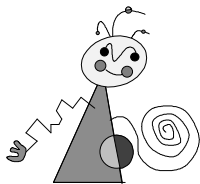
- ♦ Reorient or relocate the receiving antenna.
- ♦ Increase the separation between the equipment and receiver.
- ♦ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- ♦ Consult the dealer or an experienced radio/TV technician for help.

CAUTION

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. Shielded interface cable must be used in order to comply with the emission limits.

LABEL WARNING

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



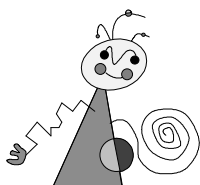
For your own safety

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

- ♦ Before opening the computer make sure that the power plug is disconnected from the main socket.
- ♦ Computer components are sensitive to static charge. Divert any electrostatic charge from your person before touching the components with your hands or any tools.
- ♦ Make sure that the components you want to add to the computer are in compliance with the computer's characteristics.
- ♦ Avoid address conflicts!



For changes that have occurred after the manual has been printed, refer to the README file on the CD-ROM supplied with your system! In the Windows File Manager double-click the README file to get the latest information.



About the manual

This manual explains how to install and use the miroMEDIA hardware and software.

Subheadings

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



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

Numbers mark step by step instructions:

1. Start Windows.

All keyboard commands appear in this font:

install<↵>

<↵> represents the enter key.

Menus, commands, options or buttons which the user can select are written in *italics*.



FEATURES

With **miroMEDIA 3D**, miro offers 64-bit Windows graphics accelerators with an especially fast 3D accelerator. These boards enable users to play DOS- and Windows-based 3D games with impressive, high-resolution 3D graphics. However, the board also packs enough performance for use in animation studios or in the fields of presentations and advertising. miroMEDIA 3D offers software-supported MPEG playback.

☐ **3D acceleration**

At present, only the S3 ViRGE-Chip, which was developed especially with Windows applications in mind, fulfills the high demands placed on graphics processors by the representation of three-dimension objects including corresponding textures.

☐ **Multimedia acceleration**

For digital video applications a video processor is integrated in the graphics processor. This processor offers a digital overlay and an optimal playback: it scales video to any size up to 1024 x 768 pixels – without jerky playbacks and frame losses. When enlarging video the pixels are not just multiplied but the additional pixels are calculated, this technique achieves a very good image quality even at high resolutions.

☐ **MPEG playback**

The MPEG playback software is able to decompress and zoom video files very quickly, enabling full-screen, flicker-free, and non-jerky playback of MPEG videos. The decoder supports all video CD formats and *.MPG files.

☐ **DirectDraw/Direct3D**

The new Windows 95 DirectDraw and Direct3D interfaces permit acceleration of 3D games and also open up brand new possibilities for professional 3D rendering.

☐ **Video memory**

miroMEDIA 3D is equipped with 2 MBtes of EDO-DRAM with 40 ns and thus achieves especially high screen refresh rates.

☐ **Drivers**

miroMEDIA 3D includes all of the necessary drivers to achieve the maximum performance from your system. In addition, the miro tools are provided.

☐ **Monitor plug & play support**

The miroMEDIA 3D board supports the VESA Display Data Channel (DDC). A monitor complying with this standard transmits its characteristics via this interface and starts up with an appropriate resolution.

❑ **miroVGA2TV**

miroVGA2TV allows you to connect a TV set to your computer and use it under DOS, recording DOS applications to video and playing DOS games on the TV set.

Upgrading the miroMEDIA 3D board with the miroMEDIA 3D TV upgrade* television card to **miroMEDIA 3D TV upgrade** lets you take advantage of additional functions:

❑ **Cable-ready TV tuner**

The miroMEDIA 3D TV has a cable-ready TV tuner with stereo sound and high-performance Teletext functionality and thus permits reception of all possible television stations.

❑ **Video sources and video formats**

All standard video sources (video recorder, video camera, TV tuner, video disc, still video camera) that generate a composite video signal or an S-video signal (e.g. VHS, Hi8, Video8) can be connected to the miroMEDIA 3D TV.

❑ **Teletext**

The miroMEDIA 3D TV integrates a module for receiving Teletext (German/British versions only). The miroMEDIA-Manager makes text pages easier to view than in the ordinary manner with a television set.

SYSTEM REQUIREMENTS

To install miroMEDIA 3D, your computer system has to meet the following requirements:

Computer	A 486 or Pentium computer or compatible with a PCI Local Bus slot.
Monitor	Standard VGA monitor. To receive all the benefits from the graphics board, you need a high-resolution multifrequency monitor. miro offers suitable monitors. To enable the data transfer between the monitor and the graphics board, you need a DDC-capable monitor cable.
Software	Windows 95.
Audio	If you want to modify audio clips or to control the volume using the miro software, your computer has to be equipped with a Windows compatible sound board with a free audio input.
CD-ROM Drive	You will need a double-speed CD-ROM drive that supports X/A-MODE2.

* At present, the upgrade is not yet available for the miroMEDIA 3D board.

PACKAGE CONTENTS

Before beginning the miroMEDIA installation, please check to make sure your miroMEDIA 3D package is complete*:

- ♦ Graphics board**,
- ♦ CDs,
- ♦ Documentation,
- ♦ *miroMEDIA 3D TV upgrade only:*
 - Adapter for composite video sources,
 - Adapter for the antenna connector,
- ♦ *optional:*
 - Monitor, shielded monitor cable, external audio cable.



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

CONNECTORS

miroMEDIA 3D has the following connectors:

- Video output** The miroMEDIA 3D composite video output connects to a TV set. The software switches between the output on the computer monitor and the output on the TV monitor.
- Audio output** The miro board has an internal and an external audio output. The internal miroMEDIA 3D audio output connects to the internal audio input of a sound board.*** As an alternative, you can connect the external audio output to the Line In input of the sound board or to powered speakers.
The miroMEDIA 3D TV upgrade tuner board has additional connections and/or internal plugs:
- S-Video input** You can use the S-video input to connect to the miroMEDIA 3D TV upgrade any video device that generates an S-video signal (and, using the adapter included, a composite video signal) in PAL, NTSC or SECAM, regardless of the video system used (e.g., VHS, S-VHS, Hi8, Video 8).
- Antenna input** You can use the antenna input to connect an antenna or a cable TV outlet.



Important:
The quality of your antenna cable has a considerable influence on reception.

To connect the video source to the miroMEDIA board, you will also need a suitable cable (cinch or S-video cable).

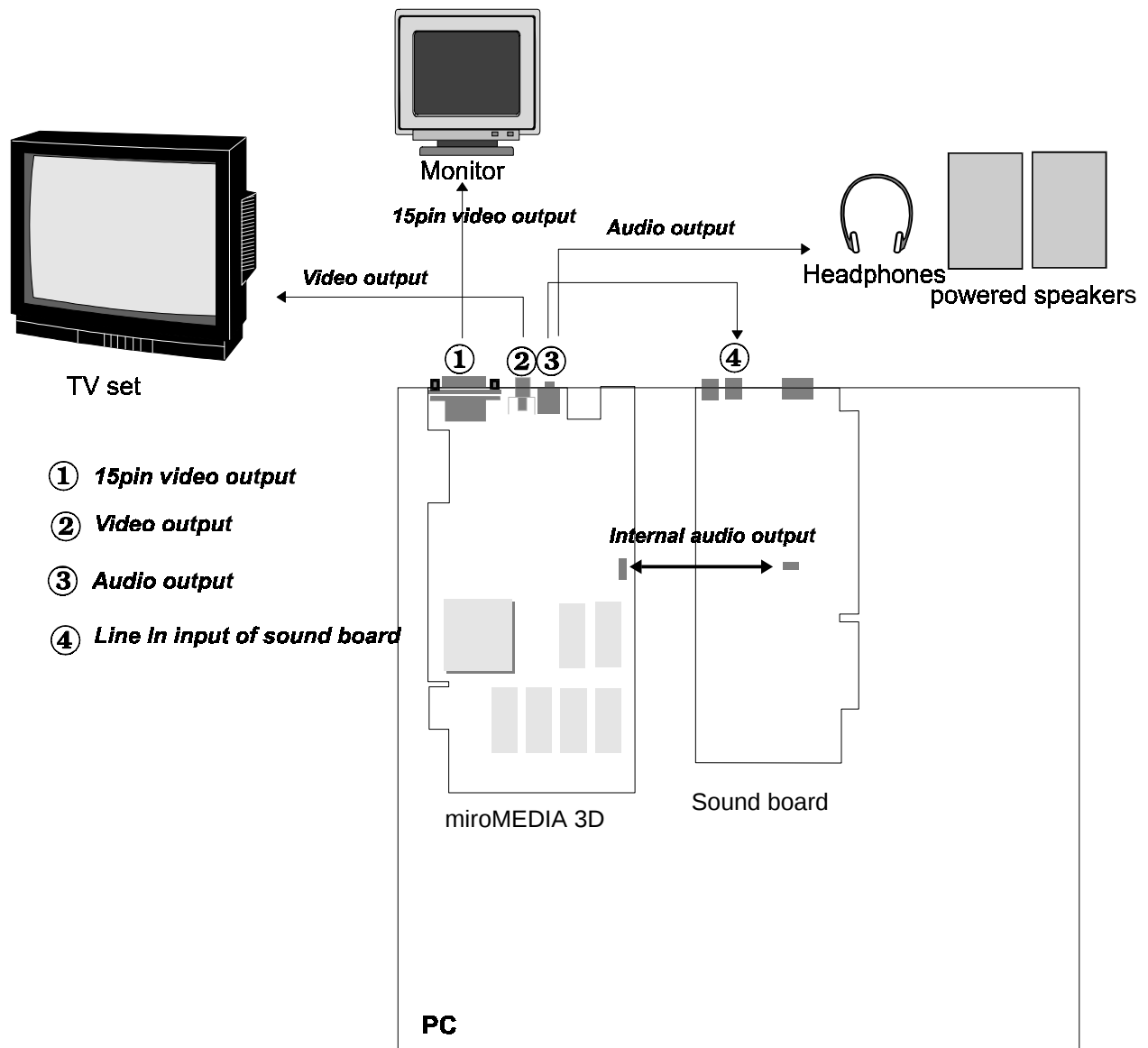
* Depending on the delivery scope, the actual package contents may be different from the package contents listed in the manual.

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

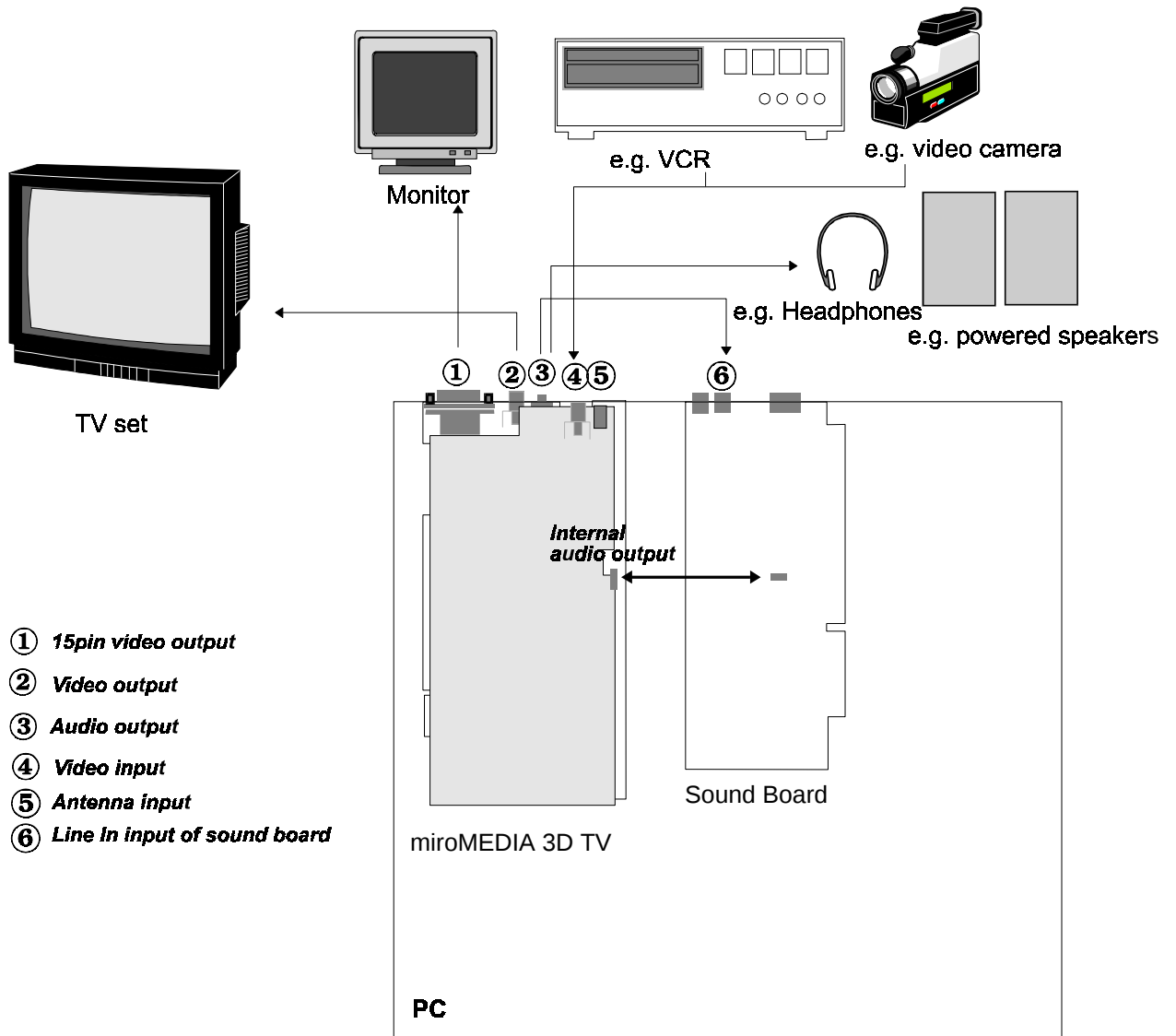
*** The package does not include an internal audio cable.

Internal Connectors Depending on the distribution variant, your board may include up to 6 internal connectors for future internal connections to new miro products. See the Appendix for the significance of the various internal connectors and the corresponding pin assignments.

miroMEDIA 3D CONNECTORS



miroMEDIA 3D TV CONNECTORS





Hardware installation

INSTALLING miroMEDIA 3D

VGA The board's graphics chip has an integrated VGA component that cannot be turned off. Before the installation, however, any existing VGA board or motherboard VGA has to be removed from the computer or disabled.

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

1. Turn off your computer and all peripheral devices. Disconnect the computer from the power supply and all necessary components.
2. Loosen the screws of the computer's cover and remove it.
3. Discharge yourself of static charge by touching the power unit casing.
4. If necessary, remove the VGA board from the computer or disable the motherboard VGA.
5. Select a free PCI slot. Remove the slot's cover at the back of the computer. Save the screws of the cover.
6. Carefully insert the graphics board into a PCI slot by holding the board at the top and gently pushing both ends into the slot at the same time. Press onto the upper edge of the board to make sure it is firmly seated in the slot.
7. Don't force the board into the slot! You run the risk of bending the contacts. If the board does not fit easily, pull it back out, and try again.
8. If necessary, connect the *internal* audio output to the internal audio input of your sound board.

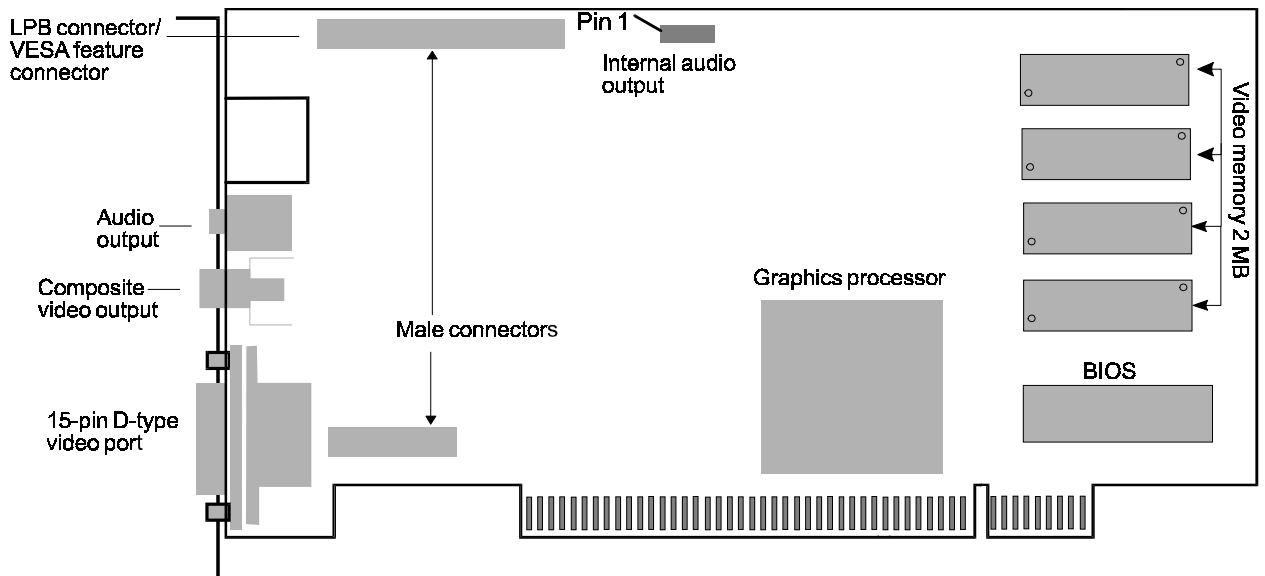


If you want to use the internal audio output, use a suitable cable. For the pin allocation, refer to the table below.

Internal audio output

<i>Pin no.</i>	<i>Assignment</i>
1	Right
2	Ground
3	Left
4	Ground

9. Fasten the board's bracket at the back of the computer using the screws you saved from the shield.
10. Put the cover back on the computer and reconnect the peripheral devices.



miroMEDIA 3D Board layout

INSTALLING miroMEDIA 3D TV UPGRADE

To upgrade your miroMEDIA 3D board, you will first have to remove it from your computer if it is already installed.

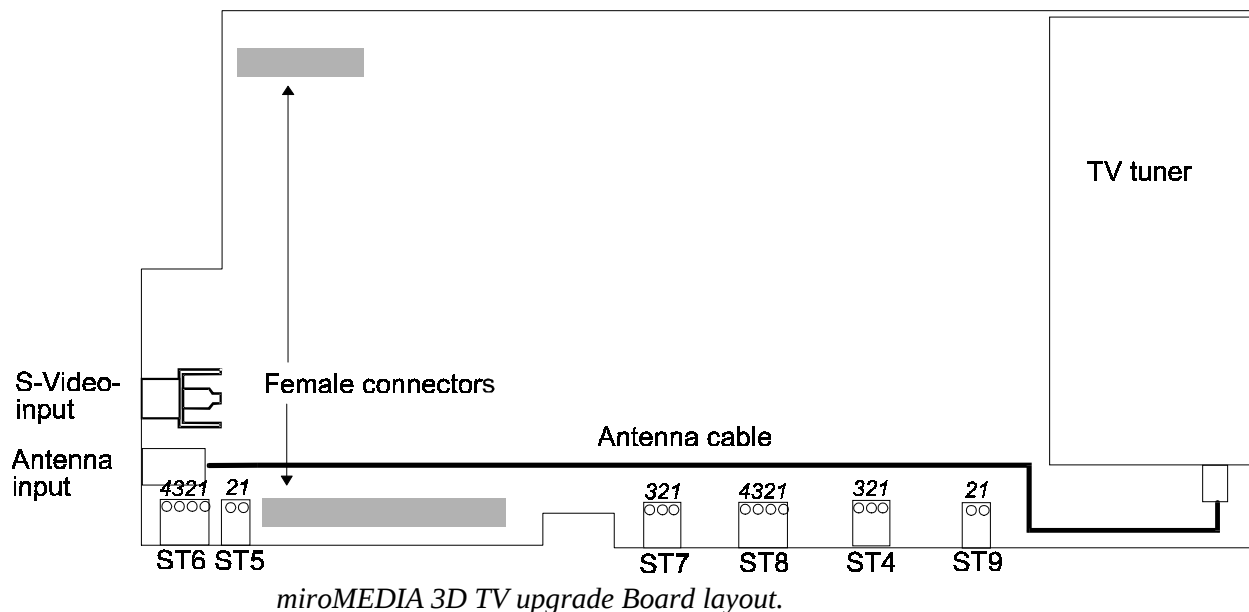
1. Remove the miroMEDIA 3D TV upgrade from the packaging.
2. If necessary, remove the label on the miroMEDIA 3D bracket over the opening in the bracket (provided for the miroMEDIA 3D TV upgrade's S-video input).
3. Plug the internal antenna lead into the cinch adapter on the bracket.
4. Locate the male connectors on your miroMEDIA 3D board (see above) onto which the miroMEDIA 3D TV upgrade is plugged. Locate the corresponding female connectors on the TV card (see below).
5. Position the TV card so that it is above the corresponding connectors on the miroMEDIA 3D.
6. When all the pins are above the corresponding sockets, press the plug-on module, carefully at first, just one or two millimeters onto the miroMEDIA 3D board.

If you feel no resistance and the TV card can be plugged on without any problems, then press the TV card all the way onto the basic board. Otherwise, please do not attempt to force the TV card onto the basic board. Instead, remove the card and try again.



Make sure that the antenna cable does not become wedged between the two boards and that the plastic spacers snap in properly.

7. Insert the miroMEDIA 3D TV in the computer. Proceed as described in the section "Installing miroMEDIA 3D"



CONNECTING THE miroMEDIA 3D TV

8. If you want to use the external audio output, connect it to the Line In input of the sound board.
9. If you have a video source with an S-video output, use a suitable cable to connect it to the S-video input of the miroMEDIA 3D TV upgrade.
10. If you have a video source with composite video output, first plug the adapter onto the S-video input of the board and then use a suitable cable to connect the video source to the adapter.



Important:

The miroMEDIA 3D TV upgrade provides both an external S-Video input and an internal S-Video input (internal connector).

Please connect only one of the two inputs.

11. Connect the monitor to the D-Sub15 monitor output. If you are unsure how to connect the monitor cable, please refer to the documentation that came with your monitor.
12. If you have a TV monitor, connect it to the video output of the miroMEDIA 3D.
13. Plug the antenna adapter (included) onto the cinch jack on the bracket.
14. Connect the external antenna cable to the antenna input.
15. Finally, make sure that the computer and the monitor are connected to electrical power.



Software installation



Your miro graphics board offers new 3D acceleration technology. To be able to use the full function range of miroMEDIA 3D, read the README file on the supplied CD before installing the software.

miroSETUP-MANAGER

To install the miro drivers and applications from CD-ROM under Windows 95, you need the miroSETUP-Manager which is contained on the CD-ROM. Once you have installed the miroMEDIA 3D board in your computer, the board will be detected as a new hardware component.

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

1. Click on the option *Select from a list of alternative drivers* in the *New hardware found* dialog box.
2. In the *Select Hardware Type* window double-click the *Display* option.
3. In the *Select device* window click *Standard display types* under *Manufacturer*; under *Models* select *Standard Display Adapters (VGA)*. Click on *Next*.

Windows will be restarted. Proceed as follows:

4. Insert the CD-ROM included in the miroMEDIA 3D package.

The miroSETUP-Manager is started automatically. Then you are in the *Language Selection* menu with the default setting *English*. By clicking *Information* you get information about the miroSETUP-Manager and its modules.

5. Click on *Install*. You are then in the *miroSETUP-Manager Module Selection*.

You have the option to install the miro drivers and programs and to view and print the documentation.

Exit/Back The *Exit* button closes the miroSETUP-Manager, with the *Back* button you go to the previous window.

miro drivers and applications

6. In the *miroSETUP-Manager Module Selection* select *Drivers and Applications*.

Then you are in the *miroSETUP-Manager Drivers and Applications* menu. Here you can select which drivers and/or programs you want to install.

Microsoft DirectX The prerequisite for the full function range of the miro drivers is that you install the DirectX driver. This contains all required software add-ons for the miro driver.



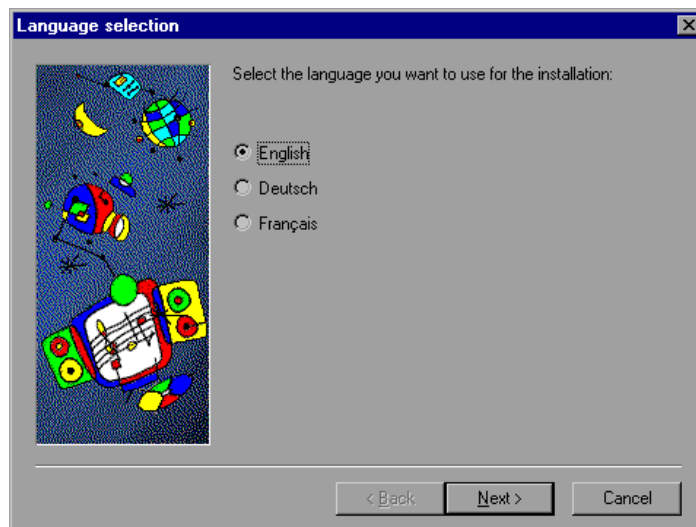
Before you install the graphics driver for Windows 95, install the Microsoft DirectX driver. For further information, refer to the README file provided on the CD.

7. Enable the *Microsoft DirectX* menu item. Follow the instructions on the screen.
8. Restart the *miroSETUP-Manager*.
9. In the Desktop select the *Start* menu and the *Run...* command.
10. Depending on your CD-ROM drive enter:
d:\miro_win<↵> where **d:** is the drive letter for your CD-ROM drive.
11. In the *miroSETUP-Manager Module Selection* select *Drivers and Applications*.
12. Enable the menu item *miro drivers for Windows 95* and click *Install...* .
The *miro* installation program is started automatically.

**miro drivers for
Windows 95**

The miro installation program

First *Language selection* occurs. The default language is the language of the installed Windows 95 version.



1. Acknowledge with *Next*.
2. Now, in the *Select Components* dialog box, select the drivers and tools you want to install. Click on *Next* to copy the drivers and tools.



3. The *Setup Completed* dialog box appears. Click on *Finish*.



4. Now the *Display Properties* dialog box appears. Choose the *Preferences* page and the *Change Display Type* button. Here you can select the graphics adapter and monitor model.
5. Click on *Change...* next to the graphics adapter.
6. Acknowledge miroMEDIA 3D with *OK*.
7. Choose a different monitor by clicking on *Change...* next to *Monitor*.

**If you use a
miro monitor**

To add the miro monitors to the list:

8. Click on *Disk...* to specify the drive from which you want to install the miro monitors: the default setting is drive a:\. Click *Browse* to change to the drive where the CD is located and to the \MEDIA3D directory. Select the MIROMON.INF file.
9. Click on *OK*. The parameters for the miro monitors will be copied to your hard disk.
10. In the *Models* window, select your monitor.

See the Appendix for more information on monitor selection.



An incorrect selection can cause serious damage to your monitor. In case of doubt, please consult the documentation that came with your monitor.

11. Answer the restart question with *Yes*.

Upon completion of installation, the tools will be dropped in the *miroMEDIA 3D* program group. Here you will find an option for deinstalling the tool.

As an alternative to the installation procedure described above, you can also install the *miro* drivers using the *Display Properties* dialog box. For more information on this procedure, refer to the README contained on the CD.

Documentation

Use this menu item to install the Adobe Acrobat Reader which allows you to View and print the complete documentation.

If you clicked *Documentation* in the *miroSETUP-Manager* Module Selection window, the Adobe Acrobat Reader installation program starts.

1. To install Acrobat Reader, follow the instructions of the installation program.

After restarting the computer the Acrobat Reader Program Group is available which includes an icon for the detailed documentation in addition to the program icon.

2. Double-click the icon to open the documentation.

Printing To print a file, select the *File* menu and the *Print...* command.

Another language If you want to View/print the documentation in another language, select the *File* menu and the *Open...* command. You recognize the languages by the letters *_e* (English); *_d* (German), *_f* (French). You find all files in the \MANUAL directory.

Further module If you want to install further modules in addition to the Acrobat Reader, restart the *miroSETUP-Manager*.



Using miroMEDIA 3D TV

Depending on the various standardization committees, the available network frequencies, various transmission procedures and services (Teletext) have been developed in various nations. For this reason the miroMEDIA 3D TV upgrade function varies from one nation to another. The following table shows the national versions:

National Function Sets	
D, A, CH, DK, NL	PAL B/G tuner, stereo, teletext
UK	PAL I tuner, mono, teletext
F	SECAM tuner, mono
US	NTSC tuner, mono



Technical Data

miroMEDIA 3D

Bus system	PCI
Compatibility	VGA register-compatible
Graphics processor	S3 ViRGE
Video memory	2 MB EDO RAMs 256 Kbit x 16 with 40 ns
Inputs/Outputs	Video output, audio output, 15-pin D-type video output
Power supply	+5 V, max. 1 A +12 V, max. 0.01 A
Video timings	Horizontal scan frequency: 31 kHz - 84 kHz, depending on operating mode Vertical scan frequency: 56 Hz - 100 Hz, non-interlaced, depending on operating mode Pixel frequency: 25 MHz - 135 MHz, depending on operating mode
TV timings	50 Hz PAL, 60 Hz NTSC

Video modes

Resolution	Bits per pixel/ Colors	Vertical scan frequency (Hz)								
		TV	48 kHz	58 kHz	64 kHz	78 kHz	85 kHz	93 kHz	100 kHz	107 kHz
1408 x 1024	8/256	—	—	—	60	70	70	70	70	70
1280 x 1024	8/256	—	—	—	60	70	75	75	75	75
1152 x 864	8/256	—	—	—	70	75	75	75	75	75
1024 x 768	16/65,536	—	60	70	75	75	75	75	75	75
	8/256	—	60	70	75	75	100	100	100	100
800 x 600	32/16.7 Mill.	—	75	75	75	75	75	75	75	75
	16/65,536	—	75	75	75	75	75	75	75	75
	8/256	—	75	75	100	100	100	100	100	100
704 x 576	32/16.7 Mill.	x	—	—	—	—	—	—	—	—
	16/65.536	x	—	—	—	—	—	—	—	—
	8/256	x	—	—	—	—	—	—	—	—
640 x 480	24/16.7 Mill.		75	100	100	100	100	100	100	100
	16/65,636	x	75	100	100	100	100	100	100	100
	8/256	x	75	100	100	100	100	100	100	100

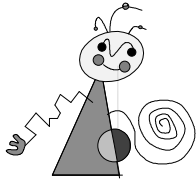
Options Monitor, shielded monitor cable

Other VESA DDC (DDC2B)

miroMEDIA 3D TV upgrade

Inputs	S-Video input (incorporates I ² C bus; Hosiden; Y/C, 1.0 Vss/0.3 Vss), Antenna input (for television receiver component)										
Teletext decoder (D/A/CH/DK/ NL/UK only)	ITT TPU3040 with pagecaching (supports TOP, FLOF, VPS and WSS)										
VideoDecoder	ITT VPX3220										
TV tuner	<table><tr><th colspan="2">Country specific versions</th></tr><tr><td>D, A, CH, DK, NL</td><td>PAL B/G tuner</td></tr><tr><td>UK</td><td>PAL I tuner</td></tr><tr><td>F</td><td>SECAM tuner</td></tr><tr><td>US</td><td>NTSC tuner</td></tr></table>	Country specific versions		D, A, CH, DK, NL	PAL B/G tuner	UK	PAL I tuner	F	SECAM tuner	US	NTSC tuner
Country specific versions											
D, A, CH, DK, NL	PAL B/G tuner										
UK	PAL I tuner										
F	SECAM tuner										
US	NTSC tuner										
Stereo audio processor (D/A/CH/ DK/NL only)	ITT MSP3400C										

NOTES

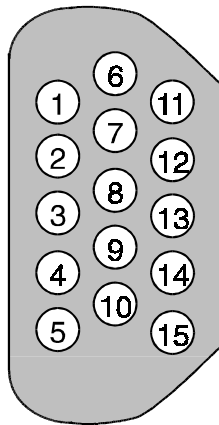


Appendix

15-PIN D-TYPE VIDEO PORT

The miroMEDIA 3D graphics boards are equipped with a 15-pin D-type connector to which the video cable attaches. The other end of the video cable connects to the monitor.

The following illustration and the table show the video output and the pin allocation of the video output, which is designed for data exchange with the monitor:



15-pin D-type connector

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

miroMEDIA 3D ADDRESS RANGE

For the miroMEDIA 3D graphics board to run without problems you have to avoid address conflicts. Make sure that the addresses used by miroMEDIA 3D are not also assigned to other components of your computer system.

I/O address range

The following table shows the I/O address areas that can be selected and used by miroMEDIA 3D.

I/O Address area (h)
3D4/3D5 or 3B4/3B5
3C4/3C5
3C0/3C1
3C6-3C9
3CE/3CF
3C2/3CC
3BA/3DA
3CA

In addition the I/O address 3C3 h is used.

Additional VGA addresses

In addition the following addresses are used:

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

IRQ *Please note:* miroMEDIA 3D needs an IRQ for the configuration.
For further information, please refer to your computer's documentation.

miroMEDIA 3D TV UPGRADE: INTERNAL CONNECTORS

Depending on distribution variant, the miroMEDIA 3D TV upgrade has up to 6 internal connectors that can be used to link other cards in the computer that also have internal connectors (e.g., video editing cards).

The following table shows the corresponding pin assignments.

Designation	Pin Assignment	Significance
ST4 (ZF In)	1=ZF 2=gnd	IF (=intermediate frequency) input for connecting an additional baseband signal from additional TV cards for stereo / dual-channel decoding
ST5 (Composite-Video In/ FBAS In)	1=FBAS 2=gnd	Separate composite video input.
ST6 (S-Video In)	1=Y 2=gnd 3=gnd 4=C	Parallel connection for the external S-video input. Important: please only connect one source
ST7 (I ² C-Bus)	1=Data 2=gnd 3=CLK	Control bus for future miro products.
ST8 (Audio In)	1=left 2=gnd 3=gnd 4=right	Separate audio input for connecting additional analog audio signals (e.g., CD).
ST9 (Tuner Out/ FBAS Out)	1=FBAS 2=gnd	Tuner signal output for future miro products.

The pin assignment mentioned above may vary depending on the board type!

SUPPORT/SERVICE

Support

miro Support Hotline hours: 10 am - 12 am
2 PM - 4 PM
phone: (49) 531 2113 - 666

miro Support Fax fax number: (49) 531 2113 - 110

miro Support Mailbox hours: 24 hours
phone: (49) 531 2113 - 112
protocol: 2.400 - 28.800 Baud,
8 data bit, no parity, 1 stop bit

The miro Support Mailbox has useful information for both Mac and PC users such as technical data, tips and tricks, forms and drivers. All information is in 8-bit ASCII.

miro in CompuServe In addition to Mailbox, VoiceMail, Hotline or Fax you can now also contact miro via CompuServe.

Enter GO MIRO to access the miro section in CompuServe.

In the *Message Area* you find the latest information as well as questions and answers about our products.

The *Library section* contains the latest drivers, tips & tricks, patches and info files about our products.

If you have any questions about CompuServe, please contact the CompuServe Information Service nearest you:

Germany:	Tel.: 0130/86 46 43 (domestic) (49) 89/66 535 222 (internat.)	Switzerland: Tel.:	155 31 79 (domestic) (49) 89/66 535 222 (internat.)
	Fax: (49) 89/66 535 241		Fax: (49) 89/66 535 241
France:	Tel.: 36 63 81 31 (domestic) (33) 1/ 47 14 21 60 (internat.)	GB:	Tel.: 0800/289458 (domestic) (44) 272/760 680 (internat.)
	Fax: (33) 1/47 14 21 51		Fax: (44) 272/252 210
Hungary:	Tel.: (36) 1/156 53 66 (internat.)	USA:	Tel.: 800 848 8990 (domestic) (001) 614/529 1340 (internat.)
	Fax: (36) 1 155 92 96		Fax: (001) 614/529 1611

Service

Repairs If your miro product needs repairs or adjustments, contact your authorized distributor. He will request a repair number (RMA No.) from miro.

Return the product with the warranty card and proof of purchase (receipt with date and serial number) as well as a detailed description of what is wrong with the product. This helps our Service Department to repair and return the product to you as quickly as possible.

Initial installation If you experience problems with your new miro product during the first week after delivery, contact your authorized miro distributor immediately.



Contact your authorized distributor if you have a question about miro products. Please have all the necessary information ready before you call so the distributor can answer your questions as precisely as possible, i. e. hardware configuration (extension cards and addresses) and software configuration (memory manager, version of the software you are using, etc.).

For more detailed information about our products and our Support and Service, please check our miroSupport Mailbox.

GLOSSARY

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

- Address** All memory positions in a computer have numbers (addresses). Through these addresses each memory position can be addressed. Some addresses are reserved for certain  hardware components and must not be used. If two hardware components use the same address, there is an address conflict.
- ANSI** **American National Standards Institute.** ANSI character set ( Font): used by Microsoft Windows and Windows applications. The character assignation only differs slightly from the assignation of the  ASCII character set.
- ASCII** **American Standards Committee of Information Interchange.** ASCII character set ( Font): standard character set used by IBM and compatible computers. The ASCII character set consists of 256 characters, the first 128 of which are standardized.
- AUTOEXEC.BAT** A special DOS  batch file which is processed automatically after the computer has been started. The file contains among other things commands which load the country-specific keyboard driver ( Driver), set the time or load programs automatically.
- AVI** Abbreviation for **Audio Video Interleaved**, standard format for digital video ( Video for Windows).
- Batch file** A  DOS file where a sequence of commands is processed one after the other.
- BIOS** **Basic Input Output System.** Number of basic input and output commands stored in a  ROM, PROM or EPROM. The  operating system uses these commands. The basic task of the BIOS is to control the data input and output. After starting the system the ROM BIOS performs some tests (checking the  interfaces, the disk drives, etc.).
- Bit** **Binary Digit.** Smallest information unit in a computer. One bit can take on two states: “0” and “1”, two bits can take on $2^2=4$ states and three bits $2^3=8$, etc. In a computer those states are realized by “0 V” (no current = 0) and “5 V” (current = 1). To display a character (letter, number etc.), 8 bits = 1  byte are required.
- Bus** In a computer, the bus provides for the communication between the  processor and the installed hardware (hard disk, graphics board, etc.). Depending on the bus width, the bus transfers a different amount of information. An 8-bit bus can transfer 8  bits (=  byte = one character) at a time.
- Byte** One byte consists of eight  bits. One byte represents exactly one character (letter, number etc.). The characters are binary-coded with “zero” (0) and “one” (1). The character “E” has the  ASCII code “01000101” or “45h” (hexadecimal).
- CD-I** A  CD-ROM standard designed for the field of entertainment which is independent of and not compatible with the conventional CD-ROM standard. Interactive components (e.g. for games) can only be played back with an original CD-I playback device.

CD-ROM	CD-ROMs are mass storage media for digital data, such as  digital video. CD-ROMs can only be read.
CGA	C olor G raphics A dapter (IBM). Graphics board which displays four colors in the graphics mode.
Clock frequency	Rate at which individual commands are processed in a processor. The higher the  clock frequency, the quicker the commands are processed.
CLUT	C olor L ook U p T able. Color table which contains all indexed color values.
CODEC	Acronym for C ompressor/ D ecompressor, compresses (packs) and decompresses (unpacks) image data.
Color depth	Number of  bits containing color information for each  pixel. A color depth of 1 bit displays only black and white ($2^1=2$ colors). At a color depth of 8 bits $2^8=256$ colors are available and at 24 bits $2^{24}=16,777,216$ ( TrueColor) colors are available.
Composite video	Composite video encodes all image information in one signal.
CONFIG.SYS	A  DOS configuration file which is processed automatically when the system starts. The CONFIG.SYS file includes  drivers which control the output to the monitor and the keyboard and the mouse.
Data rate	Data per second, e.g. amount of data which a mass storage medium (hard disk or CD-ROM) saves/plays back per second or the amount of data of a video sequence per second.
Digital video	Digital video stores information bit by bit in a file (in contrast to analog storage media).
DIP switch	D ual I ndependent P ackage switch. A row of small switches designed to make certain hardware presettings.
Dithering	Method to avoid extreme color contrasts, which occur with a reduced number of colors.
DOS	D isk O perating S ystem. The most common  operating system for PCs (P ersonal C omputer). MS DOS is the M icrosoft version of DOS.
Driver	Programs which integrate the hardware (e.g. driver for a CD-ROM drive) in the computer and which adapt the software to the hardware (e.g. driver for a graphical user interface, such as Microsoft Windows). The software then uses the features of the graphics board.
EDO-DRAM	E (xtended) D (ata) O (ut)- D RAM is a new, significantly faster variant of DRAM.
EGA	E nhanced G raphics A dapter (IBM), graphics board which displays 16 colors in the graphics mode.
EISA bus	E xtended I ndustry S tandard A rchitecture. 32-bit bus: The EISA bus can transfer an amount of data of 33  MB per second at a  clock frequency of 8.33 Mhz.
Fixed-frequency monitor	Monitor operating at a very small frequency range ( multifrequency monitor).
Font	Character set in a certain type, size and style, e.g. Times New Roman 11, normal; Times New Roman 11, italics; Times New Roman 11, bold; Times New Roman 11, bold, italics.

Graphics board	Graphics boards are the “link” between the computer and the monitor. Without a graphics board no image appears on the screen. Graphics boards operate in two modes: the text mode and the graphics mode. In the text mode only  ASCII characters are displayed. The ASCII character set includes some simple “graphical” characters to display simple graphics. The graphics mode uses individual  pixels. The more pixels available (the higher the  resolution) the more detailed characters and graphics can be displayed.
Hardware	The hardware includes all computer components which are “hard”, such as the monitor, the hard disk, the keyboard, the mouse and the printer.
HGC	H ercules G raphics C ard, monochrome (black and white) graphics board.
Horizontal scan rate	Number of horizontal scans of the electron beam per second required to create a new line. The higher the  resolution the higher the required horizontal scan rate.
Interface	Link between two parts of a system or between two systems where information, pulses and signals are adapted in a way that the receiving part can understand the sending part. For example, signals which the computer sends to the printer have to be adapted by an interface so that the printer “understands” what it has to print.
Interlaced	Image refreshing technique: the screen is subdivided into lines. When refreshing the image first all even lines and then all odd lines are refreshed.
ISA bus	I nternational S tandard A rchitecture. 16-bit bus which transfers 8  MB of data per second at a  clock frequency of 8 MHz.
Jumper	Jumpers can set up or interrupt electrical leads. To establish electrical leads with a jumper, the jumper has to be mounted, to interrupt the lead the jumper has to be removed.
KB	1 KB (Kilobyte) is equal to 1024  bytes. Here “K” (kilo) is always equal to “1024”.
MB	1 MB (Megabyte) equals 1024  KB.
MDA	M onochrome D isplay A dapter. Monochrome (black and white) graphics board.
MPEG	Abbreviation for M otion P ictures E xperts G roup. Standard for the compression of moving images.
Multifrequency monitor	A multifrequency monitor adapts itself automatically to different frequencies supplied by the graphics board ( fixed-frequency monitor) and can display different  resolutions.
Non-interlaced	Image refresh method, where the complete image is generated without skipping lines. A non-interlaced image flickers much less than an  interlaced image.
Operating system	The operating system provides for the communication between  hardware,  software and the user. The tasks of the operating system are among others the file and the program management.

Parallel interface	The parallel or Centronics  interface transfers data through an 8-bit data line. This means that 8  bits (1  byte) can be transferred at a time. The transfer through the parallel interface is considerably faster than the transfer through the  serial interface, over long distances the parallel data transfer is, however, more susceptible to interference. Parallel interfaces are designated by LPT and a number (e.g. LPT1).
PCI Local Bus	Peripheral Component Interconnect. Local Bus concept by Intel: 32-bit bus, a PCI bus can transfer 132 MB per second (max.) at a  clock frequency of 33 MHz.
Pixel	Picture element. Pixels are the smallest elements of a monitor image ( resolution).
Pixel frequency	Rate at which the pixels appear on the screen.
RAM	Random Access Memory. A RAM is a read-write memory component from which data can be read and to which data can be written any time. The computer memory is equipped with RAM components. The memory is a so-called “volatile” memory meaning that the memory contents are removed as soon as the computer is switched off.
Refresh rate	Also vertical scan rate. Number of image refreshes per second measured in Hertz (Hz). The higher the vertical scan rate the less flicker.
Resolution	Number of  horizontal and vertical pixels. 1408 x 1024 means that 1408 pixels are displayed horizontally and 1024 pixels are displayed on the monitor vertically. The higher the resolution the more details the monitor can display.
RGB	Abbreviation for R ed, G reen and B lue, the basic colors of additive color mixing. RGB describes the method used in computer technology where image information is transferred by dividing it into the three basic colors.
ROM	R ead O nly M emory. A ROM is a memory component which can only be read but which cannot be modified. The ROM's contents remain in the component also after the computer has been switched off. All functions which have to be available immediately after switching the computer on, e.g. the data for the system test, the character output on the screen, etc. are stored in ROM components. There are also PROMs (P rogrammable R OM) EPROMs (E rasable P ROM) and EEPROMs (E lectric E PROM).
Scaling	Adaptation of an image to a different size.
Serial interface	Also RS232. The serial interface transfers data through a data line bit by bit (all  bits of a  byte one after the other). The serial data transfer is considerably slower than the transfer through the  parallel interface but it is less susceptible to interference. Serial interfaces are designated by COM and a number (e.g. COM1).
Software	General term for all programs a computer can run (system programs, application programs,  drivers etc.) and files.
S-Video	With S-Video signals the brightness (luminance) and the color information (chrominance) are transferred separately.
TrueColor	16.7 million colors can be displayed at a time ( color depth).
Vertical scan rate	 Refresh rate.
VESA	Video Electronic Standards Association. Committee founded in 1988 in the USA which establishes common standards for the computer technology.

VESA Local Bus	Bus concept defined by the 📖 VESA committee: 32-bit bus operating at a 📖 clock frequency of up to 50 MHz. At a clock frequency of 33 MHz the VL bus transfers up to 132 📖 MB per second (max.).
VGA	V ideo G raphics A rray (IBM), graphics board which displays 256 colors in the graphics mode.
Video-CD	CD-ROM standard with 📖 MPEG videos you can play back using a CD-ROM drive and an MPEG decoder board.
Video decoder	Converts analog signals into digital information.
Video encoder	Converts digital information into analog signals.
Video for Windows	Video for Windows is a Microsoft Windows system extension which allows to record, to store and to play back video sequences from hard disk (📖 digital video).
YUV	Color model where Y delivers the brightness information and U and V the color information.

MONITOR SELECTION

The following instructions will help you to select the right monitor during the software installation.

**If you use a
miro monitor**

If you use a miro monitor, you will find the monitor name in the monitor selection list. For miro monitors, always the maximum vertical scan rate is selected (=100 Hz).

If you use a monitor that is listed twice, with the addition of *Microsoft* or *miro Computer Products AG*, choose the later of the two listings. This will ensure that the system uses the latest monitor timings.

**If you do not
use a miro
monitor**

If you do not use a miro monitor and therefore you do not find your monitor in the list, you can select a monitor from the monitor classes *xx kHz multifrequency monitor* or *xx kHz VESA multi frequency monitor*.

xx kHz multifrequency monitor:

Monitors belonging to this monitor class include timings with the maximum possible horizontal frequency and a maximum vertical scan rate of 100 Hz.

xx kHz VESA multi frequency monitor:

These monitors only include VESA-compatible timings which do not always use the monitor's capabilities to the fullest but which, however, offer the correct synchronization.

Select the VESA timings, if your monitor image is not synchronized correctly, the image position is wrong, etc.



Operating your monitor at a refresh rate which is too high may lead to serious damage. If you do not know which horizontal frequency your monitor supports, please refer to your monitor's documentation.

DOS TOOLS

The package contents of your miro board includes DOS tools which help you to adjust and optimize the monitor image.

Windows and DOS tools

Call the DOS tools only in the MS-DOS mode, using the MS-DOS prompt under Windows does not work.

miroVGA2TV

What is miroVGA2TV

miroVGA2TV allows you to connect a TV set to your computer and use it as a graphics display also under DOS. In this way, you can record the operation of DOS programs to video or you can play DOS games using the TV set (which is larger than the computer monitor in most cases). You can also select the graphics modes listed below.

Windows 95

To be able to install miroVGA2TV on the DOS level after having left Windows 95, select *Shut-down* in the *Start* menu and the *Restart the computer in MS DOS mode* option.

VGA2TV was copied to the Windows subdirectory \MIRO\COMMON during installation of the DOS tools.

Among others, this directory includes a README file containing the newest information on miroVGA2TV.

Using miroVGA2TV

After you start miroVGA2TV, all supported miroVGA2TV graphics modes are routed to the RCA socket of the connected TV set.

Configuring

In most cases, miroVGA2TV does not have to be configured and works automatically. You can, however, make special settings using command line parameters.

In addition, you can make these settings using the menu-driven program VGATVSET.EXE and save the settings in the VGATV.COM file.

Starting

To start miroVGA2TV, you have two options:

- ♦ Change to the directory to which you copied miroVGA2TV and enter **vga2tv <↵>** (PAL) oder **vga2tv /nn <↵>** (NTSC) to start the tool.
- ♦ Enter the PATH command in your AUTOEXEC.BAT file to be able to call miroVGA2TV from everywhere:
Path=%Path%;c:\vga2TV;
where **c:\vga2TV** is the drive and the directory to which you copied the VGA2TV files.

Command line parameters

When calling miroVGA2TV you can enter different options after the file name. If you call miroVGA2TV for the first time, the TSR is loaded into the memory and a part of the program stays resident (about 4k). If you call miroVGA2TV again, you can change some parameters. The following parameters are available:

General options:

/? Gives you brief help instructions.

/?? Gives you detailed help instructions.

/Q Messages do not appear on the screen
(except for error messages).

Options which are only available when loading miroVGA2TV (first call):

/N[P/N]

selects the video standard (P for PAL, N for NTSC). Without this parameter PAL is the default.

Options which are only available when loading miroVGA2TV (first call):

/U Removes miroVGA2TV from the memory.

/A Enables miroVGA2TV when it is in the memory but has been disabled with the \D parameter.

/D Disables resident miroVGA2TV. (This option makes it possible to switch miroVGA2TV off temporarily without removing it from the memory).

/M[<mode>[+/-]]

Use this option to switch the graphics modes supported by miroVGA2TV on/off. Without entering +/- the available modes and their present state are output.

/O[+/-]

Use this parameter to switch the *TVOnly* mode on/off. If the *TVOnly* mode is switched on, the VESA BIOS makes only modes available which are supported by miroVGA2TV.

/C[+/-]

This switch automatically distinguishes between video modes 13(320x200x8) and 13X(320x240x8). If this feature is disabled, the timing or the video mode 13X will not be adapted.

/F<special>[+/-]

Use this option to force some timing parameters (You should only use this option with together with the /C+ option). This option can be useful if the application changes the default video timing.

/FX Force alternative timing for modes 12 and 13

/FI Force interlaced timings

/FS Force default timings for modes 12 and 13

FT Enable continuous monitoring of registers

/FD Force delayed mode initialisation.

Limitations miroVGA2TV supports the following graphics modes for the PAL and the NTSC video standards.

Mode	Resolution	Type	Default
1	40x25x4	Text	enabled
3	80x25x4	Text	disabled
D	320x200x4	Graphics	enabled
12	640x480x4	Graphics	enabled
13	320x200x	Graphics	enabled
13X	320x240x8	Graphics	enabled
100	640x400x8	Graphics	enabled
101	640x480x8	Graphics	enabled
10D	320x200x15	Graphics	enabled
10E	320x200x16	Graphics	enabled
10F	320x200x32	Graphics	enabled
110	640x480x15	Graphics	enabled
111	640x480x16	Graphics	enabled
112	640x480x32	Graphics	enabled

Windows 3.1x:

miroVGA2TV does not work under Windows 3.1x or in the Windows 3.1x DOS box. Please avoid starting Windows 3.1x while miroVGA2TV is active (remove the program entering [**vgatv -u**]).

Windows 95:

If you start your computer in MS-DOS mode and then start miroVGA2TV, the Windows desktop and the DOS boxes will also be displayed on the TV set.

Graphics modes larger than 640x480 pixels cannot be displayed completely on the TV screen and thus are not supported.

Graphics modes larger than 640x480 pixels cannot be displayed on the TV screen completely and are not supported.

miroVGA2TV does not work with programs, which cannot initialize the screen via the BIOS or which modify the graphics register afterwards. In this case the TV monitor shows no image.

miroTEST

CAD drivers under DOS, which do not allow you to select the resolution, can be configured using the miroMODE function of miroTEST. You can also view a test picture which helps you to adjust some image parameters.

miroTEST will be copied to the \MIRO\COMMON directory during the installation and can be called up using additional suffix parameters.

miroMODE To get an overview over the possible parameters, change to the \MIRO\COMMON directory and enter **mirotest**<↵>. The options depend on the board/s you installed.

Example:

MIROMODE	MODE	XRES x YRES x BPP	H. frequ.	V. frequ.
0	-PC0	640 x 480 x 8	51.9 kHz	100.9 Hz
1	-HC0	640 x 480 x 15	51.9 kHz	100.9 Hz
2	-RC0	640 x 480 x 16	51.9 kHz	100.9 Hz
3	-TC0	640 x 480 x 24	51.9 kHz	100.9 Hz
4	-PC2	800 x 600 x 8	63.5 kHz	100.1 Hz
5	-HC2	800 x 600 x 15	63.5 kHz	100.1 Hz
6	-RC2	800 x 600 x 16	63.5 kHz	100.1 Hz
7	-TC2	800 x 600 x 24	46.9 kHz	75.0 Hz
8	-PC3	1024 x 768 x 8	60.0 kHz	75.0 Hz
9	-HC3	1024 x 768 x 15	60.0 kHz	75.0 Hz
10	-RC3	1024 x 768 x 16	60.0 kHz	75.0 Hz
11	-PC4	1152 x 864 x 8	67.8 kHz	75.0 Hz
12	-HC4	1152 x 864 x 15	67.8 kHz	75.0 Hz
13	-RC4	1152 x 864 x 16	67.8 kHz	75.0 Hz
14	-PC5	1280 x 1024 x 8	70.0 kHz	66.0 Hz
15	-PC6	1408 x 1024 x 8	70.0 kHz	66.0 Hz

Syntax:

To select a resolution, enter the following:

mirotest -miromode [mode1]<↵>

Options:

mode1 is the desired mode for board 1.

Example:

If your miro graphics system operates at a resolution of 640 x 480 with a color depth of 8 bit, enter: **mirotest -miromode 0**<↵>. When calling miroTEST again, the resolution you selected is marked as the current resolution.

Test picture Maybe you want to or you have to change some parameters concerning the image geometry (e. g. image position or image size).

Call a test picture for this purpose. Enter:

mirotest [XRES][YRES][BPP]<↵>

XRES/YRES are the selected resolution modes, BPP is the bit depth (s. table above).

Ex.: **mirotest 1024 768**

(The 1024 x 768 resolution is selected; the default bit depth is 8);

mirotest 1024 16

(The 1024 x 768 resolution is selected; the default bit depth is 16).

Use the following keys:

<←>, <→>, <↑>, <↓>: change the image position,

<Ctrl> and <←>, <→>, <↑>, <↓>: change the image size,

<F3>: save settings,
: delete settings,
<Esc>, space bar: reject settings.



The horizontal frequency and the vertical scan rate only increase by making the image wider or higher.

You can enlarge the image until the maximum horizontal frequency of the monitor you selected has been reached. If you selected the right monitor, the maximum permissible horizontal frequency cannot be exceeded.

miroDETECT

miroDETECT is a DOS tool which offers a graphics board detection. If you need help from the miro support, you can use this tool to gather all information concerning your board.

miroDETECT is copied to the \MIRO\COMMON directory and is called by entering **detect** <↵>.

The following data appear on the screen (example: miroCRYSTAL 22SD twin in the dual-screen operation):

① miroCRYSTAL 22SD twin

② Booting CARD 1: ③ CARD0810.INI = miroTWIN 22SD (V) 20

④ Rev.4

⑤ RAM: 2

⑥ Graphics Controller: 765

① Non-boot CARD 2: ③ CARD0411.INI = miroCRYSTAL 22SD twin

④ Rev. 4

⑤ RAM: 2

⑥ Graphics Controller: 765

Explanation:

①: Board type

②: The PC boots on the base board (board 1)/board 2 is the daughterboard

③: Name of the initialization file

④: RAM on the graphics board

⑤: Graphics processor

miro SUBSIDIARIES

- Austria:** miro Computers Products GmbH
Concorde Business Park B 4
A-2320 Schwechat
Tel: (43) 1/70155/0
Fax: (43) 1/70155/99
- Benelux:** miro Computer Products B.V.
Science park 5127
NL-5692 Ed Son En Breugel
Tel: (31) 40-670486
Fax: (31) 40-670487
- Germany:** miro Computer Products AG
Carl-Miele-Str. 4
D-38112 Braunschweig
Tel: (49) 531/2113-200
Fax: (49) 531/2113-99
- France:** miro Computer Products SARL
bâtiment D
101 rue Pierre Séward
92324 Chatillon Cedex
Tel: (33) 1/46120312
Fax: (33) 1/46120313
Minitel: 3615 miroINFO
- Great Britain:** miro Computer Products Ltd.
Westfields
London Road,
High Wycombe
Bucks HP11 1HA
Tel: (44) 01494-51 02 50
Fax: (44) 01494-51 00 70
- Switzerland:** miro Computer Products AG
Riedstraße 14
CH-8953 Dietikon
Fax: (41) 1/7415853
- Spain:** Binal Multimedia SL
c/Catalina de Erauso, 19
20011 San Sebastian
Tel: (34) 43-466047
Fax: (34) 43-461923
- USA:** miro Computer Products, Inc.
955 Commercial Street
Palo Alto, CA 94303
Tel: (001) 415/855-0940
Fax: (001) 415/855-9004



KONFORMITÄTSERKLÄRUNG DECLARATION OF CONFORMITY

Geräteart: Grafikkarte
Type of equipment: Graphics board

Produkt / Product : **miroMEDIA 3D/miroMEDIA 3D TV upgrade**

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

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

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

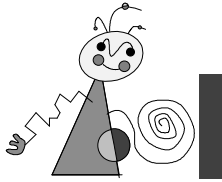
EN 55022:1987
EN 50082-1:1992

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

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

Braunschweig, 21.06.1996
(Ort / Place) (Datum / Date)

.....
Dr. Ulrich Schmidt, V.P. Engineering



Index

—1—

15-pin D-type connector I

—C—

Connectors 3

—D—

DDC 1

DOS Tools

miroDETECT XVI

miroTEST XIV

miroVGA2TV XII

—E—

Electrostatic charge iv

—F—

Features 1

—G—

Glossary VI

Graphics processor 1

—I—

Internal audio output 6

—M—

miro installation program 10

miroMEDIA 3D

adress range II

Board layout 7

Installation 6

Technical data 14

miroMEDIA 3D TV

Connection 8

miroMEDIA 3D TV upgrade

Board Layout 8

Installation 7

Internal connectors 4; III

Technical data 15

miroSETUP-Manager 9

Monitor selection XI

—P—

Package contents 3

—S—

Safety iv

Service V

Software installation 9

Support IV

System requirements 2

—T—

Technical Data 14

TV tuner 2

—V—

VGA 6

Video modes 14