

# ATAPI IDE CD-ROM DRIVE

Installation Manual



ENGLISH

**MITSUMI**  
Ready for WIN'95

Atapi CD-ROM \_\_\_\_\_

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# Introduction

Thank you for purchasing a MITSUMI CD-ROM drive. This installation manual should help you with the installation of your CD-ROM drive.

You can find the technical specifications for your drive and the numbers to call up our Support Hotline in the Specifications (Datacard). In the same way as driving a car, the installation of a CD-ROM drive is not a big challenge, but you should know some basic things before you start, just like when driving. We have put together a few questions which you should be able to answer easily if you want to install the drive yourself.

- Do you know about problems with electrostatic discharge in connection with computer peripherals?
- Do you understand what is meant by a „jumper“? Do you know what a jumper is used for?
- Do you know about the different types of ribbon cables used in your PC (36-, 40-, 50-pin)?
- Do you know about the terms „Primary“, „Secondary“, „Master“ and „Slave“ in connection with IDE drives?

The glossary given in this manual should be able to make clear these points for you. If not, it is best to leave the installation of your CD-ROM drive to an expert.

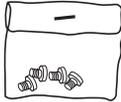
If problems do arise during installation, then please call up our Support Hotline at the numbers given in the list.

Help on basic problems, such as the installation of Windows 95, the installation of sound cards from various manufacturers, or any software and hardware from other manufacturers, is not part of the help available from the Mitsumi hotline, since in most cases we do not have the necessary documentation.

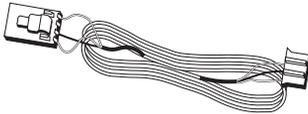
# Product Description

Please contact your dealer if any of these items are missing.

4 mounting screws  
(M3, max. 5 mm)



4-pin audio cable



3.5 inch device  
driver diskette



## Datacard

**CD-ROM Drive** **MITSUMI**  
Ready for Win 95

**DE** SPEZIFIKATION

**DK** SPECIFICATION

**FR** SPECIFICATION

**IT** SPECIFICHE

**ES** ESPECIFICACIONES

## Installation manual

**ATAPI IDE CD-ROM DRIVE**  
Installations-Handbuch

**MITSUMI**  
Ready for Win 95

Atapi CD-ROM \_\_\_\_\_

# Safety Information

## Please follow these precautions when handling a CD-ROM or CD:

- Do not put any objects on the open tray.
- Do not subject the CD-ROM to any strong impacts or vibration.
- Only handle CDs by the edge.
- Only use special markers to write on CDs and never put labels onto CDs, since these cause vibrations which will affect the running of the CD-ROM.
- Always keep compact disks in their sleeves to prevent the delicate surface from being scratched or damaged.
- CDs should only be cleaned with a soft, dry cloth by wiping in straight lines from the center outwards. Never use solvents, record cleaner or anti-static fluids of any kind.

# CD-ROM Drive Parts and Functions

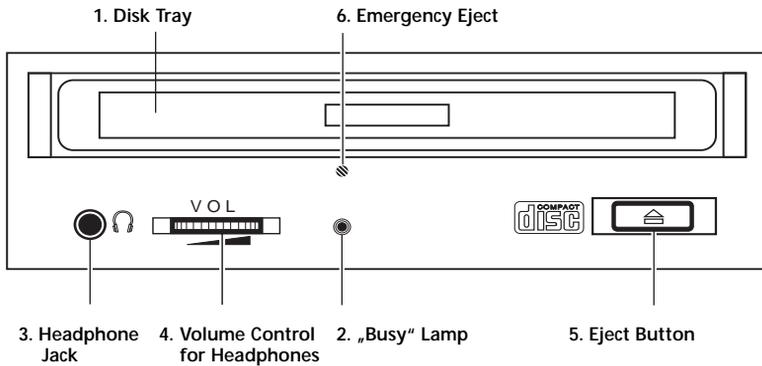


Fig. 1 Schematic front view (depends on model)

- 1. Disk Tray**  
Opens or closes for disk loading/removal. Press lightly on the front panel to close.
- 2. „Busy“ Lamp**  
On during data access or audio playback.
- 3. Headphone Jack**  
Please note that not all models are equipped with a headphone jack. It is recommended to use low impedance headphones or external loudspeakers with built-in amplifiers.
- 4. Volume Control**  
To control the volume output for connected headphones.
- 5. Eject Button**  
Press lightly to open/close the disk tray.
- 6. Emergency Eject**  
Use only to open the disk tray when the power is switched off.

# CD-ROM Drive Parts and Functions

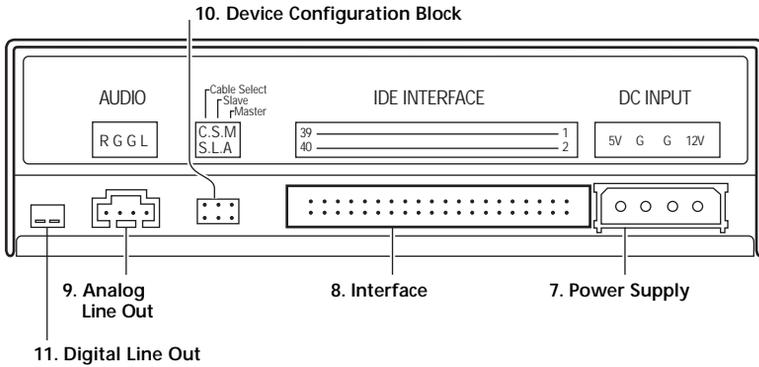


Fig. 2 Schematic rear view (depends on model)

## 7. Power Supply

Connection for a standard PC power supply.

## 8. Interface

Port for the 40-pin interface (IDE ribbon cable).

## 9. Line Out (analog)

Analog stereo output for right/left audio channel.

## 10. Device Configuration Block

Setting of these jumpers is explained in the "Installation" chapter.

## 11. Digital Line Out

Digital stereo output for right/left audio channel.

# Installation

Before an ATAPI CD-ROM can be connected to an IDE or EIDE interface, it must be configured as „Master“ or „Slave“. This is done by setting the jumpers at the back of the unit.

**Warning:** Please turn off all equipment and disconnect the computer power cord from the mains socket before you carry out the installation described below.

## Setting the configuration jumpers

A jumper must be placed in one of the three following positions:

### SL - Slave

This is the default setting. The jumper must be set here if your drive is to be operated as a slave, i.e., if you connect it on the same ribbon cable as an existing hard disk drive. In some cases the jumper setting of the hard disk drive must be modified, too. It must be jumpered as „Master, slave present“.

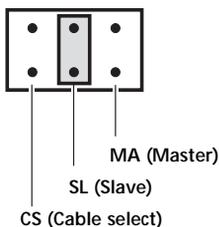
### MA - Master

This setting is used if the drive is operated as a master device, i.e. stand-alone with its own ribbon cable, or in combination with a second CD-ROM drive, jumpered as „Slave“.

### CS - Cable Select

Use this setting only if you are connecting your CD-ROM drive to an exchangeable hard disk drive and if you have the necessary ribbon cable.

The following illustration shows an example in which the jumper is set to „Slave“.



# CD-ROM Drive Installation

1. Switch off the computer and all interfaced peripherals and disconnect the computer power cord from the mains socket.
2. Remove the computer housing.
3. Install the drive in a vacant 5.25" slot and secure it with the mounting screws supplied. Make sure that the drive is not being stressed or bent by the screws. You can also install your drive vertically.
4. Before connecting the CD-ROM drive to the appropriate IDE interface, you should ground yourself electrostatically by touching the metal housing of your PC. Otherwise high electrostatic charges might destroy the drive and/or electronic components in your PC.
5. The CD-ROM can be connected directly to a sound card, if you have one, with the audio cable supplied. This allows standard audio CDs to be played back.

If you have already connected two hard disk drives to your standard IDE controller, an additional IDE controller will be needed for the IDE CD-ROM drive. This secondary IDE controller, part no. MTM2183, can be obtained at your Mitsumi dealer. You should, however, check first whether your computer does not already have an Enhanced IDE controller with a secondary IDE interface.

# Integration of the CD-ROM Into Your Operating System

The procedure for installing the device drivers and integrating the CD-ROM into the computer operating system differs from case to case. The list below is by no means complete and can only describe the basic steps of installation.

One important point is the fact that, depending on the driver or operating system used, your drive may be recognized only as Mitsumi ATAPI drive or an older Mitsumi CD-ROM drive model. Due to the hardware-independent ATAPI standard, however, this will not affect the speed of your drive.

Please refer to the user manual on your operating system for further installation instructions.

## **DOS/Windows 3.x**

A separate driver installation is required for the MS-DOS operating system (Novell DOS, PC DOS, etc.). You will require the supplied driver diskette and the information on where the file „MSCDEX.EXE“ is located (this only applies for MS-DOS, the name may differ in DOS versions from other suppliers). Please consult your manual for further information.

Insert the supplied device driver disk into your floppy disk drive and start the installation program by typing <drive>:\SETUPD where <drive> is the letter used to identify your disk drive (e.g. A:\SETUPD). The menu-driven installation program will now guide you step by step through the installation routine and update the files CONFIG.SYS and AUTOEXEC.BAT. If so desired, it will also update the SYSTEM.INI file in Microsoft Windows version 3.x.

SETUP assumes a standard configuration using the primary or secondary IDE interface. If this is not the case, you need to change the corresponding entry in CONFIG.SYS (see Appendix 1).

## **Windows 95, Windows NT, OS/2, Linux**

Support of ATAPI CD-ROM drives has already been implemented in these operating systems and no additional drivers are required. The following gives you specific information on the individual operating systems.

# Integration of the CD-ROM Into Your Operating System

## Windows 95

During the starting process, Windows 95 checks your computer hardware configuration in order to identify new internal or peripheral devices. In some rare cases, Windows 95 will not be able to clearly identify the installed hardware.

In such cases please check the hardware installation of the CD-ROM:

the connection to the IDE interface, if the IDE interface has been activated or the interface cable correctly connected, and check for correct jumpering.

## Windows NT

There are differences between installation under Windows NT 3.5x and Windows NT 4.0.

In Windows NT 3.5x the required configuration utility „Win-NT-Setup“ is in the ”Main” group. Start this utility and go to the Options menu item „Add/Remove SCSI adapters“, select the driver „IDE CD-ROM (ATAPI)“, confirm the selection, and reboot your computer.

The corresponding configuration utility is located in System Control under Windows NT 4.0. Otherwise the driver installation is the same as under Windows NT 3.5x.

## Linux

Support of your CD-ROM drive is included in the operating system.

## OS/2 Warp

OS/2 Warp automatically identifies your CD-ROM drive. For an installation under OS/2 2.21, you require the drivers located on the disk in subdirectory OS/2. Further information is contained in the ReadMe files on the diskette.

# Troubleshooting

Your CD-ROM is designed for a long and trouble-free service life. If problems do occur, please check first whether the drive installation has been carried out as described, and whether the appropriate drivers and programs have been installed correctly and are working properly. If that is not the case, please refer to the following list of commonly occurring malfunctions. If this still does not produce the desired solution, do not hesitate to contact our Support Hotline (the telephone and fax numbers are given in the attached sheet).

**Problem:** The disk tray does not open. Please check whether the power supply and ribbon cables have been connected correctly, or whether the CD-ROM has been connected to an old control card or to an interface on a sound card which do not in fact have an IDE interface.

**Problem:** The drive has been installed on the same ribbon cable as an existing hard disk drive. When the computer is switched on, the hard disk can no longer be found.

In this configuration the jumper must be set so that the hard disk is master and CD-ROM drive is slave. If this has already been done, the jumper settings on the hard disk must be changed from „Master, no slave“ for example, to „Master, slave present“. Please consult the instruction manual for your hard disk drive for further information on the correct jumper setting.

**Problem:** The drive is working but there is no sound from the sound card.

Is the audio cable correctly connected to the CD-ROM drive and the sound card? Have the loudspeakers been connected properly? Your CD-ROM drive has an audio connector with the following pin assignments:

<b>Pin 1:</b>	Right audio channel	<b>Pin 2:</b>	Ground
<b>Pin 3:</b>	Left audio channel	<b>Pin 4:</b>	Not used

The pin assignments may not correspond to those of your sound card. Please consult the manual for your sound card to check this.

**Problem:** The drive does not function, although it has been correctly connected to a primary or secondary port using the default values.

Please check if this involves an older cache controller (with or without its own BIOS).

Unfortunately these are often not 100%-compatible with the ATAPI standard, even though this involves an EIDE controller. In such cases you should deactivate the secondary port on the cache controller card and install an additional secondary port to connect the CD-ROM.

# Support Hotline

In addition to good product quality, MITSUMI also takes pride in providing excellent customer support. For this reason we are running the MITSUMI Electronics European Support Hotline to assist our customers with installation problems or questions at any time. However, the Support Hotline personnel depend on you, the callers, providing comprehensive information to allow us to give instant solutions to problems.

---

**Which CD-ROM drive model are you using?**

---

**Which device driver version are you using?**

---

**Exactly what kind of PC are you using?**

---

**Which main board and which IDE controller are installed?**

---

**How is your CD-ROM drive connected?**

---

**Which port is it connected to (primary or secondary, master or slave)?**

---

**Which operating system are you using? Which version?**

---

**What information is in your start-up files (CONFIG.SYS, AUTO-EXEC.BAT and Windows SYSTEM.INI)?**

It will help to print these files out beforehand.

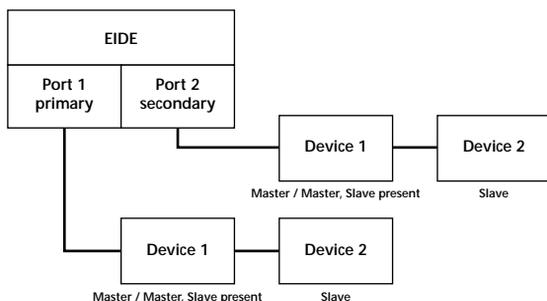
More information on our Support Hotline is given in the attached sheet.

Moreover, we offer technical support and more information on the Internet under <http://www.mitsumi.de>. There you will find answers to the most frequently asked questions, and you can also download the most up to date drivers.

# Glossary

**ATAPI** stands for Advanced Technology Attachment Interface. An ATAPI device is interfaced to an IDE controller using a 40-pin ribbon cable. See also EIDE.

**IDE/EIDE** stands for Integrated Drive Electronics and Enhanced Integrated Drive Electronics respectively and describes the hardware interface to connect (E)IDE hard disks and ATAPI-compatible devices (CD-ROM, see also ATAPI). IDE can only make use of one IDE port, the so-called primary port, which can operate a maximum of two (E)IDE or ATAPI devices in a master/slave combination. EIDE can make use of a second IDE port, the secondary port, which can likewise operate two devices. This means that an EIDE system can operate up to four (E)IDE devices.



**CD-ROM** is the description for Read Only Memory data CDs. The original standard was specified in the so-called „Yellow Book“ and was extended subsequently. The standard is divided into CD-ROM mode 1 and CD-ROM mode 2. Further information on the structure can be found in the corresponding standard sources.

**CD-ROM/XA** stands for Extended Architecture. This format is compatible with CD-ROM mode 1, and mode 2 and also permits nesting of data, audio sequences and video images.

**CLV** stands for Constantly Linear Velocity. The data tracks of a CD must be read at a constant speed. In order to achieve this, the speed of the CD-ROM drive must be constantly adjusted as there are more data blocks on the outer tracks than on the inner tracks.

# Glossary

**CAV** stands for Constant Angular Velocity. The data tracks of a CD are read at a constant speed, which greatly increases the data transfer rate.

**MIXED MODE CD** is a CD with one data track and appended audio tracks.

**MPC** is a definition for the hardware requirements for a multi-media PC. At present MPC-I, MPC-II and MPC-III have been defined.

**MPEG** is a high-performance compression routine for digitized films. Due to the high compression ratio, the data can only be decompressed and displayed using special add-on boards or programs.

**MSCDEX** stands for Microsoft CD-ROM Extensions. This extends the file system of a PC to allow it to incorporate CD-ROM drives.

**MULTISESSION CD** is a CD which has been written to in the course of several write sessions.

**PHOTO-CD** is a process developed by Kodak to allow photographs to be recorded on CDs. PHOTO-CD basically corresponds to the CD-ROM/XA standard, but has been expanded by the facility to write images onto the CD in several subsequent sessions (see Multisession).

**QUICKTIME** was developed by Apple. Together with Video for Windows by Microsoft, it is the main format for the compression and playback of video data by means of a software program. The file extension is normally \*.MOV.

The so-called **RAINBOW BOOKS** define the various file and recording formats used for CD-ROMs. They are currently divided into the following formats: Red Book (Digital Audio), Yellow Book (CD-ROM), Green Book (CD-I), Orange Book (CD-WO and CD-MO), White Book (Video CD) and Blue Book (CD Plus).

**VIDEO FOR WINDOWS** was developed by Microsoft. Together with Quicktime by Apple, it is the main format for the compression and playback of video data by means of a software program. The file extension is usually \*.AVI.

## MTMCDAL.SYS Device Driver Parameters in CONFIG.SYS

The MTMCDAL.SYS driver is a software interface between the CD-ROM drive and MSCDEX.EXE and is included in CONFIG.SYS. Setup is done for a standard configuration for the primary or secondary port with the default values for port address and interrupt. If your hardware installation differs from this, the corresponding entry must be made in CONFIG.SYS. The line has the following syntax:

```
DEVICE=[DRIVE:][path]MTMCDAL.SYS /D:device name  
[/P:xxx,yy] [/A:n] [/U:n] [/L:xx]
```

Note: The actual entry must be written in its full length in a single line within the CONFIG.SYS file.

```
DEVICE= /  
DEVICEHIGH=
```

These commands are used within CONFIG.SYS to install device drivers into memory when the PC is booted. „DEVICE =“ installs the driver into conventional memory and „DEVICEHIGH=“ loads the driver into high memory.

```
[Drive:][Path]MTMCDAL.SYS
```

Defines the location (drive and directory) and the name of the device driver.

```
/D:<Device name>
```

This parameter allows you to use any desired device description (max. 8 characters) for your CD-ROM and must be identical with the corresponding parameters used in MSCDEX.EXE (see MSCDEX) in AUTOEXEC.BAT.

```
[/P:xxx,44yy]
```

Defines the port address for the drive (i.e. the memory address for the IDE port) and the IRQ (interrupt request).

„xxx“ indicates the port address of the IDE port.

xxx =	1f0	primary port address (channel 1)
	170	secondary port address (channel 2)
	1e8	channel 3
	168	channel 4

# Appendix 1

„yy“ indicates the interrupt request (depending on the controller):

yy =	14	primary port (channel 1)
	15,12,11,10	secondary port (channel 2)
	12 or 11	channel 3
	10 or 9	channel 4

## [/A:n]

Defines the audio playback mode. Settings /A:0 or /A:1 can be selected for stereo CDs. For mono CD playback (left-hand or right-hand channel only) the /A:1 setting plays the mono audio signal via both the right-hand and left-hand channels. The standard (default) setting for normal playback is /A:0.

## [/U:n]

Defines the locking or opening of the tray to prevent unauthorized access after booting. /U:0 means „Unlock“ (the default setting) and /U:1 means „Lock“.

## [/L:xx]

Defines the language for output messages. The language can be selected according to the following codes:

“xx” =	US	English (default setting)	FR	French
	IT	Italian	GR	German
	SP	Spanish	JP	Japanese

## Installation of Device Driver MTMCDAI.386

Device driver MTMCDAI.386 is only required if your Windows version 3.1x runs with 32 bit hard disk access activated and if your CD-ROM is connected to the same IDE port as your hard disk. This file is automatically installed with the installation program SETUPD. If manual installation is necessary, simply add the following line to the [386enh] section of Windows SYSTEM.INI:

**DEVICE=[Drive:][Path]MTMCDAI.386**

## MSCDEX.EXE Parameters in AUTOEXEC.BAT

MSCDEX.EXE forms part of Microsoft DOS v6.00 and higher and Microsoft Windows 3.00 and higher. This program is required to incorporate the CD-ROM drive via an additional drive designation letter into the file system of your computer. Users of other DOS versions, such as Novell DOS, should refer to their DOS manual to find out what their equivalent of MSCDEX.EXE is called and which parameters it supports. Please note that MSCDEX.EXE can only be used with DOS version v3.00 and higher.

### **/D:<device name>**

This parameter tells MSCDEX.EXE the name of the device driver. It must correspond to the name used during loading of the device-specific driver in CONFIG.SYS.

### **/E**

MSCDEX.EXE is to use expanded memory.

### **/L:<letter>**

Indicates the drive letter to be used for the CD-ROM drive. Without this parameter, the next available drive letter will be used.

### **/M:<size>**

Indicates the size of the memory buffer to be used. A value of 10 corresponds to 20 kB of memory. Values above 32 have no significant effect on the performance of the drive.

### **/V**

Provides verbose information on the use of memory.

### **/S**

Allows the CD-ROM drive to be shared in a local network.

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Windows is a registered trademark of Microsoft Corporation.

IBM is a registered trademark of International Business Machines Corporation.