

MAGICSPIN

Internal ATAPI / Enhanced IDE CD-ROM

USER'S GUIDE



Dear I/OMAGIC Customer:

Congratulations on the purchase of your new MagicSpin CD-ROM Upgrade Kit. We can assure you that it is made from state-of-the-art chipsets and components. Your product has also gone through the most rigorous testing and quality assurance procedures in the industry.

All of the employees at I/OMAGIC want to express our sincere gratitude for your decision to purchase our product. Our commitment to you is to provide products that are easy to install and use. I/OMagic is happy to assist you with installation, if necessary, and ensure that our resellers provide you the highest level of sales and service.

I/OMAGIC opened for business in 1993 with one PCMCIA sound product. Since then, our company has grown and now offers more than fifteen products in the multimedia market, including internal CD-ROM drives, PCMCIA CD-ROM drives, 3D stereo sound cards, wavetable sound cards, 3D video cards, and PCMCIA modems.

We encourage you to browse our web site at <http://www.iomagic.com> to thoroughly review our complete product offering. We hope you enjoy using your new product, and look forward to earning your business in the years to come.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael R. Dendo". The signature is fluid and cursive, with a long horizontal stroke at the end.

Michael R. Dendo
Vice President of Sales

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- If it can be done safely, reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment to an outlet on a different circuit from the receiver.
- Consult the dealer or an experienced radio/TV technician for help.

This equipment has been certified to comply with the limits for a class B computing device, pursuant to part 15 of the FCC rules.

Only peripherals (Computer input/output devices, terminals, printers, etc.) certified to comply to the class B limits may be attached to this computer. Operation with non-certified peripherals is likely to result in interference to radio and TV reception.

To meet FCC requirements, shielded cables and power cords are required to connect the device to a personal computer or other Class B certified device.

The user is cautioned that changes and modifications made to the equipment without the approval of manufacturer could void the users authority to operate this equipment.

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Introduction

Congratulations on the purchase of your *MagicSpin CD-ROM*. The purpose of this document is to provide you with installation instructions for your new kit. If this is your first installation with this type of product, please read the entire manual before you begin. If you are experienced with installations, you may want to go directly to the hardware installation section..

For your information, we have provided background information on CD-ROMs and CD-ROM drives. Also included is background information on the IDE and EIDE interfaces. If you have never installed computer hardware, this section is both informative and necessary.

Following the installation of both the hardware and software, the Installation Guide also contains a troubleshooting section, a general specification guide, how to contact I/OMagic and information on how to register your product.

Thank you again for purchasing the I/OMagic *MagicSpin CD-ROM*.

System Requirements

Computer	IBM PC or Compatible
Processor	486 DX2 processor or Higher
Memory	8MB of System RAM
Hard Drive	Approximately 4 MB of Hard disk space
Operating System	DOS 6.0, Windows 3.1x, Windows 95(or later)

Installation Instructions

This manual is intended as a guide for those who are not familiar with the installation of PC peripherals and software applications and as a reference for experienced users. If you are new to installing PC peripherals and software applications, follow the step-by-step instructions in this manual to help you through the installation process.

Before You Begin

Before proceeding, make sure your computer system meets the System Requirements listed above. If you are unsure whether your system meets the minimum requirements, contact I/OMagic Technical Support.

- Step 1. Once you are certain your system meets all of the requirements, prepare a clean workspace, and gather the tools you will need. For installation of the card, you will need a Phillips head and/or a Flathead screwdriver, and we recommend you use a container to hold loose screws.
- Step 2. Carefully unpack the box contents. Leave the audio card in its static-resistant bag until later in the installation process. This protective bag has been specially designed to protect the card from potentially damaging static electricity.

Technical background

CD-ROM Technology

CD-ROM stands for Compact Disc Read Only Memory. A compact disc format used to hold text, graphics and hi-fi stereo sound. It's like an audio CD, but uses a different track format for data. The audio CD player cannot play CD-ROMs, but CD-ROM players usually play audio CDs and have output jacks for a headphone or amplified speakers.

CD-ROMs hold 650MB of data, which is equivalent to about 250,000 pages of text or 20,000 medium-resolution images.

A CD-ROM drive (player, reader) connects to a controller card, which is plugged into one of the computer's expansion slots. Earlier drives used a proprietary interface and came with their own card, requiring a free expansion slot in the computer. Today, most CD-ROMs for PCs use the SCSI or EIDE interface and can be installed without taking up an extra slot.

The first CD-ROM drives transferred data at 150KB per second. The speed then doubled to 300KB, then quad speed at 600KB. Today, The MagicSpin CD-ROM is more than 40 times the original transfer rate.

CD-ROM Construction and manufacturing

Compact disks start as round wafers made from a polycarbonate substrate, measuring 120 mm (about 4.75 inches) in diameter and about 1.2 mm in thickness, which is less than 1/20th of an inch. These blanks are made into production CDs using a process not dissimilar to how old vinyl records were made (which is somewhat fitting, if you think about it.)

The first step in the creation of a CD is the production of a *master*. The data to be recorded on the disk (either audio or computer data, there are many different formats) is created as an image of ones and zeros. The image is etched into the master CD using a relatively high-power laser (much more powerful than the one you would find in a regular CD player) using special data encoding techniques that use microscopic pits to represent the data. The master CD is then used to create duplicate master stamps.

The actual CDs are produced by pressing them with the master stamp. This creates a duplicate of the original master, with pits in the correct places to represent the data. After stamping, the entire disk is coated with a thin layer of aluminum (which is what makes the disk shine, and is what the laser reflects off when the disk is read) and then another thin layer of plastic. Then, the printed label is applied to the disk.

Many people don't realize that the data surface of the CD is actually the *top* of the disk. The media layer is directly under the CD label, and the player reads the CD from the bottom by focusing the laser *through* the 1.2 mm thickness of the CD's substrate. This is one reason why the bottom of the disk can have small scratches without impeding the use of the disk; they create an obstacle that the laser must look through, but they don't actually damage the data layer. On the other hand, scratches on the top of the disk can actually remove strips of the reflective aluminum coating, leaving the disk immediately unusable.

CDs are fairly hardy but are far from indestructible. They are reasonably solid but overly flexing them can make them unreadable. They are not too sensitive to heat but will warp if left to bake in direct sunlight on a hot summer's day. CD media should always be cared for properly. The use of caddies or jewel cases will protect them; in general, the less handling, the better.

Reading a CD-ROM

Digital data is carved into the CD-ROM as pits (low spots) and lands (high spots). As the laser in the CD-ROM shines into the moving pits and lands, a sensor detects a change in reflection when it encounters a transition from pit to land or land to pit. Each transition is a 1. The lack of transitions are 0s. There is only one laser in a drive. Two are used here to illustrate the difference in reflection.

IDE/ATA Interface

IDE stands for Integrated Drive electronics. The name IDE is the more popular of the two, even though it is misleading which refers to putting the logic board with the hard disk much more than it has anything to do with the interface. The more correct name is ATA or *AT Attachment*, which defines the standard interface as attached to an AT-style machine (which is the generic way of describing every PC since the old 8-bit XT). The IDE/ATA interface is 16 bits wide, just as the original IBM AT's data and I/O buses were.

ATA Packet Interface (ATAPI)

Originally, the IDE/ATA interface was designed to work only with hard disks. CD-ROMs and tape drives used either proprietary interfaces (often implemented on sound cards) or the floppy disk interface (which is slow and cumbersome). A few years ago it became apparent that there would be enormous advantages to using the standard IDE/ATA interface to support devices other than hard disks, due to its high performance, relative simplicity, and universality.

However, because of how the ATA command structure works, it wasn't possible to simply put non-hard-disk devices on the IDE channel and expect it to work. Therefore, a special protocol was developed called the *ATA Packet Interface* or *ATAPI*. The ATAPI standard is used for devices like CD-ROM and tape drives. It enables them to plug into the standard IDE cable used by IDE/ATA hard disks, and be configured as master or slave, etc. just like a hard disk would be.



Note: When you see a CD-ROM or other non-hard-disk peripheral advertised as being an "IDE device" or working with IDE, it is really using the ATAPI protocol.

Internally, however, the ATAPI protocol is not identical to the standard ATA (ATA-2, etc.) command set used by hard disks. A special ATAPI driver is used to communicate with these devices. This driver must be loaded into memory before the device can be accessed (some operating systems like Windows 95 support ATAPI internally and in essence, load their own drivers for the interface). The name "packet interface" comes from the fact that commands to ATAPI devices are sent in groups called packets; ATAPI in general is a much more complex interface than regular ATA. The actual transfers over the channel use regular PIO or DMA modes, just like hard disks, although support for the various modes differs much more widely by device than it does for hard disks.

Enhanced IDE Interface

Enhanced IDE, also called *EIDE*, is the term that Western Digital uses to describe its advanced drives that incorporate the performance improvements defined in ATA-2, along with several other refined protocols. EIDE has become a widely accepted term in the industry. The Enhanced IDE interface adds several important speed improvements as well as ATAPI support required to use your CD-ROM drive. Below is a list of the important improvements that EIDE adds:

- **ATA-2:** EIDE includes all of the improvements that are part of ATA-2, including the higher-speed transfer modes
- **ATAPI:** EIDE includes support for non-hard-disk devices on the IDE/ATA channel.
- **Dual IDE/ATA Host Adapters:** The EIDE standard includes support for dual IDE/ATA host adapters, allowing four IDE/ATA/ATAPI devices to be used.

CD-ROM Hardware Installation

Prepare Your Computer for Installation

- Step 1. Before working on your computer, make sure the power to the computer and any related equipment is turned off.
- Step 2. While the cables are still attached to your computer, you may want to label them so you are sure to reconnect them properly when the installation process is complete.
- Step 3. Disconnect all cables and connectors from the back of your computer. Some cables may be attached to their connectors by small screws. Make sure to unscrew any secured cables before attempting to disconnect the cable from the back of the computer.
- Step 4. You are now ready to remove the cover from your computer. Generally, several screws must be removed to take the computer cover off. Place the screws in a container so they do not get lost. If you are working on a tower-style computer, you may want to lie it on its side with the open side facing up.

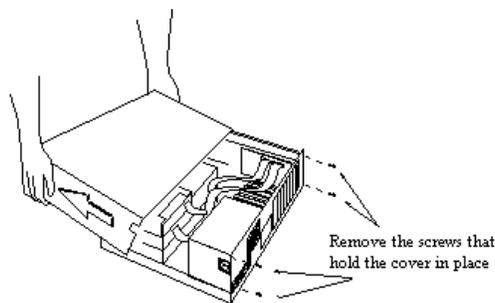


Figure 1

Note: Each manufacturer's computer case may be different. If you are unsure how to remove the case cover, consult your computer owner's guide.

Setting Master or Slave Jumpers

Before you start, please check the rear panel of the MagicSpin CD-ROM drive. There are three pairs of jumpers, CS (CSEL), SL (Slave) and MA (Master). Use a jumper cap to set the device to CS, SL or MA mode corresponding to your PC configuration (Figure 1).

Note: The default setting is SL (Slave).

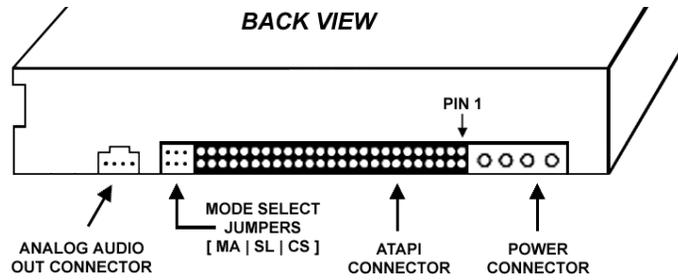


Figure 2: Back panel of the CD-ROM drive

Connecting to a Primary IDE Controller

There should be at least one IDE controller (or card) on the PC motherboard. This IDE controller support two devices, one for the hard disk (Master), and the other for the 2nd hard disk or a CD-ROM drive. The hard disk should be connected to this primary IDE (Master mode) controller as the PC needs to use the hard disk to boot up the system. Thus, the CD-ROM drive can be connected as the 2nd device which is referred to as Slave mode. Make sure the Mode Select Jumper is set to the SL (Slave) position in order to be used as the 2nd device. (Figure 2)

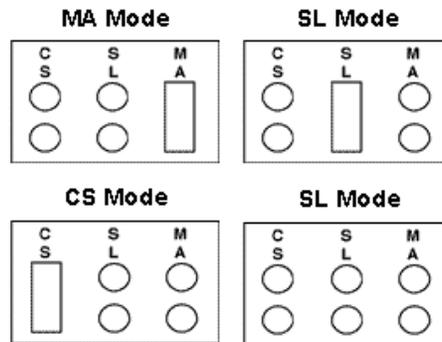


Figure 3: Mode selector settings

Connecting a Secondary IDE controller

If the PC is equipped with a 2nd IDE controller (or card) on the motherboard, each device connected to this controller should be set to either MA (Master) or SL (Slave) mode. Please set the CD-ROM drive to SL (Slave) mode if the 2nd IDE controller also connects to a Master device, such as a hard disk. If the CD-ROM is the only device connected to the 2nd IDE controller, you can set it as the MA (Master).

Mounting Your CD-ROM Drive

1 Locate an available drive bay.

Locate an empty drive bay within your computer. It may be necessary to remove a square iron plate. Please refer to your computer's User's Guide for assistance.

2 Slide the MagicSpin CD-ROM drive into the empty bay.

Attach the MagicSpin CD-ROM with the four included screws. Use a Phillips head screwdriver to secure both sides of the CD-ROM. Make sure that you tighten the screws fully.

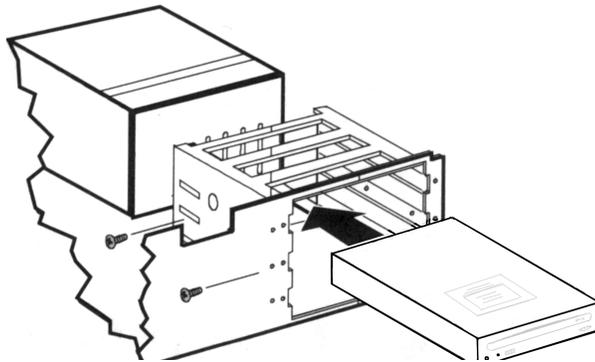


Figure 4: Insert CD-ROM into 5.25 drive bay

3 Connect the power supply cable.

Connect the power supply cable into the Power Connector on the back of the MagicSpin CD-ROM drive (Figure 5)

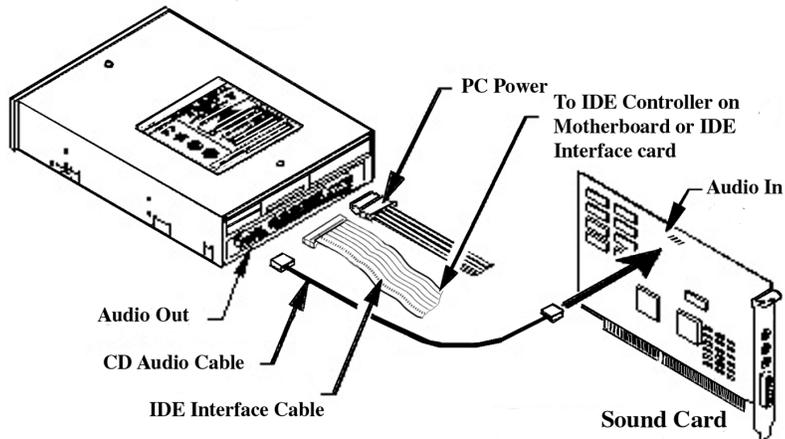


Figure 5: CD-ROM connections

4 Connect the IDE interface cable.

Connect the 40 pin IDE cable into the MagicSpin CD-ROM drive's IDE connector located on the back of the CD-ROM drive (Figure 5).

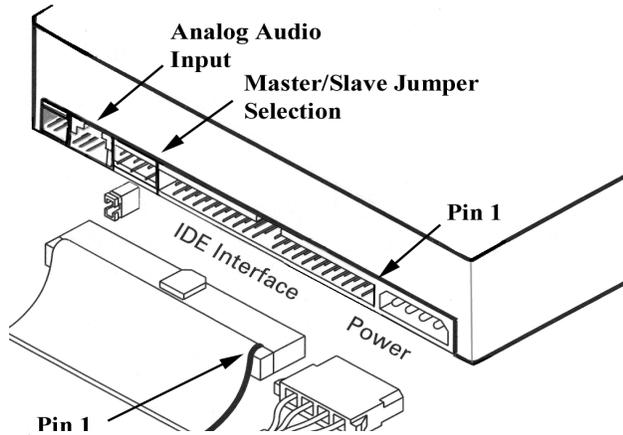


Figure 6: IDE connection

Make sure to align the red-lined edge of cable with Pin-1 of the IDE connector. Connect the other end into either your motherboard IDE controller, or your IDE controller card plugged into your motherboard (Figure 6).

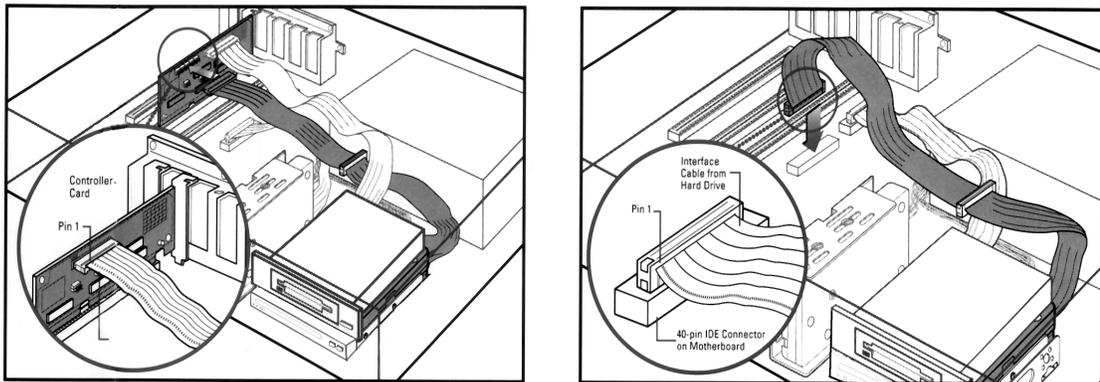


Figure 7: Connection to Motherboard

5 Connect the Audio cable from your Sound Card (If necessary).

If you have a sound card or an audio interface card, use the audio cable to connect from the sound card audio port (SONY or IDE) to the MagicSpin CD-ROM drive's Analog Audio connector located on the back panel (Figure 4).

6 Re-attach the computer's cover.

7 Reconnect all power cords to the computer.

CD-ROM Software Installation

Windows 98/95 Installation

There is no need to install any CD-ROM device driver under Windows 98/95. After completing the hardware installation section of this manual, please follow the steps below:

1 Turn on your PC and start-up Windows 98/95.

Windows 98/95 will automatically detect the new CD-ROM drive and load the appropriate drivers for your CD-ROM. If your CD-ROM is not automatically detected, please refer to the troubleshooting section on this manual.

2 Double click on the *My Computer* icon.

There should be a letter drive for the new CD-ROM drive. Place a CD into the CD-ROM drive and browse it. If you can browse the CD, the CD-ROM drive is working properly.

Note: It is not necessary to run the DOS install if you are using Windows 98/95.

Enabling Ultra DMA/33 support under Windows 98/95

Ultra DMA/33 mode is a new standard whereby the CD-ROM can transfer data through the DMA interface at speeds up to 33 MB/sec. This is supported only in new motherboards that are just now appearing in the market. You must determine what type of mother board you have to see if this function is supported. The Intel 430TX, 440LX and newer motherboards support Ultra DMA/33. Please contact your computer manufacturer or motherboard maker to determine if this function is supported.

If your motherboard or computer supports Ultra DMA/33, you must enable it in the BIOS. Consult your system manual for this.

Install the PCI IDE driver (Win95 version) which supports Ultra DMA/33. This is provided by your computer manufacturer. If this driver was not supplied, then you must contact your computer manufacturer for this driver. I/O Magic cannot supply this to you.

Windows NT 3.5x Installation

1 Power on your PC.

2 Start the Windows NT Setup Program from the Main Program Group.

3 Select OPTIONS and click ADD/REMOVE SCSI ADAPTERS

4 Click ADD and select IDE CD-ROM and click install

Windows NT 4.0 Installation

1 Power on your PC.

2 Start the Windows NT

3 Once in the desktop, click on the Start button > Settings > Control Panel > Devices

4 Select "ATAPI" from the list and click on the "Startup" button

5 When you get the startup screen, check "Boot" then click The "OK" button

6 Close the Devices screen and click on the Start button > Shut Down and restart the computer

Note: If the setup program asks for floppies instead of prompting for the current driver, exit setup, and copy the ATAPI.SYS file from your NT setup Disk to directory \WINNT35\SYSTEM32\DRIVERS, then run the above setup procedure again.

DOS or Windows 3.1x Installation

1 Power on your PC and go to the Dos prompt.

If your PC boots into Windows 3.X automatically, you need to exit Windows to the Dos prompt.

2 Insert the driver diskette into a floppy drive.

3 Type A:\install (where A:\ is your floppy drive)

5 Follow the instructions on the screen.

Follow the instructions on the screen to complete the rest of the installation process.

6 Remove the Driver Diskette and Reboot your computer.

Once the installation is complete, remove the driver diskette and reboot your computer. This is necessary for your computer to detect your new CD-ROM.

***Note:** DOS installation requires MSCDEX be present on your system. MSCDEX is included with DOS versions 6.0 and above. If you do not have MSCDEX, contact your computer reseller for assistance.*

MSCDEX.EXE

MSCDEX.EXE is Microsoft's CD Extension and is used to interface your PC to the CD-ROM drive. For the CD-ROM drive, MSCDEX.EXE version 2.21 or above is required.

During installation, a line is added to your AUTOEXEC.BAT that loads the MSCDEX.EXE driver. The entry in your AUTOEXEC.BAT will be something similar to:

```
C:\DOS\MSCDEX.EXE /D:MSCDD001 /V
```

The entry follows the format of:

```
[drive:][path]mscdex.exe /d:device_name [/l:letter] [/m:<number>]
```

***Note:** This line is not necessary if you are using your CD-ROM under Windows 98/95.*

CD Audio

If you have connected the CD audio cable to your soundcard, you will need to configure Windows to be able to play CD Audio. If you are running Windows 3.x, you will need to add the "MCI CD-AUDIO" driver. When this driver is loaded, the Media player program will then be able to play CD audio.

Installation of the Multimedia program "CD Player" may be required for Windows 98/95. To install the CD player under Windows 98/95 Open your Control panel, and click on "Add/Remove programs". When the applet appears, click on the "windows Setup" tab. Scroll down the "Components" list until you see "Multimedia". Click on the Multimedia listing. Click on "Details" button. You will then see a list of components installed on your system. If the CD Audio checkbox is not checked, then check it, and click on OK. Windows 98/95 will then install the CD player onto your system.



Figure 8: Installing CD Audio

Using the CD-ROM Drive

Front Panel Controls

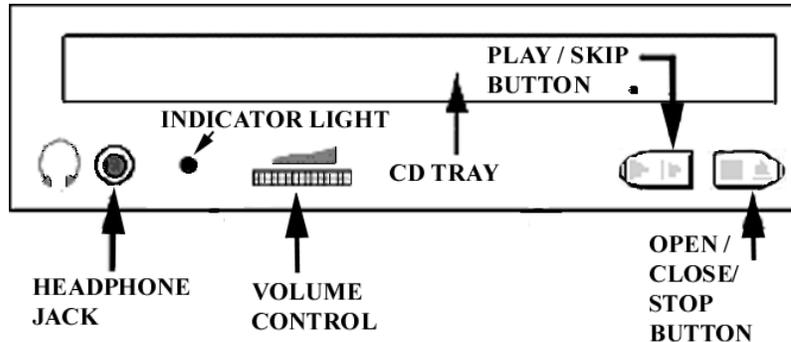


Figure 9: Front panel Controls

Headphone Jack: The user can use a stereo headphone jack to get sound output from the earphone jack.

Volume Control: The user can adjust the Volume knob to change the Earphone Jack audio output volume.

Busy Indicator: The Busy Indicator will be lit while the CD-ROM disc is being accessing.

CD Tray: The user can open or close the CD Tray by pressing the *Open/Close* button.

Emergency Eject Hole (some units): If the user can not eject the disc by pressing the *Open/Close* button, he/she can insert a paper clip or other small rod into this hole for manual ejection. Note: Please turn off the power to the PC before inserting anything into this hole for manual ejection.

Open/Close Button: This is a toggle button. When pressed, the CD-ROM drive will either open the door and tray out the disc, or tray in the disc and close the door.

Care and Handling

Like any media, you should be careful when handling CD media. Avoid touching the bottom of the media, as well as leaving the CD in direct sunlight. Care should also be taken to keep the media clean. Use only water and a soft towel when cleaning the media. Do not use any type of solvent or harsh cleanser.

If you find the CD-ROM drive is having trouble reading a particular disc, you may want to try cleaning it. Use a slightly damp cloth rad, and make gentle sweeping motions from the center of the disc to the outer edge.

Do not place anything other than a Compact Disc on the CD-ROM drive tray. The drawer is designed to hold only the weight of a CD-ROM disc.

Troubleshooting

CD-ROM Troubleshooting

The PC cannot detect the CD-ROM drive after installation. (Windows 98/95)

If you are connecting the CD-ROM drive to the motherboard, read this:

Make sure that there are no conflicts, both Primary and Secondary IDE controllers are present and without yellow exclamations on them. To check the status of your IDE controllers, click on the Start button > Settings > Control Panel > System > Device Manager (under the Hard Disk Controllers category). Yellow exclamation marks on the IDE controllers mean that the device is not working properly, not install properly or have a resource conflict with another device. Some retail version of Windows 98/95 may not recognize some of the IDE controllers. This can result in IDE devices (such as CD-ROM drives) not being detected or disappearing from the PC.

There are several ways to correct the problems.

1. If the Primary or Secondary IDE controllers are not present, read this:
Your controllers are not setup properly and you need to get a patch from your motherboard manufacture or check your BIOS setup and make sure that both onboard IDE controllers are enable. Visit our web site (www.iomagic.com) for additional help.
2. If the Primary and Secondary IDE controllers are present but they have yellow exclamation marks, read this:
The protected-mode driver for the hard disk controller was not properly initialized when you started Windows previously. When this occurs, a NOIDE entry is placed in the registry, preventing Windows from making future attempts to initialize the protected-mode driver. You might try to resolve the problem by editing your Registry.
WARNING: Using Registry Editor incorrectly can cause serious problems that may require you to reinstall Windows. I/O Magic cannot guarantee that problems resulting from the incorrect use of Registry Editor can be solved.

“Use Registry Editor at your own risk.”

NOTE: You should make a backup copy of the registry files (System.dat and User.dat) before you edit the registry.

Go to the Start button then Run and type REGEDIT. Then go to the following directories to remove the NOIDE if it is listed. Once removed reboot system.

HKEY_LOCAL_MACHINE\SYSTEM\CURRENTCONTROLSET\SERVICES\VXD\IOS

After you update the registry, restart Windows. Windows will then attempt to initialize the protected-mode driver for the controller. If no problems are encountered, the file system and virtual memory will operate in 32-bit mode, and Device Manager will not display an exclamation point in a yellow circle for the IDE channels. If the protected-mode driver is not initialized properly, an error message

will be displayed and the NOIDE registry entry will be re-created. Windows will use the MS-DOS compatibility mode file system the next time you start the computer.

If the CD-ROM drive is connected to a sound card or controller card, read this:

Make sure the sound card or controller card are install properly, working properly and compatible with with Windows 98/95.

The CD-ROM Drive cannot play music CDs (CD-DA) in Windows.

The audio from a CD is transmitted from the CD-ROM to the sound card through the "Analog cable" (3-4 Small wire cable). Make sure this cable is connected to the sound card in the right place. In some sound cards the cable can go on both ways, so if it does not work one way, rotate it around and it should work. Make sure you refer to your owner's manual for more information on diagrams and pin designations.

Note: If the analog cable does not fit your sound card, you should get an analog cable that fits your sound card and the CD-ROM drive.

What is "Multi-Read", and does my CD-ROM drive support this function?

The "Multi-Read" function means the CD-ROM Drive can read not only the existing CD title & CD-R but also recorded CDR-W media. However, the reflection rate of the CDR-W disc media is only around 25~35% of the normal CD-ROM disc. So sometimes it is difficult for the CD-ROM drive to read this kind of media.

Your MagicSpin CD-ROM drive supports CDR and CDR-W formats. If your MagicSpin CD-ROM drive cannot read CDR or CDR-W disks, the problem most likely is the way you recorded the CDR or CDR-W disk. Try reading regular CDs to ensure that your CD-ROM drive is working properly.

Is the LED indicator light supposed to stay on when I have a CD in my CD-ROM?

The LED indicator light should stay on if you have a CD in the drive. When you access the drive it should blink. This is a convenient feature of the CD-ROM drive that alerts you when you have a CD in the drive without opening it.

Appendix A: CD-ROM General Specifications

Disc	
Disc Format:	ISO9660 Data Discs CD-ROM (Mode 1 & Mode 2), CD-R and CD-RW media, Mixed Mode (Audio Combined CD-ROM Discs), CD-ROM/XA (Mode 2 form 1 & form 2), CD-I/FMV, Video CD, CD-DA, Photo-CD (Single & multisession), Karaoke CD, CD-extra.
Disc Diameter:	8cm and 12cm
Interface:	ATAPI / IDE
Audio Specifications	
Signal to Noise Ratio:	65 dB typical
Headphone Level:	≥0.6 Vrms at 1 Khz, 32 ohm load
Compatibility	
Operating System:	DOS 6.xx, Windows 3.1X, Windows 95, Windows NT, OS/2 Warp 3.x/4.x
Quality and Reliability:	MTBF up to 60,000 hours
Environment	
Operating Temperature:	10 to 45 degrees Celsius
Storage Temperature:	-15 to 60 degrees Celsius
Operating Humidity:	20% to 80% (Non-condensing)
Storage Humidity:	20% to 90% (Non-condensing)
Front Panel:	Power ON/Busy LED, Open/Close Button, Volume Control, Stereo Headphone Jack, Emergency Eject Hole
Rear Panel:	IDE Interface, Analog & Digital Audio Outputs, Power Input, Mode Select Jumper
Physical Dimensions	
W x H x D:	146 x 41.5 x 201 mm
Weight:	≤94-g typical
Power Requirement:	DC +5V ±5%, DC +12V ±10%
Power Saving:	Compliant with EPA Energy Star

Contacting I/OMagic

If you experience problems with this I/OMAGIC product and you cannot find an answer in the previous Trouble Shooting sections, you can contact I/OMagic's Technical Support Staff.

Please have the following information ready when you call:

- The product you are having problems with.
- The operating system you are using.
- A list of other hardware installed on your machine.
- If you are using DOS and Windows 3.x, a list of the contents of your AUTOEXEC.BAT, CONFIG.SYS, and SYSTEM.INI.
- A detailed description of the problem.

You can contact I/OMagic's Technical Support staff at the following numbers:

Phone: (949) 597 - 2462
Fax: (949) 380 - 0696
Internet: <http://www.iomagic.com>
Mail: I/OMAGIC Corporation
ATTN: Technical Support
6B Autry
Irvine, CA 92618

Register Your I/OMagic Product

Please take the time to send in your registration card. The serial number of your MagicSound16 card is located on the back of the card on a white sticker. The series of numbers under the bar code is the serial number.

The Serial number of the I/OMagic MagicSpin CD-ROM is located on the top of the drive. The serial number may look like the following example. If it does not look like these examples, then it will be on a sticker that starts with a SN, and is followed by several digits



Alternatively, you can register your product on-line at our Web page. This is actually the fastest way to receive the latest I/OMagic product information and updates. The Web URL address to the registration page is http://www.iomagic.com/registration_page.htm

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