backpack

CD-ROM Drive

User's Guide

Rev. 09.96.04
Part Number: MAN-CDDS

FEDERAL COMMUNICATIONS COMMISSION
RADIO FREQUENCY INTERFERENCE 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 using 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.

MODIFICATIONS

Changes or modifications not expressly approved by Micro Solutions could void the user's authority to operate this equipment.

SHIELDED CABLES

Shielded cables must be used with this equipment to maintain compliance with FCC regulations.

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Introduction

Congratulations on your decision to purchase **backpack**, the easy-to-install CD-ROM drive for PCs, XTs, ATs, PS/1s, PS/2s, laptops, notebooks and compatibles. This manual provides information regarding the installation and use of **backpack**..

System Requirements

Check the system requirements listed here to make sure you have everything needed for proper operation of **backpack**:

- IBM PC, XT, AT, PS/1, PS/2, laptop, notebook, or compatible computer with:
  - 100% IBM compatible parallel printer port.
  - 128K memory.
  - DOS version 3.1 or above or
  - Windows, Windows 95 or Windows NT.

Note: **backpack** is Enhanced Parallel Port (EPP) Aware. If the parallel port is equipped with EPP and the computer BIOS has support for EPP, **backpack** will detect this and use the feature to improve its performance.

Installation

The **backpack** drive and software must be installed before you can use the **backpack** drive. The step-by-step instructions in Sections 2.1 and 2.2 will help you perform the installation.

Drive Installation

Installing the **backpack** drive is a straightforward process. It consists of plugging the drive into your computer's parallel printer port. The instructions in this section will guide you step by step through the installation procedure. Perform the following steps to install the **backpack** drive:

1) Locate the parallel printer port connector on your computer. If you have more than one parallel printer port, it doesn't matter which one you use for **backpack**.
2) If you have a printer connected to the parallel printer port, disconnect it and attach the printer cable to the connector labeled "Printer" on the **backpack** drive.
3) Connect the cable supplied with the **backpack** to the connector labeled "Computer" on the back of the **backpack** drive.
4) Connect the **backpack** cable to the printer port on the computer.
5) Plug the **backpack** power unit into a wall outlet and attach the power cable to the power connector on the **backpack** drive.
6) Set the **backpack** power switch to the ON position.

Once you have completed the installation successfully, your computer should work exactly as it did before. If it doesn't, review the installation procedure and check for mistakes.

Software Installation

The SETUP program on your **backpack** master diskette will install the software for you automatically. This procedure assumes your diskette drive letter is "A". If you use a different drive letter, substitute it in the procedure. Use the following procedure to run SETUP:

DOS Installation Procedure:

7) Start your computer as you normally would.
8) Place your **backpack** master diskette into drive A. Make sure you have your DOS system prompt "A:\>" before you proceed to the next step.
9) Run the SETUP program with the following command at the DOS prompt (A:\>):

   `A:\>setup↵`

   "↵" means that you should press the RETURN, or ENTER, key.

   Answer the questions about your disk drive letters.

Windows Installation Procedure:

10) Turn on the computer and load Windows as you normally would.
11) Place your **backpack** master diskette into drive A.
12) From Windows PROGRAM MANAGER choose: File-Run and type in **`A:SETUP`**.
13) Click OK.

NOTE: The **backpack** OS/2 Installation Procedure is included in Appendix C of this User's Guide.

If your **backpack** CD-ROM does not contain the 16-bit sound board option, the following information in this paragraph does not apply to your installation. **Backpack** CD-ROM models that contain the 16-bit sound board include installation software on multiple High Density 3.5" diskettes. When running the SETUP program from Disk 1, you will be prompted when it is time to insert Disk 2.

The **backpack** diskette includes a file called README.TXT which contains information gather since this guide was written. You can view or print this text file using NOTEPAD under Windows. Under DOS, you can use the DOS EDIT utility to view or print README.TXT.

The software should now be installed on your boot drive. Remove the backpack master diskette and put it in a safe place. Restart the computer before using the backpack drive. Either power the computer off and then back on or hold down CTRL, ALT, and DEL on the keyboard. Under Windows, make sure to "Shut Down" the system before rebooting.

You have now completed the installation, and the **backpack** CD-ROM drive is ready to use. The remaining chapters in this guide can be referred to when needed.

Using Backpack

Backpack is used just like any other disk drive. It has its own drive letter. You can access it from your programs by referring to the drive letter. The only restriction is that you can't write to the CD-ROM drive. If you have never used a CD-ROM drive before, a brief tutorial is included in Appendix B of this User's Guide.

Backpack's Drive Letter

Just as your existing disk drives are referred to by letters (A:, B:, etc.), **backpack** also has a drive letter associated with it. The letter to be used is assigned by DOS and is determined by which letters are already in use on your system. **Backpack** will get the next available letter in alphabetical order. In a typical hard disk system where the floppy drives are A: and B: and the hard disk is C:, **backpack** will be drive D:.

If you are using MS-DOS of Windows 3:

When your computer is powered up, the Microsoft CD-ROM extensions program will display a message on the screen to tell you the **backpack** letter. The message will look like this:

```
Drive D: = Driver BPCDDRV$ unit 0
```

In this case, you will refer to the **backpack** CD-ROM drive as drive D: when you are accessing it through any software packages.

You can check the **backpack** drive letter at any time by one of three methods:

A) Insert the **backpack** master diskette in drive A and type:

   `A:cddrives`↵ or

B) From the hard drive in DOS, type:

C:\bpcdrom\cddrives↲ or

Additional **backpack** CD-ROM statistics, including the parallel port mode that has been detected and used by **backpack** can be obtained by using the **/x** switch:

C:\bpcdrom\cddrives /x↲

If you are using Windows:

The CD-ROM drive will appear as an icon in Files Manager, or My Computer and Windows Explorer

The NONSTOP Option

This Section only applies if you are using MD-DOS or Windows 3

When the DOS system loads the **backpack** software driver, it will scan the parallel printer ports looking for **backpack** drives. If it doesn't find at least one **backpack** CD-ROM drive, it will issue an error message and wait for you to press the ESC key to acknowledge the message. This could become annoying if the **backpack** drive isn't always connected to the computer.

The NONSTOP software option can be used to suppress the error message that is displayed if no **backpack** drive is found when the system starts. Perform the following steps to specify the NONSTOP option:

14) Using a suitable text editor or word processor (in nondocument, or DOS text mode), bring up the CONFIG.SYS file from your hard drive for editing.

15) Locate the line that references BPCDDRV.SYS and add NONSTOP to the end of it, as shown below:

```
device=\bpcdrom\bpcddrv.sys  nonstop
```

Be sure to type a space before NONSTOP.

3) Save the modified CONFIG.SYS file on your hard drive.

4) Restart the computer by holding down CTRL, ALT, and DEL.

Note: If **backpack** is connected and powered on, but still reports the error "A **backpack** CD-ROM Drive was not found..." during boot, refer to the Troubleshooting section (Appendix A) of this User's Guide. Do not install the NON-STOP option since it will only suppress the error and will not correct the conflict.

Playing Audio CDs

To play audio CDs on the **backpack** CD-ROM drive, you can use Microsoft Windows 3.1 or above, Windows 95 or any suitable DOS audio player software.

Playing An Audio CD Under Windows 3

Before using audio CDs with Windows, you must inform Windows that you have a CD-ROM drive with audio capability attached. Perform the following steps from the Windows main screen:

16) Insert an audio CD in the **backpack** drive.

17) Open the Program Manager window.

18) Double click on the MAIN icon in the Program Manager window.

19) Double click on the CONTROL PANEL icon in the MAIN window.

20) Double click on the DRIVERS icon in the CONTROL PANEL window.

21) A list of installed drivers will appear. If the list contains [MCI] CD Audio, the driver has already been installed and you should click on the CANCEL button and skip the next steps. If the driver is not installed already, proceed with the following steps.

22) Click on the ADD button. A list of drivers will then appear.

23) Click on [MCI] CD Audio and then click on the OK button. Windows may prompt you to insert one of your Windows installation diskettes at this point. If it does, insert the diskette and follow the instructions on the screen.

24) Exit Windows; then restart Windows to load the new driver.

To play an audio CD under Windows, perform the following steps:

25) Double click on the MEDIA PLAYER icon in the ACCESSORIES window. A window similar to an audio CD front panel will appear.

26) Select DEVICE, then CD AUDIO, to inform the media player to use the CD-ROM drive.

27) Use the buttons on the media player to start the CD.

Playing An Audio CD Under DOS:

To play an audio CD under DOS, invoke your DOS audio player software from the DOS prompt. You can also use the TRKPLAY.EXE utility under DOS. TRKPLAY.EXE is supplied on your **backpack** master diskette in the \UTILITY directory. TRKPLAY.EXE is found in the \UTILITY directory on Disk 2 if you are installing the **backpack** CD-ROM drive which includes the 16-bit sound board.

***Playing An Audio CD Under Windows 95 or NT*:**

Make sure that you have already installed "Multimedia" support for Windows 95 (under Control Panel - Add/Remove Programs - Windows Setup). Choose "Start - Programs - Accessories - Multimedia - CD Player."

Changing the Internal Drive ID

This section is relevant only if you are connecting more than one **backpack** to your computer.

Each **backpack** drive is assigned an internal drive ID when it is manufactured. The ID is a number between 0 and 99 and initially is the last two digits of the unit's serial number. When more than one **backpack** is connected to a computer, the **backpack** driver software assigns DOS drive letters in ascending drive ID order. The lower the drive ID number, the lower the DOS drive letter.

For example, assume that you have a computer with two floppy drives (A: and B:) and a hard drive (C:). Assume also that you are connecting the following two **backpack** CD-ROM drives:

Serial number xxxxxx35

Serial number xxxxxx17

Drive letter D: will be assigned to the drive with serial number 17 and drive letter E: will be assigned to the drive with serial number 35.

There are two situations in which you may need to alter a **backpack** drive ID number:

28) If you are connecting two **backpack** drives to one computer and they happen to have the same last two digits in the serial number. In this case the **backpack** software will locate only one of the drives and assign it a drive letter. The other drive will not be recognized. Assigning a new drive ID to one of the drives will allow both drives to be recognized.

Note: All **backpack** tape drives have ID numbers 00 or 01.

2) If you are connecting two **backpack** CD-ROM drives to one computer and you would like to reverse the drive letters. Since drive letters are assigned according to drive ID numbers, the order of the drives can be reversed by assigning new drive ID numbers.

Drive ID numbers are used only for establishing the order of **backpack** drive letters; they serve no other purpose. Perform the following steps to change a drive ID number:

29) Connect the **backpack** drive whose ID number you will be altering to a parallel printer port. Disconnect all other **backpack** drives from the computer.

30) Move the **backpack** power switch to the OFF position for a few seconds, then move it back to the ON position.

31) Place your **backpack** master diskette into drive A:. Make sure that you have your DOS system prompt "A:\>" before you proceed to the next step.

32) Run the SETID program with the following command:

```
A:\setid
```

The program will ask you to select a new drive ID.

5) After you exit the program, remove the **backpack** master diskette from drive A:.

4) Move the **backpack** power switch to the OFF position for a few seconds, then move it back to the ON position.

5) Attach all the **backpack** units to the computer.

6) Restart the computer by holding down CTRL, ALT, and DEL.

Backpack Device Driver Parameters

By default, the backpack device driver will test the computer's parallel port upon boot-up and automatically determine which configuration adjustments to make. In the event that backpack does not function properly on a computer's parallel port, you can add the options described below under "BACKPACK Options."

If you use DOS or Windows

The options described below can be used at the very end of the backpack CD-ROM's device driver line in the CONFIG.SYS file.

device=\bpcdrom\bpcddrv.sys /d:bpcddrv$

This is the default syntax for the backpack CONFIG.SYS line. This should allow backpack to operate properly on almost all computers. The /d:bpcddrv$ parameter specifies the name of the backpack CD-ROM device driver in memory and must not be altered. This parameter does **not** assign the D: drive designation to backpack. See Section 4.0 of this User's Guide for modification of the backpack drive letter.

Options can be combined on the same line, if necessary. For example:

```
device=\bpcdrom\bpcddrv.sys /d:bpcddrv$ NOEPP T1=10
```

would cause the backpack device driver software to bypass the backpack Enhanced Parallel Port usage and add 10 more timing delays to the data transfer signals from the backpack to the computer's parallel port.

Always reboot the computer after saving changes to the CONFIG.SYS file.

If you use Windows 95 or Windows NT

Open the Control Panel with Start, Settings or by opening Control

Panel in the Main Program Group. Double-click on the **backpack** icon.

The **backpack** Controls window will provide options similar to those below.

BACKPACK Options

NONSTOP This option is detailed in Section 3.2 of this User's Guide, and does not apply to Windows 95.

NOEPP This option turns off **backpack**'s testing and usage of Enhanced Parallel Ports (EPP). If the parallel port chip in your computer exhibits EPP properties, but is not fully EPP compatible, then this parameter may be necessary to allow **backpack** CD-ROM to function on that computer's parallel port. Be sure to turn the computer's power and the **backpack** CD-ROM drive's power OFF after saving this particular modification to the CONFIG.SYS. This will allow the **backpack** I/O chips and the computer's parallel port chipset to be reset to a non-EPP mode.

NOEPP mode can be selected with a check box under Windows 95.

UNIDIR This option turns off **backpack** testing and usage of bidirectional parallel ports. If the parallel port chip in your computer cannot properly transfer data in bidirectional mode, it may be necessary to force the **backpack** into unidirectional operation on that computer's parallel port.

Unidirectional mode can be selected with a check box under Windows 95.

T1=xx Values of 1 to 25 are valid for this parameter. This option will place additional signal speed delays on the **backpack** CD-ROM when sending data into the computer's parallel port. If the computer's parallel port is not capable of transferring data at the speed calculated by the **backpack** device driver during boot, this addition of timing delays may be necessary. The higher the value, the more timing delays are added.

T2=xx Values of 1 to 25 are valid for this parameter. This option will place additional signal speed delays when receiving data from the computer's parallel port.

T8=x Values of 1, 2 or 3 are valid for this parameter. This option adds additional EPP signal speed delays on the **backpack** CD-ROM when sending data on an Enhanced Parallel Port. If the computer has an EPP port, but the port is not capable of transferring data at the optimum EPP speed, additional signal delays may be necessary.

Microsoft CD-ROM Extensions

This Section only applies if you are using MS-DOS or Windows 3

Microsoft CD-ROM extensions (MSCDEX.EXE) is an executable program for MS-DOS (version 3.1 or higher) that works in conjunction with the **backpack** device driver (BPCDDRV.SYS) to allow your computer to access CD-ROM discs as if they were DOS formatted disks. This program is written by Microsoft and is specifically designed to work with Microsoft MS-DOS. Computers with anything other than MS-DOS operating systems may experience unpredictable results unless the operating system manufacturer provides an alternative to the MSCDEX program.

The SETUP program automatically modifies the AUTOEXEC.BAT file to run the MSCDEX program so your computer can access the **backpack** CD-ROM drive. However, some parameters can be changed, so this section explains the function of each parameter. Use a text editor such as EDLIN or EDIT to modify the appropriate line in the AUTOEXEC.BAT file.

Syntax

MSCDEX /D:BPCDDRV$ [/M: <value>] [/E] [/V] [/S] [/L:<letter>]

/D:BPCDDRV$

The /D option specifies the name of the **backpack** CD-ROM device driver and must not be altered.

/M

The /M option determines how many sector buffers MSCDEX will allocate when it installs itself. The larger this value is, the more sector cache entries are available and the less MSCDEX will have to read directly from the CD-ROM drive. The larger this value is, the better the performance will be.

If the /M option is not specified, the default value is 6.

/E

The /E option instructs MSCDEX to use expanded memory for some of its buffers. Note that you must have expanded memory available for this option to work. If no expanded memory is available, the following error message will appear:

Expanded memory not present or not usable.

/V

The /V option instructs MSCDEX to display a summary of memory usage.

/S

The /S option tells MSCDEX to patch MS-DOS to allow the sharing of CD-ROM drives on MS-NET based servers.

/L:<letter>

The /L option can be used for software that requires that the CD-ROM drive be identified by a particular drive letter. The following would cause the CD-ROM drive to be assigned drive letter M:.

```
MSCDEX   /D:BPCDDRV$  /L:M
```

Troubleshooting

Backpack should not affect the operation of your existing computer software and hardware. If there seems to be a problem using the computer or **backpack** after installation, read the following problem descriptions to see if they match the problems you are experiencing. Review the README.TXT file included on the software diskette (see Section 2.2) and see if your problem is discussed there. If you can't resolve the problem, review Section A.3 Technical Support.

When you are trying to access the drive, an "Invalid drive specification" message appears on the screen.

This can occur if you are not using the correct drive letter to access **backpack**. Be sure the letter you use is the one indicated on the screen when the computer starts. Review Section 3.1 for information on drive letters.

This can also occur if you have not run SETUP to install the **backpack** software or if you have not restarted the computer after running SETUP. Review Section 2.2 for information on software installation.

This can also occur if there are not enough drive letters available to DOS in your computer's configuration. If drive letters D: and E: are already assigned to other devices in your computer, you will need to allow DOS to use additional drive letters. If your CONFIG.SYS file contains a LASTDRIVE command, change the drive letter specified to a higher letter. If your CONFIG.SYS file does not have a LASTDRIVE command, add the line: `LASTDRIVE=M` to the beginning of your CONFIG.SYS file on your boot drive.

The **backpack** drive doesn't work. The message "A **backpack** CD-ROM drive was not found" appears when the computer starts.

This will occur if the power to the **backpack** drive is not on when the computer is started. Make sure the **backpack** power switch is in the ON position and that the power unit is plugged in securely.

This can also occur if a hardware conflict exists. Make sure you don't have two printer cards set to the same port address, and make sure you have a completely IBM compatible printer port.

This can also occur if the **backpack** CD-ROM drive's device driver software has difficulty programming an Enhanced Parallel Port into high-speed mode. Review the NOEPP option in Section 3.5 **backpack** Device Driver Parameters in this User's Guide.

The backpack appears to operate too slowly. Multimedia programs seem to "stutter" or skip frames

This will occur if the **backpack** is connected to a parallel port that is not Enhanced (EPP compatible). If your computer's parallel port is an original unidirectional or bidirectional parallel port, **backpack** will not be able to operate at its optimum speed. Use the `CDDRIVES /x` utility (Referred to in Section 3.1) to determine your computer's "Port" type.

After you install the backpack, the printer doesn't work properly.

This can occur if the power to the **backpack** is not on. In some cases, the printer will appear to work even though the **backpack** power switch is off. For reliable operation, make sure the **backpack** power switch is in the ON position and the power unit is plugged in securely.

After you have connected two backpacks, only one of them is assigned a drive letter. Either drive works properly if connected by itself.

This can occur if two or more **backpack**s are set to the same internal drive ID number. When more that one **backpack** is installed on the same computer, they must all have distinct internal drive ID numbers. Drive ID numbers are assigned at the time of manufacture but can be changed with the SETID program. Refer to Section 3.4 for information on changing ID numbers.

The message "LPT1: not found" appears when you are trying to use the printer.

This can occur if the power to the **backpack** is not on when your computer starts up. Make sure the **backpack** power switch is in the ON position and that the power unit is plugged in securely. Restart the computer using CTRL-ALT-DEL.

The message "Error: backpack CD-ROM drive requires DOS version 3.10 or higher." appears when the computer starts.

The **backpack** device driver has determined that the version of DOS is not adequate for adding a CD-ROM drive. Upgrade DOS on your boot drive and try again.

The message "BPCDDRV.SYS Error: Bad or missing argument in CONFIG.SYS" appears when the computer starts.

In the CONFIG.SYS line where BPCDDRV.SYS is loaded, a parameter was specified but the argument was either missing or invalid. The invalid argument or the position of the missing argument will be displayed, and you will have to press the ESC key to continue.

The message "BPCDDRV.SYS Error: Unrecognized parameter in CONFIG.SYS" appears when the computer starts

In the CONFIG.SYS line where BPCDDRV.SYS is loaded, an invalid parameter was specified. The invalid parameter will be displayed, and you will have to press the ESC key to continue.

Microsoft CD-ROM Extensions Error Messages

CDR101: Not ready error reading drive x: (under DOS)

No Disk in drive *or* The device is not ready (Under Windows or Windows 95)

This message is displayed by MSCDEX whenever any type of error occurs on the CD-ROM drive. Since the message is generic, there may be many causes for its appearance. Check for the following conditions.

Make sure the **backpack** CD-ROM drive is still connected to the computer's parallel port and still has the original power supply attached. Substituting a power supply of a lower voltage than the one originally packaged with your **backpack** can produce this error.

Make sure there is a CD-ROM loaded in the drive.

If you just loaded a CD-ROM in the drive, wait a few seconds before accessing it. The drive automatically reads the CD-ROM table of contents when you insert a disc, and this takes a few seconds. During this time the drive will not respond.

Check that the CD-ROM is clean. If necessary, clean it according to the instructions provided with the disc.

This error can also occur if a caching utility, such as Microsoft's SMARTDRV.EXE program, fails to provide proper caching for the

backpack CD-ROM. To disable the caching of a **backpack** CD-ROM that is designated as E: drive, add the following to the SMARTDRV line in the AUTOEXEC.BAT file:

```
c:\windows\smartdrv.exe E-
```

This is the **backpack** drive letter, followed by a hyphen.

Reboot the computer after saving the above change to the AUTOEXEC.BAT file.

Not enough drive letters available

MSCDEX cannot allocate a drive letter for the CD-ROM drive. Increase the number of available drive letters, using the LASTDRIVE command in your CONFIG.SYS file. If your CONFIG.SYS file contains a LASTDRIVE command, change the drive letter specified to a higher letter. If your CONFIG.SYS file does not have a LASTDRIVE command, add the line LASTDRIVE=H to the beginning of your CONFIG.SYS file on your boot drive.

Device driver not found: 'BPCDDRV$'

This message indicates that the **backpack** device driver BPCDDRV.SYS was not found. The message will be displayed if you do not have a **backpack** CD-ROM drive attached to your system and with the power turned on.

If the BPCDDRV.SYS device driver was loaded and the **backpack** CD-ROM was recognized during system boot, check the driver name specified with the /D: parameter with both BPCDDRV.SYS and MSCDEX and make sure the exact same name was specified.

CD-ROM not High Sierra or ISO 9660 format

The CD-ROM currently in the drive is not compatible with the Microsoft CD-ROM extensions. This message could also appear if there is a read error or a CD-ROM hardware failure.

Not enough expanded memory, reducing the number of buffers.

The /E switch was used and there was not enough expanded memory for the number of buffers requested. Reduce the number of buffers requested and try again.

Insufficient memory

There is not enough free memory to run MSCDEX

EMS memory no longer valid

There is an error in the software or hardware providing expanded memory on your system. Check the software/hardware providing EMS services.

Expanded memory allocation error

There is an error in the software or hardware providing expanded memory on your system. Check the software/hardware providing EMS services.

Expanded memory not present or not usable

There is no EMS hardware available, the EMS driver is not loaded, or there has been a failure in the EMS system. Check the software/hardware providing EMS services.

DOS Error Messages

Cannot CHKDSK a Network drive

The DOS commands CHKDSK, DISKCOPY, DISKCOMP, and others will not work with a CD-ROM drive. A CD-ROM drive appears to DOS as a network drive.

Extended error 65

This message indicates that a request was made to delete a file from the CD-ROM drive. A CD-ROM disc is read-only and files cannot be erased.

Technical Support

Most questions about **backpack** and its operation are answered in this guide. To solve most problems:

- Check the solutions and procedures in this User's Guide.
- Check the README.TXT files on the **backpack** installation diskette.
- Contact Micro Solutions' Automated Fax Response at 815.754.4600. Automated Fax Response is available 24-hours daily. A complete catalog of faxes and information is available. If you are calling from outside the United States prefix the digits 011 when you are asked to enter your country code and FAX number.
- Contact Micro Solutions' Bulletin Board Service at 815.756.9100 for troubleshooting software, bulletins and driver updates.
- Visit Micro Solutions on-line at our WebSite at:
  http://www.micro-solutions.com.

If your problem remains unsolved, contact Micro Solutions Technical Support Department at 815.754.4500. Technical Support is available during normal business hours, Monday through Friday, Central Time. Before calling, be sure to have the following information ready:

- The version numbers of your **backpack** software and your operating system (DOS, Windows or Windows 95).
- The name and model of the computer, and the eight-digit serial number found on the bottom of your **backpack** drive.
- The exact wording of any error message(s) from the **backpack** program, DOS, Windows or any other application producing the error message.

If possible, be at your computer when calling.

Program/Data CDs

A CD-ROM drive works much like a floppy diskette drive or hard drive, except that you can't write (save data) to it. Your CD-ROM drive is a "Read Only" device.

Once you have placed a CD-ROM disc into the CD-ROM drive, follow the "installation" or "setup" procedure that is detailed in the instructions supplied with each CD-ROM disc. Some CD-ROM discs contain an installation program which must be run before the actual programs on that CD-ROM disc will execute.

Your CD-ROM drive will appear under Windows "File Manager" program or under "My Computer" in Windows 95 once the CD-ROM drive has been properly installed and the computer has been re-booted.

There is no need for your CD-ROM drive to automatically set up any additional program icons under Windows, since the CD-ROM drive cannot perform any program functions until a CD-ROM disc has been placed in it.

Audio CDs

Music CDs which you can play on a home stereo CD player or on a portable CD player are called CD-AUDIO discs. The type of music on these discs is different than the audio found on most "Multimedia" CDs. You need a CD-AUDIO program on your computer, such as Media Player in Windows, to play CD-AUDIO Music CDs. You may also need to attach speakers or headphones to the front of your CD-ROM drive to hear that CD-AUDIO sound.

Most "Multimedia" CDs require a computer Sound Board which can convert the multimedia data into sound. Check the requirements listed on the Multimedia CD-ROM disc package to find out if a Sound Board is required for audio.

Installation Under OS/2

Backpack can also be installed under OS/2. The original OS/2 installation diskettes will be required.

33) Open the OS/2 System folder.

34) Open the System Setup folder.

35) Choose Device Install.

36) Follow the instructions displayed. When prompted, insert the **backpack** CD-ROM Installation diskette. The **backpack** OS/2 files are in the \OS2 directory of the diskette. Make sure that you specify the complete path: `A:\OS2` when OS/2 prompts you to specify the installation drive and path.

If there was not already a CD-ROM installed on the system, run Selective Install to set up the OS/2 CD-ROM support:

37) Open the OS/2 System folder, then System Setup.

38) Open Selective Install.

39) Select the CD-ROM Device Support check box.

40) Choose OK, then scroll down the CD-ROM device list and select Other.

41) Select OK to go from the System Configuration screen to the Setup and Installation window.

42) Select Install and follow the instructions displayed.

One or more of the OS/2 installation diskettes will be prompted for. The **backpack** CD-ROM will be available after restarting the system.

Note: If the **backpack** is not available after restarting the system, make sure the following lines appear in the CONFIG.SYS file and the files referred to exist in the \OS2 directory of the hard drive:

```
ifs=\os2\cdfs.ifs /q
device=\os2\mdos\vcdrom.sys
device=\os2\os2cdrom.dmd /q
basedev=bpcdos2.add
```

When troubleshooting parallel port compatibility problems under OS/2, the `NOEPP` and `UNIDIR` parameters detailed in Section 3.5 of this User's Guide can also be used on the `bpcdos2.add` driver line. Additional information can be found in the `README.TXT` file in the \OS2 directory of the **backpack** Installation diskette.

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