
CHAPTER 8: TROUBLESHOOTING

This chapter describes problems that might arise as you use your GRiDCASE 1535 EXP computer and suggests possible solutions to those problems.

IDENTIFYING THE PROBLEM

Initial system setup is the time when you are most likely to encounter problems. Setup problems may be due to actual defects in hardware or software, but are much more often caused by easily corrected mistakes made during the setup process. It is important to determine what kind of problem you have.

User Problems in Setting Up the Computer

Table 8-1 lists common problems you might encounter when setting up your computer system. Before you decide that you have a serious hardware or software problem, try to solve the problem using the troubleshooting chart. To use the chart, look for your problem under the heading Symptom, identify the Cause, and follow the suggested Remedy.

Table 8-1. Troubleshooting Chart

Symptom	Cause	Remedy
No response when computer is turned on	External AC power pack	Check that AC power pack is firmly connected to the computer and to a live wall outlet. The power pack must be used externally if you have a 100 MB hard disk, a plasma screen, or an attached expansion tray.
	Internal battery not usable	You cannot power the computer with the internal battery if the expansion tray is attached.
	Battery needs recharging	Recharge batteries using AC power pack or battery recharger.
Computer unable to boot	Wrong diskette in internal diskette drive	If booting from floppy, make sure diskette has correct operating system software.
	Wrong diskette in pocket or pouch drive	If booting from pocket or pouch drive, make sure operating system software is correct.
	Insufficient power	Provide sufficient power to the computer and peripherals (see Chapters 4 and 6).
	Expansion card incompatibility	Turn off computer. Remove expansion card(s). Turn computer on. If computer boots, the problem is caused by an expansion card or by the combination of expansion cards. Try booting the computer with only one card installed. Try changing address or interrupt settings of card(s).
	Expansion card set to operate as COM1 or COM2	Set card to operate as COM3 or COM4, if possible. Otherwise, this card cannot be used with a GRIDCASE 1535 EXP computer.

Symptom	Cause	Remedy
Computer boots, but battery low indicator is lit	Battery needs recharging	Recharge batteries using external AC power pack or external battery recharger, or install new battery.
No response from external diskette or tape drive	Incorrect switch settings	Check to see that the configuration switch settings are correct (see Chapter 6).
	Bad cable	Call the GRiD Resource Center at 1-800-284-GRID (4743).
	Not powered correctly	The 5¼-inch diskette drives and the tape drive must be powered separately from the computer.
Expansion card doesn't work	Card installed incorrectly	Check to see that card is properly installed. (See Chapter 7.)
	Bad card	Contact card's manufacturer.
	Overheating	Ensure that expansion unit is vented properly and that auxiliary fan is installed if expansion cards draw more than 3 watts of power.
	Card set to operate as COM1 or COM2	Set card to operate as COM3 or COM4, if possible. Otherwise, this card cannot be used with a GRIDCASE 1535 EXP computer.
	Incorrect card configuration	See Appendix D for help in eliminating system conflicts.
"Bad or Missing Command Interpreter" error message	Loading MS-DOS from ROM with a non-DOS diskette in the internal drive	Remove the non-DOS diskette from the internal diskette drive and leave the drive empty.

Symptom	Cause	Remedy
No response when printer is turned on	Not plugged in	Make sure printer is plugged into a live AC outlet.
	Printer is defective	Run a self-test (refer to printer manual).
	Cable not hooked up correctly	Connect cable securely and properly (see Chapter 2).
	Switches set incorrectly	Check that configuration switches are set properly (see Appendix B and/or printer manual).
Printer won't print or prints incorrectly	Printer is not on line	Put printer on line (refer to printer manual).
	Printer not supported	Check the software manual to make sure the program is configured for and supports the attached printer.
	Switches set incorrectly	Check printer DIP switch settings as described in printer manual. Check that configuration switches are set properly (see Appendix B).
Installed ROMs don't show up in directory or title list	ROMs seated improperly or backwards	Turn off the computer and peripherals, leaving power cord plugged in. Make sure that ROMs are seated correctly, or try a different socket.
	ROMs off or appended to other drive	Turn the ROMs on or append them to the correct drive using the MODE ROM command (see Chapter 10).

Symptom	Cause	Remedy
Incorrect date or time on screen	Time-of-day clock set incorrectly	Set correctly (refer to the <i>MS-DOS Reference manual</i>).
Internal modem doesn't function	Telephone line bad	Check telephone line by making a phone call on that line (see Appendix A) or connect computer to another phone outlet.
	Switch settings are incorrect under MS-DOS	MS-DOS users set software switches correctly using MODE command (refer to Chapter 10 or to the <i>MS-DOS Reference manual</i>).
External modem doesn't function	Telephone line bad	See remedy above.
	Switches set incorrectly	Check that modem configuration switches are set properly (see modem manual).
	Bad cable	Replace the cable.
External monitor screen blank	Not plugged in	Check that cable is firmly connected to computer and monitor's power cord is plugged into wall outlet.
	Not turned on	Check that monitor's power switch is on.
	Output is directed to built-in screen	Press the Ctrl , Alt , and Tab keys simultaneously to switch output to the external monitor.
	Brightness control knob turned down	Check that brightness control knob is turned up sufficiently.
	Not compatible color monitor	Connect a compatible color monitor.

Symptom	Cause	Remedy
Built-in screen blank	Output is directed to external monitor	Press the Ctrl , Alt , and Tab keys simultaneously to switch output back to the built-in screen.
	Contrast switch set incorrectly.	Adjust contrast switch at right of screen.
External keyboard doesn't function or there is continuous beeping.	Not connected to computer	Check that cord is firmly connected to computer's rear panel (see Chapter 2).
	Incorrect keyboard	Connect an IBM PC/AT or 100% compatible keyboard only.

If you encounter a problem that you cannot resolve using the troubleshooting chart, you may have a software or hardware problem.

Software or Hardware Problems

If you encounter problems with specific software, try erasing your working copy of the problem software and replacing it with a different copy of the same version. Do not erase your master copy of any software.

If the software still does not function properly, and if you have ordered a GRiD Customer Support Service (CSS) contract with your computer, call the GRiD Resource Center at 1-800-284-GRiD (4743) for help with diagnosing the problem. Make sure you know the tracking number of your computer; it is located on the back of the computer, under the handle (it is visible only when the handle is pulled out).

If you decide your problem is not a setup or software problem, then it may be a hardware problem. Call the GRiD Resource Center for help in problem diagnosis.

THE GRIDSCAN PROGRAM

The GRIDSCAN program is a utility program that reports the status of input/output devices attached to your computer and lists the factory-installed hardware options present. Use GRIDSCAN under the following circumstances:

- When you need to provide information to GRiD personnel responsible for analyzing a possible malfunction in your system.
- When you want to find out if your GRiDCASE 1535 EXP computer is equipped with the options your application programs require.

GRIDSCAN is provided on the MS-DOS system diskette or on the hard disk. To invoke GRIDSCAN, enter the command **GRIDSCAN** in response to the system prompt. The information provided by the GRIDSCAN program is summarized below.

- System BIOS date
- Processor type
- Coprocessor type, if installed
- Amount of conventional RAM installed and free
- Amount of expanded and/or extended memory installed and free
- Type and size of internal and external diskette drives
- Type of other external devices attached
- Keyboard firmware date
- GRiD VGA cartridge BIOS date, if installed
- Modem type and PROM checksum, if installed
- Serial port number (COM1 or COM2)
- Color mapping method
- Information on installed ROMs

DEALING WITH RADIO FREQUENCY INTERFERENCE

If you suspect that your computer is interfering with another electronic device (such as a TV or radio), do the following:

- With the system turned on, watch and/or listen to the device that seems to be picking up radio frequency interference. Turn off the computer. If interference subsides significantly, you may confidently trace your problems to the computer. If no change occurs, the problem lies elsewhere (possibly in the other electronic device itself).

If the computer seems to be the cause, try these methods for lessening interference. Make sure the computer and the other electronic device are turned on to determine if one or more of these suggestions work.

- Change the position of the electronic device's antenna. In the case of radios, this may mean moving the radio itself.
- Move the computer around so it faces a new direction.
- Move the computer farther away from the other electronic device. If this means unplugging the computer, be sure to turn it off before you unplug it.
- Plug either the computer or the electronic device into a different wall outlet. If possible, plug the two instruments into outlets on different wiring circuits.
- If peripheral devices are connected to the computer, disconnect the devices and their I/O cables one at a time. If the interference stops, it is caused by the device or cable that was disconnected last. All peripheral devices require shielded I/O cables (except for telephone cords). GRiD-supplied cables are shielded. For non-GRiD-supplied peripherals and I/O cables, contact the manufacturer or dealer for assistance.

If these solutions still do not produce satisfactory reception, contact your GRiD representative. If problems are caused by a non-GRiD product, contact the product manufacturer for that product.

CHAPTER 9: MAINTENANCE

This chapter describes how to care for your GRIDCASE 1535 EXP computer. Although the GRIDCASE 1535 EXP is basically durable, you should treat it as you would any other precision instrument—with care.

WARNINGS

This product is designed and tested to comply with various national and international safety agency standards that reflect the current state-of-the art at the time of manufacture. Use and application of the product requires exercising common sense. It is an electrical device.

Always observe the following warnings. Ignoring these warnings could lead to physical injury.

- Do not operate the computer in a dirty or dusty environment.
- Do not get the computer wet; electrical equipment should not be operated in a moist environment.
- Do not operate your computer in any potentially flammable atmosphere. It is not approved for hazardous locations.
- Do not attempt to open the computer case; it contains no user-serviceable parts. Such action voids your warranty and service contract and can damage the computer. (The ROM area is excluded from this warning.)
- Arrange any power cords or other cords so they can't be pulled out or tripped over when the computer is in use.

- If you are using an external drive, make sure its cable is securely attached at both ends and is not likely to be bumped or pulled.
- Make sure you properly ground any power-plug adapter.
- Do not eject the internal/external AC power pack without first removing the power cord from the wall socket, as a shock could result.
- Always turn off the computer before unplugging it.

CAUTIONS

Always observe the following cautions. Ignoring these cautions could damage your computer.

- Before you connect any device to your computer or disconnect any device from your computer, turn off both the device and the computer, in that order.
- Operate the computer only when the surrounding temperature is between 41° F and 95° F (5° C and 35° C).
- Operate the computer only when the relative humidity is between 20% and 80% noncondensing.
- Store the computer where the surrounding temperature remains between -4° F and 149° F (-20° C and 65° C).
- Do not store or set up the computer or any of its peripheral devices in direct sunlight.
- Do not subject the computer to unnecessary shock or vibration.
- When cleaning the computer, never use any cleaning agent such as dust wax, spray cleaner, or any abrasive substance.
- Never turn off the computer when the in-use light for any diskette or hard disk drive is lit. Turning off the computer at these times can destroy data on the disk.

- When using the expansion tray, you must install the auxiliary fan in the expansion tray if the total power consumption of expansion cards exceeds three watts.

CLEANING YOUR GRIDCASE 1535 EXP COMPUTER

Before cleaning your computer, turn it off and disconnect the power cord from the outlet.

To clean the case, use a slightly damp, soft cloth and, if necessary, a mild, nonabrasive detergent.

CAUTION

Never use any cleaning agent such as dust wax, spray cleaner, or any abrasive substance.

Wipe the case clean and then dry it.

To clean the screen, slightly dampen a soft cloth with an ammonia-based glass cleaner and gently wipe the screen. Use the cleaner sparingly so that no fluid runs down the screen and into the frame.

If necessary, dust the rear panel of your computer with a dry cloth.

WARNING

To prevent shock hazard, never apply any liquid to the rear panel of your computer or inside a diskette drive opening.

STORING YOUR GRIDCASE 1535 EXP COMPUTER

Always store your computer between -4° F and 149° F (-20° C and 65° C). To keep it free from dust and dirt, store it in a protected location.

TRAVELING WITH YOUR GRIDCASE 1535 EXP COMPUTER

When traveling with your computer, keep it in a protective case and carry it instead of checking it as luggage. Many transportation carriers do not cover the replacement cost of your computer should they lose or damage it. If you do check it as luggage, always pack it in the original shipping carton(s) and packing materials. Any damage incurred due to improper shipping is considered abuse and will not be covered under your computer's warranty.

It should be safe to x-ray the computer or any peripherals in airport security checks, but you can have it hand-checked, if you wish.

CAUTION

If you are carrying the battery pack inside the computer, make sure that the power switch is off. If it is left on, the battery pack will discharge during transportation. As an extra precaution, you may want to remove the battery pack from the computer and carry it separately.

UPDATING THE CLOCK

The computer's internal time-and-date clock, which displays the time and date on your screen, is not intended to replace your wristwatch. Its precision over a long period may vary because of temperature changes and other factors. You should check its accuracy periodically. Also note that you must change the year when going from December to January.

Refer to the TIME and DATE commands in the *MS-DOS Reference* manual for instructions on setting the clock.

CHAPTER 10: USING MS-DOS ON THE GRiDCASE 1535 EXP COMPUTER

This chapter explains how operating a GRiDCASE 1535 EXP computer and an IBM PC/AT differ; how the GRiD version of MS-DOS differs from PC-DOS; how to move and then run applications currently in use on the IBM PC-compatible computer to the GRiDCASE 1535 EXP computer, and how to create a CONFIG.SYS file.

This chapter is not a tutorial for the novice. You may not understand the information in this chapter unless you've operated a personal computer using an MS-DOS application. If you require training in basic MS-DOS skills, inquire at a local computer store on the availability of MS-DOS classes, and about the many tutorials and computer-based training programs available for purchase.

WHAT'S DIFFERENT ABOUT THE GRiDCASE 1535 EXP COMPUTER?

You should be aware of the following differences between operating a GRiDCASE 1535 EXP computer and an IBM PC/AT before starting up your system.

- The GRiDCASE 1535 EXP computers use a different operating system—you must use GRiD MS-DOS on GRiDCASE 1535 EXP computers—not PC-DOS or an MS-DOS operating system made for other computers.
- You can plug in an IBM color monitor and keyboard to your GRiDCASE 1535 EXP computer, and use it just as you would an IBM PC/AT. When you travel, simply disconnect the monitor and keyboard, and use the GRiDCASE display and keyboard instead.
- The GRiDCASE 1535 EXP keyboard has fewer keys, but all the functions of an IBM PC/AT keyboard.

- The GRiDCASE 1535 EXP computer displays text and images in blue and gray, or black and red (depending on the configuration); many monitors connected to an IBM PC/AT display text and images in full color, if the software supports color.
- MS-DOS and CrossTalk software are available on ROM cartridges for the GRiDCASE 1535 EXP computer.

WHY ONLY GRID MS-DOS ON THE GRIDCASE 1535 EXP COMPUTER?

GRiD MS-DOS is the only MS-DOS operating system that should be run on the GRiDCASE 1535 EXP computer. Although the GRiDCASE 1535 EXP is fully compatible with the IBM PC/AT, it is not desirable to run PC-DOS on the GRiDCASE 1535 EXP.

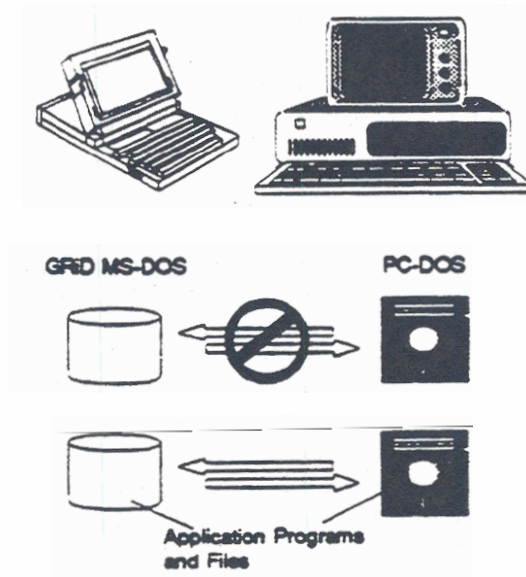


Figure 10-1. The GRiDCASE 1535 EXP Computer Requires GRiD MS-DOS

PC-DOS is licensed to run only on an IBM personal computer, and GRiD MS-DOS to run only on GRiDCASE models. Although you can interchange application programs, subject to the licensing agreement you have with the software publisher, you cannot interchange operating systems (Figure 10-1).

Moreover, GRiD MS-DOS offers the following facilities not available in PC-DOS:

- Only the GRiD MS-DOS MODE command supports GRiD input/output devices and allows you to control unique GRiD hardware features. The PC-DOS MODE command cannot control GRiDCASE hardware features.
- GRiD MS-DOS supports Read Only Memory (ROM). ROM increases the amount of permanent storage available for data files and programs. Use of programs in ROM also somewhat increases battery life by reducing disk accesses.
- GRiD MS-DOS has the HELP command for instant, on-line reference information on system commands and facilities.
- GRiD MS-DOS provides the PCMASTER and PCSLAVE commands for easy file transfer between a GRiDCASE 1535 EXP computer and an IBM PC-compatible computer.
- GRiD MS-DOS includes the GRIDSCAN command, which shows the status of input/output devices attached to your GRiDCASE 1535 EXP computer and lists the factory-installed hardware options.
- GRiD MS-DOS includes the device driver file LOWPOWER.SYS. If you reference LOWPOWER.SYS in your CONFIG.SYS file, the computer will beep when battery power is low.

You'll learn more about these facilities throughout this chapter.

USING AN EXTERNAL MONITOR AND KEYBOARD

The GRiDCASE 1535 EXP computer works like an IBM PC/AT. You can use the GRiDCASE 1535 EXP computer's built-in keyboard, or you can plug in an IBM PC/AT keyboard or any other 100% compatible keyboard. You can also plug an IBM color monitor into your GRiDCASE 1535 EXP computer.

With both the IBM keyboard and IBM color monitor connected, you can operate your GRiDCASE 1535 EXP computer just as you would an IBM PC/AT. When you travel or take your work elsewhere, simply unplug the external keyboard and monitor, and use the GRiDCASE keyboard and display. This arrangement gives you a desktop and a portable computer in one.

USING THE INTERNAL HARD DISK OPTION

If your GRiDCASE 1535 EXP computer has an internal hard disk, the hard disk is already formatted for use with MS-DOS, and the current version of MS-DOS has been loaded onto the disk. Because you cannot have a built-in diskette drive with the hard disk, you must use one of the following GRiD products to load programs onto the hard disk:

- **Model 3401 3½-inch Pocket Diskette Drive (1.4 MB).** The pocket diskette drive can be attached to the external peripheral connector on the back of your computer, allowing access to files stored on 3½-inch diskettes.
- **Model 3402 5¼-inch Pouch Diskette Drive (360 KB).** If your programs are stored on 5¼-inch floppy diskettes, this drive can be used to access them.
- **Model 6401 PCMaster/PCSlave Serial Cable.** This cable can be used to connect a GRiDCASE 1535 EXP computer to an IBM PC-compatible computer through the serial ports on each computer. Working with software supplied on your GRiDCASE hard disk, you can transfer files from storage devices on an IBM PC-compatible computer to your hard disk.

THE GRIDCASE 1535 EXP KEYBOARD

In order to conserve space and weight, the GRIDCASE keyboard contains fewer keys than the IBM PC/AT keyboard. Consequently, you may need to press slightly different GRIDCASE keys to invoke equivalent IBM PC/AT functions.

GRIDCASE keys with green keycaps correspond to function and other special keys on the IBM keyboard—PgUp, PgDn, Break, Home, etc. For additional information on the GRIDCASE keyboard, refer to Chapter 2.

THE GRIDCASE 1535 EXP DISPLAY

There are two notable exceptions in how the GRIDCASE 1535 EXP display functions in relation to an IBM color monitor:

- On the GRIDCASE display, text and images appear in blue and gray, or black and red, depending on your screen option. A color monitor displays text and graphics in full color.
- On the GRIDCASE display, text and images cannot be highlighted by your application as they can on a color monitor. Text designated as bold by a word processor command appears highlighted on the color monitor, but appears in a different type font on the GRIDCASE display. Additionally, the GRIDCASE display supports a four-level gray scale, which is sometimes used to display colors.

Other differences are hardly noticeable and rarely seen.

THE INTERNAL MODEM AND THE SERIAL (RS-232C) PORT

The internal modem of a GRIDCASE 1535 EXP computer so equipped is the MS-DOS COM1 device. The serial (RS-232C) port is the MS-DOS COM2 device. For more information on MS-DOS COM1 and COM2 devices, refer to the *MS-DOS Reference* manual.

READ ONLY MEMORY (ROM)

GRiDCASE 1535 EXP computers have mounting positions or sockets for removable Read Only Memory (ROM) cartridges, which give permanent storage for MS-DOS programs. (The two ROM sockets are under a removable cover above the keyboard.)

A single ROM cartridge containing the MS-DOS operating system and its utility files is available from GRiD. Also available is a two-cartridge set containing the MS-DOS operating system, its utility files, and the popular CrossTalk communications program.

NOTE: You should carefully read the booklet that comes with each ROM cartridge before inserting or removing a cartridge.

If your computer is equipped with an external floppy diskette drive, MS-DOS treats files on the ROM cartridge as though they reside on floppy diskette drive A, and thus as an extension of the diskette in drive A. (If your computer has an internal hard disk and does not have an external diskette drive attached, ROM files are treated as an extension of drive C.) If you use an MS-DOS system ROM, you needn't include the MS-DOS system files on the hard disk with your application and data files. This increases the space available for data files on the hard disk.

You can change the device to which ROM files are appended by using the MODE ROM command, described later in this chapter.

When you install an application program on a GRiDCASE 1535 EXP computer that has an MS-DOS ROM, note the following:

- There is no need to specify the /S option when using the FORMAT command. (This option copies the MS-DOS system files to the diskette after completing the formatting process.)
- There is no need to use the SYS command to copy the MS-DOS system files to an application diskette or to the hard disk.

ROM files differ from diskette files in the following ways:

- You cannot delete programs from ROM; nor can you store additional programs or data in ROM.

- You cannot specify a ROM file as a target file in an MS-DOS COPY command. MS-DOS issues the message "File Creation Error" and the command fails.
- If the diskette in drive A contains a file with the same name as a file in ROM, MS-DOS always uses the file on the diskette. If your system has no floppy drives and if the hard disk contains a file with the same name as a file in ROM, MS-DOS always uses the file on the hard disk.
- When copying files, you cannot specify a target file for drive C (drive A if your system has an internal or external floppy drive) that has the same name as a ROM file, unless you remove the ROM cartridge, temporarily rename the ROM file, or turn off the ROM by issuing the command `MODE ROM=OFF` (see `MODE` command later in this chapter). The power must be off before you remove the ROM cartridge.

The next procedure shows how to copy a file from hard disk C to a diskette in drive A, when the file in drive C has the same name as an existing ROM file.

To copy a duplicate ROM file from drive C to drive A, follow the steps listed below.

1. If the diskette in drive A already contains a file with the same name as the file you want to copy from drive C, remove the diskette from drive A. Otherwise, you will inadvertently rename the diskette file instead of the ROM file.
2. Rename the ROM file; for example, the following command

```
A>REN COMMAND.COM COMMAND.TMP
```

temporarily renames the `COMMAND.COM` file in ROM to `COMMAND.TMP`. (The temporary name remains in effect until the system is restarted or the file is renamed again.)

3. Insert the desired diskette in drive A, and then copy the file. For example

```
A>COPY C:COMMAND.COM A:
```

copies the COMMAND.COM file from drive C to the diskette in drive A.

After the next start-up, the COMMAND.TMP file in ROM resumes the name of COMMAND.COM. A directory listing will now show two COMMAND.COM files in drive A, one on disk and one in ROM.

WHAT'S DIFFERENT ABOUT GRiD MS-DOS?

GRiD MS-DOS is an operating system specifically written for computers manufactured by GRiD Systems Corporation. If you are accustomed to using PC-DOS or MS-DOS on another computer, you must learn how using GRiD MS-DOS differs from those operating systems. This section discusses these differences under the following points:

- How GRiD MS-DOS commands and PC-DOS commands differ
- How to run BASICA programs on a GRiDCASE 1535 EXP computer
- Special procedures when using the internal modem

HOW COMMANDS DIFFER

Several GRiD MS-DOS commands provide functions not available in PC-DOS. These commands are described below.

FC (File Comparison)

The File Comparison (FC) utility in GRiD MS-DOS is used to compare the contents of two files. The FC utility is described in Chapter 10 of the *MS-DOS Reference* manual.

In PC-DOS, the COMP command is used to compare files. The COMP command is also contained in version 3.3 and later versions of GRiD MS-DOS.

FORMAT

The **FORMAT** command provided with **GRiD MS-DOS** is functionally identical to the **PC-DOS FORMAT** command provided with newer **IBM** machines that use high-density, 1.4 MB, 3½-inch floppy diskette drives. It is documented here, however, because many users moving to a **GRiDCASE 1535 EXP** computer with a 3½-inch floppy diskette drive will not be familiar with using **FORMAT** on such drives.

When you issue a **FORMAT** command for a high-density, 3½-inch diskette drive like those used in **GRiDCASE 1535 EXP** computers, the drive formats the diskette for 1.4 MB. If the diskette in the drive is not a high-density diskette, it cannot reliably be formatted for 1.4 MB. The format operation itself may fail, or even worse, the format operation may seem to succeed, resulting in a completely unreliable diskette.

CAUTION

Do not format a diskette for 1.4 MB unless you are sure it is a high-density diskette. Failure to heed this warning may result in the irretrievable loss of your data.

You can format 720 KB, double-density diskettes in a high-density drive, but you must use the following special form of the **FORMAT** command to do so:

```
C>FORMAT A:/N:9 /T:80
```

A special batch file called **FORMATLD.BAT** is supplied on your **GRiD MS-DOS** diskette or hard disk. This batch file contains the necessary switches to perform a low-density (i.e., double-density) format. It also allows you to use any additional switches (e.g., **/S**) just as you would with the standard **FORMAT** command. To use this batch file, just enter the command, **FORMATLD**, instead of **FORMAT**.

PCMASTER/PCSLAVE

The PCMASTER and PCSLAVE commands (also called the PC file transfer utilities) transfer files from IBM PC storage devices to GRiDCASE 1535 EXP storage devices and vice versa. The transfer takes place over a cable attached to the serial port of each computer. More information on PCMASTER and PCSLAVE is presented later in this chapter.

MODE

The GRiD MS-DOS MODE command offers the same functions as the PC-DOS MODE command, plus the ability to control GRiD devices that cannot be used with an IBM PC/AT. GRiD-specific MODE command options are described below.

In the examples that follow, curly brackets ({}) indicate that you must select one of the items enclosed within the brackets. A vertical bar (|) separating two items indicates an either/or choice between the two items. Square brackets ([]) indicate that the item is optional. Two dots (..) indicate a range of choices (for example, "1..6" means that you can enter any number from 1 to 6).

MODE MODEM=[RESET] [,addressSwitch] [,ON|OFF]

This command allows you to change the settings of the software switches in either of the optional internal modems. Both the 2400 baud modem and the MNP modem emulate the Hayes Smartmodem software switches.

The optional RESET parameter resets the modem to the factory settings. This parameter is only valid for the MNP modem and must be used by itself on the command line.

The *addressSwitch* parameter represents the Hayes Smartmodem switches that are emulated in software. It consists of eight *U* or *D* characters (for *Up* or *Down*, meaning the switch is on or off, respectively). For example, the initial setting, UDDDDUUD, means that switches 1, 6, and 7 are on and switches 2, 3, 4, 5, and 8 are off. Switches 1 through 8 are supported for the 2400 baud modem. Only switches 1 through 6 are supported for the MNP modem. For more details, see the section THE INTERNAL MODEM later in this chapter.

The last parameter controls the speaker while the internal modem is dialing and waiting for a connection. The default, ON, turns the speaker on while the modem is dialing so that you can hear what is happening on the phone line. The speaker always automatically turns off when a connection is established. You can specify OFF to keep the speaker off at all times.

MODE CURSOR={LINE|BLOCK}

This command allows you to select the cursor appearance. Specify LINE (the default) to select a short, horizontal underline cursor. Specify BLOCK to select a solid rectangle cursor.

MODE FONT={1..4}

This command allows you to specify the current active alpha-mode font. Four fonts are available:

- 1 = English
- 2 = French Canadian
- 3 = Norwegian
- 4 = Hebrew

MODE ROM={d|OFF}

This command allows you to specify a disk drive to which all ROM files are appended. The *d* parameter specifies a device letter. ROMs can be appended to any device. If you specify the hard disk on your system, this setting is saved, even when the computer is powered off. If you select any other device, this setting is reset to A every time the computer is rebooted. To turn off all ROM files, specify OFF. This is useful for copying files when some of the files being copied have the same name as ROM files.

MODE {GRID|CRT|VGA=[VGA|EGA|MDA|HERC]}

This command allows you to switch the video output of your computer to an external monitor. The GRiDCASE 1535 EXP computer cannot simultaneously display output on the internal screen and an external monitor. The initial setting is GRID. Specify GRID to display all screen output on the internal GRID display. Specify CRT to display all screen output in CGA mode on an external monitor connected to the video output connector. Specify VGA=VGA to display all screen output in VGA mode on an external monitor connected to the GRiD VGA cartridge or a VGA adapter card installed in an external expansion chassis.

The modes VGA=EGA, VGA=MDA, and VGA=HERC can only be used with the GRiD VGA cartridge. They are used to emulate EGA, MDA, or Hercules video modes, respectively. Refer to the *GRiDCASE 1500 Series VGA Cartridge Owner's Guide* for further details. You can toggle between the GRID and CRT display modes directly by pressing the **Ctrl-Alt-Tab** keys simultaneously.

MODE SPEED={FAST|SLOW}

This command allows you to select between the two processor speeds available on the GRiDCASE 1535 EXP computer. The fast speed, which is the initial setting, is 12.5 MHz. The slow speed is 6.25 MHz. If some programs do not seem to work properly at the faster speed, try switching to the slow speed.

Running the processor at slow speed is **NOT** recommended when the expansion tray is attached to the computer; some expansion cards may not be able to operate correctly when the computer is running at slow speed.

You can also change processor speeds by using the keystrokes **Ctrl-Alt-Fn-↓** for slow speed and **Ctrl-Alt-Fn-↑** for fast speed.

MODE COLORMAP={1..6}

This command allows you to set the color mapping on the internal display. Six color maps are predefined. The initial setting is mode 1. Some programs designed for color displays may be more readable with a color mapping mode other than the default (1). You can select any one of the six color maps by specifying the color map number with this MODE option. You can also switch among the color mapping modes using the keystrokes **Ctrl-Alt-Fn←** and **Ctrl-Alt-Fn→**. Repeatedly pressing one of these keystrokes cycles through all six color mapping modes.

Table 10-1. Color Mapping Modes

Color	Mode					
	1	2	3	4	5*	6*
Black	off	off	off	off	off	off
Blue	off	2/3	2/3	off	full	full UL
Green	2/3	2/3	1/3	1/3	full	full
Cyan	2/3	2/3	1/3	1/3	full	full
Red	1/3	1/3	2/3	2/3	full	full
Magenta	1/3	1/3	2/3	2/3	full	full
Brown	full	full	full	full	full	full
White	full	full	full	full	full	full

Legend: off = nothing displayed
 1/3 = one third brightness
 2/3 = two thirds brightness
 full = full brightness
 full UL = full brightness and underlined

* If the background color is white, modes 5 and 6 display in inverse video (black is full brightness and all other colors are off).

MODE BACKLITE={ON|OFF|1..60}

This command allows you to control the backlight on GRIDCASE 1535 EXP computers equipped with LCD screens. Specify either ON, OFF, or the parameter 1 to 60. A number from 1 to 60 specifies the time, in minutes, that the system waits after the last keyboard access before it turns off the backlight. The default is 2 minutes. After the backlight is off, any keyboard input will turn it back on. Specifying OFF turns the backlight off until you give the ON command. Specifying ON turns the backlight on until you change the setting. This MODE setting is remembered by the computer even after the power is turned off, so you do not need to reset it each time you start up the computer.

MODE DISPLAY={ON|OFF}

This command allows you to disable and enable the internal display hardware inside the computer. The initial setting is ON. Specify OFF to turn off the internal display hardware if you are using an external monitor that is plugged into its own card (not the video output connector or VGA cartridge). Specify ON to turn the internal display hardware back on if you are no longer using an external monitor plugged into its own card. If your external monitor is plugged into the video output connector or the GRID VGA cartridge, do not turn off the display hardware.

See MODE GRID|CRT|VGA for information on how to switch between the internal display and an external monitor when the monitor is a VGA monitor or is a CGA monitor plugged into the computer video output connector.

MODE NUMPAD={ON|OFF}

This command allows you to disable and reenable the numeric keypad embedded in the internal keyboard. This MODE option only applies to GRIDCASE 1535 EXP computers with a keyboard firmware date of 5/19/88 or later (see GRIDSCAN). Normally, the internal numeric keypad is enabled and disabled by the NUMLOCK key; however, some applications may erroneously force the keyboard into NUMLOCK mode. In such cases, you can specify OFF to disable the internal numeric keypad. You can still access the internal numeric keypad by holding down the Fn key while pressing a numeric keypad key. Specify ON to reenable the internal numeric keypad.

Note that if a GRiD external numeric keypad is connected to the system, the internal numeric keypad is automatically disabled.

MODE HARDDISK={ON|OFF|1..99}

This command allows you to control power to the internal hard disk. This option is useful for saving battery power by allowing you to turn off power to the internal hard disk when it is not being used. The default is ON, meaning that the hard disk is always powered on. Specify OFF to turn off power immediately to the hard disk. For automatic control, specify a number of minutes (between 1 and 99) after which the hard disk is turned off if it has not been accessed. In any case, the hard disk is automatically powered on when disk access is required.

Each type of hard disk has a different maximum interval that can be set. If you specify a number of minutes greater than the maximum allowed, the interval is set to the maximum, and you are alerted by a message to the actual number of minutes set.

This MODE option does not apply to all types of hard disks. Currently, disk types 5, 6, and 9, as reported by GRiDSCAN, support this option. (See the section THE GRiDSCAN PROGRAM in Chapter 8.) All of these disk types have a maximum interval of 18 minutes.

CAUTION

This MODE option is designed to help extend battery life. Do not use this option when operating the computer on AC power; doing so causes unnecessary wear on the hard disk and could shorten its life.

HELP

The **HELP** facility displays online answers to many questions you may have about MS-DOS commands and functions. Normally, you find such information only in a reference manual. However, using **GRiD MS-DOS**, you can type in the following command and press **Return** to obtain help.

HELP

The **GRiD Help Facility** displays the topics on which help is available. Help is available for all **MS-DOS** commands as well as some specific **GRiD** utilities. You can select any command or function from the Help menu and press **Return** to obtain more information about it.

The Help menu displays all the topics for which help is available. It also displays all the information you need to use the **GRiD Help Facility**. Press the **F1** key to display instructions on how to use help.

NOTE: You can also enter the topic name following the **HELP** command on the **MS-DOS** command line to obtain help for a specific topic. For example,

```
C>HELP APPEND
```

directly displays help on the **APPEND** command.