Table 9-2. Configurator Command Summary

Command	Description	Default Setting	Saved
Power			
autostandby	Enables/disables the automatic standby feature.	5 minutes	+
backlite	Controls screen backlight.	5 minutes	+
lowbeep	Controls low battery warning beep.	On	+
harddisk	Controls turning on and off the hard disk.	On	+
standby	Controls entering standby mode.	On	+
Peripheral			
modem	Controls the internal modem.	On & COM2	+
parallel	Controls the parallel port.	On & LPT1	+
serial	Controls the serial port.	COM1 & RING	+
System			
boot	Sets the order of boot devices.	harddisk, extfloppy	+
keyboard	Specifies the keyboard emulation.	101	+
keyclick	Controls whether the keyclick is on or off.	Off	
speaker	Controls the internal speaker.	On	+
speed	Sets the processor speed.	Fast	
Video			
boldfont	Specifies how bold characters are displayed.	On	+
colormap	Sets colormapping	1	+
display	Sets normal or reverse video.	Normal	+
expand	Specifies how much of the screen is used.	On	+
framecolor	Sets the color for the frame.	On	+
maxcontrast	Specifies the character display contrast.	On	+
position	Controls the image location.	Top	+
video	Controls the monitor used.	LCD	+
Wakeup			
wakeup	Schedules system wakeup from standby.	Off	+

Config Autostandby

The **config autostandby** command enables or disables automatic standby mode. This command has the following format:

```
config autostandby = 1 | 2 | ... | 60 | off
```

To conserve the most power and make your batteries last longer, you can set up your computer so that it automatically goes into standby mode if the display has not changed or you have not touched the pen to the screen (or typed on a keyboard) for a certain number of minutes. The default is 5 minutes.

You can specify from 1 to 60 minutes. For example, you could set it up so that it goes into standby mode if there has been no activity for five minutes. When you want to start working again, just press the standby button and continue where you stopped.

To turn off the automatic standby feature if you have previously enabled it, specify **off**.

Note that the automatic standby feature operates only when the computer is running on battery power.

NOTE: Automatic standby may not work with some MS-DOS application programs. It works fine with all custom PenRight! applications.

Refer to the command **config standby** (page 9-24) for more information about entering standby mode.

Config Backlite

The **config backlite** command controls the timing of the backlight for the LCD display. This command has the following format:

```
config backlite = 1 | 2 | ... | 17 | on | off
```

To conserve power and make your batteries last longer, you can set up your computer so that it automatically turns off the screen backlight if the display has not changed or you have not touched the pen to the screen (or typed on the

keyboard) for a certain number of minutes. You can specify from 1 to 17 minutes. The default is 2 minutes. The screen backlight is automatically turned back on as soon as the pen or a keyboard is used or the display changes.

To permanently turn off the screen backlight, specify **off**. In this case, using the pen or keyboard will not cause the backlight to turn on again.

To permanently turn on the screen backlight, specify **on**. The screen backlight stays on until you change this setting. The initial setting is on.

The **FN-BkLt** keys on the computer override the config **backlite setti**ng.

Config Boldfont

The **config boldfont** command specifies how characters appear on the internal VGA display. This command has the following format:

```
config boldfont = on | off
```

where

on Regular characters are displayed as bold and bold characters are displayed in a heavier font (default). This is an extension to VGA to improve the image on the internal display.

off Characters are generated normally on the internal display. This is standard VGA.

Config Boot

The **config boot** command sets the order of devices to be searched for the operating system when the computer starts up (or boots). This command has the following format:

```
config boot = harddisk | extfloppy
```

When the computer is turned on, it searches its storage devices in a specific order for the operating system files; when it finds those files, the system boots. This command allows you to change the order in which the storage devices are searched.

To temporarily change the boot sequence, press one of the following keys on your keyboard after the beep when your computer starts up:

H to boot from hard disk

E to boot from the external floppy

Config Colormap

The **config colormap** command sets color mapping on the internal display. This command has the following format:

```
config colormap = n
```

where *n* is a value from 1 through 6 and specifies a color mapping mode (the default setting is 1).

Color mapping determines how colors are mapped to the internal display. Colors displayed by software are changed to various shades of gray on the screen. A color map is a particular set of gray shades that correspond to a set of colors. You can change the color mapping mode so that different shades of gray are assigned to the same set of colors.

You can change the color mapping modes from the keyboard using the **FN-Color** keys as described on page 2-20. These keystrokes cycle through each of the color mapping modes in order.

If you cannot change the color mapping, check the **config maxcontrast** setting. If it is **on**, the **config colormap** command has no effect.

The **config colormap** command uses preassigned gray shades for colors.

Config Display

The **config display** command changes the video mode of the screen from normal to reverse video. This command has the following format:

```
config display = normal | reverse
```

If you specify **normal** (the default setting), the screen shows dark characters on a light background. If you specify **reverse**, the screen shows light characters on a dark background.

You can change the display mode from the keyboard using the **FN-RvVid** keys as described on page 2-20.

Config Expand

The **config expand** command specifies how much of the internal VGA display is used. This command has the following format:

```
config expand = on | off
```

where

on The system expands video modes that normally do not fill the entire display; improves the graphics image on the internal display (default).

off Information is displayed as defined by the video mode. For example, a 640-by-350 mode does not fill the entire display.

Config Framecolor

The **config framecolor** command specifies the gray tone to be used for the frame or border on an internal VGA display. This command has the following format:

```
config framecolor = n
```

where

n — Shades of gray for the frame color. The range is **0** (lightest) to **15** (darkest); the default is **0**.

The frame (or border) is visible when displaying in a mode that does not use all of the display, such as when the **config expand = off** command has been issued.

Config Harddisk

The **config harddisk** command controls power to the internal hard disk. This command has the following format:

```
config harddisk = on | off | n
```

where

on — Indicates power to the internal hard disk is always on (default).

off — Immediately turns off power to the internal hard disk.

n — Number of minutes from 1 to 20 (the maximum allowed by your hard disk) after which the hard disk is turned off if it has not been accessed.

This option is useful for saving battery power by turning off power to the internal hard disk when it is not being used. If **off** or *n* is specified, the hard disk is automatically powered on when a disk access is required.

CAUTION

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

You can turn the hard disk on and off using the **FN-Disk** keys as described on page 2-22.

Config Keyboard

The **config keyboard** option specifies whether your keyboard is emulating a 101-key or 102-key keyboard. This command has the following format:

```
config keyboard = 101 | 102
```

where

101 The standard U.S. keyboard layout is being emulated.

102 A national keyboard layout is being emulated; the left **FN** key is remapped to **Alt-Gr.**

Config Keyclick

The **config keyclick** command controls whether the keys click when they are touched; this applies to both the keyboard and the Screen Keyboard. This command has the following format:

```
config keyclick = off | low | high
```

If you use Screen Keyboard or the keyboard on your computer, the computer can make a clicking noise each time you touch a key. This audible feedback may be helpful, especially when using Screen Keyboard. This feature is initially set to **off**. To turn it on, specify on.

From the keyboard you can increase the keyclick volume by pressing **Ctrl-Alt-Grey plus(+)**, or decrease the volume by pressing **Ctrl-Alt-Grey minus(–)**. [1] These keystrokes simply cycle through each of the keyclick settings forwards or backwards, respectively.

When you are using the full-screen configurator, the values change in increments of 5, from 5 to 60, rather than showing **low** and **high**.

1 Grey plus and grey minus refer to the plus and minus keys on the numeric keypad.

The setting of the **config keyclick** command is not saved when the computer is turned off. Each time you start the computer, it is reset to **off**.

Config Lowbeep

The **config lowbeep** command controls the low power beep feature. This command has the following format:

```
config lowbeep = on | off
```

The initial setting is **on**. When turned on, the low power beep feature causes the computer to give three short beeps about every 15 seconds if it is running from the battery pack and the battery pack becomes nearly exhausted. The beeps begin at the same time that the battery indicator lights steadily and continue until the battery is exhausted.

You may have as little as two minutes of battery power remaining when the beeps start. When you hear the beeps, you should immediately save the file you are working on to avoid losing any data. Then you should connect power to the computer, or put the computer into standby mode and replace the exhausted battery pack with a charged battery pack.

If you do not take any action to supply more power to the GRiD Convertible computer when the low power beeps start, the battery pack will continue to drain. When it is almost exhausted, the computer will automatically enter standby mode in an attempt to preserve your work in system RAM. You will see the screen go blank when this happens.

You can turn off the low power beep feature by specifying **off**.

When **config lowbeep** is set to **on**, your computer may beep when going into or out of standby; this is normal.

Config Maxcontrast

The **config maxcontrast** command specifies how the color mapping for characters is to be done on internal VGA displays. This command has the following format:

```
config maxcontrast = on | off
```

where

on Selects the highest level of contrast possible between a character's foreground color and background color; **on** maximizes the contrast when viewing on an LCD display.

off Maps the color selected by the program to a gray scale on the internal display; **off** is standard VGA compatible (default).

If you are unable to see all the detail or color mapping on the LCD display, set **config maxcontrast = off.**

The **config colormap** option is not active in non-graphics modes when this option is on.

Config Modem

The **config modem** command turns the optional internal modem driver on or off. This command also assigns the modem a device name. This command has the following format:

```
config modem = com1 | com2 | off | on
```

The **config modem** command assigns the modem a device name. The modem initially is assigned device name COM2. If you want, you can specify COM1 to assign it that device name. The **off** option means the modem is not set to a COM port. The modem cannot be used until it is assigned. The **on** option turns on the modem.

NOTE: If you assign the modem to a different COM device name, the serial port is reassigned automatically to the other COM device name.

To use PCMCIA I/O devices, the modem must be turned off.

Config Parallel

The **config parallel** command turns off the parallel port and assigns it a device name.

```
config parallel = off | LPT1 | LPT2 | LPT3
```

The **config parallel** command assigns the parallel port a device name. The parallel port initially is assigned device name LPT1. If you want, you can specify LPT2 or LPT3 to assign it that device name. The **off** option means the parallel port is not set; the parallel port cannot be used until it is assigned.

Config Position

The **config position** command sets the location of the image on the internal VGA display when the image does not use all of the vertical pixels (rows) on the display. This command has the following format:

```
config position = top | center | bottom
```

where

top Indicates the image is to be at the top of the display panel (default).

center Indicates the image is to be centered on the display panel.

bottom Indicates the image is to be at the bottom of the display panel.

This option is used when displaying in a mode that does not use all of the pixels, such as when **config expand = off** is set.

Config Serial

The **config serial** command assigns the serial port a device name. This command also changes how the serial port works to accommodate a bar code reader. This command has the following format:

```
config serial = com1 | com2 | ring | barcode |
off | on
```

The **config serial** command assigns the serial port a device name. The serial port initially is assigned device name COM1. If you want, you can specify COM2 to assign it that device name. The **off** option indicates that the serial port is not assigned to a COM port; the serial port cannot be used until it is assigned. The **on** option turns on the serial port.

NOTE: If you assign the serial port to a different COM device name, the modem is reassigned automatically to the other COM device name.

The **config serial** command also changes how the serial port works in order to accommodate a bar code reader. Normally, pin 9 in the serial port connector is used for the Ring Indicator signal. This is set by specifying **ring** (the default setting). Many bar code readers require this pin to supply +5V dc power. You can change the pin so that it supplies power by specifying **barcode.** Note that the maximum current available is 50 milliAmps.

Config Speed

The **config speed** command sets the speed at which the computer microprocessor operates. This command has the following format:

```
config speed = fast | slow
```

If you specify **fast** (the default setting), the microprocessor immediately begins operating at its fast speed (25 MHz). If you specify **slow**, the microprocessor immediately begins operating at its slow speed (12.5 MHz).

You can also switch between fast and slow processor speeds using the keystrokes **FN-LoSpd**.

The setting of the **config speed** command is not saved when the computer is turned off. Each time you start the computer, it is reset to **fast**.

Config Standby

The **config standby** command enables or disables standby mode or immediately puts the computer into standby mode. This command has the following format:

```
config standby [=on | =off]
```

Standby mode is enabled by default. When you press the standby button on top of the computer or **FN-StdBy** from the keyboard, it puts the computer into standby mode. Specify **off** to disable standby mode. When standby mode is disabled, nothing happens when you press the standby button.

To immediately put the computer into standby mode, you can also issue the command **config standby** with no parameters.

Refer to the command **config autostandby** (page 9-14) for more information about entering standby mode.

Config Video

The **config video** command allows you to select external video monitors through the monitor port and to turn the internal monitor on or off. This command has the following format:

Syntax

```
config video = internal | external | both
```

where

internal Turns on the internal display (default).

external Turns on the video output connector on the rear panel of the computer. Screen output is displayed on an external monitor connected to the video output connector.

both Simultaneously sends the screen output to both the internal display and the external monitor connected to the video output connector.

You can toggle between the internal display and the external monitor from your keyboard using the **FN-CRT** keys as described on page 2-19.

Config Wakeup

The **config wakeup** command schedules when the system will wake up from standby. This command has the following format:

```
config wakeup = hour: minute [,hourly | ,daily]
[,boot |,resume] [off]
```

where

hour Specifies the hour of the day when the system will wake up from standby. Values are 0 through 23, representing the hour on a 24-hour clock.

minute Specifies the minute when the system will wake up from standby. Values are 0 through 59.

hourly Directs the system to wake up from standby every hour at *minute* past the hour.

daily Directs the system to wake up from standby every day at *hour:minute*.

boot Indicates the wake up is to be in the form of a warm boot; the application in process when standby was entered will no longer be running.

resume Indicates the wake up is to be in the form of a resume, or exit from standby; the application in process when standby was entered is available.

off Cancels the scheduled wake up.

CAUTION

If you set **config wakeup = boot**, your computer reboots every time you leave standby mode. The reboot occurs regardless of how you entered standby mode. If you have **config wakeup = boot** set, use the command **config wakeup = off** to clear it.

For example, if you issue the following command so the computer wakes up from standby at 7:30 a.m.

```
config wakeup = 7:30,daily
```

The wakeup is repeated every day (**daily**) at 7:30 until the command is cancelled (**config wakeup = off**).

Config /?

The **config /?** command provides syntax on the options of the **config** command which are available for your computer. This command has the following format:

```
config /?
```

Testing the Screen Digitizer

The PenDraw program allows you to check the calibration of the screen digitizer, to make sure that the pen is being located with the best accuracy when it is touched to the screen.

There are two methods for starting the digitizer test program:

- Choose "Test screen digitizer" from the Executive Menu.
- Run the program **pendraw**, which is on the hard drive or the Utilities diskette.

When you start the program, the test screen shown in Figure 9-10 is displayed. This is a test screen on which you can draw with the pen. The pen leaves "electronic ink" as you draw with it. You can test the screen digitizer calibration by drawing exactly on top of the lines shown on the screen. If the electronic ink closely matches the lines, then the screen is calibrated properly. The screen digitizer is calibrated at the factory and should never need to be recalibrated.

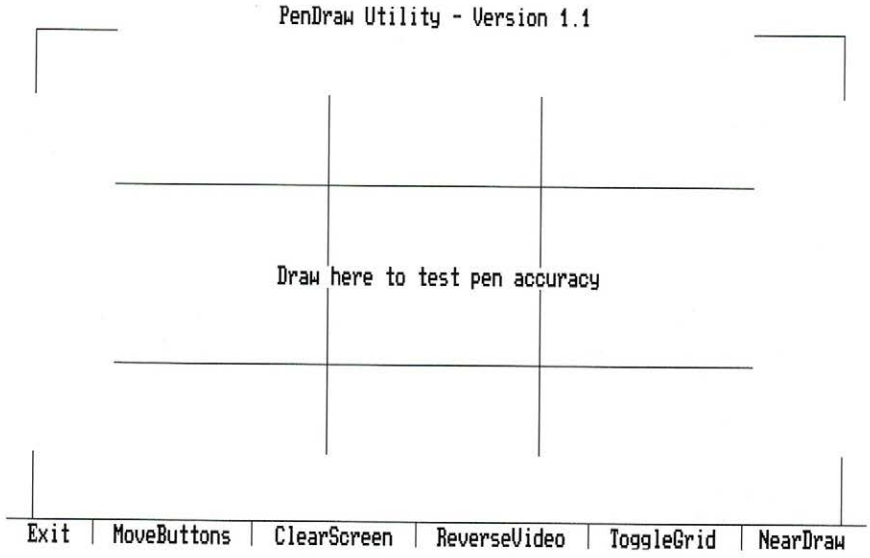

Figure 9-10. Digitizer Test Screen

The buttons at the bottom of the test screen allow you to:

- Exit—Return to the Executive Menu.

- Move buttons—Move the row of buttons to the top of the screen (or back to the bottom of the screen).
- Clear screen—Remove the electronic ink and refresh the test screen.
- Reverse video—Toggle between the light and dark background.
- Toggle grid—Turn on and off the lines on the test screen.
- Near draw/Down draw—Change to Near draw (when the NearDraw button is displayed) or change to Down draw (when the DownDraw button is displayed). Near draw means the electronic ink is deposited if the pen is near the screen. Down draw means electronic ink is deposited only if the pen is in contact with the screen.

Microsoft Windows

Selecting "Run Microsoft Windows" from the Executive Menu loads the Microsoft Windows for Pen Computing Software.

You can also start Windows by typing the command win from the MS-DOS prompt.

GRiD Systems has added some features to the Control Panel to support the GRiD Convertible computer. These include:

- The Configure option in the Pen icon lets you specify your pen characteristics.
- The Rotate icon shows the directions in which the GRiD Convertible can be rotated.
- The Calibrate icon lets you calibrate your pen and digitizer.
- The GRiD Power icon lets you set the screen backlight timeout and the hard disk timeout.

Exit to DOS

Select this option from the Executive Menu to return to the MS-DOS prompt. You must use the keyboard to continue to enter commands.

Some additional MS-DOS commands have been added by GRiD Systems to allow you to take advantage of various hardware features of your GRiD Convertible computer. These commands are described here. The commands are in the *gridutil* directory on your hard drive and on the diskette labeled GRiD Model 2260 Utilities and Diagnostics.

Cardbatt

The batteries in your storage PC Cards have a life of approximately six months after they are installed. You can check the status of the battery in a card installed in the PCMCIA slot with the **cardbatt** command. The format of this command is:

cardbatt *drive:*

where *drive* is the device designator for the PCMCIA slot (usually either D or E).

The *cmcdd.sys* driver must be loaded in the *config.sys* file in order to run the command.

One of the following messages is issued telling you the battery status:

The PCMCIA battery is good.
The PCMCIA battery is low.
The PCMCIA battery is dead.

If the battery is low, you should change it immediately; refer to the section Changing a Storage PC Card Battery on page 5-6. If the battery is dead, the storage PC Card is no longer usable. It must be reformatted as described in Chapter 5.

Setpass

You can protect your system from unauthorized use by setting a password. If you set a password on your computer, you are required to enter the password each time you turn on or restart the computer.

To set or change a password, type the following command at the DOS prompt:

setpass

The password screen is displayed, giving you the ability to add a new password, change an existing password, or disable the password. The password screen provides all the instructions you need to use the password facility. Once you have set (or enabled) a password, you must enter that exact password each time you turn on or restart the computer to gain access to your files and programs. If you enter a wrong password at the password prompt, your computer will restart each time until you enter the correct password. If you forget your password and are in the U.S., call the GRiD Resource Center at 1-800-654-GRID (4743) for assistance. Outside the U.S., contact your local GRiD representative or distributor. While GRiD Systems will try to help you if you forget your password, remembering the password is your responsibility.

Devices

The **devices** command displays a report of all devices recognized by the system. This command has the following format:

devices

The devices command displays a report of all the devices recognized by the system, including devices installed in the *config.sys* file. Devices installed in the *config.sys* file are referred to as "user-installed" devices.

If the display is in 40-column mode when the **devices** command is used, the display is automatically reset to 80-column mode to display the device list.

Penmouse

The *penmouse.com* driver is a software-based mouse emulation driver. It lets your pen emulate the industry-standard Microsoft mouse. Penmouse is loaded at the MS-DOS prompt and has the following syntax:

```
penmouse [ON | OFF] [/Lx] [/Rx]
```

where

OFF Removes *penmouse.com* from memory if it is installed and safe to remove it.

ON Reinitializes the driver and reloads it is it is not loaded.

/L*x* Maps the left mouse button.

/R*x* Maps the right mouse button.

x describes the state of the pen to map to the mouse. It is "d" if pen down is used, and "1" if a barrel button is used.

Example: The default on the GRiD Convertible computer is /Ld, meaning the pen emulates the left mouse button when the pen is down, and /R1, meaning the barrel button emulates the right mouse button.

NOTE: Penmouse may not work properly with other applications that use the pen.

APPENDIX A: GRID CONVERTIBLE COMPUTER SPECIFICATIONS

Table A-1 shows the model numbers of the different configurations of the GRiD Convertible computers. The computer specifications are given in Table A-2.

Table A-1. GRiD Convertible Computer Model Numbers

Computer Configuration	Model Number
GRiD Convertible with internal hard drive	2260
GRiD Convertible with internal hard drive and V.22bis/V.42bis 2400bps/9600 bpsFAX modem	2261
GRiD Convertible with internal hard drive and V.32bis/V.42bis 14400 bps/9600 bps FAX modem	2262

Table A-2. GRiD Convertible Computer Specifications

Microprocessor	
Main microprocessor	80386SL CPU, operating at 25 or 12.5 MHz
Numeric coprocessor	CX87SLC
Display	
LCD	9.5-inch diagonal, sidelit LCD; 640 x 480-pixel, PC-compatible VGA display, with an aspect ratio of 1:1; 64 gray scales

Table A-2. GRiD Convertible Computer Specifications (continued)

Memory	
RAM	2 MB standard; 4 or 8 MB optional
Storage	
Internal hard drive	
1 MB storage PC Card Model M03-9019	1 MB storage PC Card (68-pin PCMCIA 2.0 standard) fits into the PCMCIA slot.
2 MB storage PC Card Model M03-9021	2 MB storage card (68-pin PCMCIA 2.0 standard) fits into the PCMCIA slot.
Floppy diskette drive	External 3.5-inch high-density (1.44 MB) diskette drive reads, writes, and formats both 1.44 MB and 720 kB diskettes.
Communications Options	
V.22bis/V.42bis 2400 bps/FAX modem	2400 bits-per-second (bps) Hayes Smartmodem 2400 compatible; auto-dial, auto-answer; V.42 and Microcom Networking Protocol (MNP) Classes 2 through 4 error correction, as well as V.42bis and MNP Class 5 data compression support. Supports 9600 bps send/receive Group III facsimile transmission.
V.32bis/V.42bis 14400 bps/FAX modem	14400 bits-per-second (bps) Hayes compatible; auto-dial, auto-answer; V.42 and Microcom Networking Protocol (MNP) Classes 2 through 4 error correction, as well as V.42bis and MNP Class 5 data compression support. Supports 9600 bps send/receive Group III facsimile transmission.

Table A-2. GRiD Convertible Computer Specifications (continued)

Interfaces	
Serial	RS-232C 9-pin, with support for bar code readers.
Monitor	Analog VGA, 15-pin connector.
Phone jack (optional)	One modular telephone jack for internal modem (RJ-12 jack).
Parallel/Floppy	26-pin microminiature connector.
Pen Model G44-1364	Provides a method of input and mouse pointing functions.
Other Features	
System Indicators	Nine LEDs show power/standby, disk activity, processor speed, battery status, CapLk, KeyPd, NmLk, CRT, and ScrLk status.
Audio	Internal speaker, voice quality.
Clock/calendar	Internal, lithium battery-powered.
Bridge battery	Internal, NiCad battery provides standby mode power while changing the battery pack.

Table A-2. GRiD Convertible Computer Specifications (continued)

Power	
Computer requirements	8 to 15 Vdc, 17 W, 100 mV p-p max. noise.
Sources:	
Battery (Model G44-1377)	Removable, rechargeable A-cell battery pack provides 2-4 hours of life in full use, 6-8 hours of life in typical use.
Power supply (Model G44-1368)	Requires 100-240 Vac, at 47-63 or 400 Hz, autosensing; supplies 12 Vdc, 30 W (without battery charging).
Auto adapter (Model G44-1384)	Connects power from a 12 Vdc cigarette-lighter socket.
Optional battery (Model G44-1379)	Removable, rechargeable C-cell battery pack provides approximately 60 percent more battery life than the A-cell battery.

Floppy Diskette Drive Specifications	
Capacity formatted	1,474 kB and 737 kB
Transfer rate (kilobits/sec)	250 and 500
Maximum recording density (bpi)	17,434
Track density (tpi)	135
Rotation speed (rpm)	300
Average seek time (msec)	95
Track-to-track seek time (msec)	3
Average latency (msec)	100

Table A-2. GRiD Convertible Computer Specifications (continued)

Physical Characteristics	
Case	Die-cast magnesium and injection-molded thermoplastic
Weight	5.5 lbs (2.5 Kg), with standard battery pack 6.0 lbs (2.7 Kg), with optional battery pack
Height	1.6 inches (4.2 cm)
Width	11.5 inches (29.2 cm)
Depth	9.3 inches (23.7 cm)
Temperature	
Operating	5° to 40° C (41° to 104° F)
Storage	-20° to 60° C (-4° to 140° F)
Relative humidity	
Operating	10% to 80% noncondensing
Storage	5% to 90% noncondensing
Shock tolerance	
Operating	10g
Nonoperating	80g
Vibration tolerance	
Operating	5-200-5 Hz at 1.0g
Nonoperating	5-200-5 Hz at 4.0g
Altitude	
Operating	10,000 feet (3,048 meters)
Nonoperating	40,000 feet (12,191 meters)
Electrostatic discharge	12 kV

Table A-3. GRiD Convertible Power Budget

Feature	Watts
Backlight Maximum Brightness	3.5
Backlight Minimum Brightness	1.75
LCD	.37
Hard Disk Seeking	1.77
Hard Disk Idle	1.45
Hard Disk Spun Down	.10
Modem Connected	.48
Modem Idle	.08
CRT Video Electronics	.20
Floppy Drive Seeking	1.45
Floppy Drive Idle	.11
CPU High Speed	6.24
CPU Low Speed	5.84
CPU Idle	3.74
Standby Power with 2 MB DRAM	.54
Standby Power with 4 MB DRAM	.59
Standby Power with 8 MB DRAM	.65

Table A-4. Sample Battery Life Calculations

Feature	Number of Watts Required
Backlight Minimum - 100%	1.75
LCD On - 100%	.37
Hard Disk (5% seek, 10% idle, 85% spun down)	.3815
Modem Idle - 100%	.08
CRT Off	0
No floppy	0
CPU (75% idle, 25% full speed)	4.365
Total watts required	6.88
A-cell battery life (13.44 Watt hours)	1.95 hours @ 6.9 Watts
C-cell battery life (22.08 Watt hours)	3.21 hours @ 6.9 Watts

APPENDIX B:
ADDING OPTIONAL RAM

Your computer comes with 2 MB of RAM. However, you can install an internal 2 MB module for a total of 4 MB of memory, or a 6 MB module for a total of 8 MB of memory.

The computer has 640 kB of standard memory and 1408 kB of extended memory. Depending on the requirements of the operating system and the applications you run, you can configure extra memory you add as extended or expanded memory, using a software expanded memory driver.

Perform the following steps to install the RAM module.

1. Turn off the computer and unplug the power supply.

CAUTION

You must turn off the computer before attempting to install the RAM. Otherwise, you may damage your computer.

2. Turn over the computer so the bottom is accessible.

3. Use a Phillips-head screwdriver to remove the two screws from the RAM module cover, as shown in Figure B-1.

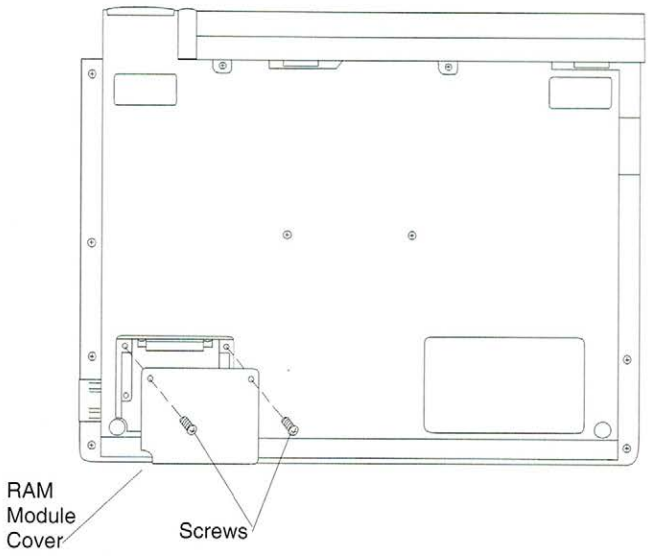

Figure B-1. Removing the RAM Module Cover

4. Lift out the RAM module cover from the bottom of the computer.

CAUTION

Prior to installing the RAM module, touch the metal plate inside the computer with one hand while holding the RAM module in the other hand. This will safely discharge any static charge that may be built up on your body or on the module prior to its installation.

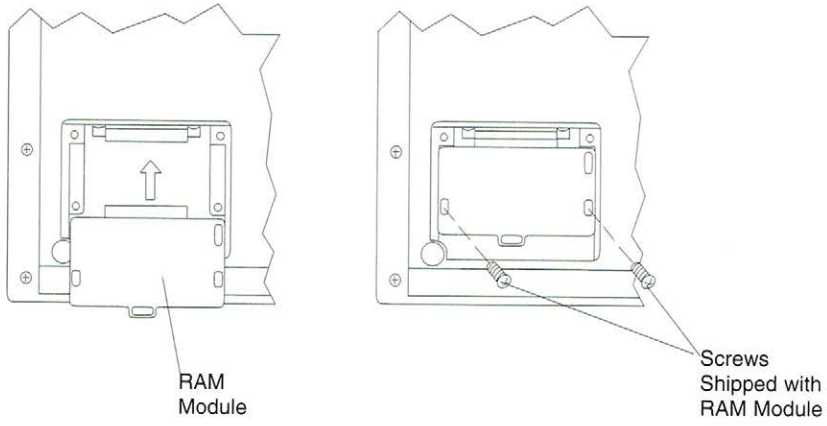

Figure B-2. Installing the RAM Module

5. Position the RAM module so the arrow on the connector is toward the inside of the computer. Install the module by pushing it into the slot until it snaps into position.

6. Install the two screws that were in the box with the RAM module into the positions shown in Figure B-2.

7. Replace the RAM module cover; refer to Figure B-1. Replace the two screws removed in Step 3.

8. Connect the power supply (if you are using one) and turn on the computer.

APPENDIX C: TECHNICAL INFORMATION

This appendix contains information about the memory usage in the GRiD Convertible computer and information about the pinouts of the interface connectors.

System Memory

Main memory for the GRiD Convertible computer is two megabytes of dynamic RAM.

Main memory is allocated starting at the low end of the available address space (address 0h). The memory from 0h to 9FFFFh (640 kB) is conventional MS-DOS memory. The memory from A0000h to FFFFFh (384 kB) is reserved for video, the EMS page frame, the BIOS, and other system functions. The first one megabyte of system memory is allocated as shown in Figure C-1.

The starting address of the 64 kB EMS page frame is located at C0000h.

The additional system memory can be used as EMS memory when you install the EMS device driver. Refer to the section Using Expanded Memory, beginning on page 8-3, for more information on using EMS memory.

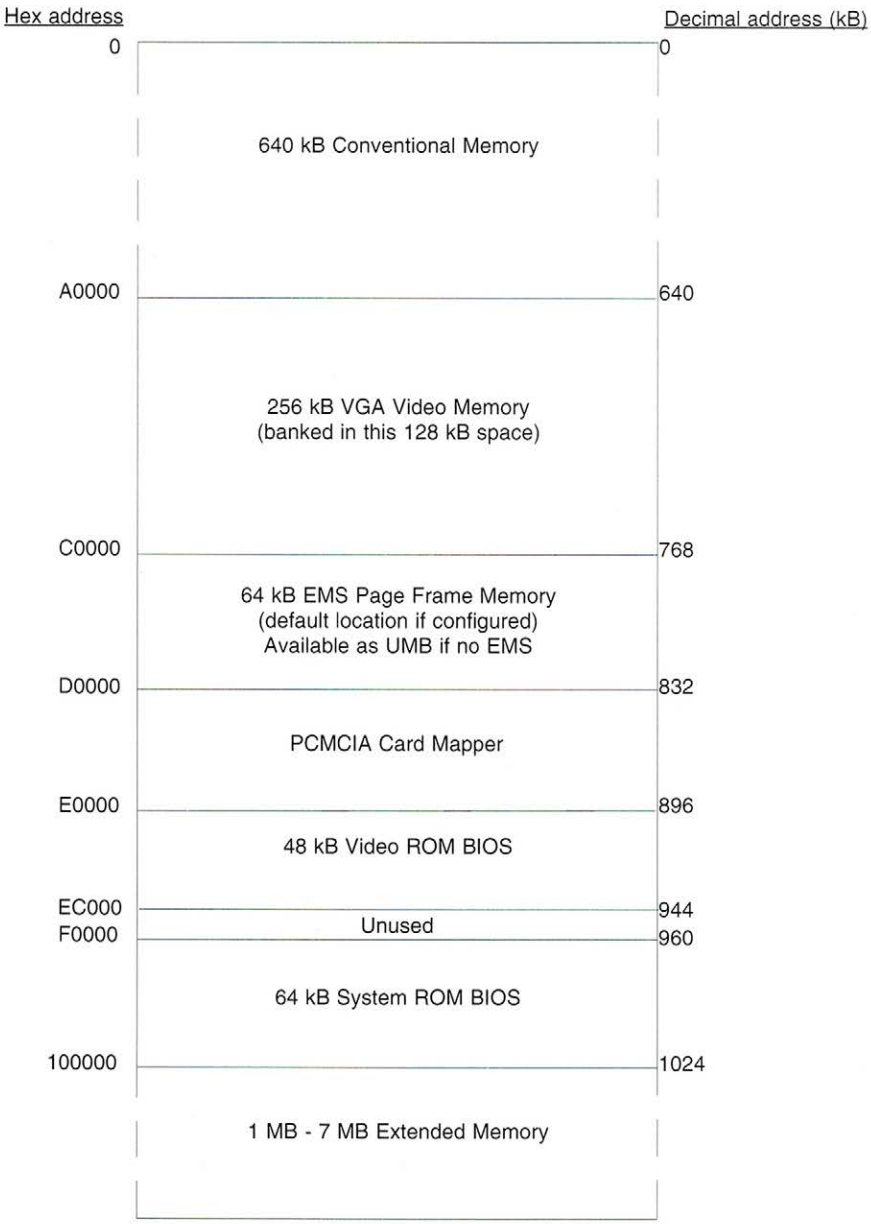

Figure C-1. Memory Map

Connectors

This section gives the pinout information for each of the interface connectors on the computer.

NOTE: The tilde (~) symbol after a signal name means that signal is "true" or "active" in its low state.

Power Connector

The power connector is an 8-pin round connector. It is used to connect the power supply to the computer using the power cable.

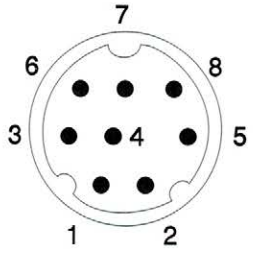

Figure C-2. Power Connector Layout

Table C-1. Power Connector Pinouts

Pin	Signal
1	Ground
2	External Power
3	Ground
4	Battery Charge Enable~
5	External Power
6	Battery Positive Current Sense Voltage
7	Battery Negative Current Sense Voltage
8	Battery Rapid Charge Status~

Telephone Connector

Computers equipped with an optional internal modem contain one telephone connector. The telephone connector is a 6-pin RJ-12C connector that allows you to connect the telephone line to the computer. Figure C-3 shows the telephone connector and Table C-2 gives the pinouts for the telephone connector.

The telephone connector accepts and is compatible with the 6-pin RJ-11C telephone plugs that are standard in the U.S.

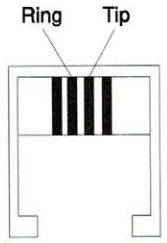

Figure C-3. Telephone Connector

Table C-2. Telephone Connector Pinouts

Pin	Signal (U.S.)	Signal (International)
1	Not connected	EQL3
2	Not connected	EQL2
3	Ring	Ring
4	Tip	Tip
5	Not connected	EQL1
6	Not connected	IA

Serial Port

The serial port is a 9-pin D-shaped RS-232C connector. The serial port is a Data Terminal Equipment (DTE) input/output port for use with a serial printer, external modem, mouse, bar code reader, or other serial peripheral. You can configure the

serial port using the MS-DOS commands **mode com*n*** and **config serial**. Refer to the MS-DOS Quick Reference in Chapter 8 and the description of the **config serial** command on page 9-23, for further information.

Figure C-4 shows the Serial connector and Table C-3 gives the pinouts for the Serial connector.

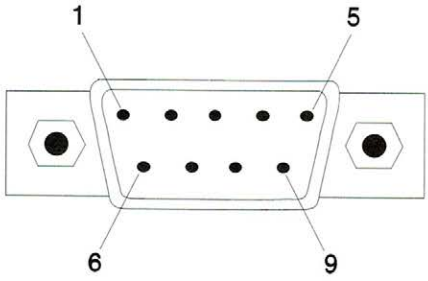

Figure C-4. Serial Connector

Table C-3. Serial Connector Pinouts

Pin	Signal
1	Carrier Detect
2	Received Data
3	Transmitted Data
4	Data Terminal Ready
5	Signal Ground
6	Data Set Ready
7	Request To Send
8	Clear To Send
9	Ring Detect or +5V dc (changeable with **config serial** command)

Parallel/Floppy Connector

The D-type 26-pin microminiature connector is used to connect the external floppy diskette drive. It also receives the printer adapter cable and provides a 25-pin D-type parallel connector.

Figure C-5 shows the Parallel/Floppy connector and Table C-4 gives the pinouts for the Parallel/Floppy connector.

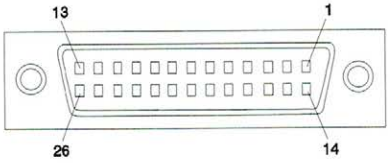

Figure C-5. Parallel/Floppy Connector

Table C-4. Parallel/Floppy Connector Pinouts

Pin	Signal - Floppy	Signal - Printer
1	Drive Select~	Strobe~
2	Motor On~	Data Bit 0
3	Step~	Data Bit 1
4	Data Write~	Data Bit 2
5	Write Gate~	Data Bit 3
6	Head Select	Data Bit 4
7	Low Density~	Data Bit 5
8	Low Density	Data Bit 6
9	Direction	Data Bit 7
10	Unused	Acknowledge~
11	Write protect	Busy
12	Unused	Paper End~
13	Disk Change	Select
14	Data Read~	Automatic Line Feed~
15	Unused	Error~
16	Track 00~	Initialize~
17	Index~	Select in~
18	Ground	Ground

Pin	Signal - Floppy	Signal - Printer
19	Ground	Ground
20	Ground	Ground
21	Ground	Ground
22	Ground	Ground
23	Ground	Ground
24	Parallel Port Key Low	No connect
25	Floppy Power	No connect
26	Floppy Power	No connect

Figure C-6 shows the Parallel connector on the printer adapter cable, and Table C-5 gives the pinouts for the parallel connector on the printer adapter cable.

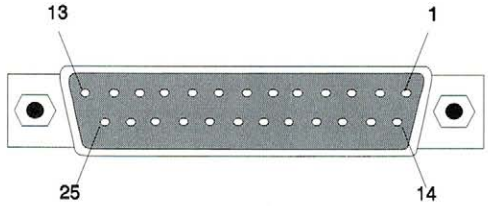

Figure C-6. Parallel Connector on Printer Adapter Cable

Table C-5. Parallel Connector Pinouts

Pin	Signal	Pin	Signal
1	Strobe~	14	Automatic Line Feed~
2	Data Bit 0	15	Error~
3	Data Bit 1	16	Initialize~
4	Data Bit 2	17	Select in~
5	Data Bit 3	18	Ground
6	Data Bit 4	19	Ground
7	Data Bit 5	20	Ground
8	Data Bit 6	21	Ground
9	Data Bit 7	22	Ground
10	Acknowledge~	23	Ground
11	Busy	24	Ground
12	Paper End~	25	Ground
13	Select		

Monitor Connector

The D-type 15-pin Monitor connector supplies analog video signals for an external VGA color video monitor and a composite monochrome signal for a VGA monochrome video monitor.

Figure C-7 shows the Monitor connector and Table C-6 gives the pinouts for the Monitor connector. Table C-7 lists the video modes supported for external monitors.

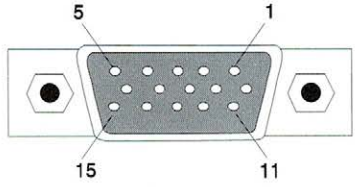

Figure C-7. Monitor Connector

Table C-6. Monitor Connector Pinouts

Pin	Signal
1	Red
2	Green
3	Blue
4	Monitor Type 1
5	Ground
6	Ground
7	Ground
8	Ground
9	Not connected
10	Ground
11	Monitor Type 2
12	Monitor Type 3
13	Horizontal Sync
14	Vertical Sync
15	Not connected

Table C-7. Video Modes for External Monitor

The GRiD Convertible supports all of the standard VGA video modes plus the following extensions.

Mode (Hex)	Resolution	Colors	Type	Supported on Panel?	Standard VGA Monitor?	Multi-sync Monitor?	Text Columns and Rows
40	900x390	16	Text	No	Yes	Yes	100x30
41	800x400	16	Text	No	Yes	Yes	100x50
42	800x480	16	Text	No	Yes	Yes	100x60
43	800x600	16	Text	No	No	Yes	100x75
50	1056x390	16	Text	No	No	Yes	132x30
51	1056x400	16	Text	No	No	Yes	132x50
52	1056x480	16	Text	No	No	Yes	132x60
53	640x480	16	Text	Yes	Yes	Yes	80x60
62	640x450	16	Graphic	Yes	Yes	Yes	80x28
63	720x540	16	Graphic	Yes	Yes	Yes	90x33
64	800x600	16	Graphic	No	No	Yes	100x37
70	360x480	256	Graphic	Yes	Yes	Yes	45x30

Interrupt Allocation

You may occasionally find it necessary to change interrupt assignments for the internal modem and the parallel port. Therefore, the PCIC interrupt configuration is provided in Table C-8.

Table C-8. PCIC Interrupt Configuration

Interrupt	Connection
IRQ15	Direct to 82360SL
IRQ14	No connect
IRQ13	Not supported by 82360SL
IRQ12	Direct to 82360SL
IRQ11	No connect
IRQ10	No connect
IRQ9	Direct to 82360SL
IRQ8	Not supported by 82360SL
IRQ7	Direct to 82360SL (shared with 82360SL parallel port LPT1)
IRQ6	Not supported by 82360SL
IRQ5	Direct to 82360SL (shared with 82360SL parallel port LPT2)
IRQ4	Multiplexed with internal modem and RS-232 ports
IRQ3	Multiplexed with internal modem and RS-232 ports
IRQ2	Not supported by 82360SL
IRQ1	Not supported by 82360SL

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