SYSTEMSOFT®

CardSoft™ 5.3

User's Guide

DOS Version

Revision 2.0
May 1997

Distributed by RTD Embedded Technologies, Inc.
SWM-640020003
rev B

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***CardSoft* 5.02**
Software
User's Guide
Revision: 2.0

May 1997

Preface

This document is written for users of SystemSoft's *CardSoft* 5.02 and CardBoot PCMCIA products. The manual contains a *CardSoft* User section and a *CardSoft* Advanced User section (which includes instructions on using CardBoot).

This manual is organized as follows:

Part 1: *CardSoft* User's Guide

Chapter 1 describes how to install the *CardSoft* and Flash File System software, and defines the beep sequences that are heard when you insert a PC Card into a slot. It also describes how to configure your system's memory manager (if you are using one) to prevent a conflict with *CardSoft*.

Chapter 2 describes the *CardSoft* commands, CSALLOC and CARDINFO, that are provided to help you configure and manage your PCMCIA system. It also describes how to use the *CardSoft* Configuration Utility to change the generic configuration settings for modem, network, and ATA Drive cards.

Chapter 3 describes how to prepare and use removable storage cards (ATA Drive cards and SRAM cards.

Part 2: *CardSoft* Advanced User's Guide

Chapter 4 describes how to customize your system by modifying CONFIG.SYS and CSALLOC.INI. It also describes how to use the Resource Allocation function of the Configuration utility to change how resources are assigned on your system.

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Part 1

CardSoft 5.02
User's Guide

Chapter 1

Introduction

Installing the Software

The Installation Utility displays step-by-step instructions for installing the *CardSoft* software. Although the procedure is easy to follow, the instructions in this section provide additional details on considerations to be taken into account during the *CardSoft* installation process. If you received *CardSoft* with optional Flash File System support, the installation procedure is the same (with the exception that different driver files are installed in CONFIG.SYS).

Note *Some computer manufacturers install the CardSoft software at the factory. The standard default directory is CardSoft. Some manufacturers may install CardSoft in a different directory. Please refer to the documentation that came with your computer to determine if this is the case. To check whether or not CardSoft is already installed on your computer, type* `cd cardsoft` *from the DOS prompt (C:\), then press Enter. If the message "Invalid directory" is displayed, follow the procedures in this chapter to install the software. If the prompt* `C:\cardsoft` *appears, it means the software is already installed; read the next section, "Before You Begin", then go to Chapter 2.*

Installation Diskette

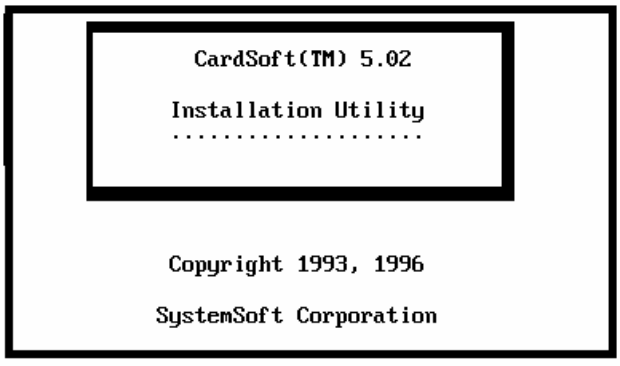
The installation diskette contains the install program files.

CardSoft Installation

1. Insert the installation diskette.
2. At the DOS command line, type **a:**, then press Enter.
3. At the A:\ prompt, type **install** and press Enter. Then follow the on-screen instructions. If you need help with a particular screen, refer to the following sections for more information. On most screens, use the ↑ or ↓ arrow key to highlight your selection, then press Enter.
4. After the software is installed, reboot your system to activate the *CardSoft* drivers.

Initial Screen

The initial installation screen will appear.



To continue the installation, press any key. Press the <ESC> key to quit the installation.

Installation Options

The CardSoft Installation Options screen will appear.

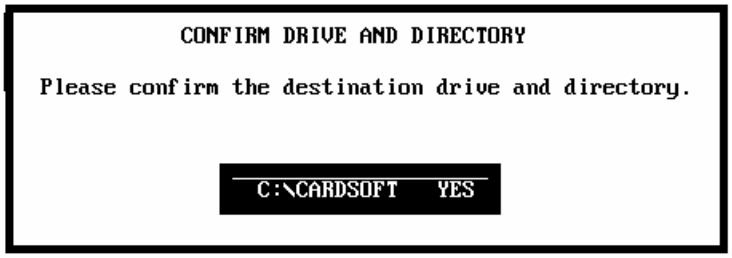
To install the entire CardSoft package select **WITH Flash Support**. To install CardSoft without Flash Support, select **WITHOUT Flash Support**.

If you are adding Flash Support to CardSoft, select **Add Flash Support**.

Destination Directory

Specify the directory in which you want to install the *CardSoft* software. We recommend that you use the default, CARDSOFT. To change the default, use the backspace key to delete CARDSOFT, then type in the desired directory name.

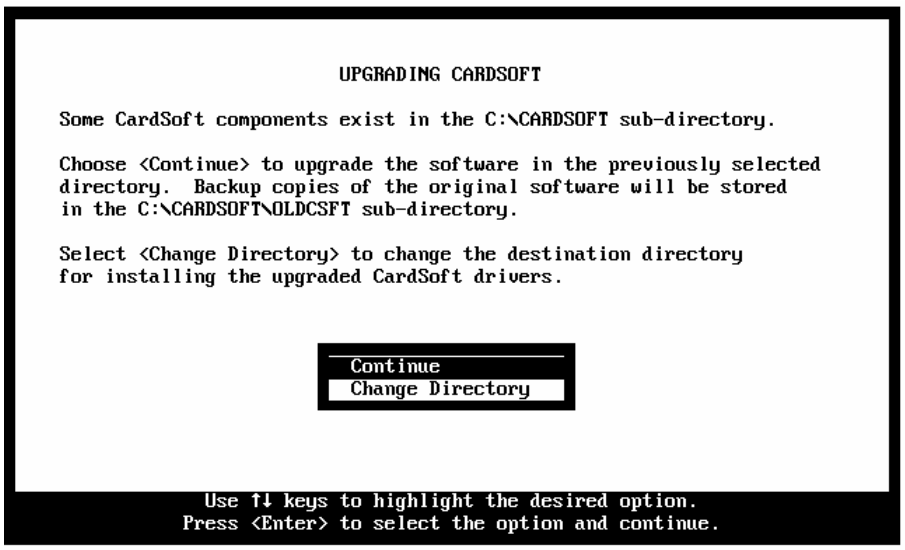
You will then be asked to confirm the destination drive and directory for this installation.



Previous Installation Detected

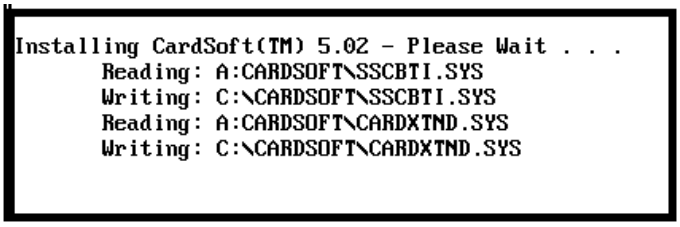
If you had previously installed CardSoft, the **Upgrading CardSoft** Screen would appear at this point: Select either Continue to install into the CARDSOFT directory or select another directory for this installation.

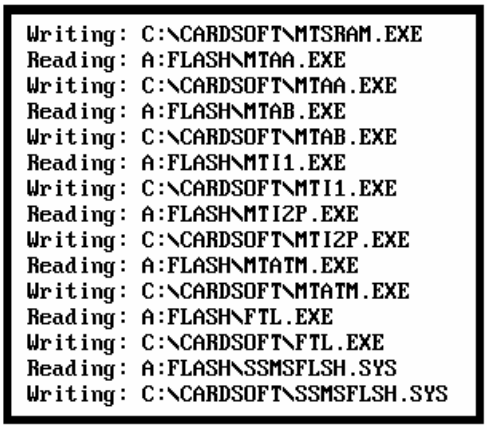
Note *If CardSoft was previously installed, you will see a screen similar to the following. In this case, choose **Continue** to install the new version of CardSoft into the directory where the previous version was installed or choose **Change Directory** to install the latest version of CardSoft into a new directory.*



Installation (Continued)

CardSoft files will then be copied to your hard drive.

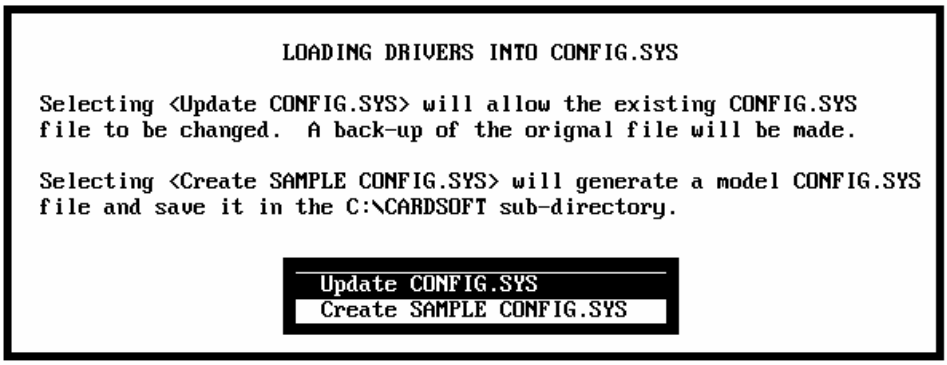




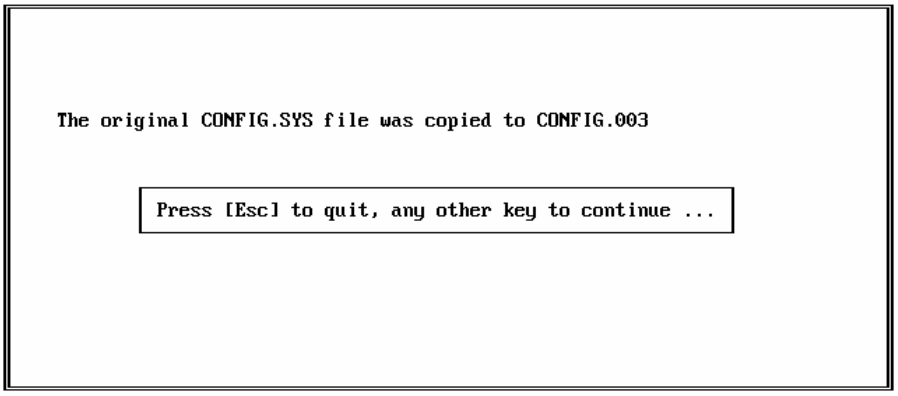
Modifying the CONFIG.SYS File

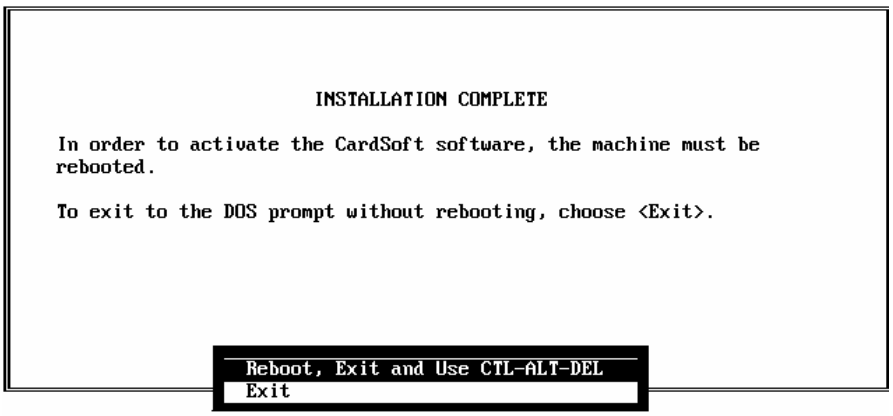
Loading CardSoft involves modifying the CONFIG.SYS file so that the desired drivers are automatically loaded when the system is booted. The installation program can automatically update the CONFIG.SYS file, or it can write to another (model) file which you can refer to in manually updating your CONFIG.SYS file.

A screen similar to the following may appear:



If you allow the installation program to update the CONFIG.SYS file, a screen similar to the following will appear:





You can then either reboot or return to DOS. You will need to reboot to activate the CardSoft software. Be sure to remove you CardSoft installation diskette.

Using TDK CD02x Ethernet Cards

If you wish to use the TDK CD02x Ethernet card with CardSoft 5.02, it is necessary to make one small change to enable this card. In the subdirectory where CardSoft is installed, a file exists called CARDID.INI. Edit this file using any text editor and add the following line to the [Libraries] section:

CardLib=TDKLAN2.CLB

Save the CARDID.INI file and restart your system.

Using Xircom CE-10BT and CE-10B2 Ethernet LAN Cards

The CardSoft 5.02 package provides support for the Xircom CE-10BT and CE-10B2 Ethernet cards. In most cases, you should use the software drivers supplied by Xircom to enable this LAN card. In the event that you want CardSoft 5.02 to configure the Xircom cards, it is necessary to make one small change. In the subdirectory where CardSoft is installed, a file exists called CARDID.INI. Edit this file using any text editor and add the following line to the [Libraries] section:

CardLib=XIRCOM.CLB

Save the CARDID.INI file and restart your system.

Advanced Power Management

Your system is designed to conserve battery life through the use of Advanced Power Management drivers which are installed when the following line in your CONFIG.SYS file is executed:

INSTALL=C:\CARDSOFT\CS_APM.EXE

Removing *CardSoft* From Your System

1. To de-install *CardSoft*: Delete all relevant CardSoft lines from your CONFIG.SYS directory.
2. Delete all files from the CARDSOFT directory.
3. Reboot the system.

Chapter 2

Using the *CardSoft* Utilities

This chapter describes how to use the *CardSoft* utilities and commands (CONFIG, CSALLOC, and CARDINFO) to help you configure and manage PC cards on your system.

Using CSALLOC

CSALLOC is a DOS program that scans the system for available memory (MEM), I/O Port (IOP), and Interrupt Request Line (IRQ) resources. It is also able to write this information to the file CSALLOC.INI, which is used by *CardSoft* to determine what system resources can be used by your PC cards.

For example, other hardware or software on your system may need to use certain system resources in order to work properly. If *CardSoft* were to use these resources, then the hardware (or software) might not work. CSALLOC makes sure that *CardSoft* does not use resources that are needed for something else.

In addition, CSALLOC:

- Scans upper memory for Read Only Memory (ROM)
- Scans for the Extended Memory driver
- Checks for the presence of HIGH memory
- Checks for the availability of Upper Memory Blocks (UMBs)
- Checks for the presence of the XMS driver.
- Enables you to display the current resource status of *CardSoft*.
- Directly checks PNP ISA BIOS for I/O and IRQ settings (no scan necessary).

When to Run CSALLOC

CSALLOC runs automatically as part of the *CardSoft* installation and also when you start your system. During installation, a CSALLOC.INI file is created. As a result, you need to run CSALLOC from the *CardSoft* subdirectory (`c:\cardsoft\csalloc`) only when you need to display which system resources are being made available to *CardSoft*. Also, if you have changed I/O Port, IRQ, or memory settings on your system (for example, if you change your COM Port settings in Windows, or you enable the XMS memory manager driver), you should run CSALLOC to scan the system for available resources and create an updated CSALLOC.INI. You should also run CSALLOC whenever you install new hardware or software that requires specific system resources, so that the resources required by the newly-installed item do not conflict with *CardSoft*.

How to Run CSALLOC

CSALLOC can only be run from the DOS command line. To run it, change to the *CardSoft* directory (`cd cardsoft`), then type one of the following commands (shown in bold type) and press Enter:

csalloc/h or csalloc/?
Will provide a listing of available CSALLOC switches.

csalloc /s
You should use this command only if your system contains a Plug-and-Play (PnP) BIOS. When you enter this command, CSALLOC forces a scan of system resources, instead of relying on the PnP BIOS to inform CSALLOC as to how system resources are assigned.

csalloc /r
When you enter this command, CSALLOC displays the current status of memory (MEM), I/O Port address (IOP), and IRQ resources on your system, as shown in the following example. Resources marked with an (R) are reserved for use by your PC cards or other system component (for example, 3F8-3FF is always reserved, since it is assigned to system COM Port 1). Resources marked with an (A) are already allocated for use by *CardSoft*. Resources marked with an (S) are shared resources (that is, they can be shared by several system components without creating a conflict).

Example:
MEM:
D000-DFFF

IOP:
108-16F, 170-177(R), 178-1EF, 1F8-2E7, 2E8-2EF(R), 2F0-2F7, 2F8-2FF (R), 300-36F, 370-377 (R), 380-3BF, 3E8-3EF(R), 508-5EF (R), 5F8-6F6 (R), 6F7-777(R), 780-7BF(R), 7E8-7EF(R), 908-9EF(R), 9F8-AF6 (R), AF7-B77(R), B80-BBF(R), BE8-BEF(R), D08-DEF(R), DF8-EF6(R), EF7-F77(R), F80-FBF(R), FE8-FEF(R)

IRQ:
3, 5, 9, A, B, C(R), D

DMA8:

DMA16:

(A) - Allocated. (R) - Reserved. (S) Shared.

Note *For a description of the resource lines (MEM, IO, etc.), see Chapter 4.*

You can cause resources to be included, excluded, reserved, or shared, either by modifying CSALLOC.INI, or by using the Configuration Utility. For more information, see Chapter 4.

Using CARDINFO

CARDINFO is a DOS program that scans the PCMCIA slots on your computer and lists information about the cards in these slots. Also, if any of the slots contain cards when you start your computer, CARDINFO lists any warnings or error messages that may have occurred when *CardSoft* attempted to configure these cards.

When to Run CARDINFO

CARDINFO can be run at any time. Normally, you should run CARDINFO if:

- You need to know the types of cards that are currently inserted in your PCMCIA slots.
- You need to know the I/O Ports, IRQs, and Memory areas that are being used by your PC cards. This information may be needed if you are installing other components on your system, and you need to know if there is going to be a conflict between the new component and a PC card that you are currently using. ("Conflict" means that the new component and a PC card are trying to use the same resource, such as an IRQ interrupt; if this happens, either the PC card or the new component would have to be reconfigured to use other resources that are available.)
- You want to turn off (or turn on) power to a PCMCIA slot that contains a PC card.
- You want to display manufacturer and product information about your PC cards.
- You need to know the drive letter for your ATA Hard Disk or ATA Flash Disk card.
- You need to know the latest error that occurred for an inserted card.

How to Run CARDINFO

CARDINFO can be run in several modes from the *CardSoft* subdirectory DOS command line. To run it, change to your *CardSoft* directory `(cd cardsoft)`, then type one of the following commands at the DOS prompt. CARDINFO can be run from within a Microsoft Windows DOS window; you do not have to exit Windows to run CARDINFO.

cardinfo — Runs CARDINFO in non-verbose mode. When you enter this command at the DOS prompt, information similar to the following is displayed:

```
Slot 0
        Manufacturer = Q293-C
        Product Name = DATA/FAX MODEM
        Card Type = Modem (COM 3)

Slot 1
        Slot 1 is empty
```

cardinfo /v ¦ more — Runs CARDINFO in verbose mode, which displays more extensive information about the PCMCIA slots in your computer. (We recommend that you use the DOS "more" switch with this command, since the information may require more than one screen to be displayed). The following section contains an example of CARDINFO information using the /v switch. The type of information that is displayed depends on the type of cards that your PCMCIA slots contain.

cardinfo /c — Provides the following additional Card Services information.

- Card Services Release Number
- Vendor Revision Number
- Number of slots
- Vendor copyright information

	This command gives you the ability to view manufacturer and product information for PC card client software other than the *CardID* component of *CardSoft*.
cardinfo /off <:slot>	Turns off power to all PCMCIA slots.
cardinfo /on <:slot>	Turns on power to all PCMCIA slots. For both of these commands, you have the option to specify a slot number. For example, `cardinfo /off:1` turns off power to Slot 1 only. This enables you to turn off power to any slot not in use, without removing the card in that slot, thereby conserving system power.
cardinfo /?	Displays information about CARDINFO switches.

Sample CARDINFO Information

This section lists an example of the type of information that is displayed when you enter the `cardinfo /v ¦ more` command. The exact information that is listed depends on the PC cards that are currently inserted in the system, and the number of PCMCIA slots in the system.

Note *If you have* CardSoft *with optional Microsoft Flash File System support, information on each of the card-specific Memory Technology Drivers (MTDs) is also displayed.*

```
Client Information for handle 9B67:
Client Revision = 0.01
CS Support Level = 2.1
Revision Date = 02-07-1994
Client Name = "SRAM MTD"
Vendor Name = "SystemSoft Corporation"

Client Information for handle 9B3E:
Client Revision = 0.01
CS Support Level = 2.1
Revision Date = 03-14-1994
Client Name = "MTDDRV"
Vendor Name = "SystemSoft Corporation"

Slot 1:
[Card Information]
Card Type = "ATA Disk"  (Drive D:)
Manufacturer = <Vendor Name>
Product Name = <Vendor Product Name>

[Configuration Info]
Configuring client handle is 94D7
Memory + I/O Interface, Vcc 50, Vpp1 120, Vpp2 120
Config base 0200, Config values:
  Option value: 42
  Copy value: 00
First I/O Range 170-177, 16-bit
Second I/O Range 378-37F, 16-bit
No IRQ is assigned to this card.
```

Using the Configuration Utility

The Configuration Utility can be used to

- Set or change the IRQs and COM Port assignment order for your fax/modem cards.
- Set or change the I/O Port address, IRQ, and memory areas that your network cards will use, as well as enable your network cards for a Fast Token Ring configuration.
- Select the address (Primary, Secondary, or Any) that your ATA cards are going to use to communicate with the system.
- Select the type of video display (Color, Monochrome, or LCD) you want to use when you run the Configuration Utility.

Note *The Configuration Utility (CONFIG.EXE) modifies the CARDID.INI and CSALLOC.INI files (the initiator files for* CardID *and CSALLOC). As a result, whenever you are done using this utility, you have to restart your system for any of your changes to take effect.*

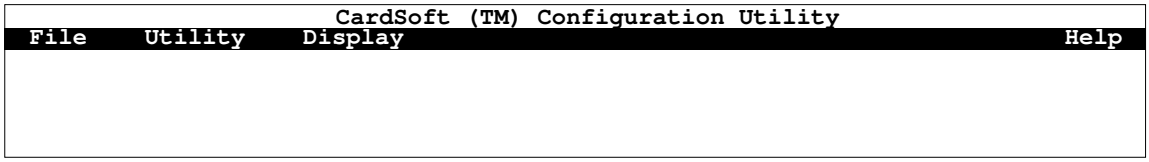
Configuration Utility Help

On-line help is available for many of the Configuration Utility fields. To access on-line help for a particular field, position the cursor in the field (or highlight the field), then press F1 (or click on the <Help> button, if available).

Running the Configuration Utility

You need to run the Configuration Utility **ONLY** if you are having trouble using a PC card, or if you want to customize your system. To run the Configuration Utility:

1. From the DOS prompt (C:\), type `cd cardsoft` to change to the *CardSoft* subdirectory.
2. Type `config` and press Enter. The following screen appears.



The menus on this screen contain the following items:

File	**Utility**	**Display**
Edit Configuration	Resource Allocation	Color
Save Configuration		Monochrome
Exit		LCD

Accessing Menu Items

Each menu bar item contains a pull down menu with various items to choose from. To access a pull down menu, click the left mouse button on the menu name, or press Alt + the highlighted key. For example, to access the File menu, click on the word *File* or press <Alt-F> from the keyboard. When the pull down menu appears, select a menu item by:

- Clicking on it with the left mouse button
- Pressing the down arrow key to highlight the item and then pressing <Enter>, or
- Pressing the key that corresponds to the highlighted letter.

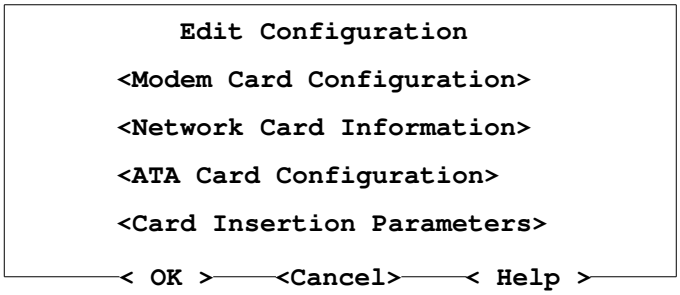
Editing PC Card Configuration Settings

The Configuration Utility enables you to edit the general configuration parameters for fax/modem, modem, network, and ATA cards. These configuration parameters include items such as COM Port, Network Port, and ATA Port information, as well as general parameters (such as having the system beep when a card is inserted into a slot).

Note *If your PC cards are working properly, you do not have to edit the PC card configuration settings. You should edit these settings only if you have a PC card that is not working properly, or if you are an advanced user and you want to custom-configure your system.*

To edit PC card configuration parameters:

1. Select *Edit Configuration* from the File pull down menu. The Edit Configuration menu is displayed.



2. If you are configuring a fax/modem or modem card, select Modem Card Configuration.

   If you are configuring a network card, select Network Card Information.

   If you are configuring an ATA card, select ATA Card Configuration.

3. Click on <OK>. The following sections describe the screens for each of these functions.

4. When done configuring the port information for the card, select Card Insertion Parameters. The Card Insertion Parameters screen is displayed.

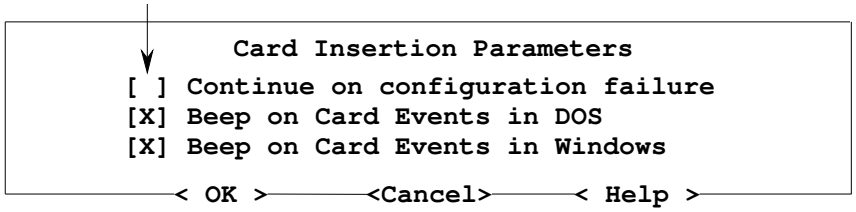
   If "Continue on Configuration Failure" is enabled, *CardID* continues to search card library records when a card configuration is attempted and fails.

   If "Beep on Card Events in DOS" is selected, the system emits a beep while in DOS whenever a card is inserted or removed, or when there is a configuration conflict.

   If "Beep on Card Events in Windows" is selected, the system emits a beep while in Windows whenever a card is inserted or removed, or when there is a configuration conflict.

Note *By default, the events that cause a beep are card insertion, card removal, and configuration conflict. You can, however, manually specify the events that cause a beep, as well as the environment (DOS and/or Windows) in which beeps occur, by adding a /BEEPTYPES switch, followed by a hexadecimal value, to the "devicehigh=c:\cardsoft\cs.exe" line in CONFIG.SYS (see Chapter 4 for more information).*

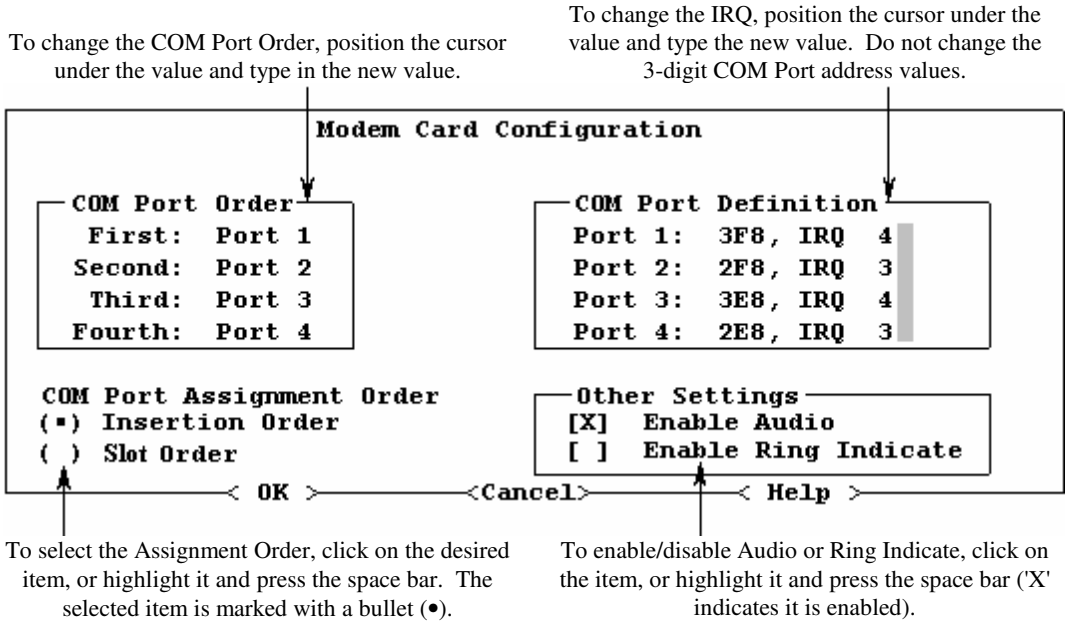
An 'X' indicates that the feature is enabled.



5. When done defining the PC card configuration, click on <OK> from the Edit Configuration screen to return to the main menu.

Modem Card Configuration

The Modem Card Configuration screen is where you define the assignment of communication ports (COM Ports), COM Port addresses, and IRQ interrupts for your modem and fax/modem cards. You can define I/O ports and IRQ values for as many as four COM Ports, and you can define the COM Port Assignment Order (the order in which the ports will be selected for configuring Modem or Fax/Modem cards).

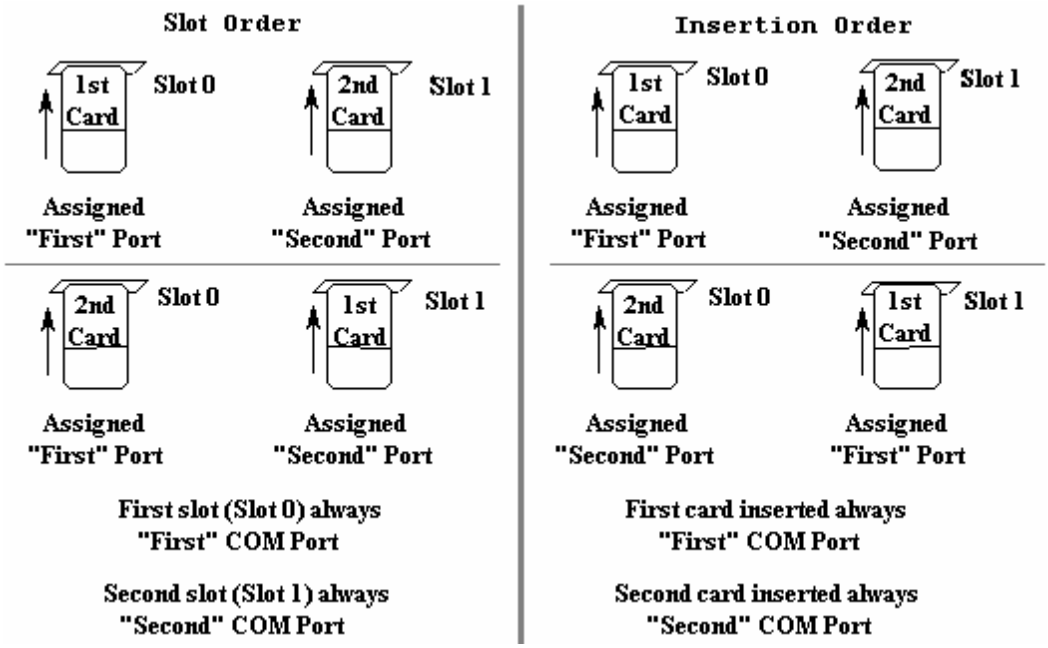


COM Port Assignment Order

The **COM Port Assignment Order** settings determine whether COM ports are assigned based on the order in which cards are inserted, or based on the PCMCIA slot into which they are inserted.

If you select Insertion order, the first modem card you insert into a PCMCIA slot would be configured as the "First" port (as listed in the COM Port Order box), the second inserted card would be configured as the "Second" port, etc. For example, if you insert a modem card in Slot 1, then you insert a card in Slot 0, the Slot 1 card would be configured as the "First" port, and the Slot 0 card would be configured as the "Second" port. In the sample screen on the previous page, the "First" port is Port 1 (COM 1). If you were to change the "First" setting to Port 4, the first card you insert would be assigned the Port 4 (COM 4) values, which are address 2E8 and IRQ 3.

If you select Slot order, the modem card you insert in your first PCMCIA slot (Slot 0) would be configured with the Port 1 values, the modem card you insert in your second PCMCIA slot (Slot 1) would be configured with the Port 2 values, etc. These assignments would be made regardless of the order in which the cards were inserted. For example, if you insert a modem card in Slot 0 after you have already inserted a modem card in Slot 1, the Slot 0 card would be configured with the "First" port values, and the Slot 1 card would be configured with the "Second" port values.



COM Port Definition

The **COM Port Definition** box determines which communication address and IRQ will be used for each COM Port. For example, in the sample screen on the previous page, Port 1 is assigned COM Port address 3F8 and interrupt IRQ 4. You can change the IRQ assigned to each port, but you should never change the COM Port addresses that are listed. If you change the IRQ setting, always change it to a value that is listed as available by CSALLOC. Also, do not change the IRQ to the same value that is assigned to the Network Card IRQ (see "Network Card Information")

COM Port Order

The **COM Port Order** settings determine which COM Ports are "First", "Second", "Third", or "Fourth". For example, the default settings are First=Port 1 (COM 1), Second=Port 2 (COM 2), Third=Port 3 (COM 3), and Fourth=Port 4 (COM 4). You can, however, change the order so that First=Port 2, Second=Port 3, etc. You would do this if you need a particular COM Port for another device (such as a mouse), and you do not want to use that COM Port for a modem card. For example, if you want to reserve COM 1 for your system mouse, enter "Port 1" for "Fourth", and "Port 2" for "First". That way, COM 2 will be the first port that your system tries to use for your modem card.

Enable Audio

When you enable **Audio**, you can hear all the normal audio beeps that are emitted when the modem (or fax/modem) is attempting to connect to a remote modem (or fax/modem). When Audio is disabled, you do not hear these connection beeps.

Enable Ring Indicate

Ring Indicate controls whether or not your system wakes up from a Suspend mode when a call comes in to a modem or fax card. If Ring Indicate is enabled, a system in Suspend mode will wake up from the Suspend state to receive the call. If Ring Indicate is not enabled, a system in Suspend mode will remain suspended, and the call will be ignored.

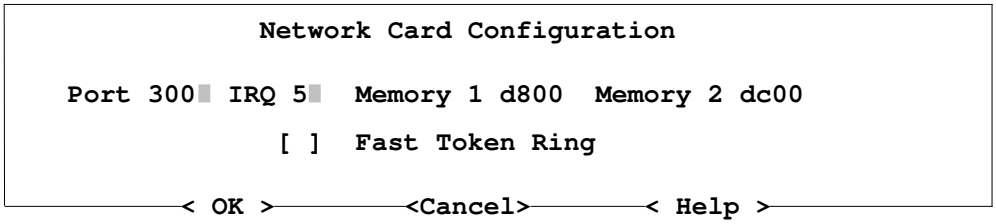
Note *The Ring Indicate feature is not supported by all modem or fax/modem cards.*

Network Card Information

The Network Card Information screen is where you specify the base I/O address, IRQ, and up to two memory windows for use with a network card. The base I/O address is specified in hexadecimal. Except for rare cases, the value should be between 100h and 3FFh. The IRQ, specified in decimal, may be any value between 3 and 15 that is available on your computer. The memory windows are paragraph values between C000h and EF00h (normally, these values are in the range D000-DFFF, which is the memory range that is excluded from use by your system's memory manager, as described in Chapter 1). Since the last two digits must be zero, you only have to enter the first two digits (normally, the appropriate values to use are D000 for Memory 1 and D400 for Memory 2, or D800 for Memory 1 and DC00 for Memory 2).

Note *Unless you have a specific reason for doing so, we recommend that you do not change the displayed values for Port, IRQ, Memory 1, and Memory 2. Refer to the documentation that came with the card to determine if it requires specific settings.*

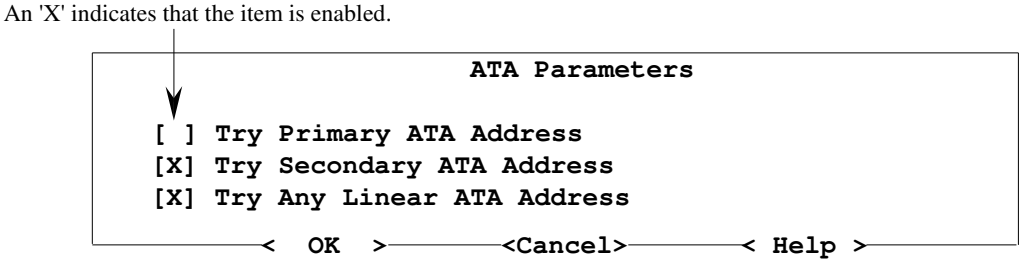
The Fast Token Ring field is used to specify the speed for a Token Ring card. When this field is enabled, the Token Ring speed is set to 16 Megabits per second; when disabled, the Token Ring speed is set to 4 Megabits per second. You should not enable this setting unless you are connected to a Fast Token Ring network (your network administrator can tell you whether or not you are). *Fast Token Ring is not always displayed, depending on the type of system you have*.



To edit the information on this screen, simply position the cursor on the value you want to change, then type in the new value. To enable/disable 'Fast Token Ring', click on the brackets (or position the cursor in the brackets and press Enter); it is enabled when an 'X' is displayed. When done, click on <OK>.

ATA Card Configuration

The ATA Card Configuration screen is where you specify how *CardID* will attempt to configure ATA cards (including Flash disks and rotating-media disks). You can specify whether *CardID* should try the standard primary and secondary ATA addresses, and whether it should try to use the linear-address mode available on most ATA cards. All three settings can be enabled at the same time (this causes the software to use whatever is available). It is generally best to avoid selecting only the primary ATA address, unless you are certain there is no disk installed on your computer that uses that address.



To enable/disable an item, click on the item, or highlight it and press the space bar, to toggle the 'X' on/off.

Saving PC Card Configuration

Once you have edited a PC card configuration, you must save your settings by selecting Save Configuration from the File pull down menu. The Save Configuration pick is available only if you have edited the general PC card configuration settings.

Changing the Configuration Utility Display Mode

The Configuration Utility can be displayed in three modes: color, monochrome, or LCD. To change the display mode, select the Display pull down menu, then select the type of display you want to use. The current display mode is indicated by a check mark (✓).

Chapter 3

Using Removable Storage Cards

This chapter describes how to prepare and use removable storage cards (that is, ATA Hard Disk/ATA Flash Disk cards and SRAM cards). It also describes how to determine which drive letter(s) you should be using to access your removable storage cards.

Using ATA Hard Disk and ATA Flash Disk Cards

In order to use ATA Hard Disk or ATA Flash Disk cards on your system, your CONFIG.SYS file must contain the following line (in addition to the standard drivers that are always required):

```
devicehigh=c:\cardsoft\atadrv.exe
```

Also, the ATA card has to be prepared before it can be used. To prepare the card, you have to run the ATAINIT command from the DOS prompt, then you have to use the standard DOS FORMAT command to format the ATA card. The following sections describe how to do this.

ATAINIT

ATAINIT.EXE is a disk partitioning utility that must be used to prepare any ATA card supported by ATADRV. When a new ATA card is inserted into a PCMCIA slot, it is not recognized since there is no common method to find out its physical parameters (number of sectors, cylinders, etc.). ATAINIT interrogates the card to find the physical parameters to use, then prepares it for use.

Note *ATAINIT works only with ATA cards that are supported by the ATADRV driver. If you are unable to use your ATA card, it may be an unsupported card. Check with the documentation that came with the card.*

ATA Drive Cards and Drive Letters

Just as your system's hard disk has a drive letter (C:) assigned to it, so do ATA cards. However, the letter that is assigned to your ATA cards varies depending on your system configuration. Basically, ATADRV assigns the next available drive letter on your system.

In most cases, your first ATA card is assigned drive letter D:, and the second one is assigned E:. If, however, you have multiple drives already installed in your system, you may already be using drive letters D: and E: for these internal drives.

You can find out which drive letters have been reserved for your ATA Drive cards by using CARDINFO. To do so, insert the ATA card into a PCMCIA slot. Then, from the `C:\cardsoft` directory, type `cardinfo` and press Enter. A listing similar to the following is displayed:

Slot 1:
[Card Information]
Card Type = "ATA Disk" (Drive D:)
Manufacturer = <Vendor Name>
Product Name = <Vendor Product Name>

The drive letter is listed on the "Card Type" line.

Note *You can configure the ATA driver as a "slave" to MTDDRV. If you do this, ATA cards share drive letters with Flash Memory and SRAM cards, and you can determine the correct drive letter to use by typing mtddrv /? at the DOS prompt from within the CARDSOFT directory. For more information, see "DEVICEHIGH Lines Required for ATA Card Support" in Chapter 4.*

You can also find out which drive letter to use when you start your system. At system startup, a series of messages scrolls up the screen as different software and hardware drivers are automatically installed. One of these messages tells you which drive letter is the first drive letter that your ATA cards will be assigned. You can press the PAUSE key to stop the messages from scrolling so that you can read them (to continue the system startup, you then have to press the PRINT SCREEN key). As the system is starting, alternately press the PAUSE and PRINT SCREEN keys until you see the following message:

```
SystemSoft PCMCIA IDE disk driver Version 1.01
Copyright 1992-1994 SystemSoft Corporation.  All rights reserved.
This driver installed starting at Drive D: for 2 unit(s).
```

The last line in this message tells you the first drive letter that will be used for your ATA cards, as well as the number of drives (units) that are installed. The sample message shown above indicates that there are two drive letters (D: and E:) reserved for ATA cards. The number of drive letters that is reserved is equal to the number of PCMCIA slots on the system.

Formatting an ATA Drive

Caution! *Make sure you are using the correct drive letter when preparing your ATA card, as any information on the specified drive is erased. Refer to the previous section if you need to know which drive letter to use.*

To format a disk managed by ATADRV:

1. From the DOS prompt (C:\), type `cd cardsoft` and press Enter.
2. Type

   ```
   ATAINIT <drive letter>
   ```

   and press <Enter>. Substitute the actual drive letter; if your ATA card has been assigned drive letter D:, you should type

   ```
   ATAINIT D:
   ```

Note *If you omit entering a drive letter at the DOS prompt, you will be asked to enter one later.*

The following screen appears:

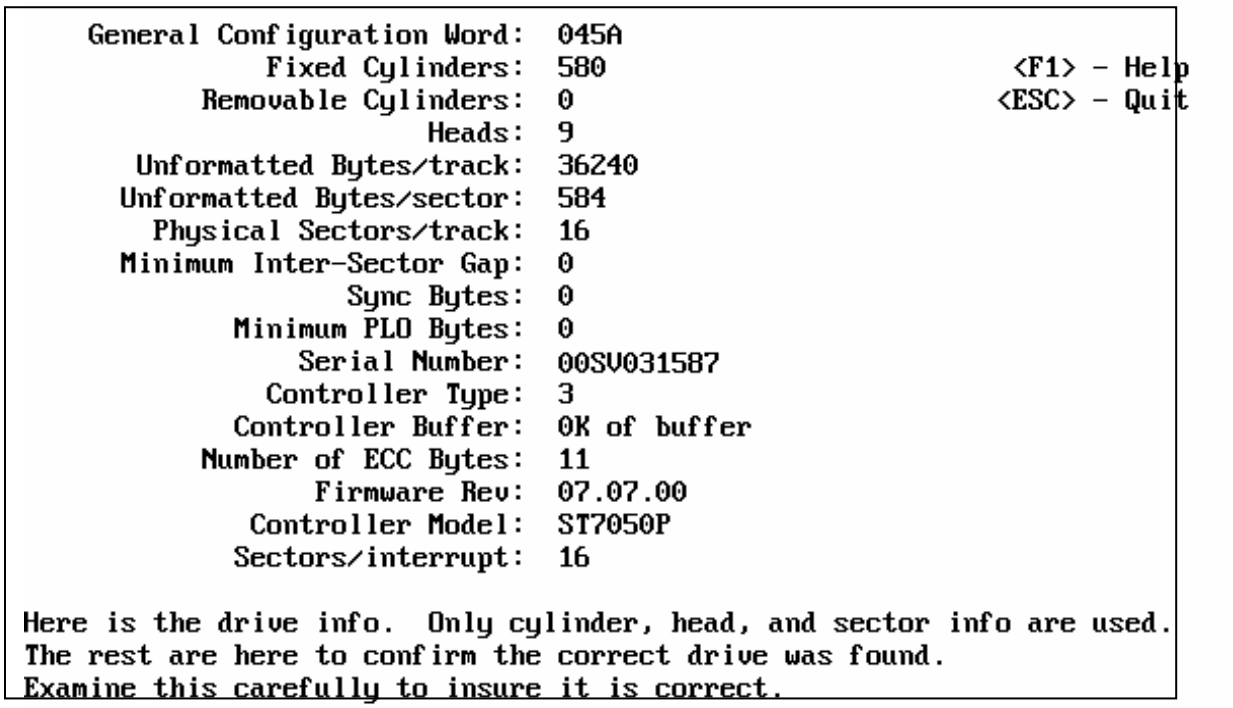
```
       Fixed Cylinders: 160                <F1> - Help
                 Heads: 2                  <ESC> - Quit
Physical Sectors/Track: 32

Here are the parameters that were returned, examine them
carefully to ensure they match what was expected.
Hit ENTER to accept and continue or <P> to prompt.
```

For an expanded report, enter ATAINIT /V.

Note *Unless the /V option (for expanded report) has been set, you will not be prompted for "compact format."*

A screen similar to the following will appear:



Note *You can press the ESC key at any time to abort ATAINIT processing.*

3. Press ENTER to accept the displayed values and continue. If, however, you are an experienced user, and you want to enter specific drive parameters, type P to display a screen that enables you to do so (then follow the screen prompts).
4. The message "Do you wish a compact format?" is displayed. In most cases, type N.

Note *If, however, your ATA card has a capacity of 4MB or less, type Y.*

ATAINIT now prepares the card. When the message

```
Partition table successfully written.
BPB Boot sector successfully wiped.
Proceed with a DOS "FORMAT /U" command.
```

appears, continue to Step 5.

5. Type

```
format <drive letter> /u
```

and press Enter, where <drive letter> is the drive letter assigned to the card. For example, if the card is Drive D, type

```
format D: /u
```

Caution! *It is very important that you use the correct drive letter in this command, because all data on the specified drive will be erased.*

6. The message

```
WARNING: ALL DATA ON NON-REMOVABLE DISK
DRIVE D: WILL BE LOST!
Proceed with format (Y/N)?
```

appears; type Y to continue. Wait for the drive to be formatted, then go to Step 7.

7. When the message

```
Volume label (11 characters, ENTER for none)?
```

appears, type in a volume label (this is simply your own name for the drive) and press Enter, or simply press Enter to leave the volume label blank (most people do not label their drives).

The next message that appears shows you the drive capacity and other drive statistics. This means that your ATA card is now ready to be used.

Using SRAM Cards

In order to use SRAM cards on your system, your CONFIG.SYS file must contain the following lines (in addition to the standard drivers that are always required):

```
devicehigh=c:\cardsoft\mtsram.exe
devicehigh=c:\cardsoft\mtddrv.exe
```

SRAM Cards and Drive Letters

In order to use your SRAM card, you need to know which drive letter to use to access it:

1. From the DOS command prompt, type `cd cardsoft` and press Enter to switch to the *CardSoft* directory.
2. Type `mtddrv /?` and press Enter. The following message is displayed:

```
Drive E is partition number 00 for slot number 00.
Drive F is partition number 00 for slot number 01.
```

   The drive letters you should use are listed at the end of the message that appears (as shown above). The number of drive letters listed depends on the number of PCMCIA slots in your system, and whether or not MTDDRV is configured for multiple partitions (the example above is for a system with two PCMCIA slots, configured for one partition per card). In this example, if you are inserting an SRAM card in your first PCMCIA slot (Slot 0), you would use drive letter E: to access the card; if you are inserting an SRAM card in your second PCMCIA slot (Slot 1), you would use drive letter F: to access the card.

Notes *Drive letters are shared by SRAM and Flash Memory cards. Using the example in Step 1, if you insert an SRAM card in Slot 0, it will be assigned Drive E; if you insert a Flash Memory card in Slot 1, it will use Drive F. If you remove the SRAM card from Slot 0, and insert a second Flash Memory card in Slot 0, it will be assigned Drive E, because that is the drive letter assigned to Slot 0 for SRAM and Flash Memory cards.*

ATA cards DO NOT share drive letters with SRAM and Flash Memory cards, unless you "slave" the ATA driver to MTDDRV. For more information, see Chapter 4.

Formatting SRAM Cards

Before you can use your SRAM cards, you have to format them using the DOS FORMAT command. For example, if the SRAM card is Drive F:, type

```
format F:
```

and press Enter.

For more instructions on using FORMAT, see your DOS User's Guide.

Part 2

CardSoft 5.02
Advanced User's Guide

Chapter 4

Customizing Your System

This chapter describes the different ways you can customize your system:

- You can select the operating environment and situations in which system beeps are emitted relating to PC card events.
- You can modify the *CardSoft* DEVICEHIGH lines in CONFIG.SYS so that you are installing only those drivers that are needed for the PC cards you are using.
- You can modify CSALLOC.INI to:
  - Exclude resources from being scanned by CSALLOC, thereby preventing *CardSoft* from trying to use memory, IRQ, or I/O Port resources that are needed for other devices or drivers installed on your system.
  - Include resources that you know are available for use by *CardSoft*, but are not being detected by CSALLOC.
  - Reserve resources that are specifically required by a PC card that you are using.
  - Allow specific resources to be shared by *CardSoft* and other system components.

Note *CSALLOC.INI can be modified in two ways. You can (a) manually edit CSALLOC.INI to add special "keywords" that cause resources to be reserved, included, excluded, or shared, or (b) use the Resource Allocation function of the Configuration utility to change system resource assignments (the Resource Allocation function will then add the appropriate keyword entries to CSALLOC.INI).*

Using Keywords to Modify System Resource Assignments

CSALLOC.INI is a file that lists the memory, IRQ, and I/O Port resources that are available on your system for use by the *CardSoft* software. It also informs *CardSoft* which resources are reserved for use by specific PC cards that you have. CSALLOC.INI is created when *CardSoft* is installed, and can be updated at any time by running CSALLOC from the DOS command line (described in Chapter 2).

Note *Due to the fact that some system devices (such as network cards) may not be active when CSALLOC is scanning for available resources, CSALLOC may include resources that are needed for the inactive device, thereby creating a resource conflict on your system. Also, system hardware design and security features may make some resources undetectable by CSALLOC.*

To resolve this, several keywords can be manually added to CSALLOC.INI to exclude resources from being used by *CardSoft*. Other keywords also enable you to include resources that you know are available, but are not listed in CSALLOC.INI. Keywords that enable you to reserve resources are also available. These keywords can be added to the end of the CSALLOC.INI file (which is located in the *CardSoft* directory) using any text editor (such as the MS-DOS EDIT program). The keywords are described in the following sections.

Note *Reserved resources are those resources that are specifically required by a PC card in order for the card to function properly. For example, if you have a PCMCIA network card that specifically requires IRQ5 and the memory region D000-D7FF, you would have to reserve those resources to prevent* CardSoft *from assigning them to other PC cards you may be using.*

MEM, IO, and IRQ Lines in CSALLOC.INI

The MEM line in CSALLOC.INI informs *CardSoft* that the listed memory areas are not being used, and are available to *CardSoft*. *CardSoft* uses these memory areas to open "windows" to PC cards for reading from or writing to card memory. Normally, the only memory range that you should see on this line is D000-DFFF.

The IO line in CSALLOC.INI lists ranges of I/O Port addresses that are available. For example, the value 108-16F means that all I/O Port addresses from 108 through 16F are available to *CardSoft*. If a range of I/O Port addresses is not listed, it will never be used by *CardSoft*, because CSALLOC has determined that these I/O Port addresses are used by another device (or application) on your system.

The IRQ line in CSALLOC.INI lists all the IRQs that are available to *CardSoft*. If a range of numbers is listed (for example, 3-6), it means that all IRQs in that range are available. Any IRQs that are not listed are not available and will never by used by *CardSoft*, because CSALLOC has detected that they have already been assigned to something else.

Note *If a resource is not listed on one of these three lines, you cannot use other keywords to make it a reserved or shared resource. You can, however, use an "include" keyword to include the resource; once it is included, you can then use other keywords to make it a reserved or shared resource.*

IOEXCLUDE

IOEXCLUDE enables you to exclude I/O Port addresses from being used by *CardSoft*. For example, if you know that the I/O Port address range 1B8-1BF is required for a sound card, an ISA LAN card, a joystick, or other such device that is installed in your system, but CSALLOC is listing this address range on the IO= line, you would add the following line at the end of your CSALLOC.INI file:

IOEXCLUDE=1B8-1BF

This line prevents CSALLOC from scanning this range of I/O Port addresses and, consequently, from listing it as available. If you are having a problem using a device, refer to the documentation you received with the device to determine if it requires a specific I/O Port address.

IOINCLUDE

IOINCLUDE enables you to include I/O Port addresses for use by *CardSoft*. For example, if you know that the I/O Port address range 1F8-1FF is not being used on your system, but this range is not listed on the IO= line of CSALLOC.INI, you would add the following line at the end of your CSALLOC.INI file:

IOINCLUDE=1F8-1FF

This line causes CSALLOC to include this I/O Port address range as available (it will not, however, be listed on the IO= line when you run CSALLOC from the DOS command line to display the available resources on your system).

IRQEXCLUDE

IRQEXCLUDE enables you to exclude IRQ interrupts from being used by *CardSoft*. For example, if you have a sound card, ISA LAN card, joystick, or other such device that specifically requires IRQ 5 to function properly, but this IRQ is listed in CSALLOC.INI as an available IRQ, you would add the following line at the end of CSALLOC.INI to reserve IRQ 5 for your network card:

IRQEXCLUDE=5

This line prevents CSALLOC from scanning IRQ 5 and, consequently, from listing it as an available resource. If you are having a problem using a device, refer to the documentation you received with the device to determine if it requires a specific IRQ in order to function.

IRQINCLUDE

IRQINCLUDE enables you to include IRQ interrupts for use by *CardSoft*. For example, if you know that IRQ 11 (B in hexadecimal format) is not being used on your system, but it is not being listed in CSALLOC.INI as an available IRQ, you would add the following line at the end of CSALLOC.INI to include this resource:

IRQINCLUDE=B

This line causes CSALLOC to include IRQ 11 as an available IRQ (it will not, however, be listed on the IRQ= line when you run CSALLOC from the DOS command line to display the available resources on your system).

MEMEXCLUDE

MEMEXCLUDE enables you to exclude memory regions from being scanned by *CardSoft* (and therefore being listed as available). Since *CardSoft* normally requires only the memory region (or part of the region) between D000-DFFF, you can manually exclude any other memory regions that are listed on the MEM= line of CSALLOC.INI. For example, if the MEM= line in CSALLOC.INI is

MEM=C800-CFFF, D000-DFFF, E000-EFFF

you could add the following line at the end of CSALLOC.INI to prevent memory regions C800-CFFF and E000-EFFF from being scanned by CSALLOC, thereby making these memory regions available to other system components:

MEMEXCLUDE=C800-CFFF, E000-EFFF

After adding this line, the memory regions C800-CFFF and E000-EFFF will no longer be listed on the MEM= line when you run CSALLOC from the DOS command line to display the available resources on your system.

MEMINCLUDE

MEMINCLUDE enables you to include memory regions for use by *CardSoft*. For example, if you know that the memory region D000-D7FF is not specifically needed for other system components, but this memory region is not listed on the MEM= line in CSALLOC.INI, you would add the following line at the end of your CSALLOC.INI file to make this region available to *CardSoft*:

MEMINCLUDE=D000-D7FF

This line causes CSALLOC to include the D000-D7FF memory region as a resource that *CardSoft* can use (it will not, however, be listed on the MEM= line when you run CSALLOC from the DOS command line to display the available resources on your system).

RIO

RIO enables you to reserve I/O Port addresses that are specifically needed by a PC card that you are using, or any other system devices. For example, if you have a PCMCIA network card that can only use I/O Port addresses 300-307, and you have an I/O card that uses only I/O Port addresses 280-287, you would add the following line at the end of CSALLOC.INI to prevent *CardSoft* from assigning this address range to other PC cards that you may be using:

RIO=280-287, 300-307

Notes *If the I/O Port range you want to reserve is not listed on the IO= line of CSALLOC.INI, you must add an IOINCLUDE line in CSALLOC.INI to make the resource available before you can reserve it.*

The following IRQ resources are automatically reserved on most systems: the hard drive I/O addresses (170-177 and 370-377) and the COM port I/O addresses (2E8-2EF, 2F8-2FF, 3E8-3EF, and 3F8-3FF).

RIRQ

RIRQ enables you to reserve IRQ interrupts that are specifically needed by a PC card that you are using. For example, if you have a PCMCIA network card that uses only IRQ 12 (C in hexadecimal), you would add the following line at the end of CSALLOC.INI to prevent *CardSoft* from assigning this IRQ to other PC cards that you may be using:

RIRQ=C

Note *If the IRQ you want to reserve is not listed on the IRQ= line of CSALLOC.INI, you must add an IRQINCLUDE line to make the resource available before you can reserve it.*

RMEM

RMEM enables you to reserve memory regions that are specifically needed by a PC card that you are using. For example, if a PCMCIA network card specifically requires the memory region D800-DFFF in order to function properly, you would add the following line at the end of CSALLOC.INI to prevent *CardSoft* from assigning this memory region to other PC cards that you may be using:

RMEM=D800-DFFF

Note *If the memory region you want to reserve is not listed on the MEM= line of CSALLOC.INI, you must add a MEMINCLUDE line to CSALLOC.INI to make the memory region available before you can reserve it.*

SIO

SIO enables *CardSoft* to share I/O Port addresses with other system components. For example, if you have a modem application that uses COM port address 2E8-2EF, and you want your PCMCIA modem card to use that address when you are using the application, you would add the following line to CSALLOC.INI to enable *CardSoft* and the modem application to share this I/O resource:

SIO=2E8-2EF

Note *If the I/O Port range you want* CardSoft *to share is not listed on the IO= line of CSALLOC.INI, you must add an IOINCLUDE line in CSALLOC.INI to make the resource available before you can make it shareable.*

SIRQ

SIRQ enables *CardSoft* to share IRQ interrupts with other system components. For example, if you have a modem application that uses IRQ 4, and you want your PCMCIA modem card to also use IRQ 4 when you are using this modem application, you would add the following line to CSALLOC.INI to enable CardSoft and the modem application to share this IRQ:

SIRQ=5

Note *If the IRQ you want to make shareable is not listed on the IRQ= line of CSALLOC.INI, you must add an IRQINCLUDE line to make the resource available before you can make it shareable.*

SMEM

SMEM enables *CardSoft* to share memory regions with other system components. For example, if you have a network application that uses memory region D800-DFFF for a memory window, and you want your PCMCIA network card to use that memory region when you use the network application, you would add the following line to CSALLOC.INI to enable CardSoft and the network application to share this memory region:

SMEM=D800-DFFF

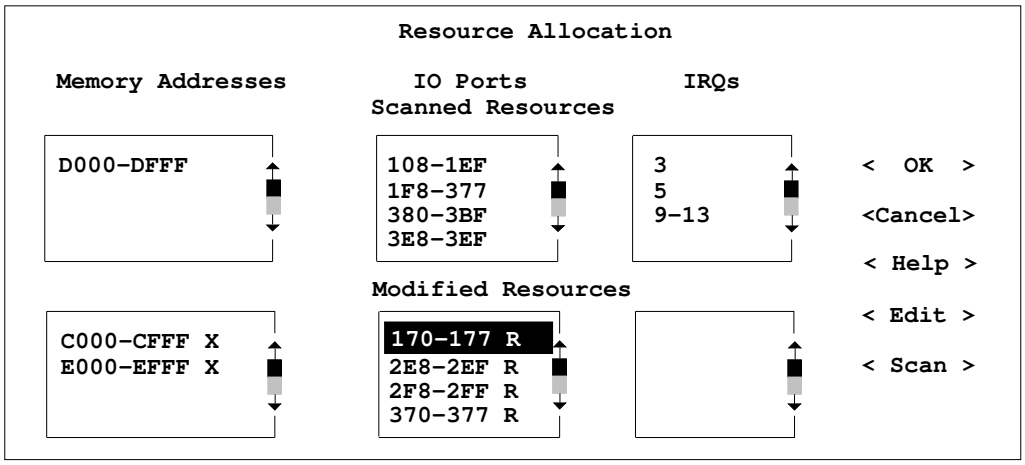
Note *If the memory region you want to make shareable is not listed on the MEM= line of CSALLOC.INI, you must add a MEMINCLUDE line to CSALLOC.INI to make the memory region available before you can reserve it.*

Using CONFIG to Modify Resource Assignments

You can use the Resource Allocation function of the CONFIG Utility to customize system resource assignments, instead of manually adding keywords to CSALLOC.INI. The Resource Allocation function automatically adds the appropriate keywords to CSALLOC.INI, based on how you assign resources.

To access the Resource Allocation function:

1. From the CARDSOFT subdirectory, type `config` and press Enter.
2. From the Utility pulldown menu, select Resource Allocation. The following screen appears.



The top row of boxes (Scanned Resources) lists the resources that CSALLOC has determined are available for use by *CardSoft*. The information in these boxes cannot be modified; if you try to change them, three beep tones are emitted.

The bottom row of boxes (Modified Resources) list all resources that are marked as reserved, included, excluded, or shareable. Resources that were automatically excluded or reserved when *CardSoft* was installed should already be displayed in these boxes (normally, the Memory and I/O Port resources listed in the sample screen are reserved/excluded).

The following sections describe the different ways you can modify resource assignments on your system.

Editing Modified Resources List

To edit the Modified Resources list:

1. On the Resource Allocation screen, position the cursor in the appropriate resource list in the Modified Resource section (bottom section) of the screen. For example, if you want to edit the I/O Port assignments, position the cursor in the middle box in the lower row of boxes.
2. **If you want to add a range of resources to the list:**
   a. Select <Edit> to display the Edit Options screen, then select <Add New> to display the Add New Resource screen.
   b. Type in the value (or range of values) that you want to add to the Modified Resource list. For example, if you want to add the I/O port range 1E0-1E7, type 1E0 in the left-most field, press TAB, and type 1E7 in the right-most field.
   c. Use the TAB key to move to the resource type list at the bottom of the screen. Then use the ↑ or ↓ arrow key to select the resource type (Include, Exclude, Reserved, or Shared). For a description of the different resource types, refer to the keyword descriptions at the beginning of this chapter. For example, if you want to know about reserved I/O ports, refer to the description of the RIO keyword.

d. Once the appropriate resource type is highlighted, press the Space Bar to toggle the bullet onto your selection. Then select <OK>, and proceed to Step 3.

If you want to change the assignment of a listed range of resources:

a. Highlight the range of resources whose assignment you want to change (for example, if you want to change a range of I/O ports from Reserved to Shared, highlight the desired range of I/O ports).

b. Select <Edit> to display the Edit Options screen, then select <Change> to display the Change Resources screen.

c. If you want to change part of the selected range, type in the range of values whose assignment you want to change.

d. Use the TAB key to move to the Resource Type list at the bottom of the screen.

e. Use the ↑ or ↓ arrow key to select the resource type (Include, Exclude, Reserved, or Shared) you want to assign to the specified resource. For a description of the different resource types, refer to the keyword descriptions at the beginning of this chapter. For example, if you want to know about reserved I/O ports, refer to the description of the RIO keyword.

f. Once the appropriate resource type is highlighted, press the Space Bar to toggle the bullet onto your selection. Then select <OK>, and proceed to Step 3.

If you want to delete a resource from the list, or part of a range of resources:

a. Highlight the range of resources that contains the values you want to delete.

b. Select <Edit> to display the Edit Options screen, then select <Delete> to display the Delete Resources screen.

c. If you want to delete part of the selected range, type in the range of values you want to delete. Then select <OK>, and proceed to Step 3.

3. A confirmation dialog box appears. Select <OK> to complete the operation and return to the Resource Allocation screen, or select <Cancel> to return to the Resource Allocation screen without making the change. Repeat Step 2 for each resource assignment you want to modify.

4. When you are done modifying the list, select <OK>.

5. A dialog box appears. Select Save to save your modifications. After the save, select <Done> to return to the CONFIG main screen, or select <Open> to make more modifications to the Resource List.

Using a Customized .INI File

By default, *CardSoft* gets resource availability information from the file CSALLOC.INI. You may, however, want to create a customized version of CSALLOC.INI to enable you to automatically load special resource configurations. To do so, use any text editor to create the file, and name the file something other than CSALLOC.INI (e.g., MYFILE.INI). Then modify the CSALLOC line in CONFIG.SYS to include the name of your customized .INI file, as shown here:

```
devicehigh=c:\cardsoft\csalloc.exe c:\cardsoft\myfile.ini
```

System Beeps

When you insert a card, your system emits a beep code to let you know whether or not the *CardSoft* software was able to recognize and configure the card. These beep codes are:

Medium tone followed by high tone beep	The PC card was recognized and successfully configured when inserted.
Single low tone beep	The PC card was recognized, but not successfully configured when inserted. When you hear a single low tone, it means the card will not work, and you may have to change your system configuration or *CardSoft* configuration to get the card to work.

Also, when you remove a card, you should hear a high tone followed by a medium tone. This indicates that *CardSoft* is aware that the card has been removed.

Configuring System Beeps

By default, *CardSoft* is configured to emit system beeps in both DOS and Windows whenever you insert or remove a card, or if a configuration conflict is detected when you insert a card.

You can, however, select the situations in which you want *CardSoft* to produce a beep by adding a /BEEPTYPES switch, followed by a two-digit hex value, to the devicehigh=c:\cardsoft\cs.exe line in CONFIG.SYS (e.g., `devicehigh=c:\cardsoft\cs.exe /BEEPTYPES CF`). The valid hex values that you can use are listed here. The first digit controls the operating environment (DOS, Windows, or both) in which beeps are emitted. The second digit controls the types of events (card insertion, card removal, configuration conflict, and artificial events) that cause a beep to be emitted. If either digit in this value is 0, no beeps are emitted under any circumstances, regardless of the other digit.

First Digit
C = Beep in both DOS and Windows
8 = Beep in DOS only
4 = Beep in Windows only
0 = No beeps (even when event type beeps are selected)

Second Digit
F= Beep on card insertion, card removal, configuration conflict, and artificial events
E = Beep on card insertion, card removal, and configuration conflict
D = Beep on card insertion, card removal, and artificial events
C = Beep on card insertion and card removal
B = Beep on card insertion, configuration conflict, and artificial events
A = Beep on card insertion and configuration conflict
9 = Beep on card insertion and artificial events
8 = Beep on card insertion only
7 = Beep on card removal, configuration conflict, and artificial events
6 = Beep on card removal and configuration conflict
5 = Beep on card removal and artificial events
4 = Beep on card removal only
3 = Beep on configuration conflict and artificial events
2 = Beep on configuration conflict only
1 = Beep on artificial events only
0 = No beeps (even if operating environment is specified)

Note *The term "artificial events" refers to logical (as opposed to physical) events. For example, if the system enters a power management Suspend state, any cards that are inserted into PCMCIA slots are logically removed. Similarly, when the system resumes from its Suspend state, any cards that are already physically inserted into a slot are logically inserted. Both of these situations would cause a beep to be emitted if "artificial events" is selected as a beep event.*

Customizing CONFIG.SYS

When *CardSoft* is installed, DEVICEHIGH lines are added to your CONFIG.SYS file to install the various drivers needed to support the different types of PC cards that are available. However, depending on the types of PC cards you use, you may not need to install all of these drivers in your system's memory. You can prevent these unneeded drivers from being installed by removing their devicehigh lines from CONFIG.SYS, or by adding a "rem" statement to the beginning of the devicehigh line.

Required DEVICEHIGH Lines

The following DEVICEHIGH lines must always be included in CONFIG.SYS in order for *CardSoft* to function properly. You should never delete or "rem" out these lines.

devicehigh=c:\cardsoft\<socket services driver>*
devicehigh=c:\cardsoft\cs.exe
devicehigh=c:\cardsoft\csalloc.exe
<additional devicehigh lines needed to support specific card types must be inserted here>
devicehigh=c:\cardsoft\cardid.exe
install=c:\cardsoft\cs_apm.exe

*The socket services driver that appears here depends on the PCMCIA controller your system uses.

This minimum configuration enables you to use modem, fax/modem, network, and other types of I/O or communications cards without installing any additional *CardSoft* drivers.

DEVICEHIGH Lines Required for ATA Card Support

In order to support ATA drive cards and ATA Flash Disk cards, your CONFIG.SYS file must contain the following additional lines:

devicehigh=c:\cardsoft\atadrv.exe

If you want to "slave" the ATA driver to MTDDRV, you need the following CONFIG.SYS lines. When you slave the ATA driver to MTDDRV, it allows you to share drive letters between SRAM, Flash Memory, and ATA cards. The value you use with the /S switch depends on the number of PCMCIA slots in your system. This example is for a system with one PCMCIA slot (/S:1).

devicehigh=c:\cardsoft\atadrv.exe /S:1
devicehigh=c:\cardsoft\mtddrv.exe

DEVICEHIGH Lines Required for SRAM Card Support

To support SRAM cards, your CONFIG.SYS file must contain the following additional lines:

devicehigh=c:\cardsoft\mtsram.exe
devicehigh=c:\cardsoft\mtddrv.exe

DEVICEHIGH Lines Required for Flash Memory Card Support

To support Flash Memory cards, your CONFIG.SYS file must contain the following additional lines:

devicehigh=c:\cardsoft\mtaa.exe
devicehigh=c:\cardsoft\mtab.exe
devicehigh=c:\cardsoft\mti1.exe
devicehigh=c:\cardsoft\mti2p.exe
devicehigh=c:\cardsoft\mtddrv.exe
devicehigh=c:\cardsoft\ssmsflsh.sys

Note *You will also need the optional MS FFS to get Flash cards to operate properly.*

Customized CONFIG.SYS Files

This release of CardSoft is for DOS 6.0 or later. With DOS 6.0 (or later) installed on your system, you can set up your CONFIG.SYS file to display a menu that will enable you to choose the driver configuration you need during a session. For example, if you only need to load network card support, you can set up a section in your CONFIG.SYS file that loads only those *CardSoft* drivers that are needed to support network cards. If you want to use an ATA card at a later time, you can have CONFIG.SYS load only those drivers that are needed to support ATA cards. By doing so, you can use your system's memory more efficiently, since you won't be loading unneeded drivers into memory when you start your system.

Following is a sample CONFIG.SYS file that displays a menu enabling you to load drivers to support all types of cards, or specific drivers to support a particular type of PC card. If you need more information on how to set up a menu in your CONFIG.SYS file, refer to your DOS manual.

Note *This example is for a system using a Cirrus PCMCIA controller and* CardSoft *with optional Microsoft Flash File System support. Your CONFIG.SYS file may differ depending on your PCMCIA controller and whether or not you received* CardSoft *with optional Microsoft Flash File System support.*

Do not include the comment statements listed in the right column; they are provided only to assist you in understanding the various sections of this example.

Example

```
device=c:\dos\setver.exe                          ; This group of lines defines a standard
device=c:\dos\himem.sys                           ; DOS startup. These lines contain the
files = 40                                        ; commands that are normally run from
buffers = 40                                      ; your CONFIG.SYS file. These lines
dos=high                                          ; may differ based on your system's
shell=c:\dos\command.com /p /e:1024               ; configuration
stacks=9,256

[menu]                                            ; This group of lines defines the menu
menuitem=normal, No CardSoft                      ; that will be displayed when you start
menuitem=cs_all, Complete CardSoft                ; your system.
menuitem=cs_io, Basic CardSoft installation
menuitem=cs_ata, CardSoft w/ATA Support
menuitem=cs_flash, CardSoft w/Flash Support
menuitem=cs_sram, CardSoft w/SRAM Support
menucolor=2, 7

[normal]                                          ; No entries are needed in this section.

[cs_all]
devicehigh=c:\cardsoft\<socket services driver>   ; This group of lines loads complete
devicehigh=c:\cardsoft\cs.exe                     ; CardSoft support, enabling you to use
devicehigh=c:\cardsoft\csalloc.exe                ; all types of PC cards, including Flash
devicehigh=c:\cardsoft\atadrv.exe                 ; memory cards.
devicehigh=c:\cardsoft\mtaa.exe
devicehigh=c:\cardsoft\mtab.exe
devicehigh=c:\cardsoft\mti1.exe
devicehigh=c:\cardsoft\mti2p.exe
devicehigh=c:\cardsoft\mtsram.exe
devicehigh=c:\cardsoft\mtddrv.exe
devicehigh=c:\cardsoft\ssmsflsh.sys
devicehigh=c:\cardsoft\cardid.exe
install=c:\cardsoft\cs_apm.exe
```

```
[cs_io]
devicehigh=c:\cardsoft<socket services driver>          ; This group of lines loads CardSoft with
devicehigh=c:\cardsoft\cs.exe                           ; I/O card support only (i.e., network,
devicehigh=c:\cardsoft\csalloc.exe                      ; fax/modem, modem, and other types of
devicehigh=c:\cardsoft\cardid.exe                       ; communications cards)
install=c:\cardsoft\cs_apm.exe

[cs_ata]
devicehigh=c:\cardsoft\<socket services driver>         ; This group of lines loads CardSoft with
devicehigh=c:\cardsoft\cs.exe                           ; ATA card and I/O card support only.
devicehigh=c:\cardsoft\csalloc.exe
devicehigh=c:\cardsoft\atadrv.exe
devicehigh=c:\cardsoft\cardid.exe
install=c:\cardsoft\cs_apm.exe

[cs_sram]
devicehigh=c:\cardsoft\<socket services driver>         ; This group of lines loads CardSoft with
devicehigh=c:\cardsoft\cs.exe                           ; SRAM card and I/O card support only.
devicehigh=c:\cardsoft\csalloc.exe c:\cardsoft\csalloc.ini
devicehigh=c:\cardsoft\mtsram.exe
devicehigh=c:\cardsoft\mtddrv.exe
devicehigh=c:\cardsoft\cardid.exe
install=c:\cardsoft\cs_apm.exe

[cs_flash]
devicehigh=c:\cardsoft\<socket services driver>         ; This group of lines loads CardSoft with
devicehigh=c:\cardsoft\cs.exe                           ; Flash Memory card and I/O card
devicehigh=c:\cardsoft\csalloc.exe                      ; support only.
devicehigh=c:\cardsoft\mtaa.exe
devicehigh=c:\cardsoft\mtab.exe
devicehigh=c:\cardsoft\mti1.exe
devicehigh=c:\cardsoft\mti2p.exe
devicehigh=c:\cardsoft\mtddrv.exe
devicehigh=c:\cardsoft\ssmsflsh.sys
devicehigh=c:\cardsoft\cardid.exe
install=c:\cardsoft\cs_apm.exe
```

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