THE SCM SWAPBOX

Hardware & Software Installation



Table of Contents

đ

Hardware Installation Introduction
System Requirements
How to Use This Manual2
Where to Get Help
FCC Notice
SwapBox Hardware Description
SwapBox Lite
SwapBox Lite X26
SwapBox Classic7
SwapBox Classic X27
SwapBox Premium
SwapBox Premium X28
Installing the SwapBox
Installing the SwapBox Controller Card
Installing the SwapBox Drive12
Connecting the SwapBox Drive to the Controller Card14
Post-installation Procedures15
Software Support
DOS-based Systems17
Other Operating Systems
Troubleshooting

The SCM SwapBox Quick Start Guide

f

Software Installation Introduction
System Requirements
How to Use This Manual24
Where to Get Help 25
Installing CardSoft and CardView
Configuring a Memory Manager
Installing CardSoft
Selecting Custom Installation Options
Using the CardSoft De-installation Option
Installing CardView
Using CardSoft
Using CSALLOC Command
Using the CARDINFO Command
Using the Configuration Utility
Starting the Configuration Utility
Editing the PC Card Configurations
Changing the Card Insertion Parameters
Modifying the Resource Allocation
Changing the Display for the Configuration Utility49
Using Removable Storage Card Utilities

۴

ý

Using CardView
Cardview for Windows53
Starting CardView54
Viewing Detailed Information About Your Card55
Configuring PC Cards58
Configuring Network Cards
Configuring Modem Cards
Specifying Card Notification Criteria
Specifying Card Criteria
Specifying Event Criteria
Specifying CardView Options
Appendix A: Dip Switch and Jumper Settings
I/O Address Settings for the SwapBox Premium65
Jumper Settings for Multiple Swapbox Classic or Lite Drives
Appendix B: Commands for System Files
Commands in the CONFIG.SYS File69
Commands in the SYSTEM.INI File





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The SCM SwapBox Quick Start Guide

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Hardware Installation Introduction

The SCM SwapBox Family provides the most compatible and economical way for a user to add PCMCIA functionality to their desktop computer system.

All SwapBox products offer the following features:

- Full Card and Socket Services software providing support for hundreds of multi-function memory and I/O PC Cards.
- Compatibility with all other major Card and Socket Services software.
- Flash Filing System (FFS/FTL) support for enabling full diskette and hard drive emulation with Flash memory cards.
- Status light indicator that provides information about the operational status of the PC Card inserted into the SwapBox.



System Requirements

To use the SwapBox, you must have the following:

- An IBM, AT 386, 486 or compatible
- MS-DOS[®] version 5.0 or later, DR-DOS[™], Microsoft Windows[™], Windows for Workgroups[™], Windows[™] '95, Windows NT[™] version 3.5, or OS/2 Warp[™]
- One available 16-bit ISA socket
- At least 640K RAM
- Card and Socket Services software for allocating system resources such as communications (COM) ports, interrupt (IRQ) settings, and memory I/O addresses (MS-DOS systems only)

How to Use This Manual

This manual explains how to install and configure your SwapBox product.

This manual does not cover MS-DOS version 5.0 or later, DR-DOS, Microsoft Windows, Windows for Workgroups, Windows[™] '95, Windows NT[™] version 3.5, or OS/2 Warp installation or the operation of PCMCIA Card and Socket Services software; see the manuals that came with these programs for instructions.

You don't have to read everything in this manual; see the section titles to find the information you want.



Where to Get Help

SCM Microsystems provides support and service such as:

- Technical assistance with the installation, configuration, and operation of SCM Microsystems products
- Customer relations
- SCM Microsystems technical information Bulletin Board Service (BBS) for the purpose of supplying improved software for the use of this and all SCM products. Dial (408) 370-4881, up to 14.4Kb, 8 data bits, 1 stop bit, no parity.
- Product literature on current and new products

When you call for technical assistance, be ready to identify your system and its configuration, and provide any error messages to the support staff.

If you need help with any other software application program you are using, see the documentation that came with that program for technical support information.

FCC Notice

This unit has been tested to meet FCC requirements for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in residential installations. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or

The SCM SwapBox Quick Start Guide

television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced Ratio/TV Technician for help.

SwapBox Hardware Description

Family of Internal PCMCIA Desktop Adapters

There are six internal models of the SCM SwapBox available:

SwapBox Lite

Economical rear-access, single socket solution.

SwapBox Lite X2

Multifunction rear-access, dual socket solution.

SwapBox Classic

Easy-access 3.5" front drive bay, single PCMCIA socket.

SwapBox Classic X2

Front-access, dual socket solution for your 3.5" front drive bay.

SwapBox Classic X2 Plug & Play

Plug & Play version of the dual front socket solution.

SwapBox Premium

Full-featured dual socket solution for your desktop (one-front and one-rear socket available).

SwapBox Premium X2

Top-of-the-line four socket PCMCIA solution (two-front and two-rear socket available).

SwapBox Lite

The SwapBox Lite is the most economical way to add PCMCIA functionality to your desktop. It consists of an AT 16-bit ISA card with an on-board PCMCIA socket accessible through the bracket on the rear side of the computer. This model supports all Type I, II, and III PCMCIA cards. It is fully compatible with Release 2.X of the PCMCIA specification, as well as the latest PC Card Standard and ExCA[™] specifications.



SwapBox Lite X2

The SwapBox Lite X2 provides a low cost dual PC Card socket solution for the desktop user. Two Type I or II PCMCIA cards or one Type III PCMCIA card may be used with this model. It consists of an AT 16-bit ISA card with an on-board dual PCMCIA socket accessible through the bracket on the rear side of the computer. It meets the same compatibility specifications as the SwapBox Lite.

SwapBox Classic

The SwapBox Classic provides user-friendly access to the PCMCIA socket from the front of the PC. The 3.5" front drive bay adapter is connected to the ISA card by way of a flatband ribbon cable set. This model is functionally equivalent to the Lite in providing full support for all your PCMCIA cards.



SwapBox Classic X2 and SwapBox Classic X2 Plug & Play

The SwapBox Classic X2 and the SwapBox Classic X2 Plug & Play provide a dual socket, front-access PCMCIA solution for the desktop PC. The 3.5" front drive bay adapter is connected to the ISA card by way of a flatband ribbon cable set. These models not only support two Type I and II PCMCIA cards, but will also support an additional Type III PC Card and one Type I or II PC Card simultaneously. The SwapBox Classic X2 is functionally equivalent to the Lite X2 in providing full support for all your PCMCIA cards. The SwapBox Classic X2 Plug & Play is functionally equivalent to the Classic X2 and provides Plug & Play functionality under Windows '95.

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SwapBox Premium

The SwapBox Premium combines the features of the Lite (rear-access PCMCIA socket) and the Classic (Front 3.5" drive bay access) in a single unit. This provides the user with the most flexibility in supporting many PCMCIA configurations. An example of use could be where fax/modems and network cards are inserted into the rear socket due to cabling issues, while data storage cards are used in the front socket much like floppy disks.



SwapBox Premium X2

The SwapBox Premium X2 combines the features of the Lite X2 (rear-access dual PCMCIA sockets) and the Classic X2 (dual socket front 3.5" drive bay access) in a single unit. This provides the user with the the state-of-the-art in PCMCIA support for the desktop environment. An example of use could be where fax/modems and network cards are inserted into the rear socket due to cabling issues, while data storage cards are used in the front sockets much like floppy disks.

Installing the SwapBox

This section explains how to install your SwapBox drive into your DOS-based, Microsoft Windows, Windows for Workgroups, Windows '95, Windows NT version 3.5, or OS/2 Warp computer system. Depending on the drive configuration in your computer, you may need to remove an existing drive or option card before you install the SwapBox drive and controller card. For instructions on how to remove a card or a drive, see the manual that came with your computer.

Installing the SwapBox Controller Card

Before you install the SwapBox controller card, check the components on the controller board and the computer's system board before deciding which slot to use. Make sure that no components are touching or obstructing other cards or cables.

Follow these steps to install the 16-bit ISA controller board.

- Caution. To avoid electrical shock to yourself or damage to the computer, always disconnect the power cord before removing the top cover.
 - 1. Turn off the power to the computer; then disconnect the power cord.
 - 2. Remove the retaining screws from your computer and then remove the cover. For instructions on how to disassemble and reassemble the computer, see the manual that came with your computer.

3. Remove the slot cover from one of the computer's available 16-bit ISA expansion slots, as shown below:



Note. Make sure the expansion slot type is 16-bit, which has two connectors for the card. 8-bit slots have only one connector.

Note. The position of the expansion slots in your computer may differ from the vertical configuration shown here for example, your computer's expansion slots may run horizontally. Nevertheless, the steps you follow to install a card remain basically the same. See the manual that came with your computer for more information on the expansion slot configuration of your computer.



4. Install the 16-bit controller card by holding it at the top edge and carefully pushing the edge connector into the 16-bit expansion slot, as shown below:



5. Secure the controller card to the computer using the screw you removed in step 3.

Once the controller board is secure, you can install the SwapBox drive. (Not necessary on SwapBox Lite products.)

Note. All SwapBox controller boards come from the manufacturer with pre-configured dip-switch and jumper settings. Do not change these configuration options.



Installing the SwapBox Drive

Before you can install the SwapBox drive, you must first remove the faceplate or existing 3.5" diskette drive from the appropriate drive bay of the computer. See the documentation that came with your computer for information on how to remove a faceplate or a drive.

Connecting the SwapBox Drive Cables

- 1. Locate the twin connectors at one end of the PCMCIA ribbon cable. All the connectors of the ribbon cable are the same.
- 2. Locate the twin connector sockets on the SwapBox drive.
- 3. Position each ribbon cable connector so that the small tab in the middle of the connector aligns with the middle notch of each connector socket, as shown below:



4. Make sure the holes in the ribbon cable connector fit over all the pins in the drive connector socket; then push in each cable connector.

◆ **Caution.** Make sure you correctly align the holes with the pins, or you could severely damage the socket pins on the SwapBox drive when you push in the ribbon cable connector.

Mounting the SwapBox Drive

To complete the installation of the SwapBox drive in your computer, you need to mount the SwapBox drive into the drive bay, securing the 4 screws, as shown below. Make sure the face of the SwapBox is flush with the front of the computer.



Note. How you mount the SwapBox drive varies according to the type of computer and drive bay you have. If your computer's drive bay has framework across the top, you must first pass the loose end of the ribbon cable through the front of the drive bay before completely sliding the drive into the



bay. See the instructions on installing drives in your computer's manual for more information about your drive bay configuration.

Connecting the SwapBox Drive to the Controller Card

To connect the SwapBox drive to the computer, you need to connect the SwapBox ribbon cables to the PCMCIA controller card. Follow these steps:

- 1. Locate the twin connector sockets on the controller card.
- 2. Position the SwapBox drive ribbon cable connectors so that the small tab in the middle of the connector aligns with the middle notch of each connector socket, as shown below:



3. Make sure the connectors are pushed in evenly and firmly. If necessary, support the back of the controller card with one hand as you push the connectors in with the other.



- 4. Replace the cover on your computer and secure it with the mounting screws you removed with the cover.
- 5. Reconnect the power cord to your computer.

Once the SwapBox is installed correctly, refer to the *Postinstallation Procedures* section to configure the diskette drive and the PCMCIA PC Card socket.

Post-installation Procedures

If your computer is DOS based, you must also install Card and Socket Services software to configure your PCMCIA drive. If your computer is Microsoft Windows, Windows for Workgroups, Windows[™] '95 version 3.5, Windows NT or OS/2 Warp, skip to the appropriate section below.



Software Support

DOS-based Systems

Installing Card and Socket Services Software

The SystemSoft[™] PCMCIA software configures your SwapBox drive for use with all PCMCIA memory and I/O cards.

You must install this software before you can use PC Cards with the SwapBox. See the software documentation for instructions on installation and use.

Configuring the SwapBox for MS-DOS and DR-DOS

The SCM SwapBox is fully compatible with both MS-DOS and DR-DOS operating systems. All necessary software is included on the provided software installation diskette. Follow the installation instructions outlined in the SCM PCMCIA software user's guide.

Configuring the SwapBox for Microsoft Windows and Windows for Workgroups

When installing the SwapBox on a platform running Microsoft Windows or Windows for Workgroups follow the standard installation instructions for installing the included Card and Socket Services software.



Other Operating Systems

Configuring the SwapBox for Microsoft Windows '95

Full-function PCMCIA support is included as a standard feature within Microsoft Windows '95. If the SwapBox is already installed at the time of the Windows '95 installation, the software will detect the presence of the PCIC controller chip on the SwapBox ISA board and load the appropriate drivers. Any further configuration of the PCMCIA socket should be done through the *Control Panel* configuration options. Refer to the Windows '95 software documentation for PCMCIA installation and support.

If the SCM SwapBox is installed after Windows '95 is already loaded on the system, use the PCMCIA icon within *Control Panel* to install the newly added SwapBox hardware. Refer to the Windows '95 documentation for installing support for new hardware peripherals. The manufacturer of the controller chip on the SwapBox ISA board should be noted. This chip is either an Intel 365, Vadem 365, Vadem 465 or Vadem 469 chip. During installation, you will be asked for this information. If you are unsure as to the type of controller chip your particular SwapBox is using, choose Intel PCIC or compatible chipset from the list of choices specified.

Configuring the SwapBox for Microsoft Windows NT 3.5

Standard PCMCIA support is available for systems using version 3.5 of the Microsoft Windows NT operating environment. Refer to the PCMCIA software installation section of the Windows NT documentation for further instructions.



Configuring the SwapBox for IBM OS/2 Warp

OS/2 Warp provides built in support for PCMCIA hardware. If the SwapBox is installed at the time of OS/2 software installation, the necessary software support will be automatically installed. If the SwapBox hardware is installed after OS/2 installation, the user should follow the instructions for Selective Install. The user should refer to the *Adding PCMCIA Support After Installation* section within the OS/2 documentation.

Configuring the SwapBox for UNIX Operating Systems

Currently there is no support for the SCM SwapBox line of PCMCIA desktop drives with the UNIX operating system environments.





Troubleshooting

If you have any problems as you set up and use your SwapBox, refer to this chapter. You can correct most problems by adjusting a cable connection, repeating a software procedure, or resetting the computer.

The troubleshooting suggestions in this chapter are organized by specific problems. If the suggestions here do not solve the problem, contact the SCM Microsystems TechLine. See *Where to Get Help* in the Introduction of this manual for instructions.

You receive a "Not Ready Reading Drive n:" DOS Error

Check whether you are using a Flash PC Card without Flash File Software (FFS/FTL). The SwapBox supports the standard Flash cards only when you are using FFS software as well. This software usually comes with the Flash card, or you can purchase it.

You Don't Hear any Beeps When you Insert a PC Card

Remove the PC Card from the socket and make a visual inspection of its socket rails for anything that could obstruct a connection. If so, remove the obstruction and reinsert the PC Card firmly in the socket.

When you Restart the Computer by Pressing the Ctrl Alt Del Keys, your PC Card(s) do not work properly afterwards

Some computer systems do not reset the PC Card socket controller when you restart the system using the Ctrl Alt Del key sequence. When you use this sequence, the system BIOS may incorrectly identify an installed and configured PC Card(s) as a peripheral that resides on the system board or

in an adapter installed on an expansion bus. The BIOS then proceeds to handle the operation of your PC Card as it would any other peripheral, creating a conflict with the card and socket services software.

You can often correct this problem by updating your system's BIOS. When a computer manufacturer realizes there is a problem with their system's failing to reset the socket controller, they typically release a BIOS update which solves the problem. Until an updated BIOS is available to you, you can follow one of these two suggestion:

- Remove all installed PC Cards before restarting your system with the Ctrl Alt Del key sequence.
- Restart your computer only by turning its power off and then on.



Software Installation Introduction

Your CardSoft[™] and CardView[™] software provides a complete software solution for integrating PCMCIA cards with the SwapBox sockets installed in your computer. This software offers you plug and play support for both MS-DOS[®] and Microsoft[®] Windows[™] environments.

For most systems, once you install the CardSoft and CardView software, you can simply insert a PC Card into the PCMCIA slot and begin to use it. In most cases, you won't need to make configuration changes to your system because CardSoft manages your system's resources for you. If you want more information about your PC Cards or need to configure your system, you can use CardSoft to perform the following functions:

- Display how resources are allocated on your system.
- Display information about your PC Cards, including manufacturer and product information.
- List the resources your PC Cards are using.
- Turn the power to your PCMCIA slots on or off.
- Modify your system's configuration for IRQ lines, COM ports, I/O ports, and memory.

You can also use CardSoft to configure specific functions for your fax/modem cards and network cards.

The CardView program performs all the functions of the CardSoft program through a graphical interface for Windows environments.

CardSoft and CardView can recognize PC Cards from most vendors based on the manufacturer's card information structure (CIS). As a result, this software supports a variety of PC Cards from different vendors, including modem, fax/modem, network, SRAM, flash, 3270 emulation, ATA hard disk, and ATA flash cards. So when you buy new PC Cards for your computer, you'll know your software will support them.

System Requirements

To use the CardSoft software, your system must have the following:

- MS-DOS 3.3 or later
- At least one PCMCIA SwapBox socket

To use the CardView software, your system must have the CardSoft software installed. It must also meet the following requirements:

- MS-DOS 5.0 or later
- Windows 3.1 (running in enhanced mode)

How to Use This Manual

This manual explains how to install your CardSoft and CardView software, how to use the CardSoft utilities, and how to use the CardView program.

You do not need to read everything in this book, but be sure to follow the instructions in the Installing CardSoft and CardView chapter to install the software. In most cases, once you have the software installed, you won't need to change any settings. Just insert your PC Card and you're ready to go.



You may, however, want to use this software to see more information about your installed PC Cards or to customize your system's configuration.

See the following summary to find other chapters you may need to read.

Installing CardSoft and CardView provides instructions for installing CardSoft and CardView software.

Using CardSoft describes how to use the CardSoft utilities.

Using CardView describes how to use CardView.

Appendix B lists the commands that must be placed in various system files for CardSoft and CardView to work properly.

Where to Get Help

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SCM Microsystems provides support and service such as:

- Technical assistance with the installation, configuration, and operation of SCM Microsystems products
- Customer relations
- SCM Microsystems technical information Bulletin Board Service (BBS) for the purpose of supplying improved software for the use of this and all SCM products. Dial (408) 370-4881, up to 14.4Kb, 8 data bits, 1 stop bit, no parity.
- SCM Microsystems technical information Bulletin Board Service (BBS)
- Product literature on current and new products

When you call for technical assistance, be ready to identify your system and its configuration, and provide any error messages to the support staff. If you need help with any other software application program you are using, see the documentation that came with that program for technical support information.

If you purchased your SCM SwapBox product outside the United States or Canada, contact your SCM dealer or the marketing location nearest you for customer support and service.



Installing CardSoft and CardView

This chapter first describes how to configure your system's memory before you install the CardSoft software. It then describes installing the CardSoft and CardView programs.

Note. If you already have card and socket services software on your system, you must remove it before you install CardSoft and CardView.

Configuring a Memory Manager

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Some PC Cards use a specific address range (typically within the D000-DFFF range) for memory. If you use a memory manager (such as EMM386 or QEMM) on your computer, you may need to exclude the address range the card requires from the memory normally allocated by the memory manager.

If you are not using a memory manager or Windows, you do not need to read this section. Go to page 6 to install CardSoft.

You may need to exclude the entire memory region D000-DFFF if you have two or more PCMCIA slots. If you have only one slot, you may need to exclude a smaller address range.

The SCM SwapBox Quick Start Guide



Before you install CardSoft, follow these steps to exclude the memory address range you need to reserve for your PC Cards:

- 1. Copy your CONFIG.SYS file to CONFIG.OLD (or some other easily identifiable file name) in case you want to restore it later.
- Open the CONFIG.SYS file in a text editor (such as MS-DOS Edit) and find the device= line that executes the memory manager:

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device=emm386.exe

Note. These examples are for the EMM386 memory manager. If you are using another memory manager, see the manual that came with it for instructions.

3. Modify the command line to exclude the address range D000-DFFF:

device=emm386.exe noems x=d000-dfff

4. Save these changes to your CONFIG.SYS file; then restart your computer.

Note. If you are using Windows, you also need to add the following line to the section of the Windows SYSTEM.INI file:

```
emmexclude=d000-dfff
```

Installing CardSoft

Before you install the CardSoft program, remove any PC Cards you have inserted in a PCMCIA slot. Then follow these steps to install the CardSoft program:

1. Insert the SwapBox CardSoft/CardView Auto Install diskette in drive A.



- 2. At the MS-DOS prompt, type A: and press Enter to log onto drive A.
- 3. Type **Install** and press **Enter**. You see the CardSoft banner screen.
- Press any key to display the next screen, which allows you to specify the type of installation you want to perform. The following table describes the options available on this screen.

Select	If you want to
First time install	Install CardSoft for the first time.
Upgrade	Upgrade from a previous version of CardSoft.
De-installation	Remove the CardSoft commands from your system's CONFIG.SYS file.
Exit	Exit the installation program without installing CardSoft.

Installation types

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- 5. Use the ↑ or ↓ cursor keys to select the type of installation you want and press Enter to display the next screen. If you select the first two options, you see the screens in the order described in this procedure. See page 11 for more information on the de-installation option.
- 6. The next screen provides some guidelines for using this Install program. Select either the **standard** or **custom** installation; then press **Enter**.


Select	lf you want to
Standard installation	Install all CardSoft utilities.
Custom installation	Specify CardSoft utilities to install.
Exit	Exit the installation program without installing CardSoft.

Standard/custom installation options

- 7. Next select the number of PCMCIA sockets you have on your SCM SwapBox; then press **Enter** to display the next screen.
- 8. Now select the drive on which you want to install the CardSoft software and press **Enter**.
- 9. The Install program displays the default directory where it will install CardSoft. Press **Enter** to accept the default directory, or replace the default with a new directory.
- 10. You see the path for the directory where the program will install CardSoft. To accept the directory, press Enter. To change the directory, press the space bar to change Yes to No; then press Enter. The program again allows you to select the drive and directory where you want to install CardSoft.
- 11. If you selected a custom installation, you now see a list of CardSoft utilities you can install. See *Selecting Custom Installation Options* on page 31 for more information on these utilities.
- 12. Press **Enter** to have CardSoft change your CONFIG.SYS file for you.



- 13. Several additional screens provide information on the Install program functions. After you read the information on each screen, press any key to continue installing the software.
- 14. When you press any key from the final installation screen, you see the MS-DOS prompt. Remove the Auto Install diskette and restart your computer to activate the CardSoft drivers.

Watch your monitor as your computer starts. If you see any errors indicating that the CardSoft drivers didn't load correctly, re-install CardSoft.

If you have Microsoft Windows, you can now install CardView. (See page 34.)

Selecting Custom Installation Options

You may want to install only some of the CardSoft features. The table below describes the individual utilities you can install if you select the custom installation option.

Utility	Description
Card services	Manages competition for system resources and manages adapter and card resources and configurations.
Card services allocation	Scans system for available memory, I/O port and IRQ resources and displays information (MS-DOS utility).

Custom installation options



Utility	Description
ATA card driver	Provides support for ATA Type II flash cards or ATA Type III hard disk PC Cards.
ATA card formatting	Places partition table on blank ATA drive and initializes the drive.
MTD driver	Provides support for PC Cards that use MTDs (Memory Technology Driver).
MTD-SRAM cards	Provides support for MTD SRAM PC Cards.
Card ID-client driver	Detects the insertion and removal of PC Cards, deter- mines the card type, then configures the card and slot/adapter.
Card ID-PCMCIA	Provides a look-up table of PC Card library Cards that require CardSoft and CardView to perform special setup procedures.

Custom installation options (continued)



Utility	Description
Card information	Scans the PCMCIA slots on the system and lists information about the cards in these slots.
CardSoft configuration	Configures IRQs, COM port assignments, I/O port addresses, and memory addresses.

Custom installation options (continued)

Using the CardSoft De-installation Option

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You may want to remove CardSoft from your system, for instance, if you need to use the memory CardSoft requires for another application. When CardSoft de-installs the program, it copies the current CONFIG.SYS file to a new file name, then places an MS-DOS REM command in front of each CardSoft command in your system's new CONFIG.SYS file. When you restart your computer, it does not load the CardSoft drivers.

Note. The **De-installation** option does not delete any files from your hard disk drive.

When you select the **De-installation** option from within the CardSoft installation program, you see two screens displaying information about what the de-installation option is doing. Press any key at both of these prompts.

Before modifying your CONFIG.SYS file, the program copies it to a file called CONFIG.nnn, where nnn is a number such as 001. The program also displays this file name during the de-installation process. To re-install the CardSoft program, either copy the new CONFIG.nnn file to the current CONFIG.SYS file or rerun the CardSoft Install program.

The SCM SwapBox Quick Start Guide

Installing CardView

CardView is a Windows application that allows you to access your CardSoft software through a Windows interface. Once you have this software installed, you can use it to display information about your PC Cards and to customize your system configuration for various PCMCIA cards.

Note. Before you install the CardView software, make sure you modify your Windows SYSTEM.INI file as described on page 6. Then install CardSoft and remove any PC Cards that may be inserted in a PCMCIA slot.

Copy the SYSTEM.INI file in your Windows directory to a backup file with another name. If you decide to remove the CardView software from your system later, you can use the backup file to restore the original file. Then, from within Windows, follow these steps to install the CardView application:

- 1. Insert the SwapBox CardSoft/CardView Auto Install diskette in drive A.
- 2. From the **File** menu, select **Run**.
- 3. Type **a:setup** and select **OK** to start the installation program. You see the CardView Setup screen.
- 4. Select **Continue** to install the software. You see a note telling you to remove any PCMCIA cards installed in your system.
- 5. If you have any PCMCIA cards in your system, remove them; then select **Continue**. You see a screen displaying the path where CardView will be installed.



- 6. If you want to install CardView in a different directory, delete the displayed path and type the new directory; then select **Continue.** You see a message indicating that the CardView setup is complete.
- 7. Select **OK**. You now have a CardView program group with a CardView PCMCIA icon in Program Manager, as shown below.



8. Close all applications, exit Windows, and restart Windows to load the CardView drivers.

You are now ready to use your PC Cards in your system. If you want to display information about your PC Cards or to customize your system configuration, see the Using CardSoft and Using CardView chapters for more information.



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Using CardSoft

CardSoft contains several utilities and commands to help you configure and manage PC Cards in the MS-DOS environment.

This chapter describes how to use the following CardSoft utilities:

- CSALLOC command
- CARDINFO command
- Configuration utility

CardView provides many of the same functions using the graphical interface of the Windows environment. See Chapter 3 for information on using CardView.

Using the CSALLOC Command

CSALLOC is an MS-DOS program that scans the system for available memory, I/O port, and IRQ resources. This ensures that CardSoft does not use resources that other system hardware or software may need to work properly.

Once you have installed CardSoft, the CSALLOC utility scans your system resources each time you start your system and maintains the information it collects in a file called CSALLOC.INI.

You need to run CSALLOC only if you want to display the system resources available to CardSoft or if you've changed port, IRQ, or memory settings on your system. You should also run CSALLOC when you install new hardware or software that requires specific system resources so that CardSoft does not use the resources instead.



You must run the CSALLOC command from the MS-DOS command line. Unless you add the directory containing CardSoft to the path command in your AUTOEXEC.BAT file, you need to change to your CardSoft directory to run the CSALLOC command.

Note. Remove any PC Cards from the PCMCIA slots before you run the CSALLOC command.

When you type CSALLOC without any switches at the MS-DOS command line, the program scans your system's resources and updates the CSALLOC.INI file. You can also use the switches described in the following table to perform different functions:

Command Switch	Function
csalloc /r	Displays the current status of memory, I/O port address, and IRQ resources on your system. The information includes the following codes to identify how each address is allocated:
	 (R) indicates addresses reserved for your PC Cards or other system components.
	(A) indicates addresses allocated for CardSoft.
	(S) indicates resources that can be shared by several system components without conflict.

CSALLOC command switches



CSALLOC command switches (continued)

Command Switch	Function
csalloc /p	Displays the contents of the CSALLOC.INI file.
csalloc /s	If the system contains a Plug-and-Play (PnP) BIOS, scans system resources instead of using information supplied by PnP BIOS.

Using the CARDINFO Command

The CARDINFO command provides these functions:

- Identifies the types of PC Cards inserted in the PCMCIA slots.
- Identifies I/O ports, IRQs, and memory areas used by PC Cards so that you can ensure that two components do not use the same resources.
- Turns power to the PCMCIA slots on or off.
- Displays manufacturer and product information about PC Cards.
- Identifies the drive letter for ATA hard disk or ATA flash cards.
- Displays the most recent error for an inserted card.

You can run CARDINFO from the MS-DOS prompt or from the MS-DOS icon within Windows.



Unless you add the directory containing CardSoft to the path command in your AUTOEXEC.BAT file, you need to change to your CardSoft directory to run the CARDINFO command.

When you type the CARDINFO command without any switches at the MS-DOS command line, the program creates a CARDID.INI file and displays the following information for any cards installed in the PCMCIA slots:

- Card type
- Manufacturer
- Product name

This program also identifies empty slots.



You can also use the switches described in the following table to perform different functions.

Command Switch	Function
cardinfo /c	Provides the information you see when you type the command without switches as well as the software release information the number of slots being managed and vendor revision and copyright information.
cardinfo /v more	Provides more extensive information about the PCMCIA slots than you see when you type the command with no switches. The information includes memory addresses, software version numbers vendor information, revision date most recent error on the device, and assigned I/Os and IRQs.
cardinfo /off	Turns off power to all PCMCIA slots.
cardinfo /off :n	Turns off power to the specified slot (n). For example, typing cardinfo /off:1 turns off the power to slot 1.
cardinfo /on	Turns on power to all PCMCIA slots.
cardinfo /on :n	Turns on power to the specified slot (n). For example, typing cardinfo /on:1 turns on the power to slot 1.
cardinfo /?	Displays information about CARDINFO switches.

CARDINFO command switches



Using the Configuration Utility

The configuration utility allows you to customize your system or reconfigure it when you have trouble using a PC Card. You can change the following configurations for your PC Cards using this utility:

- IRQs and COM port assignment order for fax/modem cards
- I/O port address, IRQ, and memory areas for network cards
- Addresses for ATA cards

You can also use the utility to modify the resource allocation that the program scanned when you started your system. In addition, the configuration utility allows you to define the type of video display you want to use with this utility.

Note. This utility modifies the CARDID.INI and the CSALLOC.INI files. Changes you make to your configuration using this utility don't take effect until you restart your system.

Starting the Configuration Utility

Follow these steps to start the configuration utility:

- 1. Log onto the directory containing your CardSoft software.
- 2. Type **CONFIG** and press **Enter**. You see an information screen about the CardSoft Configuration Utility.
- 3. Press **Enter** to continue. You see the main menu for the configuration utility.



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- 4. If you have an MS-DOS mouse driver installed, you can click on the menu option to display the corresponding pull-down menu. You can also press **Alt** together with the **highlighted letter** of the option you want to use.
- 5. To select a menu option, you can click on the option, move the cursor to the option and press **Enter**, or type the **highlighted letter** of the option you want to use.

After you have selected an option from a pull-down menu, the bottom of the screen tells you how to use the screen. Also, you can press **Enter** for <OK>, **F1** for <Help>, and **Esc** for <Cancel>. To toggle an option on or off, highlight it, then press the space bar.

Editing the PC Card Configurations

The **Edit Configuration** option on the **File** pull-down menu provides options for editing modem card, network card, and ATA card configurations. It also allows you to specify when your system beeps.

Note. If your system is working properly, you don't need to edit any of the PC Card configurations.

Select the configuration you want to change. You see the configuration screen for the PC Card type you've selected. The options for each PC Card configuration are described in the tables on the following pages.

Once you have changed your configuration, make sure you save the settings by selecting **Save Configuration** from the **File** pull-down menu.

The SCM SwapBox Quick Start Guide

Option	Function
COM Port Order	Defines the order in which ports are selected for configuring modem or fax/modem cards. You may need to change the order for the COM ports if you need to reserve a particular port for another device (such as a mouse).
COM Port Assignment Order	Determines whether COM ports Order are assigned based on the order in which cards are inserted or based on the PCMCIA slot into which they are inserted. A bullet next to the option identifies the selected order.
COM Port Definition	Determines which addresses and IRQs are used for each COM port. Do not change the addresses from those listed. If you change the IRQs, make sure you assign a value listed as available by the CSALLOC utility. (See page 37.) Also, do not change the IRQ to a value assigned to a network card.

Fax/modem card configuration options



Option	Function
Enable Audio	Determines whether you can hear the beeps produced when the modem (or fax/modem) is con- necting to a remote device. An X next to the option indicates that audio is enabled.
Enable Ring Indicate [†]	Controls whether the system activates from a suspend mode when receiving a modem or fax call. When enabled (an X appears next to the option), the system receives the call even if it is in suspend mode. If this option is not enabled, the system ignores the call.

Fax/modem card configuration options (continued)

[†]This feature is not supported by all modem or fax/modem cards.

The SCM SwapBox Quick Start Guide



Option	Function
Port [†]	Identifies the base I/O address (in hexadecimal) for the network card. Except in rare cases, this value should be between 100h and 3FFh.
IRQ^\dagger	Identifies the IRQ for the network card. Can be any value between 3 and 15 that is available on your computer.
Memory 1^{\dagger}	Displays the value for the first memory window. [‡]
Memory 2 [†]	Displays the value for the second memory window. [‡]
Fast Token Ring [∞]	Specifies the speed for a Token Ring card. An X next to the option enables it, setting the Token Ring speed to 16 Megabits per second. When this option is disabled, the Token Ring speed is 4 Megabits per second.

Network card configuration options

[†]Do not change the displayed values for these options unless you have a specific reason.

[‡]These values must be between C000h and EF00h and are normally in the range D000-DFFF. You need enter only the first two characters for these values.

 $^{\infty}$ This option may not appear for your system.



ATA[†] card configuration options

Option	Function
Try Primary ATA Address [‡]	Configures ATA cards using the standard primary ATA addresses.
Try Secondary ATA Address	Configures ATA cards using the standard secondary ATA addresses.
Try Any Linear ATA Address	Configures ATA cards using the linear-address mode available on most cards.

[†]Includes both ATA flash cards and ATA rotating-media cards.

[‡]Select this option only when you know that no other disk installed on your computer uses the primary ATA address.

Note. When you enable all three of the ATA card configuration options, the software uses whatever addresses are available.

Changing the Card Insertion Parameters

Normally, your system beeps when you insert or remove a card or when you have a configuration conflict. When you select the **Edit Configuration** option from the **File** pull-down menu, you see the **Edit Configuration** menu. This menu contains the **Card Insertion Parameters** option, which allows you to specify beep criteria for your system.

Note. If you change these parameters, make sure you select the **Save Configuration** option from the **File** pull-down menu to save your changes.

The SCM SwapBox Quick Start Guide

The following table describes the card insertion parameters.

Card insertion parameters

Option	Function
Continue on configuration failure	Continues searching card library records when the system cannot configure a card.
Beep on Card Events in DOS	Beeps in the MS-DOS environ- ment whenever you insert or remove a card or when there is a configuration conflict.
Beep on Card Events in Windows	Beeps in the Windows environ- ment whenever you insert or remove a card or when there is a configuration conflict.

Modifying the Resource Allocation

The **Resource Allocation** option on the **Utility** pull-down menu provides a quick view of the system resources that are available to CardSoft. You can also edit these system resources.

When you select the **Open** option, you see the scanned resources for your system's memory addresses, I/O ports, and IRQs across the top half of the screen.

◆ **Caution.** Do not change any resource allocation values unless you understand how these resources work on your system.



If you need to change the resources available to your system, follow these steps:

- Move your cursor to the value you want to change in the fields along the bottom of the screen and select **Edit**. You see an Edit Options screen.
- 2. Select Add New, Change, or Delete.
- 3. If you selected **Add New** or **Change**, the screen displays the acceptable range of values and allows you to include or exclude the resource and identify it as shared or reserved. Make your changes and select **OK**.

If you select **Delete**, the screen displays the resource you selected. Select **OK** to delete it.

4. Select **OK** again, then select **Save** to save your configuration changes.

Changing the Display for the Configuration Utility

You can assign a color, monochrome, or LCD display mode for the CardSoft configuration utility. To change the display mode, select the **Display** pull-down menu, then select **Color**, **Monochrome**, or **LCD** to identify the mode you want to use. Make sure you select a mode supported by your hardware.

When you make your selection, the screen immediately reflects the option you have chosen.





Using Removable Storage Card Utilities

CardSoft provides several utilities to help you partition your ATA cards and assign or identify drive letters. Both ATA cards and SRAM cards are formatted using the MS-DOS FORMAT command.

Note. If you are using an ATA hard disk or ATA flash card on your system, make sure your CONFIG.SYS file contains this command:

devicehigh=c:\cardsoft\atadrv.exe

If you are using an SRAM card, make sure your CONFIG.SYS file contains this command:

devicehigh=c:\cardsoft\mtsram.exe



To use the CardSoft removable storage card utilities, at the MS-DOS prompt, log onto your CardSoft directory. Then type the **appropriate utility command** (listed in the table below) and press Enter. The following table describes these removable storage card utilities.

Command	Function
ATAINIT [†]	Partitions the ATA card and identifies the card's physical parameters. Once you have partitioned a drive, you can use the MS-DOS FORMAT command to format the drive.
ATADRV	Assigns the next available drive letter on your system to the ATA drive. When you start your system, you see a message identifying the drive letter assigned to the drives in your PCMCIA slots.
MTDDRV	Displays the drive letter for SRAM and flash memory cards. Since these cards share drive letters it is important to know where these cards are installed.

ATA utility commands

[†]This command works only with ATA cards that are supported by the ATADRV driver.



The following table describes the information you may see on this screen.

Advanced card information

Field name	Information displayed
Manufacturer	Name of the card manufacturer, for example Epson America, Inc.
Product Name	Product name for the card, for example, EHDD170.
Card Technology	Technology the card uses, for example, SRAM or Flash card.
Card Type	Card type, for example memory or modem.
Card Size	Size of memory cards.
I/O Address	Base I/O address for the PC Card
I/O Data Width	I/O data width for the PC Card; for example, 16-bit means that data is sent in 16-bit bursts.
IRQ Line	IRQ currently assigned to the card.
IRQ Exclusive	Displays yes when the IRQ is reserved exclusively for the PC Card; displays no when the IRQ is not reserved exclusively for the PC Card and can be shared by other devices.
Memory Window 1	Base address of the first memory window used by the PC Card.



Field name	Information displayed
Memory Window 2	Base address of the second memory window used by the PC Card; if this field is blank, the PC Card is not configured to use a second memory window.
Width	Size of the data path a memory window uses to communicate with the PC Card (8-bit or 16-bit).
Туре	Type of memory the card is using (common or attribute); common memory is usually read-write, and attribute memory is usually read-only.
Speed	Speed at which the card transfers information.
Memory Partition Type	Type of partition assigned to the memory, for example, ROM, RAM, FLASH, Reserved or Not Available.
Memory Partition Size	Size of the memory partition.

Advanced card information (continued)



Configuring PC Cards

CardView allows you to configure network and modem PC Cards. The following section first describes how to configure a network card, and then describes how to configure a modem card.

Configuring Network Cards

To configure a network card, select **Network** from the **Configure** menu. You see the screen below.

Configur	e Network Car	d
Memory Window 1	D8h	OK
Memory Window 2	DCh 📱	Cancel
Base I/O Address	300	Help
Port IRQ Line	5	

If you need to change your system's configuration for a network card, you can modify the fields on this screen, then select **OK**. The fields on the network card configuration screen are described in the table on the following page.



Network card configuration options

Field	Description
Memory Window 1	Specifies the base address used by network card drivers that require an attribute memory window.
Memory Window 2	Specifies the base address of a second memory window used by network card drivers that require one.
Base I/O Address	Specifies the base I/O address used to communicate with the network card.
Port IRQ Line	Specifies the IRQ for the network card; make sure the IRQ line assigned here is not already reserved for another device or port.

Configuring Modem Cards

You can use CardView to configure the following for your modem:

- Audio for modem line activity
- Reactivation from a suspend mode to receive a modem or fax call
- COM port assignment for the modem

To configure a modem card, select **Modem** from the **Configuration** menu; then select **General Setup**. You see the screen below.



When the **Enable Audio** option is enabled, you can hear the beeps produced when the modem (or fax/modem) is connecting to a remote device.

When the **Enable Resume** on **Ring Indicate** option is enabled, the system reactivates from a suspend mode when it receives a modem or a fax call. If this option is not enabled, the system ignores the call.

To configure the port your modem card uses, select **Modem** from the **Configuration** menu; then select the **slot** or **card** you want to configure.

Note. The option names on the **Modem** menu depend on the COM Port Assignment Order specified through the CardSoft configuration utility. (See the Using CardSoft chapter.) If insertion order is specified, the menu options are **Insertion 1, Insertion 2**, and so on. If socket order is specified, the menu options are **Slot 0, Slot 1**, and so on. The menu includes a selection for each slot in your system.



When you select one of the COM port assignment options from the **Modem** menu, you see the screen below.

Insertion #1		
Port Number:	СОМ3:	OK Cancel
Base Address: IRQ Line:	3E8 4	Help

You can specify the COM port your modem uses by changing the **Port Number** option. The Base Address and IRQ Line settings change automatically, based on the system configuration.

Specifying Card Notification Criteria

CardView can use system beeps and notification screens to notify you of your PC Card's status. CardView can notify you whenever you insert or remove a card or when there is a configuration conflict. You can also configure CardView to notify you only for specific types of cards.

Note. Even if you disable your system beep options (see page 60), you still see messages for the events you have configured for notification.

Specifying Card Criteria

When you select **On Cards** from the **Notify** pull-down menu, you see the following screen.



You can use this screen to select which cards generate notification. An X next to the option indicates that CardView will notify you for that type of card.

The type of notification you receive depends on how you set up two other criteria—event criteria and system beep criteria. See the following sections for information.

Specifying Event Criteria

When you select **On Events** from the **Notify** pull-down menu, you see the following screen.

Notify On Even	t
Events Insertion Removal Configuration Conflict Unrecognized Card	OK Cancel Help



Use this screen to specify that you want CardView to notify you for these events:

- When you insert a card (Insertion)
- When you remove a card (**Removal**)
- When the system detects a configuration conflict (Configuration Conflict)
- When you insert a card CardView can't recognize (Unrecognized Card)
- When an option is enabled, you see an X beside the option

Note. You must have both the card type and the event type selected to receive notification on a particular function. For example, if you insert a modem card and have CardView configured to notify you on insertion and notify you for a network card (but not for a modem card), you are not notified when you insert your modem card, even though you have specified notify on insertion.

Specifying CardView Options

The **CardView Options** menu allows you to select two options:

- Run the CardView application minimized. With this option enabled, when you start CardView, an icon represents the cards in the first two PCMCIA slots in your system.
- Determine whether the system beeps or doesn't beep for the selected notification criteria.

When a check mark appears next to an option, it is enabled.



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Appendix A: Dip Switch and Jumper Settings

I/O Address Settings for the SwapBox Premium

The default setting for the I/O address of the SwapBox is 3EO(hex). Check whether this address is already used by another expansion board in the system. If needed, alternative I/O addresses may be selected using the DIP switch configurations found on the SwapBox Premium controller board. ROM BIOS options can also be configured. See the illustration and table on the following page.



I/O Address (hex)	Switch 8	Switch 7	Switch 6	Switch 5	Switch 4	Switch 3	Switch 2	Switch 1
300	ON	ON	ON	ON	OFF	OFF	ON	ON
310	OFF	ON	ON	ON	OFF	OFF	ON	ON
320	ON	OFF	ON	ON	OFF	OFF	ON	ON
330	OFF	OFF	ON	ON	OFF	OFF	ON	ON
340	ON	ON	OFF	ON	OFF	OFF	ON	ON
350	OFF	ON	OFF	ON	OFF	OFF	ON	ON
3E0 (Default)	ON	OFF	OFF	OFF	OFF	OFF	ON	ON
3F0	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON



ROM BIOS	Switch 4	Switch 3	Switch 2	Switch 1
C800	ON	ON	OFF	OFF
D000	ON	OFF	ON	OFF
D800	ON	OFF	OFF	ON
DISABLED	ON	OFF	OFF	OFF



Jumper Settings for Multiple SwapBox Classic or Lite Drives

You may use up to four (4) SwapBox Classic drives in one system. In this case the W1 and W2 jumpers need to be set accordingly. See the illustrations and table below.



Position	0f
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	WI	W2
1st SwapBox	2-3	2-3
2nd SwapBox	1-2	2-2
3rd SwapBox	2-3	1-2
4th SwapBox	1-2	1-2



Example of configuration for 3rd SwapBox

The SCM SwapBox Quick Start Guide





Appendix B: Commands for System Files

When you install CardSoft and CardView, these programs modify several system files to load and support the CardSoft and CardView software. This appendix describes the CardSoft and CardView commands that these programs add to your system files. It also lists additional commands you may need to add if you want to customize your system.

Commands in the CONFIG.SYS File

The CardSoft's Install program may have added some of the following commands to your CONFIG.SYS file. If you modify this file yourself, make sure you save it and restart your computer.



CONFIG.SYS commands

Command	Function
devicehigh=c:\cardsoft\ssvadem.exe devicehigh=c:\cardsoft\cs.exe devicehigh=c:\cardsoft\csalloc.exe devicehigh=c:\cardsoft\cardid.exe	Commands necessary for CardSoft to support fax/modem and application cards; other types of cards may require the MTD driver (see the documentation that came with your card for information); contains additional commands for specific drivers
devicehigh=c:\cardsoft\atadrv.exe devicehigh=c:\cardsoft\mtddrv.exe	Provide support for ATA drive cards and ATA flash cards; install the atadrv.exe command before the sramdrv or mtddrv command
devicehigh=c:\cardsoft\mtsram.exe devicehigh=c:\cardsoft\mtdrv.exe	Provide support for SRAM cards
device=c:\dos\emm386.exe x=d000-dfff	Excludes the memory range D000-DFFF



Commands in the SYSTEM.INI File

The CardView software adds some commands and modifies others in the Windows SYSTEM.INI file. If CardView files are deleted from your system, you may have problems starting Windows unless you remove these commands from the SYSTEM.INI files. The following table lists the command lines CardView places in the SYSTEM.INI file.

SYSTEM.INI commands

Command	Function
comm.drv=c:\cardview\sscomm.dr	Placed in the [boot] section of the SYSTEM.INI file; replaces comm.drv=comm.drv
device=c:\cardview\ssvrdd.386 device=c:\cardview\ssvrdd.386 ;device=*vcd COM1Base=3F8 COM1IRQ=4 COM2Base=2F8 COM2IRQ=3 COM3Base=3E8 COM3IRQ=4 COM4Base=2E8 COM4IRQ=3	Added in the [386Enh] section; replaces device=*vcd
emmexclude=d000-dfff	Added in the [386Enh] section so that CardView not the memory manager controls these addresses









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Do you use your SCM product: How did you hear about our product? What PCMCIA products do you need that are not currently offered	Ad	 At Home Editorial 	Other Other

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