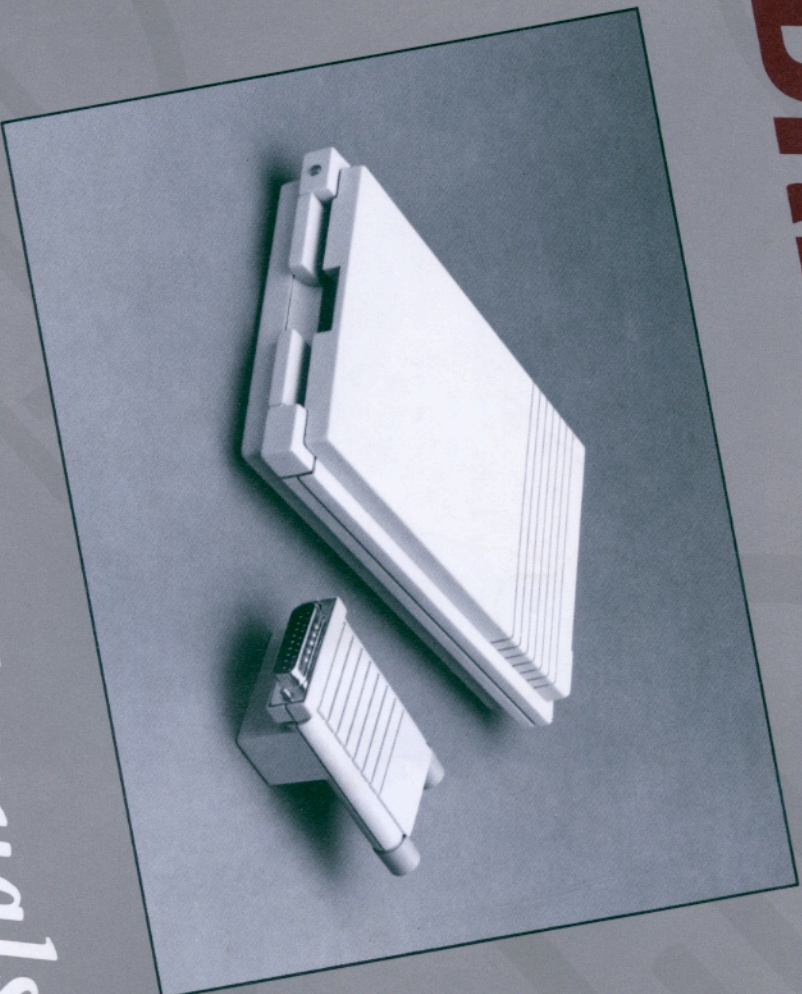


# **RAPPORT<sup>TM</sup> DRIVE 2.4**



*User's Manuals*



## Limited Warranty on Media and Manuals

Kennect Technology has tested the software and reviewed the documentation included with this product and warrants the software and manual to be free of physical defects for a period of ONE (1) YEAR from the date of original retail purchase.

If you find a defect in the software or manual and return it during the warranty period to Kennect Technology Customer Service, Kennect Technology will replace the software or manual at no charge to you. Please attach your name, address, telephone number, a description of the problem, and proof of date of original retail purchase, to the software or manual returned for warranty replacement.

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## Federal Communications Commission Radio Frequency Interference Statement

**Warning:** The equipment described in this manual generates and uses radio frequency energy. If it is not installed and used properly (i.e. in strict accordance with these instructions), it may cause interference to radio or television reception.

This equipment has been tested and found to comply with the limits for a class B computing device, pursuant to Subpart J, Part 15, of the FCC Rules. These rules are designed to provide reasonable protection against radio and television interference when operated in a residential installation.

If radio or television interference stops when you turn your computer off and resumes when it is turned back on, your computer, or one of its peripheral devices, is to blame. Turn the computer off, remove one of the peripheral devices, and turn the computer on. Continue this procedure until the source of the interference is isolated. Don't forget that the monitor is also a possible source of interference.

The effects of interference can be minimized or eliminated by one or more of the following measures:

- Reposition the receiver's antenna. Also make sure the antenna wires are making good electrical contact.

- Make sure that all electrical connections on the computer are secure and any shielded I/O cables are properly fastened.

- Move the computer farther away from the receiver.

- Plug the computer and receiver into separate electrical circuits.

If the interference persists, you should seek advice or service from your dealer or a reputable radio/television technician.

Kennect Technology is not responsible for any radio or television interference caused by unauthorized modifications to this equipment. It is the responsibility of the user to correct such interference.

### Important Note About Shielded Cables and Connectors:

This product was FCC certified under test conditions that included the use of shielded cables and connectors between system components. A shielded cable is one which uses a metallic wrap around its wires to reduce the potential effects of radio frequency interference. It is important that you use shielded cables and connectors properly to prevent the generation of interference.

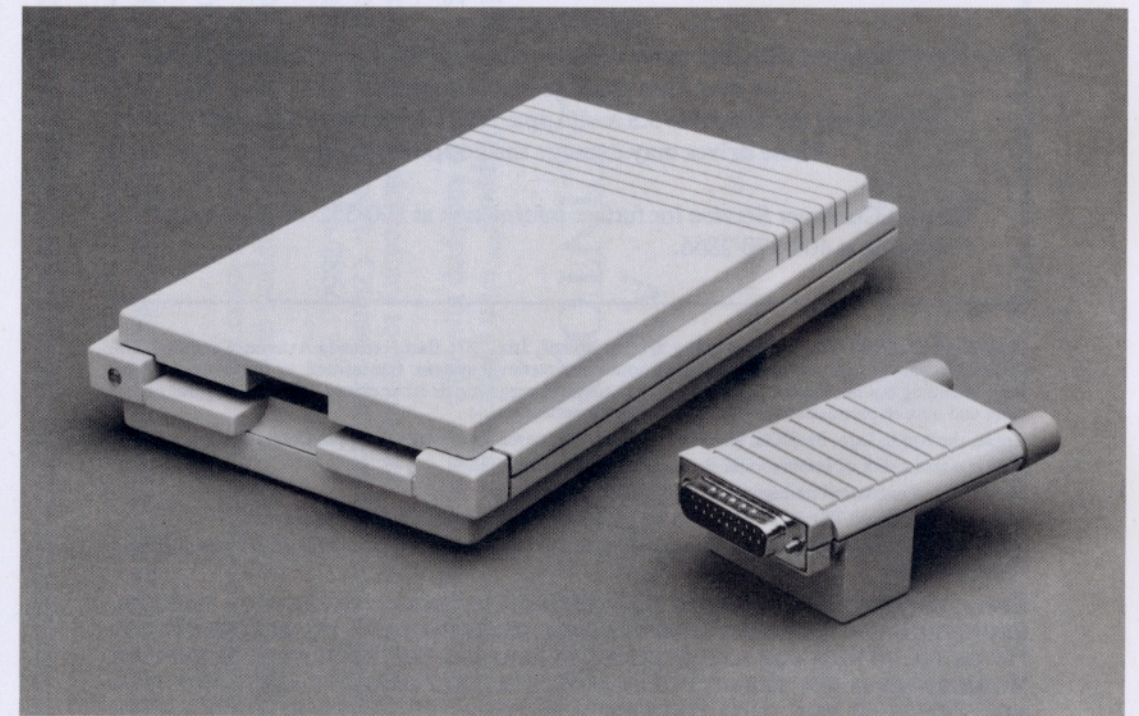
The user may find the following booklet prepared by the Federal Communications Commission helpful:

*How to Identify and Solve Radio-TV Interference problems.*

This booklet is available from the US Government Printing Office, Washington, D.C. 20402.

Stock No. 004-000-00345-4

# Rapport™ & Drive 2.4 for Rapport User's Manual



 **KENNECT™**  
TECHNOLOGY

Division of The Engineering Department, Inc.





## Supported Computer Systems

Rapport™ is designed to work with the following computers:

Macintosh™ 512e, Macintosh Plus, Macintosh SE

And the following disk drives:

Apple™ Drive 3.5, Mac 800K Internal Drive, Mac 800K External Drive & Kennect™ Drive 2.4

### WARNING

Use of Rapport with any other drive(s) may lead to unpredictable results or may even damage your equipment.

Do not use the Unidrive 3.5 and Apple 5.25" drives with Rapport!  
These drives may damage the Rapport module.

Contact Customer Service for further information at 800-552-1232 or inside California at 408-370-2866.

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## Introduction

The **Rapport™** universal floppy disk drive controller and the **Kennect Drive 2.4** provide powerful solutions to data compatibility and storage problems. The **Rapport** software is easily installed in the system folder and the module itself plugs into the disk drive port on the back of your computer. **Rapport** directly controls Kennect's **Drive 2.4** as well as Apple external disk drives, and it monitors the Macintosh internal drive. Once installed, with the Apple 800K drive attached, **Rapport** can read and write IBM 720K 3.5" disks, also read, write and initialize a special 1.2Mbytes format. When Kennect's **Drive 2.4** is connected, **Rapport** can create special high density format of 2.4Mbytes, in addition to the 1.2Mbytes format and all current IBM and Apple 3.5" standards.

## Using the Manual

This manual does assume that you have familiarized yourself thoroughly with the user's guides provided with your Macintosh and *The Macintosh Utilities User's Guide*. (Version 6.0 or later)

Instructions are in **boldface** and explanatory information is in plain text. Special cautionary information is marked with this symbol:

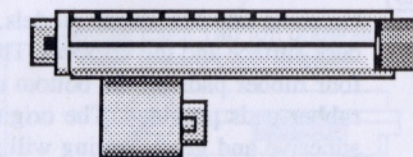


*This is an important message—be sure to read.*

The manual is divided into three sections. The first describes the installation process; then a brief tutorial on using **Rapport** and **Drive 2.4**; and finally, a reference section.

## Getting Started

**Rapport** and **Drive 2.4** are easily installed—You will not need any special tools. In most cases fingers will do all that needs doing.







## Unpacking Rapport

Along with this manual, your Rapport box contains the following:

- ☐ the Rapport module
- ☐ a Rapport System Disk (containing the Rapport Driver software)
- ☐ a package of rubber pads

Please keep all your packing materials in case you need to ship your **Rapport**. The plastic bag enclosing your **Rapport** is made of a special anti-static material and should be used to store or transport your Rapport whenever the module is not connected to a computer.

## Unpacking Drive 2.4

Along with this manual, your Drive 2.4 box contains the following:

- ☐ a Drive 2.4
- ☐ a Rapport System Disk (containing the Rapport Driver software)
- ☐ a blank High Density diskette

Please keep all your packing materials in case you need to ship your **Drive 2.4**. The plastic bag enclosing the cable connector on your **Drive 2.4** is made of a special anti-static material and should be used to store or transport your **Drive 2.4** whenever the drive is not connected to a computer.

## Before You Begin Installation

Make a copy of the Rapport System Disk and store the original in a safe place. See your Apple owner's guide for instructions on copying an entire disk.



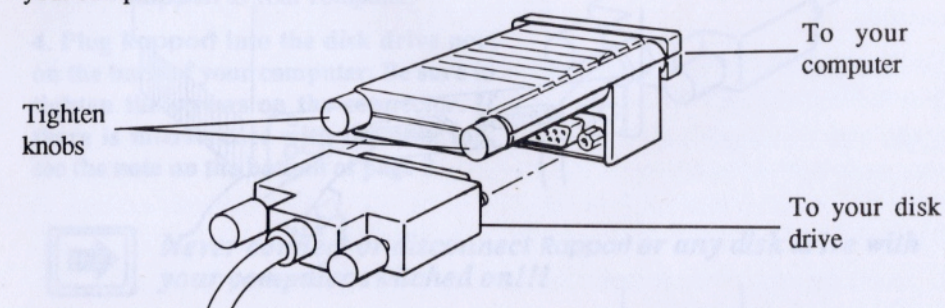
### A Note on the Short Macintosh

On some late Macintosh models, there may be interference between the desk surface and the **Rapport**. This condition is adjusted by replacing the four rubber pads on the bottom of the Macintosh with the self adhesive rubber pads provided. The original rubber pads are attached by a mild adhesive and gentle prying will remove them. If you require additional pads for the use of **Rapport** on more than one system, please contact Kennect customer service and they will be provided to you free of charge.



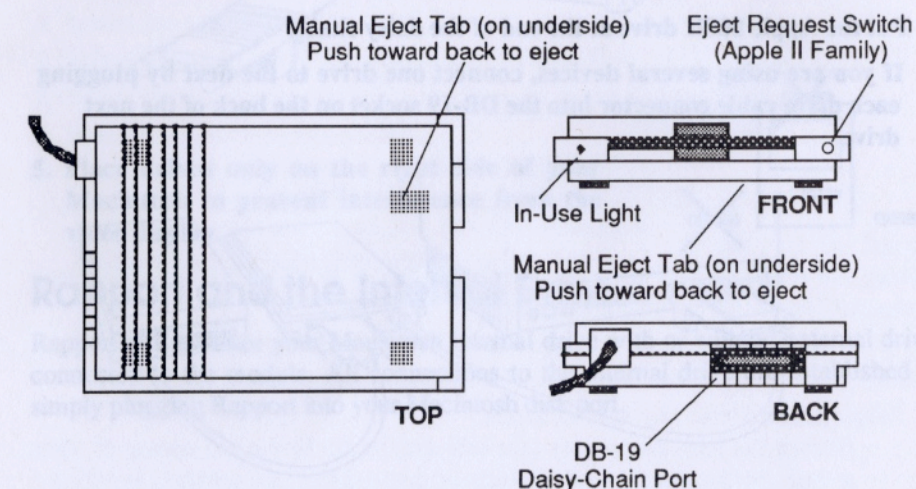
## Rapport

The **Rapport** Module contains a powerful microprocessor system and disk controller in a friendly, easy to use form. The upper connector is plugged into your computer, the lower connector receives a disk drive cable and the blue knobs secure **Rapport** to your computer.



## Drive 2.4

**Drive 2.4** has been designed specifically to unleash the full power of **Rapport**. Virtually any format that makes sense on 1Mbytes or 2Mbytes 3.5" media, is possible with this combination—up to 2.4 Mbytes on one high density diskette. Operation of **Drive 2.4** is different from the Apple 3.5" drive only in that the manual disk ejector is a small tab found in an opening on the bottom of the drive instead of a pinhole to the right of the disk slot. There is also a switch that requests **Rapport** to eject the disk. This switch is not used with the Macintosh family (eject management is provided by the Macintosh) and is provided for use with Apple II type systems only.

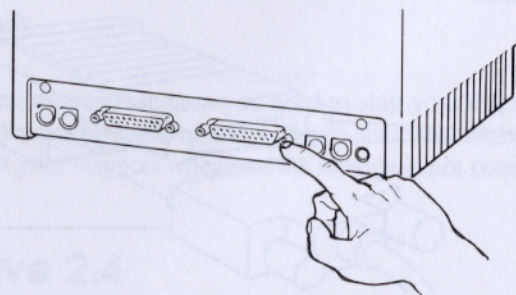






## Making Connections

1. Shut down your Macintosh and turn off the power.
2. On the back of your computer are a number of peripheral ports or plugs. Briefly touch one of the metal sheaths to discharge any static electricity you may be carrying.

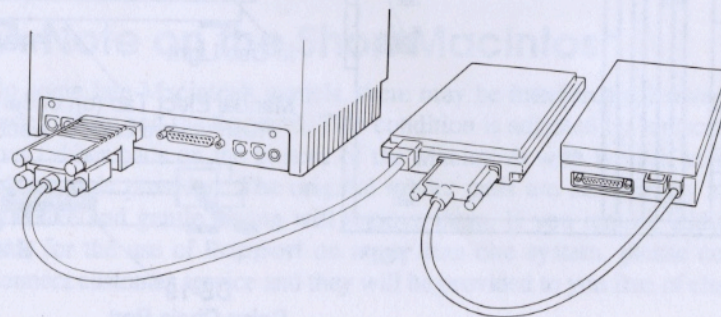


*Static electricity can severely damage or destroy the sensitive circuitry in your computer or Rapport.*

## Rapport and External Drives

Up to three external drives may be chained together. Only one of these drives can be an Apple 800K drive, the other two (or all three) must be Kennect **Drive 2.4**'s.

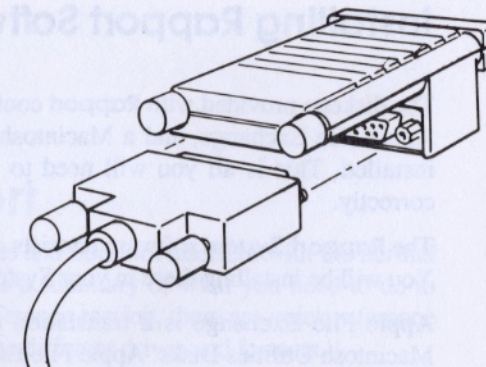
1. Put the Apple 800K drive at the end of the daisy chain.
2. If you are using several devices, connect one drive to the next by plugging each drive cable connector into the DB-19 socket on the back of the next drive.



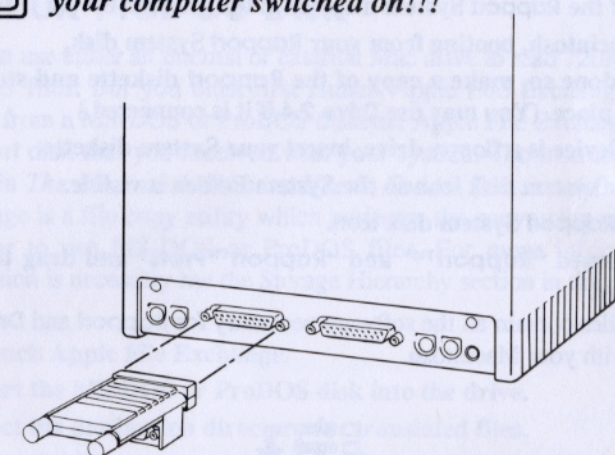
3. Connect the first drive in the chain to Rapport. Be sure to tighten the screws on the connectors.

It's easiest to attach the cable to the module before you connect Rapport to your computer.

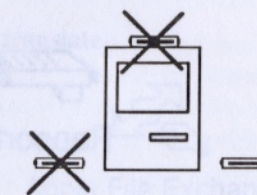
4. Plug Rapport into the disk drive port on the back of your computer. Be sure to tighten the screws on the connector. If there is interference with the desk top, see the note on the bottom of page 2.



*Never connect or disconnect Rapport or any disk drive with your computer switched on!!!*



5. Place drives only on the right side of your Macintosh to prevent interference from the video display.



## Rapport and the Internal Drive

Rapport will monitor your Macintosh internal drive with or without external drives connected to the module. All connections to the internal drive are established by simply plugging Rapport into your Macintosh disk port.





## Installing Rapport Software in Your System

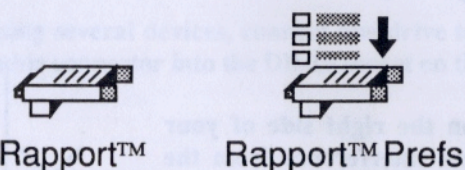
The diskette provided with **Rapport** contains the **Rapport** System software, a copy of Apple File Exchange, and a Macintosh System Folder with the **Rapport** software installed. This is all you will need to use **Rapport** and verify that it is working correctly.

The **Rapport** System software consists of two files, **Rapport™** and **Rapport™Prefs**. You will be installing these in your System Folder.

Apple File Exchange is a translation program provided by Apple on one of the Macintosh Utilities Disks. Apple File Exchange performs the translation necessary to move files in both directions, from MS-DOS or ProDOS to the Macintosh and back. It is included on the **Rapport** System disk as a convenience.

1. Insert the copy of the **Rapport** System diskette in the internal drive.
2. Turn on your Macintosh, booting from your **Rapport** System disk.
3. If you have not done so, make a copy of the **Rapport** diskette and store the original in a safe place. (You may use **Drive 2.4** if it is connected.)
4. If your start-up device is a floppy drive, insert your System diskette.
5. Double-click your system disk icon so the System Folder is visible.
6. Double-click the **Rapport** System disk icon.
7. Select the files named "**Rapport™**" and "**Rapport™Prefs**" and drag them to your system folder.

These two files contain all the software necessary for **Rapport** and **Drive 2.4** to operate with your Macintosh.



8. Drag the **Rapport** disk over the Trash to eject it or select the disk icon and choose **Eject** from the File menu.
9. If your start-up device is a floppy drive, insert your System diskette in the internal drive. Note that you can not boot from drives connected to **Rapport**.
10. Select **Restart** from the Special menu.

During the start-up process you will see, in the lower left corner of your screen, the **Rapport** logo if the **Rapport** and software are correctly installed.

11. Your **Rapport** Disk Controller software is now installed.



## Working with Rapport

**Rapport** extends your disk drive's capabilities and does not interfere with the normal operation of your computer. What follows is a summary of what you need to do to work with basic formats and sizes. In the Reference section, there are quick reference charts that detail what **Rapport** can do with the different drives and formats.

### Reading a 720K MS-DOS or 800K ProDOS Disk

You can use either an internal or external Mac drive to read 720K MS-DOS and 800K ProDOS files. But you must first launch Apple File Exchange to convert the file format from a MS-DOS or ProDOS diskette. Apple File Exchange is provided on the **Rapport** disk that you received with your system. The instructions for using it are found in *The Macintosh Utilities User's Guide*. (Version 6.0 or later). Apple File Exchange is a file copy utility which performs the conversion your Macintosh needs in order to use MS-DOS or ProDOS files. For more information on why this conversion is necessary see the Storage Hierarchy section in this Manual.

1. Launch Apple File Exchange.
2. Insert the MS-DOS or ProDOS disk into the drive.
3. Select the destination directory for translated files.
4. Select the directory containing the files you want to translate.
5. Select the files to be translated.

Apple File Exchange will use the appropriate translators provided the translators are in the correct translation menu and are active. See *The Macintosh Utilities User's Guide* for translation instructions.



Apple File Exchange

6. Perform the file system translation using Apple File Exchange.





## Saving to a Standard 720K MS-DOS or 800K ProDOS Disk

1. You must have an external drive connected to the Rapport module to save to any diskette other than a standard 800K HFS or ProDOS format diskette.
2. Launch Apple File Exchange.
3. Insert the MS-DOS disk in the external drive connected to Rapport or ProDOS disk in the internal or external drive.
4. Select the appropriate drive as the destination for the translated files.
5. Perform the translation.

## Initializing a Standard Macintosh 800K HFS Disk

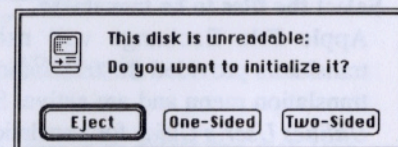


*Never use High Density Media in a Macintosh 800K Drive. HD media can be damaged beyond repair when written by a low density drive.*

**Rapport** does not affect the normal disk operations of your Macintosh. You can initialize a blank diskette in the same way that you would without **Rapport** installed. However, if you use an external drive you will see a different dialog box because of the variety of formats that **Rapport** can create with the external drive. If you need to erase an MS-DOS or ProDOS format, in order to initialize it as an 800K HFS disk, using the internal drive, you will see yet another dialog box.

## Internal Drive

1. Insert the disk. If it is brand new you will immediately see a dialog asking whether you wish to initialize it as a one-sided or two-sided disk. Otherwise, choose Erase from the Special menu.
2. Click One-Sided (400K) or Two-Sided (800K).



*Remember, the internal drive will only format 400 and 800K HFS disks*



3. If the disk has previously been initialized as an MS-DOS or ProDOS disk you will immediately see the dialog box shown below. (MS-DOS and ProDOS disks will always appear locked in the internal drive.) In order to reformat the disk to 800K HFS using the internal drive, you must first inhibit the **Rapport** internal drive functions by selecting **RapportPrefs** in the Macintosh Control Panel. Once **Rapport** is inhibited, the format operation will proceed normally. (See the Control Panel description on page 13 of this manual.)



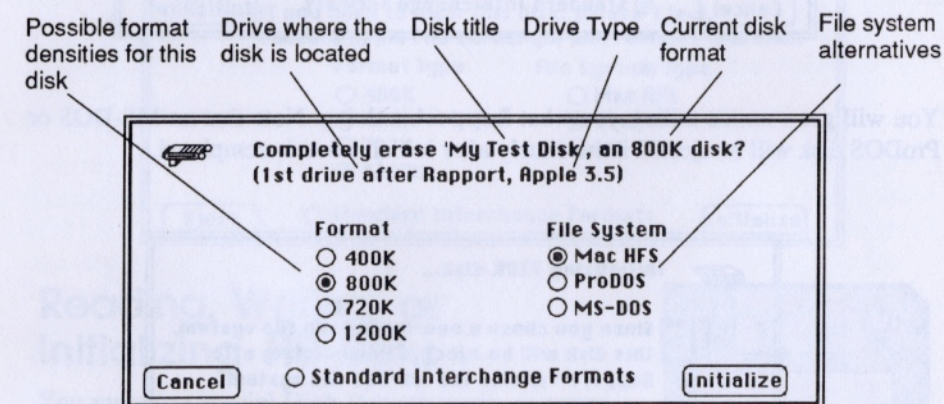
This is a locked MS-DOS disk. If you wish to initialize this disk, please eject, unlock, and re-insert it IN THE EXTERNAL DRIVE. If you want to view its contents, please execute Apple File Exchange, and reinsert this disk.

EJECT

## External Drive

1. Insert a blank disk in the external drive; or insert an old disk and choose Erase from the Special menu.

**Rapport** will present you with a dialog box like the one below. This is the box that **Rapport** will use for all initialization operations but the particulars of drive, disk, and file system will change appropriately.



3. Click the Apple 800K and Mac HFS buttons.
4. Click Initialize.





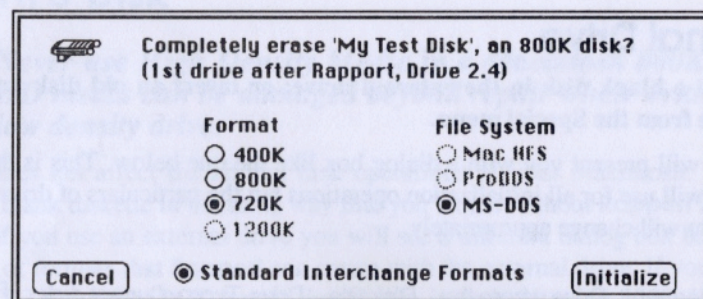
## Initializing a 720K MS-DOS Disk



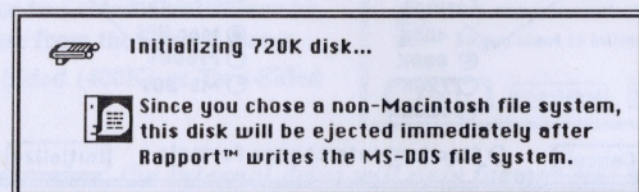
*The following format operation requires the use of a Kennect Drive 2.4.*

It is not possible to initialize a compatible 720K MS-DOS disk on standard Apple drives. If your **Rapport** is connected to an Apple drive only, 720K diskettes will have to be pre-initialized on an IBM-type system—your dealer may be able to assist you.

1. Insert the disk into Drive 2.4. If it is blank, the **Rapport** dialog box will come up automatically; otherwise choose Erase from the Special menu.
2. Click the 720K and MS-DOS buttons.
3. Click Initialize.



You will get a notice telling you what **Rapport** is doing. Note that an MS-DOS or ProDOS disk will be ejected immediately after initialization is completed.



If you wish to read or write to the disk you have just initialized you must first launch Apple File Exchange, then insert the disk in the appropriate disk drive.



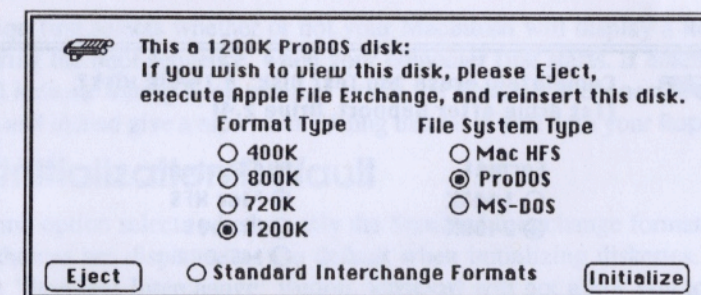
## Initializing for the Special Rapport 1.2Mbytes Disk Format

You must use standard disk media (DD/DS) for this format. The special 1.2Mbytes format may only be read on Macintosh systems equipped with **Rapport**. External Apple 800K drives and **Drive 2.4** connected to **Rapport** can read, write, and initialize the 1.2Mbytes format.

1. Insert the disk into an external drive.
2. When the initialize dialog appears click the 1200K button and your choice of file system.
3. Click Initialize.

## Reading & Writing 1.2Mbytes Disks

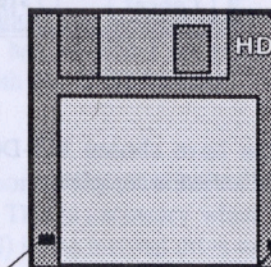
1. Insert the disk into external Apple 800K or Drive 2.4. For read only operation, the internal Apple 800K drive may be used.
2. If the the disk has an HFS file system you will not have to do anything extraordinary to access it—it will appear just like a standard disk.
3. If the disk has a ProDOS or MS-DOS file system you will have to launch Apple File Exchange before you can access the disk for reading or writing files, otherwise the system will respond with the following dialog box.



## Reading, Writing, or Initializing HD Disks

You must use special High Density media to create formats above 1.2Mbytes. These floppy disks are distinguished by an "HD" on or near the metal sleeve and by another opening opposite the Write-Protect tab.

Write  
Protect



HDD





*The following high density read, write, and initialization operations require the use of Rapport and Kennect Drive 2.4.*

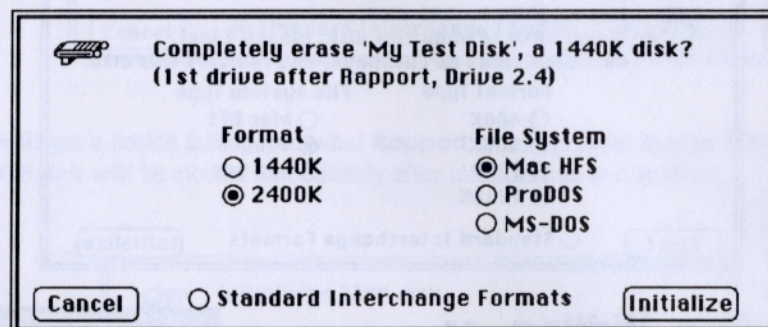
## Reading & Writing High-Density Disks

1. Insert the disk into Drive 2.4.
2. If the the disk has an HFS file system, you will not have to do anything extraordinary to access it—it will act, taste and feel just like a standard disk.
3. If the disk has a ProDOS or MS-DOS file system, you will have to launch Apple File Exchange before you can access the disk for reading or writing files.

## Initializing 1.44Mbytes and 2.4Mbytes Disks

These high density formats require “HD” floppy disks. You will not see the dialog shown if you have inserted a standard density diskette.

1. Insert the disk into Drive 2.4.
2. If it has already been initialized, choose Erase from the Special menu.
3. Pick the density and file system you wish to use.
4. Click Initialize.

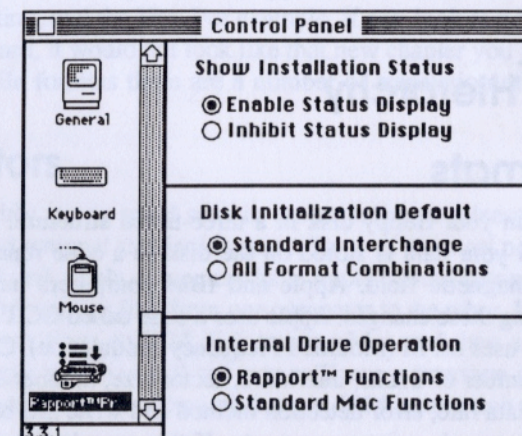


If you have chosen MS-DOS or ProDOS, your disk will be ejected after the initialization is complete.



## Control Panel Dialog

Three options governing the overall operation of **Rapport** can be set from the Macintosh Control Panel (reached from the Apple menu). See your Macintosh User's Manual for more information on the Macintosh Control Panel.



## Show Installation Status

The option first selects whether or not your Macintosh will display a **Rapport** icon, during the boot sequence, when your computer first starts. If enabled, the icon will indicate during boot, whether or not the **Rapport** is connected to your machine and indeed give a nice warm feeling that all is well with your **Rapport**.

## Disk Initialization Default

The second option selects whether only the Standard Interchange formats or all format choices are displayed as the default when initializing diskettes. If you click the ‘Standard Interchange’ Button, **Rapport** will not allow you to select non-standard format and file options. (There is also a Standard Interchange Formats button in the initialization dialog box that will allow you to temporarily change the default initialization option.) This option has no effect on your **Rapport**'s ability to read and write diskettes initialized with any of the formats.

## Internal Drive Operation

The third option allows you to inhibit **Rapport** from monitoring your internal drive by clicking the “Standard Mac Functions” button. This is necessary when reinitializing a non-Macintosh disk (MS-DOS or ProDOS) in the internal drive to the standard 800K Macintosh format.





## Reference

### The Storage Hierarchy

#### Physical Formats

Information is stored on your floppy disk in a three-tiered structure. On the most basic, "physical," level your data is stored on the disk as a code represented by a series of changes in magnetic field. Apple and IBM computers have distinctly different ways of creating these changes. Apple uses a code called GCR (Group Code Recording), while IBM uses MFM (Modified Frequency Modulation). Other physical level differences are number of tracks, interleave, sector size, number of sectors per track, intersector gap, data rate, error detection method and write pre-compensation; also media type, motor speed, write current, etc. If this sounds like Greek, don't worry; just remember that there are physical level differences and **Rapport** deals with them.

#### File System Formats

The file system is often called the "logical" level of storage structure; it determines how data is organized on your disk. **Rapport** can read, write, and initialize disks for three different file systems: HFS, ProDOS, and MS-DOS. However, your Macintosh needs help to understand alien file structures. In order to move information between different computers you must not only be able to read and convert the physical storage, but also be able to change files from one file structure to another. (This is why you use Apple File Exchange to translate the files **Rapport** reads when you are moving from one file system to another.)

#### External File Systems

In its anticipated System 7.0 release, Apple will implement an External File System which will implement the file system functions of the Apple File Exchange program inside the Macintosh System software. This will allow you to access other disk operating system files without having to launch a separate application. In the meantime you will have to use Apple File Exchange or a similar program to move files from one file system to another.



## Application File Formats

**Rapport** and Apple File Exchange will allow you to read MS-DOS disks and convert their files to ProDOS or HFS files. But unless you are bringing simple ASCII files from one system to another you will have to deal with the way the application stored data in the file. Most sophisticated applications use hidden codes in their files for display, printing, and the like. For example, if you look at what is actually stored by Microsoft Word, it would not look like that new chapter you just wrote. To deal with application file formats there are a number of translation utilities available for the Macintosh.

### Translators

There is a fairly strong trend seen in recent software releases to provide automatic translation and optional standard formats. Some of the most popular programs written for both IBM and Apple computers have implemented automatic translators to ease the difficulty of moving files from one computer to the other. If you move a Microsoft Word document from an IBM disk to your Mac and then attempt to open the file using the Apple version of Word you will see a message informing you that the program is converting the document from its IBM incarnation to an Apple document.

You should consult your user's manual for any program that exists on both Apple and IBM computers to find out whether the program provides a translation function. Apple File Exchange also has some limited translation ability, but if none of the above helps, you should check with your dealer to find out if there are any programs that will perform the application format translation you need. (DataViz, Inc. produces the best-known translation utility.)

Sometimes, particularly with graphics files, the information has been stored in a standard structure. For example, many different graphics programs know how to read MacPaint files. There are also standards such as PICT, TIFF, and EPSF to allow different applications on different machines to use the same graphic data. In general, the more popular the application, the more likely a standard format exists.

### Rapport Does Not Translate Application Formats

Please remember that the combination of **Rapport** and Apple File Exchange only takes care of the first two levels of disk translation: the physical format and the file system. You must use an application translation option or a program designed specifically for application file format translation to move files from one type of computer to another.





## Format and File System Alternatives

The first chart on the following page describes the disk density and file system alternatives that are possible with **Rapport** and different disk drives.

The chart is in two linked sections. On the top, the columns describe the physical disk format and the rows the disk drive type. Each intersection consists of three boxes that signify the drive's ability to read, write, or initialize a disk. If the boxes are blacked-in, the drive can perform the operation at that disk density and format. Note that physical disk format and file system are separate issues.

The second section shows the file systems that can be created using the various physical disk formats. Since all combinations of physical disk format and file systems are possible, the purpose of this chart is to separate the standard combinations (used for communicating with the establishment) from those more creative combinations that may make sense for use on your Macintosh. Standard Interchange Formats are combinations of physical disk format and file system that can be used to communicate with Apple computers that do not have **Rapport** installed (ProDOS and HFS) or IBM type MS-DOS machines. Special Formats are alternate combinations that may prove useful for systems that have **Rapport** installed (1.2Mbytes and 2.4Mbytes formats in particular for getting the most out of your diskettes and for transporting large files to, or from another **Rapport** equipped Macintosh).

## The Standard Interchange Formats

**Rapport** can create any combination of physical and logical formats for your disks. However, only a few of these will allow you to transfer data between IBM computers and your Macintosh, or between the Macintosh and other Apple computers not equipped with **Rapport**. These combinations are the Standard Interchange Formats. Click the button at the bottom of the initialization dialog box to restrict **Rapport** to these combinations.

|                                                                                                                                               |                                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| <input type="radio"/> 800K                                                                                                                    | <input type="radio"/> ProDOS            |
| <input checked="" type="radio"/> 720K                                                                                                         | <input checked="" type="radio"/> MS-DOS |
| <input type="radio"/> 1200K                                                                                                                   |                                         |
| <input type="button" value="Cancel"/> <input checked="" type="radio"/> Standard Interchange Formats <input type="button" value="Initialize"/> |                                         |

The diagram on the bottom of the opposite page shows which variations of density and format are native to the computer whose disks can be read by **Rapport**.

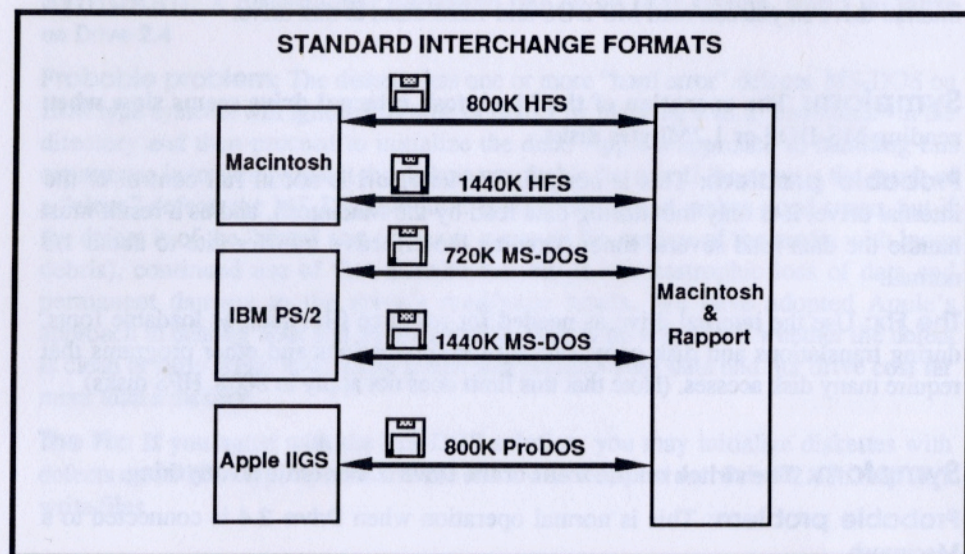


| DRIVE TYPE              | PHYSICAL DISK FORMAT |          |                  |              |              |
|-------------------------|----------------------|----------|------------------|--------------|--------------|
|                         | Apple 800K           | IBM 720K | IBM/Apples 1.44M | Kennect 1.2M | Kennect 2.4M |
| Macintosh Internal 800K | R W I                | R W I    | R W I            | R W I        | R W I        |
| Macintosh External 800K | ■ ■ ■                | ■ ■ ■    | ■ ■ ■            | ■ ■ ■        | ■ ■ ■        |
| Kennect Drive 2.4       | ■ ■ ■                | ■ ■ ■    | ■ ■ ■            | ■ ■ ■        | ■ ■ ■        |

R = Read W = Write I = Initialize

| FILE SYSTEM                  | PHYSICAL DISK FORMAT |          |                  |              |              |
|------------------------------|----------------------|----------|------------------|--------------|--------------|
|                              | Apple 800K           | IBM 720K | IBM/Apples 1.44M | Kennect 1.2M | Kennect 2.4M |
| Standard Interchange Formats | H M P                | H M P    | H M P            | H M P        | H M P        |
| Special Formats              | ■ ■ ■                | ■ ■ ■    | ■ ■ ■            | ■ ■ ■        | ■ ■ ■        |

H = HFS Macintosh M = MS-DOS IBM P = ProDOS Apple II







## Troubleshooting

**Symptom:** Macintosh can't find one (or more) disk drive on the daisy chain.

**Probable problem:** The Apple drive is in the wrong position in the daisy chain, or the **Rapport** software is not installed in the System Folder used to start the system, or the Apple drive is not the right type or is not working properly.

**The Fix:** Make sure that the Apple drive is the last drive in the daisy chain. If daisy chain position is not the problem and the **Rapport** software is installed on your boot disk, turn off your Macintosh, remove **Rapport** and plug the Apple drive directly into the disk port. Turn the Macintosh on and check the drive for normal operation. If the Apple drive checks out ok, call Kennect customer service for assistance.

**Symptom:** You can't re-initialize a ProDOS or MS-DOS disk to Macintosh 800k HFS in the internal drive.

**Probable problem:** The **Rapport** must be temporarily disconnected from the internal drive to allow the re-initializing of foreign disk formats.

**The Fix:** Choose the Control Panel from the Apple menu and select the **RapportPrefs** icon. The lowest of the three panes shown contains a radio button for disconnecting **Rapport** from the internal drive. (See the control panel section in this manual) After completing your re-initialize operation you may want to re-connect **Rapport** to your internal drive so you can read MS-DOS and 1.2M disks in that drive.

**Symptom:** The operation of the Macintosh internal drive seems slow when reading MS-DOS or 1.2Mbytes disks.

**Probable problem:** This is normal. The **Rapport** is not in full control of the internal drive, it is only monitoring data read by the Macintosh, and as a result must handle the data read several times, slowing the effective transfer rate to about 1/3 normal.

**The Fix:** Use the internal drive as needed for resource files such as loadable fonts, during translations and disk copy, but not for applications and other programs that require many disk accesses. (Note that this limit does not apply to 800K HFS disks)

**Symptom:** The switch on the front of the Drive 2.4 doesn't do anything.

**Probable problem:** This is normal operation when Drive 2.4 is connected to a Macintosh.



**Symptom:** High Density media that was initialized on an Apple 800K drive won't initialize on Drive 2.4 with either 1.44Mbytes or 2.4Mbytes format.

**Probable problem:** Initializing High Density media on an Apple 800K drive will make that disk un-usable. There is a long and very technical explanation as to why your disk is now un-usable, but we know of no easy way for you to repair it.

**The Fix:** Make an expensive coaster out of your HD disk and try not to do it again.

**Symptom:** When trying to initialize a disk on Drive 2.4 the dialog box won't give you the choice you want.

**Probable problem:** You are trying to initialize a diskette that is the wrong type for the format you want, such as 800K or 720K format on a High Density disk, or you want a non-standard interchange format and the standard interchange only button is selected.

**The Fix:** The Drive 2.4 will only allow you to initialize on the correct media. Check to be sure which type of media you have inserted in the drive. The Standard Interchange format only button may be selected or deselected in either the control panel or in the initialize dialog box. (If selected or deselected in the initialize dialog box, the selection will be for the current initialization operation only—the control panel sets the default selection.)

**Symptom:** A diskette that initialized fine on an IBM system, won't initialize on Drive 2.4

**Probable problem:** The diskette has one or more "hard error" defects. MS-DOS on IBM type systems will ignore this type of defect by marking it as a "bad block" in the directory and then proceed to initialize the disk. Apple's approach to handling this occurrence is to simply reject the disk as unsuitable for use. If the error is the result of a "clean" defect, the MS-DOS solution is economical and makes good sense, but if the defect is of the "dirty" sort (a tear or gouge in the surface of the media with loose debris), continued use of that diskette can result in catastrophic loss of data and permanent damage to the drive's read/write heads. We have adopted Apple's approach to dealing with bad media because there is no way to tell whether the defect is clean or dirty when initializing a disk and because your data and our drive cost far more than a diskette.

**The Fix:** If you agree with the MS-DOS solution, you may initialize diskettes with defects on an IBM type system and use them with **Rapport** and Drive 2.4 to read and write files.





## Technical Specifications

### Rapport

#### Drives Supported (Firmware)

|              |                    |             |                |                  |
|--------------|--------------------|-------------|----------------|------------------|
| KT 5.25"     | 40 tracks/ 2 sides | 300 rpm     | 5876 bpi       | 250K bits/s      |
| KT 5.25"     | 80 tracks/ 2 sides | 360 rpm     | 5922/9646 bpi  | 300K/500K bits/s |
| Apple 3.5"   | 80 tracks/2 sides  | 394-590 rpm | 8897 bpi       | 489.6K bits/s    |
| KT Drive 2.4 | 88 tracks/2 sides  | 300-600 rpm | 8710-17434 bpi | 464-727K bits/s  |

#### Formats Supported (Firmware)

|               |        |             |                         |
|---------------|--------|-------------|-------------------------|
| IBM 5.25"     | MFM    | 360K Bytes  | KT(PC)                  |
| IBM HD 5.25"  | MFM    | 1.2M Bytes  | KT(AT)                  |
| IBM 3.5"      | MFM*#  | 720K Bytes  | KT Drive 2.4 & Mac 800K |
| IBM HD 3.5"   | MFM-HD | 1.44M Bytes | KT Drive 2.4            |
| Apple 3.5"    | GCR    | 400K Bytes  | KT Drive 2.4 & Mac 800K |
| Apple 3.5"    | GCR    | 800K Bytes  | KT Drive 2.4 & Mac 800K |
| Apple HD 3.5" | MFM-HD | 1.44M Bytes | KT Drive 2.4            |
| KT 3.5"       | MFM*   | 1.2M Bytes  | KT Drive 2.4 & Mac 800K |
| KT HD 3.5"    | MFM-HD | 2.4M Bytes  | KT Drive 2.4            |

\*Read only on internal Mac 800K Drive, all formats read/write on appropriate external drive.

# Read/write only on Mac 800K Drive, all other appropriate format/drives read/write&format.

#### Hardware

|                  |                   |
|------------------|-------------------|
| Processor:       | 4MHz. 65C02       |
| Control Logic:   | Custom CMOS       |
| RAM:             | 32Kx8 Static CMOS |
| ROM:             | 16Kx8 CMOS        |
| Disk Controller: | Custom CMOS       |

#### Software

Macintosh Rapport Driver (placed in the System folder)

Rapport Prefs (placed in the System folder)

Apple II gs: none required (downloading additional drivers with pre-boot)

Firmware: 16K on board (with provisions for down loading additional drivers)

#### Power Requirements

+5 Volts  $\pm$  .25V @ 100mA

#### Mechanical

|                 |                     |
|-----------------|---------------------|
| Length Overall: | 3.75" (9.53 cm)     |
| Width:          | 2.00" (5.08 cm)     |
| Height:         | 1.25" (3.18 cm)     |
| Weight:         | 2.65 Ounces (75 gm) |

#### Environment

|                               |                               |
|-------------------------------|-------------------------------|
| Operating Temperature:        | 40° to 95° F (5° to 35° C)    |
| Operating Humidity:           | 10 to 80% RH Non-condensing   |
| Storage/Shipping Temperature: | -40° to 140° F (-40° to 60°C) |
| Storage/Shipping Humidity:    | 8 to 90% RH Non-condensing    |



## Drive 2.4

### Formats Supported

|               |        |             |           |                 |
|---------------|--------|-------------|-----------|-----------------|
| IBM 3.5"      | MFM    | 720K Bytes  | 8710 bpi  | 500K bits/s     |
| IBM HD 3.5"   | MFM-HD | 1.44M Bytes | 17434 bpi | 727K bits/s     |
| Apple 3.5"    | GCR    | 400K Bytes  | 8710 bpi  | 500K bits/s     |
| Apple 3.5"    | GCR    | 800K Bytes  | 8710 bpi  | 500K bits/s     |
| Apple HD 3.5" | MFM-HD | 1.44M Bytes | 17434 bpi | 727K bits/s     |
| KT 3.5"       | MFM    | 1.2M Bytes  | 9153 bpi  | 464-492K bits/s |
| KT HD 3.5"    | MFM-HD | 2.4M Bytes  | 17434 bpi | 727K bits/s     |

### Interface Hardware

Control Logic: Custom CMOS

### Drive Characteristics

|                            |                                    |
|----------------------------|------------------------------------|
| Maximum Recording Density: | 17434 Bits per inch                |
| Maximum Data Rate:         | 750K bits per second               |
| Number of Cylinders:       | 88                                 |
| Number of Tracks:          | 176                                |
| Number of Sides:           | 2                                  |
| Track Density:             | 135 tracks per inch                |
| Step Rate:                 | 3 ms                               |
| Seek Settle Time:          | 15 ms                              |
| Soft Error Rate:           | 1x10 <sup>-9</sup> errors per bit  |
| Hard Error Rate:           | 1x10 <sup>-12</sup> errors per bit |
| Seek Error Rate:           | 1x10 <sup>-6</sup> errors per seek |
| Drive Life:                | 5 years                            |
| Eject Life:                | 3x10 <sup>4</sup> eject cycles     |
| Media Life:                | 4x10 <sup>6</sup> passes per track |

### Power Requirements

+5 Volts  $\pm$  .25V @ 210mA Peak, 130mA Average

+12Volts  $\pm$  .5V @ 470mA Peak, 90 mA Average

### Mechanical

|                 |                    |
|-----------------|--------------------|
| Length Overall: | 8.50" (21.59 cm)   |
| Width:          | 5.20" (13.21 cm)   |
| Height:         | 1.40" (3.56 cm)    |
| Weight:         | 28 Ounces (793 gm) |

### Environment

|                               |                               |
|-------------------------------|-------------------------------|
| Operating Temperature:        | 40° to 95° F (5° to 35° C)    |
| Operating Humidity:           | 10 to 80% RH Non-condensing   |
| Storage/Shipping Temperature: | -40° to 140° F (-40° to 60°C) |
| Storage/Shipping Humidity:    | 8 to 90% RH Non-condensing    |



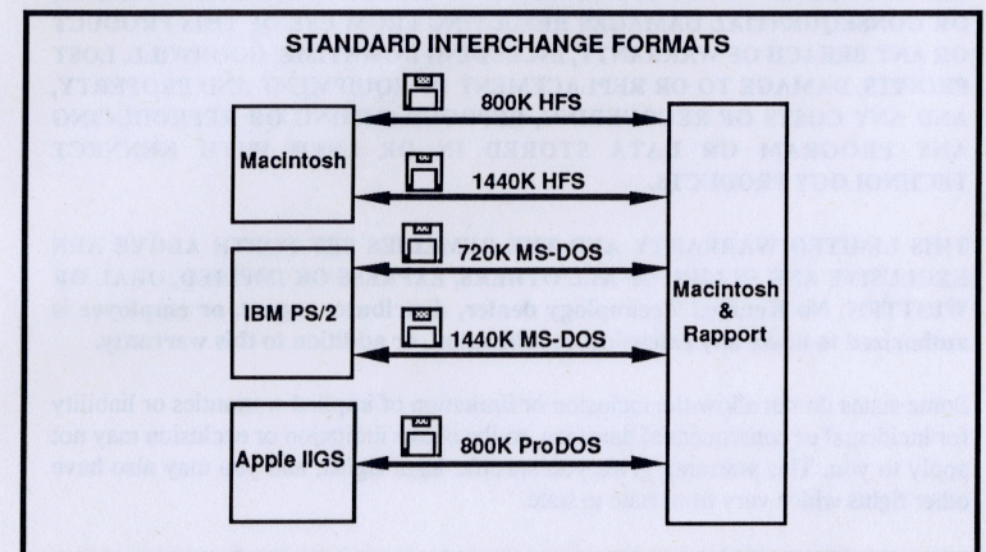
## Format and File System Alternatives

| DRIVE TYPE              | PHYSICAL DISK FORMAT |          |                  |              |              |
|-------------------------|----------------------|----------|------------------|--------------|--------------|
|                         | Apple 800K           | IBM 720K | IBM/Apples 1.44M | Kennect 1.2M | Kennect 2.4M |
| Macintosh Internal 800K | R W I                | R W I    | R W I            | R W I        | R W I        |
| Macintosh External 800K | ■ ■ ■                | ■ ■ ■    | ■ ■ ■            | ■ ■ ■        | ■ ■ ■        |
| Kennect Drive 2.4       | ■ ■ ■                | ■ ■ ■    | ■ ■ ■            | ■ ■ ■        | ■ ■ ■        |

R = Read W = Write I = Initialize

| FILE SYSTEM                  | PHYSICAL DISK FORMAT |          |                  |              |              |
|------------------------------|----------------------|----------|------------------|--------------|--------------|
|                              | Apple 800K           | IBM 720K | IBM/Apples 1.44M | Kennect 1.2M | Kennect 2.4M |
| Standard Interchange Formats | H M P                | H M P    | H M P            | H M P        | H M P        |
| Special Formats              | ■ ■ ■                | ■ ■ ■    | ■ ■ ■            | ■ ■ ■        | ■ ■ ■        |

H = HFS Macintosh M = MS-DOS IBM P = ProDOS Apple II





## Limited Warranty on Hardware

Kennect Technology has fully tested and inspected this product's quality and warrants this Product to be free of defects in materials and workmanship for a period of ONE (1) YEAR from the date of original retail purchase.

If you find a defect in the product and return it, with a copy of the bill of sale as proof of date of original retail purchase, during the warranty period, transportation charges prepaid, to Kennect Technology Customer Service, Kennect Technology will, at its option, repair, replace, or refund the purchase price of the product at no charge to you. Please call Kennect Technology Customer Service at 800 - 552-1232 or inside California 408-370-2866, for shipping instructions and return authorization number. **Do not return products to Kennect Technology until you have authorization to do so. Collect and unauthorized shipments will be refused and returned.**

This warranty applies only to hardware products and is void if the product has been damaged by accident, abuse, mishandling, shipment, misapplication or misuse, has been modified, or if the Kennect Technology serial number has been removed, modified or defaced.

**ALL IMPLIED WARRANTIES, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO ONE (1) YEAR FROM THE DATE OF THE ORIGINAL RETAIL PURCHASE OF THIS PRODUCT.**

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Some states do not allow the inclusion or limitation of implied warranties or liability for incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.



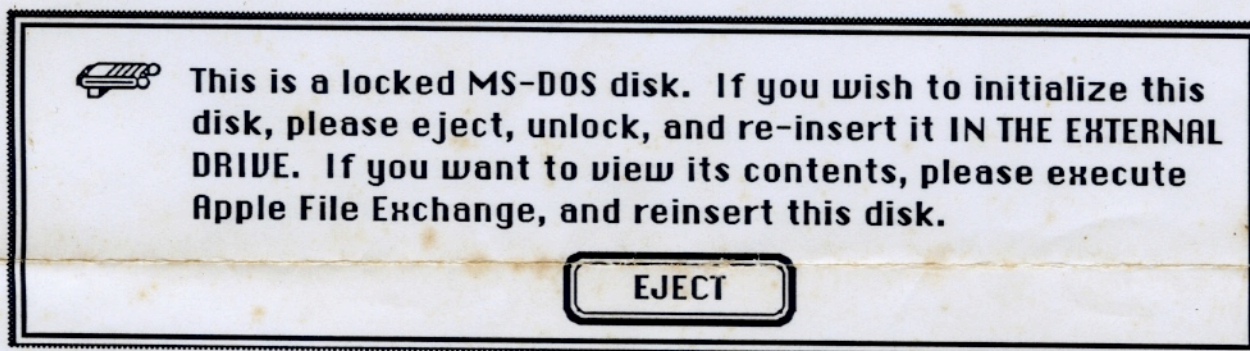
# ATTENTION MACINTOSH™ SE OWNERS

If you will be using Rapport™ with a Macintosh™ SE with two internal floppy disks, please read the following information and keep this page with your Rapport User Manual.

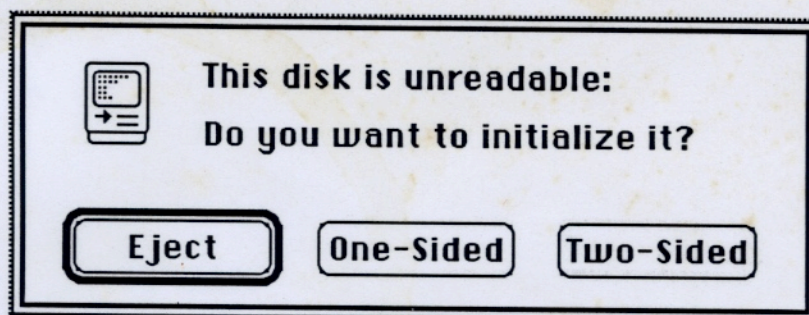
This information is supplementary to the manual. It may seem unclear until after you have read the manual and begin using Rapport. Contact Customer Service for further assistance at 800-552-1232 or (inside California) 408-370-2866.

The current version of the Rapport driver (1.2) does not support both internal drives for reading 720K MS-DOS™ diskettes. Only the lower drive can be used for reading and translating MS-DOS files with Apple File Exchange.

While in the Finder, an MS-DOS diskette placed in the lower drive will cause this Rapport dialog to be displayed:



If the same diskette is placed in the upper drive, you will instead see the standard Macintosh dialog:



So please take care! If you encounter a standard Macintosh dialog, but think you may have MS-DOS files on the diskette, be sure that you are using either the lower drive or an external floppy connected to Rapport.

We regret any inconvenience this may cause.