EVEREX

EVER for EXcellence®

Everex Streaming Tape

**OWNER'S MANUAL AND REFERENCE GUIDE
(VERSION 4.9)**

EVER for EXcellence

Addendum to Everex Streaming Tape Manual MAN-00380-48

Notes on Backing Up Open Files on a Network or Multitasking System:

When you do a backup on a network or multitasking system where a file is open you will receive a **FATAL BACKUP ERROR** message during backup. This message warns you that the files that were open during the backup operation were not backed up. However, the rest of your backup is *good data and may be restored*. When you restore that data 4.08 software will not allow you to restore the open files you encountered. You must manually rebackup all open files.

In order to verify that the **FATAL BACKUP ERROR** message you received was for an **OPEN** file error, and not for a more serious file error (such as a **READ** file error), we *strongly recommend that* you always select the **Log on Error Only** option in the advanced user interface of the software. You can then check the log file later to find out the names of files with open errors. In addition, we recommend that you always follow a backup with a compare.

For more details on **OPEN** File Errors, please read sections 1.3, 1.4 and 8.4 of your streaming tape manual.

Everex
Streaming Tape

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(VERSION 4.9)

EVEREX SYSTEMS, INC.
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FREMONT, CA 94538

Notice

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Class B: Computing Device

WARNING: This equipment generates and uses radio frequency energy and if not installed and used in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. The product has been certified and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment causes interference to radio or 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:

1. Ensure that card mounting screws, attachment connector screws, and ground wires are tightly secured.

2. Reorient the computer with respect to the receiver.

3. Move the computer away from the receiver.

4. Plug the computer into a different outlet so that computer and receiver are on different branch circuits.

5. Reorient the receiving antenna.

If necessary, consult the dealer or an experienced radio/television technician. The following booklet prepared by the Federal Communications Commission may be helpful: "How to Identify and Resolve Radio TV Interference Problems." This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402, Stock No. 004-000-00345-4 (FCC, Part 15.838 b).

NOTICE: This product requires shielded interconnect cables and connectors for proper installation and connection to peripheral devices and to insure compliance with FCC Class B limits for radio frequency emissions. Shielded cables are available from authorized dealers. The manufacturer is not responsible for any radio or television interference caused by using other than the recommended cables or by unauthorized modifications to this equipment. This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulation of the Canadian Department of Communication.

Table of Contents

Notes

Section

1

Before You Begin

Even if you are someone who never reads manuals, read this section of the manual before you start using the Everex streaming tape software. This section contains things that may not be intuitive even to an experienced computer user. It also lets you know about the most important software limitations.

1.1   Follow a Backup With A Compare

After you perform a backup operation, it is very tempting to skip the compare operation. After all, performing a compare operation does take a little extra time, and usually, the backup and the compare will match perfectly. This is because the Everex streaming tape system performs extensive error checking during backup, such as read after write, to ensure the maximum protection of your data.

However, due to the fact that there are many types of errors which cannot be automatically detected by the tape system, such as a glitch on the computer, the disk controller, the memory chips, etc., there is a chance that the data you backed up on tape doesn't match the original data on the disk.

The best way to greatly reduce undetected errors is to make it a habit to always perform a compare after a backup. If any miscompare errors occur during a compare, do not restore the data on the tape instead attempt to rebackup your data. Please refer to *Section 9: Image Restore and Compare* or *Section 10: File*

Restore and Compare for more details on compare and restore operations.

1.2   DOS 4.X Large Partitions

If you are using DOS 4.X and the size of the partition of your hard disk is greater than 32MB, you cannot perform image backup or restore. You can, however, still backup all your data in this partition using file backup. If the partition size of your hard disk is less than 32MB, you can perform both file and image backup operations.

1.3   Read File Errors

During a file backup, if the tape software encounters a read file error (due to a physical disk error or for other reasons), the tape software will display an error message and wait for the operator's input. You should write down the name of the file with the read file error. Later, if you need to restore the files on the tape, you must manually exclude the file with the read file error from the restore operation.

In the advanced user's interface of the Backup menu, if you set the **Pause on Read Error** field to **N** for unattended backup purposes, the tape software will insist that you select at least the **Log on Error Only** option. This way, you can check the log file after an unattended backup for files with read errors. If any exist, you can write down the names of the files and later manually exclude them from a restore. Otherwise, you would have no way of knowing

about a read file error and could erroneously presume that your backup is correct.

You must remember to manually exclude all files with read file errors when you restore. Failure to do so will result in incorrect data being restored over existing file data. Also, manually rebackup all files with read file errors. Refer to *Section 8.3: Read File and Open File Errors* for more information.

Caution   **Do not ignore a read file error message. If you later restore a file with a read file error message, you will overwrite the existing file with the erroneous file.**

1.4   Open File Errors

In a network or multitasking operating system, files may be opened by other applications so that the streaming tape software cannot open them for backup. If you receive an open file error during backup, retry the backup. If you are backing up a network, we suggest backing up when other workstations in the network are not being used. You should manually rebackup all files that have open file errors.

If you set the **Pause on Open Error** field to **N** for unattended backup purposes, the tape software will insist you select at least the **Log on Error Only** option so that you can check the log file later for the names of files with open file errors.

If you try to restore a file with an open file error, you will get an open file error message and you will not be able to restore the file. Refer to *Section 8.3: Read File and Open File Errors* for more information.

Note **If you back up with a new version of the EVTAPE software and have an open file error then later try to restore with an old version of the EVTAPE software, you will not be able to restore, however, you may get a strange message that doesn't fit the circumstances.**

1.5   Optional Tape Software

The Everex Streaming Tape supports various Unix and SCO XENIX device drivers and also provides utilities for a Novell Network. For additional information and pricing on the above products, please contact your authorized Everex dealer.

1.6   Reading This Manual

For best results, we recommend that you read this entire manual. You are less likely to make a serious mistake if you read this manual and you may learn about features of your streaming tape drive that you didn't know about when you bought it. However, we believe that we did our best to allow you to maneuver the tape software without reading the entire manual. Due to the complex nature of backup and restore operations, however, there are important concepts and many useful features in our tape software which are not easily derived from common

sense. The following sections are particularly important:

- Section 12: When Disaster Strikes

- Appendix A: Care and Rotation of Tapes

1.7 Version 4.08 Software Changes

Version 4.08 EVTAPE software includes the following changes:

- Modified to support a multi-controller tape backup system. When you are backing up more data than you have tape capacity available, the software will automatically advance to the next available tape drive in a multi-controller tape backup system. This is particularly useful for unattended backup.

- Changed the default setting of the easy user interface of the Backup Menu to include backing up system, hidden, and read only files.

Section

2 Introduction

Congratulations on your purchase of a new streaming tape backup subsystem from Everex. This convenient and economical tape backup subsystem will give you years of reliable service and data protection. Before you install your streaming tape subsystem, you need to make some preliminary inspections as described in this section. This section also introduces you to this manual and some of the streaming tape subsystem's impressive features.

Section 2 Summary

2.1   Features
2.2   System Requirements
2.3   Checklist
2.4   Section Summaries
2.5   About This Manual
2.6   README File

2.1   Features

The Everex streaming tape backup subsystem has the following features:

• Fully compatible with the IBM PC; XT; AT; PS/2 Models 30, 50, 60, 70, and 80; and compatible computers

• Available in 60MB, 125MB, and 150MB capacities, using cartridge or cassette tapes

• Maximum backup speed of 5MB per minute; no pre-formatting of tapes gives you top speed and convenience

• Controller cards can be reconfigurable to run in virtually any compatible system

• Includes easy-to-use backup, restore, and compare utility software

• Includes general purpose Scheduler software for automatic, unattended backup

- Includes command line mode

2.2 System Requirements

Hardware Requirements

IBM PC, XT, AT, PS/2, or compatible computer system which must include:

- One diskette drive

- One hard disk drive

Power Requirements

External cartridge tape subsystems, which have their own independent power supplies, make almost no demands on your system's power supply. Therefore, if you have an external cartridge tape drive, you may disregard this section.

Depending on your computer's power supply and the number and power requirements of the other peripheral devices, you may need to upgrade your power supply when you install the Everex internal streaming tape drive. The following power requirements do not apply to PS/2 models or to external cartridge tape subsystems.

Power
Supplies
The IBM AT and most compatibles come with a 192-watt power supply, which is generally adequate for any system configuration.

The IBM XT and most compatibles come with a 135-watt power supply. Again, this will probably suffice for the Everex streaming tape drive and your existing diskette and hard disk drives.

The IBM PC and most compatibles come with a 70-watt power supply. We recommend that you add a 40-watt supplementary power supply to the PC or upgrade to 135 watts or greater to support the Everex streaming tape drive and your other peripheral devices.

Your total power requirement depends on the combination of drives and cards present in your system. If you do need to increase your power supply, please contact your computer dealer for assistance.

Y Power Cable Before you install your Everex internal streaming tape drive or external cassette version, check whether there is an available power lead in your system. If all the leads are already in use, you need to add a Y power cable to split the output of one lead as shown in Figure 2-1.
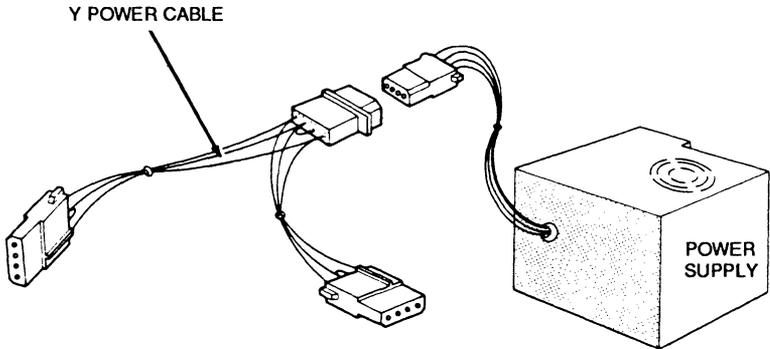
Y POWER CABLE

Figure 2-1   Adding a Y Power Cable

This cable is not included with the Everex streaming tape subsystem, but is available from your computer dealer.

2.3   Checklist

Besides this manual, your Everex streaming tape drive carton should include the following:

• Everex streaming tape drive (internal or external)

• Power cord (external only)

• One streaming tape controller card

- Three 5-1/4-inch utility diskettes for a PC, XT, or AT, or two 3-1/2-inch utility diskettes for all PS/2 models

- One "Scheduler" diskette and manual for automatic, unattended backup

- One tape cartridge

- Owner registration and warranty cards

- Protective foam and cardboard packaging

Note   **Industrial engineers designed the carton and packing materials that accompany your streaming tape subsystem to protect it during transportation. Save these packing materials. If you decide to move or ship the streaming tape subsystem, you need them to protect against shipping damage. As with any major purchase you make, save the invoice and receipt.**

If any of these items are missing or damaged, contact your place of purchase.

The Everex streaming tape drive (internal model), like all electronic components, is susceptible to static electricity. To minimize the possibility of inadvertently damaging your tape drive, please observe the following precautions during installation:

1. Always ground yourself by touching something
    metallic and grounded - like your system chassis
    - before touching your tape drive.

2. Do not remove the tape drive from its anti-static
    bag until you begin the installation. The less you
    handle your tape drive, the less likely you are to
    damage it.

2.4   Section Summaries

This manual is organized so that you can install your
streaming tape subsystem quickly and begin using it
immediately. You don't need any special or technical
knowledge to follow the instructions provided in this
manual; we do assume, however, that you have a
basic understanding of your computer system, such
as how to insert a diskette and boot DOS.

You do not need to read this entire manual in one
sitting. Your Everex streaming tape subsystem offers
many exciting options that you may want to try after
you are more comfortable with the basic operations.
We do suggest, however, that you read the first four
sections of this manual before you install and operate
your streaming tape subsystem.

This manual contains the following sections:

Section 1 lists important facts that you should
know before you attempt to use the tape software and
informs you of the latest tape software changes.

Section 2 lists features and provides section summaries to introduce you to the Everex streaming tape subsystem and manual.

Section 3 lists the steps to install your streaming tape drive. This section also teaches you how to install the tape software and how to perform a system test after the installation.

Section 4 introduces you to the Everex streaming tape software. This section helps to familiarize you with all the functions and features of your streaming tape software.

Sections 5 through 10 explain how to set up your hardware and software configurations, test your tape subsystem, as well as perform backup, restore, and compare operations.

Section 11 describes many of the extra features or "Goodies" of the streaming tape software.

Section 12 tells you how to recover data from hard disk failure.

Appendix A tells you how to care for your tapes and how to set up a rotation schedule for using tapes.

Appendix B contains descriptions of error messages that may occur during diagnostics and their appropriate remedies.

Appendix C contains command line arguments that you can enter at the DOS prompt if you prefer not going through the tape software menu.

Appendix D contains diagnostics and troubleshooting procedures if you have any problems operating your streaming tape drive.

The Glossary contains terms used in this manual that you will find helpful if you run across unfamiliar words.

The Index helps you locate specific information quickly.

2.5   About This Manual

In this manual, we use several acronyms where appropriate to keep you from having to read long product names or phrases over and over again. We also use several technical concepts and/or terms, however, we have kept these to a minimum. If you don't understand a term or concept, you can most likely find an explanation in the Glossary starting on page Glossary-1 of this manual.

Manual Conventions

This manual uses certain typographical conventions to help you obtain information quickly.

Commands that you type are printed in a different font to isolate them from other text, and keys that you press are enclosed in brackets.

TYPE THIS COMMAND   [↵]

The symbol [↵] following a command indicates a carriage return or [Enter] key. Throughout this manual, when you see [↵], you should press the [Enter] key.

Text that appears on your computer screen is represented throughout this manual in *italic type*, for example:

Press any key to return to DOS.

Italic type is also used to reference section titles or titles of other manuals or documents. For example: The Main Menu of the tape software is described in *Section 4.2: Main Menu.*

When specialized terms are used for the first time, they appear in **bold type** as do the names of keyboard commands when they refer to actions which you should perform. For example: to exit the tape software, press **[F10]**. Names of computer files and directories appear in **UPPER CASE BOLD TYPE.**

All references to the PC, XT, AT, or PS/2 in this manual address IBM and IBM-compatible systems.

Note   **Notes contain important information that is set off from the text.**

Caution   **Caution messages appear before procedures which, if not observed, could result in damage to data or equipment.**

Warning | Warning messages indicate that when a specific procedure or practice is not followed correctly, personal injury could occur.

Streaming Tape Tip

Streaming Tape Tips contain practical hints for using your streaming tape drive and its software that you may find helpful.

2.6 README File

Before you begin installation, insert the first Everex utility diskette in drive A. At the A prompt, type:

TYPE README   [↵]

If this file is on the utility diskette, it will contain any information that was unavailable when this manual was published.

Section

3   Installation

This section tells you how to install the tape software, how to install your Everex streaming tape drive, and how to perform a system test after the installation.

Section 3 Summary

3.1   Software Installation
3.2   Hardware Installation
3.3   System Test After Installation
3.4   How to Reconfigure Your PC, XT, AT, or PS/2 Line Controller Card

3.1 Software Installation

First Time Installation

Installing the tape software on your hard disk drive is very simple. The software installation program will not modify your **CONFIG.SYS** or **AUTOEXEC.BAT** files, nor create any hidden files on your hard disk. In fact, if you prefer, simply create a directory and copy all the files from the diskettes instead of using this routine.

To install the tape software on your hard disk drive, follow these steps:

1. Boot up your computer from DOS and change to drive A.

2. Insert the first Everex utility diskette in drive A and type:

    TAPE   [↵]

3. The Main Menu of your tape software appears.

4. From the Main Menu, choose **Install/Config** (function key [**F8**]).

5. From the Install/Config Menu, choose **First Time Installation** (function key [**F3**]).

6. The software copies all the files from the Everex diskettes to a directory on your hard disk drive.

By default, the program creates the directory C:\EVTAPE for the tape software. To install the software in another directory, type in the path and name of the directory you want.

7. Press [Enter] to begin the software installation. The software prompts you to insert each utility diskette in turn.

8. If you plan to use the tape software along with SideKick, refer to *Running With Sidekick* in *Section 3.1* before you proceed with the hardware installation.

9. After you have installed the tape software, you may use the default hardware and software configurations and proceed directly with the hardware installation. Turn off your system and refer to Section 3.2.

Running With SideKick

SideKick, which is a memory-resident desktop organizer program from Borland International, cannot share some system resources (particularly interrupts) with other programs, including the tape software. To resolve a conflict between the tape software and SideKick, follow these steps:

1. Boot the system without SideKick resident.

2. Change to the tape software directory and invoke the software.

3. From the Main Menu, choose **Install/Config.**

4. From the **Install/Config** menu, choose **Setup Software Configuration.**

5. In the field **Disable Real Time Clock Display** type **[F]**. By typing **[F]** in this field, you will disable the real time clock handler, the keyboard interrupt handler, the Ctrl-Break handler, and the critical error handler.

6. Press **[F8]** to save the new configuration to the file **TAPE.CFG.** (Once the change is saved, you will not need to repeat these steps each time you run SideKick.)

7. Quit the tape software and return to DOS. You should now be able to run SideKick and the tape software with no conflict.

8. Re-invoke the tape software and perform your backup operation.

3.2 Hardware Installation

Internal Tape Drive Installation

Follow these steps to install your tape subsystem:

1. Turn your computer OFF, disconnect the electricity to it, and position the system so that you have easy access to the back of the chassis.

2. Locate and remove the cover mounting screws as shown in Figure 3-1.

COVER MOUNTING SCREWS
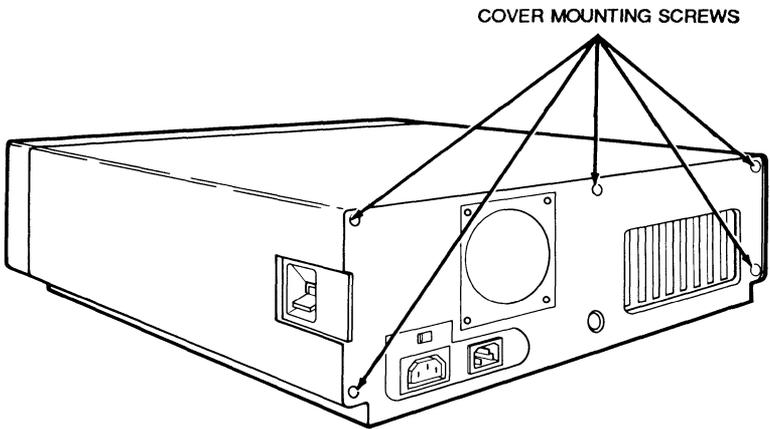
Figure 3-1 Cover Mounting Screws

3. Grasp the cover in both hands and slide it forward and off as shown in Figure 3-2.
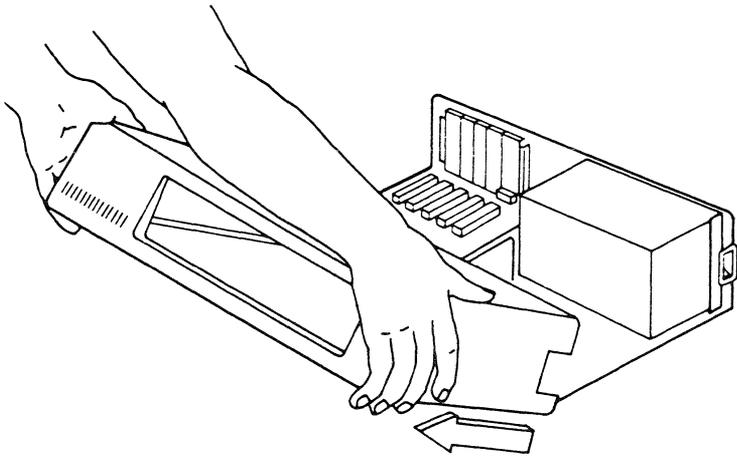
Figure 3-2 Removing the Cover

4. Locate a vacant expansion slot and remove the
    slot cover as shown in Figure 3-3. Save the
    screw that you remove.
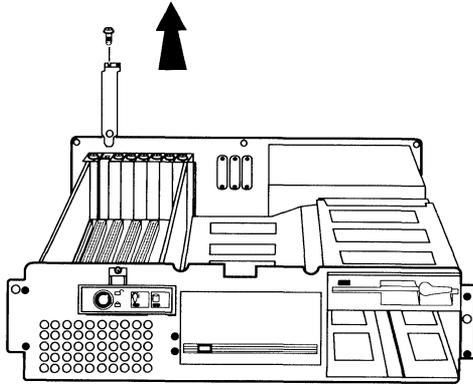
Figure 3-3   Removing a Slot Cover

5.   If the ribbon cable is not already connected to
     the tape controller card, connect the cable as
     shown in Figure 3-4.

62-PIN CONNECTOR

RED STRIPE

CONNECTOR CABLE
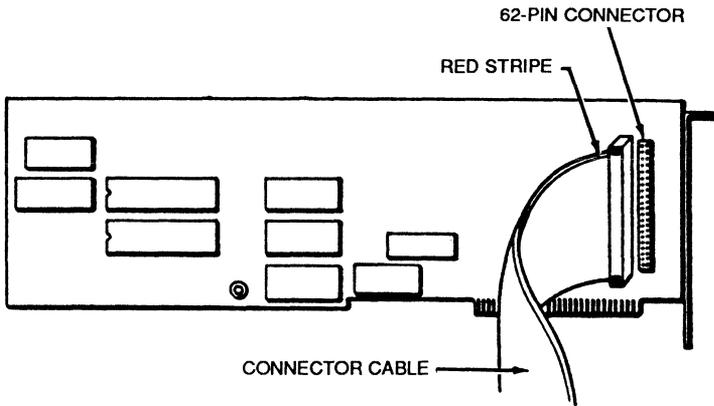
Figure 3-4 Connecting the Ribbon Cable

Note that the colored stripe which designates Pin 1 should be along the top edge of the cable when properly connected.

6. Install the controller card, with cable attached, into your expansion slot as shown in Figure 3-5.
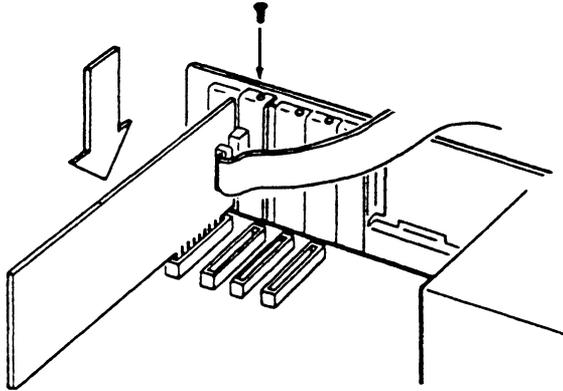
Figure 3-5 Installing the Tape Controller Card

Note that it may be necessary to fold up the ribbon cable in order to clear the other cards present in your system.

7. Connect the ribbon cable to the back of the tape drive as shown in Figure 3-6.

PIN 1
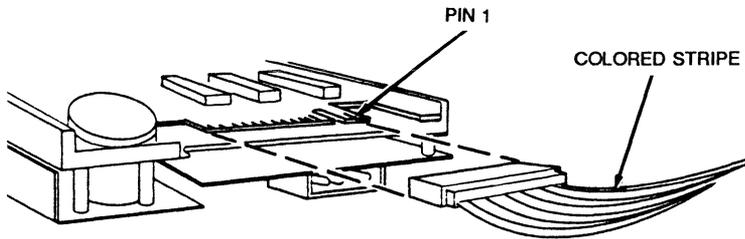
COLORED STRIPE

Figure 3-6 Connecting the Ribbon Cable to the Tape Drive

The notch cut in the tape drive's connector indicates Pin 1, and must correspond to the colored stripe along the ribbon cable.

8. Locate an available power lead (twisted wire cable with plastic four-pin connector) inside your system and connect it to the tape drive as shown in Figure 3-7.
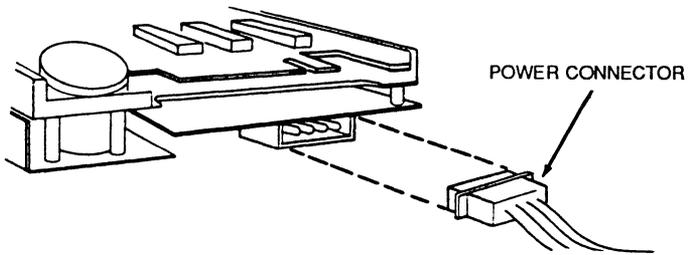
Figure 3-7   Applying Power to the Tape Drive

If there is no power lead available, connect the optional Y power cable to split the output of one of the leads.

9. Place a section of newspaper or other nonconductive pad on top of your open system, and set the tape drive on top of that.

Note   **Do not allow the tape drive to rest directly on the open computer, as accidental electrical connection could cause damage.**

10. Carefully reconnect electricity to the computer and boot up as usual.

11. Perform a system test following the instructions in Section 3.3.

Do not replace the cover on the system until the
tape subsystem has passed the diagnostics in
Section 3.3: System Test After Installation.

The indicator light on the front of the tape drive
will be lit only when the tape drive is actually
being accessed. This light will normally remain
unlit when you power up the system.

11. After the tape subsystem has passed diagnostics,
turn the computer OFF again and complete the
installation as follows:

12. Remove from your computer the plastic bezel
covering the full- or half-height drive bay that
you will be using for the tape drive. (If no drive
bay is available, consider removing a full-height
diskette drive and replacing it with a half-height
diskette drive plus the tape drive, or getting an
expansion chassis.)

Note **To insure adequate ventilation throughout the
computer, the tape drive should be installed
<u>underneath</u> any other drive in the same drive bay.**

13. Disconnect the controller cable and power lead
from your tape drive.

14. For an IBM PC/XT-type computer, screw the
retaining brackets (provided with the internal
tape drive) to the drive as shown in Figure 3-8.

RETAINING BRACKETS
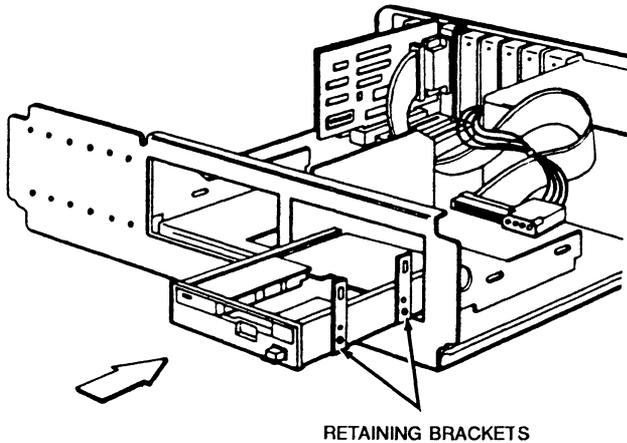
Figure 3-8 Connecting Retaining Brackets to an
Internal Tape Drive

Note **If your computer has non-standard drive bays
whose mounting holes are different from those in
the IBM PC, you may need special mounting
hardware to install the internal tape drive. The
computer manufacturer should provide this
hardware along with the system. If appropriate
mounting hardware is not provided, we
recommend an external tape drive.**

15. For an IBM AT or compatible computer, attach
the slide rails provided with the tape drive, as
shown in Figure 3-9.
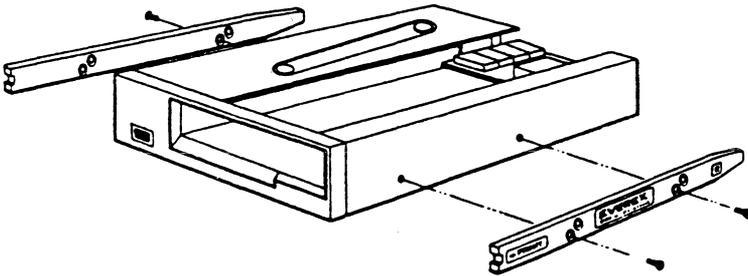
Figure 3-9 Attaching AT Slide Rails to an
Internal Tape Drive

16. Very gently slide the tape drive half-way into its
    drive bay, being careful not to damage the small
    electronic components on the underside of the
    drive. No force is required for a proper internal
    drive installation.

17. While the tape drive is partially in the drive bay,
    reconnect the controller cable and power lead to
    the back of the drive. Then continue sliding the
    drive into its bay until the faceplate of the tape
    drive is flush with the front of the computer.

18. Replace the slot cover screw, removed earlier, to
    secure the endplate of the tape controller card in
    its slot.

19. Slide the cover back on the system and replace
    the cover mounting screws.

20. Congratulations! You have successfully completed your streaming tape subsystem installation. Boot up the system, and proceed to *Section 4: Introduction to EVTAPE Software.*

External Tape Drive Installation

Follow these steps to install your external tape drive in the IBM PC, XT, AT, Personal System/2 Model 30 or compatible computer:

1. Turn your computer OFF, disconnect the electricity to it, and position the system so that you have easy access to the back of the chassis.

2. Locate and remove the cover mounting screws as shown in Figure 3-10.
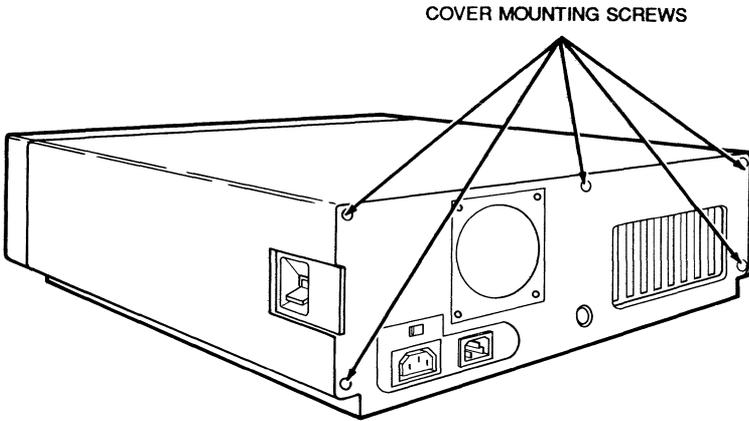
COVER MOUNTING SCREWS

Figure 3-10 Cover Mounting Screws

3. Grasp the cover in both hands and slide it forward and off as shown in Figure 3-11.
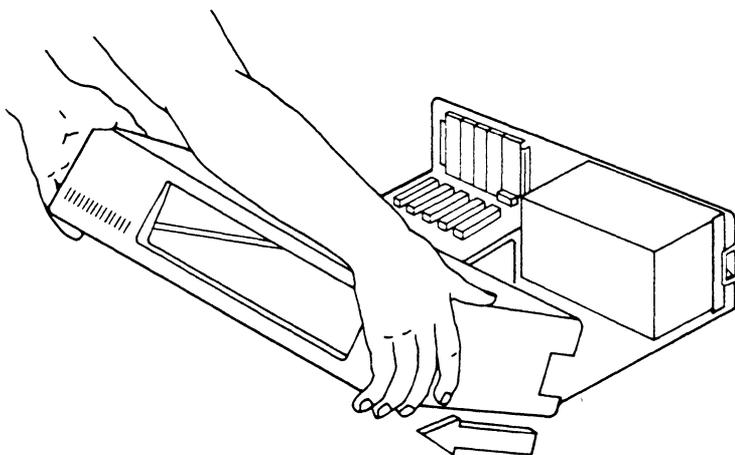
Figure 3-11 Removing the Cover

4. Locate a vacant expansion slot and remove the
    slot cover as shown in Figure 3-12. Save the
    screw that you remove.
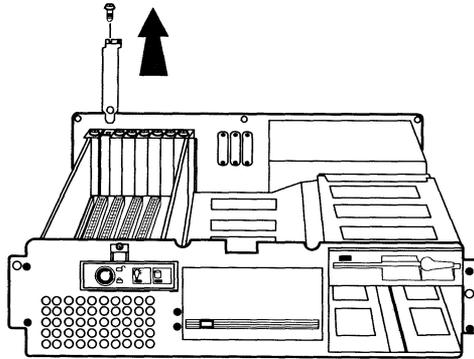
Figure 3-12 Removing a Slot Cover

5. Install the tape controller card into your expansion slot as shown in Figure 3-13.
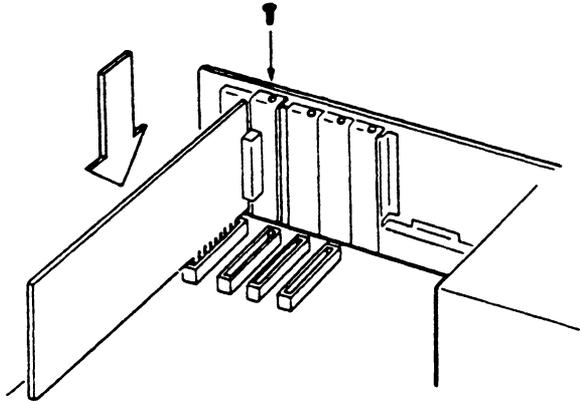
Figure 3-13 Installing the Tape Controller Card

6. Connect the tape drive's shielded round cable to the endplate of the controller card as shown in Figure 3-14.
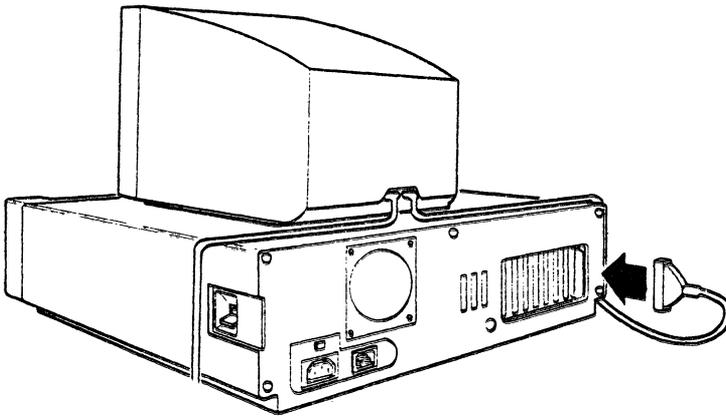
Figure 3-14 Connecting the Shielded Round Cable
to the Tape Controller Card

This connector is keyed and therefore impossible
to install backwards.

7. FOR EXTERNAL TAPE DRIVES WITHOUT
    POWER SUPPLY ONLY: Locate an available
    power lead (twisted wire cable with plastic
    four-pin connector) inside your system and
   apply it to the tape controller card as shown in
    Figure 3-15.
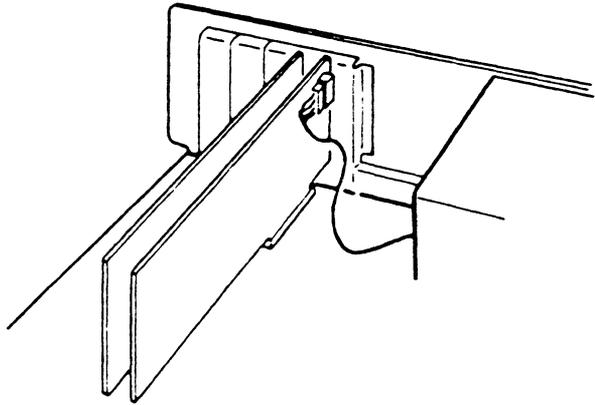
Figure 3-15 Applying Power to the Tape Controller

If there is no power lead available, connect the optional Y power cable to split the output of one of the leads.

External tape drives that draw their power through the system do not have an ON/OFF switch but will be turned ON and OFF automatically with the computer.

8. FOR ALL OTHER EXTERNAL TAPE DRIVES: Connect the heavy-gauge power cable to the tape drive and then to a grounded wall outlet.

Turn ON the tape drive.

The indicator light on the front of the tape drive will be lit only when the tape drive is actually being accessed.

9. Carefully reconnect electricity to the computer and boot up as normal.

10. Perform a system test following the instructions in *Section 3.3: System Test After Installation*.

11. After the tape subsystem has passed diagnostics, screw in the shielded round cable connector to the endplate of the controller card.

12. Replace the slot cover screw, removed earlier, to secure the endplate of the tape controller card in its slot.

13. Slide the cover back on the system and replace the cover mounting screws.

14. Congratulations! You have successfully completed your streaming tape subsystem installation. Boot up the system, and proceed to *Section 4: Introduction to EVTAPE Software.*

Micro Channel Tape Installation

Each card that you install in a Micro Channel system has an associated Adapter Description File (or ADF) which identifies the card and describes the system resources that it will use. When the card is first installed, the IBM setup program (which is provided to you on the IBM Reference Diskette) uses this ADF file to configure the computer to accept the new card. In order for the IBM setup program to use the ADF file, the ADF file must exist on the same diskette as the IBM setup program. However, the original IBM Reference Diskette is permanently write-protected. Therefore, you must make a backup copy of the IBM Reference Diskette, and you must copy the ADF file for each card in the system (including the new tape controller card) onto this backup diskette. Throughout this manual we will call the backup reference diskette RD2.

The following subsection *Installing the Tape Subsystem* tells you how to prepare your backup reference diskette, install the tape hardware, and configure the system using the IBM setup program. The subsection *Configuring the Tape Software* tells you how to configure the tape software to match your particular computer system. Read and follow both sets of instructions in order.

If you have a PS/2 Model 50, 60, or 70 that is full of peripheral cards, you may need to customize your own ADF file. Refer to *Special PS/2 Configurations* in *Section 3.2* for instructions on 3 special PS/2 configurations.

Installing
the Tape
Subsystem

Follow these steps to install your Everex streaming tape subsystem in an IBM Personal System/2 Model 50 or Model 60 (installation for the Model 80 is the same as the Model 60):

1. Make a backup copy of your IBM Reference Diskette and copy onto it the Adapter Description Files for each existing adapter in your system. We will call this diskette **RD2**.

2. Copy the tape controller's Adapter Description File **@ 57FE.ADF** to RD2.

STEPS 3-11 FOR PS/2 MODELS 50 OR 70 ONLY:

If you have a PS/2 Model 60, please skip directly to Step 12.

3. Turn your computer OFF, disconnect the electricity to it, and position the system so that you have easy access to the back of the chassis. Remove any diskettes from the floppy drives if necessary.

4. If the system is locked, unlock it.

5. Locate the two cover mounting thumb screws on the back of the Model 50, as shown in Figure 3-16.
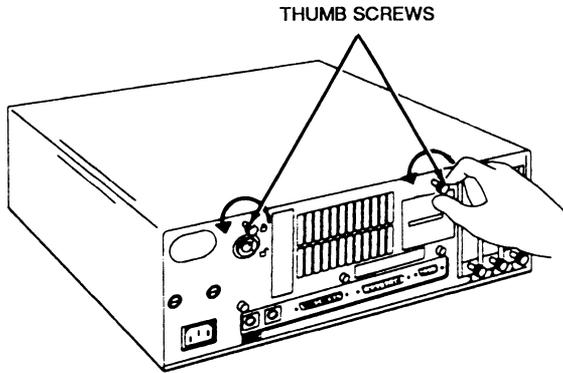
THUMB SCREWS

Figure 3-16 Model 50 Cover Mounting Thumb
Screws

Turn the screws counterclockwise until they are
disengaged from the cover. The thumb screws
will not come free in your hand, but will remain
attached to the chassis.

6. Grasp the cover in both hands and slide it
forward and off as shown in Figure 3-17.
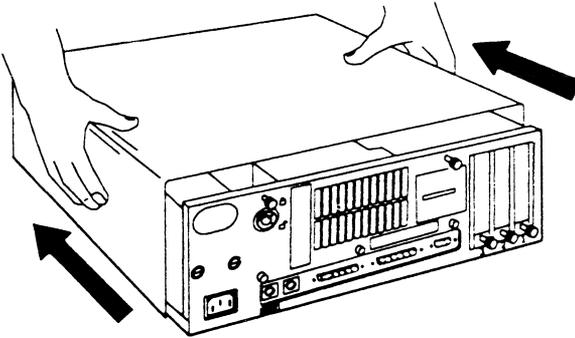
Figure 3-17 Removing the Cover of the Model 50

7. Locate a vacant expansion slot. Loosen the thumb screw securing its slot cover, and remove the slot cover as shown in Figure 3-18.
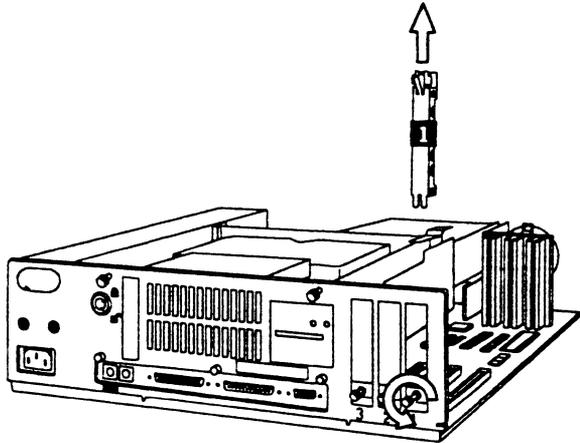
Figure 3-18 Removing a Slot Cover from the
Model 50

8. Install the tape controller card into your
    expansion slot as shown in Figure 3-19.
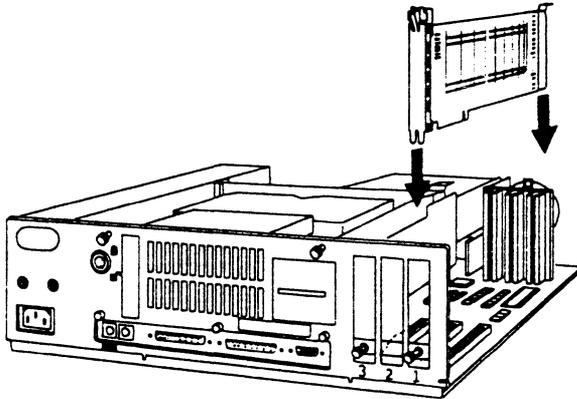
Figure 3-19 Installing the Tape Controller Card in
the Model 50

9. Tighten the thumb screw to secure the tape
    controller card in its slot.

10. Slide the cover back on the computer, and
    tighten the cover mounting thumb screws to
    secure the cover in place.

11. Skip directly to Step 19.

STEPS 12-18 FOR PS/2 MODEL 60

Note   **Installation for the Model 80 is the same as for the
Model 60.**

12. Turn your computer OFF, disconnect the electricity to it, and position the system so that you have easy access to the left side of the chassis. Remove any diskettes from the floppy drives if necessary.

13. If the chassis is locked, unlock it.

14. Loosen the two cover mounting screws with a coin, as shown in Figure 3-20.
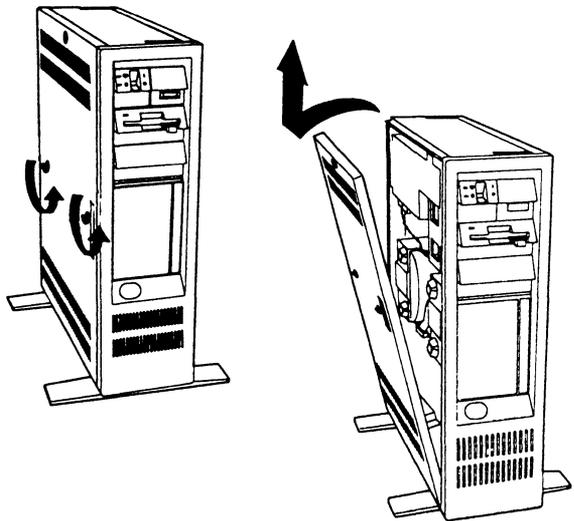
Figure 3-20 Loosening the Model 60 Cover Mounting Screws

Tilt the cover away from the system, then lift it and set it aside.

15. Locate a vacant expansion slot. Loosen the thumb screw securing its slot cover, and remove the slot cover as shown in Figure 3-21.
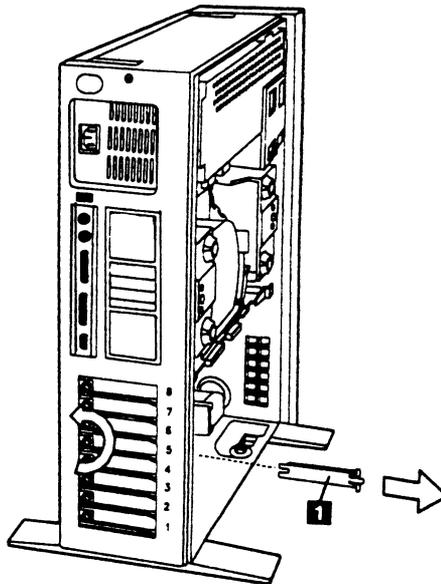
Figure 3-21 Removing a Slot Cover from the Model 60

16. Install the tape controller card into your expansion slot as shown in Figure 3-22.
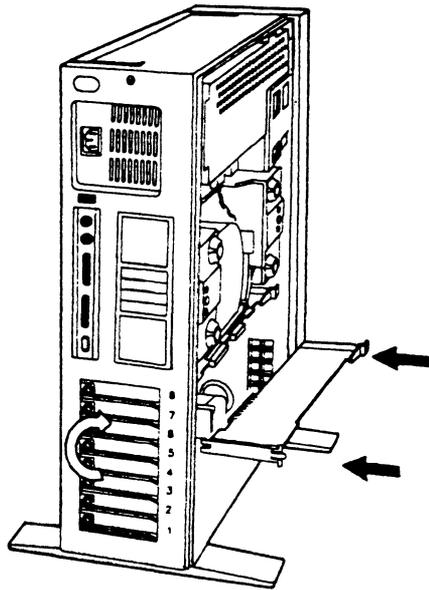
Figure 3-22 Installing the Tape Controller Card in
the Model 60

17. Tighten the thumb screw to secure the tape
controller card in its slot.

18. Replace the cover on the computer, and tighten
the cover mounting thumb screws to secure the
cover in place.

19. Connect the shielded round cable of the tape
drive to the endplate of its controller card, as
shown in Figure 3-23.
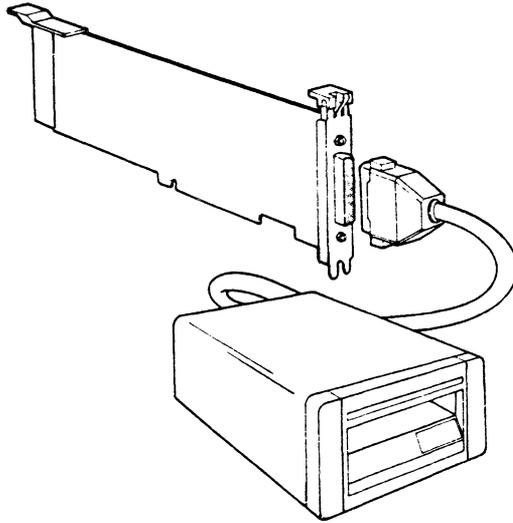
Figure 3-23 Cabling the Tape Drive and Controller
Card

Note that the cable connector is keyed and
therefore impossible to install backwards.

Set the tape drive next to the desktop computer
(Model 50) or on top of the tower (Model 60).

20. Connect the heavy-gauge AC power cord
provided to the tape drive, then plug it into a
grounded wall outlet.

21. Reconnect power to the computer.

22. Insert RD2 in drive A and turn ON the computer. You will see a message "Error 165" and hear two beeps from the system. Press [**F1**] to boot the computer from RD2.

23. You will see a window describing Error 165. Press [**PgDn**] to go to the second page.

24. Answer [**N**] to the prompt "Automatically Configure?" Next you will see the Main Menu of the IBM setup program.

25. From the Main Menu, select **Set Configuration**.

26. From the Set Configuration menu, select **Change Configuration**.

27. The Change Configuration screen will display the contents and configurations of each expansion slot in your system. Use the arrow cursor-down key to move to the slot that contains the streaming tape controller card.

28. If there are any conflicts between the streaming tape controller and other devices in your system, the conflicting values will be marked with an asterisk (*).

    If no asterisks appear, then the default configuration of the tape controller is fine for your system. Press [**F10**] to save the configuration in the computer, then reboot the system from DOS.

29. You have completed the hardware installation of your streaming tape drive. Perform a system test following the instructions in Section 3.3.

30. If one or more of the tape controller's settings (DMA, IRQ, or port address) conflict with other devices in your system, move the cursor to that setting and use **[F5]** and **[F6]** to display alternate values. When you have chosen a non-conflicting value, the asterisk will disappear.

   Write down on a slip of paper the values you have chosen for DMA, IRQ, and port address. You will need this information in the following subsection: *Configuring the Tape Software*.

31. When no conflicts remain, press **[F10]** to save the new configuration in the computer.

Note   **If for some reason you need to use a port address that is not among the 16 values displayed, or if you need to use DMA2 or DMA3 for the tape controller, please refer to** *Special PS/2 Configurations* **in** *Section 3.2* **before continuing.**

Configuring the Tape Software

1. Reboot the system from DOS and change to the tape software directory on the hard disk.

2. Type **TAPE** to access the tape software.

3. From the Main Menu, choose **Install/Config**.

4. From the Install/Config menu, choose **Setup Hardware Configuration**, and press [**Enter**] to configure your PS/2 tape controller.

5. Type in the values you have chosen for DMA, IRQ, and port address at the bottom of the screen. (The default values for all Everex controller cards are DMA1, IRQ3, and port 300H-301H.)

6. When the values entered in the tape software match those entered in the IBM setup program (see *Installing the Tape Subsystem*, Step 30 in *Section 3.2*), press [**F8**]. The tape software will record this information in the file **TAPE.CFG** and will refer to it for each subsequent tape operation.

Note **When you press [F8] the tape software will update the tape Adapter Description File @57FE.ADF on your hard disk.**

Everex provides a second file called @57FE.DFL, which always contains the default information of @57FE.ADF. In the event that you need to re-create the original @57FE.ADF, you can do so by typing

COPY @57FE.DFL @57FE.ADF

7. Press [**F10**] to exit back to the Main Menu. Perform a system test following the instructions in Section 3.3.

Special PS/2 Configurations

This section discusses two rare applications involving very fully equipped Micro Channel computers (PS/2 Models 50 and 60) that may require special configuration of the tape subsystem. For the great majority of PS/2 installations, this extra information is not necessary.

Customizing Your Own .ADF File deals with the unlikely possibility that none of the 16 starting port addresses provided in the file @57FE.ADF is available in a particular system. In this case, you can customize your own .ADF file to use any starting port address that is available.

Using DMA2 or DMA3 is for computers in which neither DMA0 nor DMA1 is available for the tape controller. In this case, the tape controller can be configured to use DMA2 or DMA3, but certain special restrictions must be observed.

Customizing Your Own .ADF File

If your particular PS/2 requires that the tape subsystem use a port address that is not among the 16 values offered by @57FE.ADF, follow these steps:

1. Before you begin, make sure that the tape software (including the file @57FE.ADF) is installed on your hard disk drive, and you have a backup copy of your IBM Reference Diskette (which we will call RD2), containing the Adapter Description Files for all the existing adapters in your system.

2. Boot the computer from DOS and change to the tape software directory.

3. To access the tape software, type:

   TAPE   [⏎]

4. From the Main Menu, choose **Install/Config**.

5. From the Install/Config menu, choose **Setup Hardware Configuration**, and press **[Enter]** to configure your PS/2 tape controller.

6. At the bottom of the screen, type in the port address, DMA, and IRQ you want.

7. Press **[F8]**. The tape software will save the new configuration in the file TAPE.CFG, for use during future tape operations, and will also customize the file @57FE.ADF with the new values.

8. Press **[F10]** twice to exit from the tape software.

9. Copy the file @57FE.ADF from the tape software directory to RD2. Do not use another, uncustomized copy of this file from another source.

10. Turn OFF the computer. If you have not already done so, install the tape hardware, according to Section 3.2.

11. With RD2 in drive A, turn ON the computer.

(If you just installed the tape controller card in Step 10, you will see "Error 165" and hear two beeps. Press **[F1]** to boot from RD2, then **[Pg Dn]** to get to the second page of the Error 165 screen, then **[N]** to bypass Automatic Configuration.)

12. From the Main Menu of the IBM setup program, select **Set Configuration**.

13. From the Set Configuration menu, select **Change Configuration**.

14. The Change Configuration screen will display the contents and configurations of each expansion slot in your system. Use the cursor-down key to move to the slot that contains the streaming tape controller card.

15. If there are any conflicts between the streaming tape controller and other devices in your system, the conflicting values will be marked with an asterisk (*).

Verify that your chosen configuration is not marked with any asterisks. (If it still is, repeat Steps 2-15.)

Using
DMA2 or
DMA3

Streaming tape uses Direct Memory Access, or DMA, to move data simultaneously between the disk and the memory, and between the memory and tape.

Normally two DMA channels are used during a tape operation: one assigned to the disk controller and one to the tape controller. The Everex tape controller may be configured to use any of the four DMA channels DMA0-DMA3.

For the tape controller's DMA channel, we recommend either DMA0 or DMA1. If both of these conflict with other devices in the system, then the tape controller can share DMA2 or DMA3 with the diskette or fixed disk controller respectively. However, you cannot use one DMA channel for two functions (disk and tape operations) at the same time. To avoid conflict with the diskette or fixed disk drives, you must do one of two things:

Configure the tape software for Single DMA Mode. Single DMA mode, however, will cost you some tape performance.

Avoid using the disk controller at the same time as the tape controller. That is, if you assign DMA2 to the tape controller, you will not be able to back up diskettes; if you assign DMA3 to the tape you will not be able to back up local hard disk drives in a PC or XT.

Normally, the IBM setup program will not permit any two controller cards to share any value, including a DMA channel. However, to give you the widest possible range of DMA options, the Everex configuration program for Micro Channel cards has been specially written not to indicate a conflict when the tape controller is configured for DMA2 or

DMA3. This feature is very important in computers that contain many add-on cards where DMA0 and DMA1 are frequently both unavailable.

Everex strongly recommends that before assigning DMA2 or DMA3 to the tape controller card, you make sure that no other add-on card in your system is also sharing that DMA. If another product in your system is using a similar technique to share DMA2 or DMA3, no asterisk will appear in the IBM setup program, but that card and the Everex tape controller may still conflict with each other. In this case neither the other card nor the Everex tape controller will work until you choose another DMA.

3.3   System Test After Installation

After you finish the installation, perform a system test. To perform this test, you need a tape. A cartridge tape is supposed to come with your tape backup subsystem. In order to proceed with the test, the tape must be write-enabled. Figures 3-24 and 3-25 show you how to write enable/protect a cartridge and cassette tape respectively.
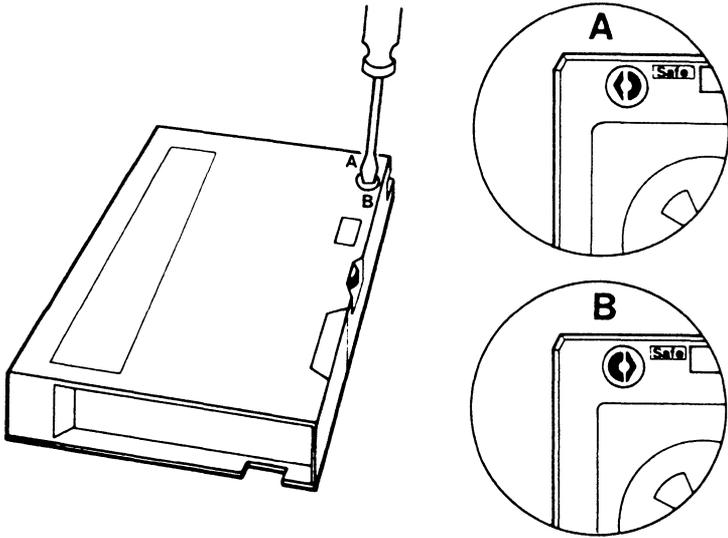
Figure 3-24. Write Enabling/Protecting a Cartridge Tape
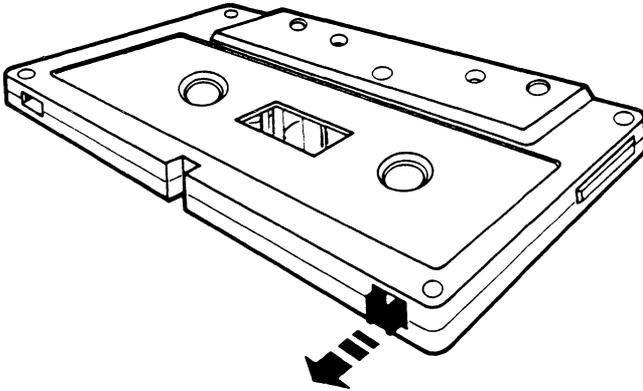
Figure 3-25. Write Enabling/Protecting a Cassette
Tape

The following is a recommended procedure for
performing a system test after the installation:

1. Boot up the computer and change to the tape
    software directory.

2. At the DOS prompt, type:

    TAPE   [↵]

3. From the Main Menu, select and execute **Tape
    Sys Test.**

4. Many of the tape diagnostic routines are "destructive" - that is, they erase and/or write to the tape, and therefore require a blank tape or one whose data you can safely remove. To avoid inadvertently testing on a tape that contains valuable data, the tape software includes a safety catch: a warning message appears on the screen in front of the diagnostic menu. Read the warning message, then press [**Enter**] to proceed with the diagnostics.

5. Insert a tape into the tape drive.

6. From the Tape System Test Main Menu, select **Complete Drive Test [F3]**. This test takes a while to complete, so please stand by.

If the system does not pass the test, refer to Appendix B for explanations of error messages and Section 3.4 to reconfigure your tape controller card. Once you correct any errors, rerun the **Complete Drive Test** [**F3**] to ensure that everything operates properly.

3.4 How to Reconfigure Your PC, XT, AT, or PS/2 Line Controller Card

Note For Micro Channel systems, reconfiguration is done through software, and is described in *Micro Channel Tape Installation* in *Section 3.2.*

Most of the time when a tape unit does not pass diagnostics on the first try, it is because one or more of its settings - DMA, port address, or IRQ - is

already being used by another device in the
computer. In this case you can easily reconfigure the
tape controller card to use different settings, thus
resolving the conflict.

To test for this type of conflict, simplify your
hardware and software environments as much as
possible. Either you or your authorized technician
may remove all non-essential controller cards from
your system, leaving only the floppy and hard disk
controller(s), display adapter, and tape controller
card. For software, remove all non-essential
memory-resident programs and device drivers. (The
easiest way is to temporarily rename your
AUTOEXEC.BAT and CONFIG.SYS files to have
the extension .TMP.) Then repeat the Complete Tape
Test. If the tape subsystem passes diagnostics
without the other controllers and software present,
you can safely assume that a conflict exists. Replace
the previously removed cards in the system one at a
time, repeating diagnostics each time. If the test
passes with all the cards in place, start replacing your
memory-resident software and device drivers one by
one until you identify the source of the conflict and
proceed to reconfigure the tape controller card to
resolve the conflict.

To reconfigure your tape controller card, follow
these steps:

1. Turn OFF your computer and remove the tape
    controller card from its expansion slot.

2. Turn the computer ON again, boot up, and change to your tape software directory.

3. At the DOS prompt, type:

    TAPE   [↵]

4. From the Main Menu, choose **Install/Config**.

5. From the Install/Config menu, choose **Setup Hardware Configuration**.

6. Use the **[PgUp]** and **[PgDn]** keys to display pictures of each available controller card model. Compare your tape controller card to the pictures on the screen to select which model you have. Observe the jumper and/or dipswitch locations that are pointed out on the card, then press **[Enter]** to configure that card.

7. For each configurable setting (DMA, IRQ, and port address), type in the value you want, and the program will graphically show you how to configure your card accordingly. If you don't know what values to try, press **[F1]** for help. (The default values for all Everex controller cards are DMA1, IRQ3, and port 300H-301H.)

8. After reconfiguring your tape controller card, change the switch and jumper settings on your controller to correspond to the settings depicted by the software. Any of several different dipswitch mechanisms may be on your card. To

set a slide switch ON, move the switch to the end marked ON. To set a rocker switch ON, press down on the end marked ON. Figure 3-26 shows you how to set slide and rocker switches.

Note   **The tape hardware and software configurations MUST MATCH in order for the tape drive to work. If you run Setup Hardware Configuration but do not want to save your changes, you can always press [F10] to exit the routine with no changes.**
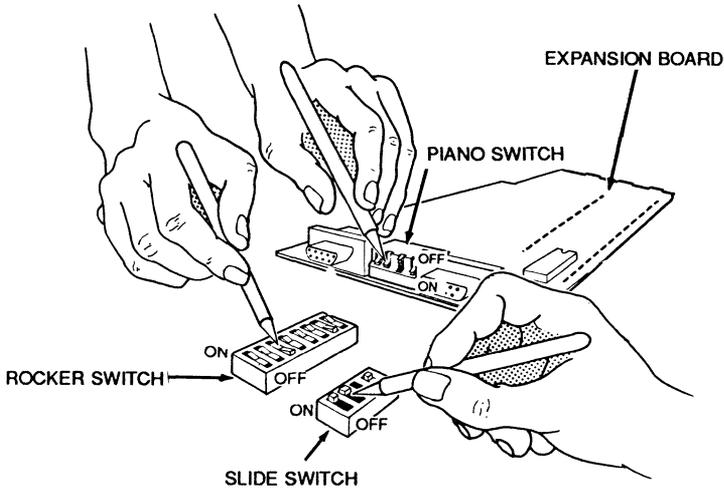
Figure 3-26. Setting Slide and Rocker Switches

9.   After saving your changes, turn OFF the computer and re-install your tape controller card. Reconnect the tape drive to the controller card.

10. Repeat the Complete Tape Test with the new settings.

Occasionally, it may be necessary to experiment with different combinations of settings in order to find one that works in a particular system. In such cases, you may find it helpful to consult the manuals of the other peripheral products installed in your system for the purpose of determining what combination of DMA, IRQ, and/or port address settings these products are using. You can then configure the tape controller card to avoid using those same settings.

Note   **Your data is Everex's first priority. If you have an operational question about the tape subsystem or if you suspect some malfunction, stop using your tape subsystem until you resolve the matter. In most cases, the information in this manual and the on-line help screens will answer any questions you have.**

4 Introduction to EVTAPE Software

This section helps familiarize you with all the functions and features of your Everex streaming tape software. Before using this section, you should have completed the hardware and software installation of your tape subsystem.

Section 4 Summary

4.1   EVTAPE Files
4.2   The Main Menu
4.3   Easy and Advanced User Interfaces
4.4   Image Vs File Backup

4.1   EVTAPE Files

Your Everex utility diskettes contain the following:

DEMO	README
COLORTAB	MONO_TAB
MENU.EXE	EVERSONG.000
EVERSONG.001	EVERSONG.002
TAPE.CFG	TAPE.EXE
TAPE.ERR	TAPE.MEN
TAPE.HLP	INSTALL.EXE
INSTALL.ERR	INSTALL.MEN
INSTALL.HLP	TAPETEST.EXE
TAPETEST.ERR	TAPETEST.MEN
TAPETEST.HLP	IBACKUP.EXE
IBACKUP.ERR	IBACKUP.MEN
IBACKUP.HLP	FBACKUP.EXE
FBACKUP.ERR	FBACKUP.MEN
FBACKUP.HLP	IRESTORE.EXE
IRESTORE.ERR	IRESTORE.MEN
IRESTORE.HLP	FRESTORE.EXE
FRESTORE.ERR	FRESTORE.MEN
FRESTORE.HLP	@57FE.TPL
@57FE.DFL	@57FE.ADF
MOUNTAPE.BAT	CHK_TAPE.EXE

Note   Read the file "README" for the most up-to-date information about your streaming tape backup subsystem. Browse through this file by typing at the prompt:more <readme   [Enter]

As part of the installation process, you installed the tape software on your hard disk drive under the default directory C:\EVTAPE (or other pathname specified by you). Change to that directory now, and access the tape software Main Menu by typing:

TAPE   [↵]

Throughout the tape software, there are two ways to select and execute a function:

1.   Use the (cursor) arrow keys (located in the numeric keypad at the right side of your keyboard) to move the cursor around on the screen **to select** the function of your choice. The selected function appears in reverse video. To execute it, press **[Enter]**.

2.   Each function corresponds to a function key, marked next to it on the screen. To select and automatically execute that function, press the appropriate function key. You do not have to position the cursor over that function if you choose it with the function key.

Note that the function keys may have different meanings for different menus. However, two of the function keys have constant meanings throughout the tape software:

1. The **[F1]** key toggles context-sensitive on-line
    help. At any point in the tape software, press
    [F1] to display a help window on the screen. The
    help window contains information specific to the
    currently-selected function. After reading the
    help window, press **[F1]** again to toggle OFF
    help, then proceed with the software operation.

2. The **[F10]** key quits the routine you are in and
    returns you to the previous "level." For example,
    if you are at the Main Menu and press **[F10]**,
    you will return to the DOS prompt.

4.2   The Main Menu

The various functions of the Main Menu are
introduced as follows:

Help   The Main Menu appears with the cursor positioned
on HELP. This function displays several pages of
generic help information; for example, it defines the
action of certain keys and the meanings of several
commonly-used terms. Read through these help
pages to familiarize yourself with the tape software
program.

Install/   These routines help you install the tape software on
Config   your hard disk drive and set up certain hardware and
software operating parameters.

Tape Sys Test
This function contains several diagnostic routines that test the entire tape subsystem for any conflict or failure.

Image Backup
This function backs up an entire disk drive, including all its directories and files, to the tape. (This operation does not affect the contents of the original disk.) Subsequently, you may restore the data from the tape back to the disk with either image or file restore operations.

An image backup operation creates one dataset on the tape for each drive specification, containing all the information on the original disk drive.

File Backup
Instead of backing up the entire disk drive, file backup lets you choose all or certain files or directories from within that disk, skipping over any other data. (This operation does not affect the contents of the original disk.) Subsequently, you can only use file restore to restore the data from the tape back to the disk.

A file backup operation creates only one dataset on the tape, containing all the specified files.

Image Compare
After completing a backup, a compare operation verifies if the data on the tape matches the original data on the disk drive exactly. The compare functions are very exacting -- if you make any change to the disk drive between the time of backup and compare (for example, if you create, modify, or delete just one file), the data no longer is identical and a

miscompare results. Use the image compare program after image backup sessions. In addition, use image compare after image restore sessions.

File
Compare

File compare is very similar to image compare, but is used with file backup or restore sessions.

Image
Restore

An image restore operation copies the contents of an image backup from the tape back to the hard disk drive. Image restore completely overwrites the existing disk drive contents (if any) and replaces them with the tape dataset contents. Therefore, use image restore only with a brand-new hard disk drive or one that contains no valuable data. To add tape data to a hard disk drive with existing valuable data, use file restore.

File Restore

File restore lets you select some (or all) of the files from the tape dataset (either image or file-by-file) to restore to the disk. In addition, file restore lets you specify the pathname to which you will restore the files on the target disk, so you avoid overwriting any existing data on that disk.

4.3 Easy and Advanced User Interfaces

To accommodate the wide range of streaming tape users and their applications, the Everex streaming tape subsystem has two user interface modes: easy and advanced.

In the easy user interface (to which the program defaults), the menus are deliberately kept as simple

as possible, and many of the optional configuration parameters are pre-determined for you. **We recommend the easy user interface to most users whose applications are basic, and to those who prefer an easy software operation.**

The advanced user interface incorporates the more powerful and sophisticated features of the tape software. In certain complex installations, you may need to use software features available only through the advanced user interface. **We recommend the advanced user interface to those users with more technical background and interest in advanced features.** Even in the advanced user interface mode, context-sensitive on-line help is always available.

Not every program in the tape software has easy and advanced user interfaces. The main program, Tape System Test, Install/Config, File Restore, and Image and File Compare programs have only one user interface. However, the Image and File Backup and Image Restore programs have easy and advanced interfaces.

There are two ways to access the advanced user interface:

1. From the easy user interface for the Image Backup, File Backup, or Image Restore, press [Alt] [F1] (hold down [Alt] and briefly press [F1]). This toggles you to the advanced user interface for that program. To toggle back, press [Alt] [F1] again. This method is temporary; the

next time you restart the tape software, it returns to its original user interface.

2. If you prefer to start the software in advanced user interface mode every time, follow these steps:

    A. From the Main Menu, select and execute **Install/Config**.

    B. From the Install/Config Menu, select and execute **Setup Software Configuration**.

    C. On the Setup Software Configuration Menu, change the value of **Enable Advanced User Interface** from **N** to **Y**.

    D. Press **[F8]** to save the change, and **[F10]** to return to the Main Menu.

With the software configured to start in advanced user interface mode, use **[Alt] [F1]** to toggle to the easy user interface and back.

4.4   Image Vs File Backup

The Everex streaming tape system offers two complementary modes of backup and restore. **File-by-file mode** lets you select individual files or directories to back up. **Image mode** operates on an entire hard disk drive at one time.

The following two subsections helps you choose the best backup mode for your particular applications.

Image Backup

The tape software lets you back up and restore your disks in image mode, selecting an entire hard disk drive at one time.

Advantages 1. Image backup lets you back up DOS or any other operating system.

2. Image backup lets you save all the data security and system structure of your disk. In addition, image backup lets you back up any hidden data.

3. In case you accidently damage your data, image backup lets you back up the data **before** you run any data recovery program (e.g., the DOS RECOVER command).

4. In the event that your hard disk is completely lost, an image restore to a new disk is the simplest and fastest way to restore your data.

Disadvan- 1. So far, an industrial standard format does not
tages exist for image backup. The Everex streaming tape backup system uses a proprietary format.

2. You cannot restore a disk image to a different type of hard disk.

3. Since image backup lets you back up your whole
    hard disk (including unused areas), it is slower
    than file backup if you only back up a small
    amount of data.

File Backup

Everex streaming tape software also provides you
with a file-by-file mode of backup and restore. In this
mode, you can back up any file that you can access.

Advantages

1. You can easily transport your data between
    different systems in file mode. Simply back up
    the desired files from the source disk and restore
    them to the target disk. It doesn't matter if the
    two disks are different types.

2. Your backup and restore operations are very
    selective. You can back up a large set of files -
    even every file on the disk - and then, in case of
    need, restore only the ones that are lost. This
    selectivity is practical and convenient.

Disadvan-
tages

1. You cannot back up the system structure in
    file-by-file mode. This is only possible in image
    mode.

2. File backup has less capability than image
    backup to handle copy-protected data.

Section

5   Install/Config

The Install/Config routines help you install the tape software on your hard disk drive and set up certain hardware and software operating parameters.

Section 5 Summary

5.1   Install/Reinstall Tape Software
5.2   Set Up Hardware Configuration
5.3   Set Up Software Configuration

5.1 Install/Reinstall Tape Software

The routine to **install** tape software creates a
directory for the tape software on your hard disk
drive and copies all the files from each of the original
diskettes to that directory.

The default directory name created for the tape
software is C:\EVTAPE, but you can change this to
any valid DOS pathname you want. Refer to Section
3.2 for details about first time installation. The
routine to **reinstall** the tape software repeats the
functions of first time installation.

5.2 Set Up Hardware Configuration

This function lets you set up or change the port, IRQ,
and DMA settings on your tape controller card to
avoid possible conflict between the tape subsystem
and other peripherial devices in your computer.

Use the **[Pg Up]** and **[Pg Dn]** keys to view diagrams
of the various tape controller cards. Then, press
[Enter] to select the diagram that matches your tape
controller card. As you set or change the port, IRQ,
and DMA settings, the diagram changes to show you
the proper jumper and switch settings for your
configuration.

Streaming Tape Tip

If you're installing multiple tape controllers in your system, they can share DMA and interrupt assignments, however, you must set your tape controllers to different port addresses. Everex recommends the following:

1. Leave tape controller #1 set at the default port address.

2. Change tape controller #2 to port address 304 (the software will automatically recommend the next available port address if you have installed a second tape controller).

3. Change tape controller #3 to port address 308, etc.

The EVTAPE software can support a maximum of eight tape controllers with one tape drive connected to each tape controller. If you want to create a multi-controller configuration, press [F5]. Now you will see an addition to the menu where you can set or change the port, IRQ, and DMA settings for up to eight controllers. Each controller in your system must be assigned a different I/O port, however, the DMA and IRQ can be shared among the controllers. You do not need to change the drive number setting even if you have multiple tape controllers in your system; leave your tape drives at the default setting DRV = 0. Use the following keys to set the

multi-controller system: **[F4]** to delete a controller, **[F5]** to add a controller, **[F6]** to move to the previous controller, and **[F7]** to move to the next controller.

After you have set or changed any of the settings, press the **[F8]** key to save the changes in the file TAPE.CFG. Remember to set the jumpers and switches on your controller according to the diagram for your card. Figure 3-26 shows you how to set slide and rocker switches.

5.3 Set Up Software Configuration

This function lets you set up certain software operating parameters, as follows:

Run Software in Single DMA Mode
The streaming tape backup subsystem uses a technology called Direct Memory Access, or DMA, to route data from your hard disk drive through the computer's memory and to the tape at maximum speed. Normally for an XT, a tape operation involves two DMA channels: one conducts data from the disk into memory, and a second channel conducts data out of memory and to the tape.

In some circumstances, however, you may need to operate the tape subsystem with one DMA channel at a time instead of two if, for example, the DMA controller chip on the system's motherboard cannot support dual DMA mode. In this case, replace the DMA controller chip. Please consult your dealer or technician about this. Meanwhile, you can probably operate the tape system in single DMA mode.

Single DMA operation results in a greatly-reduced data transfer speed. Use it only as a last resort.

Note   **Dual DMA mode is correct for most applications.**

*Enable
Advanced
User
Interface
(Y/N)*   To start the tape software in advanced user interface every time, change this field to **Y**. (You still have access to context-sensitive on-line help and can still use [**Alt**] [**F1**] to toggle back to the easy user interface when desired.)

*Disable
Real-Time
Clock
Display
(Y/N)*   Normally the tape software displays the time, as read from your system's clock, in the upper right-hand corner of the screen. This option allows you to disable the clock display and the software's on-screen time bar. You can realize a slight improvement in speed by turning this display OFF. Disabling the clock may also resolve interrupt vector conflicts with certain memory-resident programs.

Note   **For information on disabling other interrupt vectors in the system, move the cursor to Disable Real-Time Clock Display, press [F1] for help, then press [Ctrl] [PgDn] for additional information.**

If you decide not to disable the clock but change your mind during software operations, disable the clock by pressing [**Ctrl**] [**K**].

*Skip
Read/Write
on Bad
Sectors (Y/N)*   Some software copy protection schemes attempt to hide software "keys" in fake DOS bad sectors. The copy-protected software reads the key from its own diskette, and requires this key before it starts

running. Thus, if you attempt to make an unauthorized copy, DOS will not copy the "key" and your new copy will not work.

To comprehensively back up disks that contain such copy-protected programs, the tape software automatically attempts to read any bad sectors encountered on the disk.

However, some disk controller cards automatically perform a very time-consuming retry operation when attempting to read a real bad sector. This can impair the tape software's performance in systems without copy-protected software on the disk.

Change this value to **Y** if and only if:

1. You are certain that there is no copy-protected software creating fake bad sectors on your disk, and;

2. You have a disk controller that performs a time-consuming retry when attempting to access a bad sector.

6 Tape System Test

The Main Menu incorporates all the diagnostic functions of the tape software under Tape System Test. These functions check the operating conditions of your Everex streaming tape drive. The tests range from a Short Test, which conducts a quick evaluation of the operating conditions of your tape drive to a Continuous Test, which conducts an indepth test of the same operating conditions. Besides these tests, there are functions which store and load the results from the diagnostic tests.

Section 6 Summary

6.1   Functions in the Tape System Test Main Menu

6.2   Terms in the Test Statistics Menu

After you install your drive, run a Complete Test. If this test runs through without any errors, your tape drive will operate accurately.

When you believe there is something wrong with your system, run Tape System Tests. These tests help identify why your system operates improperly. Once you have completed a test, write the information into a log file for future reference.

Caution	**Most diagnostic functions are destructive: that is, they write or erase data from the tape; therefore you must work with a blank tape or one that contains no valuable data. A warning message to this effect appears before the Tape System Test Menu.**

If a test fails, note the error message written on your screen, and refer to Appendix B for additional explanations and recommendations.

6.1   Functions in the Tape System Test Main Menu

Complete
Drive Test
[F3]   The Complete Drive Test exhaustively checks the computer, the tape, the tape drive, and the software. Perform this test when you first install the tape subsystem or when there is any indication of trouble with the tape subsystem. This test takes about one hour to perform.

Short Test
  [F4]

The Short Test executes a short diagnostic to re-confirm that the tape subsystem is functional. It tests the basic tape operations (e.g., read, write, rewind) with a reduced cycle count. This test takes about 15 minutes to perform.

Tape Test
  [F5]

The Tape Test checks the tape to ensure that data can be written onto and read from it. Run this test before you use a new tape for the first time.

Continuous
Drive Test
  [F6]

This test loops through the Complete Drive Test over and over until either a test fails or you abort the program by pressing **[F9]**. If you suspect a marginal problem with the tape drive (for example, it seems to work sometimes but not others), allow this program to run overnight. If you allow this test to run continuously for more than a day, you will expend a lot of the life of your tape drive and tape.

Erase Tape
Test [F7]

This test passes the tape drive's erase bar up and down the entire length of the tape, then checks for any data remaining on the tape. Use it when you want to purge a tape of your data before passing it to another person.

Retension
Tape Test
  [F8]

Run this test before you use a brand new tape or before you reuse one that you have not used for a long time. This program retensions the tape to even its tightness and tension. For a new tape, you should also run the Tape Test.

Note   **The Retension Tape Test does not erase the tape's contents.**

Test
Log/Report
[F9]

This function offers three operations allowing you to write/read test results onto/from a (binary) log file and to generate a (text) report file. These three operations are described as follows:

Write Test Result Onto a Log File [F7]

This operation writes information from the test that you just operated into a binary log file. Some people keep this information in many files so that they have a record of the test results each time they run diagnostics. Other people keep only one file with the most current test information. Perform this operation after you conduct a diagnostic test.

Read Test Result From a Log File [F6]

Use this operation to recall the test information from a log file. The information displays on your screen exactly as it did immediately after you completed the original test.

Generate Test Report [F8]

If you plan to print out the test information, perform this operation. It generates a text file based on the test information displayed on the screen (whether the test information is produced from a completed test or from reading a log file to the screen). Load this text file into any word processing program to view or edit it. In addition, to print the test report directly, connect your printer and turn it on, then specify PRN as the output file.

6.2 Terms in the Test Statistics Menu

Number of   Block (i.e., sector) size is 512 bytes. Number of
Blocks   blocks written is the number of 512-byte data blocks
Written   written to tape.

Number of   The number of 512-byte blocks read from tape.
Blocks Read

Number of   The number of tape write operation failures. When
Writes   write failure occurs, the failure type displays in the
Failed   Test Status Report Menu and the test stops.

Number of   The number of tape read operation failures. When
Reads Failed   read failure occurs, the failure type displays in the
                   Test Status Report Menu and the test stops.

Number of   The number of recoverable tape operation errors.
Soft Errors

Number of   The number of unrecoverable tape operation errors.
Hard Errors

Number of   The number of times the tape controller transports or
Underruns   receives data at a rate less than that required by the
                   device to maintain streaming operation.

7   Image Backup

Image backup makes a complete copy of the disk data onto the tape. You can restore data backed up by this method using either image restore or file restore.

Note   **Image backup has no effect whatsoever on your disk's data. Image backup will not alter, damage, or remove anything from your hard disk.**

7.1   Image Backup Basics

Each image backup you perform creates a single dataset on the tape.

Note   **If your tape does not have enough room for the entire image backup, the software prompts you to insert another tape after your first tape is full. For this reason, keep an extra tape nearby whenever you perform a backup. Never reinsert the same tape.**

To perform an image backup, follow these steps:

1.   From the tape software Main Menu, select and execute **Image Backup**.

2.   In the image backup menus, fill in each field (or simply confirm the default setting) as described in the following subsections.

3.   Press [**F8**] to execute the image backup.

Caution   **Always perform an image compare (see Section 9) regularly after an image backup. This is especially important when dealing with extremely valuable data.**

Note **If you are using a multi-controller configuration and the tape on your first drive becomes full, the EVTAPE software will automatically continue the backup operation on the next tape drive in your configuration (this is called a cross tape operation). The new tape drive becomes the current tape unit. Although your backup operation uses more than one tape, the dataset number and label will be same for each tape.**

7.2   Easy User Interface

The easy user interface presents only one menu: the Image Backup Easy Menu. The fields displayed in this menu are as follows:

Select Disk Drive for Backup (A-Z)   Enter any valid drive name in your system; for example, "C" to back up your first hard disk drive, or "A" to back up a diskette in floppy drive A.

Do You Want to Append or Overwrite the Tape (A/O)   Whenever you start a backup operation, the tape software first reads your tape to check for existing data.

If you choose **A**, the tape software advances the tape to the end of any existing data, then adds your new data to the end. This prevents you from losing any data already on the tape.

If you choose **O**, the tape software records your new data starting from the beginning of the tape and overwrites any existing data on the tape.

Caution   If you choose O, the tape software DESTROYS
ANY AND ALL existing data on the tape. Even if
your new data does not fill up as much tape as the
previously existing data, once you overwrite the
beginning of the tape, you cannot recover any of
the previous contents.

Note   If you are using a multi-controller configuration,
the EVTAPE software will only append data to
the first tape drive in the configuration. In all
other tape drives, data will be overwritten.

7.3   Advanced User Interface

The advanced user interface presents two menus: the
Image Backup Select Drive Menu and the Tape
Specification Menu. The following two subsections
describes these two menus and their fields.

Image Backup Select Drive Menu

Select Disk   Enter a logical drive name (any letter from A to Z
Drive for   that is valid in your system), or a physical drive
Backup   number.

By entering a letter, you select a **logical image
backup**. DOS reads the data from your hard disk
drive and relays it to the tape software for backup.
This mode allows you to back up any legal DOS
disk, including, for example, a DOS partition from a
very high-capacity hard disk, a RAM disk, a floppy
diskette, or an ordinary DOS hard disk drive.

If you enter a drive number (1 or 2), the tape software performs a **physical image backup**, which is an exact bit-for-bit copy of the hard disk data, without going through DOS. Because physical image backup does not require DOS to read or interpret the data on your hard disk drive, you can back up virtually any hard disk drive in your computer. This includes, for example, disk drives that are wholly or partially dedicated to non-DOS partitions, damaged disks, disks that exceed the DOS 32MB limitation (if you want to back up the whole disk as one dataset), and ordinary DOS hard disk drives. Only perform physical image backup on an entire hard disk drive, not on a floppy drive, a RAM disk, or only part of a hard disk drive.

Backup Option

If your hard disk is not full of data, reduce your backup time by entering **D** (for DOS) in this field. The tape software starts backing up from the beginning of the hard disk then stops when it reaches the end of the DOS data on the drive, instead of backing up empty sectors or non-DOS partitions.

If you have used your disk drive for a long time, and especially if you often delete data to make room for more, data may be scattered throughout all the sectors of your hard disk drive, instead of being concentrated at the beginning. In this case, even if you enter **D** to back up DOS data only, the tape software may need to read almost the whole drive in order to come to the last sector that contains data.

Enter **W** (for Whole Disk) to back up the entire drive, regardless of empty space.

Dataset   Each backup you perform creates one dataset, or
Label   body of information, on the tape. This field lets you
label the dataset with any name you want, up to 11
characters.

Name each dataset so that it reminds you of the data
contained in it -- for example, "LETTERS-88."

Tape Specification Menu

From the Image Backup Select Drive Menu (top
window), enter the Tape Specification Menu (bottom
window) by pressing [F2].

Tape   You must assign an identification number to each
Number   individual tape cartridge or cassette you own. This
number will be recorded on the tape header and will
stay the same (unless you change it), independent of
what data is recorded on the tape.

Enter [0] in this field to default to the tape number
already recorded on the tape.

If a tape number has not yet been recorded (for
example, if the tape has just been erased by a tape
test), you will be prompted to enter a non-zero tape
ID.

If you enter a non-zero number different from that
already recorded on that tape, the tape software will
alert you to the discrepancy before it begins backing
up, and will warn you that you may be using the
wrong tape.

Tape Label   In addition to an identification number, you can
record a label (again, up to a maximum of 11
characters) on the header of each tape. Like the
dataset label, we recommend that you choose tape
labels that mean something to you - for example,
"Advertising."

Starting   This field is similar to the "Append or Overwrite"
Dataset   field presented by the easy user interface for image
Number   backup.

To append this new data to the end of any existing
data, enter the number "0." Dataset 0 does not exist,
so the software defaults to the first available dataset
number. (For example, if two datasets are already
recorded on your tape, the software makes this new
data, dataset 3.) Alternatively, enter a very large
number - for example, 9999 - and the software again
defaults to the first available dataset number on the
tape.

To overwrite the tape from the beginning, enter 1.
Your new data then becomes the first dataset on the
beginning of the tape.

Caution   **If you choose to start from dataset 1, the tape
software DESTROYS ANY AND ALL existing
data on the tape. Even if your new data does not
fill up as much tape as the previously existing
data, once you overwrite the beginning of the
tape, you cannot recover any of the previous
contents.**

7.4   Reference Information

To an Everex tape software user, there are three kinds of disk drives to back up or restore:

Physical Disk Drive   A physical disk drive is a local fixed disk drive that connects to the I/O bus of the computer. You can partition a physical disk drive into as many as four partitions, each of which may be in DOS or non-DOS format.

Refer to physical disk drives using drive number 1 or 2.

Everex streaming tape software backs up or restores the PHYSICAL IMAGE of ANY physical disk drive which has DOS, XENIX, Novell File Server, or any other types of partitions.

DOS Logical Disk Drive   A DOS logical disk drive is a DOS block device driver that presents a particular data source to DOS in the DOS disk format.

The data source of a DOS block device driver can be:

• The entire image of a local fixed disk drive

• A partition of a local fixed disk drive

• A diskette in a floppy drive

• Random access memory (RAM disk)

• Anything

Refer to DOS logical disk drives using drive names (A. B, ..., etc.).

Everex streaming tape software backs up or restores a DOS logical disk drive using LOGICAL IMAGE. You can also do this using FILE-BY-FILE. See Section 8.

Mapped A mapped disk drive maps a drive name to a
Disk Drive subdirectory tree of:

1. A logical disk drive using the DOS SUBST command; or

2. A network disk volume.

Although you can refer to a mapped disk drive by a drive name, it is not in the complete DOS disk format. Therefore, it is not possible to perform a sector read/write or DOS CHKDSK on a mapped disk drive. That is, you cannot back up or restore a mapped disk drive using IMAGE (either PHYSICAL or LOGICAL).

Everex streaming tape software, however, can backup or restore a mapped disk drive using FILE-BY-FILE. See Section 8.

8 File Backup

File backup lets you select some (or all) of your
directories and/or files to back up, instead of
including the whole disk. This option saves time
when you don't need to back up everything on your
disk drive. Use file backup for transferring data
between drives of different characteristics - different
capacity, number of sectors per track, etc.

You can only restore data backed up file-by-file
using file restore.

Section 8 Summary

8.1   File Backup Basics

To perform a file backup, follow these steps:

1. From the tape software Main Menu, select and execute **File Backup**.

2. In the file backup menus, fill in each field (or simply confirm the default setting) as described in the following subsections.

3. Press [F8] to execute the backup.

Caution	Always perform a file compare following file backup. This is especially important when dealing with extremely valuable data.

Note	If you are using a multi-controller configuration and the tape on your first drive becomes full, the EVTAPE software will automatically continue the backup operation on the next tape drive in your configuration (this is called a cross tape operation). The new tape drive becomes the current tape unit. Although your backup operation uses more than one tape, the dataset number and label will be same for each tape.

8.2 Easy User Interface

The easy user interface presents only one menu: the File Backup Easy Menu. This menu displays the following fields:

File Specification Type the DOS pathname of the files or directories you want to back up. Just as in normal DOS operation, you may use the variable "?" and the wildcard "*" in the filename or extension of your path, but not in any directory name. For example, if you installed your tape software in the default directory C:\EVTAPE and wanted to back up only the help files of the tape software, your pathname would be:

C:\EVTAPE*.HLP

If you wanted to back up only the tape software Main Menu files, your pathname would be:

C:\EVTAPE\TAPE.???

If you need more information on the DOS directory structure and the syntax of pathnames, refer to your DOS manual.

Do You Want to Include All Sub- Directories? (Y/N) Enter **Y** to include not only the files in the directories specified in File Specification but also any and all files in sub-directories below them.

For example, if you leave the default file specification C:*.*, and enter **N** in this field, your

backup includes only those files contained in the root directory of drive C. Your backup excludes any and all files in sub-directories of drive C. Enter **Y** and your backup includes every file on drive C.

Do You
Want to
Append or
Overwrite
the Tape?
(A/O)

Whenever you start a backup operation, the tape software begins by reading your tape to check for existing data.

Enter **A** to advance the tape to the end of any existing data, and append your new data to the end. This prevents you from losing existing data.

Enter **O** to record your new data starting from the beginning of the tape.

Caution   **If you enter O, the tape software will DESTROY ANY AND ALL existing data on the tape. Even if your new data does not fill up as much tape as the previously existing data, once you overwrite the beginning of the tape, you cannot recover any of the previous contents.**

Note   **If you are using a multi-controller configuration, the EVTAPE software will only append data to the first tape drive in the configuration. In all other tape drives, data will be overwritten.**

8.3   Advanced User Interface

The advanced user interface presents three menus: the File Specification Menu, the File Backup Tape

Specification Menu, and the Option Menu. The following subsections describe these three menus and their fields.

File Specification Menu

Using the File Specification Menu, you can create up to 99 individual pages of file specifications. The first file specification page is marked SPEC 01 of 01. After you enter your first pathname, press the **[F5]** function key to add a second blank file specification page, marked SPEC 02 of 02. Repeat this process as necessary to create up to 99 separate pages. Each page may have its own parameters (see System Files through Include/Exclude, in the following paragraphs), independent of the other pages. Press **[PgUp]** and **[PgDn]** to view your file specification pages, and **[F6]** to delete a page if necessary. All the file specification pages backed up at the same time constitute a single dataset on the tape.

The File Specification Menu displays the following fields:

File Spec   Type the DOS pathname of the files or directories you want to back up. Just as in normal DOS operation, use the variable "?" and the wildcard "*" in the filename or extension of your path, but not in any directory name.

For more information on the DOS directory structure and the syntax of pathnames, refer to your DOS manual.

System Files	Enter **Y** in this field to include system files, or **N** to exclude them from the backup.
Hidden Files	Enter **Y** in this field to include hidden files, or **N** to exclude them from the backup.
Read-Only Files	Some software protects you from accidentally altering, overwriting, or deleting vital information from the disk by storing that information in files marked read-only.
	Enter **Y** in this field to include read-only files, or **N** to exclude them from the backup.
Sub-Directory Files	Enter **N** in this field to back up only the files included in the File Specification. You will exclude any files contained in sub-directories below the specified directories.
	Enter **Y** to include all the files in sub-directories of the specified directories in the backup.
Modified Files Only	Each file on your hard disk has a special archive bit which is set to 1 when you create or modify the file. The DOS BACKUP utility and certain other backup programs clear this bit back to 0 when they back up the file. This makes it simple to back up only those files which are new or different since the previous backup.
	Normally the software disregards the status of the archive bit on each file, so this field defaults to **N**. To

back up only those files whose archive bits are set to 1, change this field to **Y**.

Preserve Archive Bit   (See the previous paragraph for description of archive bit.) If you want the tape software to clear the archive bit of each file it backs up (in other words, behave like the DOS BACKUP utility), then change this field to **N**. This has the effect of slightly changing the bit pattern on your disk; if you plan to follow this backup with a file compare, **preserve** the archive bit.

Starting Date   DOS tags each file on your disk with the date last created. To back up (or exclude from backup) only files created during a certain time (for example, last month), enter the starting date, using the format mm-dd-yyyy. Enter a Starting Date no later than the Ending Date (next paragraph).

Ending Date   This field closes the time period from the Starting Date field. The format is the same. Enter an Ending Date no earlier than the Starting Date.

Note   **If your system does not have a clock/calendar, and you do not conscientiously answer the system time and date prompts at boot up, many of your files may reflect the 01-01-1980 default date. Do not use the starting and ending date fields to select files for backup in this case.**

Include/ Exclude (I/E)   Enter **I** to back up the files specified by all other fields on the File Specification page. Enter **E** to exclude all those files from the backup.

If you exclude a certain set of files - for example,
*.DOC - you do not automatically include all the
other files. **To back up everything except that set,
Include everything on one page and then Exclude
that set of files on a subsequent page.**

For example, suppose you want to back up all the
files on drive C except those in the directory
\OBSOLETE. Use two file specification pages to
accomplish this: On the first page, specify C:*.*,
with Include/Exclude set to I. On the second page,
specify C:\OBSOLETE*.*, with Include/Exclude set
to E.

File Backup Tape Specification Menu

From the File Specification Menu (bottom window),
press the [**F2**] key to enter the File Backup Tape
Specification Menu (top window). The following
paragraphs describe this menu's fields.

Tape   You can assign an identification number to each
Number   individual tape cartridge or cassette you own. This
number will be recorded on the tape header and will
stay the same (unless you change it), independent of
what data is recorded on the tape.

Enter [0] in this field to default to the tape number
already recorded on the tape.

If a tape number has not yet been recorded (for
example, if the tape has just been erased by a tape
test), you will be prompted to enter a non-zero tape
ID.

If you enter a non-zero number different from that already recorded on that tape, the tape software will alert you to the discrepancy before it begins backing up, and will warn you that you may be using the wrong tape.

Tape Label   In addition to an identification number, you can record a label (again, up to a maximum of 11 characters) on the header of each tape. Like the dataset label, we recommend that you choose tape labels that mean something to you - for example, "Advertising."

Dataset   This field is similar to the "Append or Overwrite"
Number   field presented by the easy user interface for backup.

To append new data to the end of existing data on your tape, enter the number **0**. Dataset 0 does not exist, so the software defaults to the first available dataset number. (For example, if two datasets exist on your tape, the software names the new data dataset 3.) Enter a very large number - for example, 9999 - and the software again defaults to the first available dataset number on the tape.

Note   **If you are using a multi-controller configuration, the EVTAPE software will only append data to the first tape drive in the configuration. In all other tape drives, the tape will be overwritten.**

To overwrite the tape from the beginning, enter **1**. Your new data then becomes the first dataset on the tape.

Caution	If you enter 1, the software will **DESTROY ANY AND ALL existing data. Even if your new data doesn't fill up as much tape as the previous data, once you overwrite the beginning of the tape, you cannot recover any of the previous contents.**

Dataset
Label

Each backup creates one dataset, or body of information, on the tape. Label the dataset with any name you want, up to 11 characters.

Name each dataset so that it reminds you of the data contained in it: for example, "LETTERS-88."

List Tape
Files

Enter [Y] in this field to list all the files on the tape while skipping to the specified dataset. The tape operation will be very slow if the listing is turned on. Only files backed up file-by-file will be listed.

List Backup
Files

Enter [Y] in this field to list the files being backed up on the tape. The tape operation will be very slow if the listing is turned on. You can always press [**F5**] and [**F6**] during the tape operation to turn the listing on or off.

Option Menu

From the File Backup Tape Specification Menu, press [**F3**] to enter the Option Menu. Using this menu, you can create a log, listing the files you are backing up or the files which are experiencing an error in backup. The following paragraphs describe this menu's fields:

Log
Filename

Enter the log's pathname and filename in this field.
FBACKUP.LOG is the default setting under the
directory where you executed your backup program.
If you prefer to dump the log directly to your printer,
enter PRN as your log filename.

Save the log file to another hard disk. If a hard disk is
unavailable, save your log file to floppy drive A.
This may, however, affect the speed of the backup
program. For optimum backup speed, save your log
file to the same hard disk. This may have the effect
of writing data on your hard disk.

Log Tape
Files During
Advance

Enter **Y** in this field if you want to log the listing of
the files from a file-by-file dataset on the tape while
skipping to the specified dataset. The tape operation
will be very slow if the logging is turned on. **N** is the
default.

Log Backup
Files During
Backup

Enter **Y** in this field if you want each file logged as it
is actually backed up. This may slow the backup
slightly. **N** is the default.

Log Backup
Files Only if
Error

Enter **Y** in this field to log only those files which
experience an error in backup. **N** is the default setting.

Pause on
Open File
Error

Enter **Y** in this field to have the software pause when
it encounters an open file error. A prompt reminds
you to continue or abort the operation. **Y** is the
default setting.

> *Pause on*   Enter **Y** in this field to have the software pause when
> *Read File*   it encounters a read file error. A prompt reminds you
> *Error*   to continue or abort the operation. **Y** is the default.

Streaming Tape Tip

> If there are any errors during backup operations, it is
> very important that you are aware of these errors so
> that later you do not restore a file with errors in it.
> For this reason, the **Log Backup Files Only if Error**
> field will change to **Y** if you enter **N** in the **Log**
> **Backup Files Only if Error** field and the **Log**
> **Backup Files During Backup** field, and **N** on either
> of the **Pause if Error** fields.

> *Back Up*   Enter **Y** in this field if you want your files to be
> *Files in*   backed up in the sequence displayed by the DOS
> *Original*   command DIR. This may be necessary in
> *Order*   conjunction with some network backup applications.

8.4 Read File and Open File Errors

> During a file backup operation, you may get an error
> message informing you of a read file or open file
> error. While these errors are not common, it is
> important that you understand what causes them and
> what you can do about them.

> Both read file errors and open file errors can be
> caused by network or multitasking environments or
> by bad sectors on your hard disk. Try the following
> suggestions.

Repeat the Backup Operation

Since some files are temporarily locked by the system or other applications, if you continue backing up the files with error messages, eventually the backup will be successful.

If you have performed numerous backup attempts and still get error messages, it may be possible that the files are constantly locked by the system so that you cannot back them up at all. Also, you may not be able to back up files located in bad sectors on your hard disk drive.

To ensure a smooth backup, you should make sure no other programs are locking the data that you wish to back up.

Exclude Error Files

For those files that are constantly locked by the system or other applications, you should manually exclude them from the backup file specification. If the files are system and/or hidden files, you can exclude them in the advanced interface of the file backup menu.

If you cannot perform a successful backup on specific files, follow the procedures in the next section "Restoring Files".

Restoring Files

If you cannot successfully back up certain files, you must make sure that you do not inadvertently restore

them to your hard disk. Write down the name of any
files that generate error messages and store this
information with the tape. Later, if you need to
restore files, you must manually exclude those files
with error messages using the advanced interface of
the Restore Menu.

Caution   **Do not ignore a read file error message. If you
later restore a file with a read file error message,
you will overwrite the existing file with the
erroneous file.**

Note   **If you try to restore a file with an open file error,
you will get an error message and you will not be
able to restore the file.**

**If you back up with a new version of the EVTAPE
software and have an open file error, then later
try to restore with an old version of the EVTAPE
software, you will not be able to restore, however,
you may get a strange message that doesn't fit the
circumstances.**

9 Image Restore and Compare

The **image restore** program restores a disk image from the tape to the hard disk.

Caution Image restore overwrites your whole drive. If you just want to add to existing data, use file restore. See Section 10.

Streaming Tape Tip

When you use image restore, your **target disk** should have the same number of heads, sectors per track, and cylinders, as your **source disk**. Your target disk can have more cylinders, however, the maximum capacity of the target disk that you can access will be the same as the total capacity of the source disk. In other words, if your source disk during image backup was 20MB and you use image restore to restore to an 80MB disk, the operation will work, however, you will have access to only 20MB of your 80MB hard disk.

Section 9 Summary
9.1   Image Restore and Compare Basics
9.2   Easy User Interface (Restore and Compare)
9.3   Advanced Features (Restore Only)

9.1   Image Restore and Compare Basics

The **image compare** operation determines whether the disk data and the tape data match perfectly. Perform a compare immediately after a backup (or restore) operation. During an image compare, if a discrepancy exists between the data on the disk and tape, a data miscompare window appears.

If a miscompare occurs, follow these steps:

1.   Repeat the backup operation, using a different tape.

2. Repeat the compare operation. If you get the
    miscompare error again, stop using the tape
    subsystem and contact your dealer for
    professional service.

To perform an image restore or compare, follow
these steps:

1. From the software's Main Menu, choose and
    execute **Image Restore** or **Image Compare**.

2. In the image restore (or compare) menus, fill in
    each field (or simply confirm the default setting)
    as described in the following subsections.

3. Press **[F8]** to execute the restore or compare.

Note   If you are using a multi-controller configuration,
the EVTAPE software will automatically perform
a cross tape operation if you are restoring data
that was backed up to more than one tape.

The image compare program command syntax is
identical to that of the image restore. Therefore, use
this section of the manual for instructions on
performing an image restore or an image compare.
The menus (for easy user interface), fields, and help
screens will all be the same, except that for a
compare, the word "compare" replaces "restore."
However, the image restore has an advanced user
interface, which offers one more menu.

9.2 Easy User Interface (Restore and Compare)

The easy user interface presents one menus: the Image Restore (or Compare) Main Menu. The following subsections describe this menu and its fields.

Image Restore (or Compare) Main Menu

Disk Drive Name or Number

This field describes the target drive to which you restore or compare your data.

If you used the easy user interface during backup, or if you specified logical image backup in the advanced user interface, use a drive letter (for example, C) in this field.

If you did the backup in the advanced user interface and specified physical image, use a drive number (1 or 2) in this field.

From Tape Dataset Number

If you know the number of the dataset that contains the disk image that you are restoring or comparing, enter it in this field. (For example, if you overwrote from the beginning of the tape when you did the backup, then your data is in dataset 1.)

Or Select Dataset by Label

Enter the label of the desired dataset in this field.

You don't have to enter both the From Tape Dataset Number field and the Or Select Dataset by Label field; one of the two is sufficient.

9.3 Advanced Features (Restore Only)

In addition to the menu described in the previous subsection, the image restore advanced user interface offers another menu - the Image Restore Option Menu.

The following describes the fields displayed in the Image Restore Option Menu.

Scan Target Disk Drive for Unmarked Bad Sectors

When you first installed and formatted your hard disk, you entered the bad track map to mark off those sectors identified as bad during factory testing. However, as you use your hard disk, it may develop additional bad sectors. Enter **Y** if you want the tape software to scan the hard disk drive for unmarked bad sectors, and mark them off before restoring data. Since the software scans the whole disk, the restore procedure is slowed down.

Perform Bad Sector Reallocation for DOS Image

Enter **Y** if you want the tape software to reallocate data away from bad sectors on the target disk. Bad sector reallocation is possible only when there are enough good sectors available to contain the reallocated data.

Retain Bad Sector Marks in Target DOS

DOS keeps track of your bad sectors in a File Allocation Table (FAT) on each disk drive. However, if one sector in the FAT is known to be bad, DOS marks off that whole cluster and does not use it.

When you enter **Y** in this field, the image restore program will remember two types of bad sectors on the target disk:

1. Bad sectors marked by DOS in the FAT, and

2. Bad sectors found by the image restore program during the disk scan.

If you enter **N** in this field, the image restore program remembers only bad sectors found during the scan.

Retain Bad   If you leave this field set to **Y**, the software adds the
Sector   bad sector marks from the source DOS to the File
Marks in   Allocation Table of the target DOS. Although this
Source DOS   may result in a small amount of wasted disk capacity, we recommend that you leave the field set to **Y**. If you have any copy-protected software hiding its security information in fake bad sectors on the source disk, and you change these sectors to good sectors on the target disk, that software won't work.

Enter **N** in this field only if you are sure you have no copy-protected software and need to maximize your disk capacity as much as possible.

Pause   If you enable bad sector reallocation, then after the
Before   image restore, the software displays a special
Scrolling the   window and scrolls all the reallocation information
Reallocated   through it. Once a file scrolls out of this window, you
File List   cannot scroll it back. Therefore, if you really want to read the reallocation information at the end of the restore, enter **Y** in this field; otherwise, enter **N**.

Reboot the
System After
Restoring
Physical
Disk

When you do a physical image restore (designated by entering a drive number 1 or 2 in the Disk Drive Name or Number field of the Image Restore Main Menu), the software writes information directly to the hard disk drive without going through DOS. Since this information may change after you perform the backup, and since DOS initializes and checks this only when you boot up, we recommend that you choose to reboot the system following a physical image restore.

10 File Restore and Compare

The **file restore** program restores a file or group of files from the tape to the disk.

The **file compare** operation determines whether the disk data and the tape data match perfectly. Perform a compare operation immediately after a backup (or restore) operation. During a file compare, if a discrepancy exists between the data on the disk and tape, a data miscompare window appears.

10.1   File Restore and Compare Basics

If a miscompare occurs, follow these steps:

1.   Repeat the backup operation using a different
     tape.

2.   Repeat the compare operation. If you get a
     miscompare error again, stop using the tape
     subsystem and contact your dealer for
     professional service.

3.   If the compare operation was successful except
     for an open file or read file error on one file, it is
     possible to use the tape to restore files other than
     the files with errors. In this case, you must write
     down the names of any files with errors. Then
     during restore operations, manually exclude any
     files with errors using the instructions in Section
     10.2: File Specification Menu.

To perform a file restore or compare, follow these
steps:

1.   From the software's Main Menu, choose **File
     Restore** or **File Compare**.

2. In the file restore (or compare) menus, fill in each field (or simply confirm the default setting) as described in the following subsections.

3. Press [**F8**] to execute the restore or compare.

Note **If you are using a multi-controller configuration, the EVTAPE software will automatically perform a cross tape operation if you are restoring data that was backed up to more than one tape.**

The file compare program command syntax is identical to that of the file restore. Therefore, use this section of the manual for instructions on performing a file restore or compare. The menus, fields, and help screens are all the same, except that for a compare, the word "restore" is replaced with "compare."

No advanced user interface exists for file restore or compare. File restore or compare presents three menus: the File Restore (or Compare) Main Menu, the File Specification Menu, and the Directory Menu. The following subsections describe these three menus and their fields (if any).

10.2 File Restore (or Compare) Main Menu

Dataset
Number
Enter the **number** of the tape dataset from which you want to restore or compare files.

If you don't remember the number, enter a very large number (e.g., 9999) and then the exact dataset label in the next field.

If you leave the dataset number set to 0 and the dataset label blank, then the software will search every dataset on the tape and restore any matching file(s) from all of them.

Dataset
Label
Enter the label of the dataset from which you want to restore file(s). Use uppercase or lowercase letters just as they were entered at backup time. The tape software will search for the first dataset that matches either the number or the label specified.

Use the Directory Menu (see Section 10.3) to see a file-by-file listing of the dataset you selected.

Restore To
(File Restore Main Menu only) enter the directory pathname where you want to restore the specified files. This directory must already exist.

For example, if your tape dataset contains the path C:\MANUALS\TAPE, and you restore this data to the path D:\FINISHED, then the resulting data will be under the path D:\FINISHED\MANUALS\TAPE.

If you want to restore the files to their original directory path, leave this field blank.

Target Disk
(File Compare Main Menu only) enter the disk drive name which contains the files you want to compare. For example, if you specify this field as "C:" and the file on the tape has the name "D:\DIR\FILE.EXT," then the software compares that file on the tape against "C:\DIR\FILE.EXT."

Leave this field blank if the target disk drive is the same as the one during the file backup operation.

Replace (File Restore Main Menu only) if you enter **Y**, the
Target File software overwrites existing files on the disk with
if it Exists matching files on the tape.
(Y/N)

If you enter **N**, the software only restores files that do not already exist on the disk. The software will not overwrite files that already exist on the disk.

Turn Listing Enter **Y** to see the software list the files as they are
On During restored or compared. This slows down the operation
Restore (or somewhat. For maximum speed, enter **N**. Toggle this
Compare) display ON and OFF using the **[F5]** and **[F6]**
(Y/N) function keys during the restore or compare
operation itself.

10.3 File Specification Menu

From the File Restore (or Compare) Main Menu (top window), press **[F2]** to enter the File Specification Menu (bottom window). Specify here what files on the tape you want to restore or compare. Create up to 50 individual file specification pages if you need them, by pressing **[F5]** to add additional pages or **[F6]** to delete pages as needed.

For example, if your dataset contains every file on your disk, but you only want to restore or compare two directories, enter a file specification page for one directory, press **[F5]**, then enter a file specification page for the other directory.

The following paragraphs describes this menu's fields:

File Spec   Enter the full DOS pathname of the files you want to restore or compare. Use the wildcards * and ? in the filename or extension of the path, but not in the directory path itself.

Sub-
Directory
Files   Enter **Y** to restore or compare all the matching files in all the sub-directories under the specified directory.

Enter **N** to restore or compare only those files from the specified directory itself.

System Files   Enter **Y** to include the system files in the restore or compare operation. **N** is the default setting.

Hidden Files   Enter **Y** to include hidden files not displayed by the DOS command DIR in the restore or compare operation or **N** to exclude them. Frequently, security files created by copy-protected software are hidden. **N** is the default setting.

Read-Only
Files   To prevent you from accidentally overwriting valuable data or program code, some software marks its most crucial files as read-only. Enter **Y** to include these files or **N** to exclude them. **N** is the default setting.

Starting File
Date   DOS tags each file on a disk with the time and date of its creation or last modification. To restore or compare only those files created or modified after a certain date, enter that date, using the format

mm-dd-yyyy. Enter a Starting Date no later than the Ending Date (see the following paragraph).

Ending File   To restore or compare only those files created or
Date   modified before a certain date, enter that date, again
                  using the format mm-dd-yyyy. Enter an Ending Date
                  no earlier than the Starting Date (see the previous
                  paragraph).

Include/   To include those files defined on the File
Exclude (I/E)   Specification Menu, enter **I**. This is the default
                  setting.

                  To exclude the specified files, enter **E**. **Excluding
                  certain files does not have the effect of including
                  all other files.**

10.4 Directory Menu

From the File Restore (or Compare) Main Menu, press [**F3**] to enter the Directory Menu (also called the File Selection Menu). The Directory Menu lists each file of the dataset you selected in the File Restore (or Compare) Main Menu. Moreover, from the Directory Menu, obtain a new menu - the Directory Dump/Compare Menu - by pressing [**F9**].

Directory   The Directory Dump/Compare Menu offers two
Dump/   features: compare and dump. If you created a log file
Compare   during file backup (see Section 8.2.3), you can now
Menu   compare the contents of the tape directory with the
                  contents of that log file. First ensure that the file

name field matches the name of the log file you
created during file backup, then press [**F7**].

Note   **If you used the default file name
(\EVTAPE\FBACKUP.LOG) for the log file you
created during file backup, change the file name
in the Directory Dump/Compare Menu since the
default file name in this menu is
\EVTAPE\TAPE_DIR.LOG.**

Press [**F8**] from the Directory Dump/Compare Menu
to dump the tape directory contents of the dataset you
select into a file. Use this file to view the contents of
a dataset (since the software lists only 10 files at one
time). In addition, you can also print this file and
keep the printed copy with the tape so that later you
can quickly check your tape's contents.

Section

11   Goodies

In addition to its main backup, restore, and compare
functions, your tape software offers several more
features that are useful in certain situations.

Section 11 Summary

11.1 Window Manipulation

The software organizes its display into multiple windows on your screen. Each of these is marked with a window ID, which is a single-digit number in the upper left-hand corner. Only one window on the screen can be active - actually communicating with you - at one time. **The active window ID number is displayed in reverse video in the middle of the top row of the screen.**

Normally, the way the windows appear on the screen is best for most users. If you prefer to move them on top of each other (this is called "nesting") or otherwise rearrange them, press **[Scroll Lock]**, then use your cursor keys (which are in the numeric keypad). To return to normal operation, press **[Scroll Lock]** again to toggle it OFF.

With two or more windows on top of each other, the screen becomes similar to a desktop with several sheets of paper on top of each other. You can "push" the top window to the bottom of the stack by

pressing [Ctrl] [P], and can repeat this as often as you want to cycle through all the visible windows on one screen. Alternatively, if you know what window you want to place on top, press [Alt] **plus that window ID number** - for example, [Alt] [1] or [Alt] [3].

11.2 Input Redirection

Use the input redirection capability of DOS to set up unattended tape operations. Using exact keystroke representations, you can write a batch file containing the complete sequence of commands you want. Once you execute the batch file, the program will run by itself, with no further operator attention required.

Most of the keys on your keyboard are represented in the computer by a corresponding ASCII character code. However, certain nonprintable keys (for example, the function keys) do not have ASCII codes and are therefore represented by escape codes.

Each escape code consists of a semicolon (;) followed by an ASCII character. ASCII codes with HEX numbers from 00 to 1F are directly translated one to one as ;@ through ;_. The most commonly used of these is ;M which represents a carriage return (i.e., [Ctrl] [M]). Table 11-1 lists these special escape codes.

TABLE 11-1 ESCAPE CODES

Keyboard Function	Escape Code
;	;;
F1	;1
F2	;2
F3	;3
F4	;4
F5	;5
F6	;6
F7	;7
F8	;8
F9	;9
F10	;0
Page Up	;<
Page Down	;>
Cursor Right	;r
Cursor Left	;l
Cursor Down	;d
Cursor Up	;u
Del	;b
Print Screen	;p
Home	;h
End	;e
Switch to Keyboard	;k
Switch back to input redirection mode	;f

Keyboard Function		Escape Code
Insert	Off	;i0
	On	;i1
Caps	Off	;c0
	On	;c1
Num Lock	Off	;n0
	On	;n1
Scroll Lock	Off	;s0
	On	;s1
Alt	Up	;a0
	Down	;a1
Ctrl	Up	;x0
	Down	;x1
Left Shift	Up	;{0
	Down	;{1
Right Shift	Up	;}0
	Down	;}1

Keyboard Function	Escape Code	Explanation
Qualifiers	;q00000000	where 00000000 are the 8 bits defining the 0 or 1 status of above 8 keys in the order listed above.
Omit Characters	;o00	where 00 is a 2 digit decimal value of the number of characters to omit next.
Ignore to end of line	::	Ignore all characters up to and including the next CR or LF.
Key Delay	;t00000000.00	where 00000000.00 is a decimal number specifying the number of seconds delay between each key input. The first seven digits are optional while the digit before the decimal and the 2 digits after the decimal are required.

The following are standard ASCII control codes:

Keyboard Function	Escape Code
BEL	:G
BS	:H
HT	:I
LF	:J
VT	:K
FF	:L
CR	:M
DC1	:Q
DC2	:R
DC3	:S
DC4	:T
ESC	:[

An example of a batch file follows. This example is for performing a file backup with the system configured in "advanced interface mode." For more detailed examples, please refer to *Section 11.3: Demo*.

The following is an example of the steps to set up the input redirection procedure for the file-by-file

backup operation. Items in parentheses are comments and are optional.

COPY CON AUTOBAK.BAT   [↵]
FBACKUP < INP   [↵]
[Ctrl] Z   [↵]

COPY CON INP   [↵]
;2;: (Switch to the tape spec window) [↵]
80808;M;: (Tape number)   [↵]
TAPELABEL;M;: (Tape label)   [↵]
1;M;: (Dataset number)   [↵]
DATASET 1;M;: (Dataset label)   [↵]
;8;: (Start backup)   [↵]
Y;: (Confirm use of this tape)   [↵]
;0;M;: (Exit backup)   [↵]
;k   [↵]
[Ctrl] Z   [↵]

The system prompt will now appear, indicating that the batch file is completed.

- COPY CON is the command to create a file.

- "AUTOBAK.BAT" is the name of the batch file. Choose any name you wish.

- "INP" is the name of the input file. Again, choose any name you wish.

- The symbol "<" indicates that the data input normally coming from the keyboard is redirected to come from a file.

• The file INP contains a sequence of keystrokes you would have entered manually to perform the file-by-file operation.

When the system prompt appears, type:

AUTOBAK [↵]

The batch file will then operate without any further operator input.

Whenever you wish to perform an automatic file-by-file backup, type in the name of the batch file and the backup will be executed.

11.3 Demo

To run a self-demonstration of the tape software, type:

TAPE <DEMO [↵]

The program runs from the input file DEMO, which is provided with the tape software.

11.4 Menu

The Menu and Help windows of the tape software are stored in files with the extensions .MEN and .HLP respectively. The MENU program reads these files and either converts the window colors to colors of your choice (default operation) or extracts the text data and stores it in a specified output file.

Caution   **MENU overwrites your original files! Before you
run MENU, save a backup copy of these files
somewhere else!**

Syntax   **MENU [Command-Options] File1 [File2]**

where:

Command-Options:

/c[TAB]   convert colors (TAB=file
                     name of color conversion
                     table)

/e[TAB]   extract text (TAB=file name
                     of text conversion table)

/oOUT   specify text extraction output
                     (OUT=output file)

/iID[,P1[,P2]]   specify window search ID to
                     be included in conversion

/xID[,P1[,P2]]   specify window search ID to
                     be excluded in conversion

/bR1,C1,R2,C2   specify the conversion box
                     within the window region
                     (upper left/lower right).

File*n*   name of the window file. The
                     base and extension part of the
                     file name may contain

wildcards (* and ?) to select
multiple files, e.g.,
C:\TEXT*.MEN.

Notes   The color/text conversion table files (previously
referred to as TAB) are files that you create
containing lines of the desired color/text mappings in
the syntax of OLD=NEW. The OLD and NEW are
hexadecimal color/text codes. For example, to
convert the color blue (Hex 0B) to yellow (Hex 0E),
create a file and use the color mapping 0B=0E. To
convert the character '?' (Hex 3F) to '!' (Hex 21),
use the text mapping 3F=21.

Default mappings are used if the conversion table file
is not specified. The default color mapping is
monochrome.

Text conversion displays on the screen if you do not
specify an output file (referred to above as OUT).

You may use multiple numbers of the
include/exclude options (up to 16 of each) in a
conversion. If you do not specify the beginning and
ending pages, all pages in the window will be
included/excluded in the conversion. If you do not
specify the ending page, a default will be assumed
from the specified beginning page to the last page in
the window.

Use the conversion box option to delimit a
rectangular area for color conversion. For example,
you might want to change the color inside the Everex

help menus without affecting the border color. This
option has no meaning to a text conversion.

Examples   **MENU /cMONO_TAB /x801 TAPETEST.MEN**

or

MENU /c /x801 TAPETEST.MEN

or

MENU /x801 TAPETEST.MEN

Convert the tapetest menu file to black and white
using the color conversion table provided by
MONO_TAB. Exclude window 801 from the color
conversion.

MENU /b1,1,11,53 TAPETEST.HLP

or

**MENU /cMONO_TAB /b1,1,11,53
TAPETEST.HLP**

Convert the tapetest help file to black and white
within the box (1, 1) and (11, 53). Leave the border
with its original color.

MENU /e /i11,1,10 TAPE.HLP

Extract the text of window 11 (page 1 to 10) from the
ftape help file. Display the text on the screen.

11.5 Eversong

From the Main Menu, press the [S] key to make the
software play a series of three songs. Press [S] again
to stop.

11.6 Escape to DOS

At any point during backup, restore, or diagnostics,
press [Ctrl] [D] and the software suspends its
operation and returns you to the DOS prompt. You
can then enter any DOS commands and run other
software. To resume the tape operation, type:

EXIT   [↵]

Note   **Do not run a Terminate-but-Stay-Resident (TSR)**
program while the tape software suspends,
otherwise you will receive an error message and
the tape operations will terminate.

11.7 Toggle Clock Display

Normally the tape software displays the time and
date (as read from the system clock) in the upper
right-hand corner of the screen. Toggle this and the
time bar display shown during operation ON and
OFF by pressing [Ctrl] [K]. The benefits of turning
the clock and the time bar OFF are:

1. Reduces screen snow and noise if your display
    card is not flicker-free

2. Speeds up the tape operation slightly

If you disable the real-time clock handler (see Section 5.2), the clock display will always be off.

11.8 Screen Redraw

If you see any junk on your screen, press [Ctrl] [R]. This redraws the screen and eliminates the junk.

11.9 Automatic Backup

If you always back up your disk at a fixed time and do not want to waste time performing the same procedures over and over again, set up an automatic backup. The Scheduler Manual which came with your streaming tape drive explains how to perform automatic, unattended backup using the Scheduler software and how to customize it for your own particular applications.

12   When Disaster Strikes

What if you mistakenly deleted a file or a directory; a computer virus destroyed some of your important database files; or your entire hard disk would not respond? Perhaps you are thinking about reformatting your hard disk or restoring data from your backup tapes.

STOP! | Please read this entire section carefully before attempting anything. Even if you do not have any backup data on tape, the following procedures may save you from making the problem worse.

Section 12 Summary

12.1   Simple Troubleshooting

12.1 Simple Troubleshooting

Before you do anything else, take a few deep breaths
and try to remain calm. The problem may not be as
bad as you thought. Other alternatives or a simple
solution may exist. If you are unsure about what you
are doing, call your Everex dealer or the Everex
Technical Support Department for help (see
Appendix D).

If you suspect a problem with your hard disk drive,
DO NOT do any of the following things until you
are instructed to.

• **DO NOT** reformat your hard disk, it may not be
  necessary.

• **DO NOT** attempt to recover your lost data using
  a disk repair program.

• **DO NOT** attempt to recover lost data from your
  backup tape.

• **DO NOT** modify your hard disk (do not create,
  modify, or delete a file).

Power down your system for a few minutes and
power it back on. If your system or hard disk does
not boot up, check your system's power cable and

hard disk cables. Make sure they are all firmly connected.

Back Up the System in Trouble

1. Locate, label, and write-protect all your used backup tapes. Put these used backup tapes away since you will use brand new or unused tapes to do **new** backups. If you are not sure what is on a tape, do not use it. Use brand new tapes instead.

Note **The backup tapes may be your only hope of restoring your data. Label your new tapes separately. Do not confuse used tapes with new tapes. Do not try to do anything to your backup tapes until you are instructed to, not even a simple retension.**

2. If you are not sure if the DOS on the hard disk you boot up from is still healthy, boot up from a clean DOS diskette, using an unmodified copy of your original. If, however, you have an Everex hard disk installed in a computer with Alldisk or a similar drive table on it, refer to your hard disk manual for the instruction to boot up from a clean DOS diskette. Do not run any memory resident programs (e.g., SideKick, Prokeys, etc.) or unnecessary device drivers. You may need to update your CONFIG.SYS and/or AUTOEXEC.BAT files to exclude these programs and device drivers.

Note   Some hard disks require a device driver to
operate properly. Refer to your hard disk manual
for details.

3. Perform a **physical image backup** of your hard
disk on new or unused tapes. Follow the
instructions in Section 7.2 for image backup. In
the field labeled Select Disk Drive for Backup,
enter a physical drive number (1 or 2) instead of
a logical drive letter.

Because your hard disk may contain non-DOS file
systems or your DOS file systems may contain bad
sectors, a file or logical image backup may not read
the data properly. The physical image backup will
bypass DOS and read the data if your hard disk is not
physically damaged. If your hard disk is physically
damaged, however, you may get disk read errors
from the tape software.

4. If any errors occur, retry the physical image
backup. If the errors persist, ignore them.

5. Perform a **physical image compare** to ensure
that your tapes are identical to your disk and that
your tapes are completely readable. Follow the
instructions in Section 9.1. In the field labeled
Disk Drive Name or Number, enter a physical
drive number (1 or 2) instead of a logical drive
letter.

6. If you get miscompare errors, retry the physical
image backup. If the errors persist, ignore them.

7. Write-protect and label your physical image backup tapes to prevent accidental reuse.

8. Perform a complete **file backup** using another new tape. Follow the instructions in Section 8.1 confirming the default settings.

As previously mentioned, this file backup may not read the data properly. However, the idea is to back up as much data in as many ways as possible. You should even try to copy important files onto blank diskettes.

9. If the file backup succeeds, do a complete **file compare**. Follow the instructions in Section 10 and confirm the default settings.

10. Write-protect and label your file backup tapes to prevent accidental reuse or confusion with the image backup tapes.

Restore

After you back up your damaged hard disk, try to restore data from your backup tapes.

•   DO NOT restore data to a damaged hard disk.

•   DO NOT restore data to a hard disk that already contains useful data using image restore. Use a blank hard disk for image restore.

Follow the instructions in your hard disk and operating system manuals to prepare your blank hard disk for restore. You may need to perform a low level physical format.

1. Perform a **physical image restore** using your image backup tape. Follow the instructions in Section 9.1. In the field labeled Disk Drive Name or Number, enter a physical drive number (1 or 2) instead of a logical drive letter.

Note   **To perform a physical image restore from a backup tape that contains non-DOS file systems, use a hard disk that has no bad sectors. The standard version of Everex tape software performs automatic bad sector relocation for DOS 2.xx to 3.xx file systems only. Everex also has a special utility package that performs automatic bad sector relocation for Novell 2.0 and 2.1 file systems.**

2. Perform a **file restore** using your file backup tape. Follow the instructions in Section 10, confirming the default settings.

3. Experiment using the restore process on the **blank** hard disk until you are sure that you can get your data back. Try both file and image restore as necessary.

Appendix

A   Care and Rotation of Tapes

Streaming tapes are a magnetic medium, similar to
diskettes. To protect and prolong their useful life,
many of the same precautions should be observed.

A.1   Care Guidelines

- Keep the cartridge in its protective box when not used in the tape drive.

- Do not touch the tape.

- Keep the cartridge away from electromagnetic fields or calculators.

- Keep the cartridge away from heat sources, such as warm air ducts or lamps.

- Do not lay the cartridge on the computer monitor, system unit, or any peripheral device.

A.2   Storing Cartridges

Use these guidelines for long-term storage of your tape cartridges:

- Store cartridges in the write-protected position. See Figures 3-25 and 3-26.

- Place a label or other reference information on the outside of the cartridge.

- Store cartridges in a cool, dust-free, non-magnetic environment. Follow the cartridge manufacturer's specifications for storage temperature and other environmental requirements.

A.3 Tape Rotation

For maximum data security, use a ten-tape rotation schedule as described in this appendix. This ensures even tape usage and the maintenance of long-term records. Like everything else, the recording ability of a tape may decrease with use. Consistent tape rotation ensures that no one tape is inferior to the others in your stock. If you follow the ten-tape rotation schedule, you will have tapes available at intervals throughout a three-month period; this can prove invaluable if a previously undiscovered error is found in your data.

The ten-tape rotation schedule (which consists of five pages) is attached at the end of this appendix. Perform a backup at least once a day, or more often if special circumstances warrant. To follow the ten-tape rotation schedule, you should have ten sets of tapes, each set sufficient to hold one day's backup. Number your ten tape sets from 1 through 10. (If you use more than one tape per set, number the individual tapes 101, 102, ..., 201, 202, ... etc.). Following this schedule, do a complete backup every weekday, using the tape set number indicated on the schedule.

Pull out this five-page schedule and photocopy it as often as necessary. Each day, the user who performs

the backup should enter the date and his/her initials, to keep a running record of backups. On each page, work down the left column for the first four weeks, then down the right column for the next four weeks, then continue to the next page. The schedule forms a loop: when you reach the bottom of page 5, start over on page 1.

The streaming tape software offers you two modes of backup: file-by-file or image. Use either or both of them to do your daily backup depending on your particular needs. Choose the best backup mode for your backup applications. (Please refer to Section 4.3.) If you only use file-by-file mode to perform your daily backup, perform an image backup once a week since it may help you to reconstruct your hard disk more quickly.

Keep extra tapes nearby before you back up your disk since the data size may be larger than your estimation or you may accidently damage your tape.

If a tape has been unused for a long time, you might need to retension it before you can successfully read or write data. (You can retension the tape by selecting **Tape Sys Test** from the software's Main Menu, then select **Retension Tape Test** from the Tape System Test Main Menu.)

PAGE 1

Day	Tape Set	Date	User Initials	Day	Tape Set	Date	User Initials
Mon	1			Mon	2		
Tue	2			Tue	3		
Wed	3			Wed	4		
Thr	4			Thr	5		
Fri	5			Fri	6		
Mon	1			Mon	2		
Tue	2			Tue	3		
Wed	3			Wed	4		
Thr	4			Thr	5		
Fri	6			Fri	7		
Mon	1			Mon	2		
Tue	2			Tue	3		
Wed	3			Wed	4		
Thr	4			Thr	5		
Fri	7			Fri	10		
Mon	1			Mon	2		
Tue	2			Tue	3		
Wed	3			Wed	4		
Thr	4			Thr	5		
Fri	8			Fri	1		

PAGE 2

Day	Tape Set	Date	User Initials	Day	Tape Set	Date	User Initials
Mon	3	_____ _____		Mon	4	_____ _____
Tue	4	_____ _____		Tue	5	_____ _____
Wed	5	_____ _____		Wed	6	_____ _____
Thr	6	_____ _____		Thr	7	_____ _____
Fri	7	_____ _____		Fri	10	_____ _____
Mon	3	_____ _____		Mon	4	_____ _____
Tue	4	_____ _____		Tue	5	_____ _____
Wed	5	_____ _____		Wed	6	_____ _____
Thr	6	_____ _____		Thr	7	_____ _____
Fri	10	_____ _____		Fri	9	_____ _____
Mon	3	_____ _____		Mon	4	_____ _____
Tue	4	_____ _____		Tue	5	_____ _____
Wed	5	_____ _____		Wed	6	_____ _____
Thr	6	_____ _____		Thr	7	_____ _____
Fri	9	_____ _____		Fri	8	_____ _____
Mon	3	_____ _____		Mon	4	_____ _____
Tue	4	_____ _____		Tue	5	_____ _____
Wed	5	_____ _____		Wed	6	_____ _____
Thr	6	_____ _____		Thr	7	_____ _____
Fri	2	_____ _____		Fri	3	_____ _____

PAGE 3

Day	Tape Set	Date	User Initials	Day	Tape Set	Date	User Initials
Mon	5	_____	_____	Mon	6	_____	_____
Tue	6	_____	_____	Tue	7	_____	_____
Wed	7	_____	_____	Wed	10	_____	_____
Thr	10	_____	_____	Thr	9	_____	_____
Fri	9	_____	_____	Fri	8	_____	_____
Mon	5	_____	_____	Mon	6	_____	_____
Tue	6	_____	_____	Tue	7	_____	_____
Wed	7	_____	_____	Wed	10	_____	_____
Thr	10	_____	_____	Thr	9	_____	_____
Fri	8	_____	_____	Fri	1	_____	_____
Mon	5	_____	_____	Mon	6	_____	_____
Tue	6	_____	_____	Tue	7	_____	_____
Wed	7	_____	_____	Wed	10	_____	_____
Thr	10	_____	_____	Thr	9	_____	_____
Fri	1	_____	_____	Fri	2	_____	_____
Mon	5	_____	_____	Mon	6	_____	_____
Tue	6	_____	_____	Tue	7	_____	_____
Wed	7	_____	_____	Wed	10	_____	_____
Thr	10	_____	_____	Thr	9	_____	_____
Fri	4	_____	_____	Fri	5	_____	_____

PAGE 4

Day	Tape Set	Date	User Initials	Day	Tape Set	Date	User Initials
Mon	7			Mon	10		
Tue	10			Tue	9		
Wed	9			Wed	8		
Thr	8			Thr	1		
Fri	1			Fri	2		
Mon	7			Mon	10		
Tue	10			Tue	9		
Wed	9			Wed	8		
Thr	8			Thr	1		
Fri	2			Fri	3		
Mon	7			Mon	10		
Tue	10			Tue	9		
Wed	9			Wed	8		
Thr	8			Thr	1		
Fri	3			Fri	4		
Mon	7			Mon	10		
Tue	10			Tue	9		
Wed	9			Wed	8		
Thr	8			Thr	1		
Fri	6			Fri	7		

PAGE 5

Tape Day	Set	Date	User Initials	Day	Tape Set	Date	User Initials
Mon	9	_____	_____	Mon	8	_____	_____
Tue	8	_____	_____	Tue	1	_____	_____
Wed	1	_____	_____	Wed	2	_____	_____
Thr	2	_____	_____	Thr	3	_____	_____
Fri	3	_____	_____	Fri	4	_____	_____
Mon	9	_____	_____	Mon	8	_____	_____
Tue	8	_____	_____	Tue	1	_____	_____
Wed	1	_____	_____	Wed	2	_____	_____
Thr	2	_____	_____	Thr	3	_____	_____
Fri	4	_____	_____	Fri	5	_____	_____
Mon	9	_____	_____	Mon	8	_____	_____
Tue	8	_____	_____	Tue	1	_____	_____
Wed	1	_____	_____	Wed	2	_____	_____
Thr	2	_____	_____	Thr	3	_____	_____
Fri	5	_____	_____	Fri	6	_____	_____
Mon	9	_____	_____	Mon	8	_____	_____
Tue	8	_____	_____	Tue	1	_____	_____
Wed	1	_____	_____	Wed	2	_____	_____
Thr	2	_____	_____	Thr	3	_____	_____
Fri	10	_____	_____	Fri	9	_____	_____

Appendix

B   Error Messages

This appendix provides descriptions of the status or error messages that may occur while running Tape System Test.

Power On/Reset Occurred   This occurs whenever the tape controller is powered on or reset by the host. If this condition is accompanied by a hard error, there may be a problem with the power supply to the hard drive (e.g., not enough power in the system; or a 220V tape drive is plugged into a 100V outlet).

End of Recorded Media	This occurs when the tape controller detects the end of recorded data on the tape.
Bus Parity Error	This occurs when a parity error is detected during tape data transfer.
Beginning of Media	This occurs when the cartridge is logically at the beginning of the tape.
Marginal Block Detected	This occurs when the device encounters a marginal tape data block during a read operation.
No Data Detected	This occurs when no recorded data can be detected by the device.
Illegal Command	This occurs when an illegal command is issued to the tape controller.
File Mark Detected	This occurs when a read operation encounters a block separator following a dataset.
Bad Block Not Located	This occurs when a read operation fails and the controller cannot confirm that the last block transferred was the block in error.
Unrecover- able Data Error	This occurs when the controller experiences a tape operation failure and cannot recover after subsequent retries.
End of Media	This occurs when a tape operation encounters the early warning hole of the last tape track.

Write Protected Cartridge	This occurs when the tape is write protected. You must write enable a tape to perform write operations. Refer to Figures 3-25 and 3-26 to write enable a tape.
Unselected Drive	This occurs when the drive is not physically connected or is not receiving any power. Check the hard disk cable connection and the tape power connection. Make sure the tape drive is turned on.
Cartridge Not in Place	This occurs when there is no cartridge in the drive or if the cartridge is not fully inserted in the drive.
	In addition to the above status descriptions, the following error messages may also appear during tape system test.
ERROR: Reset Drive	The port address configuration of the tape controller conflicts with another device in the system and/or is different from the port addresses recorded by the Setup Hardware Configuration option in the Install/Configure program. Run Setup Hardware Configuration to choose a new port address or confirm the old address.
Bad ID in Configuration	If you have an old tape controller card and have recently upgraded to new tape software, you may need to upgrade your hardware as well. Please contact your Everex dealer for assistance.
Excessive Soft Errors	Just as a hard disk is likely to have bad or marginal sectors where data should not be recorded, any tape in your stock is likely to contain bad blocks. When the tape software encounters a bad block on the tape,

it skips over it, writes your data in another block, and
reports a soft (i.e. recoverable) error. As the tape
ages, the number of soft errors reported is likely to
increase gradually.

If the number of soft errors on a tape goes up
suddenly, or if there are too many soft errors,
perform a Complete Drive Test with a different tape.
If the Complete Drive Test passes using the second
tape, then the first tape should be discarded.

Underruns   If the tape speed and disk speed do not match, (either
too fast or too slow), the tape streaming will be
interrupted. This event is called an underrun, and has
no effect on the safety of your data. During the
Start-Stop Write and Read tests, underruns normally
occur.

Diagnostics   Some computers contain a DMA controller chip that
Fails at   is not capable of supporting dual DMA functions. To
Dual DMA   test for this problem, reconfigure the tape software
Write   for single DMA mode and repeat diagnostics. If the
subsystem passes in single DMA mode, contact your
computer dealer to verify the problem. Leave the
tape software in Single DMA Mode until you can get
the problem resolved.

Appendix

C   Command Line Mode

If you would prefer not going through the menu, you can invoke the EVTAPE utilities by typing a single command line at the DOS level. This appendix describes the syntax of the command line invocation of the EVTAPE utilities. You can also use the command line mode with the Scheduler software to perform automatic backup. *Please note the command line examples throughout this appendix.* These examples help you create your own command line arguments. This appendix is strictly optional. You can perform any of the operations in this

appendix through the software's menus in the interactive mode.

Notes on the syntax notations:

[ ]   Entries enclosed within brackets are repeatable options. You are not required to enter options.

| Arguments separated by this operator are mutually exclusive. You can only select one of them.

/   The starting character of an option

+   Concatenation operator: no space between its two operands.

Appendix C Summary
C.1   Tape System Test
C.2   Image Backup
C.3   File Backup
C.4   Image Restore and Compare
C.5   File Restore and Compare
C.6   Software Command Line Mode Examples
C.7   Switch From Command Line Mode to Interactive Menu Mode

C.1   Tape System Test

Syntax   **TAPETEST [/QE] TestType**
[TestType|LogRptType]

where:

/QE	Quit on error and return to DOS. If omitted, the software returns to the interactive menu mode on error.
TestType:	Type 0,3,4,5,6,7, or 8 (or the letters indicated).
RL: or 0	Read a saved log file containing current test status: 0+filename. The saved log filename has to be specified immediately after 0 like 0TEST1.LOG or RL:TEST1.LOG.
CT or 3	Complete Test.
ST or 4	Short Test.
TT or 5	Tape Read/Write Test.
LT or 6	Continuous Test (also called Loop Test).
ET or 7	Erase Tape Test.
RT or 8	Retension Tape Test.
LogRptType:	Type 1 or 2 (or the letters indicated).

WL: or 1   Write the current test status into a log file for later reference (you can view this file through the tape software). If used, it has to be immediately followed by a filename.

WR: or 2   Generate a test report file (ASCII file). You can view this file through any word processing program. If used, it has to be immediately followed by a filename.

Comments

1. Specify as many tests as you want; however, the DOS command line cannot exceed 127 characters.

2. The leading (i.e., first) test must not be a Type 1 or 2, because these types simply generate log/report files.

3. The Type ID 0, 1, or 2 must be followed by a FileName.

4. Tests must be separated by a space character.

5. Since 6 is the Continuous Test, all the tests specified after 6 will never get the chance to run.

Examples   **TAPETEST 6**

or

TAPETEST LT

Perform a Continuous Test and loop over errors. See Section 6 for test termination.

TAPETEST 0TEST1.LOG 2TEST1.RPT

or

TAPETEST RL:TEST1.LOG WR:TEST1.RPT

Read a saved log file TEST1.LOG into TAPETEST and generate a report file TEST1.RPT. This is especially helpful to convert a nonreadable log file into a readable report file.

TAPETEST 5 1TEST1.LOG 2TEST1.RPT 8 7 2TEST2.RPT

or

TAPETEST TT WL:TEST1.LOG WR:TEST1.RPT RT ET WR:TEST2.RPT

Do a Tape Read/Write Test and generate a log file TEST1.LOG and a report file TEST1.RPT, then do a Retension Tape Test and Erase Tape Test and generate the second report file TEST2.RPT.

TAPETEST 0TEST1.LOG 5 7 8 1TEST2.LOG

or

**TAPETEST RL:TEST1.LOG TT ET RT
WL:TEST2.LOG**

Read a saved log file TEST1.LOG into TAPETEST,
then do the Tape Read/Write Test, Erase Test, and
Retension Test. Generate a log file TEST2.LOG
before exit.

C.2   Image Backup

Syntax   **IBACKUP [Command-Options] DriveSpec
[DriveSpec]**

where:

Command-Options:

/QE   Quit on error and return to
                    DOS. If omitted, the software
                    returns to the interactive menu
                    mode on error.

/DN   Dataset number. If you use
                    this option, follow it with a
                    number, e.g., /DN1 or /DN=1.
                    If omitted, append.

/DL   Dataset label (for the leading
                    specified drive only). If you
                    use this option, follow it with
                    a label name, e.g.,
                    /DL=BKUP001.

/OW	Overwrite from beginning of tape.
/TN	Tape number. If you use this option, follow it with a number, e.g., /TN1 or /TN=1. If omitted, the number on the tape will be used.
/TL	Tape label. If you use this option, follow it with a label name, e.g., /TL=MONDAY.
/CT	Ignore checking tape number or label.

DriveSpec Syntax:

DRIVE[:][BackupType][LabelName]

where:

DRIVE	Physical drive number (1 or 2) or logical drive name (C, D, etc.).

BackupType: (/D | /W | /R)

/D	Back up the occupied area of the first DOS partition only.
/W	Back up the whole disk.

/R   Back up the raw image
                      (cannot restore with the file
                      restore program).

LabelName   Name of the dataset label
                      created for the specified drive.

Examples   **IBACKUP C:/D**

Perform an image backup of drive C and back up
only the occupied area of the first DOS partition.

IBACKUP /OW C:/W D:/W

Perform image backup of drive C and drive D (each
includes the whole disk), overwriting from the
beginning of the tape.

C.3   File Backup

Syntax   **FBACKUP [Command-Options] FileSpec
[FileSpec]**

where:

Command-Options:

/QE   Quit on error and return to
                      DOS. If omitted, the software
                      returns to the interactive menu
                      mode on error.

/DN	Dataset number. If you use this option, follow it with a number, e.g., /DN1 or /DN=1. If omitted, append.
/DL	Dataset label. If you use this option, follow it with a label name, e.g., /DL=BKUP001.
/OW	Overwrite from beginning of tape.
/LB | /LE	Log during backup or log upon error. The program creates the default log file: FBACKUP.LOG or if you prefer, specify the log filename using the /LF option.
/LF	LogFileName. If you use this option, follow it with a file name.
/IO	Ignore open file error on disk operation.
/IR	Ignore read file error on disk operation.
/BO	Set to original order.
/TN	Tape number. If you use this option, follow it with a

	number, e.g., /TN1 or /TN=1. If omitted, the number on the tape will be used.
/TL	Tape label. If you use this option, follow it with a label name, e.g., /TL=MONDAY.
/CT	Ignore checking tape number or label.

FileSpec Syntax:

[DRIVE:][PathName]FileName[FSpec-Options]

where:

DRIVE:	default drive is current drive.
PathName	DOS pathname to a directory. If omitted, current directory is selected.
FileName	DOS filename or wildcard filename.

FSpec-Options:

/S	Subdirectory.
/Y	System file.
/R	Read-Only file.

/H	Hidden file.
/A	Preserve archive bit.
/M	Modified files only.
/I | /E	Include or Exclude, default: /I.
/D:mm-dd-yyyy	Starting date, default: 01-01-1980.
/B:mm-dd-yyyy	Ending date, default: 12-31-2107.

Examples **FBACKUP C:*.*/S**

Back up all files in drive C which are not system, read-only, or hidden files. Append the backup dataset to tape.

FBACKUP /QE /OW D:\DOS*.*/S/Y/H/R D:*.COM/S/E

Back up the files under D:\DOS directory and its subdirectories except files with the file extension .COM. Write to the beginning of the tape and quit when an error occurs.

FBACKUP /DL=MENU /LE /LF=MENU.LOG C:*.DOC/S

Back up all the files in drive C with the file extension .DOC which are not system, read-only, or hidden files. Append the backup dataset to tape with the

dataset label MENU. Log those files which produce an error in backup under the file name MENU.LOG in the current directory.

FBACKUP /DN1 /QE /LB /LF=LOG C:*.*/S/Y/H/R/I

Back up all files in drive C on dataset number 1 (i.e., overwrite the tape from the beginning). This operation includes subdirectory, system, hidden, and read-only files and generates a log file LOG. If an error occurs, the program exits to DOS.

C.4 Image Restore and Compare

Syntax   **IRESTORE [COMP] /TD DatasetSpec [Command-Options]**

where:

COMP	Option to perform IMAGE COMPARE. You must enter the word COMP using all capital letters. If you omit this, an IMAGE RESTORE is performed.
/TD	Target drive.

DatasetSpec: (/DN, /DL, or both)

/DN	Dataset number. If omitted, dataset number = 0.

/DL   Dataset label.

Command-Options:

/QE   Quit on error and return to
                       DOS. If omitted, the software
                       returns to the interactive menu
                       mode on error.

Command-Options for IMAGE RESTORE only:

/SB   Scan bad sectors.

/BR   Bad sector reallocation.

/RT   Retain bad sector marks in the
                       target DOS.

/RS   Retain bad sector marks in the
                       source DOS.

/RB   Reboot the system after
                       restoring the physical disk.

Examples   **IRESTORE COMP /DN1 /TD=1**

Image compare dataset number 1 with physical drive
1.

IRESTORE /DN=2 /TD=C:

Restore dataset number 2 to target drive C.

IRESTORE /DL=MANUALS /RS /TD=C:

Restore the dataset labeled MANUALS to drive C
and retain the bad sector marks in the source DOS.

IRESTORE /DN2 /TD=C: /BR /RT /RS

Restore the image of dataset number 2 to drive C.
Retain bad sector marks in the target DOS and source
DOS. Perform bad sector reallocation for the restore.

IRESTORE /DN1 /TD=1 /RT /RS /BR /RB

Restore the image of dataset number 1 to physical
drive 1. Retain bad sector marks in the target DOS
and source DOS. Perform bad sector reallocation for
DOS image. Reboot the system after restoring the
physical disk.

C.5   File Restore and Compare

Syntax   **FRESTORE [COMP] [Command-Options]
FileSpec [FileSpec]**

where:

COMP   Option to perform FILE
                    COMPARE. You must enter
                    the word COMP in all capital
                    letters. If you omit this, then a
                    FILE RESTORE is performed.
                    File Compare and File Restore
                    have the same command line
                    syntax; the COMP option

must be included for FILE COMPARE.

Command-Options:

/QE   Quit on error and return to DOS. If omitted, the software returns to the interactive menu mode on error.

/DN   Dataset number. If omitted, dataset number=0.

/DL   Dataset label.

/TD   Target drive/directory. If omitted, the target drive will be the original backup drive.

/DD | /DC   Directory Dump or Directory Compare to a directory log file. The default FileName is TAPE_DIR.LOG or if you prefer, specify the log filename using the /LF option.

/LF   LogFileName. If included, follow it with a file name.

Command-Option for FILE RESTORE only:

/SE   Skip existing file, no
                              overwrite. If omitted, the
                              overwrite is allowed.

FileSpec syntax:

[PathName]FileName[FSpec-Options]

where:

PathName   DOS Pathname to a Directory.

FileName   DOS filename or wildcard
                       filename.

FSpec-Options:

/S   Subdirectory.

/Y   System file.

/R   Read-Only file.

/H   Hidden file.

/I | /E   Include or Exclude, default: /I.

/D:mm-dd-yyyy   Starting date, default:
                             01-01-1980.

/B:mm-dd-yyyy   Ending date, default:
                             12-31-2107.

Examples **FRESTORE COMP *.*/S**

Compare all the files of all the datasets in the tape
against the original backed up disk drive. Do not
compare system, read-only, or hidden files.

**FRESTORE /DN2 /TD=C: \DOS*.*/S
*.COM/S/E**

Restore the files of dataset number 2 under the \DOS
directory and its subdirectories to the target drive C
except files with the file extension .COM. Overwrite
the existing files in C:\DOS.

**FRESTORE /DN1 /QE /DD /TD=C: /LF=LOG
./S/Y/H/R/I**

Restore all the files of dataset number 1 to drive C.
This operation includes subdirectory, system, hidden,
and read-only files and dumps the tape directory into
the file LOG. If an error occurs, the program quits to
DOS.

**FRESTORE COMP /DN1 /QE /DC /TD=C:
/LF=LOG *.*/S/Y/H/R/I**

Compare all the files of dataset number 1 with those
of drive C. This operation compares files including
subdirectory, system, hidden, and read-only files and
also compares the tape directory with the file LOG
created during the backup operation. If an error
occurs, the program quits to DOS.

C.6 Software Command Line Mode Examples

If you would like to see a batch file which shows you some command line mode examples, insert your Everex utility diskette in Drive A. At the system prompt, type:

TYPE FB.BAT   [↵]

C.7 Switch From Command Line Mode to Interactive Menu Mode

Automatic Switch

Whenever there is a command argument/option error, the software automatically switches to the interactive menu mode.

- If an error occurs during any tape operation, the software automatically switches to the interactive menu mode unless you specified a quit on error (/QE) option.

Manual Switch

Press [Ctrl] [D] to escape to DOS. From DOS, type EXIT to return to the interactive menu mode.

- During any tape system tests, press [F9] to abort the test and return to the interactive menu mode. This also applies to file backup and image restore or compare.

Note   **Press [F10] followed by the [Enter] key to terminate any EVTAPE program and return to DOS.**

Appendix

D   Troubleshooting

If you encounter any problems while using your
Everex streaming tape drive, first refer to this User's
Guide and go through the following Troubleshooting
Procedures. More than ninety percent of the time you
will solve your problems before you get to the end of
the Troubleshooting Procedures.

Appendix D Summary

D.1   Quick Checkout

1. Make sure that the computer's main power cord is still firmly connected and did not fall off during your installation of the streaming tape drive. Please check the side of the power cord that connects to the computer as well as the other side that goes into a wall plug.

2. Check the monitor's power cord as well as the signal cable. Make sure that they are all firmly connected.

3. Make sure the streaming tape drive is properly installed according to the installation part of this manual.

4. Power on your system if it was off. Power on your monitor and turn up the monitor's brightness control knob.

5. Make sure that the tape you use is not write protected. If the tape is write protected, make sure that you do not have important data on the tape. Use a brand new tape if you are not sure. **The following diagnostic procedures will overwrite the existing contents on the tape.**

6. Make sure that the tape has no visible damages. Check if the tape ribbon is off the reel. Use a brand new tape if you are not sure that the tape is in good condition.

7. Make sure the tape is firmly mounted in the tape drive. Pop out and reinsert the tape. By doing this, you also reset the tape drive and clear its error state.

8. Run the **Tape Sys Test** function. The Tape Sys Test function is a comprehensive diagnostic routine for the streaming tape drive. It detects many types of errors and usually reports the errors with more details than backup and restore functions. We recommend that you run the **Complete Drive Test** function from the Tape Sys Test menu. Please refer to Appendix B for further explanations on the Tape Sys Test Error Messages.

   In addition, the Tape Sys Test has a retension function. We recommend that you always use the retension function on tapes which you do not frequently use (including brand new tapes) and on all tapes from time to time.

If the problem still persists after the Quick Checkout, please perform the following Complete Checkout procedures.

The Everex streaming tape drive and software are exhaustively tested on a wide range of hardware and

software configurations. They work perfectly with most IBM compatible personal computers as well as IBM PS/2 systems. They work with all major software including most of the popular network operating systems.

However some hardware and software may not work properly with a timing critical application such as the Everex streaming tape system.

The basic idea behind the following troubleshooting procedures is to isolate the problem.

D.2 Complete Checkout

1. Simplify the hardware configuration in your computer system: Some of the add-on cards in your computer system may interfere with streaming tape drive or software. To isolate the problem, temporarily remove all unnecessary add-on cards and make your system configuration as simple as possible. Leave only those add-on cards which are needed to boot up and run EVTAPE software. Usually, these include video, hard disk, and floppy diskette controller cards. You may leave the memory cards in the system if necessary. However, please remember that a faulty memory card can affect everything else in the system. Some memory cards have other functions which may interfere with the streaming tape system. If the problem is solved by removing add-on cards, add your cards back one at a time to identify the

one that conflicts with the streaming tape
system. Remember to re-check all cables after
you remove and reinstall controller cards.

2. Simplify the software environment: Some device
    drivers and memory resident programs interfere
    with the EVTAPE software. To isolate the
    problem, temporarily remove unnecessary
    device drivers and memory resident programs
    from your CONFIG.SYS and
    AUTOEXEC.BAT files. The easiest way to
    remove all device drivers and memory resident
    programs is to temporarily rename your
    CONFIG.SYS file CONFIG.XXX, and your
    AUTOEXEC.BAT file AUTOEXEC.XXX. Run
    the EVTAPE software right after a clean DOS
    bootup. Please note that some hard disks require
    special device drivers to operate. If this is the
    case, try to leave the hard disk device driver in
    your system. If the test still fails, boot up DOS
    from a floppy diskette and run EVTAPE from a
    floppy diskette.

3. Run EVTAPE software with minimum screen
    update: Some video cards lock the system bus
    while updating the screen. This prevents other
    devices from using the system bus concurrently
    and will cause the streaming tape drive to fail on
    the Direct Memory Access operation. Follow the
    Install/Config function instructions to disable the
    real time clock and percentage bar display of the
    EVTAPE software. You may achieve similar
    results by pressing [Ctrl] [K] while running any

EVTAPE function. You should also turn off the file listing display during a file backup, compare, or restore operation. This reduces the screen update while running the EVTAPE software.

4. Use a brand new tape. Your tape may have no visible damage but is, in fact, unusable. However, if you try more than one new tape and the problem still persists, it is unlikely that the problem is caused by a bad tape.

5. If you have more than one Everex streaming tape drive, replace it with another one and retry the test. All Everex streaming tape drives are tested in the factory before they are shipped to the customer. However, your particular tape drive may be damaged due to incorrect installation, mishandling, or other reasons.

6. If you have more than one computer system, install the streaming tape drive on different systems and retry the test. If possible, try the Everex streaming tape drive and software on a computer system that is made by a different manufacturer.

If the problem still persists after the checkout procedures, please contact your authorized Everex dealer. Qualified Everex Technical Support personnel are also available to help you.

D.3 Specific Problems and Solutions

PROBLEM:

When running the tape test, the system will stop or
fail on WRITE FILE MARK, and the computer
system may lock up as well.

POSSIBLE SOLUTIONS:

- Make sure that the IRQ setting on your
  controller card matches the setting on the
  software.

- Make sure that the IRQ setting on your tape
  controller card isn't already used by another
  product in your computer system.

- Make sure that the DMA setting on your tape
  controller card matches the setting on the
  software.

PROBLEM:

The tape system test fails on open channel.

POSSIBLE SOLUTIONS:

- Make sure that the port address on your tape
  controller card matches the setting on the
  software.

- Make sure that the power to your external tape drive is ON.

- Make sure that your tape drive is connected to an available power lead (twisted wire cable with plastic four-pin connector) inside your system.

- Make sure that the port address set on your tape controller card isn't already used by another product in your computer system.

- Make sure that the cable that runs from your tape drive to your tape controller card is properly connected.

PROBLEM:

The tape system test will pass, however, when you try to back up data, the tape will get read file errors and lock up.

POSSIBLE SOLUTIONS:

- Make sure that the DMA channel set on your tape controller card isn't already used by another product in your computer system.

- Set the tape software to single DMA mode.

- Make sure that the DMA controller chip on your system's motherboard can support dual DMA. Contact your computer dealer.

PROBLEM:

Tape system test will fail track changes read/write

POSSIBLE SOLUTIONS:

- Make sure that the DMA channel set on your tape controller card isn't already used by another product in your computer system.

- Set the tape software to single DMA mode.

- Make sure that the DMA controller chip on your system's motherboard can support dual DMA. Contact your computer dealer.

PROBLEM:

Tape drive indicator light remains on at all times.

POSSIBLE SOLUTIONS:

- You may have installed the internal tape drive cable backwards on the tape controller side.

D.4 How to Get Help

To help your authorized Everex dealer or Everex Technical Support personnel assist you more efficiently, we require you to have the following information before you call in:

1. Model number and serial number of your Everex streaming tape drive.

2. This manual.

3. The original Everex streaming tape software diskettes and version number.

4. A detailed description of the procedures you followed to create the problem including the function that you executed and the exact key stroke sequences that you typed in.

5. A detailed description of problem symptoms:

   A. What is the last screen display when the problem occurred? Dump the screen to a printer if possible.

   B. Did you hear the tape drive click?

   C. Did the tape drive move at all?

   D. Were you able to consistently reproduce the problem?

   E. Anything else that seems strange or relevant to the problem.

6. The version of Network Operating System you use if applicable.

7. The manufacturer, model, and speed of your computer system.

8. The manufacturer, model, and mode of your graphics controller card.

9. The manufacturer and model of your hard disk/floppy diskette controller card.

10. The manufacturer, model, and capacity of your floppy diskette drive.

11. The manufacturer, model, and capacity of your hard disk drives.

12. The manufacturer, model, capacity, functions, and configurations of other add-on cards in your system. For example, extended or EMS memory card, multi-function card, modem card, network controller card, etc. Please refer to your add-on card manuals to get their current configuration such as memory and/or port addresses, IRQs, and DMA channels if applicable.

13. The version of DOS you use.

14. Contents of your CONFIG.SYS file.

15. Contents of your AUTOEXEC.BAT file.

16. Your disk partition information.

17. A notebook and a pen for writing down
     instructions.

Finally, when you call, please try to be near your
computer, so you can follow the technician's
suggestions while on the phone.

For better support in the future, we advise you to get
the name of your authorized Everex dealer or Everex
Technical Support personnel. Try to record the date
and the conversation in as much detail as possible.

If it is determined that you need to return the
streaming tape drive to Everex for service, you must
obtain an RMA number for Return Merchandise
Authorization. To obtain an RMA number, call the
Everex Technical Support Department. Before you
call, please have the following information ready:

1. Model number and serial number of your Everex
    streaming tape drive.

2. Date code from the sticker next to the serial
    number.

You may also be required to provide a photocopy of
your sales receipt when you send the tape drive in for
repair.

Glossary

A

APPEND To record an additional tape volume on a tape cartridge.

ARCHIVE BIT A bit of information indicating whether a file has been changed since the last backup.

B

BACKUP To copy the contents of hard disks to a tape cartridge. A backup provides a copy of data that you can restore to the disk if the original data is altered or lost.

BAD SECTORS Areas on the hard disk which cannot retain data reliably.

BATCH FILE A file of commands that the computer executes in sequence. You can conveniently run routine tape operations in a batch file.

BUFFER A temporary holding pen in the computer's memory that holds data for a specific purpose.

C

COMPARE An option for verifying tape data after a backup or restore operation. If you choose the compare option, the software compares disk and tape data byte by byte and reports any mismatches.

D

DATASET Any file, group of files, or disk image on the tape backed up during one operation.

DATASET LABEL The name given to a dataset by the user.

DATASET NUMBER The number given to a dataset by the software which identifies it in a consecutive order with the other datasets on the tape.

DEFAULT VALUE A value that the tape program automatically assumes if no other value is given.

DMA Direct Memory Access. DMA channels allow different devices to access a computer's memory directly. The Intel 8237 DMA controller chip used in the PC has four channels, which can serve up to four peripheral devices simultaneously.

E

ENDING DATE During a file-by-file operation, you have the option of selecting files that were last written on, before, or after a certain date.

ERASE To remove all data recorded on a tape.

ERROR MESSAGE A message that appears on-screen to indicate a hardware or software problem or an incorrect data entry.

F

FILE SPEC The full name of the files (including their pathnames) that you want backed up or restored.

H

HIDDEN FILES Files that are stored on the disk but which do not appear in a directory listing of the disk.

L

LAN (Local Area Network) A system of linked computers within an office or building. In a local area network, hardware and data can be easily shared between all network stations.

LAST MODIFIED FILES Files that have changed since the last backup.

LOGICAL DRIVES Disk drives referenced by DOS using drive letters A, B, C, etc.

M

MEGABYTE One million bytes or 8 million bits. Used to describe the storage capacity of computers and storage peripherals. For example, a 20 megabyte hard disk can store 20 million bytes of data or about 5000 single-spaced pages.

MODIFIED FILES BACKUP A backup of all files added or modified since the last backup.

P

PARTITION A storage area on a hard disk to hold files created with a specific operating system. If a disk has one operating system, the partition usually takes up all disk storage space. If a disk has multiple operating systems, a portion of disk space exists for each partition.

PATH The route through the levels of DOS directories to a specific directory or file. The path may begin with the root directory and include each level of directory down to the specific directory or file the user wants to locate. The path names each level of directory from highest to lowest, separating each directory by a backslash.

PHYSICAL FIXED DRIVES The tangible fixed drives installed in a system.

R

READ-ONLY FILES Files which are not intended to be altered during normal operations. You can read these files but not write to them.

RESTORE To copy data backed up on a tape to a disk.

REWIND To wind the tape to its physical beginning.

S

SELECT DRIVE Choose the drive to back up or restore to.

SOURCE DRIVE The hard disk drive from which the data was originally taken.

STAND-ALONE COMPUTER A single computer that isn't part of a local area network (LAN).

STARTING DATASET NUMBER The identification of the first dataset used at the start of an operation.

STARTING DATE During a file-by-file operation, you have the option of selecting files that were last written on or after a certain date; the starting date is this date.

SYSTEM FILES Files that are necessary for the operating system to operate.

T

TAPE CARTRIDGE Magnetic floppy tape, tape spools, and read/write heads enclosed in a hard case. Tape cartridges store data backed up with your tape system.

TAPE DRIVE A device that reads, writes, winds, and erases tapes.

TAPE LABEL The name that the user assigns to the tape.

TAPE NUMBER The number that the user assigns to the tape.

TARGET DRIVE The drive where information is to be restored to.

TENSION To fast forward and rewind a tape so it has the correct amount of tension for tape operations.

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