EVEREX

Everex Streaming Tape

**OWNER'S MANUAL AND REFERENCE GUIDE
(VERSION 4-7)**

EVER for EXcellence

Addendum for
Everex Streaming Tape Manual
(MAN-00380-47 Version 4.07)

The Everex tape software you have just received (Version 4.07) does not include software utilities for Novell or XENIX.

If you are using your tape backup under Novell® or SCO XENIX®, you will need to purchase additional software utilities.

Excel Tape Backup Utilities for Novell Networks
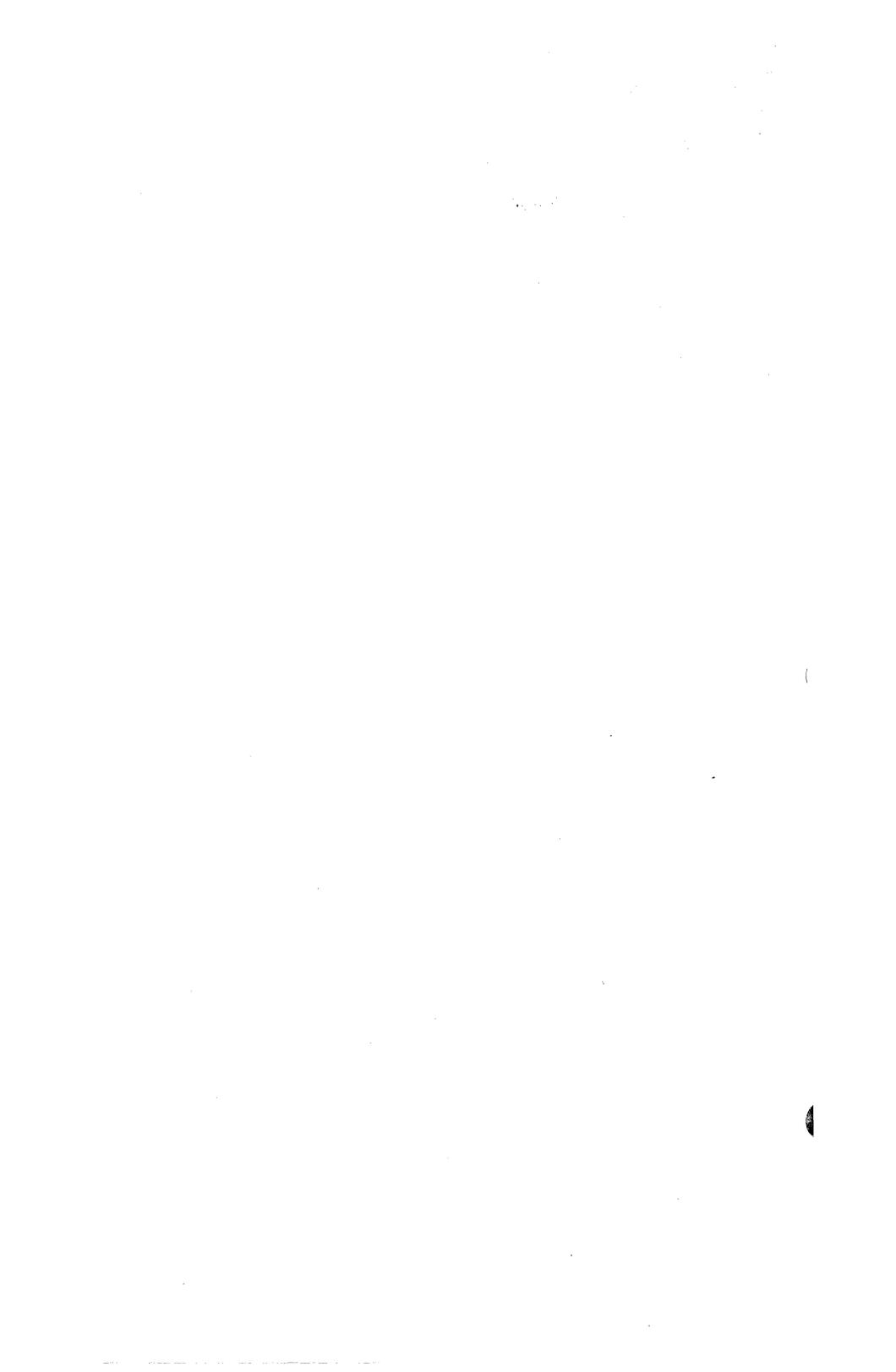   KIT-00003-00 for 5 1/4" diskettes
    KIT-00003-01 for 3 1/2" diskettes

Excel Tape Backup Utilities for SCO XENIX
    KIT-00005-00 for 5 1/4" diskettes
    KIT-00005-01 for 3 1/2" diskettes

For additional information and pricing on the above products, please contact your Authorized Everex Dealer or the Everex Customer Service Department at (415) 683-2230.

Everex

Streaming Tape

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(VERSION 4-7)

NOTICE

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Disclaimer   While we do our best to avoid such a situation, Everex will not be responsible for any loss of information resulting from the use of this product.

TRADEMARKS

Everex is a trademark and EVER for EXcellence is a registered trademark of Everex Systems, Inc.

IBM PC, XT, AT, and Personal System/2 are trademarks of International Business Machines Inc.

MS DOS is a registered trademark of Microsoft Corporation

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Novell is a registered trademark of Novell, Inc.

Intel is a registered trademark of Intel Corporation

SideKick is a registered trademark of Borland International, Inc.

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, it may cause interference to radio an 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 again such interference in a residential installation. However, there is n guarantee that interference will not occur in a particular installation. If this equipment does cause 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, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission 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 the use of 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 availabl 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 radic noise emissions from digital apparatus set out in the Radio Interference Regulation of the Canadian Department of Communication.

SYSTEM REQUIREMENTS

Hardware
Require-
ments

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

- One diskette drive

- One hard disk drive

Power
Require-
ments

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.

A. 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 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 a supplementary power supply, please contact your computer dealer for assistance.

B. Y Power Cable

Before you install your Everex internal streaming tape drive, check whether there is an available powe 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 1.
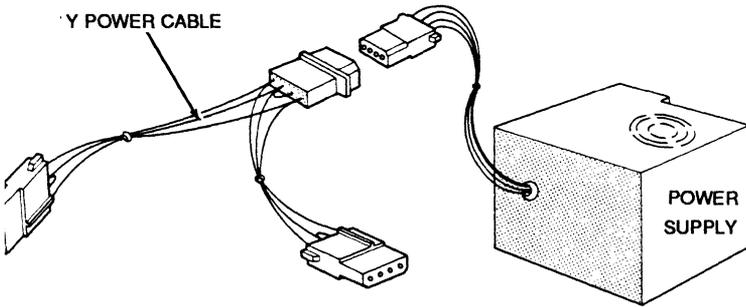
Figure 1   Adding a Y Power Cable

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

CHECKLIST

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

* Everex streaming tape drive (internal or externa

* 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.

TABLE OF CONTENTS

Section

1

HOW TO USE THIS MANUAL

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.

Section 2 lists the features of your streaming tape backup subsystem, and provides an introduction to data backup.

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 EVTAPE menu.

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

Finally, the *Glossary* contains terms used in this manual that you will find helpful if you run across unfamiliar words.

2

INTRODUCTION

Congratulations on the purchase of your new
streaming tape backup subsystem from Everex. This
convenient and economical tape backup subsystem
will give you years of reliable service and data
protection.

2.1   Features

The Everex streaming tape backup subsystem has th
following features:

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

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

- Backs up 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

2   Introduction to Data Backup

With the advent of affordable, easily available personal computers, an unprecedented information boom is taking place every day. Not only are more people doing more work on more computers, but the great majority of this accumulated labor is stored in Winchester-type hard disk drives. Although the speed, capacity, and convenience of hard disk drives make them indispensable in today's business market, they represent a major area of vulnerability -- virtually every drive contains many times its value in data and labor invested. **If this data is not backed**

up, the failure of the drive can spell instant calamity.

Although other methods of backing up hard disk dat exist (for example, by copying files onto a series of floppy diskettes), streaming tape backup is by far the fastest, least cumbersome, and most efficient metho Because streaming tape backup is quick and convenient, you are more likely to apply it than othe methods.

To maximize your data integrity, Everex has designed the streaming tape software with two principles: backup does not modify the disk data; an restore does not modify the tape data.

What is the
Streaming
Tape Drive?

Like a video cassette recorder, a streaming tape driv uses electronic read/write heads to store and retrieve information on magnetic tape. Instead of movies, the information in question is hard disk data.

With streaming tape, the tape is in constant motion. The system is able to read information from the disk and simultaneously write it to the tape (or vice versa). In this way, streaming tape combines the maximum possible speed (about 5MB per minute) with the highest reliability of any backup method.

More than
Backup

In addition to its primary purpose of data backup, you can use your tape drive for very convenient transportation of data to similarly-equipped computers. If your company wants to send 40MB of software and data files to a new branch office, there is no easier way than to back up the data on a tape,

mail or hand-carry it to the other office, and restore it to the new hard disk drive.

The Everex streaming tape backup subsystem is also a very efficient tool in migration from PC-type systems to the new PS/2 line. With our diverse line of tape controller cards, you can use the same software, and even the same external tape drive, to move any quantity of accumulated data between the two families of computers.

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.

3.1   Software Installation

3.1.1 First Time Installation

Installing the tape software on your hard disk drive
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   [Enter]

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 Section 3.1.2 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.

3.1.2 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.

.2   Hardware Installation

3.2.1 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
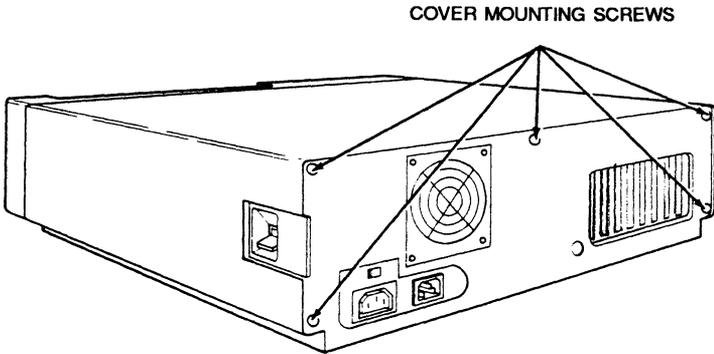
Figure 3-1 Cover Mounting Screws

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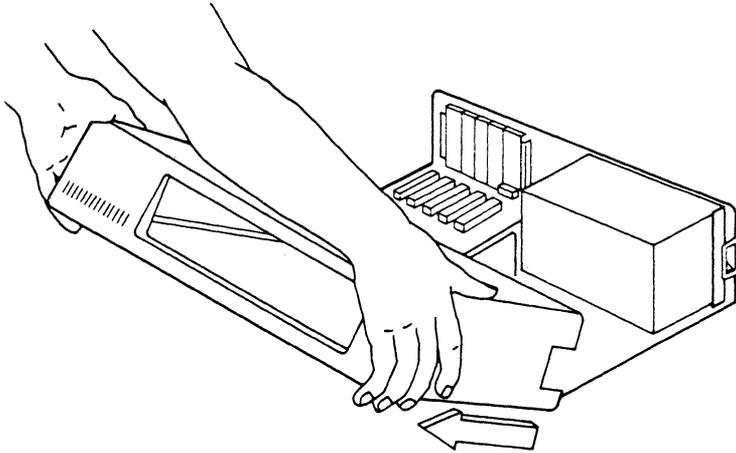
Figure 3-2 Removing the Cover

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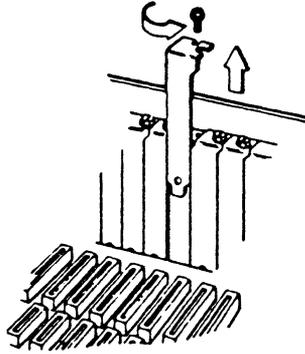
Figure 3-3 Removing a Slot Cover

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
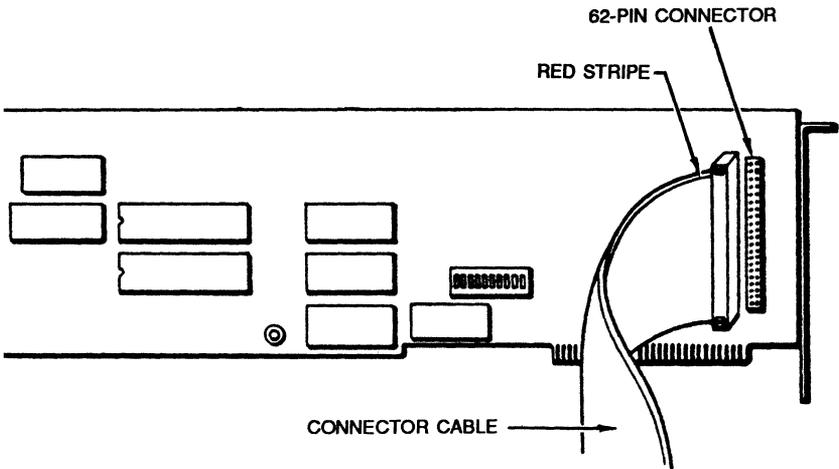
Figure 3-4   Connecting the Ribbon Cable

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

If you have a combination tape/floppy controller card, refer to Section 3.2.4 at this time.

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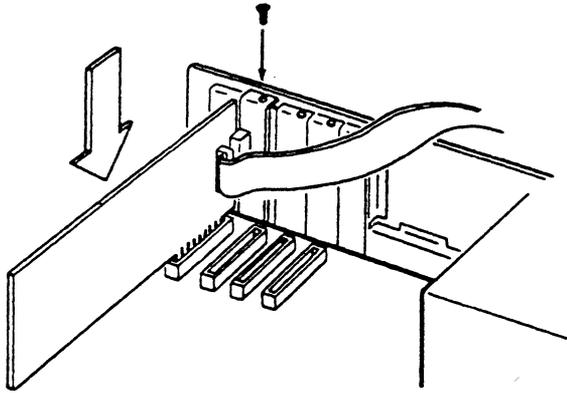
Figure 3-5 Installing the Tape Controller Card

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

6. Connect the ribbon cable to the back of the tape drive as shown in Figure 3-6.
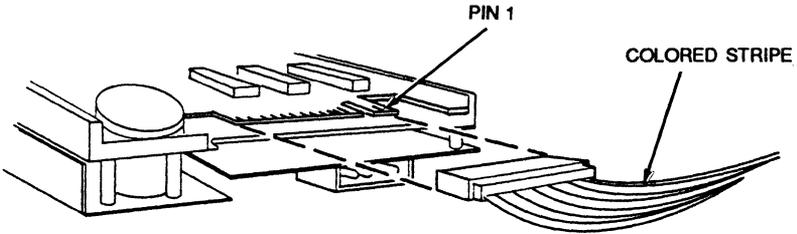
Figure 3-6 Connecting the Ribbon Cable to the Tape Drive

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

7. 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.
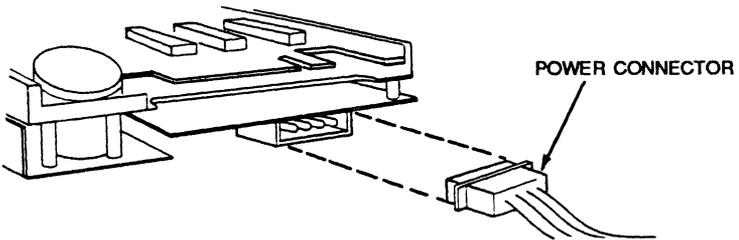
POWER CONNECTOR

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.

8. 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.

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

10. 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.

    The red 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
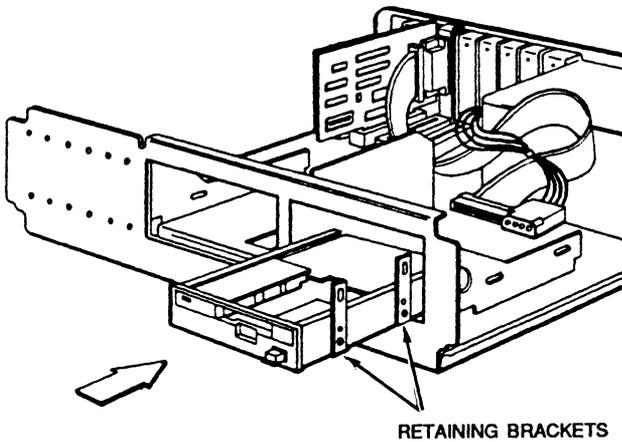
Figure 3-8 Connecting Retaining Brackets to an Internal Tape Drive

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.
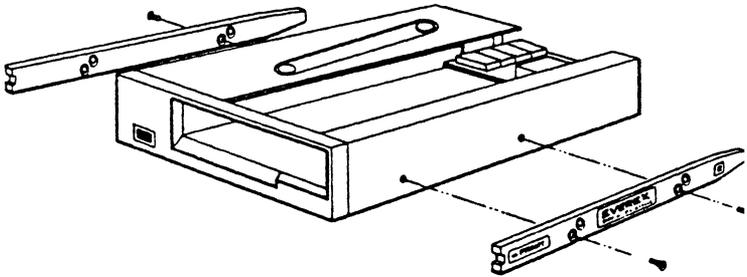
Figure 3-9 Attaching AT Slide Rails to an
Internal Tape Drive

16. Very gently slide the tape drive half-way into it;
drive bay, being careful not to damage the smal
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 tc
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 for an introduction to streaming tape software.

3.2.2 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.
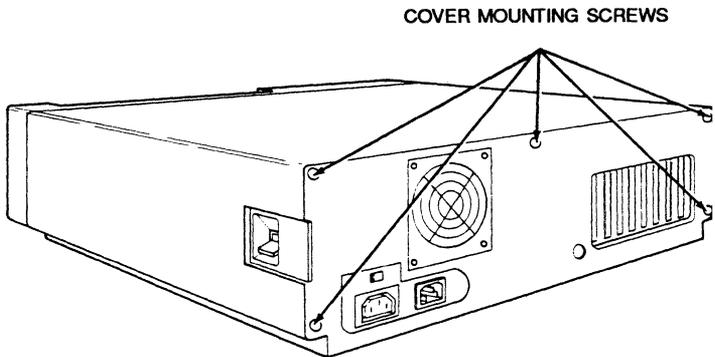
COVER MOUNTING SCREWS

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.
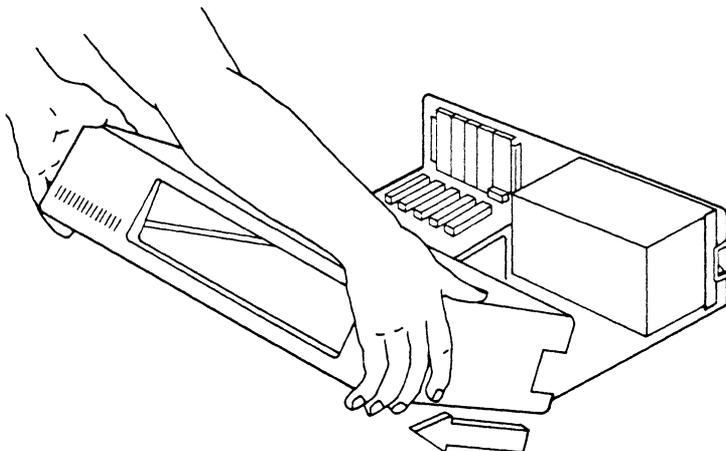
Figure 3-11 Removing the Cover

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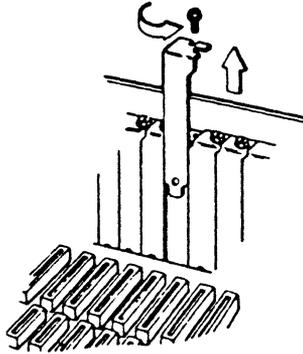
Figure 3-12 Removing a Slot Cover

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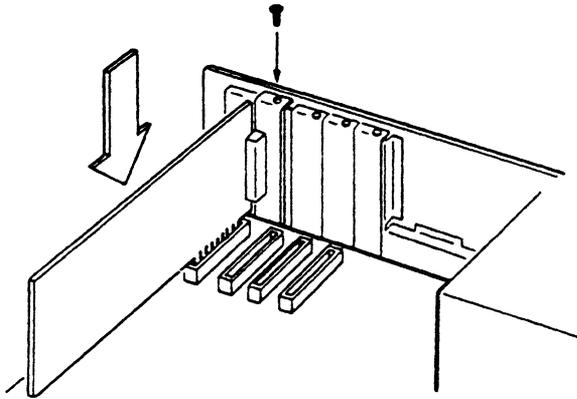
Figure 3-13 Installing the Tape Controller Card

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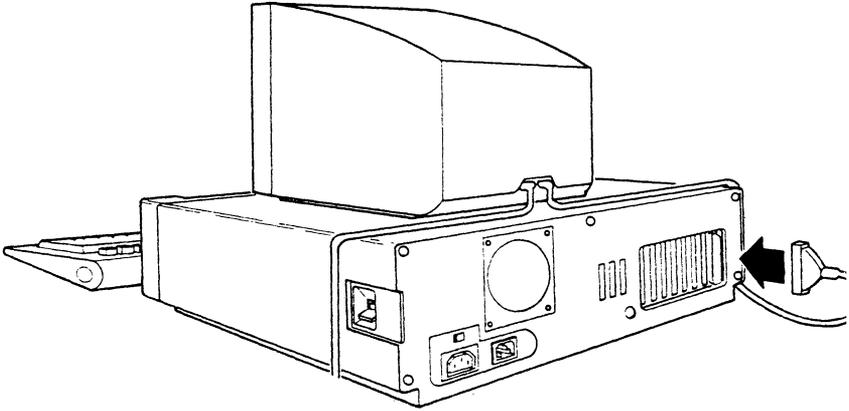
Figure 3-14 Connecting the Shielded Round Cable
to the Tape Controller Card

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.
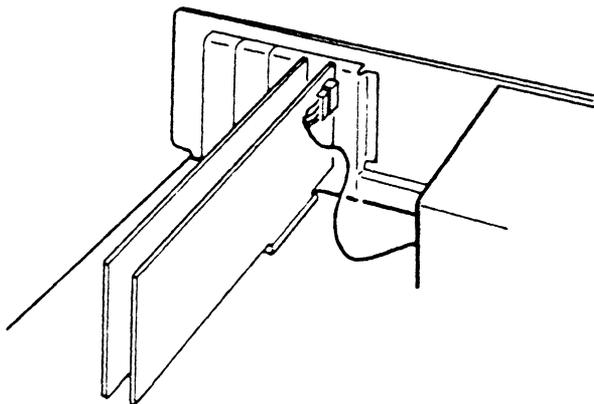
Figure 3-15 Applying Power to the Tape Controller

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 red 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.

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 for an introduction of the streaming
    tape software.

3.2.3 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 or 60 that is full of peripheral cards, you may need to customize your own ADF file. Refer to Section 3.2.5 for instructions on special PS/2 configurations.

Installing Follow these steps to install your Everex streaming
the Tape tape subsystem in an IBM Personal System/2 Model
Subsystem 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 MODEL 50 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.
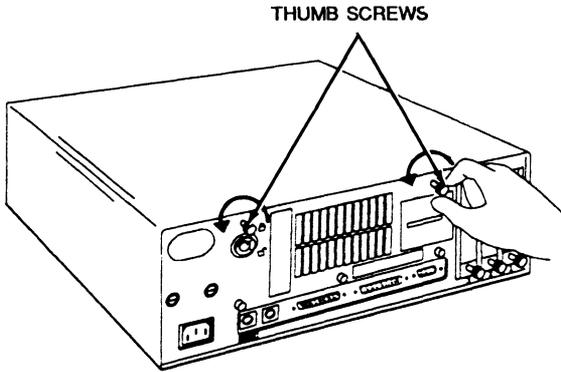
THUMB SCREWS

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.
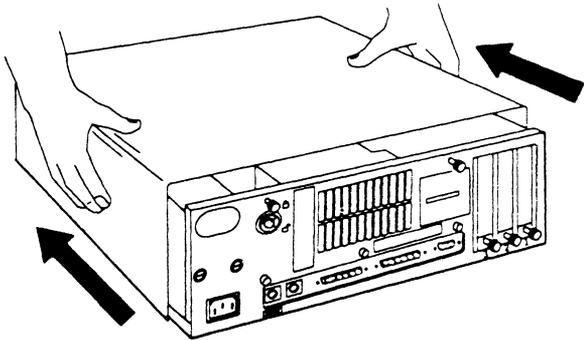
Figure 3-17 Removing the Cover of the Model 50

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.
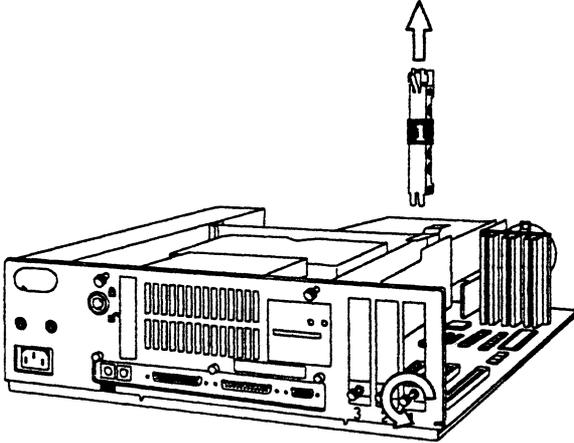
Figure 3-18 Removing a Slot Cover from the
Model 50

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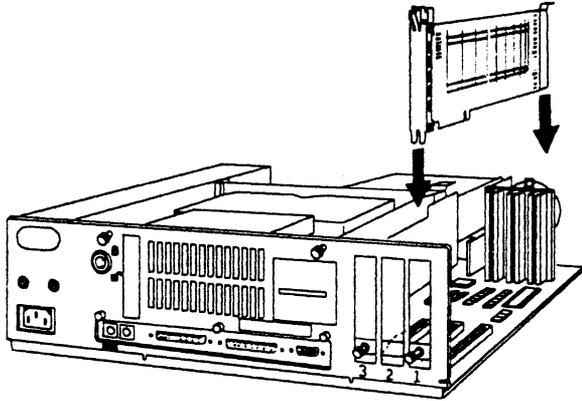
Figure 3-19 Installing the Tape Controller Card in the Model 50

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 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.
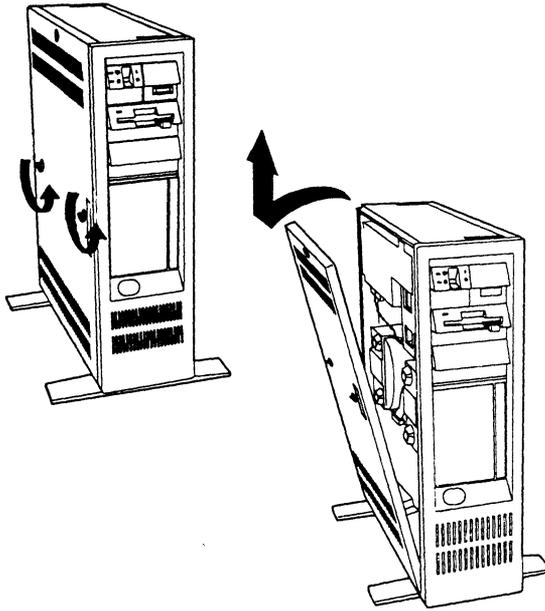
Figure 3-20 Loosening the Model 60 Cover
Mounting Screws

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.
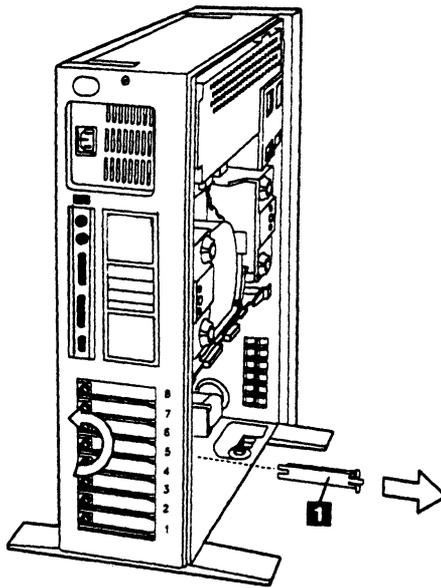
Figure 3-21 Removing a Slot Cover from the Model 60

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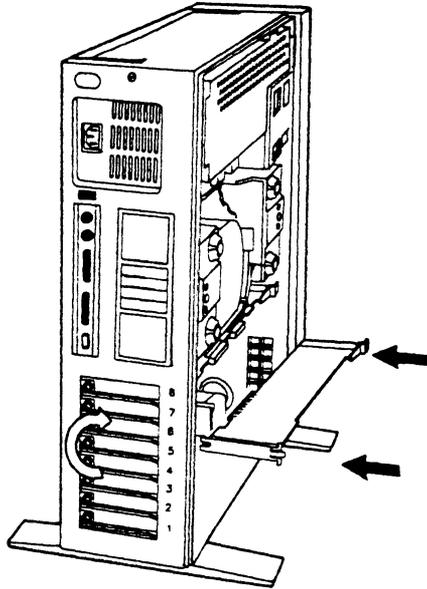
Figure 3-22 Installing the Tape Controller Card in
the Model 60

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.
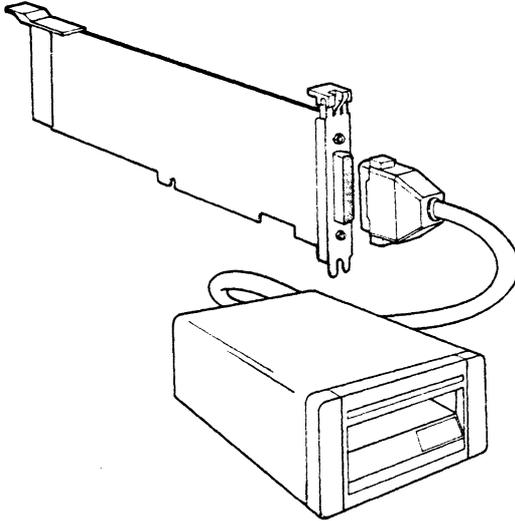
Figure 3-23 Cabling the Tape Drive and Controller
            Card

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 Configuratior**

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 Section 3.2.5 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 *Section 3.2.3: Installing the Tape Subsystem*, Step 30), 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.

3.2.4 Connecting the Floppy Disk Controller

If your tape subsystem has a combination tape and floppy disk controller card, perform the following additional steps during hardware installation.

NOTE: The combination tape/floppy controller is for use only in an IBM PC, XT, or compatible computer. Do not use this card in an IBM AT or Personal System/2 (any model).

1. Disconnect the 34-pin floppy controller cable from the existing floppy controller card in your system. (You can leave the other end of this cable connected to your floppy drive.)

2. Remove the floppy disk controller card from your system.

3. Install the combination tape/floppy controller card into its slot.

4. Connect the floppy controller cable (disconnected earlier) to the end of the new combination tape/floppy controller cable, as shown in Figure 3-24.

FLOPPY DRIVE CONNECTOR
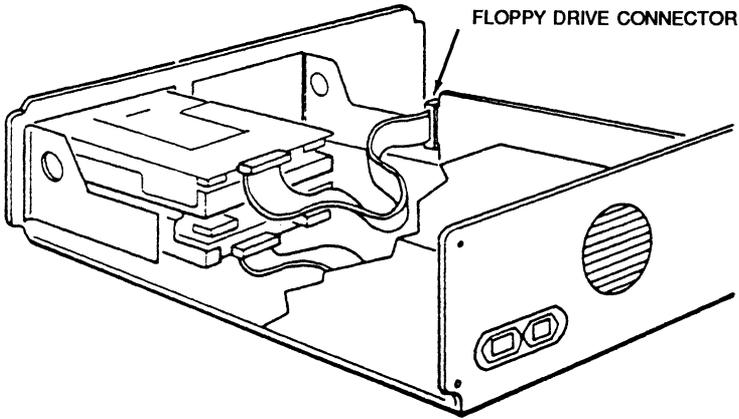
Figure 3-24. Connecting the Floppy Controller
Cable to the Combination Tape/Floppy
Controller Card

5. Continue with the hardware installation
    procedure as normal. You do not need to set any
    jumpers or switches for the floppy controller
    portion of the card.

3.2.5 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 installation, 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. Type:

   TAPE   **[Enter]**

   to access the tape software.

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.

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.

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 3-25 and
3-26 show you how to write enable/protect a
cartridge and cassette tape respectively.
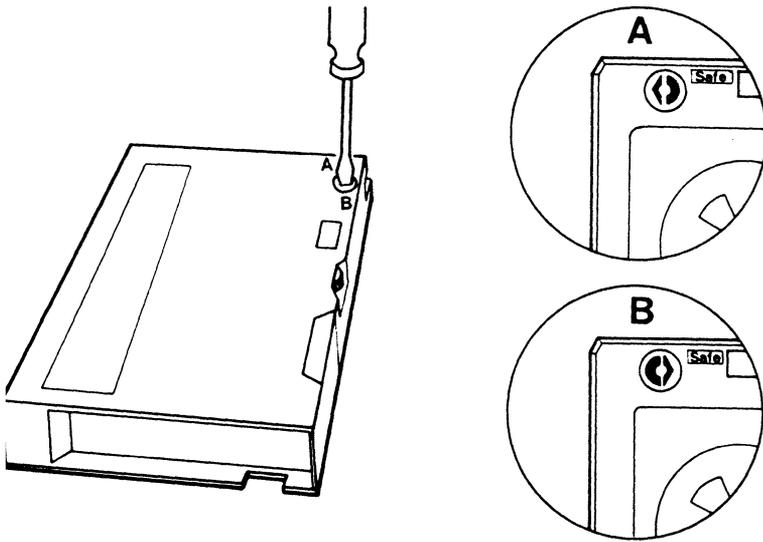
Figure 3-25. Write Enabling/Protecting a Cartridge
Tape
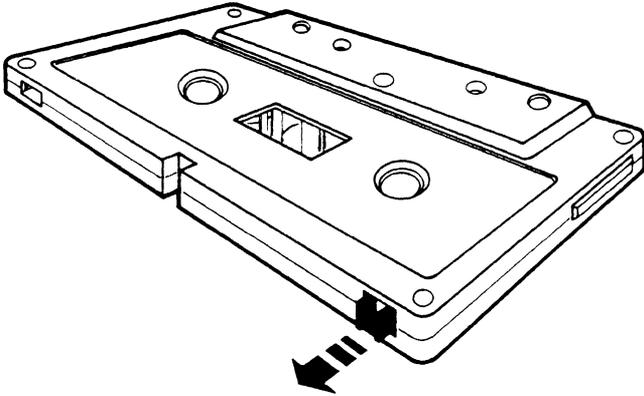
Figure 3-26. Write Enabling/Protecting a Cassette
Tape

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 [Ente

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.

.4 How to Reconfigure Your PC, XT, AT, or Model 30 Controller Card

> **NOTE: For Micro Channel systems, reconfiguration is done through software, and is described in Section 3.2.3.**

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 Tap 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 you 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 [Enter]

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 3-27
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.**
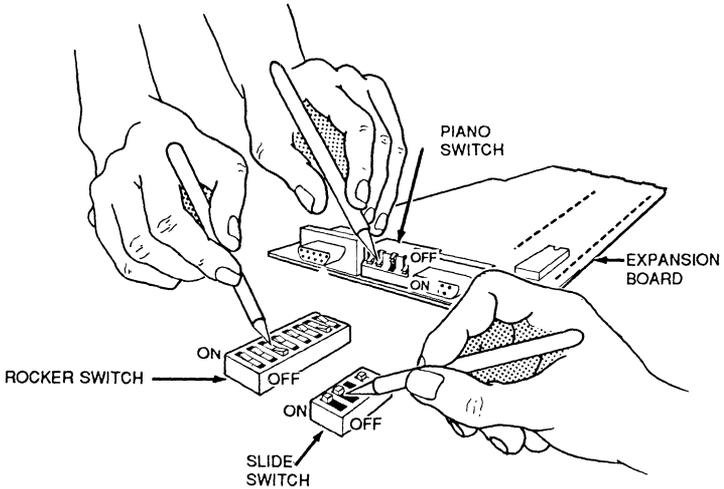
Figure 3-27. Setting Slide and Rocker Switches

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.

Section

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.

Your Everex utility diskettes contain the following programs:

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   [Enter]

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.

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

Image   This function backs up an entire disk drive, including
Backup   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   After completing a backup, a compare operation
Compare   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   File compare is very similar to image compare, but is
Compare   used with file backup or restore sessions.

Image   An image restore operation copies the contents of an
Restore   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.

4.2   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.

4.3   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.

4.3.1 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 whol hard disk (including unused areas), it is slower than file backup if you only back up a small amount of data.

4.3.2 File Backup

Everex streaming tape software also provides you with a file-by-file mode of backup and restore. In thi 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.

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

advantages

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

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.

5.1 Install/Re-install 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 origin
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 **re-install** the tape software repeats the functions of first time installation.

i.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 select the diagram that matches your tape controller card. After you have set or changed 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 3-27 shows you how to set slide and rocker switches.

i.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 ou of memory and to the tape.

In some circumstances, however, you may need to operate the tape subsystem with one DMA channel a 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 reac 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 vectoι 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
ectors (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.

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.

NOTE: 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.

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.

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.

Section

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.**

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.

Perform an **image compare** (see Section 9), regularly after an image backup, especially when dealing with extremely valuable data.

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

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

**WARNING: 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.**

7.2 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.

7.2.1 Image Backup Select Drive Menu

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

Each backup you perform creates one dataset, or 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."

7.2.2 Tape Specification Menu

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

Tape
Number

You must assign an identification number to each 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.

WARNING: 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.

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

Section

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.

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.

Perform a **file compare** following file backup, especially when dealing with extremely valuable data.

3.1   Easy User Interface

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

File   Type the DOS pathname of the files or directories
Specification 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 directorie 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 roo 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 existin 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.

WARNING: 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.

l.2 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.

8.2.1 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/   Enter **I** to back up the files specified by all other
Exclude (I/E) 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.

8.2.2 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 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."

Dataset
Number

This field is similar to the "Append or Overwrite" 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.

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

WARNING: 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   Enter [Y] in this field to list all the files on the tape
    Files   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   Enter [Y] in this field to list the files being backed up
    Files   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.

8.2.3 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   Enter the log's pathname and filename in this field.
Filename   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.
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.
Log Backup *Files Only if* *Error*	Enter **Y** in this field to log only those files which experience an error in backup.
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.
Pause on *Read File* *Error*	Enter **Y** in this field to have the software pause when it encounters a read file error. A prompt reminds you to continue or abort the operation.
Back Up *Files in* *Original* *Order*	Enter **Y** in this field if you want your files to be backed up in the sequence displayed by the DOS command DIR. This may be necessary in conjunction with some network backup applications.

Section

9 IMAGE RESTORE AND COMPARE

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

> **WARNING: IMAGE RESTORE OVERWRITES YOUR WHOLE DRIVE. IF YOU JUST WANT TO ADD TO EXISTING DATA, USE FILE RESTORE. SEE SECTION 10.**

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.

As a matter of fact, 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

9.1 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.

9.1.1 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	Enter the label of the desired dataset in this field.
Dataset by	
Label	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.

3.2 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	When you first installed and formatted your hard
Disk Drive	disk, you entered the bad track map to mark off those
for	sectors identified as bad during factory testing.
Unmarked	However, as you use your hard disk, it may develop
Bad Sectors	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	Enter **Y** if you want the tape software to reallocate
Bad Sector	data away from bad sectors on the target disk. Bad
Reallocation	sector reallocation is possible only when there are
for DOS	enough good sectors available to contain the
Image	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
Sector
Marks in
Source DOS

If you leave this field set to **Y**, the software adds the bad sector marks from the source DOS to the File Allocation Table of the target DOS. Although this 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 Before Scrolling the Reallocated File List
If you enable bad sector reallocation, then after the image restore, the software displays a special window and scrolls all the reallocation information through it. Once a file scrolls out of this window, you 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.

Section

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.

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.

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.

As a matter of fact, 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).

10.1 File Restore (or Compare) Main Menu

Dataset   Enter the **number** of the tape dataset from which yot
Number   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   Enter the label of the dataset from which you want tc
Label   restore file(s). Use uppercase or lowercase letters jus
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.

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

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   To prevent you from accidentally overwriting
Files   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 Date   To restore or compare only those files created or 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/ Exclude (I/E)   To include those files defined on the File 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.**

l0.3 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.

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 i**

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].

1.2 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 code and are therefore represented by escape codes.

Each escape code consists of a semicolon (;) followed by an ASCII character. The most commonly used of these is ;M which represents a carriage return (i.e., **[Ctrl] [M]**).

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

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	;[

For an example of input redirection, see DEMO in the next subsection.

11.3 Demo

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

TAPE <DEMO   [Entei

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.

WARNING: 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).

Filen   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 i
          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 fi
          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 th
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 [Ente

**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.**

1.7 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.

1.8 Screen Redraw

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

1.9 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.

Section

12 WHEN DISASTER STRIKES

What if you mistakenly deleted a file or a directory;
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.

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).

Simple
Trouble-
shooting

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 awa' since you will use brand new or unused tapes tc do **new** backups. If you are not sure what is on 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 ; 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 boc 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.

Care
Guidelines

- Keep the cartridge in its protective box when n(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.

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.

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	_____ _____

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Day	Tape 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	_____	_____

START OVER ON PAGE 1

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.

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.

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.

⊃.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.

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.
/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 extensioı .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.

).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 sourc 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   Switch From Command Line Mode to Interactive Menu Mode

Automatic Switch

- Whenever there is a command argument/optic 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 DO: type **EXIT** to return to the interactive menu mod

- During any tape system tests, press **[F9]** to abor 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'
Guide and go through the following Troubleshootin
Procedures. More than ninety percent of the time yo
will solve your problems before you get to the end o
the Troubleshooting Procedures.

D.1   Quick Checkout

1.   Make sure that the computer's main power cor
     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 no
    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 worl
properly with a timing critical application such as th
Everex streaming tape system.

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

).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 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 t 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 share 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 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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