EVEREX

Excel Streaming Tape Installation Manual

OWNER'S MANUAL AND REFERENCE GUIDE
(VERSION 4.2)

EVER for EXcellence

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**OWNER'S MANUAL AND REFERENCE GUIDE
(VERSION 4.2)**

EVEREX SYSTEMS, INC.
48431 MILMONT DRIVE
FREMONT, CA 94538

Notice

Warning

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 and television reception. The product has been certified and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment 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.

This product requires the use of shielded cables and connectors for proper installation and connection to peripheral devices. Shielded cables are available from authorized dealers. The manufacturer is not responsible for any radio or television interference caused by using other than the recommended cables or by unauthorized modifications to this equipment.

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 at FOB Public Contact Branch, Room 725, 1919 M St. NW, Washington, DC 20555, Telephone: (202) 634 - 1940, Stock No. 004-000-00345-4 (FCC, Part 15.838 b).

Notes

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Chapter 1: Introduction

Congratulations on the purchase of your Excel Streaming Tape™ backup subsystem from Everex Systems. This system has been engineered to give you years of data security, reliable service, and convenience.

1.1: QUICK START

If you are an experienced computer user, follow these steps to get your tape subsystem up and running as quickly as possible:

1. Copy all the files from the tape software diskettes to a directory on your hard disk.

2. Install the tape hardware in your computer according to the appropriate Chapter, below: Chapter 2 for internal tape drives, Chapter 3 for external tape drives on a PC, XT, AT, or PS/2 Model 30 system, or Chapter 4 for a Micro Channel™ system.

3. Test the tape subsystem according to Chapter 5. If necessary, reconfigure the tape controller card according to Chapter 5.1 (PC, XT, AT, Model 30 only), and repeat diagnostics.

4. Run TAPE.EXE. From the Main Menu, choose File Backup.

5. Press <F8> to execute the backup.

1.2: FEATURES

Advanced features of Excel Streaming Tape subsystems include:

■ Fully compatible with the IBM PC, XT, AT, Personal System/2™ Models 30, 50, and 60, and compatible computers

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

■ Backs up 5MB per minute; no preformatting of tapes gives you top speed and convenience

■ Easy-to-use, menu-driven software with easy and advanced user interface levels and help windows throughout

■ Controller cards can be reconfigured to run in virtually any compatible system

■ Image and file-by-file backup and restore operations; flexible file restore from image backup

1.3: INTRODUCTION TO DATA BACKUP

Why 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 being stored in Winchester-type hard disk drives. Although the speed, capacity and convenience of hard disk drives have made 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 there are other methods of backing up hard disk data, (for example, by copying files onto a series of floppy diskettes), streaming tape is by far the fastest, least cumbersome, and most efficient method. Because streaming tape backup is quick and convenient, it tends to be applied more conscientiously than methods that are time-consuming and boring.

To maximize your data integrity, Everex streaming tape software is designed to three principles: Backup does not modify the disk data; restore does not modify the tape data; and compare does not modify either one.

What is Streaming Tape

Like a video cassette recorder, a streaming tape drive 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, your tape subsystem can be used for very convenient transportation of data to similarly-equipped computers. If your company wants to send 20MB of software and data files to a new branch office, there is no easier or more rugged way than to back up the data on a streaming tape, mail or hand-carry it to the other office, and restore it to the new hard disk drive.

Everex streaming tape 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.

1.4: POWER SUPPLY REQUIREMENTS

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

If you have an internal tape drive or an external cassette tape drive which does not have its own power supply, you must verify that your computer's power supply is adequate to the additional demand, and supplement the existing power supply if it is not sufficient. In addition, if there is no available power lead inside the system, you will need a Y power cable to split the output of one of the leads.

Y POWER CABLE
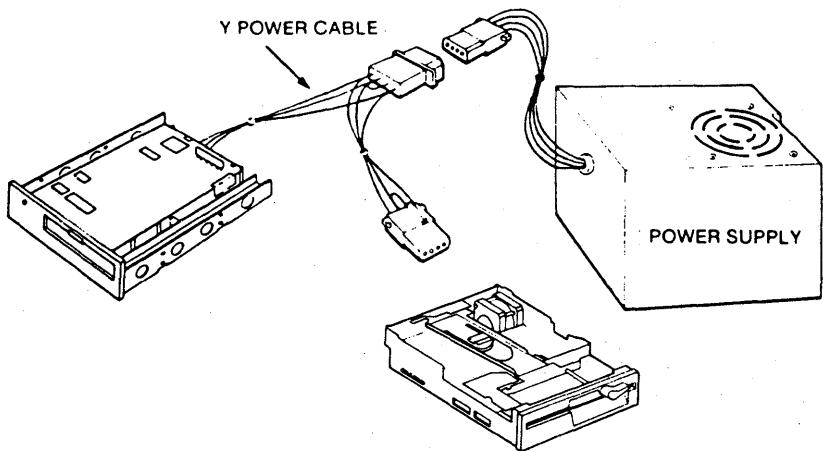
POWER SUPPLY

Figure 1: Y Power Cable

This cable is sold separately and is available from most computer stores.

The IBM AT and most compatible systems come with a 192-watt power supply, which is generally enough to support a tape drive in addition to your other peripherals.

The IBM XT and its compatibles come with a 135-watt power supply. Everex recommends that an XT be upgraded with a 40-watt supplementary power supply to support a tape drive.

The IBM PC and most of its compatibles come with a 70-watt power supply. We recommend that a 75-watt supplementary power supply be added to these systems in order to support the tape drive.

Only an external tape drive, with its own independent power supply, may be used with the IBM Personal System/2 (all Models).

In each case, the total power required by the system depends on such factors as the number and type of the disk drives, and the other peripheral cards installed, as well as on the tape drive.

If you do need to upgrade your power supply, consult your computer dealer to obtain the supplementary power pack.

1.5: HOW TO INSTALL THE TAPE SOFTWARE ON YOUR HARD DISK

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

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

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

2. Insert the first Excel Streaming Tape diskette in drive A and type:

    tape <Enter>

3. The Main Menu of your tape software will appear.

4. From the Main Menu, choose Install/Config (function key <F8>).

5. From the Install/Config menu, choose First Time Installation.

6. First Time Installation will copy all the streaming tape files from the Everex diskettes to a directory on your hard disk drive. By default, the program will create a

directory C:\EVTAPE for the tape software. If you want the software installed to another directory, type in the path and name of the directory you want.

7. Press <Enter> to begin the first time installation. You will be prompted to insert each tape software diskette in turn.

8. When the tape software installation is complete, turn to the appropriate Chapter, below:

Chapter 2 for PC, XT, AT, and PS/2 Model 30; or

Chapter 3 for all Micro Channel systems.

Chapter 2: Internal Tape Drive Installation

If you have not already done so, install the tape software on your hard disk drive according to Section 1.5, above.

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 2:
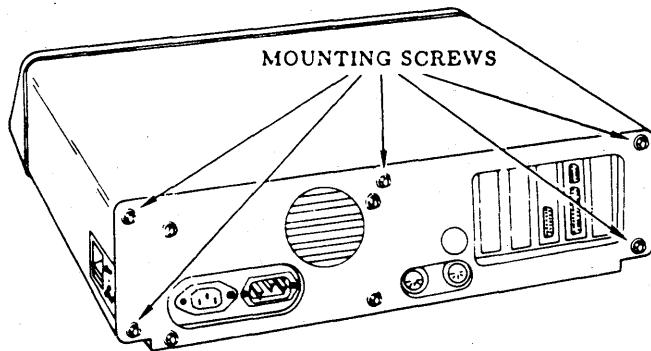
Figure 2: Cover Mounting Screws

3. Grasp the cover in both hands and slide it forward and off as shown in Figure 3:
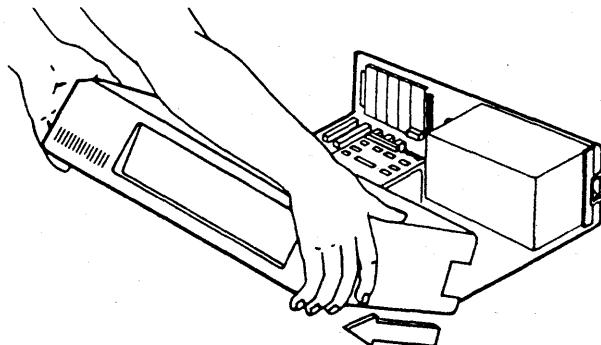

Figure 3: Removing the Cover

4. Locate a vacant expansion slot and remove the slot cover as shown in Figure 4:
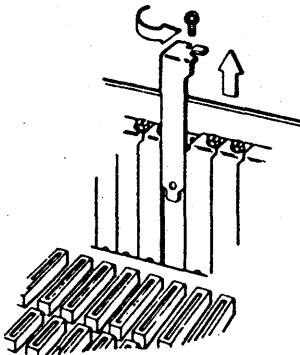
Figure 4: Removing a Slot Cover

Save the screw that you remove.

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

62-PIN CONNECTOR

RED STRIPE

CONNECTOR CABLE
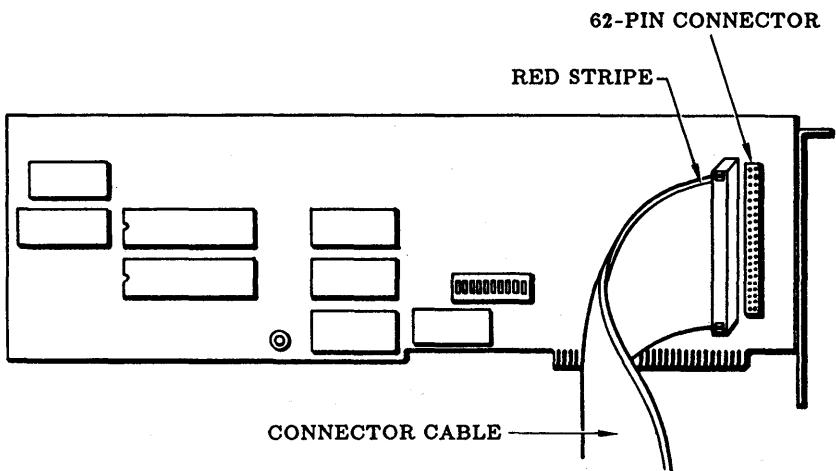
Figure 5: Connecting the Ribbon Cable

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 Appendix A at this time.

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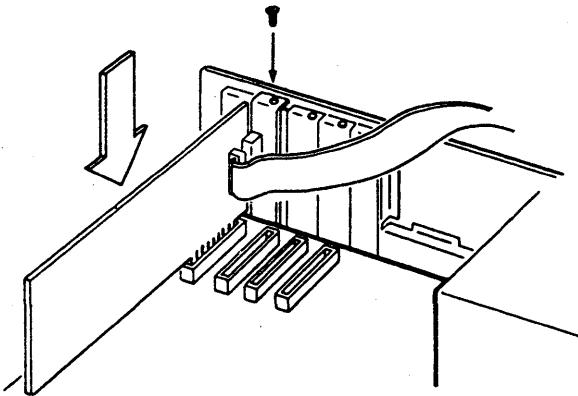
Figure 6: Installing the Tape Controller Card

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

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

PIN 1
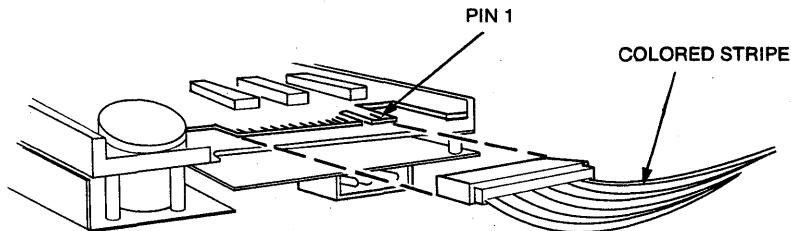
COLORED STRIPE

Figure 7: Connecting the Ribbon Cable to the Tape Drive

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

8. Locate an available power lead (twisted wire cable with plastic four-pin connector) inside your system and apply it to the tape drive as shown in Figure 8:
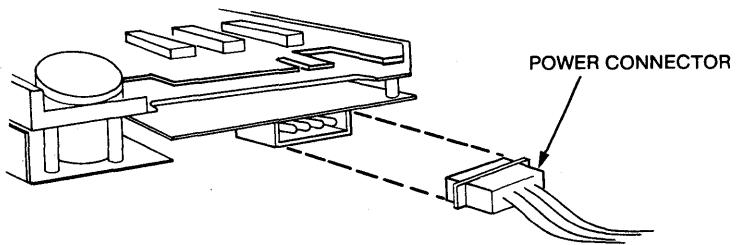
POWER CONNECTOR

Figure 8: Applying Power to the Tape Drive

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

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

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

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

11. Turn to Chapter 5, below, and run the Complete Drive Test according to the instructions.

    We recommend that you not replace the cover on the system until the tape subsystem has passed diagnostics.

    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.

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

13. 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 underneath any other drive in the same drive bay.

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

15. For an IBM PC/XT-type computer, screw the retaining brackets (provided with the internal tape drive) to the drive as shown in Figure 9:

RETAINING BRACKETS
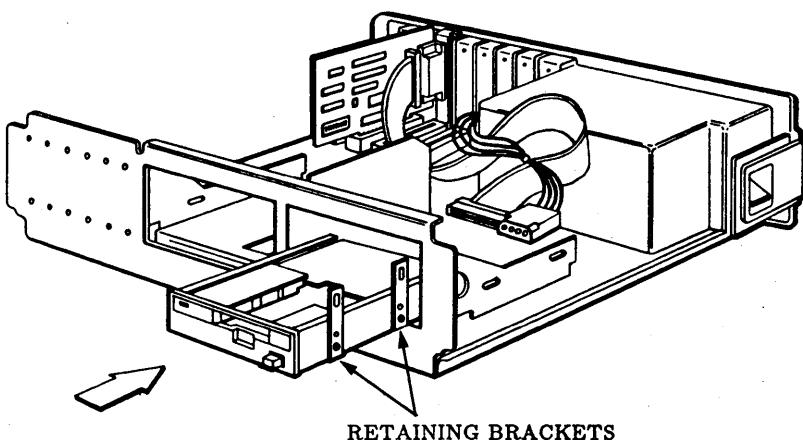
Figure 9: Connecting Retaining Brackets to an Internal Tape Drive

NOTE: If your computer has nonstandard 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.

16. For an IBM AT or compatible computer, attach the slide rails provided with the tape drive, as shown in Figure 10:
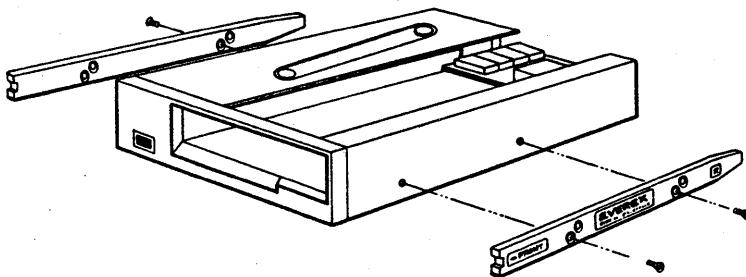
Figure 10: Attaching AT Slide Rails to an Internal Tape Drive

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

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

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

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

21. Congratulations! You have successfully completed your streaming tape subsystem installation. Boot up the system, and proceed to the *Excel Streaming Tape Operations Manual* to begin backing up your hard disk drive.

Chapter 3: 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 11:
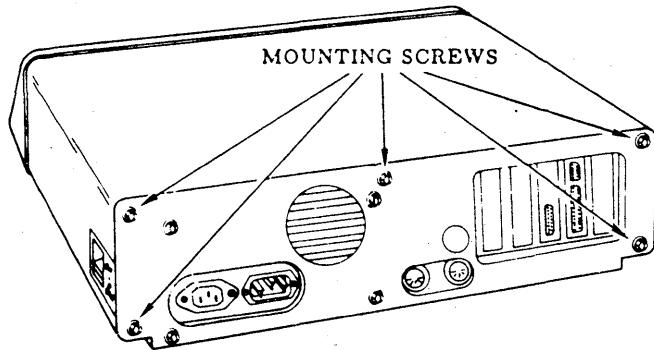
Figure 11: Cover Mounting Screws

3. Grasp the cover in both hands and slide it forward and off as shown in Figure 12:
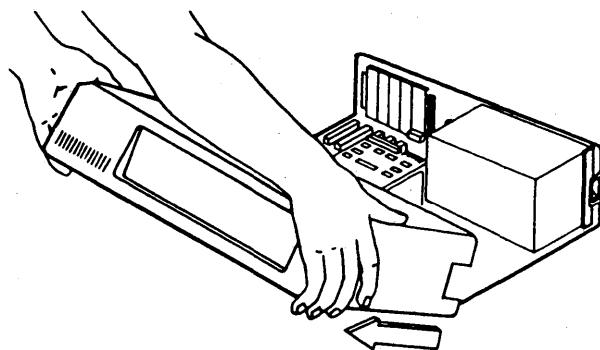
Figure 12: Removing the Cover

4. Locate a vacant expansion slot and remove the slot cover as shown in Figure 13:
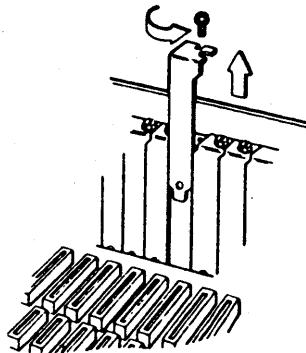
Figure 13: Removing a Slot Cover

Save the screw that you remove.

5. Install the tape controller card into your expansion slot as shown in Figure 14.
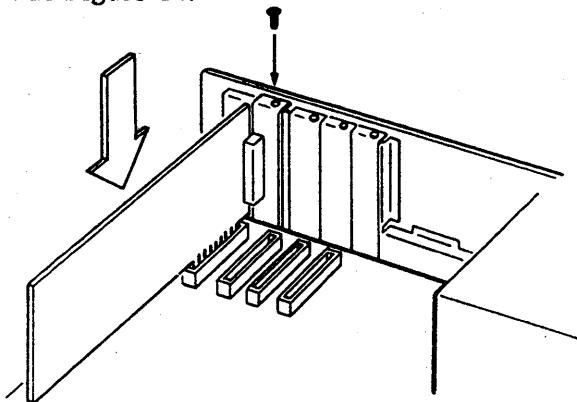
Figure 14: Installing the Tape Controller Card

6. Connect the tape drive's shielded round cable to the endplate of the controller card as shown in Figure 15.
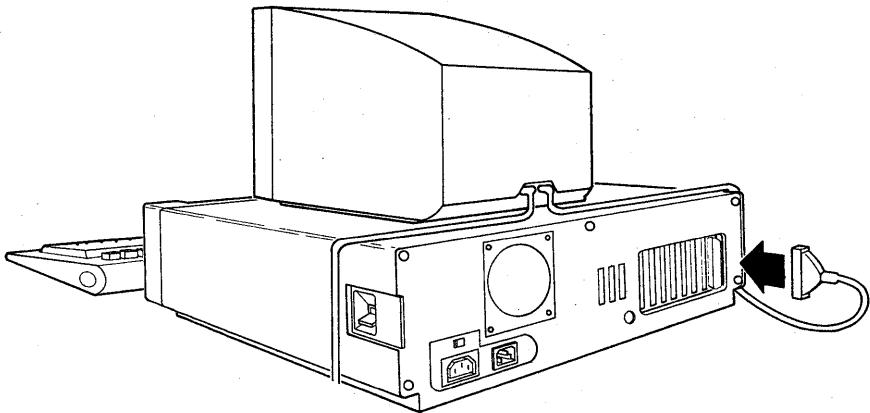
Figure 15: Connecting the Shielded Round Cable to the Tape Controller Card

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 16:
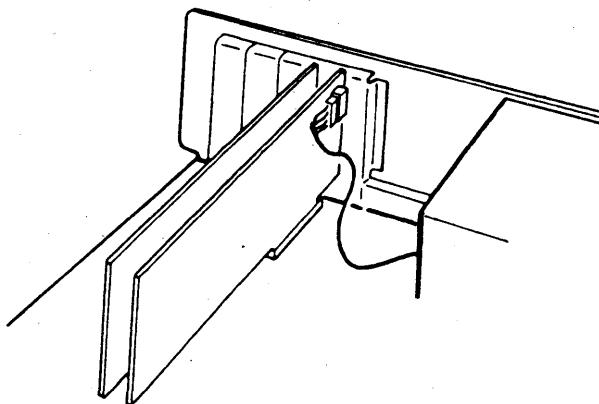
Figure 16: Applying Power to the Tape Controller

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 as the computer is.

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. Refer to the accompanying manual Excel Streaming Tape Users' Guide to perform diagnostics on the tape subsystem. We recommend that you not replace the cover on the system until the tape subsystem has passed diagnostics.

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 the _Excel Streaming Tape Operation Manual_ to begin backing up your hard disk drive.

Chapter 4: Micro Channel Tape Installation

If you have not already done so, install the tape software on your hard disk drive according to Section 1.5, above.

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 to be used by the IBM setup program, the ADF file must be present on the same diskette as the IBM setup program. However, the original IBM Reference Diskette is permanently write-protected. Therefore, a backup copy of the IBM Reference Diskette must be made, and the ADF file for each card in the system (including the new tape controller card) must be copied onto this backup diskette. Throughout this manual we will call the backup reference diskette RD2.

This Chapter is divided into two Sections: Section 4.1 tells you how to prepare your backup reference diskette, install the tape hardware, and configure the system using the IBM setup program. Section 4.2 tells you how to configure the tape software to match your particular computer system. Read and follow both sets of instructions in order, then test the subsystem according to Chapter 5, below.

4.1: INSTALLING THE TAPE SUBSYSTEM

Follow these steps to install your Excel Streaming Tape subsystem in an IBM Personal System/2 Model 50 or 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, below.

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 diskette(s) from the floppy drive(s) 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 17:
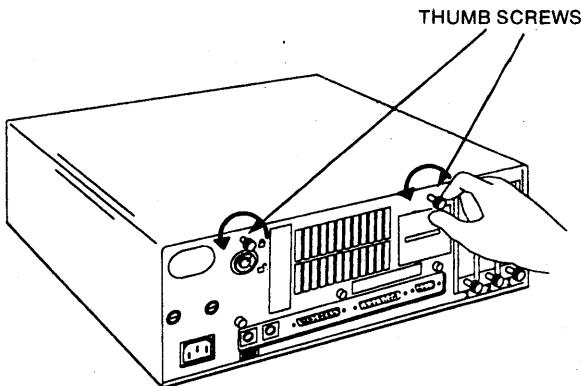
Figure 17: Model 50 Cover Mounting Thumb Screws

Turn the screws counter-clockwise 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 18:
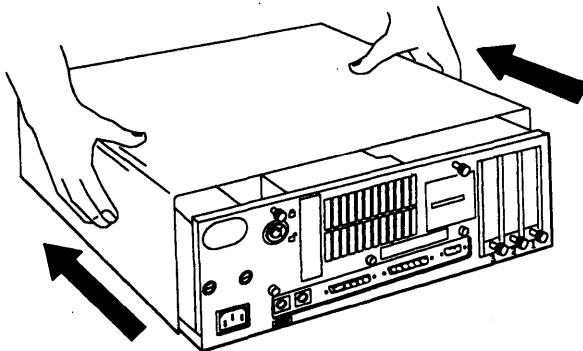
Figure 18: Removing the Cover of the Model 50

7. Locate a vacant expansion slot. Loosen the thumb screw securing its slot cover, and remove the slot cover as shown in Figure 19:
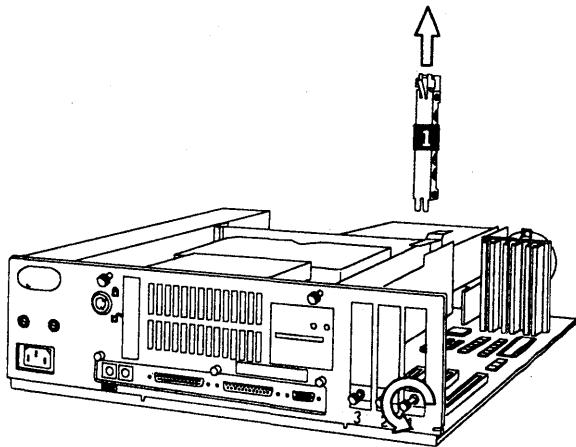
Figure 19: Removing a Slot Cover from the Model 50

8. Install the tape controller card into your expansion slot as shown in Figure 20.
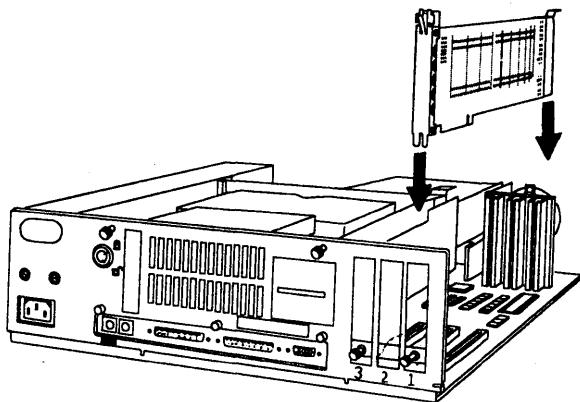
Figure 20: Installing the Tape Controller Card in the Model 50

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 below.

STEPS 12-18 FOR PS/2 MODEL 60 ONLY

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 diskette(s) from the floppy drive(s) if necessary.

13. If the chassis is locked, unlock it.

14. Loosen the two cover mounting screws with a coin, as shown in Figure 21:
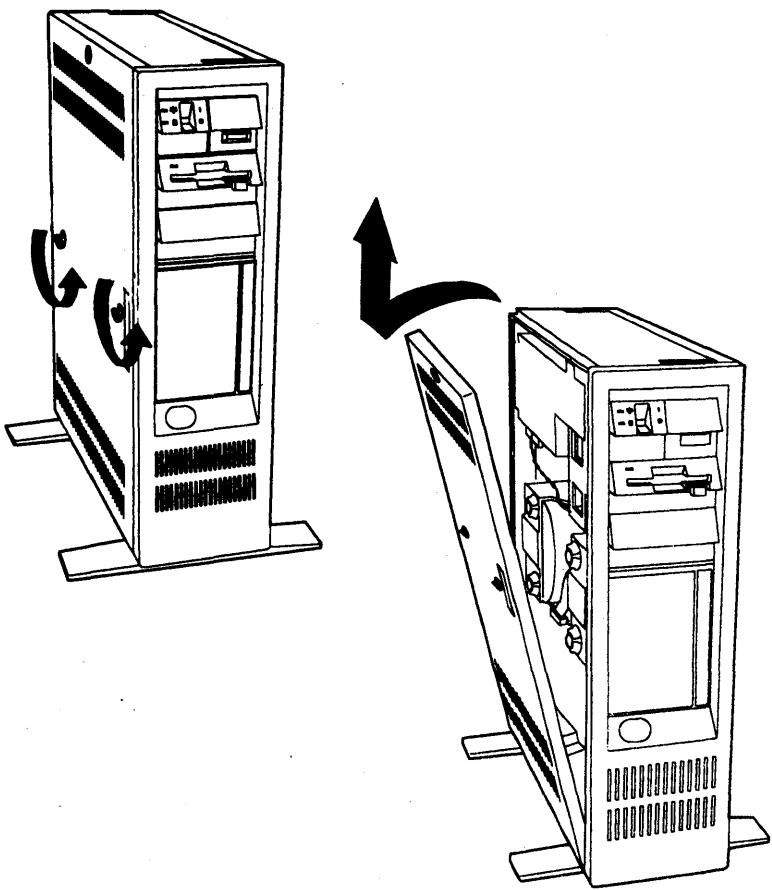
Figure 21: Loosening the Model 60 Cover Mounting
Screws

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 22:
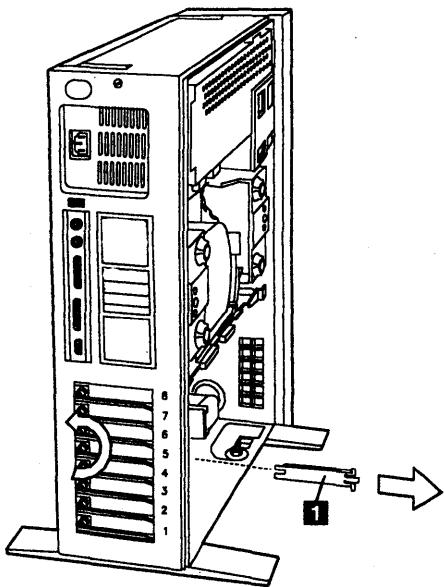

Figure 22: Removing a Slot Cover from the Model 60

16. Install the tape controller card into your expansion slot as shown in Figure 23.
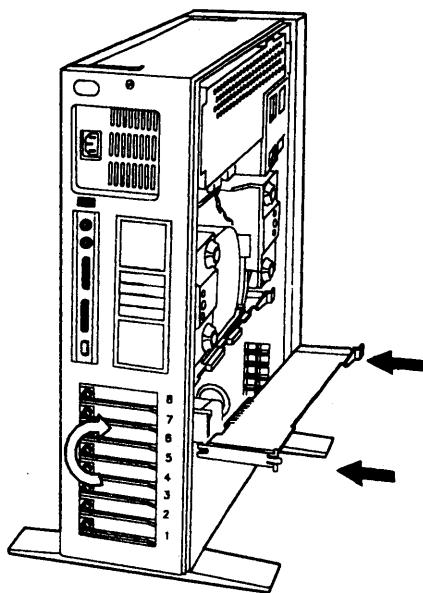
Figure 23: Installing the Tape Controller Card in the Model 60

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 24:
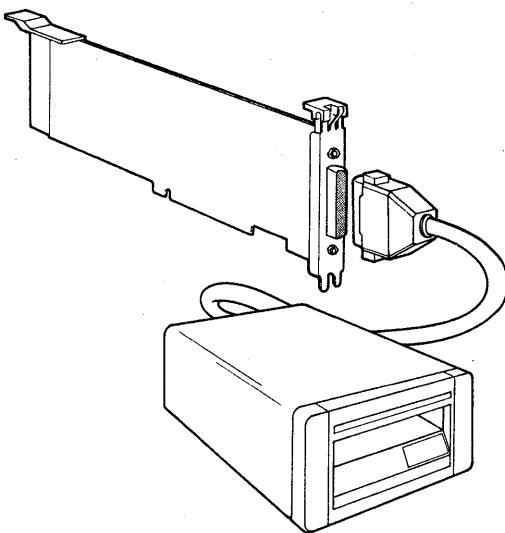
Figure 24: Cabling the Tape Drive and Controller Card

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 in to a grounded wall outlet.

21. Re-connect power to the computer.

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

23. You will see a window describing Error 165. Press <PgDn> to go to the second page.

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

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

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

27. The Change Configuration screen will display the contents and configurations of each expansion slot in your system. Use the 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. You do not need to read the rest of this Chapter. Press <F10> to save the configuration in the computer, then re-boot the system from DOS and perform diagnostics on the tape

subsystem according to Chapter 5, below. Congratulations, you are done.

29. If one or more of the tape controller's settings (DMA, IRQ, or port address) do 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 Section 4.2, below.

30. 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 Appendix B before continuing.

4.2: CONFIGURING THE TAPE SOFTWARE

1. Re-boot 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 (Section 4.1 Step 29, above), 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, and start to perform diagnostics on the tape subsystem according to Chapter 5, below.

Chapter 5: Diagnostics & Troubleshooting

Before you back up data on your tape subsystem, we strongly recommend that you run the Complete Drive Test, as follows:

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

2. At the DOS prompt, type:

    tape <Enter>

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

4. Many of the tape diagnostics routines are "destructive" - that is, they erase and/or write to the tape, and therefore require a blank tape or one whose data can safely be removed. To avoid the possibility of a user inadvertently testing on a tape that contains valuable data, the tape software includes a safety catch: a warning message appears on screen ahead of the diagnostics menu. Read the warning message, then press <Enter> to confirm that you do wish to proceed with diagnostics.

5. Insert your starter tape (which is provided with the subsystem) into the tape drive.

6. From the diagnostics menu, select Complete Drive Test. This test takes awhile to complete, so please stand by.

5.1: 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 Chapter 4 above.

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 the tape controller card can be easily reconfigured 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 temporarily to rename your AUTOEXEC.BAT and CONFIG.SYS files to have the extension .TMP.) Then repeat the Complete Tape Test. If the tape subsystem passes diagnostics without the other controllers and software present, then 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 diagnostics passes with all the cards in place, start replacing your memory-resident software and device drivers one by one until you identify the source of the conflict. and proceed to reconfigure the tape controller card to resolve the conflict.

To reconfigure your tape controller card, follow these steps:

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

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

3. At the DOS prompt, type:

   tape <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), you type in the value you want, and the program graphically shows 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. When you have finished reconfiguring your tape controller card, verify that the settings depicted by the software match the actual settings on your card. Only then should you save these changes.

   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.

9. After saving your changes, turn OFF the computer and re-install your tape controller card. Re-connect 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 setting(s) these products are using. You can then configure the tape controller card to avoid using those same settings.

5.2. TROUBLESHOOTING

NOTE: Your data is Everex's first priority. If you have an operational question about the tape subsystem, or if you suspect some malfunction, we urge you NOT to continue using the tape subsystem until the matter is resolved. In most cases, the information contained in this manual and the on-line help screens is sufficient to answer any questions you may have. If not, however, we strongly encourage you to seek help from your Everex dealer, or from our Technical Support staff, rather than take any risks with the safety of your data.

Diagnostics Error Messages

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 address recorded in TAPE.CFG. Run Setup Hardware Configuration to choose a new port address, and make sure that the hardware and software setting match.

unselected drive

> Check that your power cord and control cable are connected correctly and securely.

power on/reset occurred

> This message normally appears at the beginning of the
> test. If it recurs later on, and accompanies a hard error,
> there may be a problem with the power supply to the
> tape drive (e.g. not enough power in the system, or a
> 220V tape drive plugged into a 100V outlet).

Bad ID in configuration

> If the tape controller that you are using is very old, and
> you have recently upgraded to new tape software, you
> may need to upgrade your hardware as well. Please
> contact your Everex dealer for assistance.

marginal block detected
no data detected
unrecoverable data error
bad block not located
ERROR: tape is not erased
ERROR: MISCOMPARE
** EXCEPTION (read/write)

> **NOTE: If any of the above messages appear in
> conjunction with a hard error, stop using the tape
> subsystem for backup until you resolve the problem.**

Repeat the test using a different tape. If it passes, discard the first tape. If it still fails, reconfigure your tape controller for each unused IRQ in turn, then for each unused DMA channel in turn. If the problem still persists, contact your Everex dealer to get professional service.

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 will skip over it and write your data in another block, and will report 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 (for example, hundreds of them on a 60MB tape) you should perform a Complete Drive Test, using a different tape, to isolate the problem. If 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 Fails at Dual DMA Write

Try assigning each unused DMA to the tape controller.

Some computers contain a DMA controller chip that is not capable of supporting dual DMA functions. To test for this problem, reconfigure the tape software for single DMA mode and repeat diagnostics. If the subsystem passes is 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.

Dipswitches Reversed

Any of several different dipswitch mechanisms may be on your tape controller 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 25 shows you how to set slide and rocker switches:
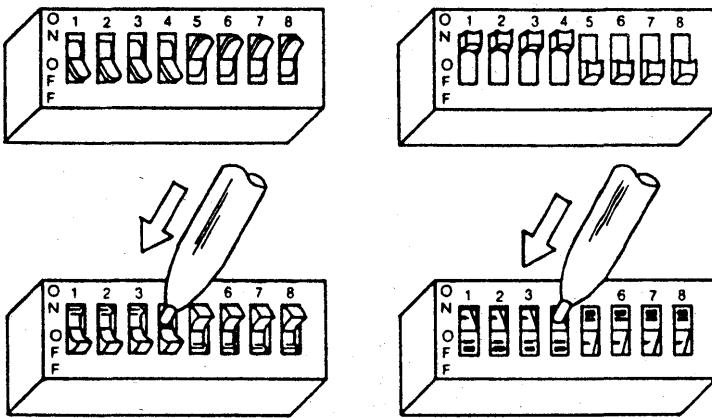
Figure 25: Setting Slide and Rocker Switches

DO NOT reverse all the switch settings on the card when you first get it.

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.

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 back 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.

Error Message "Bad Boot Record"

The tape software can do an image backup only of those drives that have 512 bytes per sector. If you attempt an image backup of a disk with a different sector size, you will get this error message. We recommend file-by-file backup in this case.

5.3: HOW TO GET ASSISTANCE

If you experience any kind of error installing or using your Excel Streaming Tape backup subsystem, we recommend the following steps:

1. Repeat the procedure that gave you the error, and see if it happens again. In the case of a software operation, press <Fl> to read the help screen(s) for suggestions. Also check 5.2, above, for a solution.

2. In almost every case, this manual is your quickest and least expensive source of help. We strongly encourage you to read the manual before pursuing any other avenues of assistance.

3. If you are unable to resolve the problem yourself, contact the Everex dealer from whom you purchased the subsystem.

4. In the unlikely event that you cannot get a satisfactory resolution through your Everex dealer, you may call us directly. Our Technical Support business hours are 8AM to 5PM (Pacific time) Monday through Friday.

   Please help us to help you. Before you call, go through this checklist and gather the information that we will need from you. This will result in much faster and more efficient service for you, and for our other customers too.

Technical Support Troubleshooting Checklist

- Is your tape drive internal or external?

- Does it use cassette or cartridge tapes?

- What version tape software are you using? (Check your diskettes or the top line of the Main Menu for this.)

- What brand name and model computer do you have?

- What brand and capacity are your hard disk drive(s)?

- What other peripheral products are installed in your computer? (For example, do you have a modem, multifunction card, network adapter card, terminal emulation card, etc.?)

- What memory-resident software and device drivers are you running? (If you are not sure about this, change to the root directory of your system disk. At the DOS prompt type:

  type autoexec.bat <Enter>

  Copy down the line(s) that appear, then type:

  type config.sys

  and copy down the contents of that file as well.)

- At what point do you experience the problem? (For example, right at the beginning of the Complete Tape Test.)

- Make note of any other facts or circumstances that seem strange or relevant to you.

- If it does become necessary to return the unit to Everex for service, we will need the following additional information:

    - Serial number of your tape controller card (printed on a small white sticker, usually on the back side of the card)

    - Serial number of your tape drive (marked on the side of internal drives or bottom of external drives)

    - Date and place of purchase

- Finally, when you call, please try to be near your computer, so you can follow the technician's suggestions while on the phone.

The number to call for Technical Support assistance is:

(415) 498-1115

Appendix A: 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 26.

FLOPPY DRIVE CONNECTOR
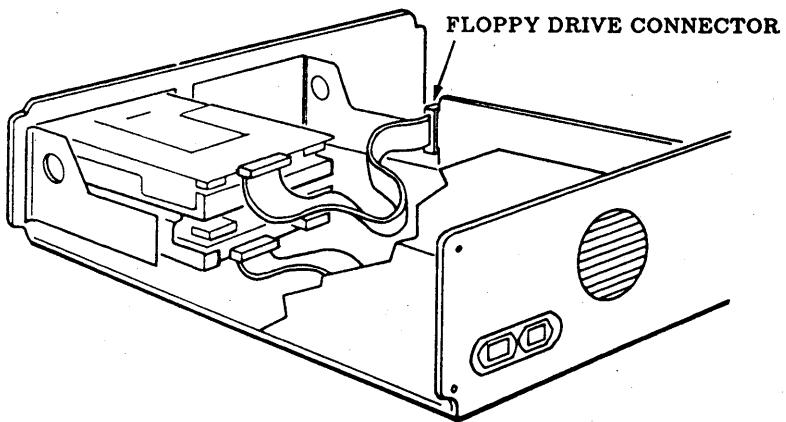
Figure 26: Connecting the Floppy Controller Cable to the
Combination Tape/Floppy Controller Card

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.

Appendix B: Special PS/2 Configurations

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

Section 1 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.

Section 2 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.

B.1: CUSTOMIZING YOUR OWN .ADF FILE

If your particular Personal System/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 Chapter 4 above.

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 PgDn 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.)

B.2: 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 (Chapter 2 of the accompanying manual Excel Streaming Tape Operation tells you how to do this). Single DMA mode will cost you some tape performance.

OR

■   Avoid using the sharing 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 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.

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