

ALTOS

486

SETTING UP

Altos 486 Setting Up Guide

**FEDERAL COMMUNICATIONS
COMMISSION NOTICE**

W A R N I N G

This equipment can radiate radio frequency and energy and, if not installed and used in accordance with the instructions manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user, at his own expense, will be required to take whatever measures may be required to correct the interference.

ACKNOWLEDGEMENTS

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XENIX is a trademark of Microsoft.

Concurrent CP/M is a trademark of Digital Research.

CAUTION

If you have to send your system for repair, part of the test procedure erases the data on the hard disk. Therefore, copy all the contents of the hard disk, as Altos does not guarantee data integrity upon return of your unit.

SAFETY WARNING

Disconnect the AC power cord before installing any option boards and before replacing the fuse.

Do not attempt to service any parts of the 486 system.

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Introduction

This guide introduces you to the Altos 486 computer system. It shows you how to connect the various parts of your system and start it up. Should you experience any difficulty with the installation, a checklist helps you locate the source of the problem and suggests possible remedies. After you have finished setting up your system, this guide directs you where to go next. A complete 486 system is shown below.

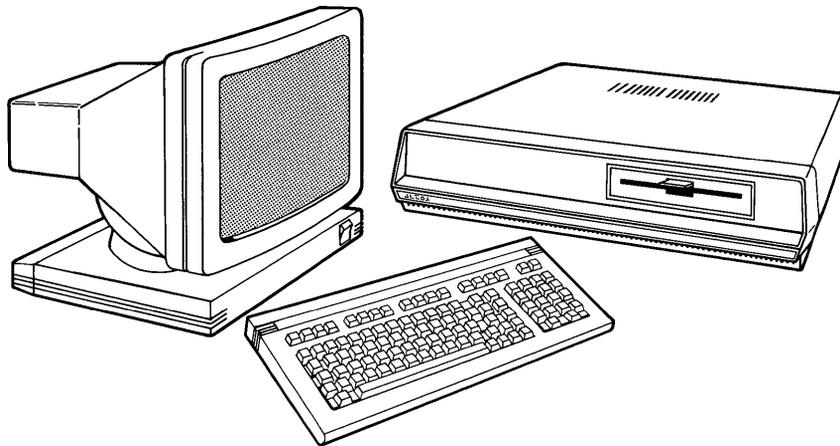


Figure 1. Altos 486 System

Choosing A Location 1

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1-2 CHOOSING A LOCATION

After unpacking your 486 and terminal, decide where you want to use your system. When choosing a location, consider these suggestions:

1. Choose a stable surface to hold your system and terminal. Make sure that the surface is large enough to provide 12" of distance between the system and the terminal.
2. Place your system and terminal near a 3 way power outlet.
3. Orient your terminal away from direct sunlight or strong room lights.
4. Provide enough space to route the cables and power cords.
5. Be sure the cooling vents for the terminal and system are not blocked.

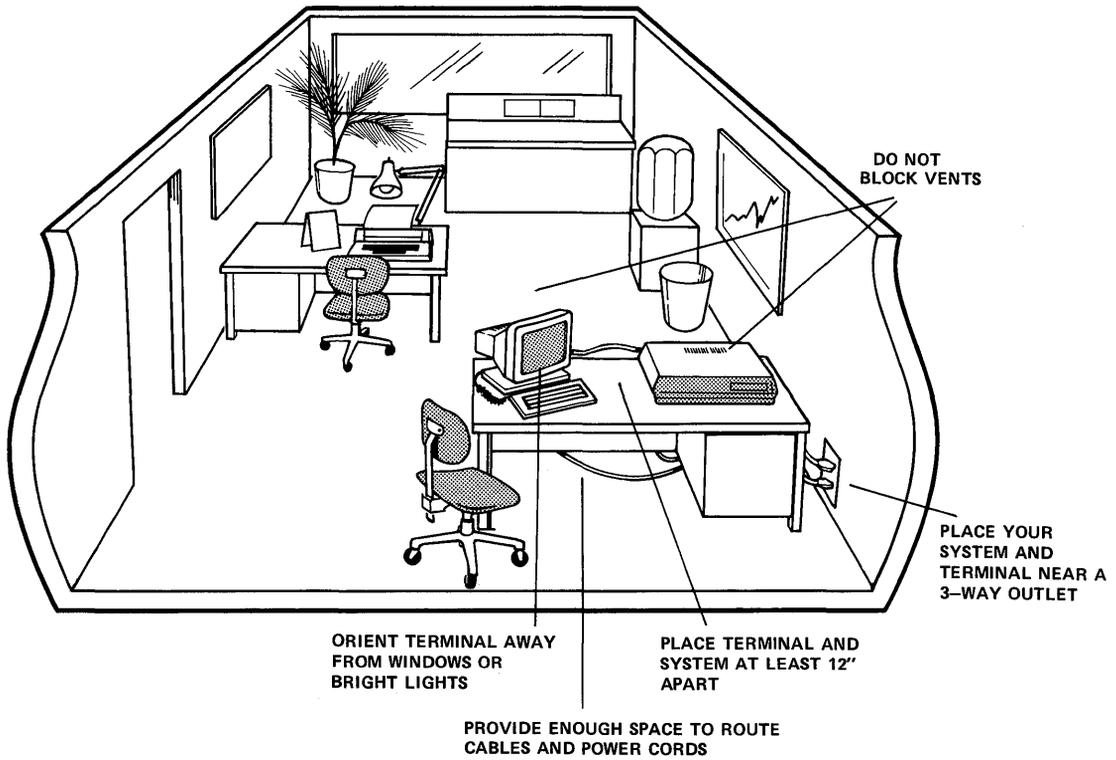


Figure 2. Choosing a Location

Setting Up Your System 2

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- 2-2 CONNECTING THE TERMINAL POWER CORD
- 2-3 CONNECTING THE TERMINAL TO THE SYSTEM
- 2-4 CONNECTING THE SYSTEM POWER CORD

Read this chapter to find out how to connect the various parts of your system.

1. Make sure that you can easily reach the backpanels on both the System and the Terminal.

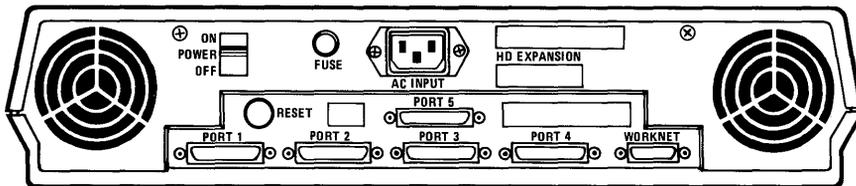


Figure 3. 486 Backpanel

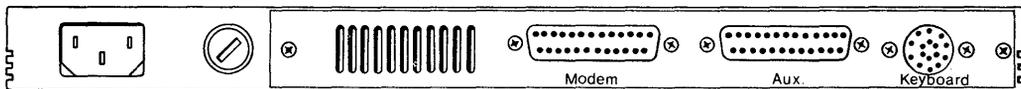


Figure 4. Altos III Terminal Backpanel

**CONNECTING THE
KEYBOARD TO
THE MONITOR**

To connect the keyboard to the monitor:

Plug the Keyboard Cord into the connector labeled **Keyboard**.

**CONNECTING THE
TERMINAL POWER
CORD**

Plug the Power Cord into the **AC POWER CONNECTOR** at the rear of the Terminal.

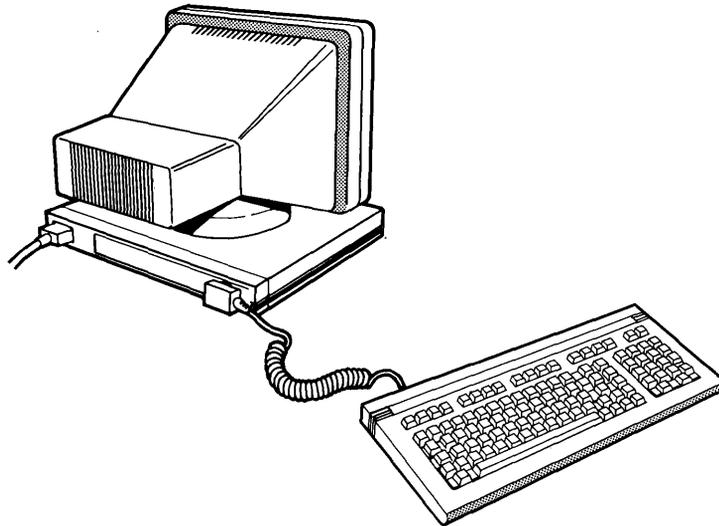


Figure 5. Connecting the Keyboard to the Monitor

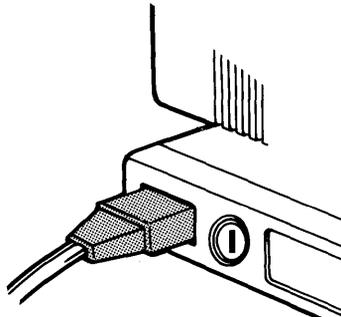


Figure 6. Connecting the Terminal Power Cord

NOTE

Do not plug the power cord into the wall outlet.

**CONNECTING THE
TERMINAL TO
SYSTEM**

1. Plug one end of the interconnect cable into the connector labeled **Modem** at the rear of the monitor.
2. Tighten the screws to lock the cable in place.

3. Plug the other end of the cable into the port labeled **PORT 1** on the rear of the system.
4. Tighten the screws to lock the cable in place.

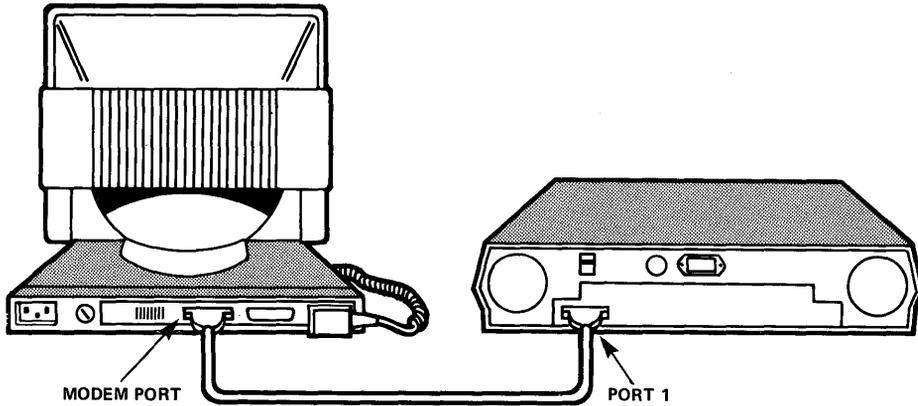


Figure 7. Connecting the Terminal to the System

**CONNECTING THE
SYSTEM POWER
CORD**

Plug the power cord into the **AC INPUT** receptacle at the rear of your system.

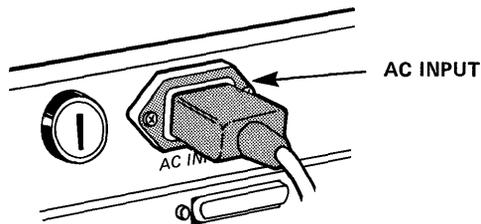


Figure 8. Connecting the System Power Cord

Do not plug the power cord into the wall outlet.

The drawing below shows how the cables are connected when you are finished.

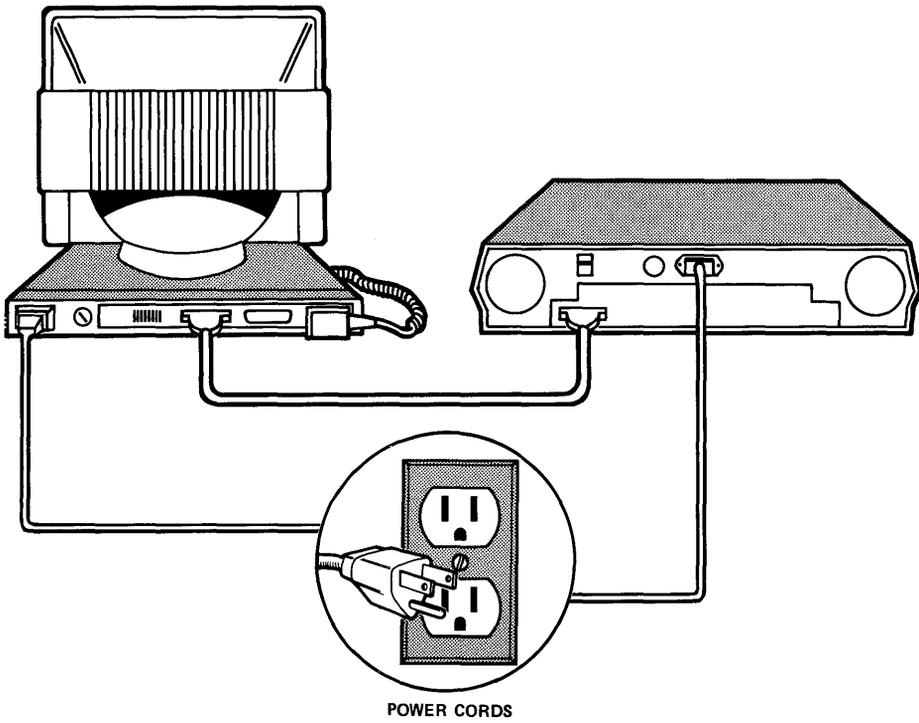


Figure 9. Rear View of 486 System with the Cables Connected

Starting Your System 3

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- 3-2 BEFORE YOU BEGIN
- 3-2 TURNING THE TERMINAL ON
- 3-3 TURNING THE SYSTEM ON

- BEFORE YOU BEGIN**
1. Make sure that the power switches for both the system and the terminal are in the **OFF** position.

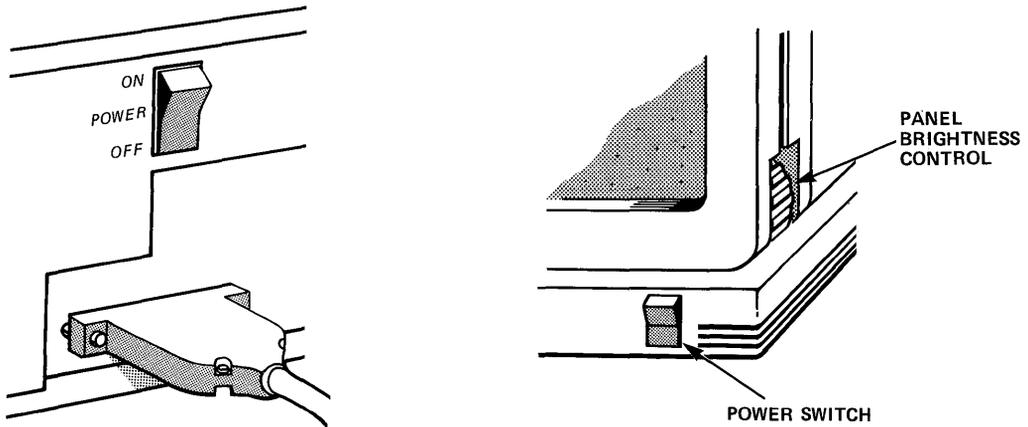


Figure 10. Power Switches For System and Terminal

2. Plug the power cords for the system and the terminal into the wall outlets.

**TURNING THE
TERMINAL ON**

1. Turn the terminal on by pushing the top half of the **ON/OFF** switch. Listen for a short beep.
2. Watch for the cursor (small rectangular block) to appear in the upper left-hand corner of the screen. After about 30 seconds, if the cursor does not appear, turn the thumbwheel (located on the lower right corner of the screen) downward.

**TURNING THE
SYSTEM ON**

To turn the system on, set the Power Switch on the system to **ON**. The following message appears on the screen in approximately 15 seconds:

```

486 MONITOR VERSION V1.0

> Power-up test ... passed

> System configuration:
Memory size (KB) = 768kb
Hard disk(s)=2
Floppy Drive(s): 1

PRESS ANY KEY TO INTERRUPT AUTO-BOOT
>Booting from hard disk failed

>Select: [1] to boot from hard disk
         [2] to boot from floppy disk
         [3] to boot from WorkNet
         [4] to boot from Debugger

Enter option:

```

The system **automatically** verifies that the system is working properly.

If the system **does not** pass the power-up test the following message appears on the screen:

```

486 MONITOR VERSION V1.0

> Power-up test ... failed
  <
  >

> System configuration:
Memory size (KB) = 768kb
Hard disk(s)=2
Floppy Drive(s): 1

> Select: [1] to boot from hard disk
         [2] to boot from floppy disk
         [3] to boot from WorkNet
         [4] to boot from Debugger

>Enter option:

```

Try running the power up test again by pressing the **RESET BUTTON** (see Figure 4). If the system still fails one of the tests then proceed to the problem checklist on the next page.

Problem Checklist 4

CONTENTS

4-2 PROBLEM CHECKLIST

1. If the fan on the system is not running, check the following:

- Is the Power Cord plugged into the rear of the system and into the wall outlet?
- Check the wall outlet by plugging in a lamp.
- Check the fuse by doing the following:
 - Set the Power Switch to OFF.
 - Unplug the power cord from the wall outlet.

Remove the fuse holder by inserting a screwdriver into the fuse holder slot and turning it counter-clockwise.

Inspect the fuse. It is defective if the wire between the two metal caps is broken or no longer visible. Replace the fuse if necessary. Otherwise, reinsert the fuse holder into the rear panel and using the screwdriver, turn it clockwise.

2. If nothing appears on the screen, check the following:

- Is the keyboard plugged into the Monitor?
- Is the cable between the terminal and the system secure at both ends?
- Is the brightness control on the lower right corner of the screen rotated all the way down?

If none of these suggestions has helped, contact your Altos dealer.

CAUTION

If you have to send your system for repair, part of the test procedure erases the data on the hard disk. Therefore, copy all the contents of the hard disk, as Altos does not guarantee data integrity upon return of your unit.

Where Do You Go Next? 5

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5-2	ALTOS FAMILY OF RELATED MANUALS
5-2	DIAGNOSTIC MANUAL
5-2	SYSTEM REFERENCE MANUAL
5-2	MAINTENANCE MANUAL
5-2	TERMINAL MAINTENANCE MANUAL

OPERATING SYSTEMS If you successfully started your 486 system, your next step is to load the operating system, either XENIX or Concurrent CP/M. Refer to the **Introduction to XENIX** manual or the **Introduction to Concurrent CP/M** manual. These manuals introduce you to the basic principles of each operating system. They also contain installation instructions and information on how to use the Altos implementation of both systems.

ALTOS FAMILY OF RELATED MANUALS There are additional manuals which will assist you in using your Altos 486 system.

486 DIAGNOSTIC MANUAL The **486 Diagnostic Manual** comes with your 486 system. By using this manual with the diagnostic diskette, you can run a series of tests to pinpoint problems, should your system malfunction. The diagnostic program also contains several utilities such as formatting and copying a floppy diskette.

486 SYSTEM REFERENCE MANUAL The **486 System Reference Manual** also comes with your system. It covers the programmable parts of the system that are of interest to the systems programmer and systems engineer. The manual also provides a general theory of operation, as well as physical, environmental and, electrical specifications of the 486 system.

**486 MAINTENANCE
MANUAL**

The 486 Maintenance Manual (Part Number 690-15683-001) must be purchased separately from Altos. It is intended for technicians performing field repairs. The manual contains a detailed theory of operation, as well as troubleshooting, disassembly, reassembly and repair procedures.

**ALTOS III
TERMINAL
MAINTENANCE
MANUAL**

The Altos III Terminal Maintenance Manual (Part Number 690-1574-001) must be purchased separately from Altos. It is intended for the technician and provides a detailed theory of operation, maintenance instructions, reassembly/disassembly and troubleshooting procedures.

Handling Diskettes 6

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- 6-2 HANDLING DISKETTES
- 6-2 PROTECTING YOUR DATA
- 6-3 INSERTING A DISKETTE

**HANDLING
DISKETTES**

- o Use a felt pen to label your diskette. Do Not use a ball point pen.
- o Keep your diskettes away from any magnetized objects. This includes putting a diskette on top of your system or too close to the telephone.
- o Do Not bend your diskette.
- o Keep your diskette away from direct sunlight or excessive heat.
- o Do Not touch or clean the exposed surfaces on the diskette.
- o When not in use, store your diskettes in their protective jacket.

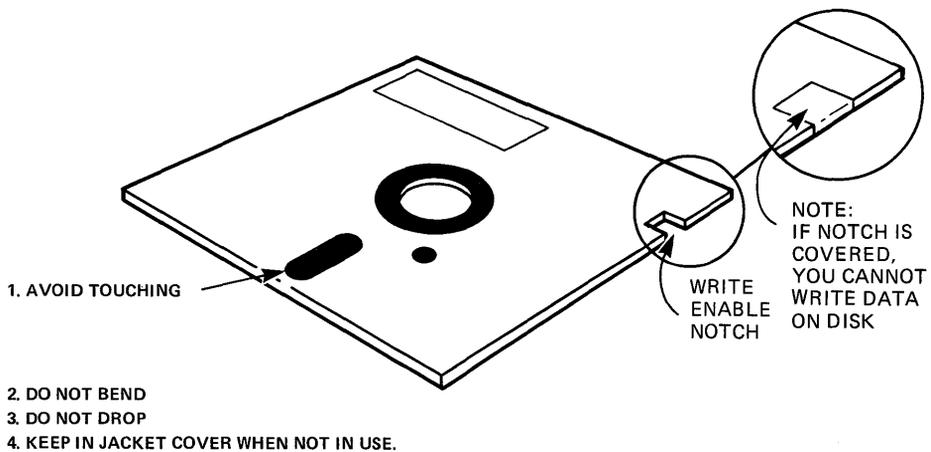


Figure 11. Diskette Handling

PROTECTING YOUR DATA

The 5 1/4 inch diskettes that you will use with your system have a notch cut into the side. You also receive silver pieces of tape for covering this notch.

When the notch is **covered** you cannot write or erase data on the diskette. This is known as **write-protected**.

When the notch is **not covered** you can write or erase data on the diskette. This is known as **write-enabled**.

INSERTING A DISKETTE

To insert a diskette:

Open the drive door by pressing the rectangular area **below** the slot.

With the manufacturer's label facing up and the notch to your left, gently insert the diskette into the drive until you hear a click. Close the door.

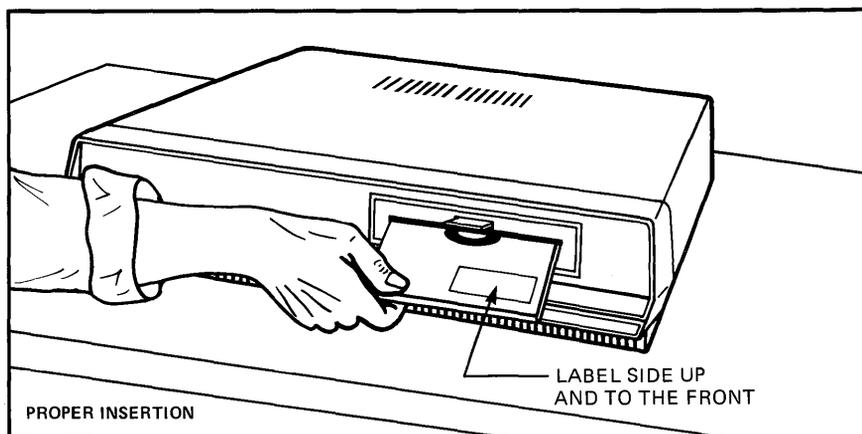


Figure 12. Inserting a Diskette

SAVING ORIGINAL DISKETTES

Always make copies of the original diskettes for the diagnostics program, operating system, and applications programs. See **The 486 Diagnostic Manual** for how to make back-up copies.

Connecting A Printer And 7 Additional Terminals

CONTENTS

- 7-2 CONNECTING A PRINTER
- 7-3 CONNECTING ADDITIONAL TERMINALS

This chapter describes how to connect a printer and additional terminals to your 486 system.

**CONNECTING
A PRINTER**

Connect your **serial** printer to **PORT 5** on the Altos 486 with a **RS232C** cable. This is an industry standard cable and is readily available.

NOTE

Epson RX-80, MX-80 and Texas Instruments TI-810

A special cable is required between the Altos 486 and these three printers. Figures 13, 14, and 15 illustrate the necessary wire connections.

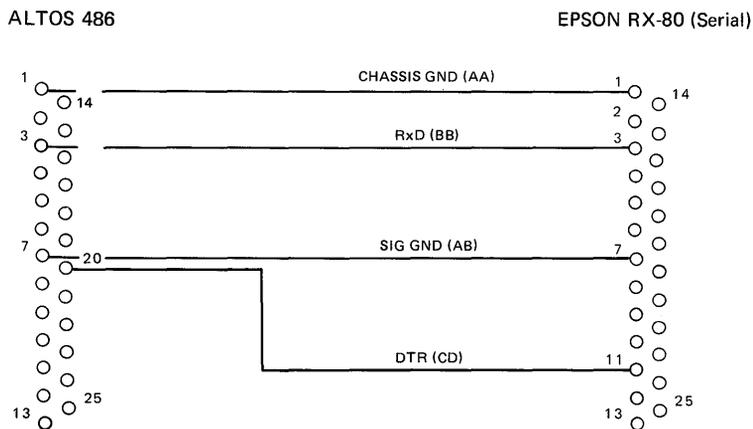


Figure 13. Wiring Diagram - 486 to Epson RX-80 (Serial)

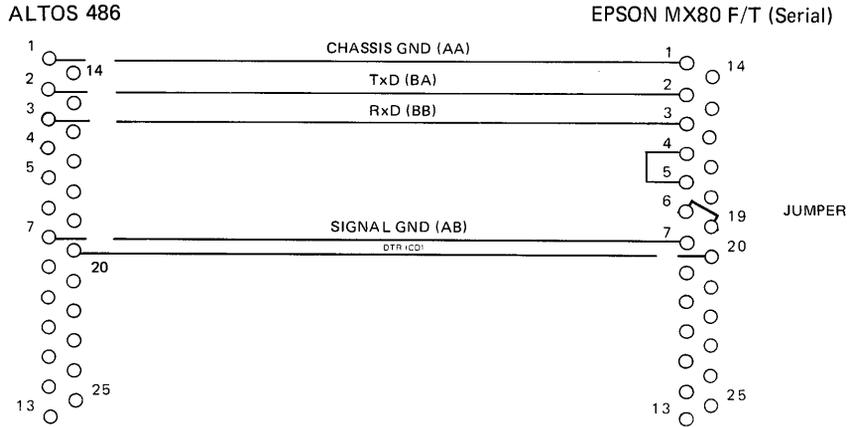


Figure 14. Wiring Diagram - 486 to Epson MX-80 (F/T Serial)

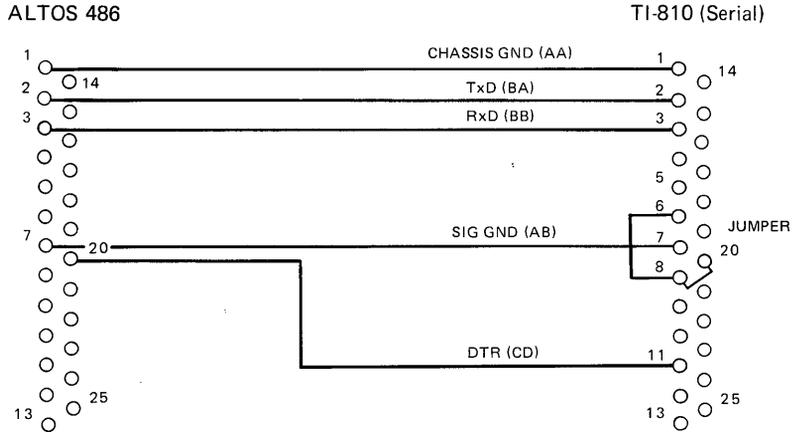


Figure 15. Wiring Diagram - 486 to TI-810 (Serial)

**CONNECTING
ADDITIONAL
TERMINALS**

You can connect three additional terminals to PORT 2, PORT 3, and PORT 4 using RS232C cables.

Appendix A

Altos 486 Specifications

CONTENTS

A-2 Altos 486 Specifications

This appendix provides a general description of the 486. For more detailed specifications see the **486 System Reference Manual**.

SIZE

17" (W) x 15" (D) x 3.5" (H)

WEIGHT

20 lbs.

REAR PANEL CONNECTORS AND CONTROLS (See Figure 5)

AC ON/OFF Switch
AC Power Receptacle
Fuse Holder
Reset Button
Serial Ports (Numbered Connectors 1-5)
WORKNET Port

POWER SUPPLY IDENTIFICATION

115-volt AC
230-volt AC

MAXIMUM INPUT POWER

U.S.: 95 VAC to 130 VAC single phase
EUROPE: 190 VAC to 260 VAC single phase

FUSE TYPE

3 A at 115 V, size 3 AG
2 A at 250 V, size 3 AG

POWER DISSIPATION

180 Watts

AMBIENT TEMPERATURE RANGE

50 to 90° Fahrenheit
15 to 32° Centigrade

RELATIVE HUMIDITY RANGE

20% to 80% Non-condensing

CPU

16-Bit
80186 Intel Microprocessor

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Warranty Information

Altos Computer Systems warrants each of its products to be free from defects in materials and workmanship for a period of 90 days from the date of purchase by the end user. During the warranty period, Altos, at its option, will repair or replace components in the products that prove to be defective at no charge other than shipping and handling, provided the product is returned to:

Altos Computer Systems
2641 Orchard Parkway
San Jose, California 95134

This warranty will not be effective if, in the opinion of Altos Computer Systems, the Altos product has been damaged by accident, misuse, misapplications, or as a result of service or modifications by other than an authorized Altos service center.

THIS WARRANTY IS EXPRESSLY EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES OR GUARANTEES EITHER EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OR GUARANTEES EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL ALTOS BE LIABLE FOR LOST PROFITS, LOSS OF GOOD WILL, OR ANY OTHER SPECIAL OR CONSEQUENTIAL DAMAGES.

Return of the End-User Registration Card is required for this warranty to be valid. Warranty claims are void unless the End-User Registration Card and Dealer Registration Card are on file at Altos Computer Systems.

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