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Eagle TX Series AMOS Based Terminal Server Technical/Installation Manual

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Eagle TX Series AMOS Based Terminal Server Technical Manual
To re-order this document, request part number DSO-00218-00.

This document applies to Eagle 100TX and 450 TX Terminal Servers.

FCC Notice

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

Canadian Department of Communications Compliance Statement

This equipment does not exceed Class A limits per radio noise emissions for digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications. Operation in a residential area may cause unacceptable interference to radio and TV reception requiring the owner or operator to take whatever steps are necessary to correct the interference.

Avis de Conformité aux Normes du Ministère des Communications du Canada

Cet équipement ne dépasse pas les limites de Classe A d'émission de bruits radioélectriques pour les appareils numériques tels que prescrites par le Règlement sur le brouillage radioélectrique établi par le ministère des Communications du Canada. L'exploitation faite en milieu résidentiel peut entraîner le brouillage des réceptions radio et télé, ce qui obligerait le propriétaire ou l'opérateur à prendre les dispositions nécessaires pour en éliminer les causes.

Battery Warning

CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

ATTENTION: Il y a danger d'explosion s'il y a un remplacement incorrect de la batterie. Remplacer uniquement avec une batterie du même type ou d'un type recommandé par le constructeur. Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

For AM-3500-TX100 systems, replace battery with Panasonic or Ray-O-Vac BR2325 only. For AM-3500-TX450 systems, replace batteries with Panasonic or Ray-O-Vac BR1225 only. Use of other batteries may present a risk of fire or explosion. Replacement batteries may be ordered from your authorized Alpha Micro reseller.

Safety Warning

This computer contains no user-configurable components that require opening the computer case. Because the power supply in this computer is capable of outputting high current levels hazardous to your safety, the computer case should only be opened by an authorized service technician.

Cet ordinateur ne contient aucune pièce configurable par l'utilisateur qui nécessite l'ouverture du boîtier. L'alimentation de cet ordinateur peut produire des niveaux de tensions dangereux, le boîtier ne devrait donc être ouvert que par un technicien autorisé.

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Chapter 1 - Introducing the Eagle TX Series Terminal Server

The Alpha Microsystems Eagle TX Series is a high-performance network adapter for adding serial peripherals - primarily ASCII terminals, printers, and modems - and one parallel interface compatible peripheral. The Eagle 100TX is based upon the popular Eagle 100 multi-user business computer which contains circuitry for adding up to eight (8) serial peripherals. The Eagle 450TX also contains circuitry to support up to eight (8) serial peripherals, but can be expanded to support up to thirty-two (32) serial peripherals. Both products include a 4 MB Flash memory (Flashcard) instead of the standard SCSI interface subsystem included on the standard Eagle series of multi-user business computers. A customized version of the latest AMOS operating system software is preloaded into the Flashcard during the manufacturing process. Also preloaded into the Flashcard is a version of MULTI, Alpha Micro's window based environment manager. Detailed documentation for MULTI is available at the Alpha Micro web site (www.amos-online.com) or can be ordered through your Alpha Micro authorized dealer.

The Eagle TX Series terminal server is constructed in modular fashion, and is housed in the standard Eagle deskside enclosure, shown in Figure 1-1. It comes standard with 32 MB of main memory.

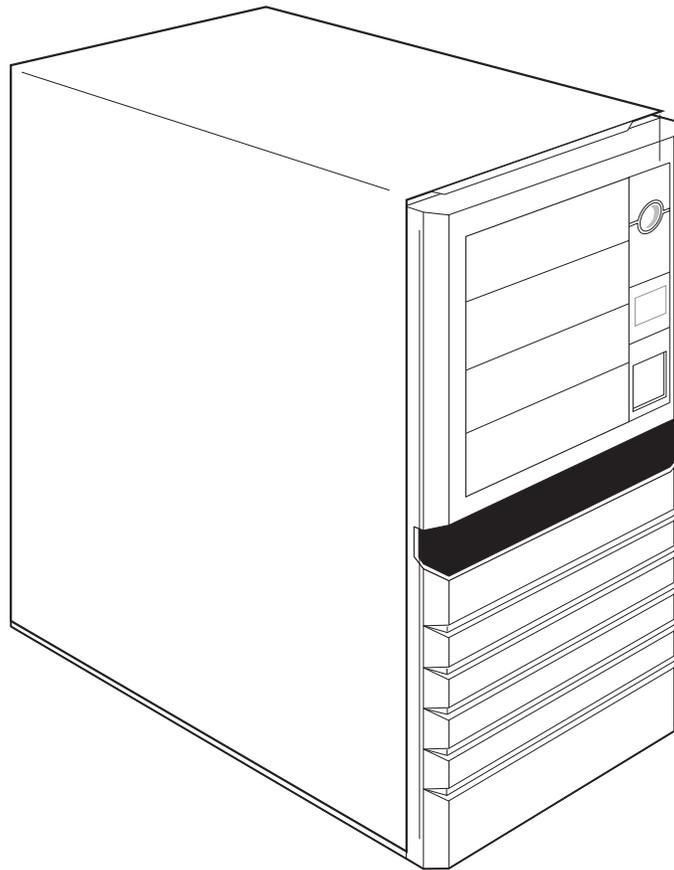


Figure 1-1: Eagle-TX Series Terminal Server

The prerequisite for using the Eagle TX Series terminal server is that you already have an AMOS based network installation using AlphaTCP 1.4A (or later) or AlphaNET 2.4. With the terminal server, you can install terminals wherever the network reaches. Distance limitations of RS-232 cabling are no longer a factor. A typical system configuration is shown in Figure 1-2.

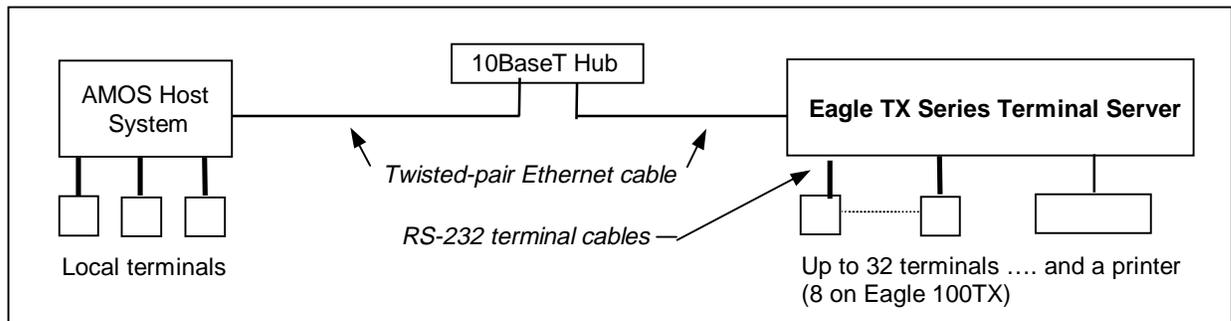


Figure 1-2: Eagle TX Series Terminal Server with Remote Terminals and Printer

The Eagle TX Series is more than just a terminal server, however. It is a powerful AMOS-based computer in its own right. That means you can run applications there, offloaded from the host CPU. In fact, MULTI, Alpha Micro's window based environment manager, is also included in the Eagle TX's Flashcard, allowing you to run MULTI remotely and free up the host CPU for other processing needs. Figure 1-3 shows an Eagle TX Series terminal server configured on a network with two AMOS host systems, utilizing the built-in MULTI software to switch between the two hosts with a single keystroke, and Figure 1-4 illustrates various system concepts regarding the Eagle TX interaction with an AMOS based host computer.

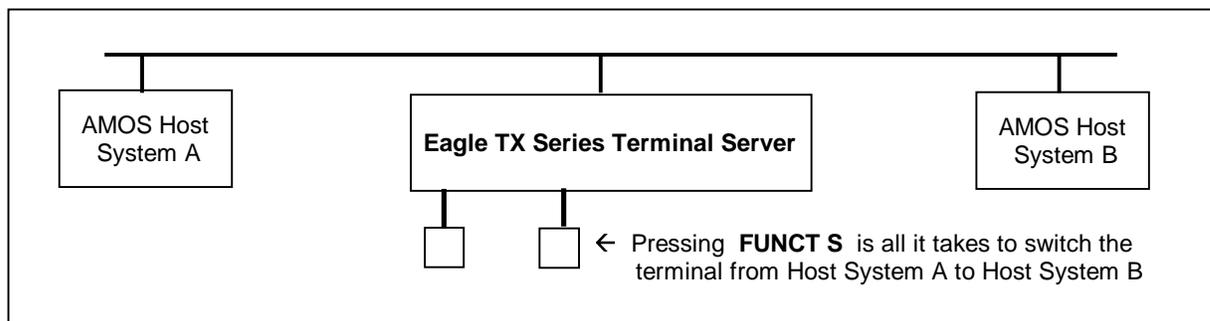


Figure 1-3: Eagle TX Series Configured to Hot-Key Switch Between AMOS Hosts

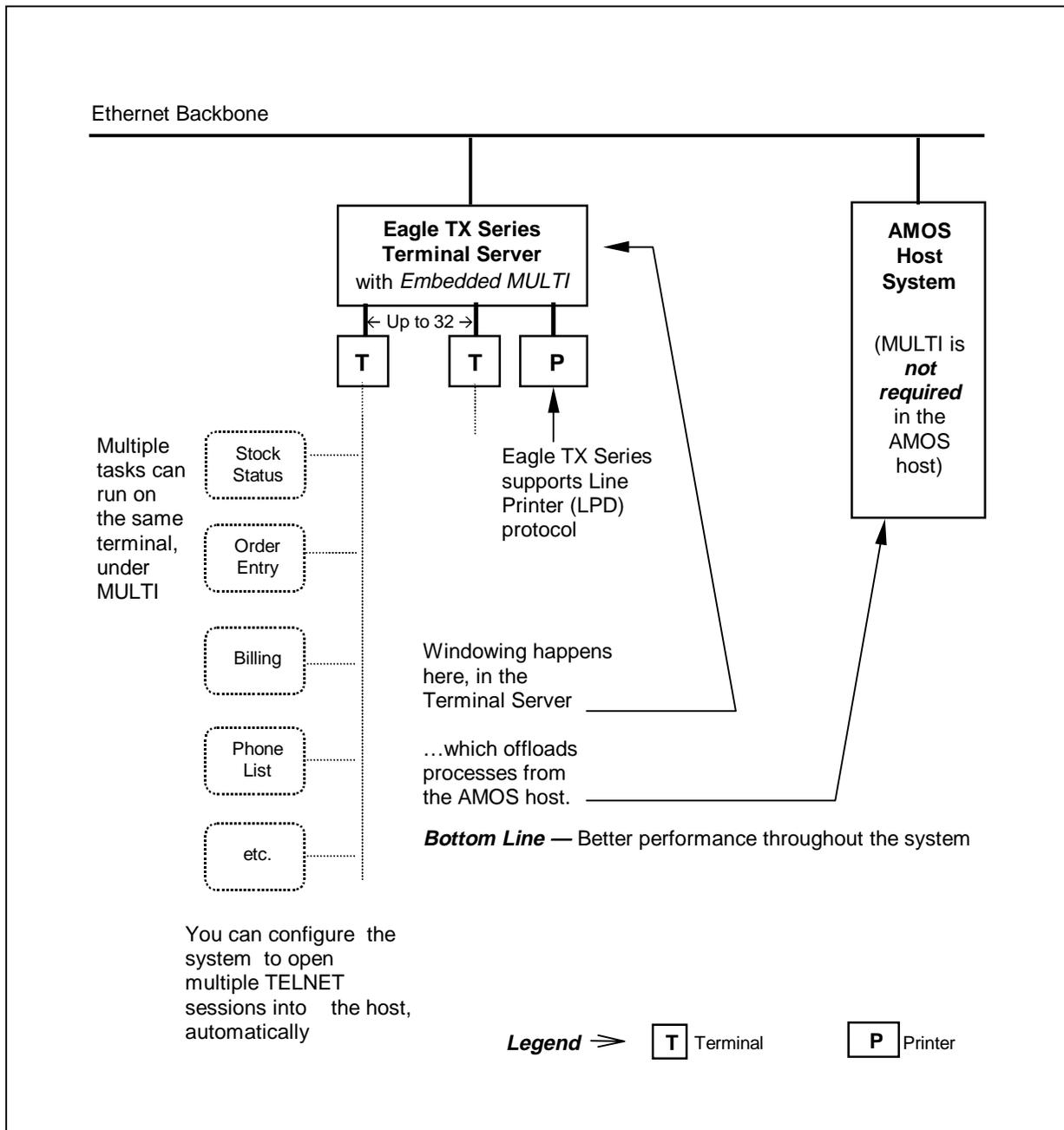


Figure 1-4: System Concepts: Eagle TX Series Terminal Server Interaction with the AMOS Host

ABOUT THIS BOOK

The purpose of this book is to get you started with your terminal server. After you've followed the instructions in this book, your terminal server will be set up and running, attached to your system network.

- This chapter contains a software and hardware overview of your system. It also discusses warranty and service information.

- Chapter 2 gives you an introduction to the specific structure of the Eagle TX Series, describing the configuration as it differs from the standard Eagle computer system.
- Chapter 3 tells you how to unpack and set up your terminal server. It also contains information on choosing an installation site, as well as customizing the configuration for your particular network configuration.
- Chapter 4 discusses various system administration issues regarding the initialization of your Eagle TX Series.
- Several appendices contain technical information, including instructions for cable installation.

The *Eagle Computer Service Manual* contains additional information on opening and configuring your terminal server. The service manual is intended for authorized technical personnel only.

Graphics Conventions

Like other documents in the Alpha Micro documentation library, this book contains a number of standard symbols to make our text easier to read and understand.

Symbol	Description
	This symbol means STOP! , and signals an important warning or restriction you must know about before continuing.
	This symbol marks a hint, and identifies a shortcut or an easier way to do something.
	This symbol says "Don't forget!" and signals information to remember.
Text	Text that looks like this in our examples shows the characters the computer displays on your terminal screen, such as prompts and information messages.
TEXT	Text that looks like this in our examples shows the characters you type on the computer keyboard.
	This symbol tells you when to press the indicated key on your terminal keyboard. For example: DIR  tells you to press the RETURN key at the end of the DIR command.
 	This combination of symbols tells you to hold down the first key and press the second key. For example, to type a   (Control-C), press the  key and, while holding it down, press the  key.

Table 1-1: Graphics Conventions

HARDWARE FEATURES

The Eagle TX Series terminal servers use a modified version of the same powerful CPU (Central Processing Unit) used in the fully configured system versions of these servers. The Eagle 100TX's main processor is a MC68030 CPU, and the Eagle 450TX's main processor is a Motorola MCF5102 *ColdFire* chip. The primary difference between the TX versions and the full system versions is that no disk or SCSI interface channel exists in the Eagle TX Series. All resident software is pre-loaded into the AM-703 4 MB Flashcard.

The following sections highlight some of the main components within the Eagle TX Series:

CPU Board

Eagle 100TX (AM-137 CPU Board)

The AM-137 board provides the Eagle 100TX with:

- Eight on-board serial I/O ports, with modem control and optional lightning protection
- SSD (Software Security Device) chip 70000, specifically selected for the Eagle 100TX configurations.
- MC68EC030 CPU chip running at 40 MHz
- 32-bit bi-directional data path and 32 bit address path
- 256-byte internal cache memory
- Real-time clock which maintains the date and time, battery backed up

Eagle 450TX (AM-138 CPU Board)

The AM-138 board provides the Eagle 450TX with:

- Eight on-board serial I/O ports, with modem control and lightning protection
- SSD (Software Security Device) chip 70002, specifically selected for the Eagle 450TX configurations.
- MCF5102 *ColdFire* microprocessor running at 33 MHz
- 32-bit bi-directional data path and 32 bit address path
- 2 K byte, 4-way set associative internal instruction cache memory
- Real-time clock which maintains the date and time, battery backed up
- 16-bit Ethernet controller with dual-port memory and both AUI and 10BaseT interfaces

AM-703 Flashcard

The AM-703 Flashcard provides 4 MB of flash memory which is pre-loaded with a special version of the AMOS operating system for use only on the terminal server product line.

AMOS for the Eagle 100TX supports simultaneous operation at the eight serial ports on the terminal server plus two channels for system management and maintenance. The operating system also supports the terminal server's parallel port, which does not require an additional user license.

AMOS for the Eagle 450TX supports simultaneous operation for up to thirty-two serial ports on the terminal server, plus two channels for system management and maintenance. The operating system also supports the terminal server's parallel port and UPS status port, neither of which requires an additional user license.

Memory

The AM-137 board in the Eagle 100TX has one socket that accommodates a main memory SIMM (Single Inline Memory Module). The AM-138 board in the Eagle 450TX has two sockets that can contain main memory SIMMs. A 32 MB SIMM is furnished as standard in both systems.

Serial I/O Capability

Eagle 100TX

The AM-137 board provides eight serial ports. The ports are brought to the rear I/O panel at either DB-9 or RJ-45 connectors, depending on which Eagle 100TX model is ordered. When ordered with RJ-45 ports, the Eagle 100TX comes equipped with AM-90 Lightning boards that provide lightning and power surge protection. Both RJ-45 and DB-9 ports provide standard RS-232 serial I/O communication.

Eagle 450TX

The AM-138 board provides eight serial ports. The ports are brought to the rear I/O panel at RJ-45 connectors, and include AM-90 Lightning boards that provide lightning and power surge protection. These ports provide standard RS-232 serial I/O communication.

The Eagle 450TX can be expanded up to thirty-two (32) serial ports, in eight (8) port increments. This is done via the purchase of AM-318-10 boards, which can be installed in the Eagle 450TX.

Network Capability

The basic Ethernet network capability for the Eagle 100TX is provided by an AM-366 board. This board provides a standard Ethernet connection through a standard 15-pin connector. An optional Ethernet interface through a 10BaseT connector is available utilizing the AM-368-10 board.

The Ethernet network capability for the Eagle 450TX is provided on the main CPU board, and includes both the standard 15-pin Ethernet connector and 10BaseT connector.

Real Time Clock

The system has a Real Time Clock chip which is part of the terminal server's main CPU board. The time and date information is battery backed-up.

Rear I/O Panel

The Eagle TX Series rear panel provides connectors for all serial ports. It also contains connectors for the 25 pin parallel port and Ethernet port, either via 15 pin Ethernet connector and / or 10BaseT connector.

Add-On Equipment

In addition to establishing the basic network connection between your network and the Eagle TX Series, the only thing you need to add is a terminal. You can add up to a maximum of thirty-two terminals, serial printers, or modems via the serial connectors on the rear panel. You may also want to add a parallel printer.

SOFTWARE FEATURES

A special version of the AMOS operating system has been included in your Eagle TX Series' Flashcard to provide the following capabilities:

- The operating system, AMOS, performs many functions, one of which is to manage the computer's resources so multiple users can run on the Eagle TX Series at the same time. The operating system also includes all support software for the hardware devices mentioned above.
- AlphaTCP allows your Eagle TX Series to communicate using the TCP/IP protocol.
- Programs called "print spoolers" let you use one or more printers at the same time without tying up a user terminal.
- A sophisticated command language allows you to invoke a stream of commands and program input (predefined by you) by entering a single command.
- A screen-oriented text editor provides an easy-to-use tool for creating documents.
- A simple system initialization procedure allows you to quickly change various system parameters, such as network IP address, types and number of peripheral devices connected to the Eagle TX Series, change user memory allocations, and customize the Eagle TX Series to your exact needs.
- Support for many different kinds of printers and terminals gives you the ability to define your own type of terminal or printer to the Eagle TX Series.

MULTI, Alpha Micro's window based environment manager, has also been included in your Eagle TX Series. This software allows you to run multiple tasks on one or more host computers, enabling you to quickly and easily switch between them.

SERVICE INFORMATION

Alpha Micro provides a comprehensive post-sales service and support program for its entire product line. Our VAR network is structured to give you immediate access to support assistance and information.

Our customer commitment is maintained through the expertise and skills of our competent, professional staff, whose dedication assures all Alpha Micro customers the maximum benefits of quality support.

Alpha Micro warrants its products through our VAR network. Alpha Micro will repair or replace a defective product under Alpha Micro's standard warranty program. If you want to arrange for factory warranty service for your equipment, you should obtain a Return Authorization Number from the Alpha Micro Technical Assistance Center. To arrange for on-site warranty service at your location, contact your Alpha Micro VAR or AMSO service organization.

In addition to the warranty service provided, support is available through Alpha Microsystems Services Operation (AMSO), our nationwide field service organization. AMSO provides direct repair services to Alpha Micro computer owners. Alpha Micro Field Engineers are factory trained to ensure continuity of product servicing. Should you select hardware service from your servicing Alpha Micro VAR, you can be assured that your VAR is backed by, and in close touch with, Alpha Micro for full factory support.

For Further Assistance

If you are unable to contact your VAR, Alpha Micro will be glad to refer you to one. If you relocate and want to learn the name and address of an Alpha Micro dealer near you, please write or call Alpha Micro.

For information and the location of the Alpha Micro service location nearest you, call our toll free service number (800) 548-4848.

Chapter 2 - Eagle TX Series Specifics

The Eagle TX Series is based on the popular Eagle Series of multi-user business computer systems, but there are some specific characteristics that need to be understood to be able to take maximum advantage of the Eagle TX Series products. This chapter addresses both the unique hardware and software features that are introduced in this product line.

SYSTEM ORGANIZATION

The Eagle TX Series members are basically diskless multi-user computers. In place of the disk subsystem normally found in our multi-user business computer systems, a new 4 MB Flashcard, the AM-703, has been developed to store a copy of a specially configured version of the AMOS operation system (AMOS2.3A or later). This software has been configured to communicate with a host computer through a network and manage the data flow to up to eight serial ports and one parallel port.

The memory map for the Eagle TX Series is shown below.

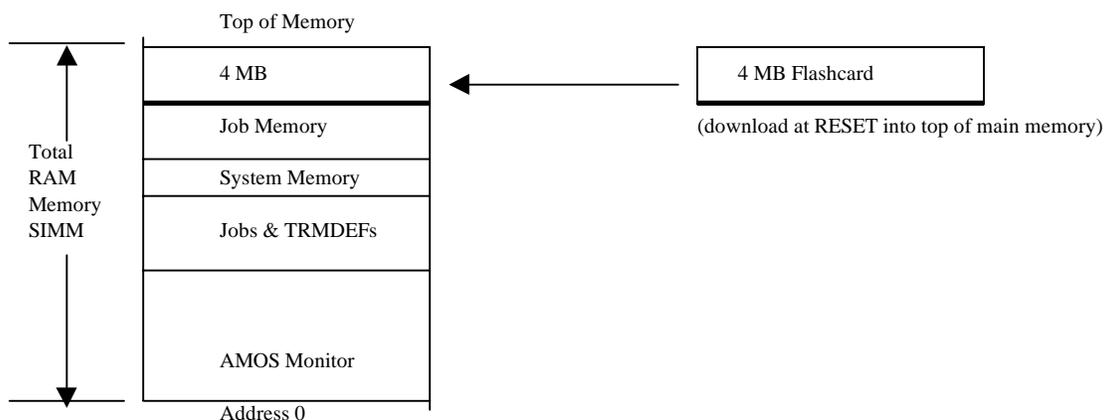


Figure 2-1: Eagle TX Series Memory Map

SYSTEM OPERATION OVERVIEW

When the Eagle TX is turned on, the boot code sizes the DRAM memory and subtracts 4 MB from the total memory size. This “end of memory” value is stored in a variable for use by the AMOS operating system. This uppermost 4 MB will be referred to as a RAM disk.

Next, the boot code copies the contents of the Flashcard into the DRAM just past the end of memory value, thereby loading the RAM disk. There is a special disk driver (RAM.DVR[1,6]) imbedded into the

AMOS monitor that emulates a disk drive. This disk driver works by adding the physical block requested to the base of the RAM disk, and reads and writes the data to that location.

The boot code then copies the AMOS monitor from the RAM disk to the beginning of memory just as a normal AMOS system would load the AMOS monitor from a hard disk drive. After the monitor is loaded into memory, the boot code jumps to the monitor and the monitor execution begins.

When AMOS is “up and running”, all disk calls are made to the disk driver which uses the RAM disk only. If new files are written to the RAM disk, or changes are made to existing files, only DRAM is affected and any changes will be lost on reset or power fail.

In order to save changes to the RAM disk, a special software utility (FLUTIL.LIT) must be run. This utility is described in detail in Chapter 4. When FLUTIL.LIT is run, the contents of the RAM disk are copied back to the Flashcard. If power is lost during this operation, or reset is pressed, then all contents will be lost. For recovery purposes, we have included a means of booting the system over a serial cable. The serial boot requires that an image of the RAM disk be made and saved on another system (PC recommended) for backup purposes and uploading back to the terminal server.

You can use the FLUTIL.LIT software utility to also make the backup image of the Flashcard. This requires that a separate RAM subsystem disk (VDK) be defined so that the image file (TRM4MB.IMG) can temporarily be stored there. The subsystem disk is required because the main RAM disk (DSK:) does not have enough room to store an image of itself. This process requires that you be logged into OPR:. An INI file (VDKINI.INI) has been included in the Flashcard that can be MONTSTed which will configure the terminal server for that purpose.

Chapter 3 - Installation

This chapter gives general installation information for your terminal server. It discusses the following topics:

- Quick terminal server installation procedure summary
- Unpacking the terminal server
- Instructions for re-shipping the terminal server
- Preparing the site for your terminal server
- Verifying AC power requirements
- Turning on the terminal server
- Installing the initial terminal
- Initially testing the terminal server
- Booting under AMOS
- Testing the network setup
- Turning off the terminal server
- Expanding your terminal server
- How to get help if you need it

QUICK EAGLE TX SERIES INSTALLATION OVERVIEW

This section outlines the steps necessary to install the Eagle TX Series. Additional details about each step are included in the corresponding sections of this chapter.

- Unpack the terminal server and plug into AC power source.
- Connect an AM-65 or compatible terminal to port 0 of the terminal server, with baud rate set to 19200 baud.
- Attach the terminal server to the network.
- Turn on the terminal server and observe boot up.
- If necessary, using the terminal attached to port 0, edit the TCP related files so that the terminal server has network access. This includes changing the IP address of the terminal server in the NETWRK. file, any router IP address in the CONFIG. file, and other IP addresses in the HOSTS. file.
- Log into OPR: account and MONTST AMOS32, AMOS32
- The terminal server should now communicate between the host computer and the terminals.

- Connect any additional serial terminals and parallel printer, and configure, if necessary, in the system initialization file
- If any changes were made, execute FLUTIL.LIT to save all new settings to the Flashcard, and make a backup of the Flashcard contents for emergency recovery purposes.

To make a backup of the contents of the Flashcard:

- For the Eagle 100TX, log into OPR: account and MONTST VDKINI.INI instead of AMOS32. Skip this step for the Eagle 450TX.
- Run the FLUTIL utility to make the backup.
- Run FTP on the PC attached to the network and *get* the file from the terminal server, or ftp it to the Alpha Micro host..

This resulting file can be used, if necessary, to restore the contents of the Flashcard if it is damaged due to some future action.

UNPACKING GUIDELINES

Unpack the Eagle TX Series and *save all packing material and cartons* in case you ever need to transport the product. The shipping material was carefully designed to provide optimum cushioning and protection. When re-shipping or otherwise transporting your Eagle TX Series terminal server, you must use the original packaging to ensure safe shipment.

What You Will Need

When you unpack your terminal server you should find the following items:

- Documentation, including this manual, and warranty cards
- The main enclosure
- One AC power cord

In addition to the equipment Alpha Micro has provided and a terminal, you will also need the following:

1. Cabling and any additional hardware to attach your Eagle TX to your Ethernet network.
2. Properly configured cables for connecting your terminal to the terminal server.
3. The manufacturer's operator manuals for your terminals and printers.
4. If your terminal server is set for 230 Volt AC operation, you need a 230 Volt AC power cord with the correct plug for your geographical area. Your local VAR may already have included this power cord with your terminal server; if not, contact your VAR for information on where to get it.

Reporting Shipping Damage

If there is any damage to the shipping container or the main enclosure, or if you are missing any items on the unpacking checklist, please call your VAR immediately.

Instructions for Reshipping the Terminal Server

If shipping damage has occurred or a functional problem exists with the terminal server, your VAR may recommend that you ship it back.

If for some reason you cannot contact the VAR you bought your terminal server from, please call the Alpha Micro Sales Department; they will give you the name and address of an Alpha Micro VAR near you who can help you. See "Service Information" in Chapter 1.

When reshipping or otherwise transporting your terminal server, you must use the original packaging to ensure safe shipment.



Please include a note to the person who will receive the product containing the following information: your name, address, phone number, the date you shipped the product back, and the reason for return.

Be as specific as possible about the problem you experienced—the more information you provide the easier it will be for the service technician to determine the reasons for any problems. If you performed any troubleshooting procedures, let the person receiving the product know exactly what procedures you have done and what the results were.

FRONT PANEL CONTROLS AND INDICATORS

Figure 2-1, below, shows the chassis front panel. The panel has the following controls and indicators:

- The Power switch turns the terminal server on and off. This switch, at the top right of the terminal server, is not shown in Figure 2-1.
- The Power light is lit when the product is turned on.
- The Turbo or HDD light is used as the system activity indicator..
- The Reset button lets you reset the terminal server from the control panel. When you press the Reset button, the hardware resets and the terminal server reboots. To avoid losing any data, make sure there are no applications running before you press the Reset button.

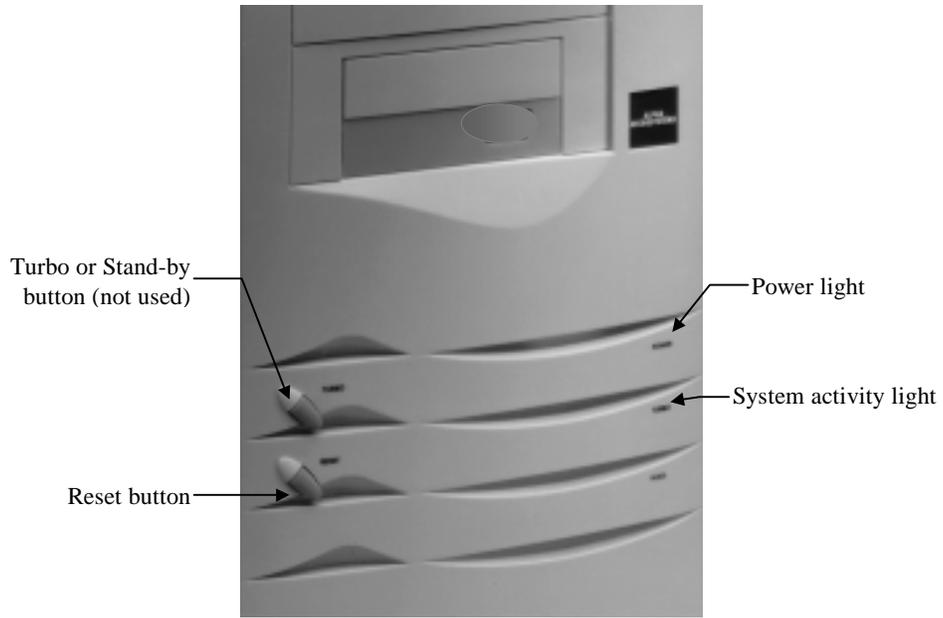


Figure 3-1: Front Panel Controls and Indicators

EAGLE 100TX REAR I/O PANEL CONFIGURATIONS

The illustration below shows the Eagle 100TX rear panel configuration.

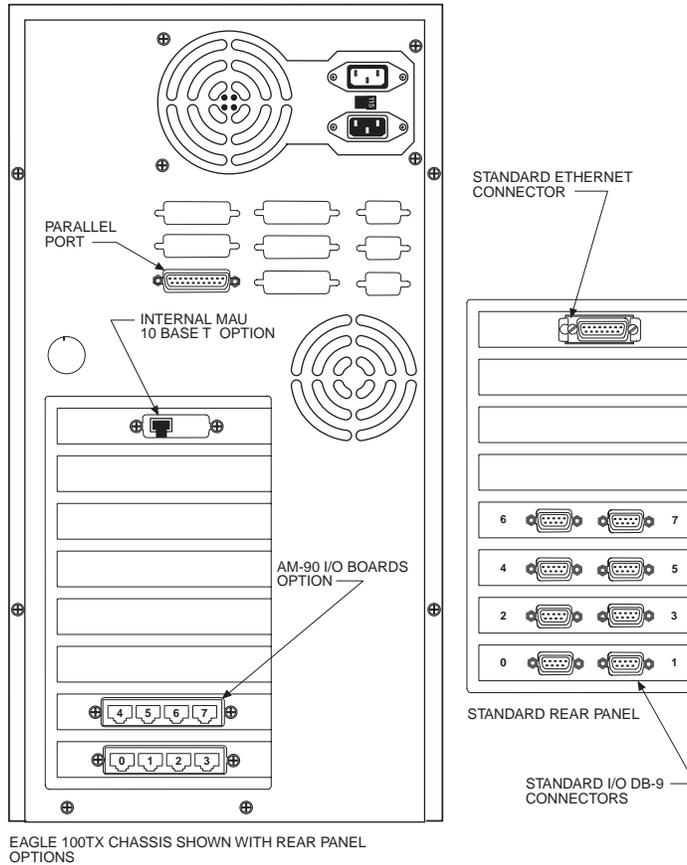


Figure 3-2: Eagle 100TX Rear Panel Configuration

The figure identifies the individual serial ports, as well as indicating both the parallel port connector and network connector. Note that the standard Eagle 100TX configuration is shown at the right. Both the 10BaseT option and RJ-45 connector serial port options are shown as installed in the Eagle 100TX in the left full system figure.

EAGLE 450TX REAR I/O PANEL CONFIGURATIONS

The illustration below shows the Eagle 450TX rear panel configuration.

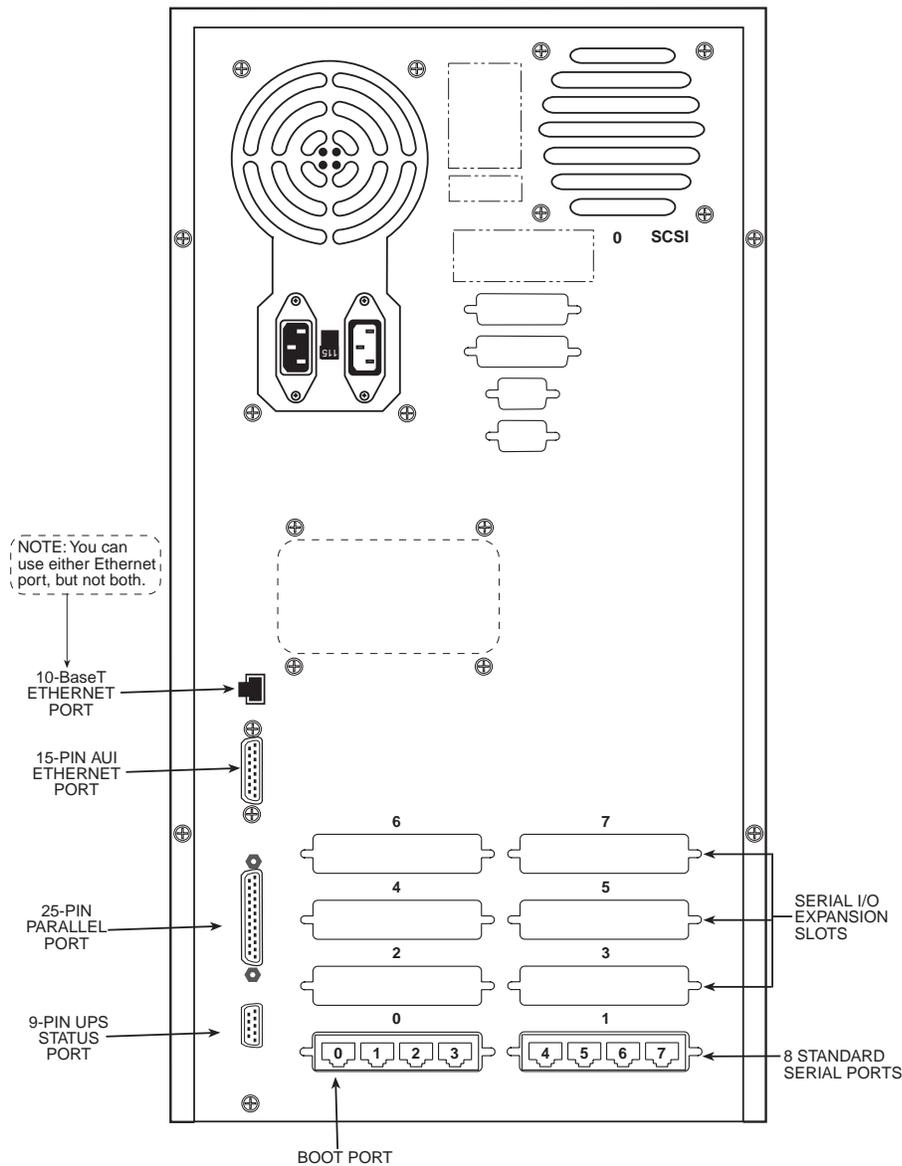


Figure 3-3: Eagle 450TX Rear Panel Configuration

The figure identifies the individual serial ports and expansion serial port locations, as well as indicating the parallel port connector, UPS status port connector, and network connectors.

PREPARING THE SITE

The Eagle TX Series terminal server should be located centrally to the terminals and other peripherals you plan to attach to it. In addition, make sure that your existing network can be easily attached. There are just a few simple considerations to take into account when planning the site.

Environmental Requirements

For your Eagle TX Series product to do its best job for you, you must place it in a clean environment it is comfortable in. Extreme temperature or humidity can cause product failure. But, it is not very demanding—its environmental needs are similar to your own.

It is important to remember that the cleaner the environment, the more efficiently the product performs. For example, do not place coffee cups or soda cans on top of the main enclosure where they can spill. If spilled liquid happens to reach the circuit boards inside the product, it could cause failure.

In general, you should install your terminal server in an area where people do not eat, drink, or smoke, since all of these activities can cause contamination problems. Try not to place the product in a high traffic area. This typically creates more dirt and dust which can clog the air intakes of the terminal server chassis, or a fan inside the chassis. This will cause cooling problems because of the dirt accumulation. A side effect of a high traffic area is static electrical discharge which can cause product resets.

When you select a location for your terminal server, remember that it operates within certain temperature and humidity ranges. Air circulation around the system is something that should be considered. Do not put a computer in a closed closet where there is no cooling. The terminal server takes air in from the front and bottom and exhausts air at the rear. Allow **at least** six inches behind the unit for ventilation. The mounting feet give it adequate ventilation space below. Do not place the product on a carpet which can block the air intakes on the bottom of the chassis.

Environmental Specifications

- **Product external operating temperature:** 60 to 90 degrees F (16 to 32.2 degrees C)
- **Humidity:** 10% to 90% (non-condensing)

Static Electricity and Grounding

One of the greatest enemies of computers, terminals, and printers is static electricity. The chief villain is climate: dry winds and dry seasons. If you have problems on dry and windy days when humidity is low, static electricity could be your problem. You should also be aware that both carpets and the plastic mats often used under desks are a prime source of static electricity.

If possible, you should place your terminal server in an uncarpeted area. If you must place it in a carpeted area, you should treat the area with anti-static spray on a regular basis. Several of the anti-static sprays on the market can be of considerable help. Also, using an air conditioner that controls humidity can greatly reduce a static electricity problem.

If problems occur when equipment near the terminal server is turned on—for example, if your terminal server stops functioning when someone uses the photocopier—improper grounding could be your problem. We recommend a low impedance power conditioner to filter out these power problems. Alpha Microsystems can provide the approved power conditioner type. Ask your VAR for further details.

POWER AND CABLE CONNECTIONS

Before selecting a site for your product, determine if the area where you want to place the Eagle TX Series has adequately regulated AC power. If you request it, many power companies will install test equipment to determine if there is a need for additional line regulation. You can also test line voltages using a high speed line transient recorder. If, over several days of testing, the line voltage varies more than 10 percent from the rated line voltage, you may need to install a power conditioner and a new dedicated AC power circuit. Alpha Micro products require a properly grounded power outlet for the product to run correctly. All peripherals (such as terminals) connected via serial cables should also have properly grounded outlets.

A "transient free," or smooth and consistent, power source and a properly installed earth ground can significantly improve the reliability of your Eagle TX Series product. While the product is in use, it is important to maintain a constant line voltage free of power surges, fluctuations and impulses.

Be sure the power rating for the power lines the product will be connected to is adequate for your computer or any future systems you may be planning to install. In North America, a standard 15 Amp, 115 Volt grounded connector-type outlet is required for the CPU chassis. In some other countries, the requirement is a 230 Volt AC power source.



The maximum power requirements for the terminal server are:

- 115 Volt AC at 5 Amps, or
- 230 Volt AC at 3 Amps

Additional outlets are required for each peripheral connected to the terminal server. Alpha Micro products come with a standard six-foot power cord. If this is not long enough, be sure any extension cords used are rated for a full 15 Amps—otherwise, the full voltage may not reach your computer. This can affect the efficient operation of your computer.

A point to remember is that the closer you get to either end of the AC voltage power range, the less efficient the product will be.

To avoid electrical interference, sources of electrical noise such as air conditioners, copiers, electric typewriters, or cleaning equipment should not be connected to the same power circuit as any computer component.



Be sure to follow all Ethernet network configuration and cabling specifications. With almost all users connected via the network, reliable network performance is critical. While non-conforming configurations sometime work adequately in small tests, they almost always degrade performance or fail completely during actual use.

Data cables should not be located near high voltage power lines, power transformers, telephone cables, or in elevator shafts. They should not cross walkways. If you must cross walkways, cover the cables with a cable bridge.

You must also take cable lengths into consideration. Single-ended circuits are susceptible to all forms of electromagnetic interference. As line length increases beyond fifty feet, the reliability of the RS-232C cable connected to a terminal or printer decreases rapidly. If local terminals are to be located further than fifty feet from the terminal server, we recommend you use low capacitance twisted-paired overall shielded cables. If this cable does not solve your problem, then signal conditioning equipment will be needed to improve the signal.

Verifying Voltage Compatibility

Different parts of the world use different standards for electricity. For example, most areas of the United States use 115 Volt electricity. Many other areas of the world use 220—240 Volt electricity.

The terminal server can work with either voltage if its input voltage switch is set correctly. The switch is on the power supply near the top of your product's back panel. Verify the input voltage setting before plugging in your terminal server.



If your terminal server is not set to the voltage you require, **do not** change the switch setting without checking with your VAR first. Your VAR will insure that you have the proper input voltage switch setting and power cord for your installation.

The power supply has one standard AC power receptacle. One standard 115 VAC power cord is packaged with your terminal server.

Turning the Eagle TX Series On

1. Verify once again that your Eagle TX Series product has been configured correctly for the AC power service in your region.
2. Place the terminal server in the site you have chosen for it. Insert the socket end of the AC power cord firmly over the three prongs in the power cord receptacle in the back panel. Then plug the pronged end of the cord into an electrical outlet.
3. Turn on the terminal server by pushing the power button on the front panel.
4. Now, check to make sure power is on:
 - Is the Power indicator light on the front panel lit? (See Figure 3-1.)
 - Is the cooling fan running? To check the fan, place your hand behind the fan opening in the back panel; you should feel air blowing out.

If the fan and the power light are on, you can proceed with installing the operator terminal. **But first, turn the Eagle TX Series off!**

INSTALLING THE INITIAL (OPERATOR) TERMINAL

The terminal you use when installing software and running utility programs is called the operator terminal. You must do two things to install the operator terminal: set its operating parameters, and connect a cable between it and serial port #0 (the boot port) on the back panel. The boot port location is shown in Figure 3-2 or Figure 3-3, depending upon which terminal server you have purchased.

Setting the Terminal's Baud Rate and Parameters

AMOS initially assumes the operator terminal is an Alpha Micro or compatible terminal using RS-232 signals. It also assumes the terminal is working at 19200 baud. (The "baud rate" is the rate at which the terminal and terminal server transfer information between themselves; if the terminal is not set at the baud rate the operating system thinks it should be using, nothing will be displayed on the terminal or the display will be garbled.) AMOS also assumes the following terminal parameters:

Data Word Length:	Eight data bits
Parity:	No parity
Stop Bit (other than 110 baud):	One stop bit

Refer to the documentation accompanying your terminal for information on setting its baud rate and the parameters listed above.

Once the terminal server is booted with a compatible terminal, you can define your own type of terminal and tell the terminal server to use that terminal from now on. For more information on defining your own terminal, please refer to the *System Operator's Guide*.

Connecting the Cable



Refer to the FCC warning concerning electromagnetic interference at the front of this manual. The terminal cables you use must be shielded to minimize such interference. Also, see the section "Power and Cable Connections" earlier in this chapter.

Make sure you have an appropriate cable for connecting the terminal to the terminal server. See Appendix A for cable guidelines. If you do not have the proper cable, please contact your VAR.

Plug one end of the cable into the proper connector on the back of the terminal and the other end into the appropriate connector on the back of the terminal server chassis. Alpha Micro cables are labeled at each end to indicate which end plugs into the CPU and which end goes to the terminal.

BOOTING UP UNDER AMOS

The actual files included in the terminal server are listed in the 100TX.DIR[1,2] or 450TX.DIR[1,2] file in the Flashcard, depending upon your terminal server model. A bootable version of AMOS has been configured and pre-loaded into the Flashcard. All you need to do to bring the terminal server up under AMOS is turn the computer on. Follow these steps:

1. Turn on your terminal and any other peripheral devices such as a printer.

2. Press the AC power button on the front panel.

CONNECTING TO THE NETWORK

The back panel of the Eagle TX Series includes either a standard 15 pin Ethernet connector or a 10BaseT Ethernet connector, as shown in Figures 3-2 and 3-3. Use standard Ethernet cable to connect the terminal server to your Ethernet network. Attach it as you would any other network computer or workstation, using Level 5 compliant cable; there are no special cabling requirements.

The terminal server ships from Alpha Micro already configured for general network use. The Eagle 450TX is configured to use the 10BaseT Ethernet connector. You may need to modify the configuration, as described in Chapter 4.

SPECIAL SOFTWARE CONSIDERATIONS

The terminal server utilizes standard AMOS software, and software configuration requires a knowledge of the various networking products supplied by Alpha Microsystems. Please see the various software and networking documents available from Alpha Microsystems for details of this software, particularly the *AlphaTCP Administrator's Guide (DSO-00187-00)* for AlphaTCP setup information. All of these documents are available on the latest AlphaCD or at our web site at www.amos-online.com.

A customized version the AMOS operating system software is preloaded into the Flashcard of your Eagle TX Series during the manufacturing process. The AMOS operating system has been configured to support up to eight (8) users. The terminal server normally boots up using the AMOS32 . INI initialization file and AMOS32 . MON AMOS monitor.

For the Eagle 450TX, you may want to add additional users via the AM-318-10 Eight Port Serial I/O SIMM. System initialization files have been configured to support eight, sixteen, twenty-four, and thirty-two serial port configurations. Simply select the appropriate .INI file to boot from via the CMOS set-up menu.

System Initialization Files

There are various system initialization files included in the Flashcard. These are:

Eagle 100TX

AMOS32 . INI [1 , 4]
VDKINI . INI [1 , 4]
ALPNET . INI [1 , 4]
TEST . INI [1 , 4]

Eagle 450TX

AMOS32 . INI
ALPNET . INI
TEST . INI
TRMS08 . INI
TRMS16 . INI
TRMS24 . INI
TRMS32 . INI

For the Eagle 450TX terminal server, four different INIs have been provided to facilitate adding serial ports. The TRMSxx.INI files are used to configure the terminal server for the various serial port options. Also, the VDKINI.INI file has not been included in the Eagle 450TX, since it has been incorporated into the AMOS monitor.

Note that the AMOS32 . INI and TEST . INI are copies of one another. See Appendix C and D for details of these INI files.

If you wish to modify the configuration, change TEST.INI. This configuration allows TCP/IP telnet and ftp sessions. In addition, the NETSER job is available for use with TCP tunneling. There are eight serial port jobs and the print spooler defined. This configuration uses the LDV LAN driver.

Network Customization

There are two methods for configuring the Eagle TX Series terminal server to function properly on your AlphaTCP network. The manual method requires you to edit several configuration files on the terminal server, test it, and then update the Flashcard. The automated method downloads configuration information from a properly configured Alpha Micro host system.

Automatic configuration

With the release of the Eagle TX Series terminal server product line, Alpha Micro has introduced new features that allow a client computer to request its configuration parameters from a host system. The Eagle TX Series terminal server is shipped with this feature enabled. Therefore, all you need do is set up your host computer with the required software and configuration parameters. Then when the Eagle TX Series terminal server is booted, it will request and receive the configuration information from the host system and automatically configure itself for your network.

The following configuration parameters can be supplied by the host system:

- IP address of the Eagle TX Series
- IP address network mask
- Host name of the Eagle TX Series
- IP address of a name server
- IP address of a gateway

Host computer requirements:

- AlphaTCP 1.4A or later
- BOOTPD.LIT 1.4A(101) or later and the corresponding BOOTPD.RTI file
- A BOOTPD. file containing the configuration information for the Eagle TX Series.
- The AlphaTCP and BOOTPD software must be running properly.

When the Eagle TX Series terminal server is booted, it can automatically send the MAC address of its Ethernet net card over the AlphaTCP network. The host server that is running BOOTPD will then find the MAC address in the BOOTPD. file and send the configuration parameters back to the terminal server, which then uses these parameters to configure its AlphaTCP environment.

You must enter the following information in the BOOTPD. file on the host system that is running BOOTPD.LIT:

1. the terminal server's MAC address
2. the IP address the terminal server is to use

3. the network mask
4. the IP address of the name server if one exists
5. the IP address of the gateway if one exists
6. the host name of the terminal server

A sample BOOTPD. file:

```
#entry for terminal server 1
[00-00-B1-23-5A-64]
addr=192.168.0.3
mask=255.255.255.0
nameserver=192.168.0.45
gateway=192.168.0.46
hostname=trmsv1.company.com
```

The MAC address for the terminal server is displayed during the boot process when the Ethernet driver is loaded and initialized. It is also displayed just after the TCPEMU job is defined. You can also get the MAC address by running the program MAC.LIT on the terminal server.

Manual configuration

If, for some reason, you must configure AlphaTCP on the terminal server manually, you must edit several of the configuration files, test the newly configured system, and then save the modified RAM disk to the Flashcard. See the AlphaTCP Administrator's Guide (DSO-00187-00) for detailed information about configuring AlphaTCP.

You must modify the following files on the terminal server:

```
TCP:NETWRK.
TCP:CONFIG.
TCP:RESOLV.
TCP:MYNAME.
```

In the NETWRK. file you must define the IP address of the terminal server and remove the line that causes AlphaTCP to request the information from the BOOTPD server. When shipped from Alpha Micro, the NETWRK. file contains lines similar to:

```
#ethernet      172.16.128.88   ether eth net
ethernet       bootp      ether eth net
```

You must change these to define your desired IP address and create lines similar to:

```
ethernet      192.168.0.3     ether eth net
#ethernet     bootp      ether eth net
```

In the CONFIG. file, you must remove the line that starts the BOOTPC program. If you are using a router, you will need to change the last line of the CONFIG. file to specify the router IP address for your installation and remove the comment character at the beginning of the line. If no router is present in your installation, make sure the last line starts with a comment character. When shipped from Alpha Micro, the end of the CONFIG. file contains lines similar to:

```
start bootpc 100k -h -n -t
# if you have a default router this is a simple way to set the default
  route.
# once complete it will exit and free the memory. fill in the IP
  address.
#start route 200k -s add 172.16.128.10
```

Remove the bootpc program by adding a comment character (#) at the beginning of the line, enable the route program if you are using a router by removing the # character from the beginning of the line and change the IP address.

```
#start bootpc 100k -h -n -t
# if you have a default router this is a simple way to set the default
  route.
# once complete it will exit and free the memory. fill in the IP
  address.
start route 200k -s add 192.168.0.46
```

Modify the MYNAME. file to contain the name of the terminal server. For example it could contain:

```
trmsv1.company.com
```

Modify the RESOLV. file to contain the IP address of your name server. For example it could contain:

```
nameserver 192.168.0.45
```

Whether you are doing the automatic or the manual configuration, you may also want to modify the FTPUSR. file to define users and passwords that are allowed ftp access to the terminal server.

To access printers on other servers, you must modify the LPR. file to point to the desired printers on the respective servers.

If you plan to use TCP/tunneling with AlphaNET, a default network setup is in the ITCD. file. These are network 1 group 1 nodes 1 through 6. The appropriate AMOS host must have its assigned IP address to accomplish the appropriate function. You may modify the ITCD. file to conform to your existing network.

The standard TCPLPR: and TCPLPD: ersatz names have been defined as DSK0:[10,0]. This may be changed to VDK0:[1,2] if desired, so that you have more storage space available. Make the changes in the SYS:ERSATZ.ERZ file.

Updating the Flashcard

Once you have completed all the modifications and tested them with a MONTST, you will need to run the FLUTIL.LIT (flash utility) program, as described in the previous chapter. This reprograms the Flashcard with all your modified configuration files. Remember to erase all the *.BAK files before you reprogram the Flashcard.

If you ftp transfer any new terminal drivers to the DSK0:[1,6], the FLUTIL .LIT utility needs to be run before any change is made permanent. If you turn off the power to the terminal server without executing the FLUTIL program, your changes will be lost.

FLASHCARD RECOVERY PLANNING

If the AC power fails in the middle of some critical operation, or if you accidentally corrupt your Flashcard so that it is no longer bootable, you can recover, though care and pre-planning are essential. The following procedure must be used to restore the Flashcard:

- Follow the procedure described in the previous chapter to create an emergency boot data file using the FLUTIL software utility.
- After successfully creating the emergency boot data file, the file should be transferred to a host computer's hard drive. If possible, it should be transferred to both an Alpha Microsystems host on the network and to a personal computer attached to the network, so that ftp can be used to perform the transfers.

ALPHANET CONSIDERATIONS

The ALPNET .INI allows the terminal server to be used as an AlphaNET installation using the (NDV) AlphaNET network driver, with Alpha/TCP as well. There are eight serial port jobs and the Print spooler defined.

If you wish to use this configuration, you must change the TCP : CONFIG file to comment out the LDV and uncomment the NDV for use with this INI. This configuration allows TCP/IP both telnet session and ftp sessions. Additionally, The NETSER job and VTSER job are available. You will also need to configure AlphaNET for your installation, setting up the network numbers on each system. The default network is 101 group 3 node 1, for the terminal server.

CUSTOMIZING NOTES

There is a sample TMENU program on the Flashcard which can be auto-executed through the START1 .JIN command files. This menu can be used to allow the users to connect to the appropriate hosts. To customize the names you will need to transfer the source file to your host and edit TMENU .M68 and change the names in the MENU: section. Additionally, you should also change ITEM1 through ITEM16 for the command you wish to execute. In our example we execute a

```
TELNET System_Name Telnet_port_#
```

Then this menu program will need to be assembled, and transferred back to the terminal server. Once this has been tested, and works properly for your installation, run the FLUTIL program to program the Flashcard.

TURNING THE TERMINAL SERVER OFF

You need to turn off the terminal server whenever:

- A technician needs to open the chassis for any reason.
- You move the terminal server or servicing is required.

To turn off the terminal server always follow these steps:

1. Make sure all terminal server users have exited all programs and are logged off the computer.
2. If desired, turn off all devices connected to the serial ports, such as printers and terminals. You do not need to turn off devices which are connected via the network.
3. Press the AC power button on the front panel.

EXPANDING YOUR EAGLE TX SERIES TERMINAL SERVER

Your Alpha Micro VAR can assist you with setting up, expanding, or servicing your terminal server.

Once your terminal server is configured with the basic components, you may want to change your basic configuration to add more users, change memory allocations, etc.

Part of adding new hardware to the terminal server involves changing the system initialization command file to define the new hardware. Changing the allocation of system resources also requires changing the system initialization file. For information on modifying this file, refer to Chapter 4 and the *System Operator's Guide to the System Initialization Command File*.

Note that there are four pre-configured INI files supplied with the Eagle 450TX which are based upon the number of serial ports installed in the terminal server. These are TRMS08.INI, TRMS16.INI, TRMS24.INI, and TRMS32.INI. The last two digits of the file name are the number of serial ports pre-configured for use in the terminal server. The easiest way to change configurations is to change the CMOS boot.ini selection to one of these file names and then save the selected configuration. The selected configuration will then be enabled during the next boot of the terminal server.



Do not attempt to modify the system initialization command file unless you have a detailed understanding of AMOS configuration procedures. A mistake could damage the file and leave your terminal server unable to boot from it. Instead of modifying the file directly, make a copy, then edit and test the copy. Replace the original file only when you know the copy works correctly.

GETTING ASSISTANCE

If you have followed all of the instructions in this chapter, but for some reason your terminal server is not working, you probably want help. Call your VAR or the Alpha Micro Technical Assistance Center at 800/548-4848.

Chapter 4 - System Administration

AMOS provides a repertoire of program tools to support system administration functions. This chapter covers many of these procedures, including:

- Eagle TX Series CMOS setup information
- Modifying the system initialization file to add jobs and terminals and change memory allocations
- Flashcard utility software and software recovery procedures

EAGLE TX SERIES CMOS SETUP INFORMATION

When booting, the Eagle TX Series terminal server uses data stored in its CMOS parameters to find the primary and alternate boot devices, the system monitor and initialization files to use, and other options. The CMOS RAM is on the AM-703 board in the Eagle 100TX, and is on the AM-138 CPU board in the Eagle 450TX.

You can change the configuration even if you can't boot the terminal server under AMOS. This can be very useful in case of certain system problems. To change the CMOS configuration, you must have a terminal attached to port 0 of the terminal server. The first time you access these CMOS configuration settings, this terminal must be set to 19.2K baud; you can then change the terminal speed setting if you want.



It's a good idea to write down the configuration settings.

Depress the RESET button on the terminal server front panel, and observe the output on the screen of the terminal attached to port 0. You should see the following:

```
Alpha Microsystems ____TX Terminal Server
Press [ESC] to enter setup
```

You have 5 seconds after the second line to press the ESC key, otherwise the system will then start downloading the flashcard contents to RAM disk.



The port 0 terminal's baud rate must match the current configuration setting (default is 19.2K baud) or the terminal server will not recognize the ESC character.

The screen should appear as follows:

```

                                ALPHA MICROSYSTEMS
EAGLE ___TX TERMINAL SERVER CONFIGURATION MENU

Primary boot device type           FLASH
Primary boot device unit #        0

Secondary boot device type        NONE
Secondary boot device unit #      0

Boot monitor file name            AMOS32.MON
Boot initialization file name     AMOS32.INI

Serial port 0 speed               19200
Display console boot messages    YES

Use [UP] and [DOWN] key to select an item.
Use [LEFT] and [RIGHT] keys to change and item.
Press [ESCAPE] when done.

```

The allowable choices for the primary boot device are Flash or SCSI Disk. This selection should always read Flash for the terminal server.

The primary boot device unit # should always read 0.

The Secondary boot device type may have one of the following settings:

```

None (default)
Flash
SCSI disk
Xmodem

```

In the normal configuration, this setting should be NONE. If it is set to Xmodem, port 0 will allow Xmodem booting. This can be aborted by typing a Control Z

The monitor name is normally AMOS32.MON

The boot initialization file name can be any of the INIs which come with the terminal server:

```

AMOS32.INI (default)
TEST.INI
VDKINI.INI
ALPNET.INI

```

PROGRM.INI

The serial port 0 speed may have one of the following settings:

1200
9600
19200 (default)
38400

The baud rate selection must agree with your terminal baud rate in order to see messages during boot up and to enter setup in the future. It should also agree with the baud setting in the system initialization file to avoid having to change the terminal baud rate between booting and normal operation.

Since there is no status display on the terminal server, the “Display console boot messages” should always be YES.

When you have completed making changes to the CMOS configuration menu, press the ESC key. You will then be asked for a confirmation that you want to save your changes. Answer either Y (yes) or N (no).

The terminal server will then complete the boot up process.

MODIFYING THE SYSTEM INITIALIZATION FILE

The system initialization command file is a special file in account DSK0:[1,4] that defines all of the devices connected to your terminal server, the jobs that will run on the terminal server, and special programs which need to be loaded into memory. It is often called simply the “initialization file.” As your requirements change or you add capabilities to your terminal server, you must modify the initialization file.

As described in Chapter 2, the name of the system initialization file for your terminal server is AMOS32.INI. This special file in account DSK0:[1,4] defines to the AMOS operating system all of the devices connected to your terminal server, the jobs that will run on the terminal server, and special programs which need to be loaded into memory. As requirements change or as capabilities are added to your terminal server, you must modify the system initialization file, or use one of the pre-configured INIs already in the terminal server.



NEVER change the system initialization file directly! Always make a copy of it and modify the copy, as described below.

To make a copy of the system initialization file to be modified and tested:

1. Log into DSK0:[1,4] by typing:

```
LOG DSK0:[1,4] RETURN
```

2. Then, type:

```
COPY TEST.INI=AMOS32.INI RETURN
```

- Use AlphaVUE or another text editor to edit the contents of the test file:

```
VUE TEST.INI 
```

If you are unfamiliar with AlphaVUE, refer to the *AlphaVUE User's Manual*.

- Make all the necessary changes to TEST.INI. Save the file when exiting AlphaVUE by pressing the key and typing **F**. Some of the common changes you may want to make are discussed below.
- Use MONTST to insure TEST.INI is working as expected. Make sure no one else is using the computer, then type:

```
LOG OPR: 
MONTST ,TEST.INI 
```

- After you have successfully tested TEST.INI and you are satisfied with the results, copy it back to AMOS32.INI or whatever name you choose for your “live” initialization file.
- Execute FLUTIL to reprogram the Flashcard.

Follow this procedure any time you modify the system initialization file.



Be careful not to rename your TEST.INI file too soon. You might want to let the terminal server run awhile to test out the new configuration before you rename it. Then, if you decide you don't want to keep the new configuration, you can always press the Reset button to reboot with your former system initialization file.



Do not change any lines in the system initialization file other than those discussed below until you're familiar with the documentation on the file in the *System Operator's Guide to the System Initialization Command File*.

FLUTIL SOFTWARE UTILITY

Occasionally, modifications must be made to the AMOS configuration or other software within the terminal server. FLUTIL helps maintain the contents of the AM-703 Flashcard (Flashcard). The Flashcard can be erased and reprogrammed with the contents of the current terminal server RAM disk. The current contents of the Flashcard can be saved to a data file which can then be used to recover in the event that the contents of the Flashcard become unusable.

The terminal server utilizes a small, specially configured version of Alpha Microsystems standard AMOS operating system. Since the terminal server does not have a hard disk, a RAM disk is created in available memory for AMOS to use. Whenever the terminal server is started, either by applying power or pressing the reset button, the initialization process reserves memory for the RAM disk and then copies data from the Flashcard to the RAM disk. AMOS is then loaded and started from the RAM disk.

During modification of the AMOS configuration and updating of the Flashcard, it is important that no other users are using the terminal server.

Remember that any changes made to files on the RAM disk are not permanent, and will disappear if the terminal server is re-started. Changes must be saved using this program to become permanent.

Flashcard Update

Before using this program to update the Flashcard, any configuration changes should be thoroughly tested. This normally means that you must MONTST the new configuration from the RAM disk and verify that:

1. The system does boot properly
2. The system does work properly including:
 - The terminal server successfully connects to the network.
 - User terminals can connect to the terminal server and to other network resources.
 - Any other peripherals are working properly.



Before running the FLUTIL program, log into OPR: and run a DSKANA on your RAM disk. Erase any old files like *.BAK, *.OLD, and *.LST which you don't want programmed into the Flashcard. Also, make sure that your JOB is NOT running MULTI.



In the unlikely event that the Flashcard update fails catastrophically (i.e. a power failure occurs), insure that you have created and saved the Flashcard recovery files for the current operating environment, as described in Chapter 3.

To update the Flashcard, log into OPR : and type:

```
FLUTIL RETURN,
```

The following menu will be displayed.

```
Flashcard Utility Program Version 1.0(105)

1. UPDATE Flashcard with current RAM disk
2. Copy Flashcard to Image File
3. Copy Image File to Flashcard
4. Exit
```

Enter choice:

Enter **1** RETURN to begin the Flashcard update. You will see a warning message and then be asked if you want to continue. To continue with the update type **Y** return. Until the update is successfully completed, the terminal server cannot be re-booted from the Flashcard.

First the Flashcard contents are erased. Next the contents of the RAM disk are programmed into the Flashcard. Then the contents of the RAM disk and the Flashcard are compared to verify successful Flashcard update. During the program and verification phases, progress is indicated on the terminal screen, and all other jobs are suspended.

If the update is not successful, a warning message is displayed. Also if you try to exit the program while the Flashcard contents are compromised, a warning message is displayed. After an unsuccessful update,

the terminal server will probably not re-boot properly. You must perform a successful Flashcard update to ensure future functionality of the terminal server.

Flashcard Recovery

In the unlikely event that the data programmed into the Flashcard becomes corrupted, the terminal server will probably not start up properly when power is applied or the reset button is pressed. To avoid the inconvenience of sending the terminal server in for service, the system is provided with three different methods to get the terminal server into a bootable condition. These are:

1. Perform a cold boot with an XMODEM upload of the BOOT.EMG (emergency boot file), which has been provided on floppy. Then update with a full system.
2. Download a 4MB image file backup of your current operating environment.
3. Replace the flashcard with a known good spare.

Option #1 - XMODEM Cold BOOT

An emergency boot file (BT100.EMG for Eagle 100TX; BT450.EMG for Eagle 450TX) file has been provided on a floppy with your terminal server. This file needs to be put on a PC near the terminal server, or loaded onto the hard disk of a local Alpha Micro host computer system. This file can then be downloaded to the terminal server via port 0 at 19200 baud with XMODEM protocol. To use this feature you must configure the CMOS set up for the alternate boot device to be XMODEM and save and exit CMOS. Then use a modem package like VersiComm or AutoLog to send the emergency boot file to the terminal server. This file can be downloaded from ftp.alphamicro.com if your floppy is not available. See the terminal server CMOS set up information earlier in this chapter for details of the CMOS set up procedure.



In order to download the emergency boot file to the terminal server, make sure the following items have been taken into account:

1. CMOS set up should be configured so that Xmodem has been selected as the Secondary boot device type. Don't forget to save the new CMOS settings.
2. If the emergency boot file is on your local PC, make sure you connect port 0 of the terminal server directly to the COM port on your local PC. See Appendix A for cabling details. From your local PC, you can then use Windows HyperTerminal to transfer the file using Xmodem protocol to the terminal server.
3. If the emergency boot file is on your Alpha Micro host, make sure that you connect port 0 of the terminal server directly to an available port on the host. See Appendix A for cabling details. You can then use either VersiCOMM or AUTLOG to transfer the file directly to the terminal server using Xmodem protocol.

Once the terminal server has finished downloading the emergency boot file, it will boot up in a minimal operating environment. This configuration has a VDK RAM disk initialized. Additionally, TCP/IP is set up with BOOTPC running. You now have two choices in order to fully restore the software to your

terminal server. Your network must be up and running so the terminal server can be configured from a BOOTPD server or using the new AMPM utility.

Downloading from a BOOTPD Server

The Alpha Micro host can be the BOOTPD server. The requirements are that if the host Alpha Micro system is running AlphaTCP 1.4A, it must have BOOTPD.LIT 1.4a(101) or later and its corresponding RTI file, and a BOOTPD. file which contains a BOOTP definition for the Terminal Server. The most important information needed from the terminal server is the hardware MAC address. This address is six two digit hex characters separated with dashes. During the normal boot of the terminal server you will see this number twice, once when it initializes the Ethernet circuitry within the terminal server, and once just after the TCPEMU job is defined. Once you have this number, you must substitute it into the BOOTPD. file on your BOOTPD server. On this BOOTPD server, you must define the Terminal Server IP address and the host name of the terminal server. You also define the nameserver IP and the gateway IP.

The following commands should be entered at terminal server port 0:

1. **LOG VDK0:[1,2]**
2. **ftp -bh {your alpha micro server ip}**
3. **cd {host location where the trm4mb.img file is stored}**
4. **get trm4mb.img**
5. **bye**
6. **LOG OPR:**
7. **FLUTIL**

Choose option **3** (Copy Image file to Flashcard)

Specify the complete file-spec. **VDK0:TRM4MB.IMG[1,2]**

This file was created to a VDK disk with option 2 of FLUTIL. This file must be saved onto a system near the terminal server that can ftp the file back to the terminal server during emergency recovery.

8. **RESET** the terminal server.
9. Change CMOS alternate boot to NONE [ESC] Y

This whole procedure should take about 20-25 minutes.

Downloading Using the AMPM Utility

This procedure introduces a new capability, AMPM, which is only available to you if your Alpha Micro host is running AlphaTCP version 1.5 or later. Consult the AlphaTCP 1.5 release notes and Administrator's manual for details of the AMPM utility.

You will need to set up and configure HTTPD and TAMED to be running. Additionally, you must create an HTTPD.DEV file and a disk directory where you can store the package directory files. Once you warm boot your system with option 2 above, enter the following commands at terminal server port 0:

1. **LOG OPR:**
 2. **AMPM ALPHAMICRO:100TX DSK0:** (for Eagle 100TX)
- or**

AMPM ALPHAMICRO:450TX DSK0: (for Eagle 450TX)

Where:

- ALPHAMICRO is the company name defined in AMPM.TXT[7,0] on your terminal server. You can substitute the name with an IP address. You can also point to your own server by adding a definition line to AMPM.TXT file.
- 100TX or 450TX is the package directory file at the company server.
- DSK0: is your local disk device where the updates need to be stored.

Since Alpha Micro has an ftp server, the most up-to-date TRMSRV.DIR file is always available so you can update you terminal server with the standard release. The only thing to keep in mind is that the customization of your operating environment will need to be applied to the terminal server configuration files before you run the FLUTIL program.

Option #2 - Download Complete Image File Backup

You can also download a complete image of your flash disk via terminal server serial port 0 if you have stored the flash disk image on a PC or the Alpha Micro host computer. It is unlikely that you will use this procedure, since the process of downloading the entire 4 MB image file can take up to 2 hours, and options 2 and 4 are much more efficient. In addition, if during the download process you encounter CRC errors during the download process, you may not be able to complete this procedure in its entirety.

Option #3 - Replace the flashcard

This option requires a technician on site to open the unit and replace the AM703 flash card. Most likely this will not be practical.

Defining The Terminal Server's Parallel Port

The terminal server contains one parallel port, which is defined for you in all the INI files provided. If you want to use the parallel port, you may want to verify that the following statements are included in the INI file that you are using:

```
DEVTBL /EGP0
```

```
SYSTEM EGP.DVR[ 1 , 6 ]
```

In addition, the EGP.PIN file contains the following statement:

```
DEVICE=EGP0 :
```

For information on printer initialization files and printer spoolers, see the System Operator's Guide for your version of AMOS. For information on constructing cables to connect a printer to a parallel port, see Appendix A.

Appendix A - Connector Configurations

The rear panel of your terminal server contains all serial connectors for the serial ports included in your terminal server, one parallel connector for the parallel port, and the Ethernet connector (either standard 15 pin connector and /or the RJ-45 10BaseT Ethernet connector) for attaching the terminal server to your network. This appendix discusses connector and cable considerations for both network and serial connections.

ETHERNET RJ-45 10BASET CONNECTOR

The Ethernet RJ-45 10BaseT port functions exactly like a DB-15 Ethernet AUI port. In fact, both of these ports use the same Ethernet driver. The following section explains some of the technical aspects of Ethernet networking, as well as the cable pinouts required when using the 10BaseT (RJ-45) interface connector.

10BaseT Topology and Cabling

Ethernet networks were originally designed to be multi-point networks arranged as a bus topology. That meant that Ethernet would work over coaxial cable (either thick or thin) with 50 ohm termination at each end of the network, and each computer would attach directly to the same cable.

With the introduction of 10BaseT, Ethernet can be connected via inexpensive twisted pair (Level 5 compliant) cabling, with each computer having its own RJ-45 termination. As a result however, the network topology is changed so a central repeater or "hub" is required to rebroadcast both data and Ethernet control signals to all other computers connected to the Ethernet. Such repeaters are commonly available from commercial sources.

10BaseT connections use 100 ohm unshielded twisted pairs, with at least two pairs per cable (one set of pairs for transmitting data and another for receiving). 10BaseT cables terminate in eight pin RJ-45 connectors with the following pin assignments:

<u>Pin</u>	<u>Signal Name</u>
1	Transmit Data +
2	Transmit Data -
3	Receive Data +
6	Receive Data -

The other pins are unused.

The 10BaseT specification allows a maximum distance of 100m (approx. 300 feet) between the computer and hub.

ETHERNET FEMALE DB-15 A.U.I. CONNECTOR

Your Eagle TX Series terminal server may have a 15-pin Ethernet port that supports standard (thick) Ethernet cabling configurations, and /or the 10BaseT connector described previously. The 15-pin connector is A.U.I. (Attachment Unit Interface) compatible, and with the addition of a commercially available transceiver, the port can be converted for thin Ethernet operation.

To use the Ethernet port, you need Alpha Microsystems' networking software AlphaTCP and/or AlphaNET. For AlphaTCP setup instructions, please refer to the *AlphaTCP Administrator's Guide*, DSO-00187-00. The *AlphaNET Installation Instructions*, DSO-00064-00, explain how to configure an AlphaNET network.

SERIAL I/O CONNECTORS

The Eagle TX Series terminal server main electronics board includes eight on-board RS-232 serial ports. For the Eagle 100TX, all on-board ports interface to standard DB-9 connectors and use the A31810.IDV interface driver starting at octal port #0. An optional configuration, using Alpha Microsystems AM-90 Lightning Protection I/O interface boards, provide an RJ-45 connector interface instead of the DB-9 connectors. For the Eagle 450TX, all ports include AM-90 Lightning Protection I/O interface boards and use RJ-45 interface connectors.

The following sections discuss the RS-232 standard, considerations if you want to build your own cables, and cable kits available from Alpha Micro for connecting the serial ports to various types of device.

What Is RS-232?

All Eagle TX Series serial ports support RS-232. RS-232 is a standard developed by the Electronic Industry Association (EIA) to encourage standardized interfacing of devices to computer systems (RS stands for Recommended Standard). RS-232 specifies electrical signal characteristics and names, and defines the functions of the signal and control lines that make up the interface.

Basically, implementing this standard involves assigning standardized signal definitions for the various pins of the RS-232 connector at either end of your terminal or printer cables. For example, the wire attached to Pin #2 carries the signal interpreted on the computer end as "Input Data from Terminal" and on the terminal end as "Transmit Data To Computer."

You enable these specific signals by attaching cable wires to certain connector pins.

If a terminal or printer manufacturer says their device is RS-232 or RS-232C compatible, it will probably be easy for you to connect it to your Alpha Micro computer system.

Before constructing the cable to connect a printer or terminal to your Alpha Micro computer system, you need to consult the manufacturer's manual accompanying the device. It will tell you how to wire the connector on the device end. Few devices use all of the defined signals. In most cases, you need to connect only three or four pins. Although printer cables are sometimes a little more complicated on the printer end, terminal cables are often the same on both computer and terminal ends.

Alpha Micro uses RJ-45 or DB-9 connectors for RS-232 device connection. The standard maximum length of RS-232 cables is *50 feet* between devices. If you use low-capacity twisted-pair cable you can extend the length up to 100 feet.

Important Note

The Federal Communications Commission (FCC) has established rules regarding allowable emission levels of Class A computing devices (ref: Subpart J of Part 15 of FCC Rules). The Alpha Micro systems to which this manual applies have been determined to be in compliance with the FCC rules. However, you should be aware that if other devices, such as terminals and printers, are attached to these systems, even if the devices are attached in accordance with the instructions contained in this manual, the resulting configuration may not be in compliance with the referenced FCC rules. Corrective measures, if any are required, are the responsibility of the user. Information on emission levels of peripheral devices should be obtained from the manufacturer of the device.

CABLE CONSTRUCTION GUIDELINES

If you want to construct your own cables, there are a few things you should keep in mind:

Cable Length

We strongly recommend that RS-232C cables attached to the Eagle TX Series terminal servers use twisted-pair cable with an overall shield. As you increase the cable length beyond 100 feet, the reliability of the data signal decreases. If the cables absolutely must be longer than 100 feet, signal conditioning equipment (for example, a "short haul modem") can improve signal quality.

Cable Type

We recommend you use a twisted paired shielded and jacketed cable. The cable should be rated at least CMP Level 3, but you can use CMP Level 5 cable for lines longer than 100 feet. Most cities require that any low voltage communication cable have a CMP (Communication cable Plenum) rating. This type of cable should comply with your local fire codes for installation in your facility. Using a high quality twisted paired, overall shielded cable helps minimize electromagnetic interference. Reducing this interference protects your system from signal noise. It also protects other devices around your Alpha Micro computer system (such as a TV or radio) from interference radiated by an improperly shielded system.

RS-232 RJ-45 CONNECTOR SIGNALS

The table below gives pinout information for the RJ-45 ports on the AM-90 card attached to the terminal server's main logic board. Pins are numbered from left to right, looking into the port from outside the computer chassis.

Pin #	Description	
1	Chassis ground (shield)	GND
2	Clear to send	CTS
3	Transmit data	TXD
4	Request to send	RTS
5	Receive data	RXD
6	Data terminal ready	DTR
7	Signal ground	GND
8	Data carrier detect	DCD

RS-232 DB-9 CONNECTOR SIGNALS

The table below gives pinout information for the DB-9 ports on the rear panel of the Eagle 100TX.

Pin #	Description	
1	No connection	N/C
2	Receive Data	RXD
3	Transmit data	TXD
4	Clear to send	CTS
5	Request to send	RTS
6	No connection	N/C
7	Signal ground	GND
8	Data carrier detect	DCD
9	Data terminal ready	DTR

CABLES AVAILABLE FROM ALPHA MICRO

The serial ports on the terminal server using RJ-45 connectors use the same plug-and-play external cabling kits as the AM-359 serial I/O boards. The list below gives the part number and a brief description of each cabling kit available for the terminal server.



These cabling configurations meet the USOC (United Standards Organization Committee) Standards.

- **PDB-00359-53**—Four RJ-45 to male DB25 adapters for connecting modems to the terminal server. This kit requires a shielded parallel patch cord with RJ-45 connectors at each end, like the 10-foot PRA-00189-10 cable in the PDB-00359-56 cabling kit described below.
- **PDB-00359-54**—Four modular RJ-45 to male DB25 adapters for connecting printers and terminals to the terminal server. This kit requires a shielded parallel patch cord with RJ-45 connectors at each end, like the 10-foot PRA-00189-10 cable supplied in the PDB-00359-56 cabling kit described below.
- **PDB-00359-55**—Four modular RJ-45 to female DB9 adapters for connecting a PC-AT style serial port to a terminal server. This kit requires a shielded parallel patch cord with RJ-45 connectors at each end, like the 10-foot PRA-00189-10 cable supplied in the PDB-00359-56 cabling kit described below.

- **PDB-00359-56**—This kit includes four (PRA-00189-10) 10 foot shielded parallel patch cords with RJ-45 connectors at each end.

Sample Cable for Connecting the Terminal Server to a PC

It is possible to download the terminal server Flashcard from a boot data file in a PC. Connect the two systems with a cable from a free com port on the PC to port 0 on the terminal server. The cable is wired as follows:

RJ-45 Plug	DB-9F
<u>(Connects to terminal server)</u>	<u>(Connects to the PC)</u>
Pin 5-----	Pin 3
Pin 4-----	Pin 8
Pin 3-----	Pin 2
Pin 6-----	Pin 1
Pin 2-----	Pin 7
Pin 7-----	Pin 5
Pin 8-----	Pin 4
Pin 1 (no connection)	

The connectors and pinouts for this cable are identical to those for the cables in the PDB-00359-55 External Cabling Kit.

Sample Cable for Connecting the Terminal Server to an Alpha Micro Host Computer

It is possible to download the terminal server Flashcard from a boot data file in an Alpha Micro Host Computer. Connect the two systems with a cable from a free serial port on the host computer to port 0 on the terminal server. The cable is wired as follows:

RJ-45 Plug	DB-9M
<u>(Connects to terminal server)</u>	<u>(Connects to the host)</u>
Pin 5-----	Pin 3
Pin 4-----	Pin 4
Pin 3-----	Pin 2
Pin 6-----	Pin 8
Pin 2-----	Pin 5
Pin 7-----	Pin 7
Pin 8-----	Pin 9
Pin 1 (no connection)	

Appendix B - The Control Characters

Your terminal keyboard allows you to type control characters which perform special functions. A control character is the signal transmitted to the computer when you hold down the **CTRL** key and press another key at the same time. The following list contains the most important control characters. The *AMOS User's Guide* contains a complete list of control characters and their functions.

Control-C Control-C is the system interrupt command. You use it to interrupt whatever program is in progress and return to AMOS command level. After pressing **CTRL/C** to interrupt a program, you cannot resume execution of that program; you must start it over from the beginning.

Some programs, such as AlphaVUE, do not recognize a Control-C as an exit command; instead you must use the exit command for that program if you want to return to AMOS command level.

Other programs do recognize a Control-C; however, if an exit command exists for a program, it is usually better to use that command than to press **CTRL/C**. Many programs perform various closing functions when you use their normal exit commands and would not have a chance to perform those procedures for an orderly exit if you bypass them by using a Control-C.

Control-U At AMOS command level, you may move to the leftmost character of the command line you are typing by pressing **CTRL/U**.

Control-S A program or command often displays more data on your terminal than fits on one screen. To stop the screen display, press **CTRL/S**.

You can now read the data on the screen at your leisure. Not only does the display freeze, but AMOS actually stops sending data to your terminal until you press **CTRL/Q** (see below); at that point, AMOS resumes sending information where it left off.

While a Control-S is in effect, AMOS stores, but does not act upon, anything you type except for **CTRL/Q**. There is, however, a limit to how much can be stored. The exact number of characters depends on your initial system setup.

Control-Q

When you press **CTRL/S** (described above) to freeze the screen display, you must press **CTRL/Q** to resume the screen display. If you have typed anything while the Control-S was in effect, a Control-Q tells AMOS it can now go ahead and act upon that input.

Try this: Press **CTRL/S**, then type **DIR RETURN**, and then **PRINT RETURN**. The commands aren't displayed on the screen and it appears that nothing happened. Now press **CTRL/Q** to release the display, and you see first a list of the files in your account printed on the screen, then a display of the files waiting to print.

Control-R

The command buffer is an area of memory where the computer stores commands that have been entered. Pressing **CTRL/R** shows you what commands are in your command buffer.

If the line editor is installed on your computer, you can use **CTRL/R** to call up previous command lines, make changes to them, and then submit them again. This is a great convenience if you want to enter a series of similar commands; you can just keep making minor changes to one command, and reusing it.

Appendix C - Eagle 100TX INI & Configuration Files

Following are the listings of the various INI and configuration files included in the Eagle 100TX

AMOS32.INI

```
:T
JOBS 50
JOBALC JOB0 ,JOB1 ,JOB2 ,JOB3 ,JOB4 ,JOB5 ,JOB6 ,JOB7
JOBALC SPOOL ,NETSER ,NETLOG ,TCPEMU
;
QUEUE 3000
;
LOAD LOAD.LIT
LOAD DEL.LIT
LOAD SYMSG.USA
LOAD TRMDEF.LIT
LOAD DEVTBL.LIT
LOAD BITMAP.LIT
LOAD SYSTEM.LIT
LOAD MOUNT.LIT
;
TRMDEF TRM0 ,A31810=0:19200 ,AM62A ,100 ,100 ,100 ,EDITOR=5
XY=24 ; Turn Graphics Off
TRMDEF TRM1 ,A31810=1:19200 ,AM62A ,100 ,100 ,100 ,editor=5
TRMDEF TRM2 ,A31810=2:19200 ,AM62A ,100 ,100 ,100 ,editor=5
TRMDEF TRM3 ,A31810=3:19200 ,AM62A ,100 ,100 ,100 ,editor=5
TRMDEF TRM4 ,A31810=4:19200 ,AM62A ,100 ,100 ,100 ,editor=5
TRMDEF TRM5 ,A31810=5:19200 ,AM62A ,100 ,100 ,100 ,editor=5
TRMDEF TRM6 ,A31810=6:19200 ,AM62A ,100 ,100 ,100 ,editor=5
TRMDEF TRM7 ,A31810=7:19200 ,AM62A ,100 ,100 ,100 ,editor=5
TRMDEF DUMMY ,PSEUDO ,NULL ,100 ,100 ,100
TRMDEF NETSER ,PSEUDO ,NULL ,100 ,100 ,100
TRMDEF NETLOG ,PSEUDO ,NULL ,100 ,100 ,100
TRMDEF TCPEMU ,PSEUDO ,NULL ,100 ,100 ,100
;
VER
;
DEVTBL TRM ,RES ,MEM ,TLP , /EGP
DEVTBL VDK
BITMAP DSK
BITMAP VDK ,800 ,0
MSGINI 20K
NETFAM
;
ERSATZ ERSATZ.ERZ
ERSATZ ETH101.ERZ
;
SYSTEM SYMSG.USA
SYSTEM CMDLIN.SYS
SYSTEM SCNWLD.SYS
SYSTEM DVR:TRM.DVR
SYSTEM DVR:EGP.DVR
```

```
SYSTEM DVR:TLP.DVR
SYSTEM DVR:AM366E.LDV/N
SYSTEM DVR:VDK.DVR
SYSTEM VDK1.SYS/N
SYSTEM VDKCTL.SYS/N
SYSTEM RPC.SYS/N
SYSTEM RPCLOD.LIT
SYSTEM RTI.LIT
SYSTEM TCP:IPCINI/N 100 100K
SYSTEM TCP:TELNET.LIT
SYSTEM TCP:TELNET.RTI
SYSTEM TELNET.LIT
SYSTEM TELNET.RTI
SYSTEM TCP:FTPD.LIT
SYSTEM TCP:FTPD.RTI
SYSTEM SYS:FTP.LIT
SYSTEM SYS:FTP.RTI
SYSTEM TCP:LPD.LIT
SYSTEM TCP:LPD.RTI
SYSTEM TCP:LPR.LIT
SYSTEM TCP:LPR.RTI
SYSTEM MLTMEM.SYS/N 3200K
SYSTEM
SMEM 5M
;
LOG OPR:
SYSTEM SERVICE
MOUNT VDK0:
SYSACT VDK0:
I
Y
N
A1,2

E
;
LOG SYS:
SET DSKERR
SET HEX
;
MOUNT DSK:
DEL *
;
SETJOB SPOOL,DUMMY,10K,LPTINI EGP.PIN
XFRSEL EGP0: RAW
;
SETJOB NETSER,NETSER,100K,NETSER
WAIT NETSER
SETJOB NETLOG,NETLOG,50K
SETJOB TCPEMU,TCPEMU,2000K,TCP:GOTCP.CMD
;
SLEEP 5
;
SETJOB JOB1,TRM1,750K,START7.JIN
SETJOB JOB2,TRM2,750K,START7.JIN
SETJOB JOB3,TRM3,750K,START7.JIN
SETJOB JOB4,TRM4,750K,START7.JIN
SETJOB JOB5,TRM5,750K,START7.JIN
SETJOB JOB6,TRM6,750K,START7.JIN
SETJOB JOB7,TRM7,750K,START7.JIN
;
;force job0 sys:start0.jin
MEMORY 0
```

ALPNET.INI

```

:T
JOBS 25
JOBALC JOB0 ,JOB1 ,JOB2 ,JOB3 ,JOB4 ,JOB5 ,JOB6 ,JOB7
JOBALC SPOOL ,NETSER ,VTSER ,NETLOG ,TCPEMU
;
QUEUE 2500
; IF YOU USE THIS .INI REMEMBER TO CHANGE THE TCP:CONFIG. FILE
; TO CHANGE FROM .LDV TO .NDV
;
LOAD LOAD.LIT
LOAD DEL.LIT
LOAD SYSMSG.USA
LOAD TRMDEF.LIT
LOAD DEVTBL.LIT
LOAD BITMAP.LIT
LOAD SYSTEM.LIT
LOAD MOUNT.LIT
;
TRMDEF TRM0 ,A31810=0:19200 ,AM62A ,100 ,100 ,100 ,EDITOR=5
XY=24 ; Turn Graphics Off
TRMDEF TRM1 ,A31810=1:19200 ,AM62A ,100 ,100 ,100 ,editor=5
TRMDEF TRM2 ,A31810=2:19200 ,AM62A ,100 ,100 ,100 ,editor=5
TRMDEF TRM3 ,A31810=3:19200 ,AM62A ,100 ,100 ,100 ,editor=5
TRMDEF TRM4 ,A31810=4:19200 ,AM62A ,100 ,100 ,100 ,editor=5
TRMDEF TRM5 ,A31810=5:19200 ,AM62A ,100 ,100 ,100 ,editor=5
TRMDEF TRM6 ,A31810=6:19200 ,AM62A ,100 ,100 ,100 ,editor=5
TRMDEF TRM7 ,A31810=7:19200 ,AM62A ,100 ,100 ,100 ,editor=5
TRMDEF DUMMY ,PSEUDO ,NULL ,80 ,80 ,80
TRMDEF NETSER ,PSEUDO ,NULL ,80 ,80 ,80
TRMDEF VTSER , PSEUDO ,NULL ,80 ,80 ,80
TRMDEF NETLOG ,PSEUDO ,NULL ,80 ,80 ,80
TRMDEF TCPEMU ,PSEUDO ,NULL ,80 ,80 ,80
;
VER
DEVTBL TRM ,RES ,MEM ,/EGP
BITMAP DSK
MSGINI 20K
NETINI ETH101.NIN
;NETFAM
;
ERSATZ ERSATZ.ERZ
ERSATZ ETH101.ERZ
;
SYSTEM SYSMSG.USA
SYSTEM CMDLIN.SYS
SYSTEM SCNWLD.SYS
SYSTEM DVR:TRM.DVR
SYSTEM DVR:EGP.DVR
;;SYSTEM DVR:AM366E.LDV/N
SYSTEM RPC.SYS/N
SYSTEM RPCLOD.LIT
SYSTEM RTI.LIT
SYSTEM TCP:IPCINI/N 100 100K
SYSTEM TCP:TELNET.LIT
SYSTEM TCP:TELNET.RTI
SYSTEM TELNET.LIT
SYSTEM TELNET.RTI
SYSTEM TCP:FTPD.LIT
SYSTEM TCP:FTPD.RTI
SYSTEM
SMEM 3M

```

```

;
LOG OPR:
SYSTEM SERVICE
SET DSKERR
SET HEX
;
MOUNT DSK:
DEL *
;
SETJOB SPOOL,DUMMY,10K,LPTINI EGP.PIN
XFRSEL EGP0: RAW
;
SETJOB NETSER,NETSER,100K,NETSER.JIN
WAIT NETSER
SETJOB VTSER,VTSER,50K,VTSER.JIN
SET LINK 1694695425-
LOG SYS:

SETJOB NETLOG,NETLOG,50K
SETJOB TCPEMU,TCPEMU,1500K,TCP:GOTCP.CMD
;
SLEEP 5
;
SETJOB JOB1,TRM1,200k,START1.JIN
SETJOB JOB2,TRM2,200k,START1.JIN
SETJOB JOB3,TRM3,200K,START1.JIN
SETJOB JOB4,TRM4,200K,START4.JIN
SETJOB JOB5,TRM5,200K,START5.JIN
SETJOB JOB6,TRM6,200K,START6.JIN
SETJOB JOB7,TRM7,200K,START7.JIN
;
force job0 sys:start1.jin
MEMORY 0

```

VDKINI.INI

```

:T
JOBS 50
JOBALC JOB0,JOB1,JOB2,JOB3,JOB4,JOB5,JOB6,JOB7
JOBALC NETLOG,TCPEMU
;
QUEUE 2000
;
LOAD LOAD.LIT
LOAD DEL.LIT
LOAD SYMSG.USA
LOAD TRMDEF.LIT
LOAD AMO000.OVR
LOAD SER000.OVR
;
TRMDEF TRM0,A31810=0:19200,AM62A,100,100,100,EDITOR=10
TRMDEF TRM1,A31810=1:19200,AM62A,100,100,100,EDITOR=10
VER
XY=24
TRMDEF TRM2,A31810=2:19200,AM62A,100,100,100,EDITOR=10
TRMDEF TRM3,A31810=3:19200,AM62A,100,100,100,EDITOR=10
TRMDEF TRM4,A31810=4:19200,AM62A,100,100,100,EDITOR=10
TRMDEF TRM5,A31810=5:19200,AM62A,100,100,100,EDITOR=10
TRMDEF TRM6,A31810=6:19200,AM62A,100,100,100,EDITOR=10
TRMDEF TRM7,A31810=7:19200,AM62A,100,100,100,EDITOR=10
TRMDEF NETLOG,PSEUDO,NULL,80,80,80
TRMDEF TCPEMU,PSEUDO,NULL,80,80,80
; Turn Graphics Off

```

```
;
;
DEVTBL TRM,RES,MEM
DEVTBL VDK
;DEVTBL /STR0
;
BITMAP DSK
BITMAP VDK,600,0
;
MSGINI 20K
ERSATZ ERSATZ.ERZ
;
SYSTEM SYSMMSG.USA
SYSTEM CMDLIN.SYS
SYSTEM SCNWLD.SYS
SYSTEM DVR:TRM.DVR
SYSTEM DVR:AM366E.LDV/N
system vdk1.sys/n
system dvr:vdk.dvr
system vdkctl.sys/n
SYSTEM TCP:IPCINI/N 100 100K
SYSTEM SYS:RTI.LIT
SYSTEM SYS:TELNET.LIT
SYSTEM SYS:TELNET.RTI
SYSTEM TCP:FTPD.LIT
SYSTEM TCP:FTPD.RTI
SYSTEM
SMEM 2700K
;
SET DSKERR
SET HEX
;
MOUNT DSK:
MOUNT VDK0:
LOG OPR:
SYSTEM SERVICE

SET NOCACHE VDK0:
SYSACT VDK0:
I
Y
Y
A 1,2

E
;
DEL *
LOG SYS:
;
SETJOB JOB1,TRM1,200k,VER
SETJOB JOB2,TRM2,200k,VER
SETJOB JOB3,TRM3,200k,VER
SETJOB JOB4,TRM4,200k,VER
SETJOB JOB5,TRM5,200k,VER
SETJOB JOB6,TRM6,200K,VER
SETJOB JOB7,TRM7,200K,VER
;
SETJOB NETLOG,NETLOG,50K
SETJOB TCPEMU,TCPEMU,1000K,TCP:GOTCP.CMD

SI
MEMORY 0
```

CONFIG.

```

# attach the ethernet to the internet package (using AlphaNET NDVs):
# EXAMPLE: ifconfig <interface> <AlphaNet Network #> arpa <receive buffers>
#ifconfig ec0 101 arpa 100
# attach the ethernet to the internet package (using standalone LDVs):
# EXAMPLE: ifconfig <interface> <driver>
ifconfig ec0 am366e
# attach the slip interface to a slip daemon:
# EXAMPLE: ifconfig <interface> <terminal> <dialup script>
#ifconfig asy0 modem1 dialup.slp
#ifconfig asy1 modem2
#ifconfig asy2 modem3
#ifconfig asy3 modem4
# change the tcp close timeout to fit the environment
# EXAMPLE: closetime <seconds>
#closetime 120
# change the tcp keepalive timeout to fit the environment
# EXAMPLE: keepalive <minutes>
#keepalive 15
# start up the daemons (servers)
# EXAMPLE: start <daemon> <memory> <options...>
# (these assume ftpd, tftpd, smtpd, pop3d, lpr, lpd, and httpd are
# in system memory)
#
#start rwhod 75k
start ftpd 50k -o
start telnetd 100k
#start tftpd 35k
#start smtpd 125k -i
#start pop3d 60k
#start poppwd 70k
start lpr 35k
start lpd 35k
start itcd 110k
start tamed 200k
#start httpd 100k
#start sntpd 85k -b2 -p240
start bootpc 100k -h -n -t
# if you have a default router this is a simple way to set the default route.
# once complete it will exit and free the memory. fill in the IP address.
#start route 200k -s add 172.16.128.10

```

HOSTS.

```

#Hostname file for AlphaTCP
172.16.128.88      e100tx.am-corporate.com      e100tx      #AM-100TX (AM-137)
172.16.128.77      am450.am-corporate.com      am450      #AM-450 (AM-138)
127.0.0.1         localhost                    me          #local loopback

```

ITCD.

```

16842754- 192.16.128.72 ;am6000
16842757- 192.16.128.86 ;am6060
16842755- 172.16.128.76 ;am450
16842756- 172.16.128.74 ;egl100lc
16842753- 172.16.128.88 ;egl100tx
16842758- 172.16.128.89 ;falcon

```

NETWRK.

```
#ident "@(#)networks 1.4 9/4/90"
#
# NETWORKS
#
# Contains information on networks comprising the DARPA Internet.
#
# The fields are:
#
# official network name    network number    alias  [ alias ]  [ alias ]...
#
# for example:
#
#      ethernet            89.0.0.0        ether   eth   net
#
#ethernet 172.16.128.88    ether eth net
#ethernet bootp          ether eth net
#ethernet dhcp           ether eth net
#slip     192.0.3.1       serial (245)
#loop     127.0.0.1      local
```

Appendix D - Eagle 450TX INI & Configuration Files

Following are the listings of the various INI and configuration files included in the Eagle 450TX

AMOS32.INI

```
:T
JOBS 50
JOBALC JOB0 ,JOB1 ,JOB2 ,JOB3 ,JOB4 ,JOB5 ,JOB6 ,JOB7
JOBALC SPOOL ,NETSER ,NETLOG ,TCPEMU
;
QUEUE 3000
;
LOAD LOAD.LIT
LOAD DEL.LIT
LOAD SYMSG.USA
LOAD TRMDEF.LIT
LOAD DEVTBL.LIT
LOAD BITMAP.LIT
LOAD SYSTEM.LIT
LOAD MOUNT.LIT
;
TRMDEF TRM0 ,A31810=0:19200 ,AM62A ,200 ,200 ,100 ,EDITOR=5
XY=24 ; Turn Graphics Off
TRMDEF TRM1 ,A31810=1:19200 ,AM62A ,200 ,200 ,100 ,editor=5
TRMDEF TRM2 ,A31810=2:19200 ,AM62A ,200 ,200 ,100 ,editor=5
TRMDEF TRM3 ,A31810=3:19200 ,AM62A ,200 ,200 ,100 ,editor=5
TRMDEF TRM4 ,A31810=4:19200 ,AM62A ,200 ,200 ,100 ,editor=5
TRMDEF TRM5 ,A31810=5:19200 ,AM62A ,200 ,200 ,100 ,editor=5
TRMDEF TRM6 ,A31810=6:19200 ,AM62A ,200 ,200 ,100 ,editor=5
TRMDEF TRM7 ,A31810=7:19200 ,AM62A ,200 ,200 ,100 ,editor=5
TRMDEF DUMMY ,PSEUDO ,NULL ,100 ,100 ,100
TRMDEF NETSER ,PSEUDO ,NULL ,100 ,100 ,100
TRMDEF NETLOG ,PSEUDO ,NULL ,100 ,100 ,100
TRMDEF TCPEMU ,PSEUDO ,NULL ,100 ,100 ,100
;
PARITY
VER
;
DEVTBL TRM ,RES ,MEM ,TLP , /EGP
DEVTBL VDK
BITMAP DSK
BITMAP VDK ,800 ,0
MSGINI 20K
NETFAM
;
ERSATZ ERSATZ.ERZ
ERSATZ ETH101.ERZ
;
SYSTEM SYMSG.USA
```

```
SYSTEM CMDLIN.SYS
SYSTEM SCNWLD.SYS
SYSTEM DVR:TRM.DVR
SYSTEM DVR:EGP.DVR
SYSTEM DVR:TLP.DVR
SYSTEM DVR:AM138.LDV/N
SYSTEM DVR:VDK.DVR
SYSTEM VDKI.SYS/N
SYSTEM VDKCTL.SYS/N
SYSTEM RPC.SYS/N
SYSTEM RPCLOD.LIT
SYSTEM RTI.LIT
SYSTEM TCP:IPCINI/N 100 100K
SYSTEM TCP:TELNET.LIT
SYSTEM TCP:TELNET.RTI
SYSTEM TELNET.LIT
SYSTEM TELNET.RTI
SYSTEM TCP:FTPD.LIT
SYSTEM TCP:FTPD.RTI
SYSTEM SYS:FTP.LIT
SYSTEM SYS:FTP.RTI
SYSTEM TCP:LPD.LIT
SYSTEM TCP:LPD.RTI
SYSTEM TCP:LPR.LIT
SYSTEM TCP:LPR.RTI
SYSTEM MLTMEM.SYS/N 3200K
SYSTEM
SMEM 5M
;
LOG OPR:
SYSTEM SERVICE
MOUNT VDK0:
SYSACT VDK0:
I
Y
N
A1,2

E
;
LOG SYS:
SET DSKERR
SET HEX
;
MOUNT DSK:
DEL *
;
SETJOB SPOOL,DUMMY,10K,LPTINI EGP.PIN
XFRSEL EGP0: RAW
;
SETJOB NETSER,NETSER,100K,NETSER
WAIT NETSER
SETJOB NETLOG,NETLOG,50K
SETJOB TCPEMU,TCPEMU,2000K,TCP:GOTCP.CMD
;
SLEEP 5
MAC.LIT
ipcfg
;
SETJOB JOB1,TRM1,250k,START7.JIN
```

```

SETJOB JOB2,TRM2,250k,START7.JIN
SETJOB JOB3,TRM3,250K,START7.JIN
SETJOB JOB4,TRM4,250K,START7.JIN
SETJOB JOB5,TRM5,250K,START7.JIN
SETJOB JOB6,TRM6,250K,START7.JIN
SETJOB JOB7,TRM7,250K,START7.JIN
;
;force job0 sys:start0.jin
MEMORY 0

```

TRMS32.INI

;(NOTE: TRMS08.INI, TRMS16.INI, and TRMS24.INI are subsets of this file.)

```

:T
; AM450tx-32 Port configuration
;
JOBS 75
JOBALC JOB0,JOB1,JOB2,JOB3,JOB4,JOB5,JOB6,JOB7
JOBALC JOB10,JOB11,JOB12,JOB13,JOB14,JOB15,JOB16,JOB17
JOBALC JOB20,JOB21,JOB22,JOB23,JOB24,JOB25,JOB26,JOB27
JOBALC JOB30,JOB31,JOB32,JOB33,JOB34,JOB35,JOB36,JOB37
JOBALC SPOOL,NETSER,NETLOG,TCPEMU
;
QUEUE 3000
;
LOAD LOAD.LIT
LOAD DEL.LIT
LOAD SYSMSG.USA
LOAD TRMDEF.LIT
LOAD DEVTBL.LIT
LOAD BITMAP.LIT
LOAD SYSTEM.LIT
LOAD MOUNT.LIT
;
TRMDEF TRM0,A31810=0:19200,AM62A,200,200,100,editor=5
XY=24 ; Turn Graphics Off
TRMDEF TRM1,A31810=1:19200,AM62A,200,200,100,editor=5
TRMDEF TRM2,A31810=2:19200,AM62A,200,200,100,editor=5
TRMDEF TRM3,A31810=3:19200,AM62A,200,200,100,editor=5
TRMDEF TRM4,A31810=4:19200,AM62A,200,200,100,editor=5
TRMDEF TRM5,A31810=5:19200,AM62A,200,200,100,editor=5
TRMDEF TRM6,A31810=6:19200,AM62A,200,200,100,editor=5
TRMDEF TRM7,A31810=7:19200,AM62A,200,200,100,editor=5
;
TRMDEF TRM10,A31810=10:19200,AM62A,200,200,100,editor=5
TRMDEF TRM11,A31810=11:19200,AM62A,200,200,100,editor=5
TRMDEF TRM12,A31810=12:19200,AM62A,200,200,100,editor=5
TRMDEF TRM13,A31810=13:19200,AM62A,200,200,100,editor=5
TRMDEF TRM14,A31810=14:19200,AM62A,200,200,100,editor=5
TRMDEF TRM15,A31810=15:19200,AM62A,200,200,100,editor=5
TRMDEF TRM16,A31810=16:19200,AM62A,200,200,100,editor=5
TRMDEF TRM17,A31810=17:19200,AM62A,200,200,100,editor=5
;
TRMDEF TRM20,A31810=20:19200,AM62A,200,200,100,editor=5
TRMDEF TRM21,A31810=21:19200,AM62A,200,200,100,editor=5
TRMDEF TRM22,A31810=22:19200,AM62A,200,200,100,editor=5
TRMDEF TRM23,A31810=23:19200,AM62A,200,200,100,editor=5
TRMDEF TRM24,A31810=24:19200,AM62A,200,200,100,editor=5

```

```

TRMDEF TRM25,A31810=25:19200,AM62A,200,200,100,editor=5
TRMDEF TRM26,A31810=26:19200,AM62A,200,200,100,editor=5
TRMDEF TRM27,A31810=27:19200,AM62A,200,200,100,editor=5
;
TRMDEF TRM30,A31810=30:19200,AM62A,200,200,100,editor=5
TRMDEF TRM31,A31810=31:19200,AM62A,200,200,100,editor=5
TRMDEF TRM32,A31810=32:19200,AM62A,200,200,100,editor=5
TRMDEF TRM33,A31810=33:19200,AM62A,200,200,100,editor=5
TRMDEF TRM34,A31810=34:19200,AM62A,200,200,100,editor=5
TRMDEF TRM35,A31810=35:19200,AM62A,200,200,100,editor=5
TRMDEF TRM36,A31810=36:19200,AM62A,200,200,100,editor=5
TRMDEF TRM37,A31810=37:19200,AM62A,200,200,100,editor=5
;
TRMDEF DUMMY,PSEUDO,NULL,100,100,100
TRMDEF NETSER,PSEUDO,NULL,100,100,100
TRMDEF NETLOG,PSEUDO,NULL,100,100,100
TRMDEF TCPEMU,PSEUDO,NULL,100,100,100
;
PARITY
VER
;
DEVTBL TRM,RES,MEM,TLP,/EGP
DEVTBL VDK
BITMAP DSK
BITMAP VDK,800,0
MSGINI 20K
NETFAM
;
ERSATZ ERSATZ.ERZ
ERSATZ ETH101.ERZ
;
SYSTEM SYSMSG.USA
SYSTEM CMDLIN.SYS
SYSTEM SCNWLD.SYS
SYSTEM DVR:TRM.DVR
SYSTEM DVR:EGP.DVR
SYSTEM DVR:TLP.DVR
SYSTEM DVR:AM138.LDV/N
SYSTEM DVR:VDK.DVR
SYSTEM VDKI.SYS/N
SYSTEM VDKCTL.SYS/N
SYSTEM RPC.SYS/N
SYSTEM RPCLOD.LIT
SYSTEM RTI.LIT
SYSTEM TCP:IPCINI/N 100 100K
SYSTEM TCP:TELNET.LIT
SYSTEM TCP:TELNET.RTI
SYSTEM TELNET.LIT
SYSTEM TELNET.RTI
SYSTEM TCP:FTPD.LIT
SYSTEM TCP:FTPD.RTI
SYSTEM SYS:FTP.LIT
SYSTEM SYS:FTP.RTI
SYSTEM TCP:LPD.LIT
SYSTEM TCP:LPD.RTI
SYSTEM TCP:LPR.LIT
SYSTEM TCP:LPR.RTI
SYSTEM MLTMEM.SYS/N 1200K
SYSTEM
SMEM 5M

```

```
;
LOG OPR:
SYSTEM SERVICE
MOUNT VDK0:
SYSACT VDK0:
I
Y
N
A1,2

E
;
LOG SYS:
SET DSKERR
SET HEX
;
MOUNT DSK:
DEL *
;
SETJOB SPOOL,DUMMY,10K,LPTINI EGP.PIN
XFRSEL EGP0: RAW
;
SETJOB NETSER,NETSER,100K,NETSER
WAIT NETSER
SETJOB NETLOG,NETLOG,50K
SETJOB TCPEMU,TCPEMU,2000K,TCP:GOTCP.CMD
;
MAC.LIT
SLEEP 5
;
SETJOB JOB1,TRM1,200k,START7.JIN
SETJOB JOB2,TRM2,200k,START7.JIN
SETJOB JOB3,TRM3,200K,START7.JIN
SETJOB JOB4,TRM4,200K,START7.JIN
SETJOB JOB5,TRM5,200K,START7.JIN
SETJOB JOB6,TRM6,200K,START7.JIN
SETJOB JOB7,TRM7,200K,START7.JIN
;
SETJOB JOB10,TRM10,200k,START7.JIN
SETJOB JOB11,TRM11,200K,START7.JIN
SETJOB JOB12,TRM12,200k,START7.JIN
SETJOB JOB13,TRM13,200K,START7.JIN
SETJOB JOB14,TRM14,200K,START7.JIN
SETJOB JOB15,TRM15,200K,START7.JIN
SETJOB JOB16,TRM16,200K,START7.JIN
SETJOB JOB17,TRM17,200K,START7.JIN
;
SETJOB JOB20,TRM20,200k,START7.JIN
SETJOB JOB21,TRM21,200K,START7.JIN
SETJOB JOB22,TRM22,200k,START7.JIN
SETJOB JOB23,TRM23,200K,START7.JIN
SETJOB JOB24,TRM24,200K,START7.JIN
SETJOB JOB25,TRM25,200K,START7.JIN
SETJOB JOB26,TRM26,200K,START7.JIN
SETJOB JOB27,TRM27,200K,START7.JIN
;
SETJOB JOB30,TRM30,200k,START7.JIN
SETJOB JOB31,TRM31,200K,START7.JIN
SETJOB JOB32,TRM32,200k,START7.JIN
SETJOB JOB33,TRM33,200K,START7.JIN
```

```

SETJOB JOB34,TRM34,200K,START7.JIN
SETJOB JOB35,TRM35,200K,START7.JIN
SETJOB JOB36,TRM36,200K,START7.JIN
SETJOB JOB37,TRM37,200K,START7.JIN
;
;force job0 sys:start0.jin
MEMORY 0

```

ALPNET.INI

```

:T
JOBS 25
JOBALC JOB0,JOB1,JOB2,JOB3,JOB4,JOB5,JOB6,JOB7
JOBALC SPOOL,NETSER,VTSER,NETLOG,TCPEMU
;
QUEUE 2500
; IF YOU USE THIS .INI REMEMBER TO CHANGE THE TCP:CONFIG. FILE
; TO CHANGE FROM .LDV TO .NDV
;
LOAD LOAD.LIT
LOAD DEL.LIT
LOAD SYMSG.USA
LOAD TRMDEF.LIT
LOAD DEVTBL.LIT
LOAD BITMAP.LIT
LOAD SYSTEM.LIT
LOAD MOUNT.LIT
;
TRMDEF TRM0,A31810=0:19200,AM62A,100,100,100,EDITOR=5
XY=24 ; Turn Graphics Off
TRMDEF TRM1,A31810=1:19200,AM62A,100,100,100,editor=5
TRMDEF TRM2,A31810=2:19200,AM62A,100,100,100,editor=5
TRMDEF TRM3,A31810=3:19200,AM62A,100,100,100,editor=5
TRMDEF TRM4,A31810=4:19200,AM62A,100,100,100,editor=5
TRMDEF TRM5,A31810=5:19200,AM62A,100,100,100,editor=5
TRMDEF TRM6,A31810=6:19200,AM62A,100,100,100,editor=5
TRMDEF TRM7,A31810=7:19200,AM62A,100,100,100,editor=5
TRMDEF DUMMY,PSEUDO,NULL,80,80,80
TRMDEF NETSER,PSEUDO,NULL,80,80,80
TRMDEF VTSER,PSEUDO,NULL,80,80,80
TRMDEF NETLOG,PSEUDO,NULL,80,80,80
TRMDEF TCPEMU,PSEUDO,NULL,80,80,80
;
VER
DEVTBL TRM,RES,MEM,/EGP
BITMAP DSK
MSGINI 20K
NETINI ETH101.NIN
;NETFAM
;
ERSATZ ERSATZ.ERZ
ERSATZ ETH101.ERZ
;
SYSTEM SYMSG.USA
SYSTEM CMDLIN.SYS
SYSTEM SCNWLD.SYS
SYSTEM DVR:TRM.DVR
SYSTEM DVR:EGP.DVR
;;SYSTEM DVR:AM138.LDV/N
SYSTEM RPC.SYS/N
SYSTEM RPCLD.LIT

```

```
SYSTEM RTI.LIT
SYSTEM TCP:IPCINI/N 100 100K
SYSTEM TCP:TELNET.LIT
SYSTEM TCP:TELNET.RTI
SYSTEM TELNET.LIT
SYSTEM TELNET.RTI
SYSTEM TCP:FTPD.LIT
SYSTEM TCP:FTPD.RTI
SYSTEM
SMEM 3M
;
LOG OPR:
SYSTEM SERVICE
SET DSKERR
SET HEX
;
MOUNT DSK:
DEL *
;
SETJOB SPOOL,DUMMY,10K,LPTINI EGP.PIN
XFRSEL EGP0: RAW
;
SETJOB NETSER,NETSER,100K,NETSER.JIN
WAIT NETSER
SETJOB VTSER,VTSER,50K,VTSER.JIN
SET LINK 1694695425-
LOG SYS:

SETJOB NETLOG,NETLOG,50K
SETJOB TCPEMU,TCPEMU,1500K,TCP:GOTCP.CMD
;
SLEEP 5
;
SETJOB JOB1,TRM1,200k,START1.JIN
SETJOB JOB2,TRM2,200k,START1.JIN
SETJOB JOB3,TRM3,200K,START1.JIN
SETJOB JOB4,TRM4,200K,START4.JIN
SETJOB JOB5,TRM5,200K,START5.JIN
SETJOB JOB6,TRM6,200K,START6.JIN
SETJOB JOB7,TRM7,200K,START7.JIN
;
force job0 sys:start1.jin
MEMORY 0
```

CONFIG.

```
# attach the Ethernet to the Internet package (using AlphaNET NDVs):
# EXAMPLE: ifconfig <interface> <AlphaNet Network #> arpa <receive buffers>
#ifconfig ec0 101 arpa 100
# attach the Ethernet to the Internet package (using standalone LDVs):
# EXAMPLE: ifconfig <interface> <driver>
ifconfig ec0 aml38
# attach the slip interface to a slip daemon:
# EXAMPLE: ifconfig <interface> <terminal> <dialup script>
#ifconfig asy0 modem1 dialup.slp
#ifconfig asy1 modem2
#ifconfig asy2 modem3
#ifconfig asy3 modem4
# change the tcp close timeout to fit the environment
# EXAMPLE: closetime <seconds>
#closetime 120
```

```
# change the tcp keepalive timeout to fit the environment
# EXAMPLE: keepalive <minutes>
#keepalive 15
# start up the daemons (servers)
# EXAMPLE: start <daemon> <memory> <options...>
# (these assume ftpd, tftpd, smtpd, pop3d, lpr, lpd, and httpd are
# in system memory)
#
#start rwhod 75k
start ftpd 50k -o
start telnetd 100k
#start tftpd 35k
#start smtpd 125k -i
#start pop3d 60k
#start poppwd 70k
start lpr 35k
start lpd 35k
start itcd 110k
start tamed 200k
#start httpd 100k
#start snmpd 85k -b2 -p240
start bootpc 100k -h -n -t
# if you have a default router this is a simple way to set the default route.
# once complete it will exit and free the memory. fill in the IP address.
#start route 200k -s add 172.16.128.10
```

HOSTS.

```
#Hostname file for AlphaTCP
172.16.128.88      e100tx.am-corporate.com      e100tx      #AM-100TX (AM-137)
172.16.128.77      am450.am-corporate.com      am450       #AM-450 (AM-138)
127.0.0.1         localhost                    me          #local loopback
```

ITCD.

```
16842754- 192.16.128.72 ;am6000
16842757- 192.16.128.86 ;am6060
16842755- 172.16.128.76 ;am450
16842756- 172.16.128.74 ;egl100lc
16842753- 172.16.128.88 ;egl100tx
16842758- 172.16.128.89 ;falcon
```

NETWRK.

```
#ident "@(#)networks 1.4 9/4/90"
#
# NETWORKS
#
# Contains information on networks comprising the DARPA Internet.
#
# The fields are:
#
# official network name network number alias [ alias ] [ alias ]...
#
# for example:
#
```

```
#          ethernet          89.0.0.0      ether    eth    net
#
#ethernet  172.16.128.84      ether eth net
ethernet   bootp             ether eth net
#ethernet  dhcp               ether eth net
#slip      192.0.3.1    serial (245)
loop       127.0.0.1    local
```

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