alpha micro
AMSD journal
November 1987
ALPHA MICRO SERVICE DIVISION
Volume 9, No. 11

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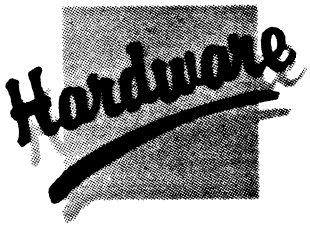
To Serve You Better



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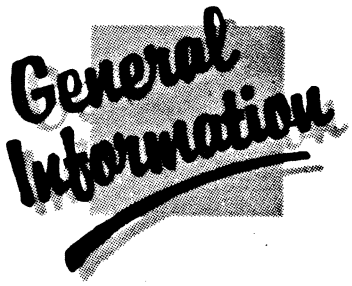

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The *AMSD Journal* is published monthly by Alpha Micro Technical Publications for Alpha Micro Technical Services. Please address all correspondence to AMSD Journal, Alpha Microsystems, 3501 Sunflower, Santa Ana, California, 92704.

Alpha Micro has checked the information contained in this newsletter and believes it to be accurate at the time of publication. However, readers should independently determine that any information used works correctly on their system and is appropriate for their application.

Subscription Information: Subscription rates are $40 per year. Back issue sets are also available for $150 per set. Each Alpha Micro dealer receives one permanent subscription to the *AMSD Journal* free. For additional subscriptions, send your name, company name, address, customer number (if applicable) with payment of $40 for each subscription to:

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Subscription Department
Alpha Microsystems
P.O. Box 25059
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Article Filing Instructions

We hope you find the *AMSD Journal* to be a valuable reference tool, and that you will want to refer to its articles frequently in the future. To make it easy and quick to find information, current articles are designed to be filed with articles from past issues. The entire set of *Journal* back issues forms three volumes: "General Information," "Software Information," and "Hardware Information." (The set of back issues is available for purchase. See "Subscription Information," above.)

The title of each feature article in this issue includes a reference number. Use the reference number to file the article in the back issue volume indicated at the top of each page of the article. For example, if the top of the first page of the article "6.5.5 One Hundred New Uses for MULTI," contains the words "Software Information," you know that article is to be filed in Section 6 of the "Software Information" back issue volume after article number 6.5.4.

The last pages of the *Journal* are new Tables of Contents for the back issue volumes, updated with entries for articles included in this month's issue.

Holiday Schedule

Alpha Micro wishes all our dealers and customers a Happy Thanksgiving.

We will be closed Thursday and Friday, November 26th and 27th.

A Note From Technical Support... To Serve You Better

Each Wednesday morning from 8:30 a.m. to 10:00 a.m. Pacific time, the Technical Support Staff holds a Technical Support Forum. During this time you may experience delays in getting a response to your technical questions. These meetings, which started in June 1987, have been instrumental in achieving a more thorough and informed support organization for our dealers. We intend to continue this method of sharing information and appreciate your patience during the time we hold the Forum.

Thank you for your encouraging comments at IAMDA and "thank **you** for your support!"

2.10.3
Important Notice for AM-520 Users

Users of the AM-520 disk controller should be aware that before adding a second AM-520, they should contact Alpha Micro Technical Support for further assistance at:

714/641-7608

Attempts to certify disk drives on the second controller will result in full data loss on the first disk drive of the first controller, **if the first drive is not write protected.** Programs affected for dual AM-520 support are 520DVR.DVR and CRT520.LIT. Upcoming fixes to these programs will be available on AMTEC.

4.3.6 Compatibility Information: 1/4" Streaming Tape Drives on Alpha Micro Computers

[Editor's Note: See the Software Volume article "3.1.16 - Workaround: Software Selection of 1/4" Streaming Tape Drive Formats on S-100 Systems," in this issue for more information on using streaming tape drives on S-100 computers.]

This article discusses a problem with using the SET command to change the tape format for 1/4" streaming tapes that do not support that option. We also summarize the different types of 1/4" streaming tape drives used in the different Alpha Micro computers.

Tape Formats: QIC11 and QIC24

The two different tape formats used by 1/4" streaming tape drives are QIC11 and QIC24. QIC24 is the more "modern" tape format; at one time, only QIC11 format was available. Some streaming tape drives support one or the other of the formats, and some support both.

The SET Command

The AMOS SET command allows you to select tape format for 1/4" streaming tape drives that support software switching between QIC11 and QIC24 formats. (Streaming tape drives that allow using software to switch between tape formats are called "configurable drives.")

However, if you use SET to change the drive format, and the drive is NOT configurable, the drive will spin the tape uncontrollably the next time the drive is accessed, leaving the job using the streamer locked up.

The next few sections describe the types of 1/4" streaming tape drives supported by Alpha Micro computers.

1/4" Streaming Tape Drives Supported

Depending on your computer, you might have one of the following types of 1/4" streaming tape drives:

- 8" drive that supports QIC11 format. This drive was manufactured by Archive, and is their model 3020I, known as the "Sidewinder."
- 8" drive that supports both QIC11 and QIC24 format. This drive was manufactured by Archive, and is their model 3020L, also known as the "Sidewinder."
- 5 1/4" drive that supports QIC24 format. This drive was manufactured by Cipher, and is model 540 or 540CT.
- 5 1/4" drive that supports both QIC11 and QIC24 format. This drive was manufactured by Archive, model 5945L-2.

Below we list the type of 1/4" streaming tape drive used in the different Alpha Micro computers.

AM-2000 Systems

- Does not support 8" streaming tape drives; only 5 1/4" drives are supported.

4.3.6 (Continued) Compatibility Information: 1/4" Streaming Tape Drives on Alpha Micro Computers

- Depending on what drive is installed, the streaming tape drive is either a non-configurable drive using QIC24 or a configurable drive using both QIC11 and QIC24. (Currently, only non-configurable Cipher drives are being shipped.)

- The factory setting for shorting block W102 on the AM-180 CPU board is OUT, defining the streaming tape drive as non-configurable. If a configurable drive is installed, this shorting block may be re-installed IN to enable software selection of the format.

AM-1500 Systems

- Does not support 8" streaming tape drive; Only 5 1/4" drives are supported.

- Depending on what drive is installed, the streaming tape drive is either a non-configurable drive using QIC24 or a configurable drive using both QIC11 and QIC24. (Currently, only non-configurable Cipher drives are being shipped.)

- The factory setting for shorting block W48 on the AM-175 CPU board is OUT, defining the streaming tape drive as non-configurable. If a configurable drive is installed, this shorting block may be re-installed IN for software selection of the format.

AM-1000 Systems

- Does not support 8" streaming tape drives; only 5 1/4" drives are supported.

- Depending on what drive is installed, the streaming tape drive is either a non-configurable drive using QIC24 or a configurable drive using both QIC11 and QIC24; however, the AM-1000 is hardwired for configurable drives. If the drive is not configurable, using the SET command will cause the problem discussed at the beginning of this article.

- Requires the streaming tape drive controller, which sits on top of the power supply.

AM-1200 Systems

- Currently, does not support streaming tape drives.

S-100 Bus Based Systems

- Does not support 5 1/4" streaming tape drives; only the 8" drives from Archive are supported.

- Depending on what drive is installed, the streaming tape drive is either a non-configurable drive using QIC11 or a configurable drive using both QIC11 and QIC24.

  Prior to the introduction of the VMEbus Streamer Support Software (required for AMOS/L 1.3B and AMOS/32 1.0 systems), the streamer driver would support software control of the format selection. However, it is no longer possible to detect the software selectibility of these configurable drives in S-100 systems and the rest of the product line using a single driver program.

4.3.6 (Continued) Compatibility Information: 1/4" Streaming Tape Drives on Alpha Micro Computers

If you have an S-100 system with a streamer and need to be able to switch between formats, see the Software Volume article "3.1.?? - Workaround: Software Selection of 1/4" Streaming Tape Formats for S-100 Systems," in this issue.

- Requires the streaming tape drive controller board which mounts directly on the drive. No other hardware change is required.

6.1.45b
Errata: "AM-1000 CPU Modification History"

Typographic errors, in addition to those published in the October Journal Hardware article 6.1.45a - Errata: "AM-1000 CPU Modification History," have been found in the original September 1987 Journal Hardware Volume article 6.1.45 - "AM-1000 CPU Modification History."

The page, column, and step number are given below so you can find the error in the original article. Please make the corrections shown in bold type below to the original article. We apologize for any inconvenience these errors may have caused you.

Page 3, Second Column - Modification #6

Step F should read:

> Install a jumper from U164 pin 1 to U164 pin 2 **and install a jumper from** U164 pin 3 to U153 pin 2.

Page 5, First Column - Modification #12

The first sentence of step B gives an incorrect U position number and should read as follows:

> Install a 10K ohm resistor between **U149** pin 3 and U165 pin 14.

The first sentence of step C gives an incorrect U position number and should read as follows:

> Install a 10K ohm resistor between U149 pin 2 and **U165 pin 14.**

Page 7, Second Column - Modification #22

The first sentence of step D gives an incorrect U position number and should read as follows:

> Install a 330 pf capacitor from **U152 pin 7** to U152 pin 4.

Page 7, Second Column - Modification #22

Step G gives incorrect U position number references and should read as follows:

> Locate the four position jumper block in etch, to the left of **U158.** This jumper pad is in a square pattern. Cut the etch running from under **U158** to the upper left position of the four.

Page 8, Second Column - Modification #25

Step C gives an incorrect pin number and should read as follows:

> Install a jumper from U132 pin 5 to **U193 pin 1.**

Page 12, First Column - Modification #37

The second step B gives an incorrect U position number and should be relabeled as step C:

C. Install a 22uf capacitor from the side of **U172 pin 8** to U172 pin 13.

Step C should be relabeled as Step D, Step D should be relabeled as Step E.

12.4.1
Data Communication: Introduction to Modems

by Rick Moore
Senior Technical Communications Specialist
Advanced Product Development

Data communications and connecting computer systems together to maximize use of total computer resources has become a priority within most business concerns today. Alpha Micro recognizes it is no longer enough to supply our dealers with the best micro based computer system in the industry. We must also help our dealers solve connectivity and cabling problems of our high-end systems.

We hope this article can begin the information flow so we can improve our service in this area. We talk about current communication projects and begin an overview of the communications field with our first topic on modems.

Communication Projects

Alpha Micro is currently evaluating data communication products. Some of the types of products currently under evaluation are modems, multiplexors (muxs), data switches and protocol converters. We hope that through laboratory testing we can certify that these products work according to the manufacturer's specifications and are compatible with the Alpha Micro product line. The final result will be to provide our dealer base with information about proven, cost-effective data communication products.

We are also developing a PC gateway, through which Alpha Micro computer systems can share resources with other micros residing on a local area network (LAN). This project is still in the feasibility stage, but we are committed to the concept of networking Alpha Micro systems using LAN technology.

Finally, we are investigating ways to solve the cabling problems associated with the installation of systems having many terminals. We recognize the inherent problems with installing standard point-to-point cabling. This approach is expensive, time consuming and not conducive to changes in the system's configuration.

These are just some of the things we are currently working on.

Data Communications - An Overview

Data communications is a confusing area within the the already confused world of computing. A data communication task may be as simple as connecting to a local billboard using a Hayes compatible asynchronous 300/1200 bits per second modem or as complex as residing on a T3 data-over-voice network with transmittal speeds of 44.736 megabits per second, or residing on a fiber optics Local Area Network (LAN) with transmittal speeds of 80-100 megabits per second.

The previous examples are at the extreme ends of the data communications scale--an entire spectrum exists between them.

When resolving a connectivity problem three questions must be answered:

- What is the physical connection?
  Such as: cabling requirements and electrical standards such as RS-232, RS-422 or V.35, etc.

12.4.1 (Continued)
Data Communication: Introduction to Modems

- What is the transport protocol? Such as: asynchronous or synchronous, etc.

- What is the application protocol? That is, the high level interface at each end such as, Xmodem, Bisync, SNA, or X.25, and so on.

Figure 1 illustrates these three considerations.

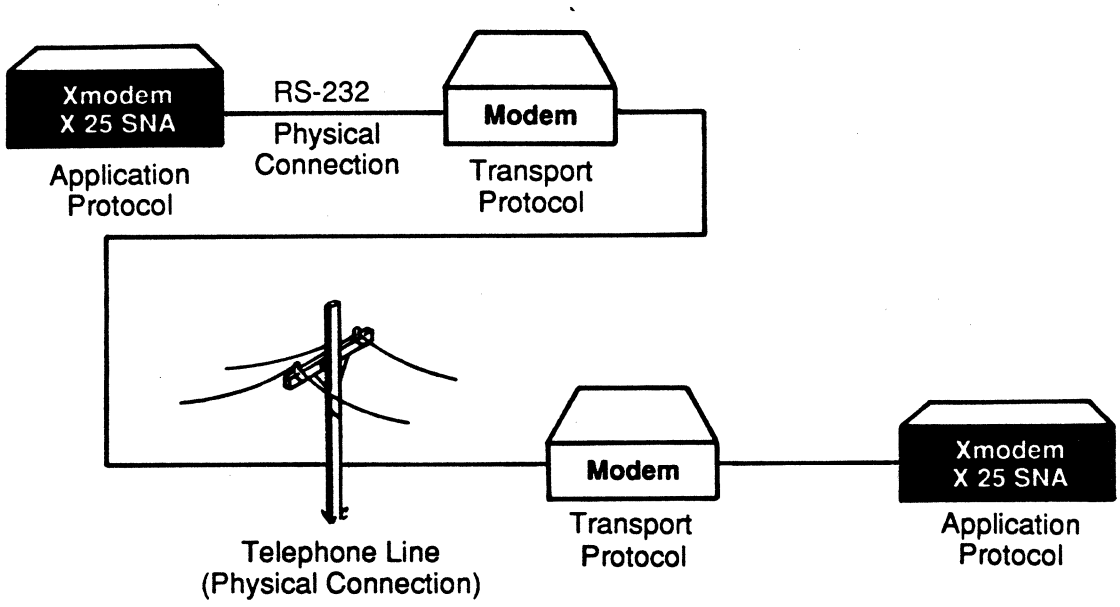


Figure 1
Three Part Protocol

12.4.1 (Continued)
Data Communication: Introduction to Modems

As mentioned earlier, one of the products we are evaluating is a protocol converter, a device allowing unlike applications to communicate. Figure 2 below illustrates the use of a protocol converter to better show the potential of this equipment when presented with a multiple system environment. The IBM host, shown at left, could as easily be UNIVAC, Sperry or Burroughs. The application protocol is 3270/SNA but it could just as well be a X.25 public network or a UNIVAC cluster controller. In the following example, the protocol converter makes the Alpha Micro terminals appear as native terminals attached to the host system.

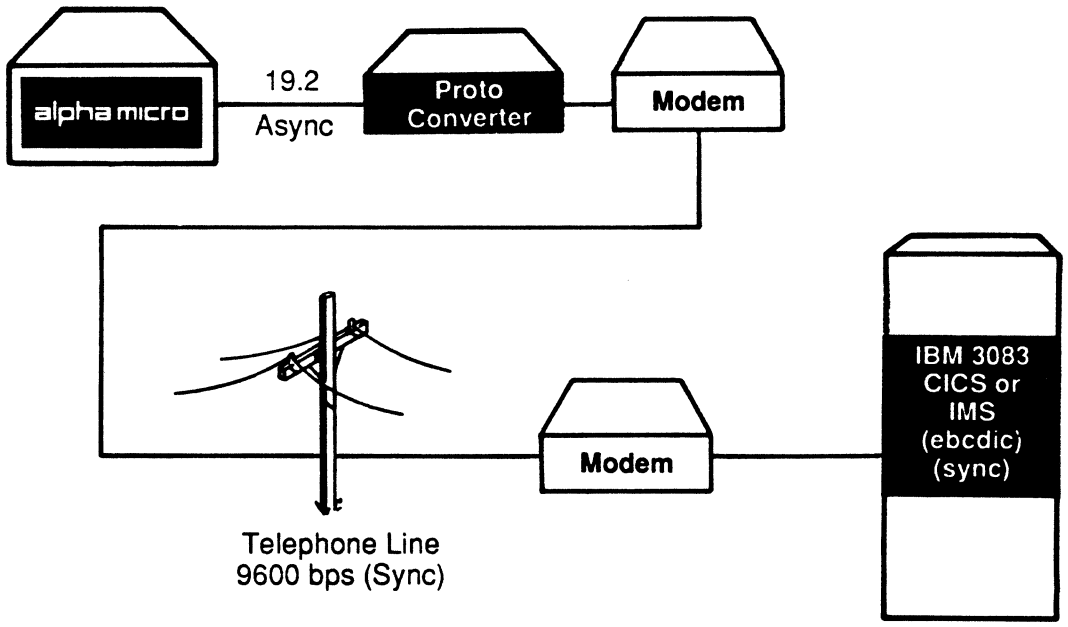


Figure 2
Protocol Converters

12.4.1 (Continued)
Data Communication: Introduction to Modems

Let's take a closer look at just what functions a protocol converter performs.

TABLE 1
Protocol Converter Functions

FUNCTION	ALPHA MICRO	HOST
Physical connection	Std. Alpha Micro	Std. IBM
Transport protocol	Asynchronous	Synchronous
Application protocol	None	3270/SNA
Character set conversion	ASCII	EBCDIC

As the technology evolves, new hardware/firmware makes the job of connecting unlike computer systems easier. Connecting two transport protocol devices with different specifications can be achieved through protocol converters. LANs residing on different physical connections can be connected through a device called a BRIDGE. LANs subscribing to different application protocols (PACKETIZING) can be connected through devices called GATEWAYS.

It is becoming more feasible each day to connect unlike computer systems. One of my responsibilities is to keep pace with this new technology so Alpha Micro computer systems can coexist and share resources with other computer systems.

Asynchronous Transport Devices

Another topic I want to discuss is asynchronous transport devices. An example of an asynchronous transport device would be a Hayes compatible 300/1200 bps modem.

The telephone system was designed to carry human voices which generate a sound frequency within the range of 300 Hz to 3,300 Hz. Digital signals produced by computers generate sound frequencies above 10,000 Hz.

12.4.1 (Continued)
Data Communication: Introduction to Modems

While there are different types of modems, all modems share common elements:

- A power supply
- A transmitter
- A receiver

The power supply usually takes 120 or 220 VAC (volts alternating current) and converts it into DC voltage, which is necessary to operate the modem's internal circuitry.

The transmitter modulates the digital data into analog form; the receiver demodulates analog signals and converts them into their original digital format.

Modems designed for asynchronous or synchronous operations differ in one major way: a synchronous modem contains a clock source and phasing circuits; an asynchronous modem does not. Asynchronous modems do not need clocking sources, because on these units data is transmitted at irregular intervals, while in a synchronous transmission, data is sent continuously in regular clocked intervals. The functional elements contained in the transmitter and the receiver are outlined below.

AGC Amplifier:
Part of the receiver, this unit provides for automatic gain control (AGC), allowing the modem to compensate for amplitude variations on the line.

Data Encoder:
Part of the transmitter, this unit determines which modulation changes should be made to the carrier frequency at each sampling segment. On a synchronous modem, the encoder groups incoming binary data into di-bit pairs and determines the type of phase shift for the carrier.

Decoder:
Part of the receiver, this unit works with the demodulator, formatting received data into a serial binary data pattern and sending it out of the modem to the receiving data device.

Demodulator:
Part of the receiver, this unit retrieves data from a modulated source and passes it to the decoder. The demodulators included in asynchronous modems are entirely different from those included in synchronous modems.

Equalizer:
Generally incorporated in modems that transmit at 2400 bps or higher, the equalizer's basic function is to correct amplitude and delay distortions, which if left alone can interfere with transmission.

Filters:
Part of both transmitter and receiver, these circuits transmit signals for frequencies within one or more frequency bands. They also attenuate signals of other frequencies, thus eliminating noise and other impairments to the formation of the data stream.

12.4.1 (Continued)
Data Communication: Introduction to Modems

Line Amplifiers:
Part of the transmitter, this component connects the modem and the carrier. An amplifier is a component that boost the strength, of a signal.

Modulator:
Part of the transmitter, this component changes the carrier frequency, as determined by the encoder.

Figure 3 illustrates the digital signals representing a series of seven binary 1s and 0s making up an ASCII character. The modulated sine wave below the digital signal is the analog representation of the same character as produced by a low speed modem.

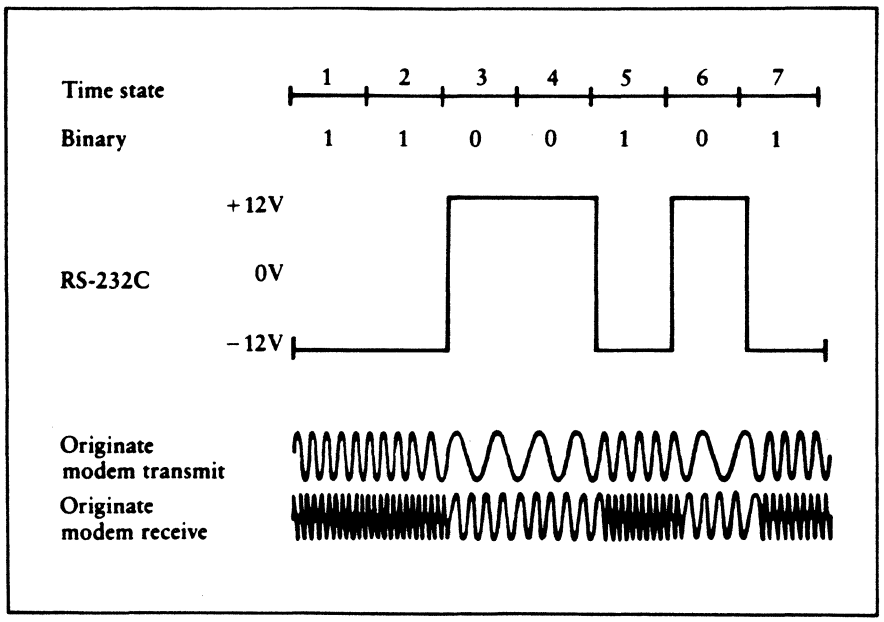
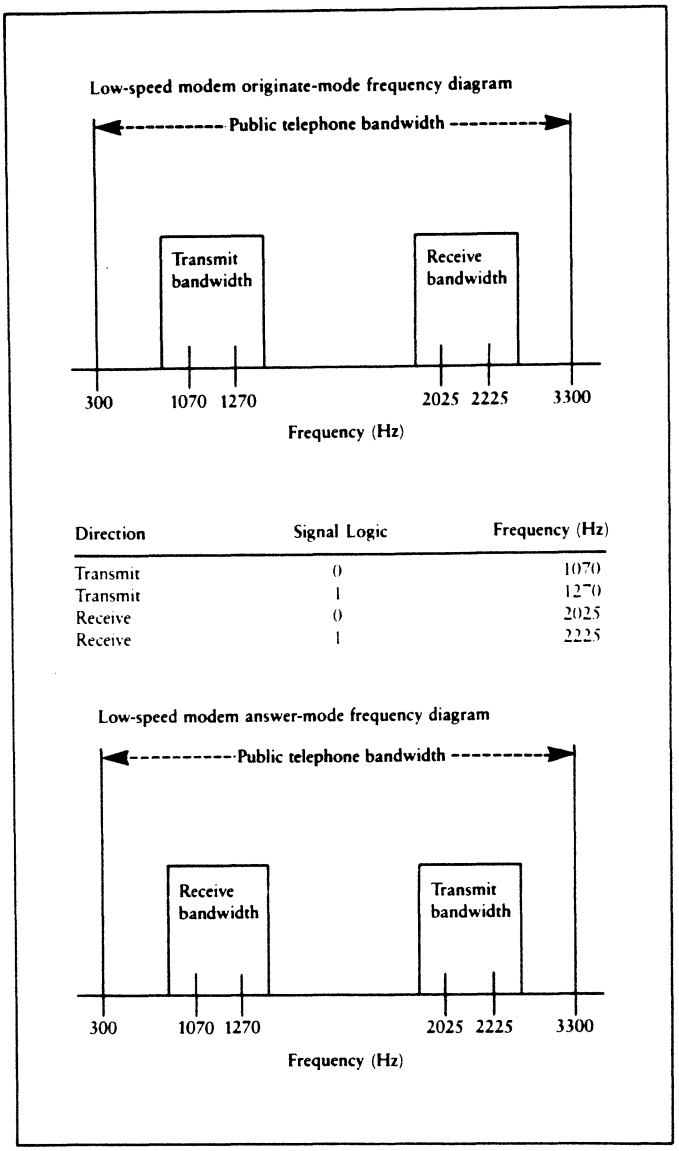


Figure 3
Digital Signals Producing An ASCII Character

12.4.1 (Continued)
Data Communication: Introduction to Modems

Figure 4 illustrates the frequencies used by low speed modems for the transmit modem and the receive modem. Note that the frequencies are at different ends of the voice grade bandwidth.



Direction	Signal Logic	Frequency (Hz)
Transmit	0	1070
Transmit	1	1270
Receive	0	2025
Receive	1	2225

Figure 4
Frequencies Used By Low Speed Modems

12.4.1 (Continued)
Data Communication: Introduction to Modems

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Santa Ana, California 92799-5059

Types of Modems

There are a number of different ways to classify modems, but the most generally recognized way defines the relationship between the modems' type and the communication facility it operates on:

- Dial-Up modems operate on the public switched telephone network
- Leased-line modems operate on private telephone lines.
- Limited Distance Modems (LDM) operate on private lines in local networks (between buildings within the same company).
- Line drivers and modem eliminators operate on customer premises over relatively short distances.

Modems can also be classified by operating speed, configuration (point-to-point or multi-point), asynchronous/synchronous, or operation mode (half or full duplex).

As simplistic as modems appear to be, there is a great deal to consider before a decision to buy is made. Issues such as throughput performance, price performance, compatibility, reliability, vendor support, features and diagnostics are usually taken into consideration.

Future Data Communication Topics

Alpha Micro is committed to improving our support in the data communications area.

If there are some issues you feel we should take into consideration, or if there are some topics relating to data communication that you would like to see discussed in future articles please write to me:

About the Author

Rick Moore joined Alpha Micro in September to help in the data communication and connectivity areas for both pre-sales and post-sales.

Before joining Alpha Micro, he worked for a consulting company specializing in data communications. Some of the major projects he worked on were the selection and installation of the communication network for the new Paine Webber trading center at the Broadway Plaza in downtown Los Angeles. The company he worked for also moved the communications center for Security Pacific Bank, including the network support for their ATM systems, to a new facility.

Along with his experience in data communications, he has been involved in point of sale distributed systems, and networking portable hand-held computers (MSI and TELXON) into IBM mainframe equipment. Early in his career Rick worked as a systems programmer on IBM 360s and 370s.

Except for a brief stint in the U.S. Army, Rick has been actively involved in the computer field since the mid-1970s. He has been in southern California for five years, and before that made his home in the mid-west states of Ohio and Kentucky.

1.1.23
Terminal Programming Hints

[EDITOR'S NOTE: Portions of this article have been excerpted from Chapter 3 of the AMOS Terminal Programmer's Manual, DSS-100096-00.]

This article gives programming hints for creating terminal-independent software--that is, software that will run correctly on almost **any** type of terminal.

But first, a little background information on the evolution of terminals to explain why the issues discussed in this article are so important.

In the beginning were teletypes that printed your interaction with the computer on paper. Because terminal designers were limited by financial considerations, the first video display terminals performed exactly the same functions as teletypes, except the paper was replaced by a video display. In fact, they were known as "glass teletypes."

At this point, there was no such thing as a video display "terminal attribute" associated with a character; e.g., display this character blinking.

When display attributes were first introduced as a video terminal feature, engineers faced an implementation obstacle: terminals had only one byte of memory for each character displayed. That is, there was no room in memory to associate an attribute with a character. Therefore, each attribute had to use a separate byte of memory, and a separate physical space on the terminal display. Thus was the "field" terminal born.

Today, memory is so much cheaper it is very abundant. Therefore, there is plenty of memory available to assign more than one byte of memory to each character, leaving room for attributes for each character without taking up room on the terminal display.

So was the "mode" terminal born: a terminal in which display attributes do not take up any room.

The following sections give more detail about the differences between mode and field terminals. Given the discussion above on the history of terminals, you can see that terminal capabilities are constantly evolving and increasing. Our purpose in this article is to provide information that will help you protect your software from becoming obsolete because of future terminal enhancements. By following the recommendations below, you can make sure your software accommodates a variety of terminals, and will not have to be rewritten to work with future terminals.

As of now, all Alpha Micro terminals have been field terminals. However, future terminals currently being evaluated are all mode terminals, since terminal manufacturers' new products are mostly mode terminals. Also, the recently released Alpha-MATE 2.0 product emulates a mode terminal.

The following discussions assume you are an experienced Alpha Micro computer programmer and are familiar with concepts such as "terminal drivers," "terminal microcode," and "TCRT codes." If not, see the Alpha Micro System Operator's Guide and Monitor Calls Manual for information on these topics. For more information on how to write a program making use of terminal features, refer to AMOS Terminal Programmer's Guide.

Field Vs. Mode Terminals

Terminals handle screen display attributes, such as underscore, reverse video, or blinking, in one of two ways: field or mode.

1.1.23 (Continued) Terminal Programming Hints

In a field terminal, you begin an attribute "field" by issuing a special command. From that point on, progressing left to right and down the screen, all text on the screen will be displayed using the new attribute until either the end of the screen, or until another attribute is encountered. You can think of these attributes as being special characters which "turn on" and "turn off" the screen attribute as the text is displayed on the screen. Writing additional characters to the screen between the begin and end attribute characters causes the characters to be displayed with the screen attribute. Writing additional characters before the begin attribute character, or after the end attribute character, causes them to display normally.

In a mode terminal, all characters you write to the screen are written with the screen attribute corresponding to the current "mode" you are in. Upon entering "reverse video mode," for example, all characters written are displayed in reverse video, regardless of their location. This continues until you select a different attribute mode for writing.

Compatibility Issues

Field terminals are still the most common because they were the first type of terminal to be widely used. Most of the very latest terminals, however, are being built as mode terminals. Because of the differences in the behavior of these two terminal types, you must take special care when creating software which must run on both types. This is important because over the next few years, mode terminals will be more common than field terminals.

To Space or Not to Space

One of the major differences between mode and field terminals is how the attributes themselves appear on the screen. In a field terminal, the attribute typically occupies a screen position, appearing as a space (a "non-hidden" attribute). In a mode terminal, however, the attribute is typically invisible and does not occupy a screen position (a "hidden" attribute). This presents an obvious problem when you want to use either type of attribute and be able to line up text on the screen.

To solve this problem, the standard set of attribute commands implemented in the AMOS terminal system interface always occupies a screen position for all attribute changes. This screen position is taken regardless of whether the terminal hardware requires it, even if it means the terminal driver must output a dummy space.

By always assuming a space will be present, you can always line text up properly on the screen, regardless of the number of attribute changes that may or may not be present.

For those applications which require the use of hidden attributes, such as underlining text in the middle of a word, special terminal system calls are available to access attributes without spaces on those terminals which support the feature. Because hidden attributes are not available on all terminals, however, use of them restricts your software to a smaller set of terminals.

Eliminating Screen Flash

An annoying problem with field attribute terminals is the phenomenon known as "screen flash." This problem arises when an attribute momentarily occupies a large area of the screen in the brief interval between issuing a "begin attribute" command and an "end attribute" command.

1.1.23 (Continued) Terminal Programming Hints

To avoid this problem, which is purely an aesthetic although very visible one, we recommend the following procedure. This procedure works equally well with mode terminals which would not normally exhibit the screen flash problem.

1. Position the cursor at the end of the area to be written with text.

2. Issue an "end attribute" command for the attribute you are going to be using. Mode terminals will ignore this.

3. Position the cursor at the beginning of the area to be written with text.

4. Issue the "begin attribute" command for the attribute you want to use. This starts the attribute for both mode and field terminals.

5. Write the text.

6. Issue the "end attribute" command again. This will end the attribute for mode terminals.

3.1.16
Workaround: Software Selection of 1/4" Streaming Tape Drive Formats on S-100 Systems

[Editor's Note: For more information on what 1/4" streaming tape drives have been used on the different Alpha Micro computers, see the Hardware Volume article "4.3.6 Compatibility Information on 1/4" Streaming Tape Drives on Alpha Micro Computers," in this issue. That article also discusses a problem with using SET to change tape formats for drives that do not support that option.]

Prior to the introduction of the VMEbus Streamer Support Software (required for AMOS/L 1.3B and AMOS/32 1.0 systems), the streamer driver would support software control of the format selection. However, it is no longer possible to detect the software selectibility of these configurable drives on S-100 systems and the whole product line using a single driver program.

If you have an S-100 system with a streamer and need to control the format, the 620DVR.DVR file that came with the original AMOS/L 1.3B Version of the operating system will support the configurable drives. Using that driver with AMOS/L 1.3B and 1.3C will re-install the configurable drive feature. After 1.3C, software configurable streamer drives will no longer be supported on S-100 systems.

The hash total of the streamer driver that will support configurable drives on S-100 AMOS/L systems is:

620DVR.DVR 127-574-264-006

Use the COPY command to place this driver into STR.DVR in [1,6] and then reboot the system. No other software changes are necessary.

3.2.30
New Software Patches Available from AMSD

The following list gives a description of the new software patches now available from AMSD. The products affected by these patches are: AMOS/L 1.3C, AMOS/32 1.0A, Videotrax, and Alpha-WRITE.

Patches in the following list include SPNs 309 through 343, and are current through 19 October 1987. As indicated on the list, some patches are still in test.

The SPN description in the purpose column ends with the software version(s) this patch is intended for.

SPN #	Module	Purpose
309	MUSER	Corrects a problem Eliminates "Cannot allocate USER.TMP – File already exists" error message. This patch applies to AMOS/32 1.0A.
NOTE: Re: 310 - 319		One SPN number was used for each user version of the AMOS/L 1.3C monitor and each user version of the AMOS/32 1.0A monitor. SPN numbers were assigned in this way for record keeping purposes. These problems were resolved in each one of the SPNs 310 to 319: 1. With TRMICP when called without a terminal attached. 2. With SRCH when used without memory assigned. 3. With unusual syntax at monitor level (i.e., "8-8") which caused system crash.
310	LSYS.MON	This patch applies to AMOS/L version 1.3C 8-user limit and fixes the problems shown in NOTE above.
311	LSYS.MON	This patch applies to AMOS/L version 1.3C 16-user limit and fixes the problems shown in NOTE above.
312	LSYS.MON	This patch applies to AMOS/L version 1.3C 32-user limit and fixes the problems shown in NOTE above.
313	LSYS.MON	This patch applies to AMOS/L version 1.3C unlimited-user limit and fixes the problems shown in NOTE above.
314	LSYS.MON	This patch applies to AMOS/L version 1.3C 64-user limit and fixes the problems shown in NOTE above.
315	LSYS.MON	This patch applies to AMOS/L version 1.3C 128-user limit and fixes the problems shown in NOTE above.
316	32SYS.MON	This patch applies to AMOS/32 version 1.0A 32-user limit and fixes the problems shown in NOTE above.
317	32SYS.MON	This patch applies to AMOS/32 version 1.0A unlimited-user limit and fixes the problems shown in NOTE above.
318	32SYS.MON	This patch applies to AMOS/32 version 1.0A 64-user limit and fixes the problems shown in NOTE above.
319	32SYS.MON	This patch applies to AMOS/32 version 1.0A 128-user limit and fixes the problems shown in NOTE above.
320	VTR.EXE	Corrects a problem with the calibration of a remote controlled VCR in 4-hour mode. This patch applies to Videotrax.
321	WRMGEN	Corrects a problem where a warmboot monitor would fail if the memory size was on any 16 Megabyte boundary. This patch applies to AMOS/L 1.3C and AMOS/32 1.0A.

3.2.30 (Continued)
New Software Patches Available from AMSD

SPN #	Module	Purpose
322	–	In test.
323	–	In test.
324	–	In test.
325	–	In test.
326	–	In test.
327	–	In test.
328	WRMGEN	Corrects a problem where a warmboot monitor would fail if the memory size was on any 16 Megabyte boundary. This patch applies to WRMGEN version shipped with the SCSI software and AM-520 tape, and since has been folded into AMOS.
329	RUN	Provides additional correction for a problem with RUN's ability to detect an "out of memory" condition when more variable space is required than is available in memory. This patch applies to AMOS/L 1.3C and AMOS/32 1.0A. See also SPN-308L.
330	SCZDVR.DVR	This patch creates a new module, SCZ100.DVR to be used on the AM-405, S-100 SCSI drive controller. This patch applies to AMOS/L 1.3C.
331	AM520.MIC*	Corrects a problem which would cause data corruption in systems with more than 8 megabytes of memory when there is enough disk activity. This patch applies to AM-520 Software.
332	–	In test.
333	–	In test.
334	WRITE	Corrects two problem. (1) - In a document with multiple margin blocks, when using UP ARROW, margin settings are handled incorrectly. (2) - The FONT key's 2 and 6 selections allow multiple paragraph markers on a line. This patch applies to AlphaWRITE 1.2A.
335	RENAME.SBR	Corrects a problem where memory locations FFFF(abs) through 10005(abs) would be corrupted if the status argument were omitted.
336	AM1213.IDV*	Corrects a problem with character loss on AM-1213 ports. This patch applies to AMOS/L 1.3C.
337	–	In test.
338	–	In test.
339	–	In test.
340	–	In test.
341 342	TSKINI TSKMAN.OVR	These patches correct a problem to properly handle printer off-0line conditions while in the routine whioch closes the output file. This prevents the spooler from getting into I/O wait states when auser queues up samll files of certain sizes wile the printer is off-line. Both patches are required to fixe this problem. This patch applies to AMOS/L 1.3C and AMOS/32 1.0A.
343	BADBLK.LIT	Corrects a problem created when closing BADBLK.SYS which would produce an incorrect active count in the UFD. This patch applies to BADBLK.LIT originally released with the SCSI support software and AM-520 software tape and has since been "folded" into the AMOS/L 1.3C and AMOS/32 1.0A patch releases.

*This patch is in the form of a module exchange. Sometimes circumstances exist such that the traditional "patch" utility is impractical. With the availability of AMTEC, it is now feasible to supply fixes and improvements to field software in module form.

3.3.21
Warm Boot Warning: WRMGEN Needs Language Definition File

The Problem

Since AMOS/L version 1.3(123), all monitors have required a language definition file in order to communicate properly with other software and the user. Beginning with this AMOS/L release, the MONGEN program, which is used to generate a new system monitor, was enhanced to allow for an optional language definition file and used ENGLSH.LDF as the default.

However, the WRMGEN program, which is used to generate a warm boot monitor file, was not enhanced to let the user declare a language definition file. Since all monitors already had a language definition file built into them, no apparent need existed to specify a separate language definition file during WRMGEN. This did, however, introduce a problem of not knowing whether WRMGEN was using the correct language definition file since WRMGEN did not request one separately from the monitor name.

When AMOS/32 was first introduced, the "generic" monitor 32SYS.MON was distributed without a language definition file. Since a language definition file is required to communicate with both the computer and the user, there was no way to use 32SYS.MON directly to create a monitor with WRMGEN to include a language definition file at all. (This lead to a related problem with the MONHSH program calculating unreliable hash totals. This is discussed in a separate Journal article: Software Volume 8.3.6 - "MONHSH Problem with AMOS/32 1.0(154)." As of AMOS/32 1.0A(157) and later, 32SYS.MON files are now distributed using the ENGLSH.LDF language definition file just as LSYS.MON always has.

Symptoms

The symptoms of warm-booting with a monitor lacking a language definition file, or a monitor having the "wrong" language definition file, vary from system to system. Generally, screen text will be illegible or incorrect but the symptoms may be worse. However, we have no indication even the worst symptoms damage data.

Workaround

This design limitation of WRMGEN will be corrected in a future release by prompting the user for the language definition file name. In the meantime, the problem with WRMGEN can be avoided if you follow these steps:

1. Use MONGEN to create a temporary monitor file. For example, TEMP.MON.

2. Enter the name of the language definition file you want to use when MONGEN prompts you for it.

3. Use WRMGEN, and specify the temporary monitor file you created in step 1 (TEMP.MON) when you see WRMGEN's "Input monitor:" prompt.

These steps assure the warm-boot monitor will not only have a language definition file, but will have the one you need to use.

We apologize for any inconvenience the current implementation may have caused you.

8.3.6
MONHSH Problem with AMOS/32 1.0(154)

A Little History

Typically, hash totals are generated using the DIR/H command which takes into consideration every byte in the file that is being "hashed." However, system monitors contain a device driver that is hardware specific and will affect the hash total. Because of the vast variety of devices supportable, this renders the traditional hash total method nearly useless as a way to "fingerprint" a monitor file. Therefore, AMOS (as of AMOS/L version 1.2(96) and all versions of AMOS/32) have the MONHSH utility to generate unique hash totals for system monitor files.

MONHSH performs the same algorithm for generating a hash total on a monitor as DIR/H for any file; however, it is smart enough to ignore the area of the monitor reserved for the device driver.

The Problem

Unfortunately, with the advent of the language definition file, there is a new wrinkle with which MONHSH must contend. AMOS/32 version 1.0(154) system monitors were distributed as 32SYS.MON and did not come with a device driver **nor language definition file installed.**

The language definition file area of 32SYS.MON will contain a specified language definition file after you use MONGEN but MONHSH is not designed to ignore the language definition area of the monitor as it does the driver area. Consequently, even though it is essentially the same monitor, there is a different hash total before you MONGEN and specify a language definition file than afterward.

The Solution

The system monitor 32SYS.MON, on AMOS/32 1.0A (157)and later, ships with the ENGLSH.LDF language definition file built in.

This means MONHSH returns the same hash total value for the original 32SYS.MON as it does for one where MONGEN has been used on 32SYS.MON--**as long as you use ENGLSH.LDF as the language definition file.** If you use any other language definition file during MONGEN, the before and after hash total will not be the same.

MONHSH and Patches

When installing patches to the monitor, the hash total generated by MONHSH is an important check point for determining the integrity of the patch installation. Be sure you take the previous conditions into account if you are troubleshooting because the hash totals are not matching. Understanding the conditions under which MONHSH will give different hash totals, as described above, can keep you from wasting time looking for typographic errors in the patch.

With respect to patches for the AMOS/32 1.0(154) monitor, the monitor hash totals provided in SPN-230L and SPN-253L are those found for 32SYS.MON as distributed from Alpha Micro and assume MONGEN has **not** been used on these files. Incidentally, there is a nice side effect of these patches: the DIR/H command and MONHSH command will produce the same hash total value. This allows you to use the same OHASH and NHASH "verbs" with

8.3.6 (Continued) MONHSH Problem with AMOS/32 1.0(154)

the patches to the monitor for this release only.

Monitor patches on AMOS/32 1.0A(157) list a monitor hash total for 32SYS.MON as distributed from Alpha Micro (or from the previous patch), but they should be identical to any monitor of the same version and patch level which has not had MONGEN used on it and uses the ENGLSH.LDF language definition file.

1.1.1
New Warranty Program

A product's success is often determined by how confident the manufacturer is in its product's quality. In many industries, this confidence is displayed through extended warranty programs. We at Alpha Micro are confident in our products and believe in our ability to deliver the very best the computer industry has to offer. The extension of our warranty program highlights our commitment to quality.

Alpha Micro's new warranty policy is effective for all shipments of Alpha Micro product[1] made on or after 24 August 1987. The changes are:

1. Warranty policy extended from 120 days to 180 days from shipment.

2. After the Dead-On-Arrival (DOA) period, terminals must be returned for repair or replacement.

If you have any questions regarding our new warranty program, please contact Order Administration at 714/641-6360.

Warranty Program Detail

The following list highlights Alpha Micro's new hardware warranty program.

DEAD ON ARRIVAL (DOA) EQUIPMENT (Within 5 Days of Receipt):

- Replacement shipment will be made to you within 48 hours (two working days.)
- Whole unit replacement will be made for peripheral products sold and shipped by Alpha Micro, such as terminals.
- Modular replacement of AM-1200, AM-1500, and AM-2000 series products (board, power supply, drive, etc.).
- Alpha Micro pays shipping both ways; customer must use Waybill included with replacement shipment.
- Return Authorization Number (RAN) is required; contact Technical Support.
- Return failed item within 15 working days to Alpha Micro (must be returned in the replacement's packaging, including all accessories[2].)

WARRANTY EQUIPMENT (Within 180 days of shipment)

- Modular replacement shipment for AM-1200, AM-1500, and AM-2000 series products (board, power supplies, drives, etc.) within 5 working days.
- Terminals repaired or replaced within 15 working days (must be returned in the replacement's packaging, including all accessories[2]).
- Alpha Micro pays shipping both ways.
- Return Authorization Number (RAN) is required; contact Technical Support. Technical Support will also provide shipping authorization account number for terminals.

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1 Except Videotrax: Videotrax controller warranty is 365 days parts and labor after date product is sold to an end user. VCR warranty is 180 days from date of sale to end user.

2 Documentation and cables shipped with the replacement unit(s) are to be returned with the defective unit(s) in the replacement unit(s)' packaging. The customer will be invoiced for the DOA replacement unit in full, if all accessories are not returned to Alpha Micro.

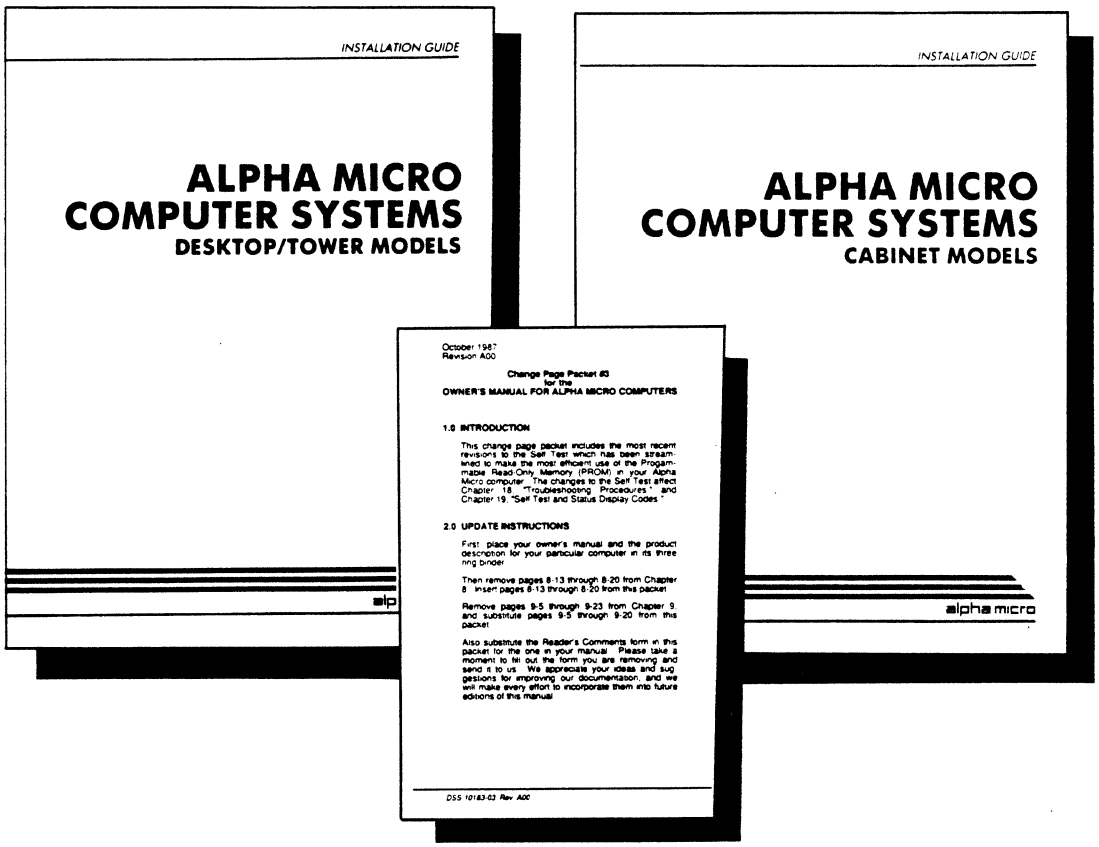
3.2.10
New Documentation Release

Several new user manuals are available for sale in November. (See the November Alpha Micro Reseller Price List for prices and availability.) The following documents have been updated to include information on the new self-test and use of SCSI drives on VME systems:

Change Page Packet #2 to Alpha Micro Computer System Installation Guide - Cabinet Models, DSS-10192-02.

Change Page Packet #2 to Alpha Micro Computer System Installation Guide - Tower Models, DSS-10184-02.

Owner's Manual for Alpha Micro Computer System, DSS-10183-00, Rev. A03.



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