DataLink™

Communications Software

(Including DataTerm and OnLine 64)

User's Manual

APPLIED ENGINEERING®

A DIVISION OF AE RESEARCH CORPORATION

v1.1

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Introduction

DataLink includes Applied Engineering's powerful communications software giving you a chance to use your DataLink immediately. Connect with other computers the world over to get public domain and shareware software, flight information, business data, movie reviews, and answers to your questions on just about any topic.

Apple IIGS and 128K //e users can use "**DataTerm.**" "**OnLine 64**" is for the 64K][Plus and 64K //e. These ready-to-use communication programs have many of the features found in the leading communication packages on the market today.

Link up with bulletin boards, print while online, send (upload) and receive (download) files, and much more using either program. They're easy to use, but if you do come across any question or problem that the manual does not cover, Applied Engineering's Technical Support staff is ready to help you.

Enhancing the DataLink even further are the utilities included on the second DataLink disk. A description of these utilities is included in an ASCII text file called, "Notes" on the /DL.UTIL disk. You can select "Notes" from the boot menu or you may want to load this file (/DL.UTIL/NOTES) into a word processor and print it out to keep the information handy.

Those of you who have used a modem before will be impressed with DataLink and its powerful complimentary software. Newcomers to the modem can now discover the world of information that's just a phone call away.

About this manual

The DataTerm software is covered in Part One of the manual. OnLine 64 is covered in Part Two. Both parts include examples detailing how to use the software to call bulletin boards and print the exchange.

We have tried to make this manual as informative, understandable, and error-free as possible. Check the Notes file (/DL/Notes) on the DataLink disk for any corrections we've made since the publication of this manual. If you have any suggestions on how to make it better, we'll be glad to hear from you. Please send us a letter with your constructive criticism addressed to:

Applied Engineering
P.O. Box 5100
Carrollton, Texas 75011
Attention: Manager, Technical Publications

PART ONE

DataTerm

Communication Software for the //e (128K+) and IIGS

DataTerm, written by Don Elton, is a command key operated communications program designed specifically for use with the DataLink. A step-by-step sample session will tell you everything you need to do to call a BBS and capture the exchange in DataTerm's buffer.

You have easy access to DataTerm's software commands with the quick reference card (included with the DataLink package) as well as the online help screens (Ö-? and ◆-?).

We've included macros that will automatically call several BBS numbers for you (see the list of BBS numbers included in the DL package). You can also customize your own macros. Once created, you simply press two keys and the macro can call another computer, log you in, download or upload files, and log you off.

To help you get started using DataTerm, we recommend you go through the first two chapters. You can then use the other chapters in Part One and the appendices as reference when needed.

Chapter Outlines

Chapter 1 **Getting started -** tells what you need to use the program. This Chapter also tells you how to start running the program from a program selector.

Chapter 2 **Using DataTerm** - gives you step-by-step instructions on how to call a bulletin board, capture the exchange, and then send it to your printer.

Chapter 3 **Basic program operation** - explains in greater detail how to set the baud rate, print on screen, make a call, and other important features you'll want to know.

Chapter 4 **Filing commands** - instructs you on how to call up files and volumes, change their names, and delete files.

Chapter 5 **File transfer operations** - tells you how to use DataTerm to send and receive files to and from other computers. It includes instructions on how to choose which protocol to use and how to create a text file with various word processors.

Chapter 6 **Command files and macros** - lists the commands you can use to create your own macro files including step by step instructions for using the Macro Maker program. An example of a macro created with AppleWorks is also included in this Chapter as well as what you need to know to create a macro using FreeWriter™, Sensible Writer™ and AppleWriter™.

CHAPTER ONE

Getting Started

Hardware

Required

You need to have one of the following computer set-ups to use DataTerm:

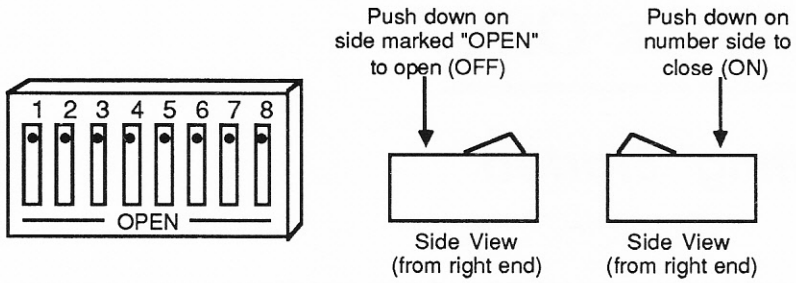
- ❑ Apple //e with 128K RAM, 80 column display, and a DataLink modem.
- ❑ Apple IIGS with a DataLink modem.
- ❖ *Note:* 64K //e and Apple][Plus users won't be able to use the DataTerm software. You will need to refer to **Part Two** of this manual, "OnLine 64."

Optional

- ❑ DataTerm supports a Pascal 1.1 or BASIC firmware protocol compatible printer interface card in slot 1 (or the built-in printer port for the IIGS).
- ❑ DataTerm supports a ProDOS compatible clock.
- ❑ DataTerm supports ProDOS compatible hard disks or RAM disks (such as a RamWorks, RamFactor, or GS-RAM RAM disk).

Hardware set-up

You'll need a DataLink card plugged into any slot except slot 3. Slot 2 is recommended. The DataTerm software will automatically find the DataLink modem in any slot. DataLink's configuration switches will have to be set to support interrupts for use with the DataTerm software. All you need to do is make sure switch 1 is in the closed (up) position (see illustration).



DataLink dip switches
(set as shipped)

- *IIGS Note:* If you'll be using the IIGS with a DataLink modem, you should enter the Control Panel and select SLOTS. From there select "YOUR CARD" for the slot in which you've installed DataLink and proceed with the set-up instructions for the Apple //e. (See "Control Panel" in the glossary for more information.)

For more information on installing the DataLink, you'll need to refer to the *DataLink User's Manual.*

Running DataTerm

FIRST, make a **BACKUP** of the front and back side of the DataLink Communications disk. Refer to your Apple User's manual for instructions on copying disks.

Boot your copy of the DataTerm disk (/DL). You'll be presented with the following menu:

```
                    AE DATALINK MENU

                [D] - Run DataTerm
                [M] - Run Macro Maker
                [N] - Notes / Changes
                [P] - Quit to ProDOS
                [B] - Quit to BASIC

  Please Choose an Option:
```

You can select any of the menu options by typing in the bracketed letter.

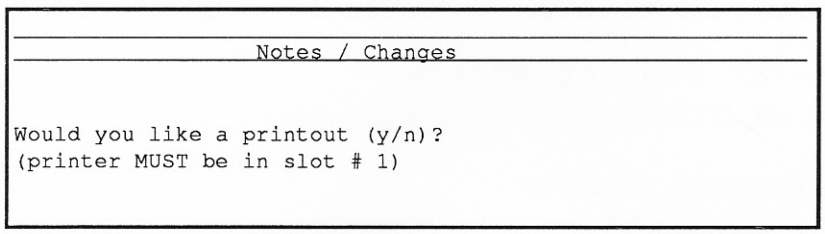
(D) - Run DataTerm

Choosing this option (typing 'D') will run the DataTerm communications program.

(N) - Notes / Changes

The first time you boot the disk, you should choose 'N' for Notes / Changes. This will tell you about any changes or new features that have been made to the disk since this manual was printed.

When you choose the Notes / Changes option you'll be asked if you wish to print the file to your printer. This option assumes that your printer card is in slot number 1. It does not support a printer in any other slot.



If you answer 'Y' to this question, you'll be given a quick checklist and be prompted to press the Space bar to begin printing. When the file has been sent to the printer, you'll be asked to press a key to return to the main menu.

If you answer "N" to the above question, you'll be presented with the first page of information. Pressing the spacebar will advance to the next page of information in the file. This will continue until the entire Notes file has been displayed.

If you have a printer that is not in slot #1 but would like a printout of this file, you can load it into any standard ProDOS based word processing program that supports printing. The file is called NOTES and is a standard ASCII text file.

(P) - Quit to ProDOS

Choosing this option returns control back to ProDOS or to a calling program selector such as the Extended Command Processor or ProSel if they are installed.

If you have a program selector, follow the normal procedure. If no program selector is installed, ProDOS will prompt for a new prefix directory and the name of a system program to run.

(B) - Quit to BASIC

This option will quit the menu program and will leave you in AppleSoft™ BASIC with a BASIC prompt (]).

Other Ways to Run DataTerm:

DataTerm also runs directly under ProDOS and is a "system program." This means that you can run DataTerm from BASIC or from a program selector. DataTerm is in a file named "DL.SYSTEM" on the distribution disk.

From BASIC:

If you're at the Applesoft BASIC prompt (]), you can run DataTerm with the following command:

```
]-/MY.DISK/DL.SYSTEM
```

(where **MY.DISK** is the name of your disk)

From a program selector:

Program selectors vary in the way they allow you to start programs. For example, from the Extended Command Processor™ (Carolina Systems Software), you would just type the pathname of the program at the colon prompt (:) as shown below:

```
:/MY.DISK/DL.SYSTEM
```

To install DataTerm on a program selector such as ProSel, enter /MY.DISK/DL.SYSTEM when asked for the system file to execute. (For more about pathnames, see the glossary and the ProDOS Tutorial in the appendices.)

From a mouse-based program selector, such as Apple II Desktop™ or Catalyst 3.0™, you would double-click the icon representing DataTerm (Ex: DL.System).

Some program selectors ask you to specify a startup prefix for the program you want to launch. You may set this prefix to whatever directory you want DataTerm to use at launch time. DataTerm does not depend on this prefix to find its own files.

See the documentation for the appropriate program selector if you have trouble.

On the Other Disk

The second DataLink disk (/DL.UTIL) contains various utilities that you may find helpful in your operation of the DataLink:

- ❑ The public domain programs ALU and BLU (see Glossary) are very useful for packing and unpacking files.
- ❑ FreeWriter is a simple text processor which you can use to create text files to send or read text files you've received.
- ❑ We've also included the analog loopback test for the DataLink to let you quickly test your modem.
- ❑ A modem game, "Modem Surround," is also included for your online enjoyment.

Make a backup copy of this disk.

For a complete list of the included files, boot the disk and select the [N]otes option.

CHAPTER TWO

Using DataTerm

All of the DataTerm commands are typed with Apple keys. These are modifier keys, like the shift or control key, but they don't represent any character. With DataTerm, every key you type on the keyboard is transmitted out through the DataLink modem and every character received via the DataLink is displayed except for a few display disrupting characters.

To enter a command to DataTerm you must press either the open apple key ("" - the key with the outline of an Apple on it to the left of the space bar) or the closed apple key ("" -the key with the solid Apple on it to the right of the space bar.

- *Note:* The Apple IIGS substitutes the ***option*** key for the key.

Pressing either the or the (***option***) key with another character designates that character as a command key for DataTerm to invoke a particular defined program function.

In general the keys are commands while the keys execute macro files. For example, the notation -? means press the Open-Apple key and the "?" key simultaneously. This particular function will display the help screen of available commands.

- *Note:* For a complete list of the commands, refer to the command summary card included with the DataLink package.

Linking
A sample of DataTerm in Action

This section will walk you through several aspects of the software. It is intended to help those who are unfamiliar with modems get a general feel for what's going on.

We'll use only a portion of the commands available to DataTerm but the more you use your modem, the more familiar you'll become with what other options you'll want to use.

If you have the number of a local BBS, you may want to use that or you can call one of the bulletin boards on the sheet provided with the DataLink. (Long-distance charges will apply in most cases.)

Once connected, you'll login as a guest, get a list of the basic commands for that bulletin board, save them to disk, then logoff.

You'll need a ProDOS formatted disk on which to save the buffer. When instructed to enter, "MY.DISK," type the name of your ProDOS formatted disk. (Single drive users will need to swap disks when necessary.)

❖ *Note:* Don't use the communications disk provided with the DataLink for saving the buffer; this disk is almost full.

KEY

"Enter" = type in the command followed by a carriage return.

"Press" or **"Type"** = no carriage return needed.

Do This	Result:
Boot DT software	Gets the DataTerm program ready to run.

Refer to the previous chapter for boot instructions.

Once you've booted the DataTerm program, you'll get the DataTerm startup Screen. (You can get rid of the startup screen by deleting the file "DL.Startup" from your copy of the /DL disk.) The bar at the top of the screen displays your current settings.

The default bar is shown below:

```
1200 Baud  Full Duplex        Buffer:  0%  Dir:/DL   10:32
```

As you change the DataTerm settings, the status bar will change accordingly.

Press ⌘-B — Changes the baud rate settings.

You'll want to set the baud setting to the fastest baud rate allowed by your DataLink and the board or service you are calling.

- *Note:* You must set the baud rate to the proper setting before dialing. You won't be able to change baud rate while online. Most boards will run at 1200 (the default setting) so if you're not sure of the board's setting, try calling at 1200 first.

Press ⌘-E key — Changes the duplex setting. Change it from Full to Half to Chat and then back to Full.

Leave the Duplex setting set to Full for most of your exchanges.

Press ⌘-R — This turns on the recording buffer. A bracketed "R" (`[R]`) will appear in the status bar to the left of "Buffer".

While the recording buffer is on, any characters sent to the screen will be stored there.

As the buffer fills up, the number next to "%" will change to indicate how much buffer space is currently used.

When the buffer is 100% full, or when you press ♁-S, the information it contains will be saved to your currently set Autosave file. The default setting of the Autosave File is /DLTEMP.1. However, since your DataLink Communications Disk is nearly full, you'll want to save your buffer to another ProDOS formatted disk (hard disks, RAM, and ROM disks can be used) as instructed below.

Press ♁-M	Displays the "Set Defaults" menu.
Press "2"	Selects the Autosave File option.
Enter in name of your disk followed by a name for the buffer file	(ex: /MY.DISK/DLSTUF.1) This sets the new pathname to which the buffer will be saved.

This volume must be online before you can set this option. If the disk isn't in an accessible drive, the option will return to the previous setting.

❖ *Note:* If you don't understand what ProDOS volume names and pathnames are, refer to the ProDOS tutorial in the appendices of this manual.

When option #4 is set to "False," the Autosave will automatically change the last character of the filename to consecutive numbers each time you save to keep the files separate. For example, the first time you save the buffer with ♁-S, it will be saved as /MY.DISK/DL.STUF.1. The second time it will be saved as /MY.DISK/DLSTUF.2, etc.

If you'd rather add the current buffer to the previously saved buffer file every time, set option 4 to "True."

Press Return	Enters any changes you've made and asks if you want to make these changes permanent.
Press Y	Saves manual settings until next time you alter this menu.

❖ *Note:* You must have at least three free blocks on the disk and the disk must be write-enabled to save these settings.

Selecting 'N' will reset to the previous setting when you quit the program.

Press ♁-D	The Dial Macro screen will appear on your screen.

IIGS users, ♦ is the same as the option key.

Type "P" or any other key — You'll get the ATDP or ATDT prompt.

"P" will pulse dial, any other key will tone dial.

Enter BBS # — This will dial the number of the BBS.

It doesn't matter whether or not you use dashes or spaces.

You should hear the board answer, followed by a high pitched tone or whistle. The DataLink will send you the message, "CONNECT 1200." Most boards will then give you an intro screen.

If you get a busy signal, press Return and type A/ (capital 'A', no carriage return) to dial again.

If you hear the board answer but don't get a CONNECT, try setting the baud rate to 300 using the Communications Menu and dial again.

Follow login directions — Different boards have different login procedures. Most boards will let you login as a guest.

Once connected there are a few other items you should know about.

- **Data Bits, Stop Bits, and Parity?** DataTerm defaults to the setting *8 data bits, 1 stop bit, and no parity*. This combination will work with the vast majority of systems regardless of what they tell you they use. If you need a different setting, you can change it with the ♦-**M** command described in this chapter.
- **Request LF?** The other thing you will need to know is that DataTerm, like a standard TTY terminal, expects that the carriage return character and the line feed character represent separate functions. This means that the host should transmit a carriage return and a line feed as the new line sequence.

  Again, this is almost always the case without your asking for it, but some systems will ask you if you need line feeds. If they should ask you this, tell them that you do. If they don't send you line feeds, the lines will all write over themselves on your screen.

- **Request Nulls?** Some systems will ask you if you need any nulls. A null is a zero byte transmitted to make the host computer pause briefly. They are typically needed for people using slow printing terminals or slow scrolling display screens. If you are using an Enhanced Apple //e (post March 1985 or upgraded) or Apple IIGS, then nulls should never be necessary. At slower baud rates they should still never be necessary even on the older //e.

  If, however, you find that you're missing the first few characters on each line, then you might try adding a null for each character that you're missing. This way the host will send spaces at the beginning of each line after each carriage return it sends so as to give your screen time to move the cursor down and scroll the screen.

Enter ? at the prompt — On many boards, this will give you a list of possible commands. (Almost all boards will tell you what to press for help.)

Press ⌘-S — Saves the buffer to your default setting (/MY.DISK/DLSTUF.1).

If your disk (/MY.DISK) isn't in an accessible drive, the recording buffer will switch off but the current information will not be lost. Insert your disk in an accessible drive and save again(⌘-S). Turn the recording buffer back on (⌘-R) to continue saving the transmitted data.

At this point, you can continue to explore the bulletin board or...

Logoff — Usually done by typing T (Terminate), B (Bye), or Q (Quit). Refer to the BBS's help menu for proper logoff.

Now you have a text file (DLSTUF.1) which contains all the information that was sent from your computer to the host and visa-versa. You can load this text file into a word processor and edit it or print it out from within the DataTerm program following the directions below:

Press ⌘-O Turns on online printing.

A [P] will appear on the status line between `Duplex` and `Buffer`. Data sent to the screen will also be sent to the printer. You can use this command while connected to a bulletin board but sending the data to the printer takes longer than sending data to your screen. Therefore, extensive use of the ⌘-O command while connected to a bulletin board will slow down transmission.

Press ⌘-J The view file command.

You can enter in the name of any text file you wish to view.

Enter /MY.DISK/DLSTUF.1 This sends the saved buffer file to the screen and the printer.

Press any key to display and print the next screen or 

to stop.

You can use these same steps to record your logon procedure for making a logon macro. Once set up, the logon macro, described in Chapter 6, will do the entire logon procedure for you with just a couple of key presses.

Press ⌘-J The view file command again.

Insert backup of the of /DL.UTIL disk into drive We'll now print the documentation for the various utilities included on the /DL.UTIL disk.

Enter /DL.UTIL/NOTES This sends the documentation for the utilities to the screen and printer.

Press any key to display and print the next screen or 

to stop.

To quit the DataTerm program:

Press ⌘-Q You'll be given three choices.

```
Q    Quit and disable port
E    Exit with port active
ESC  Return to DataTerm
```

Type Q — You'll now be returned to the launcher from which you started the DataTerm system.

If you had anything in your recording buffer, it will now be saved to your Autosave pathname. If DataTerm cannot find your disk, the buffer will be erased and the information it contained will be lost.

CHAPTER THREE

Basic Program Commands

The following commands directly address DataTerm. A detailed description of each command follows the summary list below. You may also refer to your command summary card included with the DataLink package for an abbreviated list of these commands.

Standard Communications Quick Reference Guide

Supplied Macros

⌘-?	**Display command file macro key definitions**
⌘-B	**Bulletin Board macro**
⌘-D	**Dial macro**
⌘-E	**Terminal emulation macro**
⌘-H	**Help macro for ⌘ commands**

Open-Apple Commands

⌥-?	**Help screen display for ⌥ commands**
⌥-Esc or	
⌘-Esc	**Hide/Reveal status line display**
⌥-B	**Change baud rate**
⌥-E	**Change duplex status**
⌥-H	**Hang up phone**
⌥-M	**Manual settings (including terminal emulation)**
⌥-O	**Toggle online printing**
⌥-P	**Print screen to printer**
⌥-Q	**Quit - leave program**
⌥-X	**Execute a named command (macro) file**
⌥-Z	**Zoom - show control characters**

Supplied Macros

The following macros have been supplied to ease your operation of DataTerm. The ⌘-B, ⌘-D, ⌘-E and ⌘-H macros can be replaced with macros you create. See the chapter "Macro Files" for more information on creating macros of your own.

Online documentation:
⌘-?

This command will display a list of defined command file macro keys. The unused ⌘- keys are marked "unused". You may use these keys for your own macros. Refer to the Macro Files chapter for instructions on how to write your own macro.

Bulletin Board Numbers:
⌘-B

This command will give you a list of the included BBS macros we have included with DataTerm. Selecting one of the options from the presented menu will activate the dial macro for that particular BBS.

A sheet listing the currently included BBS numbers is included with the DataLink package.

Dial Macro:
⌘-D

The dial macro asks you to enter 'P' for pulse dialing or press any other key for Tone dialing. It will give you the ATDP or ATDT prompt, at which time you enter the number to be dialed.

Change Emulation:
⌘-E

Terminal Emulation is set with this command. Press ⌘-E for the prompt "Select a Terminal to Emulate," followed by a list of available terminal emulation settings. Select the letter of the emulation table you want to load. The macro will then load in that setting, which will remain active until you choose a different setting.

More on Terminal Emulation

For a definition of Terminal Emulation, see the glossary. The terminal emulation tables are on the `/DL` volume in the `TERMCAPS` subdirectory.

While emulation is in effect, all screen output from the host, displayed from the recording buffer, or displayed from a text file, will be routed through the terminal emulator.

For no terminal emulation, enter TTY. The TTY emulation definition is always available in memory.

Terminal emulation settings can also be set from the "Manual Settings" menu (Ó-M) discussed later in this chapter.

Help macro for Ó commands:

Ó-H

More online documentation is available for the Ó commands. Pressing Ó-H will give you a list of all the Open-Apple commands available. Pressing the letter of one of the commands listed will give you a brief description of that command's function.

Open-Apple Commands

Online documentation

Ó-?

Use this command to display a one page help screen that will display all available Ó commands for using DataTerm.

Toggle status line display:

Ó-Esc or Ó-Esc

When you run DataTerm, the first line of the display is the status line display while the next 23 lines of the display make up the communications window. The status line display can be turned off or turned on using this command. The status line displays the following information:

```
* 1200 Baud  Full Duplex [Z] [P] [R] Buffer:99%  Dir:/DL   10:32
```

*—an asterisk in the left-most position of the status line indicates that a command file (macro) is being executed. You may press Esc to terminate the execution of most command files so that DataTerm will again respond to commands from the keyboard.

Baud Rate—The current baud rate. Controlled with ♁-B.

Duplex status—Full duplex Half duplex or Chat. Toggled with ♁-E.

Zoom mode—**[Z]** for Zoom (show control characters) or blank for non-Zoom operation. (♁-Z)

P—if **[P]** is displayed toward the middle of the status line, then online printing has been enabled with the ♁-O command.

R—if **[R]** is displayed, the recording buffer, ♁-R, is actively recording modem input.

Buffer—a percentage display of how much of the recording buffer is filled so far - range 0 - 99%. The recording buffer currently has a capacity of 46K of data on a IIGS or 128K //e.

Dir:—the current ProDOS prefix directory is displayed. Change to a new directory with ♁-N.

Time Display—the current ProDOS time is displayed in 24 hour format if you have a clock.

Set the baud rate:

♁-B

This command will switch DataTerm between baud rates from 300 up. Each time you press the ♁-B keys the baud rate will change. The status line is updated immediately to reflect the new baud rate.

Change duplex setting:

♁-E

Use this command to toggle DataTerm from full to half to chat duplex and back to full again. The status line is updated immediately to reflect the new duplex status. See glossary for definitions of Duplex settings.

Change duplex setting:

♁-I

This command does the same thing as a control-reset but without dropping carrier. This is useful if line noise puts you in inverse or somehow turns off the 80 column display. ♁-I does not read your dl.config, dl.startup or dl.macros files. It will display the opening DataTerm screen and prompt you to press space to continue.

Manual settings:
⍥-M

The ⍥-M command allows you to set some of the functions manually. When you enter ⍥-M, you will be given the following menu:

```
              [ Set Defaults ]

[1] Root Directory: /DL/

[2]  Autosave File: /DL/DLTEMP.1
[3]         Buffer: Auto
[4]         Append: False

[5]   Printer Init: ^I80N

[6]  DataLink Slot: 2
[7]      Echo Mode: False

[8]    Data Format: 8N1

[9]       Terminal: TTY

[RETURN] Accept Current
```

[1] Root directory—Where DataTerm will look for macro files and save the buffer.

[2] Autosave file—You can alter the name by which the buffer is saved. The default setting is DLTEMP.1. The buffer filename must be at least 2 characters long when option 4 is set to 'False' because DataTerm changes the last character for multiple saves. For example, if you named the file, 'AE', the second time you save the buffer, it would replace 'E' with '2'. However, if you set the filename as AE.1, then the 1 would be replaced with 2 the second time you saved giving you, 'AE.2'

[3] Buffer—Your choices are Auto--the host computer can turn the buffer on and off as needed, and Manual--the program will ignore buffer on/off commands from the host computer.

[4] Append—True--saves all captured files as one large file. With "True" selected, every time the buffer is saved, it finds the last entry of the buffer file and appends the new information to it. Or False--DataTerm breaks files up into sections, "DLTEMP.1, DLTEMP.2," etc. (default names).

[5] Printer Init—This setting recognizes an interface card that supports Pascal 1.1 and BASIC firmware protocols. In almost all cases, leave this setting as is.

[6] DataLink—Displays the number of the slot in which it found the DataLink card.

[7] Echo Mode—True--Echo on, or False--Echo off.

[8] Data Format—Allows you to change start and stop bits as well as parity settings. The order is 8N1, 7E1, 7O1, 7E2, 7O2 and back to 8N1. The N stands for No parity, the E for Even, and the O for Odd parity.

[9] Terminal—This allows you to select a terminal emulation table to be loaded by DataTerm. TTY is the standard mode.

For a definition of Terminal Emulation, see the glossary. The terminal emulation tables are on the `/DL` volume in the `TERMCAPS` subdirectory.

For a list of available emulation tables, use the ⌘-E command or display (⌘-D) the `/DL/TERMCAPS` directory.

To load a table, you'll need to select option 9 (press the 9 key) in the manual settings and enter, "`/DL/TERMCAPS`" followed by one of the emulation options (i.e. `/TERMCAPS/APPLE80`, `/TERMCAPS/VT52`, or `/TERMCAPS/IBM3102`).

The emulation definition files supplied on the `/DL` disk can be kept in any directory as long as you specify the pathname to the specific emulation definition file you wish to use.

For no terminal emulation, enter TTY. The TTY emulation definition is always available in memory.

While emulation is in effect, all screen output from the host, displayed from the recording buffer, or displayed from a text file, will be routed through the terminal emulator.

❖ *Note:* You may find it easier to use the ⌘-E option to load the emulation tables. See the ⌘-E description earlier in this chapter.

We have provided a macro (-T) on the disk so you can calibrate the time according to your machine. This program will beep the computer's speaker three times with a ten second pause between beeps.

If you make changes to the Set Defaults menu, you'll be asked if you want to make these changes permanent. Type 'Y' or 'N.' Typing 'Y' will save this settings to your write-enabled program disk in the file DL.CONFIG. If this file doesn't exist in your root directory, it will be created when you press 'Y'.

Pressing 'N' will change the settings only until you quit the program or make new changes. If you don't make any changes, you can exit the menu by pressing Return or Esc.

Toggle online printing:

-O

A [P] toward the middle of the status line indicates that online printing has been enabled. This command will turn on or turn off online printing. In this mode, any text displayed to the screen either in terminal mode or as a result of viewing a text file will also be sent to the printer.

Print the current screen:

-P

This command will send the contents of the current screen to the printer in slot 1. Data that arrives over the modem during the printing operation (up to 256 bytes) will be displayed on the screen after printing is completed.

Quit program command:

-Q

```
Q     Quit and disable port
E     Exit with port active
ESC   Return to DataTerm
```

Pressing "Q" will hang up the modem and exit the program. This command returns control back to ProDOS or to a calling program selector such as the Extended Command Processor or ProSel if they are installed. If your running the program from the provided disk, you will be placed in Bird's Better 'Bye' described in the appendices.

- *Reminder:* DataTerm will automatically save the contents of the recording buffer to the current Autosave file if you quit with a non-empty buffer. If it can't find the proper volume to save the buffer to in an accessible drive when quitting the program, the buffer contents will be lost.

You can use ⌘-Q to leave DataTerm for another utility and then return to DataTerm to continue communications.

- *IMPORTANT:* You may want to disable Auto Answer when leaving the program. This will prevent the DataLink from answering the phone before you can answer it yourself or from answering the phone and interrupting another program you are using.

  Turn off the answer mode using the ATS0=0 command.

Select Macro

⌘-X

This command lets you manually specify a macro file to be run. For example, if you create a macro called, MY.MACRO and save it on a disk called, /MY.DISK, you can run it by pressing ⌘-X and entering the directory name (if it is not the Current Directory listed) followed by the filename: /MY.DISK/MY.MACRO. See the Macro Files chapter for more information about macro files.

Zoom Mode Toggle

⌘-Z

This command toggles between Zoom and non-Zoom mode. Zoom mode means that control characters (other than carriage returns and line feeds) will be displayed as inverse video letters representing the particular control character received. For example: the Bell character, ASCII $07 will be displayed as an inverse video "G" for Control-G. This feature is useful for determining exactly what data is being sent by a host computer during debugging operations with command files.

CHAPTER FOUR

Filing Commands

Filing Commands

Quick Reference Guide

⌘-D Show disk directory

⌘-J Display file to screen

⌘-K Delete a file

⌘-N Change to new directory

⌘-V Display volumes online

These commands are used to manipulate ProDOS in basic operations while you're using DataTerm. The descriptions that follow assume that you have at least a casual understanding of how ProDOS works with directories, files, and subdirectories. If you need more information about these areas, refer to "A Brief ProDOS Tutorial" on page 85 before proceeding.

Display a disk directory:

⌘-D

This command will display a window with the current prefix directory (also shown on the status line) and will prompt for the name of the directory you wish to display. Pressing return will cause the prefix directory contents to be displayed on the screen. You may type in the full or partial pathname of the directory you wish to display if it is different from the prefix directory.

If the directory is more than one screen, it will pause after each full page and wait for you to press a key to continue. Pressing  before the end of the list is reached will display the total blocks used and free at the bottom of the screen without completing the listing.

After the directory has been displayed or you have pressed  , you may press any key to restore the original communications window.

Display a file:

-J

This command will prompt for the pathname of a text file you would like displayed on the screen. While the file is being displayed, you may press any key to stop the display momentarily. To resume display, press any key or press  to abort. The display will pause at the end of the file. Pressing any key will restore the original communications window.

Delete a file:

-K

This command prompts for the name of a file to delete. It will not delete a locked file (that's what lock is for!).

Set a New Prefix:

-N

This command allows you to change the current prefix as displayed in the status line display at the top of the screen. A window will display on the screen showing you the current prefix. If you wish to change the current prefix, type in the new name of the directory and hit return. If you do not type a new name and just press return, it will accept the current prefix as is.

Display volumes online

-V

This command will display a listing of the slot and drive assignments for all mounted (accessible) ProDOS disk volumes including any installed RAM disks or hard disks. This command is useful if you forget the volume names of mounted volumes because other commands require that pathnames be used instead of the slot and drive assignments.

CHAPTER FIVE

Transferring Files

File Transfer Operations

Quick Reference Guide

⌘-C Clear recording buffer

⌘-L List the recording buffer

⌘-R Turn recording buffer on/off

⌘-S Save recording buffer to disk

⌘-T Transfer a file

⌘-W Write recording buffer to named file

About Protocols

One of the nice things about modem communication is the ability it gives you to transfer files of data or programs across telephone lines. Unfortunately, just as one person may not understand what another person has said, so can computers send incorrect information or misinterpret what was sent. When transferring text data, a data error caused by line noise may be easily recognized and cause no trouble. This, however, is almost never the case when the file contains programs or data where a single byte error will cause the file to be worthless.

To avoid problems like these, communications protocols were developed so that communications programs like DataTerm would be able to detect transmission errors as they occur and direct the sending computer to re-send segments of the file that contained errors.

DataTerm's wide variety of protocols makes it compatible with the protocol systems of almost all host computers. Use this chapter to help you choose the protocol best suited to the individual transfers you need to accomplish.

DataTerm's transfer protocols

DataTerm supports 7 file transfer protocols. They are Xmodem, Xmodem CRC, Ymodem, Ymodem CRC, 4modem, ASCII text, and ASCII Express™ protocols. In addition, DataTerm supports automatic downloading of Binary II formatted files. A special limited utility protocol, called Turbo Xmodem, is also available for downloads.

When to use protocol transfers:

Use protocol transfers any time they are available; they are the best way of getting an error-free transmission. Protocol transfers are the only way that you can transfer binary or program files—ASCII text transfers can be used for only readable ASCII text files.

Which protocol should you use?

In general: You will want to use ProDOS when uploading Apple-based data. Use 4modem when available. If not, use Ymodem. If a lot of line noise is present, use Xmodem.

DataTerm supports 5 non-ASCII file transfer protocols as well as combinations of the 5. When you tell DataTerm that you want to transmit a file, your choices are Xmodem, Ymodem, 4modem, ProDOS, or Text. Text refers to ASCII text transfers and is described later in this chapter

Xmodem--relatively noisy lines

Xmodem is a protocol in which 128 byte blocks of data are transmitted from one computer to another with a single byte checksum that is calculated based on the values of the 128 data bytes. The receiving computer calculates its own checksum and compares what it calculates to the checksum sent by the other computer.

If the two values match, it can reasonably be assumed that the 128 byte data blocks were valid. The receiver then tells the sender to send the next data block.

If the checksums don't match, the receiver directs the sender to re-send the block. This continues until either the entire file is transmitted or the transfer aborts. The transfer will abort if:

(1) 10 consecutive errors are transferred

or

(2) Local user presses 

The various boards may have other means to stop the transfer.

The benefit of Xmodem is that it uses small data blocks so transfers can be successful, even with relatively noisy lines, since the odds are good that you can get 128 bytes to transfer error-free. The bad effect is that there is a waiting period between every 128 bytes of the file for the handshake to occur between the sender and the receiver; a waiting period that prolongs the transfer process somewhat.

Ymodem--low-noise lines

Ymodem is identical to Xmodem except that 1K (1,024 byte blocks) are used instead of 128 byte blocks. This works better on cleaner data lines since there are fewer handshaking pauses during the transfer. At 1200 baud, Ymodem is as much as 10% faster than Xmodem for this reason. Of course, if errors do occur, then an entire 1,024 bytes must be re-transmitted even if the error only involved one byte of data.

Keep in mind that not all computers support Ymodem. Most host computers will list the protocols they support and you can adjust accordingly.

4modem--low-noise lines

4modem is an accelerated Ymodem. A 4K packet (4,096 byte blocks) is transferred at once. The data lines need to be very clean since there are even fewer handshaking pauses during the transfer. Of course, if errors do occur, then an entire 4K packet must be re-transmitted even if the error only involved one byte of data.

Keep in mind that, like Ymodem, not all computers support 4modem. Most host computers will list the protocols they support and you can adjust accordingly.

ProDOS--Apple to Apple

This refers to ASCII Express protocol transfers. This is basically an extension to Xmodem in which ProDOS directory information, such as the exact length of a file, the ProDOS file type, the create date, the modification date, and the program load address, are automatically transmitted along with the file. This is important any time you're transferring a file from one Apple to another because it avoids the problem of how this important file information should be transferred to the other system.

This particular ProDOS protocol extension is compatible with ASCII Express The Professional™, ASCII Express MouseTalk™, Point-to-Point™, ProLine Message System™, ModemWorks™, and several other ProDOS based bulletin boards and message systems. It is not supported by any non-Apple system but the protocol allows for automatic detection of support for this protocol at the other end of a transfer.

This means that you can select ProDOS transfers on a non-ProDOS host and the protocol in DataTerm is smart enough to determine whether the other end of the transmission can support the full protocol. If not, DataTerm will drop into either Xmodem or Ymodem depending on the capabilities of the host.

Binary II downloads--receiving Binary II files

While ProDOS protocol works well with Apple systems, it isn't supported by any non-Apple information services or bulletin boards. On these systems, many files will be found in what is known as Binary II format. In this format, files are stored with a 128 byte header of their ProDOS directory information.

When you tell DataTerm you want to receive a file, if it detects that the incoming file is in Binary II format, it will ask if you want it to automatically unpack these files. The default is 'Y.'

If you choose 'Y' (or press return) then DataTerm will automatically extract any ProDOS files from the Binary II file as it is downloading to your disk.

If you choose 'N' then any incoming Binary II files will be saved to disk in their Binary II form, just as they were on the host system. These Binary II files would then have to be unpacked by a separate program such as the Apple Library Utility. See "Apple Library Utility" in the glossary for more information.

❖ *Note:* If the file has the suffix, .BNY, you'll probably want to choose 'Y' to unpack as you receive. If the file has the suffix, .BQY, it means it is a squeezed Binary file and probably contains more than one file. It will be faster, in most cases, to leave the .BQY files in their packed form then use a program that unsqueezes and unpacks at the same time (e.g. BLU). Otherwise the files will be unpacked when you receive them and you'll have to unsqueeze them one at a time.

Turbo Xmodem--very clean connections

Turbo Xmodem is a special limited use form of Xmodem downloading. When you download a file from a network such as GEnie or The Source, the majority of protocol download time is spent between blocks waiting for verification that the previously transferred block is valid.

The delay between each block transferred can be up to a second--sometimes even longer. Turbo Xmodem pre-acknowledges blocks during downloads so the host will start sending the next block without waiting. This can as much as double the speed with which a file is transferred.

Yes, there is a catch—If any errors existed in the block that was already acknowledged as good, then the entire transfer fails and must be repeated. For this reason, Turbo Xmodem should be used only when you have a very clean data connection (no line noise).

Additionally, because data is arriving almost continuously during a Turbo Xmodem download, the protocol can only be used when you are downloading to a RAM disk such as the ones created using RamWorks, RamFactor and the GS-RAM card. As long as you understand these very significant limitations, Turbo Xmodem can be quite useful in selected circumstances.

Most of the time, however, you will want to answer 'N' (the default setting) when asked if you want to enable Turbo Xmodem mode.

CRC checking--when available

In the description of Xmodem, mention was made of checksum checking. Another error checking protocol is known as CRC for Cyclic Redundancy Check. This is a two byte value that's a more accurate method of detecting errors in transmitted blocks. DataTerm will use the CRC brand of error checking any time it can determine that the other end of the transfer supports it. You may, when given the choice, tell the host that you would prefer CRC checking as opposed to checksum checking and DataTerm will act accordingly with more accuracy.

Auto-protocol selection

DataTerm has many enhancements that allow it to automatically detect when another system supports a particular transfer protocol and will adjust itself automatically to support Ymodem, ProDOS, or CRC checking protocols. When DataTerm is used to receive a file from a host, it sends a special code to the host that essentially says: "I can support Ymodem with CRC checking. Use it at your end if you can and I will reciprocate." DataTerm will also look out for this special code when it is sending a file to a host so it can respond accordingly.

At the same time, when DataTerm transmits a file via the ProDOS option, it sends a code that translates to, "I can support ASCII Express protocol. Can you?". If so, then DataTerm will use ProDOS protocol. If not, it reverts to Xmodem or Ymodem if the receiver requests it. It's a complex communication between the computers which DataTerm has made easy for you to use.

- **Once again:** All other things being equal, use ProDOS transfers when talking to an Apple based message system. If not, use 4modem or Ymodem transfers for their speed. If there is a problem with line noise on your phone line, you might try the Xmodem mode to force the smaller data blocks.

When to use ASCII text transfers

ASCII text transfers can be done only when the file you want to send is made up of readable characters (also known as 7 bit files). There is no error correction facility built into ASCII transfers but some systems can support no other protocol.

If you want to upload a pre-prepared mail message to a bulletin board service, you would use a text editor or word processor to prepare your text, logon to the information service or bulletin board, and use DataTerm's ASCII transfer capability to upload the file into the editor of the information service. This will work just as if you had typed it while online but has the advantages of speed and accuracy; you can prepare the text on your own time using whatever special formatting and spell-checking your text editor supports without tying up the phone line while creating the content of your message. This is especially advantageous for those of us who hunt-and-peck.

❖ *Note:* We have included instructions on how to send a file created with FreeWriter (included on the back of the /DL disk), AppleWorks, AppleWriter, and Sensible Writer in the "Uploading a TEXT file" section.

ASCII transfers work best where there is a fairly noise-free telephone connection as there is no mechanism to detect or correct errors. When uploading a program source file or other long or important document, you should use one of the protocol transfers (if that option is available) because of their ability to transmit or receive the file error-free.

You can use the text downloading feature of DataTerm (the recording buffer) to log or archive your online session to review later at your own leisure.

Transmitting/Uploading Apple Files:

File directories

As was mentioned in the description of ProDOS protocol file transfers above, there's more important information about ProDOS files than what's included within the file. ProDOS maintains this important information in the file directory. If you can use the ProDOS protocol to transfer a file, all that information will be automatically transferred. Displaying the directory where you put a downloaded file will look the same on your computer as it did on the host computer.

If the file you are transmitting or receiving is a text file, the information may not be important and you can just transmit the file (refer to "Uploading a Text file" below).

If the file is a binary or program file, your options are:

1) Convert the file to a text file that will create the original file when Exec'd from ProDOS BASIC. Some examples of utilities that will do this are, "The Executioner" by Glen Bredon (on CompuServe) and, "The Executive" by Morgan Davis (on ProLine).
2) Send a separate mail message describing the ProDOS file information to potential recipients of the file.
3) Place the file into a Library file or BINII file. A Library directory holds the ProDOS file information inside the file so that regular file transfer protocols may be used to transmit the file to other systems. ALU and BLU, included on the back of the DataLink disk (see Glossary), programs designed for this purpose.

Uploading a TEXT file

Use the Text file transmit option when uploading a standard text (.TXT) file to another computer. Programs such as FreeWriter (included on the DL disk), AppleWriter and Sensible Writer allow you to save your files as text files.

With DataTerm, you can send AppleWorks word processing (AWP) files and DataTerm will translate them into TXT files during the upload by stripping out the AppleWorks formatting commands.

Text file transmission:

⌘-T

To transmit a text file to a host computer follow the steps below:

1) Select the File transfer dialogue box by pressing ⌘-T.
2) When prompted to Send or Receive a file select "S" for Send.
3) Enter the full or partial pathname of the text file you wish to send when prompted with "Sending File:".
4) Select "Text transfer" by pressing the "T" key.
5) Press the key that represents the "Prompt" character or press Return if no prompt is to be used. The prompt character is the character that signals DataTerm that the host is ready to accept the next line of data. If the prompt is used, DataTerm will not send the next line of data until it receives the prompt. This keeps DataTerm from sending the file too fast for the host to accept.

   A typical prompt might be the ":", or the ">" character. If you're uploading to a text editor on the host that does not display any prompt, you might try using the Down Arrow (line feed key) as the prompt since the host will transmit a line feed prior to accepting each new line of text. Control characters such as the line feed key will be displayed as inverse video characters.
6) The "Character delay" is an arbitrary time delay added between the sending of each character. Some host computers can only keep up with human typing and not with a fast program such as DataTerm so adding delay between characters will help DataTerm slow down to near human speeds. The higher the baud rate setting, the more delay needed to noticeably slow down the reception. Pressing Return or entering a "0" will mean no character delay while entering "9" would be the maximum inter-character delay.

7) The "Line delay" is an arbitrary time delay added between the sending of lines. This allows a host time to save each line of text uploaded prior to accepting the next line of text from DataTerm. Line delays are often needed when uploading text to a system that cannot send the sender a prompt character.

The file specified will then be sent to the host until either the end of the file is reached or the user presses the 

key to abort the transfer.

Text file reception

Text file reception is accomplished via the DataTerm recording buffer. The recording buffer is an area of memory where incoming data is stored. This area is 46K on a IIGS or a 128K //e. When this buffer is filled, the contents are automatically saved to disk in the current prefix directory in the file set with option 2 of the ♁-M command. The default setting is DLTEMP.1 with subsequent buffer images saved as DLTEMP.2, DLTEMP.3 and so on.

You can specify another pathname to use for autosave operations via the ♁-M menu. Option 4 controls whether or not the buffer will be kept as one big file with each saved buffer appended to the end of the previously saved buffer (True) or if the buffers will be saved as separate files (False).

You can also set up a buffer file by the command file statement, SET AUTOSAVE (see the chapter, "Macro Files"). Below is an abbreviated list of the commands that control the recording buffer. A more detailed explanation of each command follows.

Clear recording buffer

♁-C

This command will erase the contents of the recording buffer.

List recording buffer

♁-L

This will display the contents of the recording buffer to the screen.

Note that the percentage of the recording buffer currently filled is displayed next to `Buffer:` on the status line display. During a typical session you would:

1) Tell a host which file you want it to send you.
2) Tell the host that you desire an ASCII transfer.
3) The host should tell you to press 

to start the transfer.
4) Press ⌘-S to save the current buffer or ⌘-C to clear the buffer.
5) Press ⌘-R to turn on the recording buffer if it isn't already on.
6) Press 

to tell the host to send the file.
7) Once the file has been received you would press ⌘-R to turn off the recording buffer.
8) Press ⌘-S to save the current buffer to disk or ⌘-W to save the buffer to a filename other than the Autosave file.

Recording Buffer ON/OFF:

⌘-R

This command toggles the recording buffer on and off. When the buffer is turned on, the letter "R" is displayed near the middle of the status line display. You should use this command to start DataTerm's recording of data received by your computer.

Save buffer to Autosave file:

⌘-S

This command saves the current contents of the recording buffer into the appropriate DLTEMP.n file on your disk (where "n" is equal to the file number). The ⌘-S command also clears the recording buffer after the buffer image has been saved to disk. Note that this function occurs automatically should the recording buffer fill up (100%).

If the disk that is set to save your buffer to is not online (in an accessible drive), DataTerm will tell you, "Volume not found" and turn off the recording buffer. Everything saved to the buffer up to that point will still be in the buffer. You can put the proper disk in an accessible drive, enter the proper pathname, save the buffer, and turn it back on with ⌘-R.

Write buffer to file...

⌘-W

This command is like the ⌘-S command in that it allows you to write the contents of the recording buffer to disk. Unlike ⌘-S, however, ⌘-W allows you to specify the pathname of the file that will be used when the file is written to disk. This command is particularly good for text downloads of program files because you can give the files names that reflect their contents.

Receive a protocol file:

⌘-T--R

To receive a file via a file transfer protocol:

- You must tell the host computer which protocol to use in sending you the file prior to initiating the transfer with DataTerm. If given a choice, choose the protocol based on the considerations listed in the section "Choosing a transfer protocol" (usually Ymodem).
- The host computer will usually tell you to prepare to receive a file.
- Select the file transfer dialogue box with the ⌘-T command.
- Specify 'R' to receive a file.
- Enter the name of the file to which you want the incoming data saved and press Return.
- Select whether or not you want DataTerm to automatically enable Binary II file downloading. You will usually want to say 'Yes' to this prompt.

❖ *Note:* Remember, you'll probably want to answer 'Y' (the default) for .BNY files and 'N' to .BQY files.

- Select whether or not you want to use Turbo X-Modem. The default is 'N'; you usually will not want to do this.

The rest of the process is automated; DataTerm determines which file transfer protocol is being used by the host computer and acts accordingly.

The total number of bytes and number of bytes transferred are displayed. DataTerm will tell you when the transfer is completed.

Send a protocol file:

⌘-T--S

To send a file via a file transfer protocol, you should select the file transfer dialogue box with the ⌘-T command and specify "S" to send a file. You should then enter the name of the file you want to transmit and select a protocol(Again, refer to the section, "Choosing a transfer protocol."

- *Note:* You must first tell the host computer that you want to make a protocol transfer prior to initiating the transfer with DataTerm.

CHAPTER SIX

Macro Files

DataTerm supports powerful Command files called macros. A macro file is simply a set of commands (one per line) saved in a standard text file and executed as commands by using the keyboard. These macros, if properly named, are automatically executed when you press the Closed Apple key together with a letter key or they may be specified manually using the ♁-X command.

If the user presses the ♁-A combination, DataTerm will look for a file named "DL.KEY.A" to execute as a macro file.

In order for DataTerm to find its Command files, DataTerm keeps up with the concept of a "root directory." The root directory is the directory in which DataTerm resides when it is run. All Macro Command Files must reside in the root directory.

At startup time, if a file named "DL.STARTUP" is found in the root directory, DataTerm will execute it as a Command file automatically.

You can create simple or complex macros depending upon what you desire the program to do and your ability to construct the macro to do it. For the more complex macros, you should have some experience with structured programming because the commands you'll be using are much like the ones in BASIC programming.

OR--you can use the **Macro Maker** program included in the System Utilities on the DataTerm disk to create logon macros for you.

Before you begin...

The DataTerm master disk is almost completely full. You'll want to delete the OnLine 64 files from your backup disk to make room for any macros you want to create. (Refer to, "Copying the Communications Programs to Your Disks," in the appendices to determine which file you should delete.)

You'll want to update your DL.MACROS file with a word processor to reflect the changes you have made. See the example at the end of this chapter under, "Creating macros with AppleWorks."

Macro Maker

Macro Maker, written in AppleSoft BASIC, lets you create a custom macro without having to do any actual programming. Simply answer the questions the program asks you. It will take your answers and put then in the correct form to communicate with the DataTerm program.

We'll take you step by step through the program to show you how easy to use it really is.

Start Macro Maker

Boot the back side of the disk and run Macro Maker from the A.E. DataLink Utilities Menu by selecting the option, "Run Macro Maker" or run it from Basic by entering:

```
]-MACRO.MAKER
```

Making a closed apple (🍎) macro

The program will first ask you if you want the macro assigned to one of the Closed-Apple keys. Answer [Y]es and you will be shown a list of the macros that have already been defined in the DL.MACROS file.

We'll create a macro for the National AppleWorks User's Group.

❖ *Note:* This macro was current at the time this manual was published. If N.A.U.G. changes their BBS software or number, the macro may also need to be changed.

The program will first ask you:

```
Which macro to change? (a-z):
```

Type a Z to change the current 🍎-Z macro. If this key is already being used as a closed-apple key, the program will ask you if you want to change it. If not it will tell you:

```
This is now unused

Change this one?
```

Type a **Y** The screen will clear then you will be asked:

```
What is the Macro name?
```

Call this macro **Sample Macro**

```
What is the Baud rate (300/1200)?
```

Type **1** for 1200 baud. Note that you need to type only the first letter of your choice for these questions, e.g. type "1" for 1200 baud, type "F" for full duplex, etc.

```
Full or Half Duplex (F/H)?
```

Type **F**

```
Dial with Tone or Pulse?
```

Type **T** if you are using a tone dial phone. If you are using a pulse phone, enter P.

```
What is the Phone Number?
```

Type **1 313 482 8090** (spaces included for clarity). This is the number for the National AppleWorks User's Group.

```
Turn on recording Buffer? (Y/N)
```

Type **Y** This activates the recording buffer.

```
Include a logon sequence? (Y/N)
```

Type **Y**

In order to include a logon sequence as part of the macro, you must know the exact keystrokes required in order to logon to the computer you are calling. We have listed the proper logon sequence below for this macro.

If you don't know the correct logon sequence for a particular BBS, you may be able to get it through the BBS's voice line. If not, logon to the board manually, with your recording buffer turned on. By doing this you will be able to capture the logon information so you can include it in your macro.

The program then asks you:

```
After CONNECT, who sends first?
(me/Host)
```

Type **H**

```
I wait for:
```

Type ->

```
Then I send:
```

Type **new**

```
Need a Password? (Y/N)
```

Type **N**

```
Is data all correct? (Y/N)
```

Type **Y** if yes or **N** if you need to reenter the information.

```
Macro saved as: DL.KEY.Z
Push Space for DataLink Menu
```

The Macro Maker saves the file to your backup disk and puts the name of the macro (SAMPLE MACRO in this example) next to the key (Z) in the Macro Key Definitions list (-?).

Push the spacebar to return to the DataLink menu.

You can now run this macro by pressing the closed-apple key and the Z key at the same time (-Z).

❖ *Note:* If the DataTerm program tells you that it cannot open your macro file and yet, it appears in the Macro Key Definitions list, it's probably because you do not have enough room on your disk to save the actual file. You will need to make more space by deleting some of the files that you don't plan to use often. Or you can write over one of the currently existing macros by choosing that macro's letter when the Macro Maker asks you, "Which Macro to Change?".

To view the contents of this macro, use the -J command from within the DataLink program or you can load it into a standard ProDOS word processor (AppleWriter, AppleWorks, Sensible Writer, MouseWrite, etc.) to make changes. You must use a word processor capable or working with standard TEXT files.

DataTerm macro file syntax:

In order to invoke Macro Command files, you must have a text file named DL.MACROS in DataTerm's Root directory. Each line of this file should begin with the letter of a valid macro key. So, if you start a line in DL.MACROS with "A", you should have a file named "DL.KEY.A" in the same Root directory with DataTerm. The remainder of the line should start immediately after the letter identifier and should be the name of the service associated with the particular macro key. Refer to the example of a macro file created with AppleWorks at the end of this chapter.

- *Note:* Most Command file operations can be aborted by pressing the  key. There may be a short delay in aborting certain Command file functions.

DataTerm command files (macros) are text files created by any text editor. They consist of lines of text with a single command per line. Blank lines are ignored as are leading and trailing spaces which may be included in the file to improve readability. Upper and lower case characters are allowed and won't affect parsing.

The macro command syntax is very straightforward and easy to understand. The following pages list the commands and their descriptions. At the end of the chapter is a sample macro, written in AppleWorks, which uses several of these commands.

#

This is the comment character. It's used to put labels or comments into the programs. One or more spaces must follow the # symbol. Labels are defined as the first word following the # symbol. Thus to encode the label 'start' in a command file you would use the following:

```
# start   <-- this is a label.. "Start"
```

BUFFER ON

Turns on the recording buffer.

BUFFER OFF

Turns off the recording buffer.

BUFFER CLEAR

Erases the recording buffer. Leaves it on if on/off if off.

BUFFER SAVE

Saves the recording buffer to the Autosave file.

BUFFER WRITE <file>

Saves the recording buffer to <file>.

DELETE <file>

Deletes <file> from disk. This command will not work with a locked file.

DISPLAY <string>

The <string> is displayed to the CRT. You may display a control character by prefixing a letter key with the caret symbol (^). Thus, "^C" is 

-C. Note that the characters displayed are sent to the CRT using the communications console driver so carriage returns and line feeds must be encoded separately as "^M^J".

- ❖ *Note:* Be sure to enclose all text to be displayed in double quotes: Ex: "Now dialing".

DO <label>

Calls a subroutine that begins with the line following <label>. See also RETURN. Note that only one DO procedure may be active at one time.

EMULATE <path>

Loads the terminal emulation file named. For example, `EMULATE TERMCAPS/VT52`. Without a leading '/,' EMULATE assumes the root directory.

EXIT

Leaves the DataTerm program with the modem active. Use EXIT to leave DataTerm for another utility and then return to DataTerm to continue communications.

GOTO <label>

Transfers control to the statement following <label>.

HANGUP

Hangs up the telephone connection.

IF EXISTS <pathname> <statement>

If the file specified by <pathname> exists on an online disk device, then <statement> will be executed. Otherwise, control continues with the statement that follows on the next line.

This command clause is typically used so that a command file can decide if there is or is not a message reply file to be uploaded. The command file can then branch accordingly or check to make sure that a file exists before it attempts to delete the file.

IF FAILED <statement>

If the previous WAITFOR statement failed (i.e. didn't find its target before the time limit expired), then <statement> is executed. Otherwise, control passes to the next line and <statement> is ignored.

IF FOUND <statement>

If the previous WAITFOR statement found what it was waiting for, then execution continues with <statement>. Otherwise, control passes to the next line and <statement> is ignored.

IF KEYBOARD <character> <statement>

If the key pressed in response to the most recent WAITFOR KEYBOARD statement matches <character>, then execution continues with <statement>. Otherwise, execution continues with the next line and <statement> is ignored.

Note that this command can also test control characters designated by preceding a letter with the "^" character. For example: when looking for 

-C, you could type, "IF KEYBOARD ^C GOTO EXIT" (where exit is a label, not a command).

PAUSE <seconds>

Execution pauses for the duration specified in <seconds>. If <seconds> is omitted, then execution will pause for approximately one second.

PRINT INIT <string>

Sets the printer initialization string as specified. Control characters can be encoded just like DISPLAY.

PRINT OFF

Turns off online printing.

PRINT ON

Turns on online printing.

PRINT SCREEN

Prints the current screen.

QUIT

The ProDOS QUIT MLI call will cause DataTerm to deactivate the modem and exit to the selector program.

❖ *Reminder*: If you QUIT the DataTerm program, the contents of the buffer will be autosaved.

RECEIVE <file>

Receives <file> from a host computer using Xmodem, Ymodem, or ProDOS Xmodem protocol.

RETURN

This statement returns control back to the next line following the last executed DO statement.

❖ *Note:* The RETURN and DO statements operate like the GOSUB and RETURN functions in AppleSoft BASIC.

SEND <file> 4modem

Transmits <file> to a host computer using ProDOS 4modem protocol.

SEND <file> PRODOS

Transmits <file> to a host computer using ProDOS Xmodem protocol.

SEND <file> TEXT

Transmits <file> to a host computer using ASCII protocol with the previously defined prompt, line delay, and character delay.

SEND <file> XMODEM

Transmits <file> to a host computer using Xmodem protocol.

SEND <file> YMODEM

Transmits <file> to a host computer using Ymodem protocol.

SET APPEND ON
SET APPEND OFF

This setting determines whether DataTerm will write all recording buffer disk saves into a single large file or not.

The default is OFF meaning that each time a recording buffer is saved to disk, the file name is changed by incrementing a file number in the last character position of the name (e.g.: DLTEMP.1, DLTEMP.2, DLTEMP.3 and so on).

If you set this option ON then all subsequent automatic buffer saves will be appended to the end of the previous file. This option can be used to allow you to download text files that are longer than the maximum capacity of the recording buffer (which is currently about 46K with the GS and 128K //e.

SET AUTOSAVE <file>

This sets a new autosave file. The <file> name should be at least 3 characters in length because DataTerm will change the last 2 characters for multiple saves.

SET BAUD 300
SET BAUD 1200...

Sets the Baud rate as indicated.

SET BINARY2 AUTO
SET BINARY2 MANUAL

Sets whether Xmodem downloads will automatically extract members of Binary II format files during the downloading process. The default is AUTO.

- *Note:* It will not unsqueeze squeezed BINII files (BQY).

SET BUFFER AUTO
SET BUFFER MANUAL

Sets whether DataTerm will recognize a ^R or ^T signal from the host to direct DataTerm to turn on or turn off the recording buffer under host control. The default is AUTO.

SET CDELAY <0-9>
SET LDELAY <0-9>

Sets the Character or Line delay timer for Text file uploads. These settings default to 0 if you do not set them. They remain set until you reset them or re-run DataTerm.

SET DUPLEX FULL
SET DUPLEX HALF
SET DUPLEX CHAT

Sets Duplex to full, half or chat, for terminal mode.

SET DFORMAT <setting>

Allows you to set the Data Format from within a macro file. The options are 8N1, 7E1, 701, 7E2, and 702.

SET ECHO ON
SET ECHO OFF

Enables or disables the display of macro statements as they execute. These statements are used primarily to debug macros.

SET PADCR ON
SET PADCR OFF

This setting determines whether or not DataTerm will add a space character to blank lines during text uploads. The default is ON.

SET PREFIX <path>

Sets the ProDOS prefix.

SET PROMPT <character>

Sets the handshaking prompt for text uploads.

SET SLOT <1, 2, 4, 5, 6, 7>

Sets the slot where DataTerm will look for the DataLink. The default is slot 2.

SET TIMER <seconds>

Sets the time limit for WAITFOR. If TIMER is set to 0 then there will be no time limit. If it is not set, the timer defaults to 1 second. The maximum time limit is 255 seconds.

STATLINE ON
STATLINE OFF

Controls the status line display. Some terminal emulators will overwrite the status line if it is left on.

STOP

The macro is terminated if this command is encountered. No error message is displayed.

VIEW <file>

<file> is displayed to the CRT.

WAITFOR KEYBOARD

Execution will pause until a key is pressed at the keyboard. The time-out limit does apply when you are waiting for the keyboard.

WAITFOR STRING <string>

Execution will pause until <string> is received over the serial port or until the time limit expires. If <string> is omitted, then execution pauses until any character is received over the serial port. Note that <string> may contain imbedded control characters just like the DISPLAY command.

WAITFOR TIME '00:00'

Execution will pause until the specified time matches the ProDOS system time. You should not use this command if you do not have a ProDOS compatible clock installed. Note that the time string must be exactly five characters long and must be encoded in 24 hour format.

XMIT <string>

The <string> is transmitted out the serial port. Note that imbedded control characters may be encoded in <string> just like with the DISPLAY command.

Creating macro files using word processors

Macro files can be created very easily with AppleWorks, AppleWriter, Sensible Writer or FreeWriter (included on the back of the /DL disk). Below is a sample autodial macro file for a Bulletin Board System (BBS) with instructions on how to create it using AppleWorks:

Boot your copy of AppleWorks.

Choose, "Add files to the Desktop"

Then choose, "Make a new file for the: Word Processor"

Choose, "From scratch"

Let's call it "Sample.Macro"

Enter	Result
set baud 1200	Sets the modem to 1200 baud
pause 2	Gives the chip time to reset
set duplex full	Sets modem to full duplex (most BBS's are set for full duplex -- see Glossary)
set timer 20	Timer will wait 20 seconds for "connect" string
display "Now dialing^M^J"	The 'Now Dialing' will display on the crt -- ^M (Control M) is a carriage return -- ^J is a line feed
xmit "ATDTxxx-xxxx^M"	Type the phone # of the BBS at the x's followed by a ^M (carriage return)
waitfor string "connect"	Waits for the modem to answer.
if failed goto exit	If the computer does not receive a "connect" string, it will go to the label "quit"
buffer on	Turns the recording buffer on
xmit "^M"	Transmits a carriage return to the host
stop	Stops execution of the macro and you are connected to the board ready to logon

# exit	This is a label
hangup	Hangs up the phone
display "Nobody Home^M^J"	Prints "Nobody Home" to the screen if no connect received
stop	Stops execution of macro

Now you're ready to save the file. If you're using Sensible Writer or AppleWriter, save the file as a text file. FreeWriter will automatically save it as a text file.

AppleWorks files must be *printed* as a text file:

1) Press ⌘-P (for print).
2) Choose "Beginning" when AppleWorks ask you where to print from.
3) When asked where you want to print, choose "A text (ASCII) file on disk".
4) You'll then be prompted for the pathname to which you want the file saved. Type "/MY.DISK/DL.KEY.S" where MY.DISK is the name of the disk to which you want to save it.

You can now save the AppleWorks file (Sample.Macro) in the normal manner so you a can easily make changes to it in the future. Now when you run DataTerm you can run this macro by pressing ⌘-S or by pressing ⌘-X then typing, "/YOUR.DISK/DL.KEY.S".

❖ *Important:* In order to run the macro you have made with the closed-apple (⌘) letter key, you must save the macros to the same directory that contains the DL.SYSTEM and your DL.MACROS files. If you want to run the macro with the ⌘-X command, you can save the macro file to any ProDOS disk.

You'll want to load the DL.MACROS file into AW to reflect the new macro you just created. Tell AW you want to, "Make a new file for the word processor" "From a text file". When asked for the pathname, type, "/DL/DL.MACROS". When asked for a new file name, type, "Macros".

The file will look something like this:

aunused
bBBS's
cunused
dDial Macro
eSet Emulation
funused
gunused
hDataLink HELP
iunused
etc.

This DL.Macros file already contains the names of some sample macros we have included on disk. Change the "unused" to the name of the service you have made a macro for. For the example above, change, "sunused" to "sanyname" where "anyname" is equal to whatever you decide to call this macro.

You'll then need to print the DL.Macros file to disk as described above. AW will ask you if you want to delete the old copy of file with the same name. Select, "Yes". The macro will now be included on your Macro Key Definitions list (-?) as, "-S Sample Macro".

- Reminder: AppleWriter and Sensible Writer can be saved as text files by choosing TEXT from their save menus. FreeWriter automatically saves its files as text files.

PART TWO

OnLine 64

Communication Software for the 64K)(Plus and 64K //e

On the back side of the DataLink Communications disk, Applied Engineering has provided a communication program designed for the 64K Apple][Plus and 64K Apple //e. This program is called "OnLine 64."

OnLine 64 offers just about every feature you could want for a basic communications program. It supports Xmodem uploads and downloads with automatic CRC error checking and ASCII Express ProDOS extensions, online printing (to a slot 1 Apple Pascal 1.1 standard printer card), Full and Half Duplex modes, ASCII TXT file uploads, ability to view a TXT file on your screen, 80 column support on 80 column Apple //e computers, and an online help menu.

To help you get started using OnLine 64, we recommend you go through the first two chapters. You can then use the other chapter and the appendices as reference when needed.

Chapter Outline

Chapter 1 **Getting started --** tells what you need to use the program. This chapter also tells you how to start running the program from a program selector.

Chapter 2 **Linking --** takes you through a sample session during which you'll set the baud rate, make a call, print online, and experiment with other important OnLine 64 commands.

Chapter 3 **About the Menus --** describes all the options of each of the menus.

OnLine 64 was written using ModemWorks. Applied Engineering has licensed ModemWorks from Morgan Davis.

CHAPTER ONE

Getting Started

Hardware requirements

Required

You need to have one of the following computer set-ups to use OnLine 64:

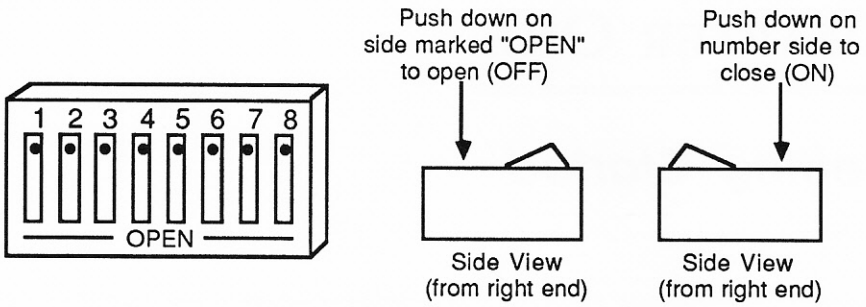
- ❑ Apple][Plus with at least 64K RAM and a DataLink modem.
- ❑ Apple //e with at least 64K RAM (or IIGS) and a DataLink modem.

Optional

- ❑ OnLine 64 supports a Pascal 1.1 protocol compatible printer interface card in slot 1.
- ❑ OnLine 64 supports a ProDOS compatible clock.
- ❑ OnLine 64 supports ProDOS compatible hard disks or RAM disks (such as RamWorks or RamFactor).
- ❑ OnLine 64 supports 80 column display on the //e.
- ❖ *Note:* Apple IIGS and //e users can also use OnLine 64.

Hardware set-up

You'll need a DataLink card plugged into any slot except slot 3, the //e's Memory Expansion slot, or the][Plus' slot 0. Slot 2 is recommended. The OnLine 64 software will automatically find the DataLink modem in any slot. DataLink's configuration switches will have to be set to support interrupts for use with the OnLine software. All you need to do is make sure switch one (1) is in the closed (up) position.



DataLink dip switches
(set as shipped)

For more information on installing the DataLink, you will need to refer to the *DataLink User's Manual.*

Running OnLine 64

1.) **FIRST**, make a **BACKUP** of both the back side of the DataLink Communications disk, /ONLINE64, and the front side of the /DL.UTIL disk. Refer to your Apple User's manual for instructions on copying disks.

2.) Boot your copy of the /ONLINE64 disk.

3.) When the disk is finished booting, you'll be presented with the following menu:

```
                    AE DATALINK MENU

                [O] - Run OnLine 64
                [N] - Notes / Changes
                [P] - Quit to ProDOS
                [B] - Quit to BASIC

 Please Choose an Option
```

You can select any of the menu options by typing in the bracketed letter.

The Options

(O) - Run OnLine 64

Choosing this option (typing an "O") will run the OnLine 64 communications program.

When running OnLine 64 on an Apple][Plus computer, you'll get the following message:

```
LOWER CASE: abcdefghijklmnopqrstuvwxyz
CAN YOU DISPLAY LOWERCASE? (Y/N)
```

If your Apple][Plus has a lower case adapter chip installed you can say yes to this question (type 'Y').

❖ *Note:* OnLine 64 is a 40 column program on an Apple][Plus so even though you may have an 80 column card that supports lower case characters OnLine 64 will not use it. You must have a lower case ROM chip installed on your][Plus motherboard in order to display lowercase within OnLine 64. A lowercase ROM is available from Applied Engineering Sales, (214) 241-6060.

If you do not have the lowercase ROM, simply press 'N' and the program will be run using all caps.

Next,][Plus owners will be asked:

```
DO YOU HAVE THE SHIFT KEY MOD? (Y/N)
```

If you are unsure if you have this modification installed, please refer to the appendices for a description.

❖ *Note:* If you answer 'Y'es to this question and DO NOT have this modification, your keys will not respond correctly. Enter 'N' if you don't have the mod and the program will run accordingly.

(N) - Notes / Changes

The first time you boot the disk, you should choose 'N' for Notes / Changes. This will tell you about any changes or new features that have been made to the disk since this manual was printed.

When you choose the Notes / Changes option you'll be asked if you wish to print the file to your printer. This option assumes that your printer card is in slot number 1. It does not support a printer in any other slot.

```
                    Notes / Changes


Would you like a printout (y/n)?
(printer MUST be in slot # 1)
```

If you answer "Y" to this question, you'll be given a quick checklist and be prompted to press the spacebar to begin printing. When the file has been sent to the printer you'll be asked to press a key to return to the main menu.

If you answer "N" to the above question you'll be presented with the first page of information. Pressing the spacebar will advance to the next page of information in the file. This will continue until the entire Notes file has been displayed.

If you have a printer that is not in slot #1 but would like a printout of this file, you can load it into any standard ProDOS based word processing program that supports printing. The file is called NOTES and is a standard ASCII text file.

(P) - Quit to ProDOS

Choosing this option returns control back to ProDOS or to a calling program selector such as the Extended Command Processor or ProSel if they are installed.

If you have a program selector, follow the normal procedure. If no program selector is installed, ProDOS will prompt for a new prefix directory and the name of a system program to run.

(B) - Quit to BASIC

This option will quit the menu program and will leave you in AppleSoft BASIC with a BASIC prompt (]).

Other Ways to Run OnLine 64:

You can also run OnLine 64 from BASIC, from another system program, or from a program selector. OnLine 64 is in a file named "ONLINE64" on the distribution disk. This disk contains other files needed to run the program (AMPERWORKS, MODEMWORKS, DATALINK.DVR, MAIN.PGM, FILE.OVL, and ONLINE64) These files must be in the same directory.

- ❖ *Note:* For details on copying OnLine 64 to your own disks, see the appendices.

From BASIC:

If you are at the Applesoft BASIC prompt, "]", and your prefix is set to the directory containing the files listed above, you can run OnLine 64 with the following command:

```
]-ONLINE64
```

From a program selector:

Program selectors vary in the way they allow you to start programs. For example, from the Extended Command Processor™ (Carolina Systems Software), you would just type the pathname of the program at the colon prompt (:) as shown below:

```
:/ONLINE64/ONLINE64
```

If OnLine 64 is installed on a program selector such as ProSel, enter `/MY.DISK/ONLINE64` (where `MY.DISK` is the name of your disk) when asked for the system file to execute.

❖ *Note:* For more about volumes, prefixes, and pathnames, see the glossary and the ProDOS Tutorial in the appendices.

On the Other Disk

The second DataLink disk (/DL.UTIL) contains various utilities that you may find helpful in your operation of the DataLink:

- ❑ The public domain programs ALU and BLU (see Glossary) are very useful for packing and unpacking files.
- ❑ FreeWriter is a simple text based word processor which you can use to create text files to send or read text files you've received.
- ❑ We've also included the analog loopback test for the DataLink to let you quickly test your modem.
- ❑ A modem game, "Modem Surround," is also included for your online enjoyment.

For a complete list of the included files, boot the /DL.UTIL disk and select the [N]otes option.

CHAPTER TWO

Linking
A Sample of OnLine 64 in Action

This chapter will walk you through several aspects of the software. It is intended to help those who are unfamiliar with modems get a general feel for what's going on.

We'll use only a portion of the commands available to OnLine 64 but the more you use your modem, the more familiar you'll become with what other options you'll want to use.

If you have the number of a local BBS, you may want to use that or you can call one of the bulletin boards on the sheet provided with the DataLink. (Long-distance charges will apply in most cases.)

Once connected, you'll login as a guest, get a list of the basic commands for that bulletin board, save them to disk, then logoff.

You'll need to have a printer connected to slot one for the last half of this sample.

KEY

"**Enter**" = type in the command followed by a carriage return.

"**Type**" = no carriage return needed.

Do This	Result:
Run OnLine 64	Gets the OnLine software program ready to use.

Refer to the previous chapter for instructions on running the program.

Type C	Displays the Configure Commands menu.
Type B	Checks Baud Rate.

The default is 1200 or 2400 depending upon the DataLink you are using. The current Baud Rate setting is displayed in the highlighted box on the left side of the top line (status bar).

Type 0,1...	Sets Baud Rate. Return or ESC will leave the baud rate as is.

You'll want to set the baud setting to the fastest baud rate allowed by both your DataLink and the board or service you are calling.

- *Note:* You must set the baud rate to the proper setting before dialing. You won't be able to change baud rate while online. Most boards will run at 1200 so if you're not sure of the board's setting, try calling at 1200 first and then adjust accordingly.

Type D	Changes the duplex setting. Change it from Full to Half and then back to Full.

The current setting will flash in the left corner of the status bar.

Leave the Duplex setting set to Full for most of your exchanges.

Type M	Returns you to the main menu.
Type D	The prompt "Dial Number:" appears in the status bar.
Enter BBS #	This will dial the number of the BBS.

It doesn't matter whether or not you use dashes or spaces.

You should hear the modem dial and then the board answer followed by a high pitched tone or whistle. When connected, the status bar will display one of the following lines:

//e

```
Full Duplex - [Apple-ESC exits]
```

][Plus

```
Full Duplex - [Control-P-ESC exits]
```

If you get a busy signal, press  to hangup, let the software hangup, then press  or "R" to dial again.

If you don't see anything but an OnLine menu, press the spacebar to enter the OnLine mode.

If you hear the host answer but do not get a connect, try setting the baud rate to 300 using the Communications Menu and dial again.

Follow login directions

Different boards have different login procedures. Most boards will let you login as a guest.

Once connected there are a few other items you should know about.

- **Data Bits, Stop Bits, and Parity?** OnLine defaults to the setting *8 data bits, 1 stop bit, and no parity*. This combination will work with the vast majority of systems regardless of what they tell you they use.
- **Request LF?** The other thing you will need to know is that OnLine 64, like a standard TTY terminal, expects that the carriage return character and the line feed character represent separate functions. This means that the host should transmit a carriage return and a line feed as the new line sequence.

  Again, this is almost always the case without your asking for it, but some systems will ask you if you need line feeds. If they should ask you this, tell them that you do. If they don't send you line feeds, the lines will all write over themselves on your screen.

- **Request Nulls?** Some systems will ask you if you need any nulls. A null is a zero byte transmitted to make the host computer pause briefly. They are typically needed for people using slow printing terminals or slow scrolling display screens.

  If you're using a][Plus, an enhanced Apple //e (post March 1985 or upgraded), or an Apple IIGS, nulls should never be necessary. At slower baud rates they should still never be necessary even on the older //e.

  If, however, you find that you're missing the first few characters on each line, you might try adding a null for each character that you're missing. This way the host will pause briefly after each carriage return it sends to give your screen time to move the cursor down and scroll the screen.

(][Plus) Type Control-P-Esc
(//e) Type ⌘-Esc

Puts you in the OnLine Command state.

The status bar displays the "`OnLine Command:`" prompt.

Type P

Gives you the prompt "OFF Turn Printer ON? (Y/N)."

You'll need to turn the power to your printer on if it isn't already on.

Type Y

Turns online printing on. Now, anything sent to the screen will be sent to the printer.

Press Spacebar

Returns you to the online BBS.

Enter ? at the prompt

On many boards, this will give you a list of possible commands. (Almost all boards will tell you what to press for help.)

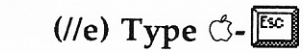
As the menu is printed to the screen, it's also sent to your printer.

At this point, you can continue to explore the bulletin board.

When you're ready to turn off the printer:

(][Plus) Type Control-P-Esc

Puts you in the OnLine Command

(//e) Type  state.

Type P Gives you the Printer toggle prompt.

Type Y Turns online printing off.

When you're ready to exit the BBS:

Logoff Usually done by typing T (Terminate), B (Bye), or Q (Quit). Refer to the BBS's help menu for proper logoff.

Now you can call up another BBS or quit the program.

To quit:

Type Q The status bar will give you the prompt "Quit to [B]asic or [P]roDOS:".

Type B or P Returns you to BASIC or ProDOS

If all went well, you've now made contact with a BBS, printed its command file, logged off, and quit the program.

On the basic level, that's all there is to it. The more hands-on/online experience you get, the more you'll be able to do.

CHAPTER THREE

About the Menus

If you went through the sample session detailed in the last chapter, you'll have already used several of the OnLine 64 commands. This chapter describes the commands you used as well as the other commands available.

```
[11:25:32] OFFLINE Command:
_____________________________________

[?] or [/]    Display this screen
[I]nfo        Info about OnLine 64

[R]e[D]ial    Dial/Redial number
[H]angup      Terminate connection
[T]ransfer    Transfer a file

[P]rint       Turn printer on/off

[C]onfigure   Configuration options
[F]ile        File commands

[Q]uit        Quit OnLine 64

While Online Use:
Spacebar to enter terminal mode
Apple/Escape to exit terminal mode
```

The OnLine 64 Menu

Status Bar

The top line of the menu is the "status bar."

```
[05:30:12] OFFLINE Command:
```

The status bar lets you know when you're OFFLINE or ONLINE and tells you which command menu you're in.

If you have a ProDOS compatible clock installed in your machine, the current time will be shown at the left end of the status bar.

If you don't have a ProDOS compatible clock, `[00:00:00]` will be displayed.

What the Options Do

(?) or (/) - Display this screen

Choosing this option will display the command menu shown above.

(I)nfo - Info about OnLine 64

Tells you the version number and who created OnLine 64.

(R)e(D)ial - Dial/Redial number

```
Dial number:
```

```
Redialing: *last number dialed*
```

- Choose 'D' to dial a number. You can enter up to 28 characters in your dial sequence. OnLine 64 will dial with touch-tone unless you make your first character a 'P'.

  After typing the number and pressing return, you'll get the following display until either you connect or the modem times out and hangs up.

```
Waiting to connect [RETURN cancels]
```

  At this point you can press Return to cancel the dial. Be patient! It takes a moment to re-initialize the modem after canceling the dial.

- 'R' will redial the last number you dialed. It will display the following:

```
Redialing: *last number dialed*
```

  Followed by:

```
Waiting to connect [RETURN cancels]
```

  If you don't get a connection, OnLine 64 will redial immediately. It will continue to redial until it either gets a connection, or until you press Return. (Press Return only once.)

(H)angup - Hangup phone (logoff)

```
Hanging up, please wait
```

This will hang up the phone and disconnect you from the service you are calling. Make sure you always use this command to end your session before 'Q'uitting OnLine 64. Otherwise you may still be connected to the service you were calling and may end up paying for connect time and/or a long distance phone call.

(T)ransfer - Transfer a file

The [T]ransfer command will not work without the presence of a carrier; you can't send or receive a file unless you're connected to a service.

Selecting this option while online gives you the following status bar:

```
(S)end or (R)eceive file:
```

(R)eceive - Get a file (download)

```
Receive file: ?
```

Entering Return will give you a catalog of the files in the currently set directory. (See [P]refix for instructions on how to change the ProDOS prefix.)

When downloading a file from a BBS, first instruct the BBS that you wish to download. Refer to whatever instructions you have with that service on how to do this.

Once you have instructed the Host computer (the BBS) to initiate the download, you need to press Control-P Esc in a][Plus or ♌-Esc in a //e or IIGS to get to the OnLine 64 command mode. From here type 'T' to 'Transfer' a file and then 'R' to 'Receive' or download the file. You'll be prompted for a proper ProDOS name to save your file as.

❖ *Note:* See "A Brief ProDOS Tutorial" on page 85 for information on proper ProDOS names.

After you press return, OnLine 64 will start downloading the file. The display will look like this:

```
filename:  Receiving  #+
```

The # after the word 'Receiving' is the number of Xmodem blocks that have been transferred. There are 8 Xmodem blocks (128 bytes of data) to 1K of file size. Therefore, if you are getting a 10K file, you will receive approximately 80 Xmodem blocks.

The file will be saved to the currently set ProDOS path. Use the 'N'ew Dir option under [F]ile command to find out what the currently set path is or to change the path.

After the file has been successfully downloaded, you will get the following message:

```
Transfer was successful!  Press a key
```

At this point, pressing a key will return you to the BBS.

The [R]eceive command supports the standard Christensen non-batch checksum protocol (Xmodem). It also supports a special extension for ProDOS files which is compatible with DataTerm, MouseTalk, ASCII Express, Point-to-Point, and many other popular terminal programs.

If you are receiving a file from a service that supports this extra protocol, there will be a '+' on the screen after the blocks received indicator.

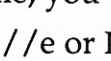
If you give [R]eceive a filename that already exists on the disk, you will get a message "Filename Exists, Overwrite (y/n)?" If you answer 'Y', it will delete the existing file (unless it is locked) and continue on with the download. If you answer 'N', the [R]eceive command will abort.

If the existing file is locked, you'll get the message, "File Locked" and will be left in the file command menu.

(S)end - Send file (T)ext or (X)modem

To send a file, you would press 

-P 

in a][Plus or 

in a //e or IIGS to get to the OnLine 64 command mode. From here type 'T' to 'Transfer' a file and then 'S' to 'Send' or upload the file. You'll be prompted for the proper ProDOS name of your file:

```
Send file: ?
```

Entering '?' will give you a directory of the current prefix directory. (See [P]refix for instructions on how to change the ProDOS prefix.)

```
Send (T)xt or (X)modem:
```

Type 'T' or 'X' depending upon whether you're sending a plain text (TXT) file or an Xmodem file.

```
Delay after each line sent (0-9)
```
(text files only)

```
Character to get before sending line:
```
(text files only)

```
Sending  XX  packets  <blocks sent counter>
```

Tells you how many packets and blocks have been sent.

After the transfer process is finished, you'll get one of the following messages:

```
Transfer successful!  Press a key
```

```
Transfer unsuccessful!  Press a key
```

If the transfer was unsuccessful, repeat the steps to upload again.

(P)rint - Turn printer on/off

```
OFF : Turn printer  ON ? (y/n)N
```

```
ON  : Turn printer OFF ? (y/n)N
```

This option will allow you to have a slot 1 printer turned on while online with a BBS. It's a good idea to turn your printer on to record the commands menu of the service you are calling.

- *Note:* In order to use this feature your printer card MUST adhere to the Apple Pascal 1.1 protocols. If you're using a printer card that does not support this protocol, the program may lock up. If it looks as though the program has locked up, press the ESC key (). This may recover the program for you.

(M)ain - Return to Main Menu

Selecting this option returns you to the main menu.

(C)onfigure - Configuration options

Pressing "C" will give you the following submenu:

```
OFFLINE  Configure Command:
-------------------------------------------

[?] or [/]    Display this screen

[B]aud        Check/Change baud rate
[D]uplex      Check/Change duplex

[E]mulate     Load terminal emulation

[M]ain        Return to Main Menu
```

(B)aud Check/Change baud rate

```
1200 bps (0=300 1=1200 2=2400):
```

This option will display the currently set baud rate and will allow you to change it.

Type '0' to set 300 baud (the number '0', not the letter 'O'); Type '1' to set 1200 baud. Type '2' to set 2400 baud.

Make sure you set the baud rate BEFORE you dial up the service/BBS. You won't be able to change the baud rate once you've connected. (Note that the change baud rate command will still work, but you will get garbage on the screen instead of proper text display)

The default baud rate is 1200 on the DataLink 1200 and 2400 on the DataLink 2400.

(D)uplex - Check/Change duplex

```
Full: Change duplex? (y/n)N
```

This option lets you choose between Full Duplex (what most BBS services require) and Half Duplex (not used very much any more). For the most part you'll always want to be in Full Duplex mode. If you're calling someone running another terminal program (such as DataTerm or OnLine 64) instead of a BBS, you may need to switch to Half Duplex .

For an explanation of Duplex, please refer to the glossary in the back of the manual.

(E)mulate - Load terminal emulation

❖ *Note:* This option is not available for the][Plus.

Lets you select from a list of terminal emulation files. Once selected, the terminal emulator will be loaded and your computer will behave as if it is the chosen terminal.

(M)ain - Return to Main Menu

You guessed it!

(F)ile - ProDOS file commands

The [F]ile commands option will display the submenu below. From here you can list the ProDOS volumes online (in you disk drives), change the current ProDOS pathname, catalog the current disk, view a text file to the screen, or delete a file on disk.

```
OFFLINE  File Command:
_____________________________________________

[?] or [/]   Display this screen

[O]nline    List volumes online
[P]refix     Set new ProDOS prefix
[C]atalog    Catalog current disk

[V]iew       View a TXT file
[D]elete     Delete a file on disk

[M]ain       Return to Main Menu
```

(O)nline - List volumes online

The Online command will list the ProDOS volume name of any ProDOS disk that's in a disk drive. The OnLine command will also display the currently set ProDOS prefix. (See [P]refix for instructions on how to change the ProDOS prefix.)

(P)refix - Set new ProDOS prefix

```
Prefix:
```

Prefix lets you change the current ProDOS Prefix to a new one while leaving the root directory as is. Use this command in conjunction with the [O]nline command and the [C]atalog command.

If you simply want to go down another level, i.e. the current prefix is set to '/HARD1/' and you want to change it to '/HARD1/DATA', you just need to type 'DATA' at the cursor.

If you want to go back one level, i.e. the current prefix is set to '/HARD1/DATA', just type 

-W. This will change the prefix to '/HARD1/'.

❖ *Note:* Typing Control-W will back up the prefix to the first non-alpha or numeric character, i.e. If your prefix is set to '/HARD1/DATA/APR.07.88/' and you press Control-W, you'll now see '/HARD1/DATA/APR.07.'; press it again and you'll get '/HARD1/DATA/APR.'

You can also use the back arrow key, the delete key (//e or IIGS only), or Control-H to backspace the cursor and delete a single character.

If you want to set a brand new prefix, first type Control-X; this will clear the currently set prefix and allow you to type in a new prefix.

❖ *Note:* You must use the leading slash (/) when you use Control-X.

(C)atalog - Catalog current disk

Catalog will display a list of the files in the currently set ProDOS prefix and will also show the root directory. Press Control-S to pause the list. Press any other key to continue.

(V)iew - View a TXT file

```
View File: ?
```

View will let you list a text file on your screen. At the 'View:' prompt, type the name of the text file you wish to view.

If the file does not exist, or if it's not a text file, you'll get an error message stating so.

❖ *Note:* The view command will only display a standard ASCII text file (TXT). It will not display AppleWorks files, etc.

If you're unsure of the name of the file you wish to view, pressing Return will display a list of text files in the currently set directory.

```
Viewing 'filename' [ESC to Stop]
```

❖ *Note:* You can press Control -S to 'SUSPEND' a listing if it is about to scroll off the screen. Once the display has been suspended, you can press any key to continue the listing or Esc to abort.

(D)elete Delete a file on disk

The delete option will allow you to delete a file on the current disk. After choosing this option you'll be asked to type the name of the file you wish to delete.

```
Delete File: ?
```

If you're unsure of the name of the file you wish to delete, pressing Return will display a list of all files in the currently set directory.

Once the file is found, you'll get the prompt:

```
Delete filename? (y/n)N
```

Press 'Y' to delete or 'N' to cancel.

Answering 'Y' to this question will cause OnLine 64 to attempt to delete the file. Answering 'N' (default) will abort the delete function and return you to the file commands prompt.

Delete will not delete a locked file. That's what LOCK is for!

(M)ain - Return to Main Menu

'Nuff said.

(Q)uit - Quit program

```
Quit to [B]asic or [P]roDOS?
```

This option gives you two ways to quit the OnLine 64 program. You will be given a choice of quitting to BASIC or ProDOS. Either option will remove AmperWorks and ModemWorks from memory.

Quitting to BASIC will remove AmperWorks and ModemWorks from memory, clear the screen, and leave you in AppleSoft BASIC.

Quitting to ProDOS will remove AmperWorks and ModemWorks from memory and return you to the ProDOS quit code. If you ran OnLine 64 from a program selector (such as ProSel or E.C.P.), you'll be returned to it if you choose this option. If you're not running a program selector, you'll be returned to the standard ProDOS quit code.

- *Note:* Do not leave OnLine 64 by pressing RESET. ModemWorks installs interrupt vectors within ProDOS and these will remain intact unless you quit via the quit routine or power your machine down. If these are left intact, and BASIC.SYSTEM is no longer in memory, a serious crash can result if your modem receives a character (which will happen if the phone rings).

  If you must reset out of OnLine 64, make sure you reboot your machine before running any other software.

APPENDICES

The following appendices are included for further reference and reading enjoyment:

A -- Copying the Communications Programs to Your Disks

B -- File Extensions Commonly Encountered on BBS's

C -- Shift Key Mod. for the Apple)(Plus

D -- Running Your Own BBS

E-- A Brief ProDOS Tutorial

F-- Bird's Better 'Bye'

G -- Getting Help

APPENDIX A

Copying the Communications Programs to Your Disks

If you want to run either DataTerm or OnLine 64 from your hard disk, Æ ROM disk (RamKeeper), or RAM disk, or if you want to delete the files not essential to the program to free up more space on your floppy disk, here are the files essential to the operation of each program.

DataTerm Files

The only file required for running DataTerm besides the boot files (ProDOS, etc.) is the **DL.SYSTEM** file.

It can also use the files below, but they are not essential to its operation.

DL.MACROS -- contains the various Closed-Apple macro files we've included with the program.

Macro.Maker -- If you'd like to run the Macro Maker program from a seperate disk, you'll also need the file **ERR.PR**.

DL.KEY.(letter) -- these files (DL.KEY.B, DL.KEY.E, etc.) contain the actual macro instructions that are carried out when the -(letter) key is pressed.

DL.CONFIG -- stores the settings of the -M menu. If there is no DL.CONFIG file in the root directory when you save the Manual Settings menu, this file is automatically created.

OnLine 64 Files

OnLine 64 pulls information from several different files. These files must be included in the same directory:

AMPERWORKS	**OL.SETUP**
MODEMWORKS	**ONLINE64**
DATALINK.DVR	**CONFIG.OVL**

You will also need to copy the **TERMCAPS** directory and its files if you want to use terminal emulation.

APPENDIX B

File Extensions Commonly Encountered on BBS's

Below is a list with definitions of several file extensions you may come across in your adventures in BBS Land.

.ARC Archived file - usually found with MS-DOS files.

.BNY Binary II file. Special ProDOS format for storing files.

.BQY Binary II packed file in which one or more files have been squeezed.

.PP3 File packed with ProPacker III.

.PP6 File packed with ProPacker v5.1 or higher.

.SQU Squeezed file. Unsqueeze using "UnSQueeze" or "BLU."

.TXT Standard text file.

.BIN Binary code file (machine language).

.BAS BASIC program file.

.EXE Exec-able file. EXEC this file to create a runable program.

.LBR Library file. Used largely for MS-DOS files.

.PIT Macintosh file packed with Packit III

.SIT Macintosh file packed with Stuffit.

APPENDIX C

Shift Key Mod. for the Apple)(Plus

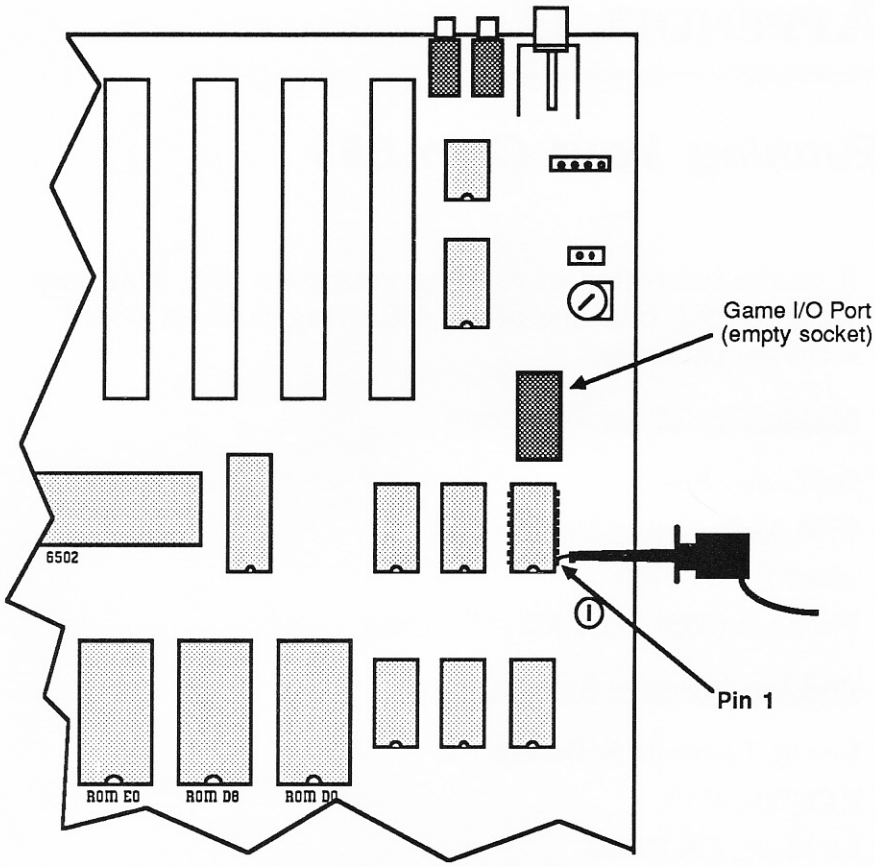
This is an easy to install, one-wire modification for the Apple][Plus which will enable you to use the lower case feature of Applied Engineering's Viewmaster 80 and use the Shift key as a real shift key. If you're running an Applesoft BASIC program or AppleWorks, this relieves you of toggling Control-A every time you wish to change case. (Control-A will still function as a shift-lock.)

No cutting or soldering is required. The only part needed is readily available at your local Radio Shack® store. It is called a "Mini Clip Lead" and the part number is 278-016.

This modification requires a newer style keyboard used on **revision 7 or later** Apple][Plus computers. Contact your authorized Apple dealer for an upgrade to the latest revision main logic board & keyboard.

Here's how to apply the shift key modification to an Apple][Plus:

1. Turn the computer OFF and remove the cover.
2. Attach one of the lead's spring loaded clips to pin 1 of the 74LS251 integrated circuit "chip, " which is just forward of the Game I/O connector (toward the keyboard). Refer to the following picture.
3. Connect the other end of the mini clip wire to pin 24 of the keyboard encoder connector. This connector is a row of 25 parallel wires extending between the keyboard and the keyboard encoder circuit card suspended below it. Pin 1 of this connector is nearest the power supply; pin 25 is nearest the right side of the computer (pin 24 is second from the right).
4. Replace the cover; installation is complete.



Apple][Plus Shift Key Modification

APPENDIX D

Running Your Own BBS

If you're interested in running your own BBS, you may want to look into one of the following Bulletin Board software packages.

Magic City Micro BBS from:

SofTools, Inc.
8306 Mills Drive; Drawer 262
Miami, FL 33183
Phone # (305) 271-7402 (BBS line)

ProLine Message System from:

Living Legends Software
P.O. Box 4313
La Mesa, CA 92044
Phone # (714) 676-1940 (voice line)

Both packages are equipped with drivers for the DataLink.

Appendix E

A Brief ProDOS Tutorial

This is a brief explanation of the **Pro**fessional **D**isk **O**perating **S**ystem, **ProDOS**, for those who are completely new to it. All of this information and more is included in your Apple Owner's Guide but we have provided it here for your convenience.

Operating System

ProDOS is one of several operating systems for the Apple. Others include DOS 3.3 and Pascal. Operating systems, as defined in the Apple Owner's Guides, are programs that control how information is loaded into memory, how the computer handles the information, how the information is stored on a disk and how the computer communicates with the printer and other peripherals.

Naming Volumes

ProDOS must have a way to locate which disk (often called "volume") you want to access. Instead of typing in the location of the disk as in DOS 3.3 (ex: S6,D1), you simply type in the name of the disk (the volume name). Some rules for volume names are:

1) Name can include letters, numbers or periods but not spaces
2) Name must begin with a letter
3) Name can be up to 15 characters long

These rules also hold true for subdirectory names.

Root Directory and Subdirectory

The main directory of the volume is called the root directory. The root directory uses the same name as your disk. Sub-directories are ProDOS' way of organizing information on a disk.

Think of the root directory as a file drawer and the subdirectories as folders within the drawer. You can:

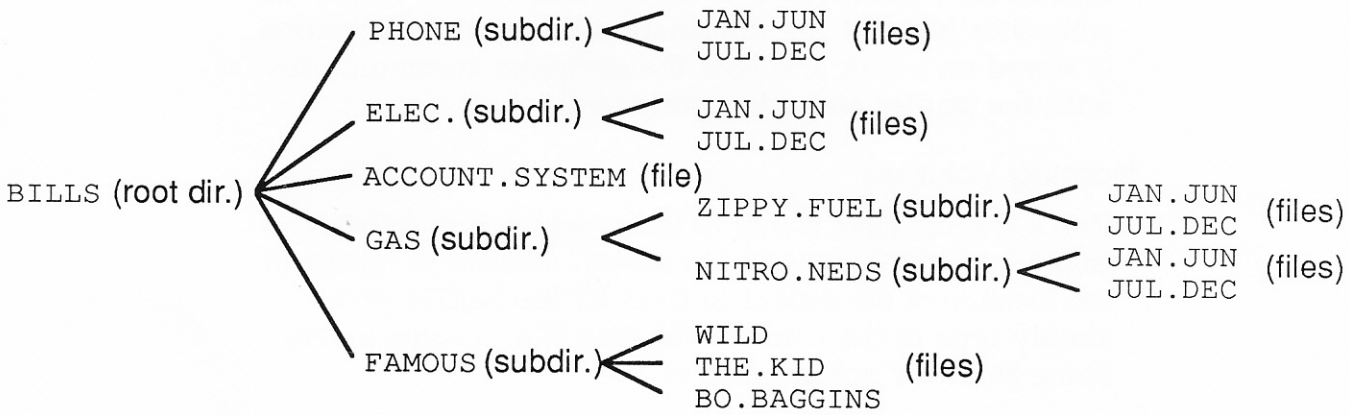
1) put files directly into the root directory like putting documents straight into the file drawer

2) Put files within subdirectories like putting documents in folders

3) Put subdirectories within subdirectories like putting folders within folders.

Pathname

The name of the directory combined with the names of one or more subdirectories is called a pathname. Volume names and subdirectory names are preceded by a slash, "/". (Note that some applications add the slash for you.) For example, you could have a volume named `/MY.DISK` and a file called MY.FILE on the root directory of that disk. To access that file, you would use the pathname `/MY.DISK/MY.FILE`. You could also have a file `JUL.AUG` in a subdirectory (folder) called `PHONE` on a disk called `/BILLS`. To access that file, you would use the pathname `/BILLS/PHONE/JUL.DEC`. Refer to the diagram below.



ProDOS Directory Structure

Now when an application asks you for the pathname of a file, you'll have a basic understanding of what it expects.

System Files

A system file is a ProDOS file that starts an application. Typically, these files have the suffix `.SYSTEM` (e.g. `/APLWORKS.SYSTEM`, `/ACCOUNT.SYSTEM` [see above], etc.). When you boot ProDOS, it runs the first system file listed in its directory. So, if BASIC.SYSTEM is the first system file on your ProDOS boot disk, ProDOS will boot and then put you in BASIC.

Additional Resources

The following books are available through most book stores:

Apple II Owner's Manual (Apple Computer, Inc.) Supplied with your Apple Computer. Take the time to read it.

Basic Programming with ProDOS (Addison-Wesley Publishing) Gives a detailed explanation of how to use ProDOS from AppleSoft Basic.

Beneath Apple ProDOS (Quality Software) Provides information about ProDOS for both the novice Apple user and the advanced programmer.

ProDOS Inside and Out (TAB Books) Very good book for both the beginning and advanced BASIC Programmer.

ProDOS User's Manual (Apple Computer, Inc.) Provides an overview of ProDOS and explains how to use the ProDOS User's Disk.

APPENDIX F

Bird's Better 'Bye'

The DataLink Communications disk contains a modified version of ProDOS. It incorporates a mini program selector, Bird's Better 'Bye,' that lets you exit one system program and easily run another system program (e.g. APLWORKS.SYSTEM, BASIC.SYSTEM, FILER) from a menu.

To use this 'BYE' command, boot your copy of the Æ disk or copy the 'PRODOS' file from the Æ disk to your boot disks. Then, anytime you quit a system program (such as AppleWorks), a menu of the first 13 .SYS type files of subdirectory entries on that disk will be displayed on the screen. This menu can also be called from the Applesoft BASIC prompt by entering the 'BYE' command.

```
          ESC: CHANGE VOLUME
          RETURN: SELECT FILE

 /AW2.EXP
      PRODOS
      AE.AW.SYSTEM
      FILER
      GSTEST.SYSTEM
      RWTEST.SYSTEM
      RFTEST.SYSTEM
      AECACHE.SYSTEM
```

Sample screen display

The sample screen above shows the AW 2 Expander disk online and lists its executable system files.

Use the up and down arrow keys to highlight the selection you want to run. Esc will change the volume (disk) selection to the next online volume. Return selects the currently highlighted file or subdirectory name.

Subdirectory names on the disk will be indicated by a '/' as the first character of the file name.

About The Program

Bird's Better Bye was created by Alan Bird of "Beagle Bros."

APPENDIX G

Getting Help

If you have a technical question relating to your DataLink card that is not covered in the manual, please contact the dealer from whom you purchased the card. If you are experiencing difficulties with one particular program, contact the program's author or publisher.

In the event that the dealer or the publisher's support personnel cannot answer your question, call Applied Engineering Technical Support. The support representatives are experienced in the applications and uses of Applied Engineering products, but in order to provide a quick and effective answer to your question, they will need to know as much as possible about the hardware and software specifically related to your question. Please provide the technical support representative with the following information:

- ◊ The Applied Engineering product related to your question and its revision number.
- ◊ The original and current memory configuration of the card (if applicable).
- ◊ The model and revision of your computer.
- ◊ What peripherals are being used and what cards are in each slot.
- ◊ The name, version, and revision level of the software that you are experiencing problems with.
- ◊ The results of any test programs, diagnostics, or troubleshooting done by you, your dealer or your software publisher's support department.

Applied Engineering
Technical Support
(214) 241-6069
9 AM to 12:30 PM & 1:35 PM to 5 PM(CST)
Monday Through Friday

(Please call only the number above for technical support. Our sales office cannot transfer calls to the support lines.)

Returning a Product

Include

If your product needs to be returned, the technical support representative will give you a Return Material Authorization (RMA) number.

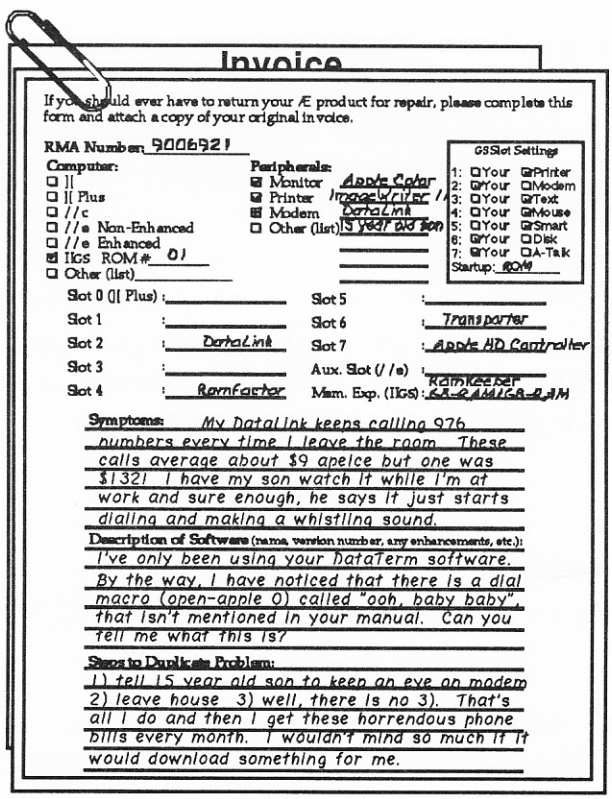
- ❑ Record the RMA number for your own records.
- ❑ Write the RMA number on the outside of the package you send to us.
- ❑ Write the RMA number at the top of the return form included with your product package.

Fill out the Return Form on back of the yellow sheet marked, "Attention!" A correctly completed form will greatly reduce the time it takes to process and return your product.

Attach a copy of your original invoice to the return form.

- ❖ *Warning:* If you don't include an invoice products will be treated as out of warranty products and will be returned to you C.O.D. for the amount of the service charge.

A completed form should look something like the one below.



Invoice

If you should ever have to return your Æ product for repair, please complete this form and attach a copy of your original invoice.

RMA Number: 900621

Computer:
- ☐][
- ☐][Plus
- ☐ //c
- ☐ //e Non-Enhanced
- ☐ //e Enhanced
- ☑ IIGS ROM# 01
- ☐ Other (list)

Peripherals:
- ☑ Monitor Apple Color
- ☑ Printer ImageWriter II
- ☒ Modem DataLink
- ☐ Other (list) 15 year old son

GS Slot Settings

1:	☐Your	☒Printer
2:	☒Your	☐Modem
3:	☐Your	☒Text
4:	☐Your	☒Mouse
5:	☐Your	☒Smart
6:	☒Your	☐Disk
7:	☒Your	☐A-Talk

Startup: ROM

Slot 0 (][Plus)		Slot 5	
Slot 1		Slot 6	Transporter
Slot 2	DataLink	Slot 7	Apple HD Controller
Slot 3		Aux. Slot (//e)	RamKeeper
Slot 4	RamFactor	Mem. Exp. (IIGS)	GA-RAMIGS-2.4M

Symptoms: My DataLink keeps calling 976 numbers every time I leave the room. These calls average about $9 apeice but one was $1321. I have my son watch it while I'm at work and sure enough, he says it just starts dialing and making a whistling sound.

Description of Software (name, version number, any enhancements, etc.): I've only been using your DataTerm software. By the way, I have noticed that there is a dial macro (open-apple 0) called "ooh, baby baby", that isn't mentioned in your manual. Can you tell me what this is?

Steps to Duplicate Problem: 1) tell 15 year old son to keep an eye on modem 2) leave house 3) well, there is no 3). That's all I do and then I get these horrendous phone bills every month. I wouldn't mind so much if it would download something for me.

When You Ship

If you don't have the original packing material, wrap the board in anti-static material (preferably the anti-static bag in which the card was originally shipped, however, aluminum foil will work fine). Pack it in a sturdy box cushioned with wadded papers (i.e. used computer paper or newspaper).

- *Warning:* If your product is damaged due to inadequate packing, your warranty will be void.

Include the return form and invoice.

Send the package, shipping prepaid, to:

RMA#__?__
Applied Engineering
Technical Support
3210 Belt Line Road, Suite 154
Dallas TX 75234

You should insure your package. Æ will not assume any responsibility for inadequate packing or loss or damage during shipping.

When We Receive

Our service department will use your completed form in an attempt to duplicate the problem.

If it is determined that your product is defective due to a manufacturing defect, your card will be repaired or replaced at Æ's option.

Any misuse, abuse, or non-Æ authorized alteration, modification and/or repair to the Applied Engineering product will void the warranty. This warranty will also be void if you use the Æ product for any purpose other than its intended use.

Your product will be fully tested before it is shipped back to you, transportation prepaid, via UPS regular delivery.

Once your product is received by Technical Support, it will be processed and delivered to our shipping department within 7 to 10 working days.

Glossary

Apple Library Utility (ALU) - A utility program used to create library files and unpack library files and Binary II files. Unpacking will extract any ProDOS files from the Binary II files. Library files usually have a .LBR suffix and Binary II files usually have a .BNY suffix. ALU, a public domain program, is included on the back side fo the DataLink disk.

ALU will not create Binary II files. See BLU.

Attention - Also known as Break. This is a special signal that is required by some mainframes and mini-computers as a sort of RESET command for remote operation. What this signal does varies from doing nothing to logging you off. You should not use the command (-A) that sends this signal unless your host's documentation says it is required. You may see this signal referred to as the PA-1 or Program Attention - 1 signal.

Baud - Baud is (1) a unit of signaling speed derived from the duration of the shortest code element. Speed in baud is the number of code elements per second. (2) a unit of signaling speed equal to the number of discrete conditions or signal events per second.

For practical purposes it is used interchangeably with "bits per second;" that is, a baud is equal to one signal element per second. There are 8 bits to a byte (or character) so 300 bits per second (i.e. 300 Baud) is a data transfer rate of roughly 30 characters per second accounting for character overhead. Both ends of any computer connection must be sending and receiving at the same baud rate. Telephone lines can typically support 300, 1200, or 2400 baud depending on the capabilities of the modem in use. Most people can read fast enough to keep up with 300 baud. Higher baud rates are more efficient for long distance file transfers provided that the information service to which you are attached does not charge a high price for using the higher rates.

Binary II (BIN II) - Files stored with a 128 byte header of their ProDOS directory information. The BIN II format is used by non-Apple information services to store Apple file information including file type, file length, create date, etc.

BLU - A utility program designed to create BIN II files, extract files from a BIN II file as well as squeeze and unsqueeze files. BLU requires at least an 80 column //e to operate.][Plus users will need to use a different program such as "Binary Up, Binary Down" (available on many BBS's) to unpack Binary II files. Library files usually have a .LBR suffix and Binary II files usually have a .BNY suffix. BLU, a public domain program, is included on the back side fo the DataLink disk.

Boot - This is the process of starting up a disk device. From basic you can initiate this process by entering the command PR # <slot num> where <slot num> is the number of the slot that contains the disk controller card of the device you wish to start up. On the Apple this will usually be slot 6. If you wish to startup a hard disk then consult the documentation for your particular hard disk for directions on how to startup from that drive. Some hard disk drives cannot be automatically started up. On the Apple //e and IIGS you can cause a disk to be booted (started up) by holding down the Control and ♁ keys, while pressing the RESET key.

Break - See Attention.

Carrier - This is a constant tone broadcast over the telephone line by modems in order to act as a reference tone for data communications. When you dial another computer you (and many modems) can listen to the line for a whistle (the carrier signal) to recognize that another computer is on the line. Sometimes you can hear the tone shift pitches from high to low or from low to high as it changes baud rates to match your baud rate setting.

Command file - A command file is a text file on a disk device that contains a list of DataTerm or OnLine 64 program commands to be executed automatically.

Control Panel - This is a special menu available on the Apple IIGS to allow you to set certain default conditions about the computer that will be remembered even after the power switch is cut off. You access the control panel while in ProDOS by holding down the Control and ♁ keys while pressing Esc. The currently running ProDOS program will be interrupted while you are in the control panel. You may return to the original application unchanged once you have finished with the control panel. See the Apple IIGS manual for more information about the control panel.

DIP switches - These are the small configuration switches on the DataLink. They are white switches in a red, rectangular casing. Most of what they control can also be controlled through the DataLink software. For a list of the switches and their functions, refer to the appendices of the DataLink hardware manual.

Download - This is the process of transferring a file from a host computer to your computer. You download a file from another computer to your disk. See also: Upload.

DTR - This stands for DATA TERMINAL READY. It is the name of one of the control signals that the computer can send to the DataLink and many other modems to cause the modem to hang up the phone under program control. DataTerm uses the DTR signal to cause modems to hang up the phone via the HANG UP command, ⌘-H. The [H]ang up command in OnLine 64 uses the DTR signal as well.

Duplex - Normally a host computer will transmit back to you every character you type. This is where the display of your typed characters comes from. This mode of operation is known as full duplex. Half duplex means that characters you type are not only transmitted to the host, but are also displayed locally to the screen as opposed to the characters being sent from the host. DataTerm's Chat duplex is useful when calling another computer (as opposed to a BBS). Chat mode adds a line feed after every carriage return. If you find that you either get no characters displayed when you type, or you get double characters when you type, change the duplex setting of DataTerm.

Macro - A Macro is a function to save a user much time and many key strokes. Typically one talks about Macro keys meaning a keyboard sequence or character that will execute several functions automatically. An example macro might type a users name or password when he or she presses a single keyboard key. DataTerm implements Macros by allowing a single keypress to start a command file that can then automate several functions chosen by the user. See the chapter, "Macro Files."

Modem - A Modem is a computer accessory for converting digital data signals from a computer into tones that can be sent over telephone lines and back again. Modem stands for MOdulator/DEModulator.

Pathname - A pathname is a path of directories required to access a specific file on a disk device. To reference a file named "MYDATA" on volume "/MY.DISK" you would use a "path" to the file: "/MY.DISK/MYDATA". Some files may be additional directories and those directories may contain references to more files or more directories. The main volume directory is called the, "root directory." Directories within the root directory are called subdirectories. If you want to refer to a file contained in a subdirectory then you must include those intermediate subdirectory names in your full pathname. Say you have a volume called "STREET" and have a subdirectory called "HOUSE" and have a file called "ROOM" the complete pathname to access the file "ROOM" would be: "/STREET/HOUSE/ROOM". See: Prefix and Volume. Also see "A Brief ProDOS Tutorial" in the appendices of this manual.

Prefix - The ProDOS prefix is a standard default partial pathname that is added to any file name you specify if your pathname is not fully qualified. A fully qualified pathname is one that starts with the volume name followed by any subdirectories that must be accessed to find the file in question. A prefix is used to shorten the amount of typing you must do to specify a pathname to a file. As an example. Suppose you have a volume called "NATION" and that volume has a subdirectory called "STATE" and you have a program file called "CITY" that is in the "STATE" subdirectory. Without a prefix, you would have to use "/NATION/STATE/CITY" as the pathname to your file. You could, however, set the prefix to "/NATION/STATE" and then you would only have to specify "CITY" as your pathname; "/NATION/STATE" would be automatically attached to the pathname you specified.

Prefix directory - The Prefix Directory is the directory specified by the current ProDOS prefix. i.e. if the prefix is set as "/MY.DISK/GAMES" then the Prefix Directory would be the subdirectory called "GAMES" found in the "/MY.DISK" volume directory.

Program Selector - A ProDOS program selector is a program that is used to switch from one ProDOS system program to another. When you leave a ProDOS system program via the QUIT or BYE option, a selector program, if available, is automatically loaded into memory. Some ProDOS program selectors are the Finder (Apple), Bird's Better 'Bye' (included on the DataLink disk), ProSel (Glen Breadon), and ECP (Carolina Systems Software).

RESET - If you get yourself into a part of the program and can't leave, then as a last resort you can usually use a Control-RESET command. You execute this feature by holding down the Control and RESET keys simultaneously, followed by releasing the RESET key.

- ❖ *Warning:* If you use this option while DataTerm or OnLine 64 is trying to write to disk you may damage the data on your disk.

A common reason you might have to use this option would be to cancel routine output to a printer when no printer is connected. DataTerm will wait for the printer to become ready and it never will. Thus using Control-RESET is the only way out of the situation short of buying a printer or turning off your computer. In the event of a serious software failure, a FATAL ERROR message will be displayed. You should record any screen message and if the reason for the error is not apparent contact Æ Technical Support. Pressing Control-RESET will reset most fatal errors. Note that pressing Control-RESET will cause DataLink to hang up the phone and remain off.

Terminal Emulation - With DataTerm's terminal emulation, your computer will appear to the host computer to be a different computer terminal. This is useful when the host computer uses software that takes advantage of particular screen formatting features of other terminals. DataTerm can emulate the DEC VT-52 stand-alone terminal or the IBM 3101. To take advantage of these features, your Apple must pretend to be the other terminal. Emulation involves translating some incoming characters into functions or other characters that are then sent to the standard Apple screen drivers. For instructions, refer to the Apple- **M** command description in the "Basic Program Commands" chapter.

❖ *Note:* DataTerm does not support Answerback.

Upload - This is the process of transferring a file from your computer to a host computer. You upload a file from your disk to another computer. See also: Download.

Volume - Refers to a logical disk storage unit. Usually a volume will be the same as a floppy disk; you may place any of several ProDOS volumes into a disk drive. Some disk devices, such as hard disks, may contain more than one volume online at any given time. Under ProDOS, volumes are referred to by name rather than physical location. Volume names may be up to 15 letters, numbers, or periods long and must begin with a letter. Volume names are always preceded by a slash "/". An example volume name might be "`/MY.DISK`".

Notes

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