

PROTERMTM A2

VERSION 3.1

**PROFESSIONAL
COMMUNICATIONS
SOFTWARE
FOR APPLE II COMPUTERS**

**Winner of
Apple Computer's
"Award of Excellence"
"Best Apple II Software"**
—Two awards were presented—
ProTERM won both!

ProTERM 3.1 was developed and written by Greg Schaefer.
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Intrec Software, Inc.

puter use. We recognized and selected most of them through their involvement in calls to the InTrec BBS. We've met only a few of our testers face to face, but during testing, we "talk" almost every day via email and sometimes even have a phone-voice conversation. However, like pen pals who have never met, we probably would not know each other if we met face to face, and that is the beauty of telecom — it allows people with similar interests to easily communicate.

Beta testing is serious business, a commitment of time and dedication, and one of the most important parts of software development. The testers not only find problems in the software, they actively suggest software feature and design improvements. The desirable tester is involved in the process, and not just there to enjoy the show and get a free T-Shirt. Really good software applications are a product of the designer and a good beta team. Dedicated callers are recognized through their expressed individual talents as well as their call frequency to a service, their posted messages, their willingness to assist others, the questions and/or answers they provide and the files they contribute such as, macros or other special interest files. If you are interested in beta testing InTrec Software products, request an InTrec Beta Test brochure from InTrec Tech Support.

About the Book

John Bohn, and Barry Prowell helped by reading the original manuscript several times before final printing. Barry has telecom expertise sensitive to persons with disabilities. His talent and consideration were an important part of the finished product.

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Thanks!

ProTERM 3 is the result of intense development, and many people contributed to its success. While it is not possible to mention everyone, a partial list of those individuals more directly involved in ProTERM 3.1 include the following.

The ProTERM 3.1 beta test team consisting of Cindy Adams, John Bohn, Don Davidson, John Edwards, Michael Edwards, Dean Esmay, Jim Ferr, Brian Hansen, Brendan Hoar, Pat Kern, Rob Meredith, Dale Smith, Sid Stulberg. Without their diligent testing and feedback, ProTERM 3.0 could not have been completed.

ProTERM 3.1 was developed a year after 3.0 had been released. It includes increased hardware support, new features requested by 3.0 users, changes to some existing features, and a rewritten, redesigned and expanded manual.

About Software Testing

InTrec Software continually receives requests to be part of the ProTERM beta test cycle. We are delighted and flattered by the many sincere requests and wish we could honor each and every one. For each project we select a broad group of testers based on their various talents, capabilities and equipment configurations. A Beta Test Team necessarily needs a level of expertise from novice through the casual user to the guru. The input and expertise of the "power-user" with their usual collection of every kind of equipment plays a big roll in the overall picture, but the candid questions and suggestions from a less experienced tester, are just as important. A novice will ask questions an expert will not, and since most new ProTERM customers are beginners, novice testers provide valuable insight on how the different parts of ProTERM will be perceived by this new user. If you have an interest, please contact us and ask for an InTrec Beta Tester Evaluation Kit.

We were extremely proud to have had the association of the ProTERM 3 beta teams. They have been hard working and fun groups and have represented a spectrum of personal com-

A Very Special Thanks

More than once, I called Mike Fairman and Joe Holt to ask for their technical expertise during the initial preparation of this manual. Mike Golaszewski assisted with the early design of the program. Dale Smith deserves special recognition for his diligence and perseverance as a beta tester. The entire beta test group was great, but Dale's efforts were far beyond the call of duty. His expertise and advice has always been invaluable to me. Pat and Derek Cline (along with Jerry) worked hard to keep InTrec running while Jerry and I worked on ProTERM.

My friends and family deserve a very special thank-you for allowing me to spend so much time developing our new venture. They always know when to leave me to my work and when to coax me into a needed break. Those people include Harry & Karen Schaefer, Steve & Rita Graham, Alyssa Graham, Mike Huckeby, Dick Sloan, Evie Harter and Bob Joslin. In particular, Alyssa. She has supported me since the day InTrec was formed and understood the importance my saying, "Just let me get this last development idea in..." excuse more times than I can count.

Most importantly, however, this project could never have been completed or even started without my friend and partner Jerry Cline (the man who never sleeps). Jerry may actually have put more hours into this project than I. He is responsible for all the printed materials and layout as well as helping me with most of the program design. In many respects, the opportunity to work with Jerry has been the most rewarding aspect of this entire project.

Greg Schaefer

Manual: Editor, Layout & Design

Jerry Cline, with assistance from Pat Cline, Derek Cline and Greg Schaefer.

Freeware and Support:

A Note About the reclassification of ProTERM to Freeware Status and continued support.

With the reclassification from commercial software to Freeware status, while InTrec still retains the Copyright, InTrec is no longer able to continue to provide direct support for ProTERM A2. Support for ProTERM has been shifted to the community at large, an 'official' support forum has been hosted by (16) Sector in addition to community support via usenet and other forums. Calls to InTrec will be referred to online community support.

The Power][Be Your Best - Apple II Forever!

29-December, 2008.

T. Diaz / tdiaz@apple2.org

ProTERM 3.1 is (C) 1991-1993 Greg Schaefer, and the ProTERM package and documentation are © 1991-2009 InTrec Software.

The documentation changes between ProTERM 3.0 and 3.1 were substantial and amount to a complete rewrite. Suggestions and ideas given by ProTERM 3 users are included in this manual. A couple of ProTERM aficionados, who deserve credit and thanks for their voluntarily work on suggested changes in the ProTERM documentation. Melinda Bargreen was instrumental a new look and feel for new users. The result was to split major information areas of the manual into major divisions or parts. Derek Cline took Melinda's ideas to a next step and assisted with the development of the new user and *Getting Started in Telecom* parts of the documentation including the enclosed *Cheat Sheet*. Another ProTERM user, Barry Schwarz sent several pages of excellent suggestions and changes for the documentation.

The Past

ProTERM was originally released by Checkmate Technology as version 1.1 in Spring '87. Checkmate released version 1.2 in the summer of '87 and 2.0 in the spring of '88. ProTERM 2.0 introduced new features including the ProTERM editor, new protocols, IIgs support, VT-100 emulation, and many other requested features. Version 2.1 released in late '88, and included: Zmodem, Global Macros, Rotary Dialing, and File Utilities. Unfortunately, differences of opinion with Greg Schaefer and Checkmate forced the program into a two-year hiatus, and no new development happened during that period.

Jerry Cline and Greg Schaefer became partners and formed InSync Software in May 1990. Jerry's interest and field is marketing and production and Greg interest and field is software design and development.

InSync Software published ProTERM 2.2 in June '90 as Greg immediately set to work and rewrote ProTERM from scratch as a complete new Apple II telecom application. Starting over, he took the best ideas from ProTERM 2.2, incorporated all new and state of the art features, and the result was released as ProTERM 3.0 in October 1991.

ProTERM 3.1

After the release of ProTERM 3.0, we immediately began work on a next version. Hundreds of great ideas and suggestions were collected from 3.0 customers. We wanted to incorporate every realistic requested change that we considered valuable to the software.

Name Change

At that time, the decision was also made to change the company name to provide a more unique identity in the marketplace, we changed three letters in the middle of our company name, and InSync Software became InTrec Software.

The Future

ProTERM will continue to live on in the Apple II® community for years to come.

Thanks from the InTrec Software crew:

Jerry Cline	Pat Cline
Derek Cline	Greg Schaefer



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Part One

GETTING STARTED

Foreword

TELECOMMUNICATIONS

This introductory primer contains the fundamentals of getting started in telecommunications. Hopefully it will help simplify what may initially appear too complex to comprehend. This text was developed from an article written by Greg Schaefer and Jerry Cline at the request of Apple Computer, Inc., and was originally published in "The Apple II Guide" – "A complete resource for users of Apple II computers" and addressed getting started in telecommunications. This is a more complete version.

**Telecommunications:
The tool that allows
us to easily and
instantly exchange
information around
the world.**

Is Telecommunications for Me?

You may feel some apprehension about getting started with telecommunications. Not sure where to get started, or think it may be too expensive or the procedures too difficult? Maybe you're concerned about what the phone company thinks about using your computer to make calls using their equipment. You may feel uneasy because this is all new and foreign. This ProTERM user manual will introduce you to this new world, ease your concern, and help you discover the value and enjoyment of telecommunications.

Personal computers are today's basic communication tools. Telecommunications is the root-level of communications between support groups of people with common interests.

Your personal computer is the essential tool to assist with your personal needs and interests can connect you to most any other computer anywhere in the world. Computers can help you communicate between people with common goals and shared interests. This used to be true for only the big corporate mainframe computers, but is now available to all of us. A new generation of home "telecommuters"* use personal computers to reach out for information, communicate with friends, exchange email, computer files, and even allow us to work at home. Thanks to telecommunications, rural areas now have the same access to information available in their metropolitan counterparts.

* Telecommuter: A person who works (and plays) from a remote location (usually their home) via a computer, modem, software and a phone line.

The modem is a translator: it lets all computers speak a common language.

It is important to know that telecommunications allows text information to be exchanged between all different types of computers. Private electronic mail, public messages and informative bulletins are almost always available in text form and can be easily exchanged. This is especially true of text information. The modem is the translator: it allows different types of computers to "talk" (communicate) with each other regardless of their particular hardware or software. When using telecommunications, you can access a wide variety of information, and the modem makes it all possible. There is one exception: even the modem cannot make computer programs designed for one type of computer operate on a different type. However, many data files such as word-processor documents, spreadsheets and databases can be exchanged between computers.

Just as special tools are used to repair a car, build a house, special tools are needed to collect and distribute information. Mail and delivery services, fax devices, voice phones and telecommunications are all information distribution tools. Using ProTERM for your Apple II or ProTERM for your Macintosh computer, you can find and share information. Not just any information, but the specific kinds of information of interest to you right when you need it.

Using ProTERM:

- A student can obtain information for a report by calling an online encyclopedia.
- Search the library card catalog for availability and location of needed books.
- Use your computer to manage your stocks and get up-to-the-minute quotations, and enter the info directly into a stock management program for analysis.
- Professional and "armchair" scholars use telecommunications to exchange information, and special-interest groups "meet" electronically to discuss current interests.
- Telecommunications allow you to easily exchange electronic mail or data with a friend. Compose a letter on your computer, call an online service, and send the letter. The letter is available the reader within minutes.

Telecommunications is perfect for physically challenged people and contributes to an improved quality of life, especially for those with limited mobility or motor skills. Telecommunications is a wonderful equalizer because everyone is on a level playing field. It can enrich the lives of everyone because it offers a unique non-discriminating and non-intimidating environment. Telecommunications allows:

- Access to further education by allowing remote attendance in classes not otherwise accessible.
- Social development by allowing interaction at conferences, social events, games, and forums offered by online services.
- Interaction as an individual with the community through local bulletin board services.
- Development of self-esteem from accomplishments and achievements online.
- Allows the hearing impaired to participate in online conversations using an alternate form of communication besides the Telephone Deaf Device (TDD).
- An easy method to send and receive mail (electronically).

Work-at-home business owners depend on fast and easy communication.

Telecommunications is an extremely important and powerful tool for home businesses. Until just recently, the words "home-based business" conjured the mental image of a business not quite able to make it in the "real" world. However, at one time in history, most businesses (trades) were based out of the home. As businesses become specialized in an era of industrialization, and transportation also becoming easier with the automobile, it became profitable for businesses to hire large numbers of employees, and they all worked in one general location. With the advent of telecommunications and other related communication and delivery services and technologies, this need for physical centralization of the office is drastically reduced in many types of businesses. The result is a literal explosion in home-

based businesses and employee telecommuting (working from home using communications technologies). Cottage industry is so large and popular, the home-office business has spawned an industry relying on services to home-office businesses. Many businesses now specialize in services just for home-office business.

Since 1990 telecommuters rose from the relatively unheard of, to the commonplace. More than 35 million home-based businesses are established, and an estimated 10% of the work force will utilize telecommuting from home instead of going to work "at the office." Federal, state and local governments understand the ecological impact of everyone driving from home to a work location, and encourage work at home whenever possible. Many city, county and state government offices offer "work at home management information" including well organized video media for use by business management. Working at home, or "the cottage industry" as it is called, is not only desirable, it is trendy, fashionable, and coveted.

The phone company doesn't care who's talking.

The Telephone Line

Using the phone line for a telecommunications call is the same as using it for a voice call, except your computer is "talking" instead of you. The phone company doesn't know or care about how you use the phone line as long as the use is reasonable and legal.

The telephone company wants to assist you. They are in the business of selling telephone service and they are pleased to have a customer who may find a need to request additional lines and services. The normal voice-quality phone line you have in your home is perfectly adequate for everyday telecommunications. Additional lines are not needed unless you prefer the freedom an additional line may give. No changes are needed, other than plugging a phone line extension cord into a modem, and connecting the modem to your computer.

**Modem:
A translating device.**

How Data is Sent Through a Phone Line

Phone lines actually handle computer data calls as voice calls. Normal phone lines were designed for voice (analog or continuous tone) transmission where frequency and volume give speech its "color" and "meaning." During normal speech, frequencies and volume change gradually in continuous tones. Think of the gradually changing sound of the plaintive wail of a wolf as it changes from a low to a higher pitch, and compare that to the clicking sound of the tap dancer. Phone lines are designed to handle the mellow tones of your voice, but computers speak in a digital on/off "clicking" language which is sharp by comparison. Since the computer speaks this digital language of on/off pulse sound, and the phone system is designed to transmit a range of frequencies and tones, a translation device is needed, and that is where a modem becomes a necessity.

**MO-dulator +
DEM-odulator
= MODEM.**

The Modem

MODEM *n*: a contraction, MOdulate+DEModulate: A device that converts signals from one type of device (as a computer) to a form compatible with another type of device (as a telephone).

The modem is the device that connects your computer to the phone line. It uses a process called modulation to change electronic on/off clicks or pulses from the computer, into continuously fluctuating sounds—Think of it as a form of highly specialized speech. This

Bits per second (bps) and baud rate are measurements of speed.

The most important things to know about a modem; quality, compatibility and transmission rate.

If you are not sure what modem to buy, contact us. We can help.

We sell only good value modems at InTrec.

“modem speech” can be sent across a phone line just like the human voice. Since phone lines are designed to handle tones, the modulated computer information can be sent via a voice phone line. When received by another modem, the analog tones of the “modem speech” are translated back into on/off pulses, in a process called demodulation.

Serial Port -> Modem -> Phone Line -> Modem -> Serial port

The transmission rate of a modems is measured in terms of bps (bits per second) (also referred to as baud rate). At the time this text was written, popular modems support rates from 300 to 33,600 bps. Higher speed modems can normally communicate at lower speeds, so a 14,400 bps modem can step down to communicate with 300.

At 300 baud, a computer can send about 30 characters per second. At 14,400 bps, a modem can send 14,400 characters per second. Obviously, when you are calling long distance or paying by the minute for an online service, faster is better. However, some commercial online services charge a higher per-minute fee for higher speed transmission. High speed modems can almost always be used at any of the lower speeds and connect automatically at the highest speed supported by both modems.

NOTE: The terms bps and baud are often used interchangeably when referring to modem transmission rates. Technically, baud means something slightly different and bps is the correct term.

Good quality 2400 bps modems are extremely affordable and adequate for many telecommunication tasks. New technology and the popularity of telecommunications continues to bring the cost of high speed to a level we can all afford. Most services can be accessed at 14,400, 28,800 bps or faster. This same statement was being made about 1200 and 2400 bps modems respectively in the very recent past.

Modems are available in many shapes, sizes and costs. Some computers have internal connectors that allow the use of “internal” modems. These modems are connected to the computer’s serial port and draw power from the computer’s power supply. Other computers use external modems which are connected to the computer’s serial port using a cable. An external modem has its own case and power supply. Because it is external to the computer, most external modems can be used with any type of computer while internal modems can typically only be used with the specific type of computer they were designed for. Whatever kind of modem you consider, it must be compatible with the intended computer system (hardware and software).

The “buzzword” for a modem’s compatibility with other modems is “AT-compatible” or “Hayes® compatible.” Most telecom software is designed for use with “AT compatible” modems. Often, features such as automatic dialing are lost when non-compatible modems are used. Before you buy a modem, compare models, ask about features and make sure you get a modem that matches your needs. A good price does not mean a good value. Like anything else, if you are not sure what to do, buy what is popular — there is safety in numbers.

Considerations When Shopping for a Modem

- A modem is NOT a good item to buy cheap—you generally get what you pay for. Most of the technical support calls to InTrec are to resolve problems caused by cheap (low quality) modems. Determine whether the product is a good value or is it cheap, the difference is incomparable.

The Bottom Line

- Quality products generally give good service, satisfactory results, and last a long time.
- Cheap products don't cost as much.

NOTE: ProTERM supports an extremely wide variety of modems. For more detailed information regarding what to look for when purchasing a modem, see the Index: Modems.

The Serial Connection

Internally, a computer moves information around in units referred to as bytes. A byte is a group of eight smaller parts called bits. A bit is an individual on/off value, think of it as an off/on switch. A single bit has either the value zero or the value one. In order to represent larger values, bits are grouped together into larger units such as bytes. Each of the eight bits in a byte can have an individual value of zero or one. There are a total of 256 different combinations of zero/one bit values within a byte. The following shows the bit values that would represent the letter "H" within a byte.



7	6	5	4	3	2	1	0	Place number
128	64	32	16	8	4	2	1	Place value
0	1	0	0	1	0	0	0	Off/On
0	+ 64	+ 0	+ 0	+ 8	+ 0	+ 0	+ 0	H = 72 Total

Example of a Byte

As you can see here, the letter H is the same as a value of 72. See the ASCII Character Chart in the back of this book for more detailed information.

Normally, computers communicate internally by sending one or more bytes of information in a "parallel" arrangement (all the bits in a byte are sent simultaneously). However, when the information must be sent through a modem and phone line, the order of these "side-by-side" bits has to be rearranged. To simplify communication with the modem, the bytes are sent one bit at a time in a serial arrangement (one after another). Computers "talk" to modems by "serial communications" using an electronic circuit called a "serial port."

An analogy of how a serial port works would be to think of an eight lane highway with cars traveling side by side. Each lane represents a single bit and looking across all the lanes at once represents a complete byte. This is how the computer normally handles bytes within its own electronic circuitry. The conversion performed by the serial port is similar to forcing all eight lanes of traffic through a one lane tunnel. Cars from all eight lanes must "peel" off their individual highway lane, and line up in single file, and go through the tunnel one after the other, which is slower than traveling abreast. Once out of the tunnel, the cars can again return to their original lanes side-by-side and continue on at full speed.

ProTERM is your telecommunication power-tool.

Bulletin board services run on personal computers just like yours.

ProTERM Puts It All Together

he above is all detail you'll never have to worry or wonder about because ProTERM provides the interface between you, your computer, your modem and the service you call. ProTERM uses the available hardware and gives it instructions, telling it how to connect to the outside world. Ultimately the software determines how simple or difficult, powerful or limited telecommunications will be, and ProTERM is extremely powerful software providing the sophisticated tools needed for a large variety of different telecommunication applications.

ProTERM Telecommunication Features:

- Easy to use allowing new telecom users to quickly adapt to using online services.
- Automatic dialing and sign-on, frees you from remembering and typing phone numbers, user identifications and passwords. Connecting to a service is as easy, just choose from a menu.
- Terminal emulation allows your computer to appear as if it is a specialized stand-alone computer called a "video display terminal." Some services can only be accessed by the use of a video display terminal, and ProTERM's terminal emulation allows you to work with most of those services.
- An integrated text editor allows letters and messages to be composed in advance before you call a service which saves long-distance and access charges.
- A full selection of transfer protocols allow files to be transferred.
- Review old information even after it has long since scrolled off the screen, and replaced by new text. Easy selection of text to be printed or saved for later review.
- Chat mode allows participation in online chat conferences with others in real-time.

Someone To Call

With ProTERM installed on your computer, you're ready to explore telecommunications. You just need to choose an online service to call. A wide range of computer services are available and many are free. Online services fall into several general classifications, bulletin board services, library database services, large commercial services and the Internet.

Bulletin Board Services

Bulletin boards are a popular online service. Also called BBS, they are an electronic version of the message exchange board often found at public places such as the grocery store, where you can tack a note on the board to announce an item for sale, lost and found, job openings or other items of specific interest. The subjects of discussion on a BBS vary widely, and as diverse as the people who call. Most of the interaction on a BBS takes place through public messages posted by individuals, and the messages are generally categorized according to subject. Other people interested in the same subject can read these messages and reply. In addition to public messages, a BBS usually offers private electronic mail (electronic mail called "email") which is a kind of private message that can be exchanged between two or more users. Unlike public messages, private mail is visible only to the recipient. While visiting a BBS, you can choose to quietly read and not get involved in discussions (this is referred to as "lurking"). However, if people like yourself never ever participated, there would not be anything to read. Therefore, don't just use a BBS—get involved—you will enjoy it. Remember that everyone has to post their first message. Promise yourself that you will break that barrier early—it really makes a difference.

**As time progress,
all information will
be available elec-
tronically.**

Most bulletin board services run on personal computers similar to yours. The difference is that the individual running the service has dedicated their computer full-time to allow you and others to communicate. The access to many BBS's is free, costing only the price of the phone call (normal local service & long-distance telephone rates apply). A free BBS may have only a single phone line which means only one caller can use it at a time, so a busy signal when calling a BBS is not uncommon. Phone numbers for bulletin board services are often published in the local newspaper. Some of the membership based BBS's are even listed in the yellow pages under "Computer-Bulletin Boards." Also see the Index: User groups.

Library Services

Libraries offer a variety of services which are accessible to the public, and many libraries now have the card catalogs online, and some even include short book summaries. In some areas, entire books are available electronically with a simple phone call. Call your local library and ask what online services they provide. They will be happy to assist.

Commercial Services

The large commercial services, provide a wide variety of information. For example, you can use some commercial services to make travel reservations, get current news, or play games. You can "chat" with other people online in a group session by typing messages back and forth. You can post public messages or send private email to be retrieved by someone later. You can also send and receive software to and from the service (provided the author of the software has given permission). Commercial services normally charge for usage by some time limit such as per minute, hour or month. In most metropolitan areas, you can reach the service with a local phone call and the cost of what is really a long distance call is built into the overall cost of the service. This may save your paying long distance phone charges if you're exchanging files with someone in another city, or even somewhere else in the world.

NOTE: See Appendix F for more information about online services.

What Is Available Online

"Freeware," "shareware" and "public domain" software have separate meanings, but the names are often confused and used interchangeably. Some software is available for just the cost of transferring it to your computer. Some has certain restrictions, including limiting redistribution, or requiring a registration fee for extended use. You must responsibly read the documentation regarding the use and redistribution of the software.

Some of this software is good, useful, and even valuable; some is not so good, and may even crash your computer. Beginning programmers frequently introduce themselves and their work by using these distribution methods to get their software both tested and recognized. Technical support may also poor, limited or nonexistent.

Public Domain Software

Public domain software can be used with no responsibility for legal ownership or payment for its use. The author retains no copyright restrictions on its use or method of redistribution, does not collect payment for the software, and allows it to be freely redistributed.

Freeware

Freeware applies when the author allows to be distributed at no cost or obligation to the user. Freeware is like public domain software, except the author retains the copyright and may place restrictions on how the software is distributed.

Shareware

Shareware is “try before you buy” software. The user is allowed to use the software on a trial basis. If the user decides to keep and use the software, they are expected to pay a fee. Additional documentation and updates may also be provided after payment. Prompt and proper payment of shareware fees encourages the developers to continue to support and upgrade the software. Treating shareware developers fairly is an obligation we all share as a computer community. The author retains full and complete copyright restrictions on its use or method of redistribution,

Commercial and Copyright Software

Commercial software is protected against copying and electronic distribution by the national copyright laws. The author of the software has exclusive and legal right to reproduce, publish, sell and distribute the matter and form. Any other methods of unauthorized distribution are considered software piracy.

Getting Telecommunications Assistance

If you need assistance getting started, help is available from several sources.

- Contact your local user group. They are sure to have members who can answer your questions and enthusiastically assist you with locally available services. Many user groups even run their own bulletin board service. Larger user groups often have special interest groups (SIGs) dedicated to the subject of telecommunications. For more information see the Index: User groups.
- This ProTERM manual contains extensive and detailed information on learning to use telecommunications.
- Telecommunications is popular, there are hundreds of books published. Check your local library and book store.

About ProTERM

CHAPTER ONE

Congratulations

...on your purchase of ProTERM, the most powerful communications program available for the Apple IIe, IIc, IIc+, II GS, Laser 128 and Mac LC with the IIe Emulator Card. ProTERM operates under ProDOS and can be used to communicate between your computer and almost any other computer which is accessible by a modem. You can reach commercial online services such as CompuServe, GENie, Delphi, Dow Jones News/Retrieval, Canada Remote Service, Dialog, BIX, PeopleLink, NewsNET and many more. Likewise, there are many popular Bulletin Board Systems (BBS) run by individuals in almost every community and all are easily accessed with ProTERM. If you're not aware of any privately-run Bulletin Board Systems in your community, check with your local computer retailer or user group. For further reference, see "user groups" in the index.

ProTERM is designed to be easily mastered by all levels of users. It is operated through a series of pull-down and pop-up menus which are never more than a keystroke or mouse click away. A lot of values can be changed and adjusted for individual needs, but most values are preset and ready to use.

Overview of the Manual

This manual is divided into four major parts. Each part deals with a different aspect of the software. For easy reference, each page of the manual is subtitled with the name of the part in which it occurs. Bending the manual back slightly reveals black page edges marking the start of each part. Also, each chapter is marked with a black band also visible at the page edges.

Part One — Getting Started

Part One (this part) of the manual provides an introduction to telecommunications and explains how to setup and use ProTERM. When first getting started using ProTERM, all the information you need is located in Part One. You may not need to reference the rest of the

“Call-Outs” like this example “point at” important topics.

Minimum requirements.

The Four Divisions of this Manual

manual until you have gained some experience online and want to further explore ProTERM, but the information is there if you need it.

Part Two — The Major Features

Part Two is organized according to the major features of ProTERM. This part contains the most detailed information on each of the different major functions of the software.

Part Three — The Menus

Part Three provides information on every command in the pull-down menus. This part is organized according to the way in which the menus are arranged within ProTERM.

Part Four — Reference

Part Four contains the Appendixes and the Index. The Appendixes have information on topics including compatibility, troubleshooting and technical support. The Index provides an extensive cross reference of keywords to page numbers.

Hardware Requirements

ProTERM will run on an enhanced Apple IIe, IIc, IIc+, IIGS, Mac LC with IIe card or Laser 128 computer with most internal and external modems. Apple IIe's require an 80-column card in the auxiliary slot, a minimum of 128K of memory and the "IIe enhancement kit." A minimum of one 5.25" drive is needed, but two 5.25" or a 3.5" drive or a hard drive make ProTERM easier to use and more efficient. ProTERM will not operate on an unenhanced Apple IIe (see the Index: *enhanced Apple IIe*). Although ProTERM will work with a minimum of 128K, increasing the memory to just 256K makes a BIG difference in performance. When anything over 128K of RAM is available, ProTERM will load some of the often used overlays into this RAM based memory and then operate from this memory rather than accessing the disk each time. All Apple IIGS memory cards are supported to a maximum of 8 megabytes. Most Apple IIe memory cards which follow the auxiliary-slot convention of bank-switched RAM are supported to a maximum of 8 megabytes. Both "slot-RAM" and "Slinky-RAM" cards are also supported to a maximum of 1 megabyte.

Limitations of Using Just the Minimum of Hardware

ProTERM will function with a minimum of 128K of memory and one 5.25" disk drive, but when using only the minimum amount of hardware, certain limitations are placed on the software, including:

- The ProTERM Editor is limited to 24K.
- Scrollback is limited to 23K (equivalent to 10-12 typed pages).
- The transfer buffer shares the same space as the Editor buffer (memory).
- ProTERM commands require additional disk access if the *ProTERM Program Disk* is removed for operations such as saving or accessing files from other data disks.

An expanded Index helps to find subjects easily.

Improving performance.**Increasing ProTERM's Performance**

For the best performance, a minimum of 256K of memory and two disk drives (or a hard drive) is recommended. When used with 256K of memory, ProTERM allows:

- A full 46K Editor (equivalent to 20+ type written pages).
- Approximately 80K of Scrollback.
- A dedicated 46K transfer buffer.
- A 46K code-cache buffer which allows recently used ProTERM commands to be kept in memory so they are immediately available the next time they are needed. This feature dramatically decreases the amount of ProTERM disk access. Adding memory beyond 256K continues to increase the size of the Scrollback buffer until it reaches a limit of 8 megabytes.

Hardware Supported**Memory Cards**

AE RamWorks, RamFactor, RamExpress and Z-Ram Ultra.
 Checkmate MultiRAM (all versions) and Q-Card.
 MPD Super Expander "E" & "C".
 Apple Memory Expansion Card.
 Chinook Technology C-RAM.
 PLUS ALL Apple II GS Memory Cards.

Modems

AE DataLink 1200/2400, Express 2400.
 Apple Modem 300/1200/Personal.
 Boca Research 14.4K BPS.
 CTS Fabri-Tek 1212AD, 2424ADH/AMH.
 Epic 2400 Classic II, 2400/Mini/Plus.
 Hayes Personal Modem 1200/2400.
 Hayes SmartModem 300/1200/2400/V9600.
 No Modem in System (for direct-connect use).
 Novation Professional 2400.
 OKIDATA Okitel 9600.
 Prometheus Promodem 1200/1200A/2400A.
 Quality Computers Q-Modem 2400.
 SupraModem 2400, 2400 Plus.
 SupraFaxModem Plus, V32bis.
 US Robotics Password.
 US Robotics Courier 2400/HST/HST-Dual.
 Zoom/Modem MX 2400R.

About Modem Compatibility

While it is not possible to test every modem in today's developing market, most modems which are truly "Hayes compatible" or "AT compatible" will operate with ProTERM. Modems which do not have this compatibility can be supported to some degree by using ProTERM's *Null Modem* configuration.

Modem Ports and Serial Cards

Apricorn Super Serial Imager.
 Apple IIc Modem Port.
 Apple IIc+ Modem Port.
 Apple II GS Modem Port.
 AE Serial Pro.
 Laser 128 Modem Port.
 Apricorn Super Serial Imager.
 Apple Super Serial card.
 Practical Peripherals SeriALL.

Optional Hardware

Although ProTERM can make use of a clock or a printer, they are considered optional and neither are required for its operation.

Printer Ports and Interface Cards

Apple IIc Printer Port.
 Apple IIc+ Printer Port.
 Apple II GS Printer Port.
 Laser 128 Printer Port.
 Apricorn Parallel Card.
 Apricorn Super Serial Imager.
 Apple Parallel Card.
 Apple Super Serial Card.
 AE Parallel Pro.
 AE Serial Pro.
 Apricorn Parallel Card.
 Apricorn Super Serial Imager.
 Dumpling 64 Parallel Card.
 Epson APL Printer Card.
 Orange Micro Grappler Plus.
 Practical Peripherals SeriALL.
 SMT Printech II.
 Star Micronics Grafstar.
 Textalker-GS 1.2.

Clock Cards

Apple II GS internal clock.
 AE RamExpress, Serial Pro, TimeMaster II HO, Z-RAM Ultra clock.
 SMT No Slot Clock.
 ThunderWare ThunderClock Plus.
 PLUS ALL ProDOS Compatible Clocks.

About Hardware Support

A great deal of time and effort has been directed at making ProTERM's hardware support as broad as possible. However, new hardware products are continually introduced, and requirements may differ. ProTERM allows the use of "plug-in" code modules and new modem/hardware operating software (drivers) can be released independent of ProTERM version releases. As new drivers are developed, they are made available to registered owners

Want more hardware support in ProTERM?

through the InTrec BBS. These small files can be copied into the ProTERM folder and the new driver selections will be available from the Install menu after ProTERM is re-started.

If you would like to see hardware support for a particular product, please let us, and the product vender know. InTrec is always interested in broadening ProTERM's hardware support, but it requires customer participation. First, we need to know there is interest in the support of a product. Second, we need your help in acquiring the product. Usually, if we initially contact venders, they're reluctant to furnish us with product without a apparent need. However, when customers tell the manufacturer or vendor they want the product supported by ProTERM, the results differ significantly.

Mail your warranty card now.

List of Materials Included in the ProTERM Package

- 1 – ProDOS-formatted 3.5" program diskette (master disk). Make sure this disk stays write protected.
- 1 – ProDOS-formatted 5.25" program diskette (master disk). The front side of this disk is the boot side and the backside is the program side. It is not notched so it is always write protected.
- 2 – Quick reference cards.
- 1 – ProTERM product registration card.
- 1 – ProTERM user manual.

NOTE: If you are not sure on how to make a backup "working" copy of the ProTERM master disks, just boot the size disk you will be needing and it will automatically go to a disk copy mode.

If any of the materials are missing or damaged, please contact your software retailer. If your computer retailer is unable to help you, call:

InTrec Technical Support	602/992-1345
InTrec BBS	602/992-9789
InTrec FAX	602/992-0232
Internet	proterm@intrec.com
	http://www.intrec.com
	ftp://ftp.intrec.com/pub/intrec/

Have your ProTERM serial number available anytime you call for technical support.

Remember to have your ProTERM serial number available anytime you call for support. The serial number is the number on your original ProTERM master disks, the Warranty Card, the ProTERM box and the ProTERM manual.

If you have just purchased ProTERM and not yet sent your Warranty Card and need assistance feel free to call, but have your Warranty information ready to give to the Tech Support person you speak with:

- Your name and address information.
- The dealer you purchased ProTERM from.
- The ProTERM serial number from the disks, manual, Warranty card or box.

Please send your ProTERM Warranty Card as soon as possible. This interim support is limited to just getting started. We reserve the right to refuse technical support if the caller is not a registered user.

Textalker-GS

In addition to supporting many different printer and printer Port combinations, ProTERM also supports Textalker-GS speech software for visually impaired users. The Textalker-GS driver is selected from the Printer Port installation window (see Installing the Printer Port) and speech is utilized through the ProTERM printer commands. Detailed information on using Textalker-GS and ProTERM can be found in the text file "PT3.TEXTALKER" located in the "UTIL" directory on the ProTERM 3.5" disk.

The ProTERM User Interface

CHAPTER TWO

This chapter can help you to become a ProTERM expert in the shortest possible time. It explains how the ProTERM interface works and gives tips on how to use shortcuts to save time and make telecommunications easier for you. Even if you're a telecommuter guru, take a few minutes and read this chapter now.

The ProTERM user interface (what you see on the screen as you work with ProTERM) is MUCH easier to use than to explain. While you can just dive in and learn ProTERM without reading this or any chapter, the tips and pointers given here will save a lot of time and let you enjoy the power of ProTERM. Just browsing this chapter gives a feel of how the interface works. As you gain experience using ProTERM, refer back to this chapter for specific questions regarding the user interface.

The ProTERM interface works with either the keyboard or a mouse.

The ProTERM interface of pull-down and pop-up menus and windows is easy to learn and use. This interface is usable with either the keyboard or mouse or both if you prefer. If you do not have a mouse (or just dislike using it) —no problem. While ProTERM has excellent mouse support, it is not a “mouse-based” application. Many users find learning the software is easier when using a mouse, but after gaining experience, they gradually change to just using the keyboard command equivalents because of convenience and speed. For example, a file can be saved in at least three different ways:

- The mouse can be used to click on the File menu, pull down to Save and then release the mouse.
- Press the COMMAND key and then the F key. Choose Save, and press the RETURN key.
- Pressing COMMAND+S is the keyboard equivalent to both of the above.

All three of the above operations execute the save a file function, but as you can see, the keyboard equivalent is the fastest and the easiest. Read on to find more ProTERM tips and short cuts.

DRAG =
Position the
pointer, press and
hold the mouse
Button. Move the
pointer, and release
the mouse Button.

COMMAND =
Open-Apple.

OPTION =
Closed-Apple.

The Keyboard

Throughout this manual, reference to keys that need to be pressed to create an action will be in UPPER CASE, for example, “press the RETURN” key. Also, references will be made to the COMMAND, OPTION and ARROW keys. The COMMAND key is labeled with the open-apple “k” and/or “c” (clover or propeller) icon while the OPTION key is labeled with the word “OPTION” or the Solid-Apple “K” (see Open and Closed Apple References below). The ARROW keys are the four directional arrows, or “cursor keys” located on the keyboard. When instructed to press a key combination like COMMAND+PERIOD, hold down the COMMAND key, press the PERIOD and then release both. Like the SHIFT key, the COMMAND and OPTION keys modify the function of other keys, but have no action when pressed alone. The CONTROL key is obviously labeled and the ESCAPE key is labeled ESC.

The Mouse

When using a mouse with ProTERM, interaction takes place by *positioning* the *pointer* and *clicking* the mouse button. The *pointer* is a small arrow which moves on the screen in response to moving the mouse. When a key is pressed on the keyboard, the pointer is “obscured” (hidden) so it does not interfere with what is seen on the screen. Moving the mouse makes the pointer re-appear. *Clicking* involves pressing and releasing the mouse button. *Double-clicking* is two clicks in quick succession. *Dragging* refers to moving the pointer while the mouse button held down.

Open and Closed Apple References

While the Open and Solid (also referred to incorrectly as “closed”) Apple are familiar to many Apple computer users, there are several reasons this manual does not use or reference the Open and Closed Apple symbols for keyboard commands. The main reason is due to a style change request from Apple Computer. Some computers manufactured by Apple do not show the Apple keys (and the Laser computers have open and closed triangles). We chose to follow the convention as noted in the Apple Developer Manual, the *Apple Publications Style Guide — Fall 1990 Edition* which is directly quoted as follows:

“Open Apple key”

“Don’t use; use *Command key* for the key on the Apple II and Macintosh computers that is marked with an Apple symbol, a propeller symbol or both. (On Apple II family keyboards that have two keys with Apple symbols, the key marked with an Open Apple is now the Command key; the key marked with the Solid Apple is now called the Option key).”

“Option key”

“Not *Solid Apple key* or *Closed Apple key*. (On the Apple II family keyboards that have two keys with Apple symbols, the Option key is marked with a Solid Apple.)”

In addition, a design change for all Apple II computers manufactured after the fall of 1986 changed certain keys of the Apple IIgs, Apple IIe Platinum, and Apple IIc+): The “solid Apple” icon was renamed as Option (opt) key. This change allowed all Apple computer keyboards, Apple II and Macintosh, to have the same look and user reference.

**“COMMAND”
“k” & “c”
all reference the
same key.**

**Need to see the
Menu Bar while
online?
Press the
COMMAND key.**

Misc	
Editor	⌘E
Scrollback	⌘Z
Answer Phone	
Unattended	⌘U
Macro File	
Read Globals	
Transfer Stats	
Preferences	
Install	⌘I

Reminders for the Open Apple key being the COMMAND key and the Closed Apple key is now the OPTION key, are provided throughout the manual and on the *Quick Reference Cards*. Most newer Apple II keyboards have a hollow (open) Apple “k” and/or “c” (clover or propeller) icon on the COMMAND key and a key labeled OPTION. We regret any confusion this policy may cause, but we feel it is important to following Apple’s recommended style guidelines where possible.

Navigating ProTERM

The Menu Bar

ProTERM commands are accessed through pull-down menus (windows) which are selected from the *MenuBar*, the inverse bar (highlighted line) of information at the top of the screen. The MenuBar is not visible except when needed. Because the Apple II computer screen displays 24 lines, the line at the top which contains the MenuBar must also be used for the Status Bar. To issue a command when the MenuBar is not visible, either hold down the COMMAND Key or move the mouse, to make the MenuBar visible.

Commands from the Keyboard, or Keyboard Equivalents

ProTERM allows the use of combinations of keys to navigate and perform tasks easily. When menus are pulled down, look for an *Apple* icon (for example k + E = Editor) next to an alpha character. These key combinations are known as a keyboard equivalents and they perform the tasks directly without going to the menu. See the Quick Reference cards and the chapters explaining the individual menus. Also see the *Table of Contents: File and Utility* for more information.

Navigation with keyboard commands is easy and intuitive. Press the COMMAND key and the first letter in the name of the pull-down menu. For example, press COMMAND+M which pulls down the *Misc* menu. The contents of the pull-down menu displays a list of commands and one is highlighted. Use the Up or Down ARROW keys to highlight different commands within the menu. The Left or Right ARROW keys to move respectively right or left, selecting the other pull-down menus. Also, when a pull-down menu is displayed, pressing the first letter of a command’s name causes that command to be selected (highlighted). For example, the File pull-down menu shows *Open* as a visible command in the pulled down menu, and pressing *O* selects *Open*. If several commands start with the same letter, subsequent key presses cycle between those commands. For example, if the “c” key is pressed repeatedly while the *File* menu is visible, *Copy* and *Catalog* would be highlighted alternately. Press the RETURN key to choose the highlighted command or press *ESCAPE* to cancel the selection. As noted above, commands which show an Apple icon (k), for example the Misc menu shows “Editor k E” which means the ProTERM editor can be accessed directly by pressing COMMAND+E key without pulling down the menu showing that command.

Selecting Commands with the Mouse

Mouse terms

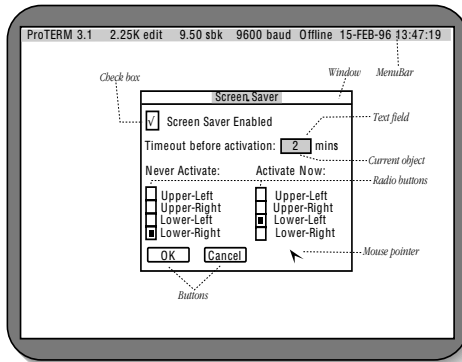
- Click Pressing the mouse button. Double-click means to press twice in rapid succession.
- Drag Positioning the pointer and pressing and holding the mouse button as the mouse is moved.
- Press Pressing the mouse button down (clicking).
- Select Windows, objects, sections of text and groups of files are selected.
- Choose Positioning the pointer on a file or command and pressing and holding the mouse button down. To choose a command using the mouse, move the pointer until it is resting on the name of a pull-down menu selection on the MenuBar. Press and hold the mouse Button while moving the mouse (dragging the pointer) down into the pull-down menu. As the pointer is moved in the menu, the commands are highlighted as they are contacted by the pointer. To choose a command, drag the pointer until the command is highlighted and release the mouse button.

Windows

An “object” is a selectable item in a window.

The TAB key highlights different objects in the window.

Objects are the individual items within a window.

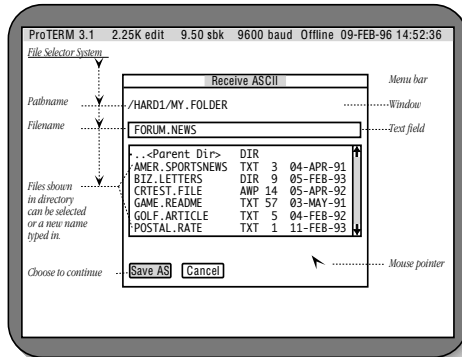


Example Window 1

Everything you do and all input to ProTERM takes place within a *Window*. A Window is defined as having a frame around the window may or may not have a title, see illustrations *Example Window 1* and *2*, shown in this chapter. A Window can contain *Buttons*, *Text Fields*, *Check Boxes*, *Radio Buttons*, *Pop-Ups*, *Lists*, *File* and *Batch Selectors*. Throughout this chapter the term *object* is used to refer to all of these different item types. These illustrations show some example of windows containing the different window objects.

One *object* in a window is always selected. Unless otherwise noted, input from the keyboard (keystrokes) always affect the selected object. To select a different object (so it can be modified), press the TAB key to move to the next selection in a clockwise direction. COMMAND+TAB moves a counter-clockwise direction, moving the selection to the previous object. Positioning and clicking the mouse on an object, selects that object. This may have other effects such as causing a window to pop up. Each individual window object type is discussed below.

**COMMAND-RETURN
“presses” the
default Button.**



Example Window 2

**Selecting an object,
makes that object
the “current”
object.**

Hotkey feature.

**ESCAPE and
COMMAND+PERIOD
cancel the window.**

**An object is any
item in a window.**

Buttons

Buttons are objects located along the bottom margin of a window. They consist of a rectangular frame (box), enclosing the name of the Button.

To select a button:

- Click on the button.
- Press the TAB key to move the clockwise and COMMAND+TAB to move counter-clockwise to a button.
- Press and hold the COMMAND key while pressing the letter of the key the name of the button. For example, COMMAND+M selects the Macro button in the system parms window. This action moves the cursor directly from the selected object to the desired button at the bottom of the window. In addition, when the *HotKeys* feature is turned on (see Index: *HotKeys*), the command is complete and immediate because the HotKeys feature invokes the RETURN key automatically. In other words, the Button is automatically activated by the COMMAND+*Letter* keypress.
- When a button is selected, the ARROW keys select the next or previous button.

To activate a button:

- Double click on the Button.
- Press the RETURN key to activate a selected Button.

Other keys that activate Buttons which can be used anytime a window is visible are: COMMAND+RETURN always “presses” the default Button. That is, pressing the keys COMMAND and RETURN when a dialog box is open, is equivalent to using the ARROW keys to highlight the left-most button and pressing RETURN.

Cancel

ESCAPE or COMMAND+PERIOD select and “press” the *Cancel* Button.

Text Fields

Text Fields are window objects which allow text input. Text input is only allowed within framed input *Text Fields*. To select a text field (making it the current object), either position the pointer within the field and click, or press TAB or COMMAND+TAB until the text field is selected. When selected, a vertical bar (cursor) blinks within the text field. To edit existing

**Important:
Text Field
editing
commands.**

text, the Left ARROW and Right ARROW can be used to move the cursor in the respective direction of the ARROW. Typing at the keyboard inserts text at the current cursor position.

Important Commands

The following commands are important and dramatically simplify the task of entering data into text fields. Since text fields are used throughout ProTERM. Learning these commands makes the use of ProTERM much easier.

– Key –	– Action –
CONTROL+A	Move to the beginning (left) of the text field.
CONTROL+S	Move to the end (right) of the text field.
CONTROL+D	Delete the character “under” the cursor.
CONTROL+F	Insert a space to the right of the cursor.
CONTROL+Y	Truncate the line at the cursor.
CONTROL+X	Erase the entire line — Clear the field.
DELETE key	Delete the character left of the cursor.
Left ARROW	Move the cursor to the left.
Right ARROW	Move the cursor to the right.
RETURN	Accept the text field.
OPTION+SPACE	Insert “hard-space.”

Check Box

A *Check Box* is a window object indicating the option (parameter, feature) is either on or off. It is displayed as a small box with a name to the right. The current status of the Check Box is indicated by the presence (on) or absence (off) of a checkmark in the box. When a check box is selected, the SPACEBAR toggles the checkmark on or off. In addition, the 0 (zero) key turns the checkmark off, and the 1 key turns the checkmark on. Clicking the checkbox also toggles it on and off.

**Only one
“Radio Button” can
be selected at one
time.**

Radio Buttons

Radio Buttons are a collection of options where several choices may be available, but only a single option can be selected at one time. Selecting one, de-selects another (see illustration: *Example Window 1*). The name “radio button” is comparative to a car radio where a station is selected by pressing one of the buttons. Selecting a radio button:

- Clicking on a Radio Button.
- Radio Buttons can also be selected with the TAB or COMMAND+TAB key and then the ARROW keys can be used to highlight the desired choice. Alternatively, Radio Buttons can be chosen with the number keys 1 through 9. Number 1 is always the first button and 2, 3, 4... chooses the corresponding buttons.

Pop-Up Windows (Menus)

A *pop-up* menu is used for multiple choice settings. When a pop-up menu is selected, the ARROW keys change the current choice within the window. The choices appear to “slide by” and are “exposed” one at a time “through” the window. Clicking on a pop-up window causes a menu to “pop-up” showing all the possible choices. Drag the pointer until the desired choice is selected. Releasing the mouse button selects the choice.

List Selector

As the name implies, a *List* shows a “catalog” of selections and allows the selection of one or more items from choices in an alphabetized List.

NOTE: Alphabetization can be turned off in the *Preferences – More* menu. Also see Index: *File List*.

Some Lists allow only a single selection while others allow multiple selections. If the List allows only a single selection, then the highlighted item is the selected item. If the List allows multiple selections, items with checkmarks [✓] are the selected items. The following commands can be used with Lists:

- The ARROW keys move the selection (selection) bar up or down.
- Pressing the first (alpha) letter key of the name of an item finds and highlights that item (if more than one item begins with the same letter, subsequent keypresses of the same letter cycles between those items). The Modem *selection list* which you used during the Install procedure is a good example, and opening a file in the Editor is another. An “A” selects items towards the top of the list while a “Z” selects items towards the bottom. Other letters select items in-between.
- Press the COMMAND key and keys 1 through 9 locates items in a range throughout the list. The number 1 selects the first item while 9 selects the last. The numbers 2 through 8 select relative points in-between the top and bottom.
- Click on an item in the list to select that item.
- Click on the Up or Down Scrollbar Arrow to move the selection up or down the list.
- Dragging within a List does not select items, but scrolls the List showing more items. When the pointer touches the top or bottom item shown in the window, the items in the list scroll to the last item.
- To choose a single item, select the item and press the RETURN key, or double-click on the desired item.
- To select multiple items, highlight the item to be selected and press the SPACEBAR to place a checkmark [✓] next to each one.
- Multiple presses of the SPACEBAR select adjoining items. The SPACEBAR selects in the same direction it was last moved using the ARROW keys.
- Hold the OPTION key down, position the pointer to the desired item and click to select an item. Doing this to already selected items deselects them.
- Hold the OPTION key down, position the pointer to the desired item, click and drag the pointer to select or deselect multiple items.
- Press CONTROL+A to select *all* items.
- Press CONTROL+N to select *none* of the items or deselect all.
- Press the RETURN key to accept the current selection.
- Press ESCAPE or COMMAND+PERIOD to cancel any action in the window.

COMMAND+ARROW keys offer a quick method of navigation through directories.

File Selector

A *File Selector* is a special kind of *aList*. While it looks very similar to and uses many of the same commands as a List (which see above), a text field is displayed in addition to the filename List. This text field allows filenames to be typed in directly, as well as be selected from the filename List. The following commands can be used with File Selectors:

- The ARROW keys move the selection bar up and down.
- Type a complete filename to immediately select that file.
- Type a partial filename to select the filename which most closely matches the entered text.
- Press COMMAND+1...9 to locate items throughout the list. The number 1 selects the first item while 9 selects the last. The numbers 2 through 8 select relative points in-between top and bottom.
- Click a filename to select it.
- Click on the up or down scrollbar arrows to move the selection bar in the corresponding direction.
- Click and drag within the filename list does not select items, but scrolls and shows more filenames. When the pointer touches the top or bottom of the filename window, the list scrolls.
- Double-click on a directory or select it and press RETURN or COMMAND+Down ARROW to open it (see Index: *ProDOS* for details on this method of quick navigation).
- Press COMMAND+Up ARROW or double-click on "<Parent Dir>" or choose it and press RETURN to close the current directory and open the parent directory (see Index: *ProDOS*).
- Press COMMAND+Left ARROW or COMMAND+Right ARROW to close the current directory and open the main directory of the previous or next volume.
- Press CONTROL+Z to display all filenames regardless of filetype.
- Press CONTROL+X to display the filenames *without* alphabetization. In this mode, partial filename selection is disabled. Press CONTROL+X again to show the list as alphabetized.
- Press RETURN to accept the current selection.
- Press ESCAPE or COMMAND+PERIOD to cancel all action in the window.

Batch File Selector

Just as some Lists allow multiple items to be selected, a *Batch File Selector* allows multiple filenames to be selected. However, there is a difference when a directory is selected is part of the selection. The directory is opened only if no other items are selected, and the directory was selected with the RETURN key or double-clicked. If other items are already selected, or the SPACEBAR is used to choose the directory, then it remains selected like any other filename. In addition to the File Selector commands, the following commands are also available:

- To select multiple items, highlight each item and press the SPACEBAR to place a checkmark [✓] next to each one.
- Multiple presses of the SPACEBAR select adjoining items.
- Hold down the OPTION key when using the ARROW keys or dragging to select or deselect multiple items.
- Press CONTROL+A to select *all* items.
- Press CONTROL+N to select *none* of the items (deselect all).

- Hold the OPTION key down, position the pointer to the desired item and click to select an item. This action on a selected item deselects that item.

**Rule of thumb:
When in doubt,
accept given
choices.**

**See the on disk
tutorial.**

Choosing Parameters - Too Many Choices?

Throughout ProTERM many different parameters can be selected and changed to match ProTERM to your personal satisfaction. ProTERM perfectly without changes because it always provides a default value. Simply stated, the rule of thumb for the ProTERM novice is, "When in doubt, press the RETURN key and accept the defaults."

Suggested Further Reading

For assistance with an on disk tutorial, See the Index *Suggested Further Reading*.

The ProTERM disk contains a file named A60SECOND.WORKOUT. Open this file from within the ProTERM editor and follow the step-by-step instructions.



Installation

CHAPTER THREE

ProTERM and your hardware... matching it all up.

Introducing ProTERM to Your Equipment

Thank you for the support you've demonstrated through your purchase of ProTERM. To provide the greatest possible flexibility, ProTERM is distributed on non-copy protected diskettes. The locked, and write protected disks are to encourage you to make working backup copies so you can preserve your original archive disks. We trust your good faith as a ProTERM owner, and ask for your support by not distributing copies indiscriminately. Your support of our products is our incentive to support you, and plan future improvements.

This chapter assists your installation of ProTERM software to match your hardware configuration.

If you need technical support.

Your ProTERM Package Is Personalized

ProTERM disks are serialized, the serial number is on a small white label, and all of the important parts of your ProTERM package carry this label and number. This serialized set is for your use at one station at one time. If you happen to call for technical support, you will be asked for this number to identify your ProTERM set. Before calling for support, see Appendix A: Technical Support in this manual.

Receive the InTrec email newsletter. Send us your email address?

Mail your ProTERM Warranty Card

We are very careful and concerned about keeping our ProTERM licensee records accurate and up to date. If you need Technical Support, we need to verify that the ProTERM is licensed to you before we can assist you. Our customer list is updated continually as the serialized ProTERM Warranty Cards are received, and as we communicate with customers. As

**An Extra Slot
for IIcs users.**

technology changes, and we discover and implement design improvements, changes are made, and the software is updated accordingly. We want to be able to contact you and advise you of the changes, but we can only do this for registered owners. In addition, we would like to keep in contact so we can notify you of new software releases to keep you up to date on what is new. If your address information changes, let us know and we'll update your record. Also let us know how we can communicate with you online, be sure we have your current email address.

Apple IIcs Modem Port

When running ProTERM on the Apple IIcs, and using an internal modem, or an external modem with a serial card in Slot 2, change the settings of the Apple IIcs Control to show the slot of the modem/serial card to *Your Card*. When using an external modem with the IIcs serial port, there is no need to change the control panel settings unless it is desirable to change Slot 2 to "Your Card" to enable another device to be controlled from that slot. Since ProTERM does not need the settings in the Control Panel's *Slot 2*, you can change the Slot 2 settings to whatever you need, including changing it to read *Your Card*. You can then plug in a card of your choice, and both the card in Slot 2 and the modem port function normally with ProTERM. This arrangement gives you the bonus of an extra slot as ProTERM continues to function from the modem port regardless of the Control Panel settings.

Macintosh LC With Ile Card

Refer to the setup instructions provided with the Macintosh LC Apple Ile card and install the Apple II software on the Mac hard drive.

- Run the *Ile Startup* software.
- Press the CONTROL-COMMAND-ESCAPE keys to get to the *Ile Option Panel*.
- Click on the *Serial Card* "phone" icon.
- Click the radio button *Other Device*, (use settings below).
- Open the *Serial Card*.
- Click on the *Interrupts* option, and change the Interrupts to *On* (they are set to Off by default).
- Click *Continue* to close Control Panel.

Install ProTERM On an LC With Ile Card:

- Choose the external modem from the Modem Install menu.
- Choose Apple Super Serial Card.
- Choose Generic Printer slot 1.

**NEVER use the
original disk;
always work
from a copy.**

Copying ProTERM

ProTERM should never be used from the original disks. Copy the disk needed and USE THE COPY not the master! The only time the original (master) disks should be used is when they are being copied. After making your working copies, store the master disks in a safe place.

Original ProTERM disks are shipped write-protected. The 5.25" disk is NOT notched and the small plastic shutter window on the back side of the 3.5 disk is OPEN. These write-protect

methods keep the original disks from being written to or copied over accidentally. Please leave them write-protected and protect your warranty.

The original ProTERM disks must remain write protected.

Move Ahead by Backing Up

An old adage called "Murphy's Law" states, "Whatever can go wrong, will go wrong, and usually does." Treat disk media as if it were designed to fail. Eventually it will, and it will happen at a most inconvenient time (OH PLEASE... NOT NOW!), and your precious information will be gone. "Matter will be damaged in direct proportion to its value." — Murphy's Constant.

Important! Always work from a copy of the original disk.

How to Copy ProTERM

ProTERM is designed to automatically create backup copies from the original disks. Boot the original write protected disk as you would normally boot a new disk following these instructions. Note there are labels on the front and back of the 5.25" disk. The label on the front is titled "Boot Side" and the label on the back is titled "Program Side." Copy both sides of the disk.

NOTE: To boot the original ProTERM 5.25" disk, be sure to put the disk in the drive with the "Boot Side" label facing up as you insert it into the disk drive.

Cold Boot

Starting with your computer turned off, put either the 5.25" or the 3.5" disk in your primary (booting) disk drive and turn the computer on, causing the computer to (cold) boot from that disk drive.

Warm Boot

Put either the 5.25" or the 3.5" disk in your primary (booting) disk drive, and hold the COMMAND and CONTROL keys down, press the RESET key down momentarily and release it, then release the COMMAND and CONTROL keys. This should cause the computer to (warm) boot from your primary booting disk drive.

COMMAND key = Open Apple key.

GS/OS Finder

From GS/OS (the Finder), put either the 5.25" or the 3.5" disk in the appropriate drive, double click to open the "PT3" disk icon, and double click on the "PT3.SYSTEM" file.

NOTE: If you're using the ProTERM 5.25" disk, be sure to put the disk in the drive with the label reading "Boot Side" facing up as you place it into the disk drive.

When any of the above procedures are used, ProTERM automatically executes a disk copy application which can be used to create duplicates of your ProTERM disk for backup purposes. The application is named FastCopy, it was developed by Apple Computer and we've adopted it for use here to allow you to easily make working copies of your disks.

If the ProTERM disk does not boot, See Appendix B, Trouble Shooting.

ProTERM original disks are write protected.

ProTERM Disks Are Write Protected.

Making ProTERM work disks.

Using the “built-in” copy routine.

Using FastCopy

When the FastCopy title screen appears, a message at the bottom of the screen asks whether it's “OK” for FastCopy to erase the contents of your RAM disk. If you don't understand that question, it's probably safe to assume it does not apply to you, so press the Y key to answer *Yes* and press the RETURN Key. If you do understand the question then be aware answering *Yes* destroys files you have stored on your RAM disk. If you don't want to lose the information you have stored on your RAM disk, press N for *No* and then press the RETURN key. FastCopy then uses only the unused portion of your Ram Disk. FastCopy works either way, but depending on how much memory you have, using the RAM disk may copy a little faster.

Copying disks

COMMAND-? gets FastCopy Help files.

1. Press the RETURN key to select *Copy Disks*
 - NEED HELP? — Use COMMAND-? — While using FastCopy, note the instructions available at every prompt. In the lower-left corner of the screen FastCopy displays an Open-Apple icon and a question mark. Press and hold the COMMAND key down while pressing the question mark “?” key for additional instructions.
2. If asked, select the type of drive you want to use for the copy. Highlight the required option by pressing the Left or the Right ARROW key, then press the RETURN key.
 - The selected number 3.5" or 5.25" indicates the type of disk you want to copy.
 - If you select 3.5, the program ejects any 3.5" disks in the 3.5" disk drives connected to your system as a safety precaution. Insert the disks you want to copy from (source) and to (target). FastCopy checks to see if one or two 3.5" drives are on line and uses one or both as found.
 - The 5.25" disks drives are not “intelligent” drives and require a little more help from the user. If you select 5.25, you are asked whether you have one or two 5.25" drives. Highlight the required option by pressing the Left or Right ARROW and then pressing the RETURN key. (Once you've answered this question, FastCopy remembers your response and won't ask again unless the program is quit and restarted.)

NOTE: A 3.5" disk is write protected when the slide tab is NOT covering the square opening in the corner of the disk (see the label notation on the back of the disk next to the write protect tab. ProTERM 5.25" original disks have NO notches in the corners. They are shipped write protected so mistakes cannot happen. Warning — Notching the original ProTERM disks or using the 3.5" disk unprotected voids the warranty.

3. A message appears at the bottom of the screen asking you to insert your source disk (the disk you want to copy).
 - Insert the write protected ProTERM 3.5" disk in any of your 3.5 inch disk drives.
 - With 5.25 inch disks, put the source disk in your *startup* drive and press the RETURN key.
4. If you are using two drives, a message at the bottom of the screen tells you to insert your destination disk. Insert a blank disk, or a disk you don't mind erasing, and press the RETURN key.
5. If the disk is blank, you see a message asking whether you want to format the disk. Press the Right ARROW to highlight *Yes*, then press the RETURN key. If the disk is a used disk containing information, you are asked for permission to destroy that data. directions from above. Place tape over the work disk's notches so the disk is write protected, make a copy of this configured disk, and mark it “Configured ProTERM Backup.”

6. If you are using one drive, swap the source disk for the destination disk when prompted by messages on the screen.
 - How it works: FastCopy reads as much information from the source disk as it can fit into the memory of your computer. As it is reading information from the disk, a message is shown to indicate the percentage read from the source disk. (If you have a memory expansion card installed in your computer, the program is able to read more information at one time than if you don't.) After reading as much information as your computer's memory can handle, FastCopy writes the information to the destination disk. As FastCopy is writing information to the destination disk, a message is shown indicating what percentage of the information written to the destination disk. If you have two drives of the same size, the reading and writing proceed without any intervention on your part. If you have only one drive, depending on the amount of memory in the computer, you may need to swap the source disk for the destination disk several times.
7. When FastCopy finishes writing all information to the destination disk, a "Copy complete" message is displayed. Press the RETURN key to go back to the FastCopy menu.

Making a "flippy" disk.

"Multiple Copies" Message and 5.25" Disks

There are two sides 5.25" disk, a *Boot Side* (front) and the *Program Side* (back). Each side must be copied separately. When asked:

"Make another copy of this disk?" ... answer No!

Do not follow the FastCopy directions on making "Multiple Copies" because that procedure continues to make multiple copies of the of the disk just copied. You need to copy the back side of the ProTERM 5.25" disk so choose "No" and FastCopy takes you back to its main menu. When at the FastCopy main menu again, press the RETURN key to accept *Copy Disks* and then choose 5.25" disk again. Depending on your computer's memory capacity, you may see the statement:

Last source disk still in memory. Use it?

Choose *No* and press the RETURN key to start the process of copying another disk. This time turn the original ProTERM disk over and the work copy of the ProTERM disk over and copy the Program (back) side of the disk.

Be sure to copy BOTH sides of the 5.25" disk.

Copying to the backside of a disk

ProTERM 3 is a large and powerful telecom application and the 5.25" floppy disk storage capacity is small by today's standards. ProTERM is designed to store most of its program files on one side of the disk leaving a little room for data storage on the other side. It is your choice as to whether you put ProTERM's second side on another disk or on the flip-side of the same disk.

WARNING — Don't notch the Original ProTERM disk!

If you prefer to use both sides of a single disk for your ProTERM work disk, you must remove the write protection from the backside of the disk. A double sided "Work-Disk" MUST be notched on both sides or data cannot be saved to the backside. Devices are sold to assist you in easily and perfectly notching disks but it can be done using available resources. For example, lay a notched disk over the un-notched side to see where the notch is to be placed and use a paper punch, scissors, razor blade what-have-you to notch the disk. It may not be elegant, but it works.

Making a "flippy" 5.25 disk.

Proceed through the rest of this chapter using the backup of your original ProTERM disk. After completing this chapter, you have a configured ProTERM disk read to go to work for you. Boot the original ProTERM disk to get into the Fast Copy program following the

Like light bulbs, disks eventually fail — Make backup copies of your work disks from time to time.

New user assist!

DO NOT NOTCH THE PROTERM MASTER DISK.

5.25" Boot Side.

Because ProTERM handles dialing and logon automatically, you can very quickly become dependent on the information ProTERM maintains for you. Data such as how you personalize and customize ProTERM plus phone numbers, passwords, system settings and especially logon macros and personalized global macros become increasingly valuable with use. As you continue to work with ProTERM, the value of this collection of phone numbers, AutoLogon Macros and personal preferences become more valuable to you, because of the value of the information being stored. Plus you tend to forget the details of the information because ProTERM does all your work for you automatically. This information can become difficult if not impossible to recreate. Therefore, a practice of periodic updates by making copies of the working disk is cheap insurance and strongly encouraged. Be safe and backup your working files often, someday it may prevent you from having to start over from scratch — dread the thought!

A note to the newcomer

The physical size of a disk is not a demonstration of its storage size. The storage size of the smaller 3.5" ProTERM disk is at least six and can be up to ten times larger than the physically larger 5.25" disk. In addition, they are both referred to as "floppies" because even though the smaller one seems very rigid, the actual disk media inside is flexible ("floppy"). "Hard disks" are much larger devices with hard (ceramic type) disks (plates) inside. Another difference is the 5.25" disk must be physically turned upside-down to write to the back side of the disk, but the 3.5" disk is designed to write to both sides of the disk simultaneously.

One more thing and we'll let it go. There are a lot of stories about why the backside of a 5.25" floppy disk should not be used, but the real truth is, the only difference between the front side and the back side is, one side faces up and the other faces down — that is until you turn them over then the reverse is true. Don't be afraid to use the back side of your 5.25" disks, they were manufactured to have the same quality on both sides. One side is guaranteed, but both sides are usually good. As a point of interest, when information is written to a disk, it is written to the "back" or the side away from what is considered to be the relative top or "front." Be careful when laying a disk down that it does not contact any dust or other foreign matter. If the disk can be formatted on both sides, use both sides. If it can't try another.

ProTERM on a 5.25" Floppy

Because ProTERM is a large application, there is not enough room on one side of a 5.25" floppy disk for all of the different parts of the program. Because of this, ProTERM is designed for use on two 5.25" disks, or on two sides of one disk called a "flippy." The front of the ProTERM disk is the "BOOT" side, the back is the "PROGRAM" side, and they are labeled as such. While this arrangement requires a second disk to be inserted when ProTERM is run, it allows for over 50K of free space on the PROGRAM disk while ProTERM is running. This "free-space" is needed and used by ProTERM to store system phone numbers, and macros, and to allow space for small personal files. When ProTERM is used from a 5.25 disk, make sure the disk is not write-protected as it prevents ProTERM from operating correctly.

ProTERM 5.25" Disk Contents

<u>File Name</u>	<u>Filetype</u>	<u>File Description</u>
BOOT DISK:		
/PT3	DIR	(Disk name.)*
PRODOS	SYS	(ProDOS Disk Operating System.)
PT3.SYSTEM	SYS	(Runs PT3 when disk boots.)

**5.25"
Program Side.**

PT3	SYS	(PT3 Code, resident portion.)
PT3.CODE0	BIN	(PT3 hardware drivers.)
PT3.CODE1	BIN	(On both disk sides of the disk.)
PT3.BACKUP	SYS	(Makes Copy of original PT3 disk.)**

PROGRAM DISK:

/PT3	DIR	(Disk name.)*
PT3.CODE1	BIN	(On both disk sides of the disk.)
PT3.CODE2	BIN	(PT3 command overlays.)
PT3.CODE3	BIN	(PT3 transfer overlays.)
PT3.CODE4	BIN	(PT3 <i>Terminal Emulations</i> .)
PT3.CONVERT	TXT	(Converts old <i>Macro</i> & <i>Dial List</i> Entries.)
PT3.DIAL	DIR	(Directory with <i>System List</i> entries.)
PT3.GLOBAL	TXT	(Contains default <i>Global Macros</i> .)
PT3.WELCOME	TXT	(Contains default <i>Welcome Message</i> .)
PT3.CLOCK	TXT	(Example of <i>File Macro</i> .)***

- * Both disks must have the same name.
- ** PT3.BACKUP need not be on backup copies of the disk or hard drive, but does not hurt if it is.
- *** PT3.CLOCK need not be on the disk. After viewing it, PT3.CLOCK can be deleted if disk space is needed.

Take care to conserve your /PT3 disk space when using 5.25" floppies. Don't save any non-essential files to this disk, ProTERM needs the available space.

ProTERM Startup from a 5.25" Floppy

To start ProTERM running from the 5.25" disk, insert the BOOT side of the copy of the ProTERM disk into your booting 5.25" disk drive and turn on the computer. The software starts up automatically. If the Program side is booted by mistake, no harm is done, but an alert message "Unable to load ProDOS" is displayed. Insert the appropriate disk side and reboot.

The modem must be connected and electrically switched on at this point.

ProTERM on a 3.5" Floppy & Hard Drive

ProTERM 3.5" Disk Contents

<u>File Name</u>	<u>Filetype</u>	<u>File Description</u>
/PT3	DIR	(Disk name.)*
PRODOS	SYS	(ProDOS Disk Operating System.)
PT3.SYSTEM	SYS	(Runs PT3 when disk boots.)
PT3	SYS	(PT3 Code, resident portion.)
PT3.CODE0	BIN	(PT3 hardware drivers.)
PT3.CODE1	BIN	(PT3 setup code.)
PT3.CODE2	BIN	(PT3 command overlays.)
PT3.CODE3	BIN	(PT3 transfer overlays.)
PT3.CODE4	BIN	(PT3 <i>Terminal Emulations</i> .)

Don't write protect your ProTERM working disk.

Files needed on a 3.5" drive.

PT3.DIAL	DIR	(Directory with <i>System List</i> entries.)
PT3.CONVERT	TXT	(Converts old <i>Macro & Dialing List</i> entries.)
PT3.GLOBAL	TXT	(The default <i>Global Macro</i> file.)
PT3.WELCOME	TXT	(Contains default <i>Welcome Message</i> .)
PT3.BACKUP	SYS	(Makes Copy of original PT3 disk.)**
PT3.CLOCK	TXT	(Example of <i>File Macro</i> .)***
*	Disk name can be any name you like.	
**	PT3.BACKUP need not be on backup copies of the disk or hard drive, but does not hurt if it is.	
***	PT3.CLOCK need not be on the disk. After viewing it, PT3.CLOCK can be deleted if disk space is needed.	

Files Not Supported by InTrec

Due to the larger storage capacity of the 3.5" floppy, ProTERM uses only a fraction of the available disk space. Since extra space is available, extra directories of utility applications are included on the disk. These utility programs are not required for using ProTERM and are provided only as a convenience. These files include a disk utility also found on the *Apple System Disk* and *SbrinkIt*, a file shrink/unshrink utility used by most Apple telecommunications. Do not contact InTrec for support on these applications. InTrec Software, does not support any of these utilities, as they are not published, sold or distributed by InTrec. They are provided only because the disk space was available, and for your convenience. The files are fairly self explanatory but some documentation is included which can be read and printed with the ProTERM Editor. After making a backup copy of ProTERM, these directories, and all the files in them can be deleted from the work disk to provide additional disk space.

ProTERM Startup from a 3.5" Floppy

To start ProTERM running from a 3.5" disk, insert the disk into your primary 3.5" disk drive, and turn on your computer. ProTERM boots, starts the program and shows the Main Menu.

ProTERM on a Hard Drive

To install ProTERM on your hard drive, create a directory and copy all of the files (except ProDOS) from the 5.25" or 3.5" disk. The name of the directory you store the ProTERM files in, is your choice. Note the PT3.DIAL directory is initially empty, but as you use it, all of the names, phone numbers, parameters and macros for all the systems you call, are stored in this directory as PT3.DIAL files. The PT3.DIAL directory must be either copied with the rest of the files from the ProTERM disk, or created in the ProTERM files directory as PT3.DIAL on your hard disk. If this directory is missing or named differently than PT3.DIAL, ProTERM cannot operate correctly. For example:

Error Message When Booting From Hard "Please insert the PROGRAM disk (flip disk) and press RETURN."

Failure to copy PT3.DIAL to the directory containing the PT3 files causes the above error message. Either copy the directory named PT3.DIAL to the directory the PT3 files are in, or create a new directory named PT3.DIAL in the directory containing the ProTERM files.

**Don't forget the
PT3.DIAL Directory.**

Files needed on a hard drive.

Files Needed To Run ProTERM From a Hard Drive

<u>File Name</u>	<u>Filetype</u>	<u>File Description</u>
/HARD.DRIVE/		
/PT3	DIR	(Directory name.)*
PT3.SYSTEM	SYS	(Runs PT3 when disk boots.)
PT3	SYS	(PT3 Code, resident portion.)
PT3.CODE0	BIN	(PT3 hardware drivers.)
PT3.CODE1	BIN	(PT3 startup code.)
PT3.CODE2	BIN	(PT3 command overlays.)
PT3.CODE3	BIN	(PT3 transfer overlays.)
PT3.CODE4	BIN	(PT3 <i>Terminal Emulations</i> .)
PT3.CONVERT	TXT	(Converts old <i>Macro & Dial List</i> entries.)
PT3.DIAL	DIR	(Directory with <i>System List</i> entries.)
PT3.GLOBAL	TXT	(The default <i>Global Macro</i> file.)
PT3.WELCOME	TXT	(Contains default <i>Welcome Message</i> .)
PT3.CLOCK	TXT	(Example of <i>Macro File</i> .)***
*	This directory is made by you and the name chosen is not important to the function of ProTERM.	
***	PT3.CLOCK need not be on the disk. After viewing it, PT3.CLOCK can be deleted if disk space is needed.	

Getting started on a hard drive.

Starting ProTERM from a Hard Drive

To start ProTERM from your Hard Drive, boot your computer as you normally would:

- Running ProTERM from the GS/OS Finder:
Open the directory created for ProTERM and double click on "PT3" or "PT3.SYSTEM."
- Running ProTERM from a file selector:
Set up file selector to run "PT3" or "PT3.SYSTEM."
- Running ProTERM from BASIC.SYSTEM:
Set prefix to your ProTERM directory's name and type *-PT3.SYSTEM* (The hyphen "-" is the same as RUN command).
- Running from ProDOS 8 - 1.9 or later.
Use TAB, ESCAPE to navigate to the ProTERM directory, select "PT3" and press the RETURN key.

PT3.SYSTEM

PT3.SYSTEM is a small module which runs PT3 (ProTERM). It is required for certain system configurations but works in all configurations.

For more information on hardware install problem solving, see the Index. Also see Appendix B: Troubleshooting, and Appendix C; Cables and Serial Ports.

Other ProTERM Files

While using ProTERM, several support files are created.

PT3.BIOS

The first file created by ProTERM as it is started from a new working copy is named *PT3.BIOS* and this file contains the hardware configurations you set up and select, such as which modem, printer, keyboard and clock definition, function or description files (called drivers) are chosen during the *Install* configuration.

With reference to hardware installation, deleting the file “PT3.BIOS” and starting ProTERM over is the same as booting a new pristine copy of ProTERM. If ProTERM 3 update files such as an updated or revised PT3.Code0 file containing new modem or printer drivers are installed, PT3.BIOS must be deleted. ProTERM must then be rebooted, and it will act the same as if it were a new program. This is very important if you are installing PT3.1 in an existing PT3.0 directory, the old PT3.BIOS file must be deleted, or ProTERM will fail to operate.

PT3.PREF

PT3.PREF is another file created as you use ProTERM and customize it for your personal use. When you make a change to ProTERM to personally suit your needs, and then open and save the Preferences file in the Misc menu, ProTERM saves this change in the PT3.Pref file. The next time you start ProTERM, this file is read and your preferred changes are in effect. PT3.Pref contains both the default preferences and operating parameters changed by you. For more detail, see the Index: *Preferences*.

Deleting PT3.PREF and restarting ProTERM sets ProTERM's defaults to “factory” standards (as if it was a new program).

PT3.DIAL Directory

Each time you create a system dialing entry, a file in the form of “PTD \backslash stemname” is created in the “PT3.DIAL” directory. Be sure all of the files from the directory “PT3.DIAL” are copied when making backup copies of your “Working Disk.” All files in the PT3.DIAL directory should be prefixed with “PTD.”. Any other files are there by mistake.

Before Going Any Further

Before you actually start using ProTERM, make sure your modem is really connected and ready. When ProTERM starts up, it must be able to communicate with the modem and send instructions to it so that it will be able to operate effectively. Consult your modem manual for installation instructions. If you are using an external modem, make sure the modem is plugged in, turned on electrically, if there are lights, are they on? External modems connect to the computer via a cable with generally a “D” shaped connector on the modem end. This “D” connector Base generally contains 25 pins and is called *DB25*, for obvious reasons. The other end of this cable should be plugged into a serial port on the back of the computer (possibly with a telephone icon next to it) or to a connector connected to a serial card inside of the computer.

Make sure the modem is switched on electrically or it can not be initialized.

ProTERM can accept input from either the keyboard or the mouse, or both.

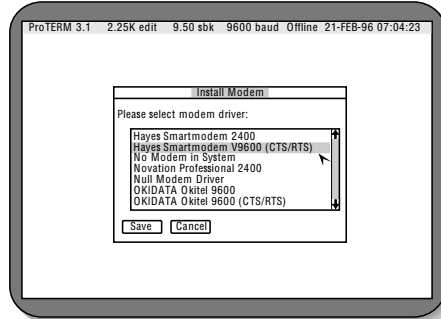
Pressing the first letter of a modem's name finds all modems named with that letter.

When the down ARROW is pressed, the menu scroll revealing more selections.

Need help understanding ProTERM's interface? See Chapter 2, The ProTERM Interface.

"Hayes" or "AT" compatibility.

For modem driver explanations, see the Index: Modems; drivers.



Modem Selection Window

Install Modem Menu

The *Install Modem* menu displays several different modems for selection. Only seven choices are visible within the window. Use the ARROW keys or mouse to scroll through the entire list. When the cursor bar is moved to the bottom of the menu, the list scrolls showing more selections. In addition, typing the first character of the modem name finds a modem beginning with that character in the list. Example; typing S locates the cursor on the first Supra selection. Pressing "S" again moves the selection to the second Supra selection and so on. After selecting the name and model matching your modem, press the RETURN key, and your selection is marked with a check-mark [✓]. Click the Save button or press the RETURN key which invokes the *Save* button and accepts your choice. To return to modem selection, press the TAB key.

If your modem is not listed, consult your modem manual for its compatibility with other modems. Many modems are designed to be "Hayes or 'AT' compatible" a term meaning their modem accepts or reacts to "AT" commands the same or similar to the way a Hayes brand modem would. If you can't find the exact name of your modem and it claims Hayes compatibility, select the Hayes Smartmodem driver respective to the speed of your modem.

None of the Drivers Work?

If you cannot locate a driver in the list that will initialize your modem so that ProTERM can work with it, you are left with selecting the *Null Modem Driver*. This has to be a last resort, because when using the Null Modem Driver, all of the power and automation of ProTERM is lost and all instructions to the modem, including dialing a phone number and hanging up after the call, must be entered manually. The Null Modem setup is also referred to as the dumb terminal or direct-connect mode.

No Modem In System

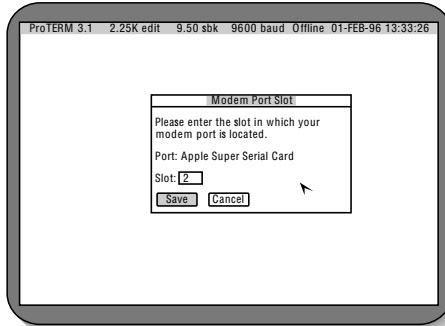
If you do not have a modem at this time but would like to see what ProTERM looks like, or even use just the ProTERM word processor alone, select *No Modem in System*.

Installing the Modem Port

If you select an external modem (that is, the modem does not plug directly into a slot inside of your computer), then ProTERM asks for information about your *Modem Port*. The modem port is the serial device which connects the modem to the computer. Some computers have modem (serial) ports built in while others require additional hardware such as a serial card in a slot. Use the ARROW keys or mouse to choose the correct modem port, and press the

RETURN key. The selection is marked with a check-mark [✓] and the Save button is selected. Press the RETURN key to press the *Save* button.

To return to Modem Port selection, press the TAB key. To return to Modem selection (the previous menu), press either ESCAPE or choose the Cancel button, choose the Modem button, and press the RETURN key.

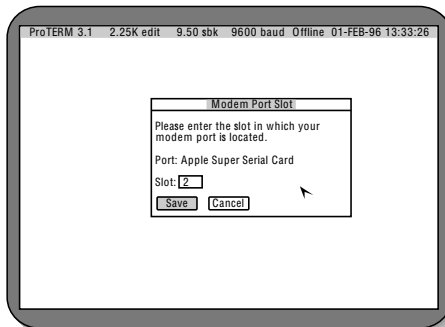


Port Selection Window

Installing the Modem Port Slot

If you have an internal modem on a card that is plugged into a slot inside of your computer or is an external modem, but is attached to a serial card plugged into one of the slots inside of your computer, ProTERM asks for the slot number in which the modem/port is located. The slots are numbered from one to seven (the modem/port normally slot two). Enter the slot number of the modem/port and press the RETURN key. Pressing the RETURN key again selects *Save* and accepts your choice. To return to modem port selection, press the TAB key.

To return to modem selection (the first menu), either press ESCAPE or choose the Cancel button and press the RETURN key.



Port Slot Selection Window

Installing the Printer Port

While ProTERM does not need to know what kind of printer you are using, it does need information about the printer port which connects the printer to your computer.

- If you do not have a printer, select the “No Printer in System” entry.
- If your printer port or card is not listed, select the “Generic Printer Driver” entry.

- If your printer does not work as expected, select *Pascal 1.1.1 Printer Driver*. One of these selections normally give satisfactory results.

To install the printer port, use the ARROW keys to choose your selection and press the RETURN key. This marks your selection with a check-mark [✓] and chooses the *Save* button. Pressing the RETURN key again invokes *Save* and accepts your choice.

To return to *Printer port* selection, press the TAB key. To return to the *Install Hardware* menu (the first menu), press either ESCAPE or choose the Cancel button and press the RETURN key.

Installing the Keyboard

Unlike modem and printer installation, keyboard installation is optional. The default entry, *Autoselect Keyboard at Runtime* selects either the Apple II GS or Apple II family keyboard driver depending on the type of computer you are using. If an *Apple IIgs Extended Keyboard* is used, choosing the correct keyboard allows ProTERM take advantage of the keypad and function keys.

From the *Install Hardware window*, choose the *Keyboard* button and press the RETURN key. Use the ARROW keys or mouse to choose the correct keyboard and press the RETURN key. This marks your selection with a check-mark [✓] and chooses the *Save* button. Pressing the RETURN key selects *Save* and accepts your choice.

To return to Keyboard selection, press the TAB key. To return to the *Install Hardware* window, press either ESCAPE or choose the Cancel button and press the RETURN key.

Installing the Clock

The default entry, *Autoselect Clock at Runtime* selects either the Apple II GS clock driver or the ProDOS compatible clock driver depending on the type of computer you are using. If a clock other than the Apple IIgs internal clock is in your system, we strongly recommended you install the correct clock. While ProTERM can generally utilize various clocks by using the *Autoselect Clock at Runtime*, unless the correct clock driver is selected, the display clock may not show the seconds, and other problems related to timing, including the use of a high-speed modem are likely.

From the *Install Hardware* window, choose the Clock button and press the RETURN key. If your clock is not listed, then select *Autoselect Clock at Runtime*. Use the ARROW keys to choose your clock and press the RETURN key. This marks your selection with a check-mark [✓] and selects the *Save* button. Pressing the RETURN key invokes *Save* and accepts your choice.

To return to clock selection, press the TAB key. To return to the *Install Hardware* window, press either ESCAPE or choose the *Cancel* button and press the RETURN key.

Changing the Modem Initialization String

This option is only for the advanced user who needs the ability to send special “modem commands” to their modem. When ProTERM first runs, it initializes the modem by sending the displayed init (initialization) string to the modem. Modem commands for controlling

Keyboard install is optional.

Clock install is optional.

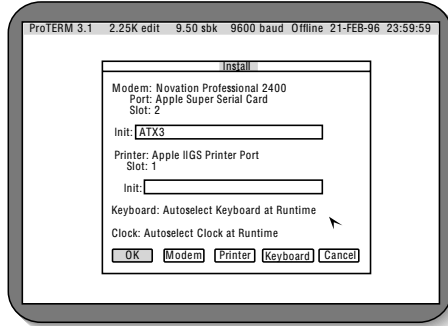
For the experts — If you do not understand this, ignore it.

Is all of the displayed information correct?

Press the TAB key to edit the *Init* string.

At this point, the world of telecom is at your fingertips!

modem-specific functions should be included in the existing string. Do not remove any commands from the existing string or send any commands which change the way the modem responds to commands (i.e., verbose mode).



Install Hardware Summary Window

To change the *Init* string, press the TAB key. A cursor appears at the end of the *Init* string. Use the ARROW keys to move, DELETE to delete characters to the left of the cursor (for more on this, see the Index: *Text Field Editing Commands*), and type new information where you want it inserted. When you are finished changing the *init* string, press the RETURN key to accept the changes.

If you decide you want the original *init* string reinstalled, go through the modem selection again and ProTERM will reinstall the *init* string.

Verifying the Installation Information

After installing all hardware, the *Install Hardware* window is visible with a summary of your installation choices. Make sure all of the displayed information is correct. If there are problems with any of the hardware, use the ARROW keys to choose the appropriate button (*Modem*, *Printer*, *Keyboard* or *Clock*) and press the RETURN key to return to that part of install. When you are confident all of your choices are correct, choose the *OK* button and press the RETURN key to start using ProTERM.

NOTE: When the computer ports is selected for the Apple II gs, a slot number is displayed automatically. Because the computer port is known, ProTERM entered this information.

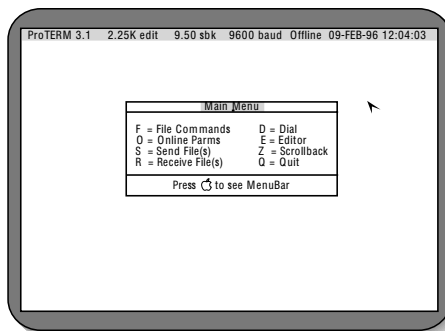
Using ProTERM

When the installation procedure is complete, ProTERM goes through the startup procedure and you are shown an introduction screen while ProTERM goes about its other preparations. Several status windows announce ProTERM's progress: *Loading Drivers*, *Initializing Modem*, *Loading Emulation Names* and *Building Dialing List*. If you have a hard drive, these pass quickly, whereas floppy disks are slower and take longer. After ProTERM completes its startup sequence, the *Main Menu* is displayed and from this point, the world of telecommunications is literally at your fingertips!

Install Complete Shows the Main Menu

This completes the installation procedure, and it is saved to disk. You will not have to use Install again, unless you change equipment.

You can now enter the Dial menu and call your first host system. For the details of how to quickly and easily use ProTERM, see the Index: *Interface*. For more details on entering your first host system to call, see the Index: *Dialing*. The next chapter is a tutorial which walks you through using the ProTERM interface and setting up your first call to a host system.



Main Menu

In Case of Trouble Modem Failure & Isolating the Problem

If the startup process stops during the *Initializing Modem* phase and a *Modem Failure* window is displayed, the most common causes are listed below. If you can locate the problem, correct it, choose the Retry button and press the RETURN key. When the problem is corrected, ProTERM continues on to the Main Menu. Otherwise, the modem failure window is displayed again. If you are unable to determine the cause of a problem check these steps:

- The modem is not turned on electrically. Check to make sure electrical power is available to the modem. If the modem is external, is it turned on? Do any lights show? If the modem is internal, this is not an issue.
- The modem is not connected to the computer, or is plugged into the wrong port. Recheck the connections and carefully follow the cables from end to end.
- An incorrectly wired cable, a printer cable for example, is used between the modem and the computer's serial port. This is a common problem. See the Index: *Troubleshooting*.

**In case of trouble,
see Appendix B & C.**

- An incorrect modem and/or serial port was chosen during Install. Select *Install* and try again.
 - 1 The *Install Hardware* window opens and you can verify your modem and port selection are both correct.
 - 2 If they are not, make the appropriate corrections and then choose the OK button to return to ProTERM.
 - 3 If this all seems correct see Appendix B: Trouble Shooting and Appendix C: Cables.

How to boot directly into Install.

If you call the InTrec Technical Support, be at your computer and have it booted.

Complete details on calling for Tech Support are available in Appendix A: Warranty and Service.

Program Lockup

It is possible the software may just “lockup” during the startup process. This happens if an invalid hardware configuration is chosen. ProTERM is following instructions to align itself with chosen hardware and the hardware specified is not available to act as expected. This can only be corrected from the *Install Hardware* window. To return to the *Install Hardware* menu, restart ProTERM and holding down COMMAND key as ProTERM begins to boot. As an alternative, the file “PT3.BIOS” can be deleted before restarting ProTERM.

It Still Doesn't Work

If you are still unable to get ProTERM to run after checking the modem connections and the installation parameters, consult Appendix B: Troubleshooting. Appendix B contains answers to common installation problems. If you're still unable to find a solution, call the InTrec for Technical Support Department.

Save Time for Yourself and Tech Support

You can save time for both you and our support staff. Have your computer booted and ready. This will save your having to pay phone charges while you go through this process. We can generally determine the problem easily if you are at your computer, but if you are not, it adds to the difficulty of resolving the problem.

- 1 Have this manual, information about your hardware and a copy of your modem manual available.
- 2 Be at your computer with ProTERM booted up as far as it can proceed. This saves valuable phone time for you and our Technical Support Dept.
- 3 Keep the modem turned on and everything up and as ready as it can be under the circumstances. Using the phone with the modem connected to the line does not cause any problems. The problems can be usually resolved without having to actually use the modem to access the phone line, but it must be turned on.

Miscellaneous Notes

Leave Your Modem On

Many users are concerned about leaving their modem on when it is not in use. Generally speaking, this concern is not justified. Most modems fit the following criteria:

- Low power use.
- Does not answer the phone unless specifically set up and instructed to do so by the software.
- No parts which wear out when left on.
- Being turned on and connected to a phone line does not impair the phone line or its quality.

The only time ProTERM instructs your modem to answer the phone is when you purposely use the Answer Phone or the *Unattended Access* mode commands. Normally when you receive a phone call, ProTERM may display the word “RING” on the screen. This is a verification that ProTERM sensed the phone is ringing, but no other action is taken. If you control your computer through a power-strip, we suggest you plug your modem into the power-strip and turn the modem on any time you are using your computer. The benefits for leaving the modem on outweigh any reasons for turning it off.

Changing from ProTERM 3.0 to 3.1

When *Create System* (in the Dial list) is used to create a new host System entry, in ProTERM 3.0 or 3.1, a new file beginning with the prefix "PTD." is created. The name you enter as *Save System As: [systemname]* is appended to a "PTD." prefix and the file is then named "PTD.*systemname*." This file is stored in the "PT3.DIAL" directory. System Macro, phone number and other "personalized" information for each System you call is kept in these PTD.*systemname* files and they are updated whenever you make changes to any of these host system's settings. To have your old PTD. files available for your new ProTERM 3.1 files to use, it is simply a matter of making sure your old PT3.DIAL directory and the new PT3.1 files are placed together in the same volume or directory. When ProTERM is restarted, your personalized dial list with all of your System numbers, macros and other information relative to the systems you call, is complete and functional in ProTERM 3.1. (see the Index: *Directory* for more information on directories and pathnames. Also see *PT3.DIAL* and *PTD files*)

The ProTERM 3.1 files from the new PT3.1 disks can be copied into the same directory where the ProTERM 3.0 files existed, but do NOT copy the new PT3.DIAL (empty) directory over the old one containing your personalized PTD*systemname* files. For more information on PTD.*systemname* files see the Index: *PT3.DIAL*; explained.

If You Work From Floppies

If you use ProTERM on 5.25" or 3.25" floppies, you may experience some difficulty getting the PT3.DIAL directory or its files copied from your "old" PT3 work disk to the floppy containing the new ProTERM 3.1 files. The reason there may be a problem is, your "old" work disk and the "new" work disk (copy of the new ProTERM 3.1 master) may both be named /PT3, and the ProDOS operating system is not capable of copying files between two disks having the same name. There are several ways to handle this, but the easiest method may be to use another disk with a different name as a kind of temporary or "intermediary" disk. Copy the directory named PT3.DIAL and the files it contains, to this intermediary disk, and then copy the PT3.DIAL directory and its files from the intermediary disk to your "PT3 work disk" containing your new ProTERM 3.1 files. Here is an example of how this process could be used:

- Format a disk and name it *DATA* for use as the intermediate disk. Note that ProTERM 3.0 can be used for this if you do not have any other file or disk utilities: Press COMMAND-F at the Main ProTERM menu to see the File Utility and Copy menu selections. For help on this, see the Index: *Format Disk* and *Copy*.
- Copy the directory PT3.DIAL and all of its files from your "old" /PT3 work disk to the intermediary floppy named /DATA.
- Copy the directory PT3.DIAL and all of its files from the intermediary volume named /DATA to the new /PT3 work disk, and ProTERM should be ready to go to work for you.

Using An Existing Volume or Directory

When installing ProTERM 3.1 into an existing ProTERM directory, the (old) file "PT3.BIOS" must be deleted before trying to run the new ProTERM 3.1. A new PT3.BIOS file is created during the Install procedures of ProTERM 3.1.

PT3.GLOBAL

If you have customized (made changes to) your present PT3.GLOBAL file, you may not want to replace it, and that is okay. The PT3.GLOBAL files that work with PT3.0 work without

problem when installed with PT3.1. If you have not customized the PT3.GLOBAL file for PT3.0, we suggest replacing the old one with the one from the new ProTERM 3.1 disk. We also suggest you look over some of the changes in the PT3.GLOBAL file on the new PT3.1 disk. Open the file PT3.GLOBAL in the ProTERM Editor and read through the new comments. Global Macros are powerful tools, and reading through this file can give you ideas on how they can go to work for you.

File Macros

If you have created File Macros for PT3.0, these should work without problem in PT3.1. If you have problems or questions concerning Macros, we invite you to call the InTrec BBS and ask for Special PT3 access.

PT3.CACHE

ProTERM 3.1 loads the System Dial List much faster than ProTERM 3.0 and the file *PT3.CACHE* is no longer used or needed.

The Conversion of – Dialing Numbers & System Macros From PROTERM 2.x To PROTERM 3

ProTERM 3 uses a completely different method for system dialing and macros, and the following should help you in getting your older ProTERM macros converted and updated.

About PT3.CONVERT

This little application assists you in converting your phone numbers and macros from prior ProTERM versions, to work with ProTERM 3. Running PT3.CONVERT from a macro is also a demonstration of the ability and power available in the macro language designed in ProTERM.

To convert phone numbers and System Macros from ProTERM 2.x versions:

- Install ProTERM 3 and your hardware, as described earlier in this chapter.
- Press OPTION-M (⌘+M). This invokes a macro from PT3.GLOBAL macros which in turn runs a file on your ProTERM 3 disk named PT3.CONVERT.
- Read the directions carefully as they are provided at the prompts, they are quite easy to follow. If there is enough room on the disk; before starting the conversion process, the older files can be copied to the new disk or directory if that will make finding and converting easier. Make the older ProTERM and current ProTERM 3 files available by entering the pathname older PT.DIAL file. If your files are on a 5.25" floppy, there may not be enough room on the disk. If you only have one drive, and the ProTERM 3 disk and the older ProTERM 2.x disk must be swapped after each dial number is converted.

If the ProTERM 2.x *PT.MACRO* file is in the same directory the ProTERM 2.x *PT.DIAL* resides, System Macro files are automatically converted as the dial numbers are being converted.

When the conversion is complete, restart ProTERM 3. Choose Dial from the Menu, and the converted numbers should be ready to choose and dial.

**See the Index:
Suggested Further
Reading.**

A ProTERM Tutorial

CHAPTER FOUR

A Service, System, or System Entry, references the host services you will be calling.

Getting Started

This chapter is an overview of how to create, and customize, a system dial file, and then call a system (host computer) using your computer, a modem using your phone line. ProTERM is the software package that puts it together for you and makes it all possible. This chapter is very general. See the Table of Contents and the Index for details on specific features and functions.

The most common ProTERM function is to dial and connect with a remote system, and we'll start with a hands-on tutorial describing how to:

- Create a System Dialing file.
- Dial and connect with the new host system.
- Use proper etiquette when terminating a call.
- Review the session in scrollback.
- Practice sending and receiving files.
- Call an online service and putting it all together.

This tutorial covers the steps of how to call The InTrec BBS. Calling the InTrec BBS may be a long distance call for you, but since no two host systems are the same, the attempt here is to show a generic representation of some popular telecom services. We can tell you what to expect on the InTrec BBS, but other services are not so predictable. You may prefer to follow the steps as you call another system and substitute changes to fit your needs.

Each System entry you create will contain the name, phone number, baud rate (the relative speed of the modem) and other important information matching the characteristics of the host system. This set of characteristics, or "system specific information," is referred to as *parameters*, or just "parms." ProTERM will take care most of what you need with hardly any changes, but it will need your help on a few obvious ones like the service's name and phone number.

Parms & parameters, what are they?

See Chapter 2 for explanations of the ProTERM interface.

Press “D” or press the RETURN key to open the Dial Menu.

System names cannot begin with a SPACE character.

A System is created by entering the Dial list (Press either the “D” key, or the RETURN key) and choose *Create System*. If you have difficulty with this part, see Chapter Two: *The ProTERM User Interface*, and Chapter Three: *Installation*. They will help you get ProTERM up and working, introduce you to the ProTERM interface, and make the learning process easy and enjoyable.

Set up is easy. Most Systems can be set up and called with a minimum of effort by entering the following:

- Name of the host service.
- Phone number of host system.
- Set the modem speed (usually optional).
- Enter an abbreviated name that ProTERM can use to *save the System As*: so ProTERM can store the new service’s name and information on disk.

That’s it, you’re ready to make your first call. In most cases it’s that easy because ProTERM understands how to do the rest. If specialized situations exist, ProTERM will allow you to deal with each as needed.

User Groups and Local Assistance

You will find references throughout this manual suggest user groups as an information resource. Learn the value of these groups of knowledgeable computer users. They are an excellent resource for bulletin board phone numbers, general information and many even offer telecommunications assistance. Some user groups also have Special Interest Groups (SIGs) for ProTERM or telecommunications in general. See the Index: *user groups*.

Making Your First Call

ProTERM’s Main Menu should be displayed on your monitor. If not, see the Index: *Installing ProTERM*, and follow the information on starting up the software.

Entering a System

From the Main Menu, press *D* (for Dial) to pull the *Dial* menu down. Press “C” or use the ARROW keys to choose (highlight) *Create System* and press the RETURN key. A window titled *Enter a System* will appear, and prompt for information about your new host System entry.

System Name

Each System or service as they’re usually called, must have an identifying name. The name you enter as *System Name*: will be the name that appears in the Dial Menu or list, and is used to select that System when you call. A System name can have up to 32 characters containing upper or lowercase alpha characters, numbers, punctuation and symbols. The only restriction is, System names may not begin with a space. Enter *Intrec BBS*, or the name of the system you will be calling, and press the RETURN key. This name is cosmetic and is not directly used for anything but choosing from your Dial list.

Numbers and other keyboard characters can be used to start a name in the System Dialing List. See the Index: *Dial List*; *customizing*.

Call the InTrec BBS for the latest on ProTERM and get some practice.

See the Index: Editing Text Field and Editing Commands for entering and changing text in a window.

Set the baud rate high.

Press the TAB key to choose the next text field.

System Number

Each System must have a phone number. Press the TAB key to highlight (choose) the System Number, and to call the InTrec BBS as a long distance number, enter:

“1-602-992-9789”

...and press the RETURN key (long distance numbers require 1-(area code) just as you would dial the number with a voice phone.

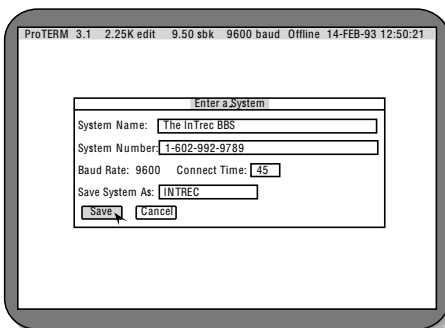
NOTE: When calling long distance, normal calling charges will be in effect while you are connected to a long distance called number.

NOTE: Some specialized Systems, such as a direct connect system used on campus where a modem is not being used, may not require a “conventional phone number” to make the connection. Leaving the phone number field blank and ProTERM will make the direct connect for you.

If your phone system does not support Touchtone[®] dialing, insert a “P” as the first character of the phone number.

Example: P1-602-992-9789

This will instruct ProTERM to use pulse (rotary) dialing instead of defaulting to Touchtone dialing. For more detail on customizing dialing, see the Index *Meta characters*.



Enter a System Window

Baud Rate

Press the TAB key to choose (highlight) “Baud Rate” and use the ARROW keys to select the highest baud rate supported by the remote system. In the case of The InTrec BBS, set the baud rate to 19,200 and press the RETURN key. Always set the baud rate to the highest supported by the remote system even if your modem does not support that rate. When ProTERM dials the system, it will automatically determine the highest baud rate supported by both modems.

Connect Time

Press the TAB key until *Connect Time* is chosen. This controls the amount of time the local modem will wait for a connection when calling the remote system. Normally the default connect time of 45 seconds is a adequate for calling most systems. If you call a system and it answers, but is not able to connect before the modem times out and hangs up, increase the Connect Time by using the DELETE key and typing new numbers. See the Index: *Editing Text Fields* for quick easy tips on making changes. Increase this number by five or ten seconds and try again.

The mouse and or the keyboard can be used for selection.

See Chapter Two: The ProTERM Interface for help on how to change settings.

Parms & parameters defined.

Press TAB to enter and move forward & down in the System Parm's window.

Press COMMAND+TAB to move in the reverse direction.

Save System As

Press the TAB key to choose the text input window named *Save System As:*. The name you place here will be the name this System information will be saved to disk as, and you probably never have to do anything with this entry after its entered and saved. Just so you know where the filename is stored *PT3.DIAL* directory. All of host System entries are stored in this directory. Eleven characters will fit in the *Save System As:* window. This name must be a valid ProDOS name: it must start with an alpha character, spaces cannot be used, and only periods can be used for separators or punctuation (see the Index: *ProDOS* for more details on ProDOS filenames). Each System's entry carries all of the system characteristics (attributes and parameters) needed to call that system, and this information is stored in that System's file. Entering a duplicate name causes an alert message to be displayed, and the name can be revised.

For this example, enter "INTREC" for a *Save System As:* name and press the RETURN key and ProTERM will save this System information as a file named "PTD.INTREC" in the *PT3.DIAL* directory.

Saving the System Entry

To correct any information in any of the fields, press the TAB key or use a mouse to point and position the cursor at the proper text input window and correct the information as needed. Pressing and holding the COMMAND key while pressing the TAB key moves the cursor in a reverse, counter-clockwise reverse direction. For details, see Chapter Two — *The ProTERM Interface*. When the basic System parameters have been entered, choose the *Save* button and press the RETURN key to save the new System entry to disk.

NOTE: Parameter Defined A bit of information whose value characterises a member of a system or family. Uses here to establish and define perimeter limitations and or boundries. Sometimes used in a shortened version of "parms."

Editing the System Parm's Window

After the basic information has been entered for the host system, and the RETURN key is pressed, a large window named *Edit System Parm's* (parameters) is displayed. This window contains information fields that allow you to change information to match the characteristics needed for that service. The System Name, Number, Baud Rate and Connect Time are filled in with the values entered when the service was created, and while several other fields are available to further match the service's needs, these other settings are generally correct just as they are preset. For example, the information you've already entered to call the InTrec BBS is all you need, and with a press the RETURN key, ProTERM will dial and connect.

System Name

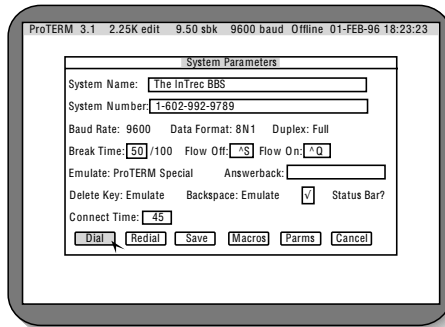
See *System Name* above.

System Number

See *System Number* above.

Edit the System Params Window.

To edit fields, press TAB to enter the window.



System Parameters Window

Baud Rate

See *Baud Rate* above.

Data Format

Normally left unchanged. See Index for more information.

Duplex

Normally left unchanged. See Index for more information.

Break Time

Normally left unchanged. See Index for more information.

Flow Off & Flow On

Normally left unchanged. See Index for more information.

The ProTERM Emulation Feature

If you call a service using what will be referred to as "Emulation" or "Terminal Emulation" such as VT-100, you will need to choose the needed emulation from this field. Some systems are capable of showing special graphical interfaces on specialized equipment especially designed for that purpose. Your Apple computer can call their special terminals, and ProTERM will convert what is being sent and make your computer system pretend to be, or emulate, the special system you are calling.

Click on, or Press TAB to move the cursor to Emulate: then press the ARROW keys to choose the desired emulation.

Certain businesses such as real estate and the airlines allow their employees to call into special data bases to obtain proprietary information concerning their work, schedules, listings and other related information. Local public libraries allow searching of their card catalogs using your personal computer. These systems usually use an emulation called DEC VT-100 which allows you to see graphical information on the screen which would not be otherwise visible or viewable. Emulations are covered in depth in other parts of this manual; see the Index: *Emulations* and *Scrollbar; capture*.

TIP: When using Apple IIe, IIc and Laser 128 computers to navigate VT-100 screens, the OPTION key must be pressed when using the Arrow keys .

If emulations are not needed for your call, skip down to “The First Call.”

Use the Online Menu for temporary settings.

ProTERM Special emulation.

ProTERM Special Emulation

Using Emulations

Emulation controls how ProTERM displays incoming data. Some systems send out special codes instructing the software to clear the screen or reposition the cursor, draw special graphics or make sounds. See the Index: *Emulation*.

To enable an Emulation, choose *Emulate* in the *Edit System Parm*s window and use the ARROW keys to choose the required emulation.

Using an emulation is a choice on your part. Enabling an emulation will not show any immediate visible change, you will only see the results when connected to a system which controls the emulation. The emulation turns on automatically and is immediately obvious. If there is no emulation during the call, no changes will take effect.

Changing Emulation During the Call

If you are online with a system and decide you want one of the emulations turned on, press COMMAND-L, choose *Emulate* and change the *Emulate* parameters to the emulation of your choice while online. Settings made to the Online menu are only in effect during that call. If settings are found that work as desired, be sure to note the setting used and make those changes to the System Parms window for that service.

If you're not sure emulation is offered or needed on the system being called, leave the emulation set at “No Emulation.” Emulation is sensitive to line noise and can cause strange effects including sounds and random characters. If you experience problems during the call and an emulation is chosen, try choosing No Emulation (see paragraph above) to see if it helps. Also see the Index: *Emulations*. With regard to line noise, and ProTERM Special, if you call a system featuring ProTERM Special Emulation but it seems to break up, give strange noises or other problems, this is probably caused by line noise. Try calling back, sometimes a second or third call will solve the problem. Also try calling at a lower baud rate. Lower baud rates are more stable and may give you a slight advantage.

Emulations and the Menu/Status Bar?

If you call a system needing certain emulations such as VT-100 emulation, use the TAB key to move the cursor to the *Status Bar* checkbox [] in the *Edit System Parm*s window and press the SPACEBAR. This removes the checkmark which tells ProTERM to remove the Status Bar from the top of your screen as soon as the emulation is detected during the call. Removing the status bar allows the emulation to use all 24 of the lines of the Apple screen. The Status bar uses or hides one line at the top of the screen, and any information being presented on the top is hidden. For example, some emulation systems show their prompt on the top line, and when the ProTERM Menu/Status bar is showing, the prompt would not be visible. Any time the Status Bar is not visible and ProTERM Menu is needed, press the COMMAND key ProTERM menu bar. For more information see the Index: *Status Bar*.

Some local BBS systems have ProTERM Special Emulations areas demonstrating emulations graphics and sound shows. To see an example of ProTERM Special Emulations at work see The InTrec BBS special message board named “The ProTERM Special Showcase.”

Answerback:

See the Index: *Answerback*.

Dialing a system also saves edited changes made to the system.

Delete Key:

See the Index: *Delete; key*

Backspace:

See the Index: *Backspace*.

Status Bar?

See the Index: *Status Bar* and its subcategories.

Connect Time:

See the Index: *Connect; Time*.

Save Changes and Call, or Just Save Changes

Choose *SAVE* or *DIAL*. To call now, choose *DIAL*. Pressing the Dial saves the changes and dials the system to make the call. If you want to call at a later time, choose *save* and press the RETURN key and the changes will be saved to disk without dialing.

The First Call

Dialing the New System

After creating and customizing a system, dialing it is easy. From the Main Menu, press the D key on the keyboard to pull the Dial menu down. Choose the service you wish to call, and note that the Dial button is selected. A press of the RETURN key dials the service. ProTERM dials and attempts to establish a connection. If a connection cannot be made (most commonly because the system is busy), an *Unable to Connect* window is displayed. If the called system does not answer, ProTERM will continue the call, ringing the host until the time set in the *Connect Time* field has counted down to zero. Pressing the Dial button again will redial the system. Pressing the Redial button will cause ProTERM continue to redial the system until it either makes a connection, or you press the Cancel button, or press the ESCAPE key, which cancels the call.

Navigating the Called System

When the call connects with the remote system, the screen clears except for the top *Status Bar* (which now displays "Online") as ProTERM enters the "Terminal Mode." At this point, you are a guest of the host system and can apply for a password, logon, or conduct "Business as usual." Valid (host system) commands (for that system) now control the system you are connected with. Each system is different and commands vary from system to system.

Your System Address

Your email address.

Some systems, such as public library card catalog systems, are usually available with a local call. They are quite generic and easy to use. Some allow users to call and log in without ever giving your personal identification, you get your information and terminate the call, but this is not how all systems work. Normally, the first call to a system is usually different than any subsequent calls to that system, because during the first call you will be asked for your name and other information requested by the system's administrator. After entering this information you should be given an address or number (this will be your system "address") and a

you also receive a password which is your “security key” for that service. On some systems, your pass number or address, is your name, or an abbreviated form of your name. Usually your access number is your public email address for that system. You can make the “address” public and when you receive messages on that system, they will be sent to, and received by your system address. Private electronic notes (email) can also be sent to you, and you can reply and send email.

Passwords

Passwords are different than your address. A Password is your “private passkey” to that system. You are usually allowed to change your password, and it is good advice to do that from time to time.

Access Levels

Some systems want to know who is requesting access, and new callers have restricted or limited access during the first call, or even subsequent calls, until the new account is considered by the system administrator. When your account request is processed, your access level can be changed to allow you to use areas of interest on that system. Access levels are like “gateways” and allow certain users to different access different areas such as downloading files, enter game areas, discreet discussions, etc. After your first call and while you are waiting for access, be patient. System administrators have a life too. While they are not hovering over the keyboard waiting to process your new account, it is reasonable to expect them to normally check in within a 24 hour period.

Slow it Down!

While online with the remote system, there may be times when incoming data is displayed faster than it can be read. Press COMMAND-SPACEBAR to pause the system. The status bar will display “Paused” and ProTERM will wait until you press another key before more data is displayed.

If something scrolls off the screen faster than you can read it, press the COMMAND key and use the Arrow keys to navigate back through the text. For more details on this great ProTERM power-tool feature, see the notes later in this chapter and the Index: Scrollback

Getting Help

Once you get past the logon (prompted introduction) screens, you can request help. Usually the host system will have help menus available, and these menus can be called with conventional commands such as “?” or “Help” followed with a press of the RETURN key at the prompt line. Look for something like “(=?=HELP)” which literally says, pressing the QUESTION MARK key equals HELP (also press the RETURN key to send the command to the host).

During this first call, your access will usually be restricted, and you will need to wait for validation to really be able to do much. You are there, so poke around, you can't break anything, and the experience will be good for you.

Think of a host system as a public library building, and follow an analogy of this comparison:

- | | |
|----------|--|
| Library | • You enter the front door of the library. |
| BBSystem | • You enter the host system through the logon procedure. |
| Library | • You are looking for the general area where the books on telecommunications are kept – you ask at the information desk. |

STOP! and GO!

Entering a question mark “?” will get help files.

What is a protocol?

- | | |
|----------|--|
| BBSystem | • You want to know where file transfer utility files are kept – you request a menu by entering a question mark character (?) at the prompt and press the RETURN key. |
| Library | • The information desk person says, “Those books are downstairs: Just follow the arrows to row one.” |
| BBSystem | • The menu shows if you enter an “L1” you will be taken to the Utility files “Library” area. |
| Library | • You decide to take a book home. You find the number of the book, you locate the book and take it to the front desk where you follow a protocol (library’s rules) of removing the book from the library. |
| BBSystem | • You want a file which is on the host system. You locate the file, instruct the system to prepare to send it to you using a particular protocol and tell your computer to follow the same protocol to transfer the file from the host library to your storage disk. |

Let’s carry this a little further.

Like the library analogy, host systems are comprised of different levels or areas, like a main floor, a “downstairs area” and even some “upstairs floors.” They generally start off with a main level as noted above. Consider it as the reading area where the periodicals (general or timely message boards) and public notice, or message (cork) bulletin boards are.

These “comparative terms” can “develop a mind’s eye picture” of these electronic “libraries” so consider that host systems a file transfer area which we will state in terms of as being “downstairs,” but you can also access message areas referred to as “message boards or branches.” These could be compared to the cork bulletin boards where various messages are tacked up (posted). For the sake of completing our “mental map,” these message boards are on the “main floor and adjacent to the information desk.” These boards are generally grouped, and individual boards carry message themes referred to as “threads.” There may be a few or several of these message boards, each concerned with different subjects, general chatter, for sale, tech-talk, social exchange, games and any other imaginable area of interest. The large online systems have hundreds of interest areas. Menus will generally be available at each general level, and these menus have the commands for the needs of that level. Use the menu commands to improve your mental picture and then try the commands to move around and investigate the different areas within your access level. Each message board may have several hundred messages, and they are generally arranged numbered and or sequentially dated files. Host systems usually track your history and keep records on what you have read. This works to your advantage because you have read the current usually latest date and/or highest numbered messages. When you call back at a later date, you request the NEW messages and the messages posted (placed) since the last time you called, scroll into view.

When you read a message of interest, you can answer or reply or enter your own comments or questions. (That is how the messages get there in the first place.) New messages are what makes a host system interesting, and the real fun will start when you get involved.

The Large Online Services

Larger systems such as CompuServe, Delphi or Genie work much the same as the smaller BBSystems but with much more depth. They are so big, you can access files such as an online encyclopedia, the stock market, travel, shopping areas and countless large interest specific forums. These large systems offer extraordinary resources with very little effort, and all of this

**Say “Good-bye”
with etiquette.****No way out?****Navigating through
Scrollback.**

with a local call. Another benefit of the larger services is the ability to join into online conferences “talking live” to several people at once (see the Index: Split Screen Chat Emulation). The large services are far reaching — literally! People from all over the world frequent the larger systems. Messages from wide ranging sources is expected and commonplace. For more information see the Index: Online; services; major.

Disconnecting

Since you are a guest when calling a host system, it is considered good telecom etiquette to say good-bye and inform the system you are finished before disconnecting. Common sense rules of protocol prevail. You would not hang up the phone in mid-conversation with a friend, and when you finish a call to a host system, it would be considered rude to just shut down or hang up without warning. Be polite, announce your intentions. From the system help screen or menu, determine the command to disconnect, enter the command and press RETURN to take action. Commands to leave a system gracefully are often in the following forms: TERMINATE, TERM or T, GOODBY, G or BYE, LOGOFF or OFF, HANGUP, H or HANG Q or Quit, X or Exit, among others (not usually case sensitive — BYE and bye are the same). In the case of The InTrec BBS, the command is “T” (terminate connection). Once the remote system disconnects, ProTERM returns the ProTERM Main Menu screen and the status bar displays “Off line.”

Immediate Disconnect

If you are unable to determine the disconnect command, choose “Hangup” from the Online menu (COMMAND-H) which promptly disconnects you from the system. This method of terminating a call is abrupt and can be thought of as “pulling the plug” or “slamming the door on the way out.” But if the service does not make any obvious way out, you should feel justified in doing what you have to do.

Saving Preferences

As you use ProTERM and change the way it works for you, the changes can be saved so ProTERM will always maintain those customized changes. ProTERM has hundreds of preferential changes that can be saved to fit individual needs. As you change ProTERM to fit your needs, it will become as comfortable as an old glove. Whenever you want ProTERM to “remember” to use your new and changed preferences, choose the *Preferences* from the *Misc* menu and choose *Save* in the *Preferences* window. For more information, see the Index: *Defaults*.

Using Scrollback

While logged onto a host system, information is constantly displayed on the screen. As more information is received, ProTERM saves this information into a memory (RAM) based scrollbar file as it scrolls up and off of the screen. Imagine this action as a special kind of “text reader” that reads the text as it scrolls past the top of the screen and disappears out of sight.

Some of the information you’ll see online is important and some is not, and it can be difficult to tell what you may want without reading it all, but that takes time. Perhaps text that scrolls

out of view shows a command, or important instructions. To find what you're after it takes additional time to request the host system to re-display the information uses time. Your time, the online charges or long distance calling fees can be expensive. Fortunately scrollbar is one of ProTERM's great features and it offers the optimum way to retrieve and browse this information online and immediately, or later at your leisure, saving you the frustration, and even time and money.

To see a sample of scrollbar, even before you've made a call, just press the Up ARROW key several times and you will see an intro screen. The Scrollback menus are also visible. Use the COMMAND key F, E and U keys to pull down and the File, Edit and Utility menus.

Scrollbar is a feature dedicated to "remembering" all the information that scrolls off the top of the computer screen. Choose *About ProTERM* from the Apple menu, (click on the *Apple* in the upper left corner of the screen, or press *the COMMAND - ~* keys (COMMAND plus the TILDE key) and then press the RETURN key: ProTERM will display: "*Scrollbar Buffer: xxxk*" in size (press any key to return to the Main Menu). This number shows the Scrollback capacity of your computer to store Scrollback text. Think of this as, ProTERM will remember the last xxx thousand characters which scrolled off the screen and out of view. This means you need not be concerned when data scrolls off the screen, since the data is being stored so it can be viewed later. The number *Sbk xxx* on in the middle of the Status Bar on the top of the screen shows how much is in Scrollback at any given time. See the Index: *Scrollbar*.

Scrollbar is only temporary.

Scrollbar is not stored on disk, it exists only in the electronic RAM (temporary memory) of your computer. Quitting ProTERM or turning your computer off causes the contents of Scrollback to disappear forever. While ProTERM is running, the information is there, waiting to be called back to the screen.

Text which has scrolled off the top of the screen accumulates in Scrollback memory until the available memory fills up. Once memory is full, new lines "push" the "oldest" lines out of Scrollback. Once data has been "pushed out," it cannot be recalled. The amount of Scrollback that can be saved in memory is determined by the memory hardware configuration of the computer. For more detail see the Index: *Scrollbar; size*.

To choose Scrollback when you are online and connected to a system host, press *COMMAND-Z* or *COMMAND-ARROW*. To enter Scrollback when off line, just press any *ARROW* key. When you first enter Scrollback, the contents of the current screen will be displayed. Pressing the *Up ARROW* again causes the screen to scroll back one page (screen of text) while the *Down ARROW* will scroll forward one page. Depending on the amount of text you have in Scrollback and the computer's memory, data from the current screen back to the ProTERM start up screen will be available for viewing. The Left ARROW and Right ARROW scroll up and down one line at a time while the numbers "1" through "9" position to various points within Scrollback ("1" positions to the oldest data at the top, while "9" positions to the most recent text at the bottom). When you are finished viewing Scrollback, press *ESCAPE* to return you to the most current screen or ProTERM's Main Menu if you are off line.

Scrollbar can also be used while off line or online, but when using Scrollback while online, the remote host system is waiting for input. If you stay in Scrollback too long, the remote system may time-out and terminate your call. While in Scrollback, ProTERM attempts to suspend all incoming data. However, service being used does not understand the standard commands, data continues to come in, and only about 512 bytes (characters) will be saved.

Practice transferring files.

Protocol defined.

To make transfers easier, see the Index: Default Pathnames.

Need More?

The information above may help you enough to serve all of your telecommunications needs, and maybe you just need to gain proficiency in accessing online text messages, sending and receiving Email and perhaps some research. If you need more details on the above mentioned features, look in the Index under the items of interest. The rest of this tutorial deals with transferring files between computers.

Send and Receive A File — Practice Session

The Meaning of Protocol

The word “protocol” is often used in telecommunications, and it may not be a familiar word. Protocol is a name associated with a particular method of file transfer. As noted below, a protocol is just a set of rules both sides understand and agree to follow. Moms and dads, and our governments all have rules (protocols). ProTERM handles several different protocols for transferring files, you only have to choose the protocol that will be available on both systems at the time of the file transfer.

Protocol; *n* a: a code describing strict adherence to rules b: a set of conventions governing the formatting of data in a communications system c: both sides understand and use a particular set of rules.

Telecommunications must be very exact and precise and the protocols are the rules of governing, or maintaining the order; sequence, timing, format, error control and order by which data is exchanged, and how that information travels between computers. Simply stated, when two people attempt to communicate, they cannot both talk at the same time, they follow a protocol.

The Names of Protocols used by ProTERM 3:

Zmodem	Ymodem	Xmodem	Kermit
	Ymodem-G	Xmodem-CRC	ASCII
	Ymodem-4K	Xmodem-4K	

Each of these protocols follow specific rules on how data file transfers are handled. For more details and history see the Index: *Protocol*. Also, the order of the listing of the above protocols, the columns from left to right, roughly suggests the ease of use and popularity of those protocols.

Practice Sessions

Using a protocol transfer to receive a file from a remote system is a fairly simple procedure, but the first time you try a file transfer, you may think otherwise. The confusing part is knowing the exact command sequence of ProTERM’s file transfer procedure and relating these procedures to those of the host system you’re calling. Eliminate some of this confusion and frustration by practicing ProTERM’s operations of sending and receiving a file before you ever make a call. You can press all the keys and go through the scenario just as if you were online and connected to a host. ProTERM will let you play the roll to the end and then show the “File was not transferred successfully” message (this happens because you were not actually connected to a host and the file couldn’t be transferred). Practice these routines until you feel comfortable and it will ease the tensions when you have your first online session.

Send (Upload) a File – Practice

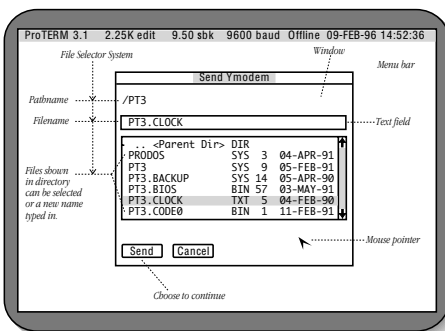
To begin this practice session, you should be at the *Main Menu* in ProTERM 3. Press the COMMAND key down and then press the “S” key. A pull-down window will show all of the protocols available for that operation.

Send
ASCII
Xmodem
Xmodem CRC
Xmodem-1K
Xmodem-4K
Ymodem
Ymodem-G
Ymodem-4K
Zmodem
Kermit

Let’s go through a scenario where you are off line, but pretend you are connected to the InTrec BBS. Pretend you have a file you want to share with others, and we’ll use an example where you upload (send) this file to the InTrec BBS file library. Let’s also assume you’ve already made the call, reached the InTrec Main menu and entered the `&` command to get to the InTrec BBS file transfer “library” area. You would have also instructed the InTrec BBS that it should prepare to receive a file from you. These actual steps are covered later in this chapter, but since this is a practice session to familiarize you with ProTERM, these are the steps:

- 1 Press *COMMAND-S*. A pull-down window appears with a list of the file send protocols.
- 2 To easily choose one of the protocols, press the first letter of the name of the desired protocol. Example, press *Y* which chooses Ymodem on the protocol list, and press the RETURN key.
- 3 Assume you will send a file named “PT3.CLOCK” from the ProTERM disk. Following the above scenario, you should see a window named *Send Ymodem*.
 - 1 Make sure the ProTERM disk is in one of your drives, either type */PT3*, or choose *<Parent>* until you see */PT3*, and press the RETURN key.
 - 2 The */PT3* files will list. Select *PT3.CLOCK* and press the RETURN key. See the illustration *File Transfer Window* below for an example.
 - 3 Press the RETURN key. The drive with the ProTERM (*/PT3*) disk should show that it is being accessed and then you should see a list of the files on that disk.
 - 4 Using the ARROW keys, choose *PT3.CLOCK* and press the RETURN key. If you prefer, you can type the filename *PT3.CLOCK*, it works either way.

NOTE: If you prefer to let ProTERM find the disk and the file, choosing *<Parent Dir>*, this causes ProTERM to search upward and shows the volumes and directories on your disks—try it now. If necessary, choose *<Parent Dir>* again until you see the “*/PT3*” disk online as one of the choices in the file selection window. For more detail on how this works, see the Index: ProDOS. *<Parent>* chooses upwards to the next level and *<Select>* chooses downwards. See the Index: ProDOS for details.



File Transfer Window

- 5 Press the *Send* button (press the RETURN key to choose the Send button, and then press the RETURN key again to “press the button”) to begin the transfer.

6 While the file is being transferred, ProTERM will display a status window (see the illustration), with information regarding the status of the file transfer.

Because this is a “mock” file send, ProTERM will time-out with a message stating this file transfer was aborted. This is due to excessive errors without progress, because you were really not connected to a host service and ProTERM lets you know that the file transfer was aborted. Press the RETURN key or ESCAPE, to get back to the Main menu. For more information and detail, see the *IndexFile; transfer*.

NOTE: The Download and Upload Transfer and Status windows have the same appearance, except one shows info on outgoing files and the other shows info for incoming files, so to conserve space, only the Receive window is shown as an example. In addition, with minor exceptions, the example windows are representative of most all of the protocol Send AND Receive windows and are generically referred to as “the transfer windows” in this discussion.

Receive (Download) a File — Practice

NOTE: Some of the detail that was already discussed above is omitted in this part tutorial. To get the full picture, see the notes above on practice file Sending.

To begin this practice session, you should be at the *Main Menu* in ProTERM 3. Press the COMMAND key down and then press the “R” key. A pull-down window will show all of the available protocols.

Just like the Send File scenario above, you are off line, but pretend you are connected to the InTrec BBS. You have a file you want from the InTrec BBS file library and you would like to download (receive) this file and save it to a disk on your computer. Let’s also assume you’ve already made the call, reached the InTrec Main menu and entered the “X” command to get to the InTrec BBS file transfer “library” area. You would have also instructed the InTrec BBS that it should prepare to send a file to you. These actual steps are covered later in this chapter, but this is a practice session to familiarize you with ProTERM.

Format a Disk

To begin this practice session we will need a formatted disk named /DATA:

- 1 Place a new disk, or one which can be erased, into an available drive.
- 2 Hold the COMMAND key down and press F to pull down the File menu. Release the COMMAND key.
- 3 Press F again to choose Format from the pull-down menu, and press the RETURN key.
- 4 Choose the drive with the disk to be formatted, from the list, and press the RETURN key.
- 5 Type the word /DATA, and press the Format button.
- 6 If it is a new blank disk, the disk will begin formatting. If the disk was previously formatted you will see an alert message asking for permission to format.

NOTE: The Download and Upload Transfer and Status windows have the same appearance, except one shows info on outgoing files and the other shows info for incoming files, so to conserve space, only the Receive window is shown as an example. In addition, with minor exceptions, the example windows are representative of most all of the protocol Send AND Receive windows and are generically referred to as “the transfer windows” in this discussion.

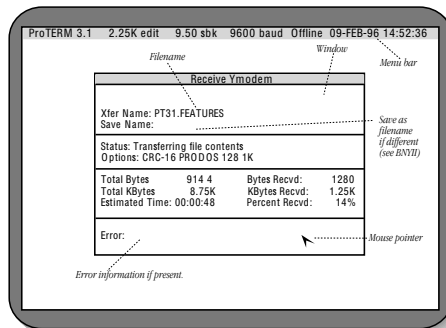
Receive – Practice Cont:

- 1 Press *COMMAND-R*. A pull-down window appears with a list of the file send protocols.

- 2 To easily select one of the protocols, press the first letter of the name of the desired protocol.
- 3 Press Y and press the RETURN key.
- 4 Following the above scenario, you should see a window named *Receive Ymodem*.
- 5 Type */DATA* and press the RETURN key.

NOTE: If you prefer to let ProTERM find the disk and the file, choosing <Parent Dir>, this causes ProTERM to search upward and shows the volumes and directories on your disks—try it now. If necessary, choose <Parent Dir> again until you see the “/PT3” disk online as one of the choices in the file selection window. For more detail on how this works, see the Index: ProDOS.

- 1 ProTERM attempts to find and access the disk named */DATA*.
- 2 Press the RETURN key twice to press the *Recv* button.
- 3 A Receive Ymodem window appears showing the status and progress of the transfer.



Transfer Status Window

If you were really connected to a host and had prepared the host to send a file, the file would transfer at this point. Since you are not, ProTERM will note lack of progress, time out and show an alert message to that effect.

Call the InTrec BBS For Online Experienced & Practice

Now that you have read the above steps and are an expert wanting to practice your new talent, try your expertise real-time. Call the InTrec BBS, go to the file libraries and when you get to the main command prompt of the InTrec BBS, follow the directions shown below to arrange for the file transfer. Then go through the steps you have been practicing and find the satisfaction of moving a file from one computer to another. The InTrec BBS is available anytime, and you can call at any speed from 300 to 14,400 bps. Call the least expensive time for you, like late at night or early morning or weekends. Check with your long distance carrier, the call could cost a lot less than fifteen cents per minute. Ten minutes is a lot of time online and you can do some serious experimenting for less than the cost of a burger and fries — try it.

Example of a transfer library menu.

NOTE: See the above mock file Send and Receive tutorial for practice before you call.

Main Command (?=Help):

Example of a system's main prompt.

**InTrec BBS Main Menu -
(List of supported commands)**

InTrec BBS Main Menu — (List of supported commands)

B	Goto the Bulletin Boards	R	Read Your Email
G	Global QuickScan	S	Send Mail
T	Terminate Session	F	Feedback to SysOp
<hr/>			
*	News & Current Information	H	Detailed HELP Files
I	ProTERM Information	D	Display Phone Number
U	See the User List	E	Examine Your System Stats
P	Change Your Password	X	Goto the File Transfer Libraries

[XXmins left]Main Command (?=Help): X

"X" is entered at the Main Prompt to enter the file transfer area.
The screen changes here and Shazam! You're in the file transfer area.

Example of a transfer library file list.**Library #1: Main Transfer Area**

#Name	Type		Size	Date	Time	Dwnld
1.	PT3.FEATURES	TXT	10.0K	01-AUG-91	23:26	DL=9
2.	ICONED.GS.SHK	BIN	55.0K	30-OCT-91	17:21	DL=2
3.	PROTERM.ICON.SHK	LBR	1.5K	08-DEC-91	14:59	DL=5
4.	PT3.CHAT2.BXY	LBR	2.5K	06-MAY-92	19:39	DL=7
5.	PT31.FEATURES	TXT	9.5K	01-MAR-93	00:09	DL=9
6.	PT3REVIEW	TXT	12.5K	20-AUG-92	16:54	DL=8

[XXmins left][Library #1] Xfer (?=Help): _

Enter a QUESTION MARK "?" for Help.

Example of a Transfer menu.

##	Read file description. Just type the file number.
D	Show Directory of files.
SPACE	Stop Directory scroll.
J	Jump to another file library.
J?	List all Libraries available.
K	Kill (delete) a file you uploaded.
I	Enter information description about a file you uploaded.
U or R	Upload (command host to Receive) files from your computer.
V	View information about a file.
Y	Download files using Ymodem (Send a file to you).
X	Download a file using Xmodem (Send a file to you).
A	Add file to directory
G	Global new upload scan

- P Configure Xfer
- Q Quit to the Main Command Prompt (Exit Xfer).
- T Terminate this call (sign-off of the InTrec BBS).

[XXmins left][Library #1] Xfer (?=Help):_

Receive
ASCII
Xmodem
Xmodem CRC
Xmodem-1K
Xmodem-4K
Ymodem
Ymodem-G
Ymodem-4K
Zmodem
Kermit

Receiving – a File Real-Time

The information above covers the details from installing a system to practice file transfers. Now put this all together and actually transfer a file to and from your computer, we'll go through a real online session to make it all happen.

At this point we can assume you've successfully called the InTrec BBS, logged in and are at the Main menu. Enter a QUESTION MARK to call up the Help Menu and have experimented with navigation by using menu the host system menu commands to move around.

Note: the InTrec Main Menu shows this command:

"X Goto the File Transfer Libraries"

As a reference to the InTrec system commands and navigation to the file Libraries, "L" and "X" are the same command. Also, "X12" and "L12" are the same command and would take you directly from the Main menu to Library 12 on the InTrec BBS. Entering/ and then the number of the Library to jump (J4 for example) would take you to that Library. Enter "J?" for a list of the libraries available to you. When you see this list:

1. Main Transfer Area
 2. ProTERM Public Files Library
 3. ProTERM Macros Library
- Jump to Library (1-100 or ? for Library list) _

...enter the number of the Library and press the RETURN key. For example, you enter the number 2 and when RETURN is pressed, you jump (are moved) to Library 2.

Check the host menu to find the command to list the available Library areas. For the InTrec BBS enter a J? to see the Library list:

Library #2: ProTERM Public File Library

#	Name	Type	Size	Date	Time	Downloads
1.	PRINT.MARGINS	TXT	8.0K	22-SEP-92	18:47	DL=28
2.	PT31.DEMO3.5SHK	LBR	154.5K	24-JUL-92	20:06	DL=31
3.	PT31.FEATURES	TXT	10.0K	01-AUG-91	23:24	DL=10
4.	PT31DEMO525.SHK	LBR	166.5K	24-JUL-92	19:59	DL=9

[XX][Library #2] Xfer (Press ? for Help):

From the menu, you see that Y is the command to begin a Ymodem download on the InTrec BBS. Since plain Ymodem is a popular and an easy protocol to use, enter Y and press the RETURN key. The host should be ready to send files to you, and Ymodem will allow you to download several files (a batch) in one session. The prompt will look something like this:

Ymodem Download

Enter the name or number of a file you see in the list. For this example, you would enter 3 to download the file *PT31.FEATURES*. As noted, Ymodem will allow you to download several files as a batch, but try one for now. Press the RETURN key with no additional entries to finish the list and you will see a prompt something like this:

Start your Ymodem receive now...

This is the point where you started your practice session noted above. Instruct ProTERM to receive the file from the host. Press *COMMAND-R* and the Receive pull-down window will appear with a list of the file receive protocols. To easily choose one of the protocols, press the first letter of the name of the desired protocol *Y* and press the RETURN key. Place a formatted disk (see the Index: *Format; Disk*) named */DATA* in one of the available disks drives.

NOTE: If you have one drive and only 128K memory, you will have to work out the timing of when to remove the ProTERM (*/PT3*) disk and put in your */DATA* disk. ProTERM will need to provide instructions before the disk is removed as there is “extra” no space to store the instructions when there is minimal memory and one drive. ProTERM works better with at least two drives and is at its best with a minimum of 256K RAM.

You should see a window named *Receive Ymodem*. Type */DATA* and press the RETURN key.

As you begin typing */DATA*, you will see what you typed in the *text field* (see the Illustration File Transfer Window). Press the RETURN key. A window “Receive Ymodem” will open. The drive with the */DATA* disk should show it is being accessed.

NOTE: If you prefer to let ProTERM find the disk and the file, choosing *<Parent Dir>*, this causes ProTERM to search upward and shows the volumes and directories on your disks—try it now. If necessary, choose *<Parent Dir>* again until you see the “*/PT3*” disk online as one of the choices in the file selection window. For more detail on how this works, see the Index: ProDOS.

A window named *Receive Ymodem* will open. In the middle of the window, and *<Select>* is highlighted, press the RETURN key which will “select” the *Recv* button. Press the RETURN key again to start the file transfer to the */DATA* disk on your computer.

While files are being transferred, ProTERM displays a status window with information regarding the status of the file transfer. For more information, see the Index: *Transfer protocol*.

Let's See The New File!

After you have terminated your call, and you are at the ProTERM Main Menu, enter the ProTERM Editor (see the *Misc* menu). To open the new file, see the *File* menu and choose *Open*. A window titled “Open” will appear. Type */DATA* and press the RETURN key. The new file you just downloaded should be visible on the */DATA* disk. Select the file using the ARROW keys, and press the RETURN key. The file will open and you have completed your first lesson.

Summary

You have called a service, downloaded a file, and opened it with the most full featured word processors ever developed for telecommunications. Choose Print from the File menu, and Press the RETURN key to print the file. Try editing and saving the file under another name using the Save As command. For more information, see the Index: Editor.

Send a File – Real-Time

Follow the directions above for calling the InTrec BBS and type X1 to enter the InTrec practice library.

- 1 Enter the J1 command on the InTrec BBS to Jump to Library 1. The files in Library 1 will scroll and a prompt will be shown.
- 2 Enter the letter *U* to instruct the InTrec BBS you will be Uploading a file, and it will prepare to receive the file: Press the RETURN key to enter the command.

Upload File(s)

1. Xmodem
2. Xmodem CRC
3. Xmodem-1K
4. Xmodem-4K
5. Ymodem
6. Ymodem-4K

A protocol list is presented and since plain Ymodem is a popular and an easy protocol to use, choose plain Ymodem and press the RETURN key. The host should be ready to receive the file:

Upload Files (Y/n)

Enter Y and press the RETURN key and you will see this prompt:

Start uploading now...

At this point you have just over 30 seconds to inform ProTERM to start the file upload from the InTrec host. After that, this service times out and returns to its normal prompt. No harm, if it times out, start over again and chalk it off to practice.

Instruct ProTERM to send the file to the host. Press *COMMAND-S*. A pull-down window appears with a list of the file send protocols. To easily select one of the protocols, press the first letter of the name of the desired protocol. Press *Y* and press the RETURN key. Assume you will send a file named "PT3.CLOCK" from the ProTERM disk. Make the ProTERM disk available in one of the drives. Following the above practice scenario, you should see a window named *Send Ymodem*. Type */PT3* and press the RETURN key. With the ProTERM disk in the drive you will see a list of files, select *PT3.CLOCK* and press the RETURN key and the file will begin to transfer. See the illustration below *File Transfer Window* for an example.

Enter T to Terminate

To terminate the call, enter T which is the command for Terminate, and enter the Y to answer Yes to end the session. ProTERM will automatically "hang up" the modem and take it off line. At this time you can use the voice phone normally to receive calls or call out. The modem can be left plugged in and turned on and it will not interfere with normal phone use.

NOTE: Anytime you see an upper case letter and lower case letter together in a prompt, example; Y/n, this means if the RETURN key is pressed, the upper case letter, "Y" in this example, is the default command provided by the called host, and is automatically selected by pressing RETURN.

Receiving and sending Email

Also see the Index: Scrollback: Minimizing Online Time

The Reply Format filter in the ProTERM Editor edit menu is an extremely useful ProTERM feature. Reply Format works like a power tool doing most of the work for you when it creates a special format using text from the original message. Reply formatting has special markings that clearly shows the quoted text, showing that it is separate from your reply. This formatted text provides a reference for the receiver of their message, reminding them of their previous remark by showing the text that prompted your reply. Here's how it works:

- 1 Make sure the text to be reformatted is flush with the left margin, or it will not react to the formatting procedure. Depending on the amount of text, you can either place the cursor just right of the space and then use the DELETE key to edit the spaces out. For larger blocks of text, see the Index: Reply Format.
- 2 Select the text to reply to from their message in Scrollback, and paste it directly to the ProTERM Editor.
 - A- Selecting the text in Scrollback by holding the OPTION key down will using the arrow keys, or click-drag using the mouse.
 - B- Use the Copy to Editor command from the Edit menu (shortcut, press COMMAND+D after selecting the text in Scrollback).
- 3 Press the ESCAPE key to return to ProTERM's Main Menu.
- 3 Press COMMAND+M to pull down the Misc menu. Choose Editor to enter the ProTERM Editor (shortcut, press COMMAND+E at the Main Menu)
- 4 Select the text to be formatted in the ProTERM Editor by placing the cursor above or below the text and while holding the OPTION key down, use the ARROW keys to select the text or use mouse to click and drag. For details, see the Index: Select; text; editor.
- 5 Move the cursor just above your reply and choose Paste from the Edit menu (COMMAND+V).
- 6 Select the text again and choose Reply from the Edit menu to convert the text to Reply Format.

NOTE: For more details on how to use Reply Formatting, see the Index: *Reply*.

One or several messages can be prepared in the ProTERM Editor.

Sending a Single Message

As this is probably your first experience at this, type one message in the ProTERM editor, call the service, navigate to where the message is to be sent, and at the point where you would normally begin to type your message online at the host's editor prompt, press OPTION+S to send (upload) the text directly from the ProTERM editor.

Sending Multiple Message in a Session

If you wish to send several messages in one session, create all of your messages in the ProTERM editor, call the service, navigate to where the first message is to be sent, and at the point where you would normally begin to type your message, press COMMAND+E to enter the ProTERM editor. Select the text you want to send using selection techniques mentioned above and press COMMAND+D to "dump" the selected text to the host's message editor.

When the message is finished uploading, press the ESCAPE key to get out of the ProTERM editor and return to the host's editor (the terminal or online screen).

Here are the steps by the number:

- 1 Choose Editor from the Misc menu (COMMAND+E).
- 2 Highlight the reply you want to send (you can use the pointer to click and drag, or CONTROL+C and the ARROW keys).
- 3 Choose Send ASCII from the File menu (COMMAND+D).
- 4 Adjust the Send ASCII parameters, if necessary, select Send and press RETURN.

This will send your reply to the remote system far faster, easier and with more perfections and satisfaction than you could ever type it into the hosts's editor while online.

Continue the above described process until all of your replies have been sent. Terminate from the system and your work is complete. You may want to choose Save from the ProTERM editor File menu, and save the file to disk. You can then clear the text from the ProTERM editor by choosing Close from the File menu.

Utilizing Paste to Modem

Another great Scrollback feature is the ability to copy and paste to the modem port. This process is described in the following example:

You have just called a favorite online host, perused the library files, and you see several files you wish to download. Select and Paste to Editor, the list of files from ProTERM scrollback to the the ProTERM editor using the commands explained earlier in this chapter. Edit (delete unwanted text, add back what may be needed) the text in the ProTERM editor until it contains the exact file identification information you need. When you're ready to send the information to the host, select the text, and choose Copy from the ProTERM editor's Edit menu which places the text in the ProTERM clipboard file. Press the ESCAPE key to return to the terminal mode that shows the screen containing the host's prompt.

TIP: Use COMMAND+D to quickly and easily "dump" all of the information in the ProTERM editor directly to the host. This sends the all of the text in the ProTERM editor directly to the host at the cursor.

At the prompt where the host asks you to write the filename information, choose Paste from the Edit menu. This will paste the contents of the clipboard at the cursor in the terminal window. This also works if you are sending a letter to someone and they have a complex name or number address. Just cut and paste the information string from Scrollback! If it is long or has other extraneous characters on the same line, paste the line to the Editor, re-select only the needed text, Copy it to the clipboard and its ready to paste. This process is referred to as pasting through the modem port. For more details open how to use this feature, see the Index: *paste*.

Quitting ProTERM

To quit ProTERM, press COMMAND-Q. Choose the OK button, ProTERM will quit and place you at the "ProDOS Quit Code." From here you can run other applications. More information on the *ProDOS Quit Code* is available in the "ProDOS reference Manual" published by

Apple Computer, but one of the most complete help files written in layman language on the use of ProDOS 8 is the ProDOS chapter in this manual.

NOTE: The InTrec BBS is a support BBS for the products of InTrec Software. Whenever new information is available about InTrec products, it will be available on this system first.

Next Steps

Also see the Index for:

Macros: AutoLearn: Genie and CompuServe.

Replicating Systems

The systems you call may be very similar and instead of creating each new system individually. It may be more convenient to make one system that generically matches your needs, and then replicate it. You can then make the needed changes in the copied system file, such as name and phone number, and you're ready to call the new service.

The easiest way to do this is to use the ProTERM *File - Copy* command to copy the files FROM the PT3.DIAL directory, TO the PT3.DIAL directory — REALLY!

This is how it works: When ProTERM copies files to a directory where they already exist, it can allow you to copy over the existing files, but by default, ProTERM allows you to rename the files. So a file named "PTD.INTREC" would be renamed as PTD.JIMSBBS as it is copied. Copy the number of files needed to create your replicated systems and then make the individual changes.

There are just a couple of rules that must be followed exactly.

- Dialing filenames MUST begin with *PTD*.
- The total numbers of the characters in the name cannot exceed fifteen.
- Only periods are allowed for name separation or punctuation. See the the Index: ProDOS; names for more details on proper ProDOS names.

Reboot ProTERM when finished, and each of these new files will be a new system but they will all have the same name in the *Dial List*. This is not a problem. Enter each system and look at the name at the bottom of the window:

Filename: PTD*systemname*

The replicated system will have the new name you entered when the files were copied. TAB to the name field and edit the *System Name*, *Phone Number*: and any other specific parameters needed for your new system.

Customizing the Dial List

As your Dial list grows, you may want to rearrange the order of names. The Names can be edited and changed at will. The list is shown alphabetically and inserting different letters of the alphabet in front of the name in the list will change the relative arrangement of the list. Non-alpha characters for example: dollar, percent, pound, tilde, exclamation and any others can be placed in front of the system's name. Most non-alpha characters come before (a few come after) the alpha characters and can cause these names to be alphabetically arranged at the top of this list, if used as first characters (see the hierarchical arrangement in the ASCII

chart at the back of this manual). Leading the name with a number or other than an alpha character will also cause it to place accordingly in the "alphabetized" list.

Default Service

You may have one service you prefer to be the default service, or the one that is always selected when you enter the Dial List.

- 1 Choose the service by highlighting it in the list.
- 2 Press the RETURN key to open the window's Edit System Params window for that service.
- 3 Press ESCAPE to return to the Main Menu.
- 4 Press COMMAND+M to pull down the Misc menu.
- 5 Press to choose Preferences and press the RETURN key to open the Preference window.
- 6 Note that the Save button is selected. Press the RETURN key to press the Save button.
This saves all recent preference changes made in ProTERM during this session.

Return to the Main Menu and press the D key to pull down the Dial menu. The service you selected as your default service is selected and ready to dial.

Print a ,Menu from a Called Service Directly from the Screen

This neat trick can help navigate unfamiliar services. When you are online with the called system and request the help menu or any other information of interest and it is on the screen, press hold the CONTROL and OPTION keys, and then press the letter P keys to print an image of the screen. See Index: *Screen print*.

Listing a Library's Files

When you enter a host system's library area, some automatically scroll a directory of files and some do not. You may have to enter a command to request the directory of files. Use "?" to see the Library Menu for the directory listing command. To see the Directory list on the InTrec BBS enter a D and press the RETURN key.

Print a Screen of Information

Pressing CONTROL+OPTION+P prints the screen being viewed. This can help you work with online help menus, file directory lists and other items of reference.

Delete a System

"House cleaning." To delete a service:

- 1 Select the system from the Dial list.
- 2 Choose the *Params* buttons.
- 3 Choose *Delete* and press the RETURN key.
- 4 Choose *Delete* when presented with the prompt "*Do you really want to delete this system?*"

Running a Sample Macro

A macro is a script, a set of instructions, a string or phrase of commands, which can be invoked with a keystroke to perform a set of complex tasks or many keystrokes with just a single keystroke. The file "PT3.CLOCK" is placed on the ProTERM disk as a kind of "show off"

**How to run
PT3.CLOCK.**

example of what a macro file can do. This example does require a clock in your computer, or it cannot work. The file is just a text file which you could load into the ProTERM Editor and explore and play with. For more on this see *Index:Macro*.

To run PT3.CLOCK, from ProTERM's Main menu, choose *Macro File* from the *Misc* menu and press the RETURN key. Choose *PT3.CLOCK* from the *Exec a Macro File* menu, and press the RETURN key. A full screen graphic digital clock appears and ticks off the seconds.

AutoLogon Macros

Let ProTERM do the repetitive tasks of calling your favorite host systems. See the *Index:AutoLearn* and *AutoLogon* for instructions on how to call and enter all of the log in information with a single keystroke.

Suggested Further Reading

For assistance with an on disk tutorial, See the *Index:Suggested Further Reading*.

Part Two

THE MAJOR FEATURES

The Editor

CHAPTER FIVE

Composing and working with text files is one of the most important parts of telecommunications and ProTERM's integrated editor/word-processor is designed especially for this purpose. The utility value of the ProTERM Editor becomes apparent when considered its features:

- Composing documents offline.
- "Cleaning up" data received from remote host systems.
- Opening files with wrong file types and then saving them as TXT (text) or AWP (AppleWorks word processing) files.
- Editing.
- General overall formatting or reformatting into "*> Reply Mode.*"
- Formatting.
- Adding margins.
- Stripping, or removing, or replacing unwanted CONTROL characters.
- FIND & REPLACE COMMANDS .
- Customizing TABs and document widths.
- Previewing and printing documents.
- Uploading (sending) entire or selected parts of a document to another computer with "on-the-fly" formatting.

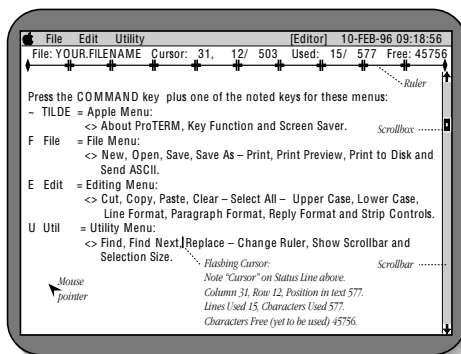
One of ProTERM's most popular features is its ability to send ASCII text directly from the Editor. This allows ProTERM to prepare, and custom format the text as it is being transferred. Because an entire document or just selected portions can be sent, it is possible to compose several letters in the Editor as one long document, call a remote host system and then select and send selected parts of text as individual letters or messages, one at a time.

About the Editor

The size of the ProTERM Editor memory (buffer) varies between 23K and 46K depending on whether the computer has the minimum 128K or more memory available. As ProTERM is booting up, all available memory in the system is examined. The amount of available memory is automatically allocated and used to its best advantage. To find the size of the Editor on your computer, choose *About ProTERM* from the Apple "K" menu. While the size of the

COMMAND = Open-Apple & OPTION = Closed-Apple.

ProTERM Editor may limit its ability to open extremely large documents, virtually any size document can be manipulated using Segmented Loading which is described later in this chapter.



**ProTERM Editor
Screen**

Using the Editor

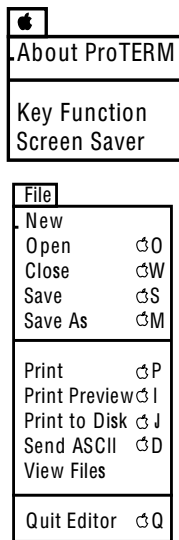
To use the ProTERM Editor, choose *Editor* from the *Misc* menu. The screen will change and the Editor MenuBar, Status Bar and TAB-ruler will be displayed at the top of the screen. These three lines contain information pertaining to the status and management of the Editor. Because the MenuBar (the topmost highlighted line containing the pull-down menus) is changed to Editor related commands, Terminal mode commands are not visible or available from within the ProTERM Editor. The Editor command pull-down menus replace the Terminal mode commands. The total number of keys available for keyboard commands is limited, so many keyboard commands available within Terminal mode have different functions within the Editor. For example, COMMAND-S is the *Send* command in Terminal mode but is the *Save* command in the Editor. For more information on keyboard commands, see the latter part of this chapter, the *ProTERM Quick Reference* and the *PROTERM EDITOR REFERENCE* cards. To exit from the Editor and return to the Terminal mode (Main Menu), press the ESCAPE key or choose *Quit Editor* from the File menu.

When the Editor is entered for the first time in a session, the MenuBar, Status Bar, TAB-Ruler and a blank screen are displayed. As you begin to type, the new text is entered at the position of the cursor (the flashing vertical bar). After each character is entered, the cursor moves to the right. When a line becomes full and the next full word will not fit on the line, that word “wraps around” and automatically moves to the start of the next line. Also see *Insert* and *Overstrike* Mode below for more information and alternate ways to enter text into the Editor.

Open, Save and Close a File

Choose the *Open* command from the *File* menu to open (load) a text file document stored on disk. When finished working on a document, choose *Save* from the File menu. To clear the current document and begin something new, choose *Close* from the File menu. Each of these commands are described in more detail later in this chapter.

NOTE: The ProTERM Editor does not have an “undo” command. When text has been deleted it is gone. You can mimic an “undo” command by using the Cut command (see the Edit menu) instead of Delete to remove data. In this way, data can be retrieved through the Paste command. See Cut and Paste later in this chapter.



The terms “Open” and “Load” are synonymous.

Editor Menu Bar Commands

The following section contains details on all of the ProTERM Editor commands available from the pull-down menus. Most of these commands are not for editing, but rather for functions such as opening, saving, printing, searching and sending (uploading or transferring an ASCII text file). Most text entry and editing commands are controlled via the keyboard and are described under Keyboard Commands later in this chapter.

The Apple Menu

The Apple menu is the only pull-down menu which remains the same in Terminal mode, Scrollback and the Editor. Refer to The Apple Menu chapter for complete information on the Apple menu.

The File Menu

The File menu contains commands which open and save documents as well as *Print* and *Send ASCII*. All of the commands in the File menu are listed below.

New

To clear the Editor of all text, choose *New* from the *File* menu. If the current document has not been changed, the screen is cleared immediately. If the document has been changed, ProTERM asks if the changed document should be saved before clearing the Editor. When the Editor is cleared, the Ruler automatically resets to TAB stops at every 8th column and the width equal to the Send Width parameter for the current System host entry in the Dial menu (see Index: *Parms*).

Open

The *Open* command opens a new document and places the text in the ProTERM Editor. If text already exists in the Editor, the one or more files being opened are inserted into the current document at the current cursor location. If multiple files are selected for opening, they are opened in the order they appear. Files normally appear alphabetically, but using COMMAND-X will show the files as they are stored on the disk. This command opens both text, AppleWorks and even non-text files (see below).

Opening Non-Text Files

Sometimes it is desirable to load non-text files into the Editor. This can occur if a text file “loses” its “TXT” filetype during transfer. ProTERM allows any file to be loaded into the Editor, regardless of its filetype. To open a non-text file into the Editor, choose *Open* from the *File* menu, select the directory containing the file to be opened and press CONTROL-Z (this displays all files including non-text files). Select the name of the file to open and press the RETURN key.

When a non-TXT file is opened, it either looks like a normal file (is totally readable) or it may contain strange looking “garbage” characters. If the file does not look normal, then it is probably not a text file. To change the filetype to “TXT” choose *Save* from the *File* menu. The Save command writes the file with the new filetype as specified (TXT or AWP) in the Save window. Take care when using this procedure, do not use the Save command on a non-text file unless you’re sure the file should be saved as a “TXT” or “AWP” file. Also see the Set File Info command in The File Menu chapter for another method of changing filetypes.

The *New* and *Close* commands are identical.

Filetypes: TXT = text & AWP = AppleWorks Word Processing.

Close

To clear the current document from the Editor, choose *Close* from the *File* menu. If the current document has not been changed, *Close* clears the Editor immediately. Otherwise, it allows the document to be saved prior to clearing the Editor.

Save

To save the current document (the file in the Editor), choose *Save* from the *File* menu and the document will be saved to disk using the filename displayed in the Status Bar.

If there is no filename shown in the Status Bar, (on the left just next to *File*), the *Save As* command is automatically chosen. Typing a filename and pressing the RETURN key will choose the *Save As* button.

If *Save* is chosen while text is selected, then the *Save Selection As* window is displayed, see below: *Save As* and *Save Selection As*.

Save As

The *Save As* command allows the current document to be saved using a filename of your choice. Choose *Save As* from the *File* menu, select the filetype (“TXT” or “AWP”) and press *Save As*. If a file of the same name already exists, ProTERM prompts you to *append* to, or *Delete* the existing file. If *Save As* is chosen while text is selected, then the *Save Selection As* command is automatically used (see *Save Selection As* below).

Save Selection As

Save Selection As, saves just the current selected text in either a “TXT” or “AWP” file. To save the current selection, choose *Save* or *Save As* from the *File* menu while the selection is highlighted. When the *Save Selection As* window is displayed, enter the filename, select the filetype (“TXT” or “AWP”) and press *Save*. If a file of the same name already exists, ProTERM prompts you to *Append* to or *Delete* the existing file.

Print

The *Print* command prints the whole current document or just text selected within the document. If the *Print* command is chosen while text is selected, then only the selected text is printed, otherwise, the entire document is printed. To print a document or selected text, choose *Print* from the *File* menu, adjust the print parameters if needed and press *Print*. Normal parameters are already set up in this window and unless the way the page is printing does not suit you, no changes are needed. To cancel printing, press ESCAPE. See *Printing* and *Dot-Commands* later in this chapter for more information on print formatting.

Print Preview

Print Preview displays the current document or selected text as it would look if it were printed. All formatting, including *Dot-Commands*, page breaks and many special print modes are displayed as “What You See Is What You Get” (WYSIWYG). Attributes which would change the printed characters, such as underline and bold type do not show. The entire document is previewed unless a portion of the text is selected, in which case just the selection is previewed. To preview a document or selection, choose *Print Preview* from the *File* menu. Within the preview display, press:

Line	Scroll one line at a time.
Quad	Scroll four lines at a time.
Half	Scroll 10 lines or one half page at time.
Page	Scroll twenty lines or one page at a time.

Print Preview is a viewing command and only scrolls forward. Press Cancel or ESCAPE to exit Print Preview and return to the Editor.

Print to Disk

The *Print to Disk* command formats the current document or selection as if it were to be sent to the printer, but the formatted file is saved to disk. If Print to Disk is chosen when text is selected, only the selection is saved (printed to disk), otherwise, the entire document is saved (printed to disk). To print to disk, choose *Print to Disk* from the *File* menu, enter a name for the file and press Save As. If a file of the same name already exists, ProTERM prompts you to Append to or Delete the existing file.

The file saved by the Print to Disk command contains RETURN characters at the end of every line and all Dot-Commands are processed and removed. The Print to Disk command is normally used to create files which are subsequently uploaded in their formatted form with one of the file transfer protocols. While the Send ASCII command can format documents “on-the-fly”, protocols such as Xmodem cannot. The protocols transfer a file exactly as it is saved, Dot-Commands and all.

Send ASCII

As previously mentioned, one of ProTERM’s more powerful features is its ability to send files directly from the Editor, formatting them as they are sent. The *Send ASCII* command sends the current document or selection to the remote host system performing formatting “on-the-fly.” To send a document or selection, choose *Send ASCII* from the *File* menu, change the parameters if needed and press Send. To cancel the send, press ESCAPE. For more information on file transfer and Send ASCII parameters see the Index *Send ASCII*.

View Files

The *View Files* command appears in the File menu for both the Editor and Terminal mode. A complete description of this command can be found under *View Files* in the File Menu Chapter. Other than the convenience of being able to work directly from the Editor, there is one major difference between using View Files from Terminal mode and from the Editor mode. The View command from the Editor mode allows text to be inserted at the cursor position, while the View command in Terminal mode will only Append text to the end of the current document. The commands are identical in all other respects.

NOTE: The View option is significantly faster from Terminal mode than from the Editor. For opening large chunks of data, it may be advisable to use this command from Terminal mode.

Quit Editor

Quit Editor exits the Editor and returns to Terminal mode. Quitting from the Editor does not alter or destroy the document in the Editor. Upon return to the Editor, the document will be unchanged. Choose Quit Editor from the File menu to return to Terminal mode. An alternate method to exit the Editor is to press the ESCAPE.

Edit	
Cut	⌘X
Copy	⌘C
Paste	⌘V
Clear	
Select All	⌘A
Upper Case	
Lower Case	
Line Format	
Paragraph Format	
Reply Format	
Strip Controls	

The Edit Menu

The Edit menu contains commands for operating on selected text and for working with the clipboard. All of the commands in the Edit menu are listed below.

Cut

The *Cut* command removes (cuts) the current selection from the document and pastes it to a memory area referred to as the clipboard. Each time Cut is chosen, the current memory contents of the clipboard are replaced. Select the text to be cut and then choose *Cut* from the *Edit* menu. Place the cursor at the point of insertion for the new text and choose the *Paste* command to paste data from the clipboard back into the document.

Copy

The *Copy* command copies the current selection to the clipboard. Each time Copy is chosen, the current contents of the clipboard are replaced. Select the text to be copied and choose Copy from the Edit menu. The Copy command does not change the original selection. Use the Paste command to insert data into the document from the clipboard.

Paste

The *Paste* command inserts the contents of the clipboard at the cursor location. Position the cursor to the insertion point and then choose Paste from the Edit menu. The current clipboard contents are inserted into the document to the right of the cursor. The clipboard data is not changed when the paste command is used and can be pasted multiple times.

Clear

The Clear command deletes a selection from a document. Because the ProTERM Editor has no “undo” command, once a selection is cleared, it is gone and cannot be retrieved. Using the Cut command instead of Clear is often a good alternative since Cut can be “undone” by following up with the Paste command. Using Clear has no effect on the contents of the clipboard.

Select All

The *Select All* command creates a selection of the entire document. After choosing Select All, any command which operates on a selection can be used. Choose Select All from the Edit menu to select the entire document.

Upper Case

The *Upper Case* command converts the current text selection to upper case. Select the text to be converted and then choose Upper Case from the Edit menu. The conversion changes all alphabetic text in the selection to upper case.

Lower Case

The Lower Case command converts the current text selection to lower case. Select the text to be converted and then choose Lower Case from the Edit menu. The conversion changes all alphabetic text in the selection to lower case.

Line Format

The *Line Format* command places a RETURN character on the end of each line in a selected block of text. The length of each line is dependent on the width of the Editor Ruler. Select the text to be formatted and then choose Line Format from the Edit menu. Any line which does not have a RETURN at the end will have one appended.

The method of dividing paragraphs using a single RETURN character to mark the end of a paragraph is not recommended for a document which will be Line Formatted. Since each line has a RETURN appended to it, each line takes on the appearance of an individual paragraph and all of the text tends to flow together into large continuous blocks which can be very difficult to read. A simple method for avoiding this problem is to use two RETURN characters between paragraphs. This separates the paragraphs by putting a blank line between them. The method of using two RETURN characters between paragraphs is commonly used in telecommunications because it is easier to read and a single RETURN character uses less disk storage space than multiple SPACE characters.

Paragraph Format

The *Paragraph Format* command selectively deletes RETURN characters from a text selection thus converting it from Line Format to Paragraph Format. After conversion, RETURN characters are present only at the end of paragraphs, not at the end of each individual line. Individual lines are “wrapped” at the right margin of the Editor until the end of the paragraph where they drop to the next line. To convert a selection to Paragraph Format, select the text and choose Paragraph Format from the Edit menu.

Paragraph Format removes RETURN characters from all lines except where two RETURN characters occur in succession or where a RETURN is followed by a non-alphabetic character. Both these conditions are considered end of paragraph indicators. Depending on the original formatting of the text, it may still be necessary to do some manual formatting after Paragraph Format is used.

Reply Format

A common convention used for referencing text in message replies includes a sample of the original text along with a designator to indicate the original author. The ProTERM Editor includes a special conversion routine which reformats the original text and inserts a small “header” at the start of each line. The header can be up to six characters long and usually includes a text separator character (such as “>”). To format text for message reply, select the original text and choose *Reply Format* from the *Edit* menu or press OPTION-R.

When text is converted to reply format, the selection is reformatted by shortening the right margin and inserting the reply header at the start of each line. Consider the situation where you want to reply to a post, but unless a question from the original post were associated with your reply, your comments may seem out of context. Using Reply Format to include a sample of the original message solves this problem. The following shows how a sample paragraph would be formatted with a reply header of “GS>”.

— Example of above text reformatted —

GS> When text is converted to reply format, the selection
 GS> is reformatted by shortening the right margin and
 GS> inserting the reply header at the start of each
 GS> line.

**Press OPTION-R for
Reply Format.**

Creative formatting.

Utility	
Find	⇧L
Find Next	⇧G
Replace	⇧H
Change Ruler	⇧R
Show Scrollbar	⇧T
Show Special	⇧Z
Selection Size	
Paste to Modem	⇧Y

A “string” is a sequence or phrase of characters.

The concept of “hard-spaces” can also be used to insert leading and trailing SPACE characters into the Reply Format. “SPACE” characters do not really “take up space” but pressing OPTION-SPACEBAR will insert a “real” “space” character. Inserting at least one SPACE character BEFORE the “>” will prevent replies from being reformatted on systems such as Delphi, GENie and CompuServe.

Reply Format can also help with creative formatting. For example, if all but the top line of a paragraph were selected and then reformatted using several space characters, the finished product would be a paragraph with a “hanging” indent.

NOTE: A customized Reply Format can be saved as a personal Preference. See the Index: Preferences; saving personal changes.

Strip Controls

Text files from other sources (such as those downloaded from an IBM PC oriented BBS) may include unwanted control characters imbedded throughout the file. These are generally visible as unfamiliar highlighted characters. Since control characters can cause unwanted problems especially if the document is printed, it is generally desirable to remove them. Select the text containing the control characters and choose *Strip Controls* from the *Edit* menu to automatically remove them. To only replace certain control characters, see *Find* and *Replace* later in this chapter.

The Utility Menu

The Utility menu contains commands for search and replace, changing the Editor width and toggling other assorted Editor options. All of the commands in the Utility menu are listed below.

Find

The *Find* command searches within the current document for a string of characters. The search can start from the current cursor location or the beginning of the document and the search string can optionally be made case sensitive. To find a string, choose *Find* from the *Utility* menu. Enter the search string including spaces, numbers and non-alpha characters. If upper and lower case do not matter in the search, place a check in the *Ignore Case* option. To start the search from the beginning of the document, place a check in Search from Start. Press the Find button and ProTERM will search for the string. If a match is found, the matching word is selected (highlighted). Otherwise, an alert message *The specified text could not be found in the Editor* is displayed. To find the next occurrence of the string, see *Find Next* below.

Find Next

The *Find Next* command finds the next occurrence of the “Find” search string (see above). The difference between Find and Find Next is, Find Next uses the last search string used by Find and always searches from the current cursor location. To do a complete search of the document using Find Next, move the cursor to the beginning of the document prior to using Find Next. To find the next occurrence of the search string, choose Find Next from the Utility menu.

Finding Control Characters

To search for a string containing CONTROL characters, use ProTERM's CONTROL character prefix notation using a CARET character as a CONTROL character indicator. For example, to search for a CONTROL-M, enter “ ^ M” (CARET-M) as the search string. The CARET indicates the following character should be seen as a CONTROL character. To search for the CARET character itself, enter “ ^ ” (CARET followed by SPACE). The SPACE occupies the spot where the CONTROL character would normally be.

Replace

The Replace command allows one string (set of characters) to be replaced by another. To replace a string, choose *Replace* from the *Utility* menu. All characters including SPACE and CONTROL characters can be used as search and replace characters. Enter the search string *what?* and replace strings *With what?* (each can be up to 20 characters long). While the search string is mandatory (there must be a text entry in the box), the replace string can remain blank. Entering a search string and no replace string has the effect of deleting that string from the document. Like the Find command, Replace allows the search string (upper/lower) case to be ignored with the option of being able to start searching from the beginning of the document or the current cursor location.

Replace has two different modes of operation. Press *Replace* to be prompted prior to the replacement of each string. Press *Repl All* (Replace All) to have all the strings replaced automatically. When Replace is pressed, each occurrence of the search string is displayed in the document and you are prompted whether or not to replace the string.

Finding and Replacing Spaces

There are many instances where it is desirable to find and replace SPACE characters. However, doing this is not as easy as it might initially appear. Unlike other characters, when SPACE is entered in a text field the SPACE character does not actually use a “space.” For example, choose *Find* from the *Utility* menu and enter three SPACE characters for the search string and press TAB. The search string appears to still be blank. This is because SPACE characters are normally used as separators between other characters, not as characters themselves.

To solve this problem, ProTERM supports the concept of “hard-spaces” which are SPACE characters which actually take up “space.” For example, choose Find from the Utility menu again. However, this time press OPTION-SPACE three times. Three checkerboard characters will be inserted into the search string. These characters function exactly the same as normal SPACE characters except they are visible. Hard-spaces can be used within both the Find and Replace command as well as in the Reply Format string.

Change Ruler

Change Ruler allows the document width and TAB stop locations to be changed throughout the document. The Editor Ruler width can be changed from a minimum of 20 to a maximum of 249 characters (columns) wide and TAB stops can be placed anywhere along the Ruler. To alter the Editor Ruler, choose *Change Ruler* from the *Utility* menu and the cursor will move from the document text onto the Ruler. Use the following keystrokes to change the Ruler:

ARROW keys	Move the cursor left or right.
SPACEBAR	Toggle TAB stops on or off.
CONTROL-D	Decrease the Ruler width.
CONTROL-F	Increase the Ruler width.
RETURN	Ruler changes are complete.
ESCAPE	Cancel Ruler changes.

COMMAND = Open-Apple & OPTION = Closed-Apple.

Changing the width of the Editor Ruler changes the width of the document. If the document is transferred as Send ASCII or printed, it is formatted according to the Editor Ruler width. Dot-commands imbedded within a document override the default Ruler width.

®-----+-----+-----+-----+-----+-----+-----+-----+-----®

The Editor Ruler

Show Scrollbar

The *Show Scrollbar* command toggles the display of the Scrollbar on the right side of the Editor window. To toggle the display of the Scrollbar, choose Show Scrollbar from the Utility menu. When the Scrollbar is visible, the “scroll box” or “thumb” (the little square box with a dot in the middle) reflects the relative cursor position within the document. Clicking in the shaded region above or below the scroll box moves the cursor up or down a page (one screen). Clicking on either of the Scrollbar Arrows moves the cursor up or down a line. Drag the scroll box to any part within the Scrollbar to position the cursor to a relative part the document.

A “>” may indicate a hidden character.

The Apple computer can only display 80 columns (characters) on a line and when the Scrollbar is visible, it covers two of these columns. As a result, text may extend off the right edge “under” the Scrollbar. A full 80 column wide document is still allowed, but ProTERM shows an arrow “>” pointing at the Scrollbar indicating text extends “under” the Scrollbar (text beyond the 78th column). These arrows are only indicators and are not part of the text.

The Scrollbar is visible by default. To make the Scrollbar invisible by default, turn it off with the Toggle Scrollbar command and then save the change as a Preference (see Index: *Preferences*).

Show Special

The *Show Special* command toggles a display of characters which are normally invisible in a document. When Show Special is turned on, the following characters become visible as noted:

SPACE	Shows as a dotted underline character.
TAB	Shows as a right facing arrow character.
RETURN	Shows as a down-and-left facing arrow character.

The Show Special display is toggled on and off by choosing *Show Special* from the *Utility* menu. The status of Show Special is saved whenever the Preferences are saved (see Index: *Preferences*).

Selection Size

Selection Size displays the size of the current selection of text in both lines and bytes (characters). This is especially useful when preparing text to be sent to a remote host system which imposes a size restriction on messages. Many remote host systems have message size limitations either expressed in lines (i.e., 100 lines maximum) or in characters (i.e., 4000 characters maximum). To determine the size of the current selected text, choose Selection Size from the Utility menu.

NOTE: Selection Size shows TAB characters as using one byte of memory. However, when using Send ASCII to send a document to a remote host system, TABs are often expanded to use up to 8 bytes of memory. See Judging Document Size later in this chapter for more information.

About the Clipboard

The clipboard is an invisible buffer (special memory area) used by the Cut, Copy and Paste commands to store small selections of text (approximately 2500 characters or 30 lines). Text is placed "on the clipboard" when the Cut or Copy commands are used. Text stays on the clipboard until the next Cut or Copy command at which time the old clipboard contents are discarded and replaced by the new. Text from the clipboard can be inserted into a document with the Paste command at any time. Attempts to Cut or Copy a selection larger than the clipboard's capacity results in an error message. In such a case, reduce the size of the selection and try again. The clipboard is not cleared between exiting and entering the Editor. However, the contents of the clipboard are lost upon quitting ProTERM.

Judging Document Size

The size of a selection as displayed by the *Selection Size* command or the size of a document as displayed by the Editor Status Bar is in raw bytes, (actual number of characters used). When such a file is sent to a remote host system, the size may increase due to "TAB expansion." If a remote host system imposes a message size limitation and you routinely use TAB characters in your documents, it is worth understanding how this expansion works.

A TAB character uses only a single byte (character) of memory in the Editor. However, when such a document is transferred to a remote system with the Send ASCII command, the TAB characters are converted to SPACE characters (since most host systems don't understand TABs). The amount of expansion is equal to the number of SPACES which a TAB causes text to be spaced over. For example, assuming there are TABs on every eight character positions, a TAB in one column turns into eight SPACE characters while a TAB in another column turns into four SPACE characters. As a result, when a document is transferred with the Send ASCII command, the TABs would be expanded into their respective SPACE characters increasing the size of the document. By keeping messages slightly under the maximum message size limitation, potential problems can be avoided. It is also possible to pre-format a document (change TABs to SPACES and other Send ASCII related conversion) prior to sending using the *Print to Disk* command (see the Index). After a document has been "processed" (printed to disk), opening the resulting document in the ProTERM Editor will show the correct and exact character count on the Status Bar.

Editing Wide Documents

Most text used in telecommunications does not exceed 80 characters per line. This is convenient because the Apple screen is only 80 characters wide. However, on occasion you may encounter or even need to compose documents with lines wider than 80 characters. Fortunately the Editor can handle documents with line widths up to 250 characters through a technique called "panning." The idea is, while the Editor can only display 80 characters of

the document at a time, it is possible to “pan” from side to side, thus changing the view of the document. Think of the text being stationary with the screen as a “sliding window” which moves across the text. Panning allows you to place the 80 character wide “editing window” anywhere along a 249 character line. If text goes “under” the Scrollbar or off the right edge of the screen, a right facing arrow “>” at the right edge of the screen “points” to the “hidden” text.

When the Scrollbar is visible, the effective width of the screen is dropped from 80 characters to 78 characters (the Scrollbar uses two characters). As a result, when the Scrollbar is visible, 80 character wide documents may also show the “>” to indicate the end of a line of text extends “under” the Scrollbar. Choose Show Scrollbar from the Utility menu to toggle the Scrollbar off and on.

There are two steps involved in working with wide documents. The first is to use the *Change Ruler* command to set the Editor Ruler (and thus the document) to the desired width. The Editor can handle documents from 20 to 250 characters wide. The second step is to decide whether to use automatic panning. In manual panning mode, it is necessary to press CONTROL-Q and CONTROL-W to pan the screen left and right (change the view of the document). As a default mode of operation for the Editor, the screen never pans of its own accord. In automatic panning mode, the screen is automatically panned so the blinking cursor is always visible. When the cursor is moved off the visible screen, the screen pans making the cursor visible again.

The panning mode preference is set by the Preference command in the Misc menu from Terminal mode (see Index: Preference for more information). By default, “Pan Editor on Cursor Movement” is set to *None*. That is, the screen does not pan when the cursor is moved off the visible screen. If you use documents wider than 80 characters, you may want to set this parameter to *Horiz* or *All*. The *Horiz* parameter forces panning only after horizontal cursor movement has moved the cursor off the screen. The *All* parameter forces panning anytime the cursor moves off the screen.

The following is an example use of wide documents: Many airline personnel download flight schedules and bid sheets from an online service. These documents are typically around 135 characters wide. By setting the Editor Ruler to the proper width, these documents can be viewed in their normal full-width perspective (versus having lines “wrap” at 80 columns). By sending special codes to the printer to enable condensed printing, the document can even be printed at full width (see Printing Wide Documents later in this chapter).

Removing Unwanted Rulers

Whenever the Editor saves, prints or sends a document, it checks to see if the document ruler is “standard” meaning the ruler is 80 characters wide and has TAB stops every 8 characters. If the width or TAB stops are different, then a copy of the ruler in the form of a Dot-Command is included with the document when it is saved, printed or sent. Normally, this is not a problem because the Print, Send ASCII, and Open commands all automatically extract the ruler from the document and use it for formatting. However, if such a document is saved and then opened using an application other than ProTERM or sent using a file transfer protocol, the ruler will be present as the first line of the document.

See example of the ProTERM Editor Screen earlier in this chapter.

```
.RRL-----|-----|-----|-----|-----|-----|-----|-----|-----R
```

A Dot-Command Ruler

Don't Save the Ruler

Some users prefer the ruler to never be saved with a document. This is not normally a good idea since the reason ProTERM saved the ruler was because it was non-standard (using a special width or TABs). If a document is saved without a ruler, when it is subsequently reopened, it is formatted to a width of 80 with TAB stops every 8 characters. If this action is desired, choose the Preferences command from the Misc menu in Terminal mode. Press the More button and disable the "Allow Editor to Save Ruler" option. This prevents the Editor from ever saving the ruler with a document.

Removing a Ruler

This procedure can be used to remove an existing ruler from a document resetting it to a standard width of 80 with TAB stops every 8 characters:

- Use the *New* command from the *File* menu. This removes any text in the Editor and resets the Ruler to normal.
- Press the RETURN key to insert a single blank line into the Editor. This step is important because it instructs ProTERM to use a new standard Ruler.
- Choose the *Open* command from the *File* menu, select the file needing its ruler removed and press Open.
- After the file is opened, press COMMAND-1 to move the cursor to the beginning of the file.
- If the document had a Ruler saved with it, the Ruler will be on the second line of the Editor. Use the CONTROL-X command twice, once to delete the first (blank) line and the second time to delete the ruler line and then save the document.
- The *Save As* window will open and the (new) document must be given a name. The document can be saved as the same name by just typing it in again.

The Editor Status Bar

The Status Bar is displayed on the second line of the screen anytime the Editor is in use. It contains simple statistics regarding the current document. The following explains what each status indicator actually means.

```
File:      Cursor:      0,      0/      0      Used:  0/      0  Free:  46333
```

The Editor Status Bar

File:

When a document is opened using the Open command, the filename is displayed in the *File* field. When the Save command is used, the document is saved using this filename. If the *File* field is blank, and the Save command is used, the *Save As* window opens to enable you to name the file being saved.

Cursor:

The cursor position is shown in bytes (characters) using three different measurements:

- The first field is the position of the cursor on its current line in spaces (columns) from the left margin. More correctly, it shows how many characters are to the left of the cursor on that line. When the cursor is at the first character position, this field shows zero (since there are no characters to its left).
- The second field is the line the cursor is on within the document. More correctly, it measures the number of lines above the cursor. When the cursor is on the first line of the document, this field shows zero. This field shows a correct line count regardless of whether each line is wrapped or each line has a RETURN character at the end.
- The third field is the current byte (characters) position within the document. More correctly, it measures the number of bytes before the cursor. When the cursor is at the beginning of the document, this field shows zero.

Used:

The Used field displays the total lines and characters (bytes) in the entire document:

- The first field is the total number of lines in the entire document. This field shows a correct line count regardless of whether each line is wrapped or has a RETURN character at the end.
- The second field is the total number of characters (bytes) in the entire document.

Free:

The *Free* field displays the number of characters (bytes) remaining until the Editor is full. This varies according to the amount of available memory in the computer. See the About ProTERM command for information on the amount of memory available to the Editor.

Keyboard Commands

The majority of the editing commands are controlled from the keyboard and consist of using the CONTROL, COMMAND, OPTION and ARROW key sequences. The keyboard commands are grouped according to function. The Quick Reference Cards also contain a complete summary of editing commands.

Cursor Movement Commands

The blinking cursor acts as a “pointer” showing where the next editing transaction will take place. If the cursor is moved to the top or bottom of the screen, the screen scrolls up or down respectively as the cursor moves further in that respective direction. If the Editor Ruler is set wider than 80 columns, some text may not be visible on the screen. When this happens, an arrow “>” indicates more text is present beyond the right edge of the screen (see *Editing Wide Documents* and *Scrollbar* above for more information). The following commands change the cursor position:

Left ARROW	Move left one character.
Right ARROW	Move right one character.
Up ARROW	Move up one line.
Down ARROW	Move down one line.
COMMAND-Left ARROW	Move left one word.
COMMAND-Right ARROW	Move right one word.
COMMAND-Up ARROW	Move to previous page (scroll up).
COMMAND-Down ARROW	Move to next page (scroll down).

CONTROL-R	Move to previous page (page up).
CONTROL-T	Move to next page (page down).
CONTROL-B	Move to the beginning.
CONTROL-E	Move to the end of the document.
CONTROL-A	Place cursor at beginning of current line.
CONTROL-S	Place cursor at the end of current line.
COMMAND-1	Move to beginning of the document.
COMMAND-2...8	Move to points between beginning and end.
COMMAND-9	Move to end of the document.
CONTROL-Q	Pan window left (does not move cursor).
CONTROL-W	Pan window right (does not move cursor).

Moving Within A Line

To move one character in any direction, press the appropriate ARROW key. Moving to the left at the start of a line places the cursor at the end of the previous line. Moving to the right at the end of a line places the cursor at the start of the next line. Holding down the COMMAND key while pressing one of the ARROW keys increases the range of the movement. The Left and Right ARROWS move backward and forward a word, while the up and down ARROWS move up and down one page. CONTROL-A and CONTROL-S move to the beginning and end of the line respectively.

Moving Within The Document

CONTROL-R and CONTROL-T provide a fast way to page through a document. They move up and down a page just as COMMAND-Up ARROW and COMMAND-Down ARROW do, but they are very fast because they do not scroll the screen. To move quickly through the document, hold down the COMMAND key and press "1" through "9". COMMAND-1 (or CONTROL-B) moves to the beginning of the text, while COMMAND-9 (or CONTROL-E) moves to the end of the text. COMMAND-2 thru COMMAND-8 moves to intervals between the top and bottom of the document.

Inserting Text

As you type, characters are inserted at the cursor location and the cursor advances to the right. When the cursor reaches the end of a line, you can either press the RETURN key to force the cursor to the next line, or continue typing and allow the Editor to wrap the text to the next line. When the Editor wraps a line, the line "breaks" between two words (this is referred to as "word-wrap").

CONTROL-G	Toggle between Insert and Overstrike mode.
TAB	TAB or move to the next TAB stop.
RETURN	Move cursor down to next line (mark end of line or paragraph).
CONTROL-P	Insert a CONTROL character at the cursor position.
CONTROL-F	Insert a space at the cursor position.
CONTROL-D	Delete a character at the cursor.
CONTROL-N	Insert a RETURN character at the cursor position.

Insert and Overstrike Mode

When entering text from the keyboard, the Editor operates in one of two modes: insert or overstrike. In insert mode (denoted by a flashing I-beam cursor), new text is inserted to the right of the existing text. Old text is never deleted or replaced by new text. In overstrike mode (denoted by a flashing solid block cursor), new text replaces old text as it is typed over. Overstrike and insert modes toggle by pressing CONTROL-G. Within either mode, CONTROL-F inserts a blank space at the cursor and CONTROL-D deletes the character at the cursor.

The RETURN key works differently in insert mode than in overstrike mode. In the insert mode, a RETURN character is inserted into the text at the point of the cursor and other text to the right of the cursor on that line is moved down to the beginning of the next line. In overstrike mode, the cursor moves to the next line, but a RETURN character is not inserted and the existing text is not moved. In either mode, press CONTROL-N to insert a RETURN character at the cursor, but leave the cursor in the same position.

Inserting Control Characters

Since typing CONTROL characters from the keyboard results in issuing commands directly to the Editor, (instead of inserting the characters), a special method is needed to insert control characters. For example, pressing CONTROL-A does not insert it into the Editor but rather moves the cursor to the start of the line (see *Cursor Movement Commands* above). To insert a CONTROL character into a document, position the cursor to the desired point and press CONTROL-P followed by the “letter” of the CONTROL character to insert. For example, to insert a CONTROL-A into the document, press CONTROL-P followed by A. To insert an ESCAPE press CONTROL-P followed by “[” (open bracket). The “Null” and “Delete” characters cannot be embedded in a document.

Deleting Text

The following commands can be used to delete varying amounts of text from a single character, up to an entire line. To delete more than a line at a time, see the *Clear* and *New* commands.

DELETE key	Delete the character left of the cursor.
CONTROL-D	Delete the character “under” the cursor.
CONTROL-V	Delete the current word. This command deletes from the position of the cursor to the end of the word.
CONTROL-Y	Delete from the cursor to the end of the line.
CONTROL-X	Delete the entire line.

The DELETE key is similar to the Left-ARROW except when it moves left, it deletes the preceding character. As the character is deleted, the cursor and any text to the right of the cursor moves left. CONTROL-D deletes the character “under” the cursor. The text to the right of the cursor moves left to fill the deleted character’s space, but the cursor does not move.

Selecting Text

Since many Editor commands operate on text selections, the ability to select text is very important. The Editor has several different ways to select text, both using the mouse and from the keyboard. Selections are displayed as highlighted text and consist of all the highlighted text contained therein. A selection must be at least one character long and can be as large as the entire document. After a selection has been highlighted, choose the appropriate menu command to operate on the selection.

Selecting Text from The Keyboard

ProTERM supports three different methods of creating selections from the keyboard. The first and simplest is to choose the *Select All* command from the Edit Menu. While quick and easy, it is not always helpful since it always selects the entire document. However, the *Select*

**COMMAND-A
selects ALL text.**

All command can be used to select ALL of the text and then while holding the OPTION key down the ARROW keys can be used to de-select a part of the text (see below).

NOTE: Holding the COMMAND key down during this operation, extends the range of the ARROW keys.

The second method is to hold down the OPTION key while moving the cursor with any of the cursor movement commands. The selection extends from the cursor location where the OPTION key was pressed to the cursor location where the OPTION key is released. To de-select selected text, release the OPTION key and press one of the ARROW keys.

The third method of selecting from the keyboard is to position the cursor to the start of the selection and use the CONTROL-C command to create an "anchor point." After creating an anchor point, use any of the cursor movement commands to highlight the selection in any direction. The selection extends from the anchor point to the current cursor location. To toggle the selection off, press CONTROL-C again.

Selecting Text with The Mouse

To select text with the mouse, position the mouse pointer adjacent to the first character of the text to be selected, click to start the selection, and drag to the last character of the desired text. As you drag, the selection is highlighted on the screen. When attempting to drag the pointer off the top or bottom of the screen, ProTERM scrolls the screen making more text available for selection.

To create large selections with the mouse, move the pointer to the first character of the desired text and click, positioning the cursor at that point. Next, hold down the OPTION key and position the Scrollbar to the page of text where the end of the selection should be. Place the pointer in the text at the end of the desired selection, click and then release the OPTION key. This technique allows large selections to be created very quickly.

Segmented Loading — Opening Large Files

Segmented loading can access huge documents.

Also see Open: non-text files.

ProTERM is unable to open documents which are larger than the Editor's memory. However, through the use of segmented opening, any segment or portion of a large file may be opened (up to the size of the Editor memory). To use segmented opening, choose *View Files* from the *File* menu, select the file to be opened and press *View*. *View Files* initially displays the first page of the file along with the choices: *Next*, *Prev*, *Goto*, *Edit*, *Done* and *Cancel*. Use the *Next*, *Prev* and *Goto* buttons to position to the first screen of text which should be loaded into the Editor. Press the *Edit* button and enter a number for the *Number of Pages to Copy*: of text to be loaded into the Editor (20 lines is considered one page or "screen"). After pressing *OK*, ProTERM opens as much of the text as fits into the Editor. When finished loading text into the Editor, press *Cancel* to return the Editor window. After the text has been edited, it can be saved to a file using the *Save As* command. By repeatedly using the *View Files* command to read a file, save it to a new name, then use *View File* to position to the next consecutive part, editing and then saving to the new renamed file and appending to it, it is possible to open and edit a very large file piece by piece. For more information, see *View Files* in *The File Menu* chapter.

Editor Command Summary

The following summary lists all the Editor commands divided by subject along with their COMMAND key equivalents (where applicable).

Opening and Saving Documents

- New Clear the Editor. Choose New from the File menu (COMMAND-W – “Close Window”).
- Open Load a document into the Editor. Choose Open from the File menu (COMMAND-O).
- Close Save the current document and clear the Editor. Choose Close from the File menu (COMMAND-W).
- Save Save the current document using the filename in the Status Bar. Choose Save from the File menu (COMMAND-S).
- Save As Save the current document under a new name. Choose Save As from the File menu (COMMAND-M).

Cursor Movement Commands

- Left ARROW Move left a character.
- Right ARROW Move right a character.
- Up ARROW Move up a line.
- Down ARROW Move down a line.
- COMMAND-Left ARROW Move left a word.
- COMMAND-Right ARROW Move right a word.
- COMMAND-Up ARROW Move to previous page (scroll up).
- COMMAND-Down ARROW Move to next page (scroll down).
- CONTROL-R Move to previous page (page up).
- CONTROL-T Move to next page (page down).
- CONTROL-B Move to the beginning of the document.
- CONTROL-E Move to the end of the document.
- CONTROL-A Move cursor to beginning of current line.
- CONTROL-S Move cursor to end of current line.
- COMMAND-1..9 Position within the document (1=start, 9=end).

Inserting Text

- Typing Insert or overstrike text into document.
- CONTROL-G Toggle between insert and overstrike mode.
- TAB Insert TAB and move with the TAB character.
- RETURN Insert a RETURN character and move to the next line.
- CONTROL-P Insert a CONTROL character into the text.
- CONTROL-F Insert a space to the right of the cursor (move text right and away from cursor).
- CONTROL-N Insert a RETURN character at the cursor (move lines down and away from cursor).

Deleting Text

- DELETE Delete the character left of the cursor.
- CONTROL-D Delete the character “under” the cursor.
- CONTROL-X Delete the entire line.

- CONTROL-Y Delete from the cursor to the end of the line.
 CONTROL-V Delete the current word.

Text Selection Commands

- OPTION Hold down to create or extend a selection by using the cursor movement commands or positioning and clicking the mouse.
- CONTROL-C Anchor the beginning of a selection.
- Select All Select entire document. Choose Select All from the Edit menu (COMMAND-A).
- Save Save a selection to a file. Choose Save from the File menu (COMMAND-S) while text is selected.
- Print Print the selection. Choose Print from the File menu (COMMAND-P) while text is selected.
- Print Preview Preview the selection with formatting. Choose Print Preview from the File menu (COMMAND-I) while text is selected.
- Print to Disk Format the selection and save to disk. Choose Print to Disk from the File menu (COMMAND-J) while text is selected.
- Send ASCII Send the selection to a remote system. Choose Send ASCII from the File menu (COMMAND-D) while text is selected.
- Cut Remove selection and place in clipboard. Choose Cut from the Edit menu (COMMAND-X) while text is selected.
- Copy Copy selection to the clipboard. Choose Copy from the Edit menu (COMMAND-C) while text is selected.
- Clear Remove selection from document. Choose Clear from the Edit menu while text is selected.
- Upper Case Convert selected text to upper case. Choose Upper Case from the Edit menu while text is selected.
- Lower Case Convert selected text to lower case. Choose Lower Case from the Edit menu while text is selected.
- Line Format Add RETURN characters and convert selected text to lines. Choose Line Format from the Edit menu while text is selected.
- Paragraph
 Format Remove RETURN characters and convert selected text to paragraphs. Choose Paragraph Format from the Edit menu while text is selected.
- Reply Format Insert a reply header at the start of selected lines. Choose Reply Format from the Edit menu while text is selected.
- Selection Size Display size of selection. Choose Selection Size from the Utility menu while text is selected.

Other Commands

- Change Ruler Adjust text width and TAB stops. Choose Change Ruler from the Utility menu (COMMAND-R).
- Display Special Display special characters. Choose Display Special from the Utility menu (COMMAND-Z).
- Toggle Scrollbar Toggle the display of the Scrollbar. Choose Toggle Scrollbar from the Utility menu (COMMAND-T).
- Print Print the document or selection. Choose Print from the File menu (COMMAND-P).
- Print Preview Preview the document or selection. Choose Print Preview from the File menu (COMMAND-I).
- Send ASCII Send the document or selection to remote host. Choose Send ASCII from the File menu (COMMAND-D).

- Quit Editor Exit Editor back to terminal mode. Choose Quit Editor from the File menu (COMMAND-Q or ESCAPE).
- Find Find a word or phrase. Choose Find from the Utility menu (COMMAND-L).
- Find Next Move to the next match during a find. Choose Find Next from the Utility menu (COMMAND-G).
- Replace Replace a word or phrase with a nother word or phrase. Choose Replace from the Utility menu (COMMAND-H).

“Parameters” = “values.”

COMMAND-P opens the Print Parameters window.

CPI = Characters Per Inch.

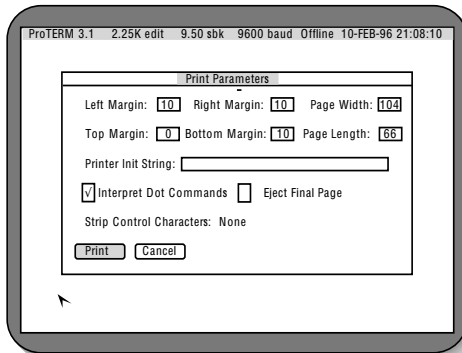
Printing

Printing from the Editor, Scrollback or Print File are all similar operations. In each case, after selecting the text to print and choosing the appropriate print command, a window of print parameters is displayed. These parameters control print options such as margins and page breaks. In addition, ProTERM supports a much more powerful method of print formatting called Dot-Commands. These allow sophisticated documents to be created and can include elements such as headers, footers, page numbers and margins. Dot-Commands are described in depth later in this chapter. To print a document, choose the appropriate print command, change the following parameters as needed and press Print.

Print Parameters

Left Margin

The Left Margin parameter controls how many character spaces the text will indent on the left side of the page when it is printed. A setting of 0 provides no indent at all, while a setting of 10, indents 10 character positions (one inch at 10 CPI). A setting of 12 indents one inch at 12 CPI.



Print Parameters Window

Right Margin

The Right Margin parameter controls how many character positions are left blank on the right side of the page when text is printed. A setting of 0 instructs the printer to print all the way to the right edge, while a setting of 10 leaves 10 character positions blank (one inch at 10 CPI).

NOTE: How the printer pin-feed guides are positioned right or left affects the margins. Check the printer's owner's manual.

Top Margin

The *Top Margin* parameter controls the number of lines the paper is advanced (left blank) from the top of a page. A setting of 0 starts the printing on the first line (at the position of the print head when printing begins), while a setting of 6 advances the paper 6 lines before printing. Usually printers advance the paper 1/6" for each line. For such printers, a setting of 6 leaves a top margin of one inch.

Bottom Margin

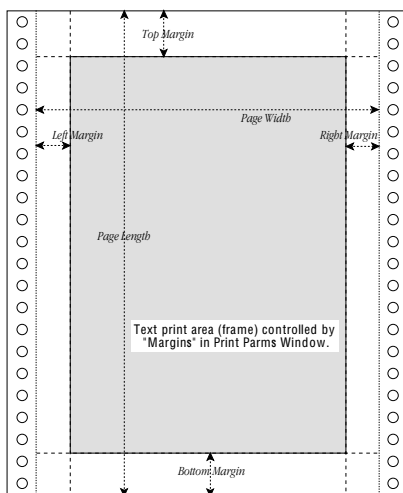
The *Bottom Margin* parameter controls the number of lines to be left blank at the bottom of a page. A setting of 0 prints to the bottom edge of the page, while a setting of 6 typically leaves a bottom margin of about one inch.

Page Length

The *Page Length* parameter tells ProTERM the total length of the paper in lines. To calculate the length of your paper in lines, you must know how many lines your printer prints in one inch and the length of the paper in inches. Most printers print at 6 LPI (lines per inch) and standard paper is 11" long. Multiply the LPI value by the paper length. For most applications, this is: 6 LPI multiplied by 11" for a total of 66 lines.

Continuous Printing (Without Page Breaks)

When both the top and bottom margins are set to zero, the printer prints continuously and does not advance (form feed) over the perforation (page break). When printing begins, the paper is not advanced. Printing begins at the point where the print head is set. When using continuous printing, *Eject Final Page* should be Off (see below).



**Page Margins as set
by Print Params**

Normal Printing (With Page Breaks)

Generally, the printer paper is manually advanced five or six lines above the print head before the printer is turned on. This presets a "header space" which appears on each successive sheet. Set the Top Margin to 0 and the Bottom Margin to 10 (or something close

depending on how much white space you like at the top and bottom of each sheet). As the printer advances the paper and comes to the 56th line (the last printable line), it “form feeds” the current sheet, skipping over the perforation and resumes printing on the next sheet. The Bottom Margin controls the space between “the last printable line” and how many lines you advanced the first sheet of paper when you started. To maintain the “header space” between print commands, Eject Final Page should be On (see below).

Why does this work? The page length is set at 66 lines (six lines per inch times eleven inches of paper equals sixty-six lines). With the paper manually advanced five or six lines prior to printing and the Top Margin set at 0, printing starts at the location of the print head without advancing any blank lines. Since the Bottom Margin is set to 10, ten lines are subtracted from the 66 available leaving 56 printable lines. When the printer finishes the 56th line, it advances 10 lines which takes it from the 56th line on the first page to the 5th line on the second page. From there, the whole process starts over again at line zero.

Sheet Feeder Printing

If your printer has a sheet feeder attached, then both the top and bottom margin parameters must be set. Normally, they are both set to 6 to allow a one inch top and bottom margin. In addition, Eject Final Page should be On (see below).

Printer Init String

The Printer Init String is sent to the printer prior to printing a document and can be useful for enabling or disabling printer options. For example to cause the ImageWriter II to print slashed zeros, put “`^ [D ^ @ ^ A`” in the Printer Init String field. The string is entered as normal text and CONTROL characters use CARET prefix notation (i.e., use “`^ M`” for RETURN). To make an ImageWriter print 17 CPI (135 characters a cross), enter “`^ [Q`” as a printer init string. For more information see Printing Wide Documents below.

Interpret Dot-Commands

While the page margins provide one mechanism for formatting, ProTERM also supports Dot-Commands which provide ways to emphasize text, control justification, print headers and footers, and much more. ProTERM’s Dot-Commands are a subset of those supported by AppleWriter II and its “Word Processing Language (WPL).” Unless the document you are printing contains Dot-Commands created by a word processor other than by ProTERM, this option should be left on.

Eject Final Page

The Eject Final Page parameter controls whether ProTERM advances a document to the end of the final page before it stops printing. This option makes the resulting printout easier to tear-off since it automatically positions the perforation at the tear off point when printing is finished. Otherwise, you must advance and align the paper manually after each print session.

Strip Control Characters

Some of the text coming from remote host systems contains invisible CONTROL characters. While these hidden characters do not bother ProTERM, CONTROL characters can send instructions to a printer and seemingly give it a mind of its own causing weird garbage to be printed. Often, when a printer starts printing unintelligible characters and going into and out of “special” print modes, form feeds and more, the cause is hidden CONTROL characters. When Strip Control Characters is set to All, no CONTROL characters are sent to the printer. Also see Index: Control; Character; removing.

**Also see
Embedding
Control
Characters.**

**Dot-Commands are
powerful format-
ting commands.**

Making Print Parameter Changes Permanent

If you have made changes to the printer options and want the changes to remain permanently, print at least one page to see if everything is correct. Then choose the Preferences command from the Misc menu in Terminal mode (this requires quitting from the Editor or Scrollback). Press Save in the Preferences window and the most recently used print parameters (excluding the Init String) are saved as future defaults.

Changing How the Printer Prints

While the print parameters and Dot-Commands provide a way to control how ProTERM formats text as it is sent to the printer, it is a different issue altogether to control how the printer prints. For example, while the print parameters control the number of characters and lines to be printed per page, they cannot control the printing font, the number of characters per inch, the number of lines per inch, the quality of the printing and many other printer specific options. Control characters are the language of the printer. All of the enhancements of the printer such as character size, font, print quality and more can be changed or invoked with CONTROL characters. ProTERM provides three different methods for sending CONTROL characters to the printer:

- **Printer Init String:** Both the Install window and Print Parameters window contain Init String fields. These strings can be entered using CARET prefix notation (i.e., “^M” is RETURN) and are sent to the printer prior to any document text.
- **Dot-Commands:** The “.SC” command allows a string of characters (using CARET prefix notation) to be sent to the printer. The string is sent at the point in the document where the “.SC” command is encountered (see Special Characters under Dot-Commands below).
- **Embedded Control Characters:** By embedding CONTROL characters directly into a document it is possible to control the printer (see Inserting Control Characters above).

Printer Control Characters

Your printer manual should have a section which lists the CONTROL character sequences used to activate the different options available for your printer. For example, the ImageWriter II Owners Manual lists the sequence “ESCAPE-a-2” as causing the ImageWriter II to print in near-letter-quality mode. This CONTROL character sequence could be sent to the printer using any of the three methods listed above:

- Set the Printer Init String to “^ [a2” and print the document.
- Insert the Dot-Command “.SC ^ [a2” as the first line of the document and then print it.
- Move the cursor to the beginning of the document and press CONTROL-P (to insert a CONTROL character) followed by “[” followed by “a2” and then print the document.

All of these methods work equally well, though some have advantages over others. In particular, changing the Printer Init String does not require changing the document itself. If the Print File command is being used, this is the only option available. The “.SC” Dot-Command is preferable to embedding CONTROL characters directly into the document because the “.SC” command knows to send the CONTROL characters directly to the printer without any formatting. When CONTROL characters are embedded in the text, ProTERM uses them in calculating formatting requirements and this can cause problems in certain circumstances.

While the Printer Init String is only sent once each time a document is printed, multiple “.SC” commands or embedded CONTROL characters can be placed throughout a document. Each time one of these sequences is encountered, the CONTROL characters are sent to the printer and the printer can change its operating mode according to the sequence.

Printing Wide Documents

By instructing the printer to print smaller characters, more characters can be printed on each line. As discussed above under *Changing How the Printer Prints*, CONTROL characters are used to give instructions to the printer. This example deals specifically with the Apple ImageWriter II printer. If you are using a different printer, consult your printer manual to find the CONTROL character sequence for condensed mode printing. In the case of an ImageWriter II, the control sequence for ultra-condensed mode is ESCAPE-Q and results in 17 CPI print. To set ProTERM to print at maximum width using an ImageWriter II printer, choose one of the Print commands and make the following changes to the Print Parameters window:

- Change the Left Margin to 0.
- Change the Right Margin to 0.
- Change the Page Width to 140.
- Change the Init String to “^[Q” (CARET followed by an open-bracket followed by an uppercase Q).

Once these changes have been made, press *Print* to print the document in ultra-wide mode. This same technique can also be used to print narrow documents in a larger font if the printer supports one. Ultimately, the different possibilities for printing are limited by your printer and your imagination.

Permanent Init String

If you want a special printer initialization string such as the above example to be permanent, go to the Install text field and place the needed init string (information) in the Printer Init window. ProTERM will use that info as the default for setting up the printer when you boot it up, but it can still be changed for small jobs by following the above instructions.

Dot-Commands

ProTERM's Dot-Commands easily provide a powerful method of performing sophisticated print formatting. ProTERM prints perfect without Dot-Commands, but they are an extraordinary tool which can give the user total command over text being transferred or printed. Placing a Dot-Command on a page, referred to as “embedding” the command, allows formatting including margins, left, right and center justification, character emphasis, page numbering, forced form feeds and much more.

Dot-Commands must occur after a RETURN character and the first “dot” must be the first item on the left margin containing the command. Dot-Commands cannot be preceded by even a SPACE character. After pressing the RETURN key to establish a new line, they start with a period (dot) “.”, in the left-most space followed by a two-character alpha command, any parameters (additional instructions to that command), and a RETURN character to end the line. Dot-Commands can be chained together (concatenated) on the same line (one immediately following the other). No other (unrelated) text can be on the same line with a Dot-Command.

Dot-Commands can be in UPPER or lower case.

The seven different Dot-Commands which control page layout:

.LM	Left Margin	.BM	Bottom Margin
.RM	Right Margin	.PM	Paragraph Margin.
.TM	Top Margin	.TL	Top Line (Header)
		.BL	Bottom Line (Footer)

When used in printing, the most important thing to remember about Dot-Commands is, they operate relative to the margins imposed by the Print Parameters window (see illustrations). When used to format ASCII transfers or print text files to disk, the margins are generally imposed by an 80 column screen width (79 characters plus a RETURN character for ASCII uploads), although they could be set to widths up to 249 characters wide for special application. Margins set within the Print Parameters window can be considered as a “frame” of “hard set” values while Dot-Commands should be considered as “soft set” values, that is they can easily be set within the document to fit the text within the “frame” of the Print Parameters window. For example, a Left Margin can be specified both in the Print Parameters window and by the “.LM” Dot-Command in the document, but an adjustment of the Left Margin as specified by a Dot-Command is confined inside of frame of the Left Margin specified in the Print Parameters window. This rule applies for all the margins.

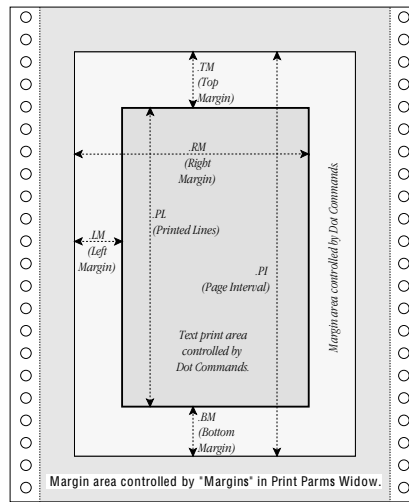
Page Margin Dot-Commands

- .BL//#/ Bottom Line to print (Page Number) *Left Justified*.
- .BL/// Set a Bottom Line *Footer*.
- .BM:xxx Bottom Margin is used to change the number of lines between the footer (if there is one) and the last line of text (the default is 1).
- .CJ Center Justify text.
- .EP0 Disable printing. Stop printing text until .EP1 command is given.
- .EP1 Enable printing.
- .FF Form-Feed to next page.
- .FFxxx Conditional Form-Feed. Unless xxx number of lines are available from this command to the end of the page, Form Feed to next page to keep related text together.
- .L:xxx Line spacing: 0=single, 1=double, 2=triple etc..
- .LJ Left Justify text.
- .LM Set Left Margin to normal (default).
- .LM:xxx Number of characters from the left edge of the page to the start of the text (the default is 0).
- .LM+xxx Increase Left Margin xxx chars.
- .LM-xxx Decrease Left Margin minus xxx chars.
- .P:xxx The Page Interval is the total number of lines available on the length of a page. An 11" page with the normal 6 lines per inch would have 66 lines.
- .PL:xxx The number of Printed Lines is normally, set to 58 lines. The Top and Bottom Margins (where page numbers and such are printed) each take one line, leaving 56 lines of actual printed text. The “.PL” parameter must always be smaller than the “.PI” parameter. The additional lines (8 on a normal page) are those which skip over the perforation to make the space between the bottom page and top page margin.
- .PM:xxx Number of characters (positive or negative) from the left margin to the start of the text on the first line of a paragraph; this parameter can be used to create either indented or hanging paragraphs (the default is 0 or just .PM).
- .PNxxx Set Page Number to a beginning number.
- .RJ Right Justify text
- .RRxxx Set ruler: New custom Ruler with Left and Right Margin and Tab settings.
- .RM Set Right Margin to normal (default).
- .RM:xxx Number of characters from the left edge of the page to the end of the text. The default is the page width, minus the Left and Right Margin value as specified in the Print Parameters window. This usually results in a

Take control with Dot-Commands.

value of 80 characters across the page, which is the screen width of a monitor.

- .RM+xxx Increase Right Margin xxx chars.
- .RM-xxx Decrease Right Margin minus xxx chars.
- .SCxxx Send a Special Command (an instruction) to printer or host system.
- .TL/// Set a Top-Line header.
- .TL/#// Top Line to print (Page Number) *Center Justified*.
- .TM:xxx Top Margin is used to change the number of lines between the header (if there is one) and the first line of text (the default is 1).
- .UTxxx Set the Underline Token to xxx.



Setting Margins With Dot-Commands

While the “.LM” (Left Margin) and “.RM” (Right Margin) alter margins on different sides of the page, these measurements are ALWAYS expressed in terms of offsetting the margins from the left edge of the page. Margins are set in terms of character positions, not inches. For example, ImageWriter printers normally default to 12 characters per inch (CPI), so think of measurements in terms of characters (12 characters equal one inch) and to create a Right Margin, “.RM70” (70 characters to the right of the starting left margin) might be an example, not “.RM10” as you might think.

As an example of how a Dot-Command works, the command “.LM10.RM70.PM5” could be included as part of a document and would set the Left Margin to 10, the Right Margin to 70 (for a print width of 60 characters) and a Paragraph Margin (indent) of 5, something like the example of this paragraph. When using Dot-Commands, margins are always measured from the left side of the page and are effective inside of the margins (see metaphor of “frame” above) set in the *Print Parameters*. As a result, if you have left and right margins set to 10 both in the Print Parameters window (starts counting at the raw edge of the page) and the same in Dot-Commands (starts counting at the edge of the Left Margin Print Parameter), the margins are added together resulting in left and right margins of 20 instead of

10. See the illustration *Setting Margins With Dot-Commands* for a graphic representation.

Hanging indents on paragraphs like this example paragraph can be an attractive way to present lists of information. To create a hanging paragraph with ProTERM, use the sequence “.lm5.pm-5” (any number can be substituted in place of 5). This causes the first line of a paragraph to be flush with the left side of the page, while subsequent paragraph lines are indented. Use “.lm.pm” below the paragraph to disable the set (embedded) command, and set it back to default (using a Dot-Command without a number “.lm” is the same command as “.lm0”).

The math of the defaulted page setup looks like this. There are eleven lines on the page and at six lines per inch, 66 lines are available. Of the 58 designated lines for use in the body of the text, 2 are set aside for TL and BL headers (one each for Top Line and one for Bottom Line). The remaining 8 lines are divided between spacing from the Bottom Line (a space held to be used for footers such as Page Numbers) of the page and the Top Line (a space held which can be used for headers such as Page Numbers) of the next page.

Page Breaks

To force ProTERM to begin printing on a new (the next) page, use the “.FF” command. Regardless of the current position on the page, ProTERM skips down, prints the footer (if there is one), advances to the next page and resumes printing. By specifying a value after the Form Feed command, e.g., “.FF12”, ProTERM conditionally breaks the page depending whether there are 12 lines left on the page. If less than 12 lines (in this example) remain on the page than were specified following the “.FF12”, ProTERM advances to a new page.

Example of a conditional Form Feed Dot-Command:

```
.FF Advance to a new page and continue printing.
.FF7 If there are less than 7 lines remaining on the page, advance to a
new page.
```

NOTE: A conditional form-feed command is normally placed prior to a paragraph which should not be broken up. To keep a paragraph unbroken, precede it with “.FFxxx” where “xxx” is the number of lines in the paragraph. Instead of breaking up the paragraph, it is printed in its entirety on the next page.

Line Spacing

The “.LI” line interval (line spacing) command controls whether text is printed single, double, triple, or quad spaced. By default, ProTERM prints text single-spaced. The line interval is set with “.LIxxx”.

```
.LI0 Single Space all subsequent text.
.LI1 Double Space all subsequent text.
.LI2 Triple Space all subsequent text.
.LI3 Quad Space all subsequent text.
.LI4, .LI5, .LI6, etc..
```

Justification

ProTERM supports three types of justification:

- Left justification, the most common and considered “normal” forces all lines flush along the left margin and ragged on the right.
- Right justification forces all lines flush along the right margin and ragged along the left.
- Center justification forces lines to be centered between the left and right margins.

- .LJ Left Justify all subsequent text.
- .RJ Right Justify all subsequent text.
- .CJ Center Justify all subsequent text.

Text Emphasis

Besides being able to print normal text, ProTERM can also underline and double-strike text as well. This is done by defining a “token” and marking all text to be emphasized by that token. By default, neither the underline nor double-strike token is defined.

- .UL\ Underline text which is surrounded by backslash characters. The sentence, “This is an \underline test” would print as “This is an underline test.”
- .UT There is no underline token. The backslash can now be used as a normal character.
- .DT~ Bold print (Double-strike) text which is surrounded by the TILDE [~] character. The sentence, “This is a ~bold~ test” would print as “This is a **bold** test.”
- .DT Bold print token off. The tilde can now be used as a normal character.

Headers, Footers and Page Numbers

ProTERM allows a header and/or a footer to be printed on each page. A header is printed as the top line of a page, and a footer is printed as the bottom of a page. These lines of information can contain text related to the overall document or information specific to the page such as the page number. The actual position of the lines on the page is determined by the page margins (see above). The header and footer text is entered as part of a line divided into three-fields: Left, Center and Right. The placement of the text on the header or footer line is determined by what field the text is placed in. The fields are divided by using a slash character “/” as a delineator (see the examples below). If the pound-sign “#” is used as part of the text, it is replaced by the current page number when printed.

- .TL/xxx// Print the header “xxx” left-justified.
- .TL//xxx// Print the header “xxx” center-justified.
- .TL///xxx/ Print the header “xxx” right-justified.
- .BL//#// Print the page number as the footer, center-justified.

NOTE: The header and footer accept only a single string. If text is placed in more than one field, only the first field encountered is formatted and printed.

Page Numbering

To start page numbering from other than 1 (or change the current page number), enter the Dot-Command “.PN” followed by the number of the next page. For example, to number the next following page as page 6, insert the Dot-Command “.PN5” in the current page.

- .PN5 Give the current page the number 5.

Disabling Printing

There are times when it is desirable to disable a portion of a document from printing. To support this, there is a “.EP” or “.EP0” (enable printing) Dot-Command which can be placed around a block of text to prevent it from printing. When printing is disabled, ProTERM scans the document until it encounters the Dot-Command “.EP1” which resumes printing.

- .EP0 Keep scanning the document for printable text, but do not print until ".EP1" is encountered.
- .EP1 Continue to print text as normal.

Changing TAB Stops

When a document is printed or sent via ASCII from the Editor, the Dot-Command module interprets the width and TAB stop locations within the Editor Ruler settings for that document. Although this can be changed in the *Print Parameters* or *Send ASCII* windows, normal settings allow the Dot-Command module to use this information for determining format width and where TAB stop locations. This is why documents are formatted the same whether they are printed or sent via Send ASCII.

It is also possible to change TAB stop locations within a document (as well as the left and right margins) by including a ".RR" Dot-Command followed by a ruler. This Dot-Command can be embedded in the document as many times as needed to perform multiple TAB stop changes. After a ".RR" Dot-Command is encountered, all subsequent TAB characters are formatted according to the ruler. The syntax and format of the ".RR" Dot-Command are:

- The ".RR" Dot-Command.
- The ruler starts with an uppercase "L" which marks the left margin.
- Character spaces are made up of HYPHEN characters "-".
- TAB stops are made up of VERTICAL BAR characters "|".
- The ruler ends with an uppercase "R" which marks the right margin.

Each HYPHEN represents a column space, and each VERTICAL BAR represents a TAB stop. The new width of the document is determined by the number of HYPHEN plus VERTICAL BAR characters. The ruler can be up to 249 characters wide. Both the leading "L" and trailing "R" are mandatory in order for the ruler to be processed.

```
.RRL-----|-----|-----|-----|-----|-----|-----|-----|-----R
```

An Example .RR Dot-Command

Special Characters

While the Dot-Command interpreter provides a powerful formatting system, it is also useful to have a mechanism to allow output of untouched ("raw") unformatted text. This procedure is used to send CONTROL characters to the printer to enable and disable special print modes, and it is also used to facilitate the sending of ASCII text to a remote host. The ability to send CONTROL codes and Dot-Commands to remote host systems within an ASCII file adds another dimension to ASCII file uploads. The Special Command ".SC" Dot-Command allows a string of text to be sent directly to a printer or a remote host system without any formatting or processing by the Dot-Command interpreter. The string can contain CONTROL character using CARET prefix notation (i.e., "^M" is RETURN).

Example commands for printing:

- .SC ^N Print Pica (10 CPI) on an ImageWriter II.
- .SC ^Q Print Ultra condensed (17 CPI) on an ImageWriter II.
- .SC ^E Print Elite (12 CPI) on an ImageWriter II.

**Special Characters
Add Power to Send
ASCII.**

Example commands to place at the end of a file as a direct command to the host that this is the end of the file, save it!

```
.SC ^Z   Send "CONTROL-Z" (save a message on the Delphi message
         boards).
.SC.s ^m Send ".s" to save a message for high speed ASCII send on the InTrec
         BBS).
.SC.p ^m Send ".p" to start prompt ">" for high speed ASCII send on the
         InTrec BBS.
```

Special Dot-Commands are not needed on the following systems but because this information is covered here and the procedure is the same, they are included here:

```
*s ^m   Send "*s" (save a message on GENie).
/send ^m Send "/sen" (save a message on CompuServe EMail).
/post ^m Post "/pos" (save a message on CompuServe message boards).
```

Suggested Further Reading

- At the ProTERM Main menu, press COMMAND-E (Open Apple-E) to open the ProTERM Editor (a very powerful word processor especially designed for use with telecommunications).
- Temporarily remove other disks from your drives and insert either the 3.5" or the *Program* side of the 5.25" ProTERM Master disk into any one of your disk drives.
- Type the following:
/PT3/A60SEC.WORKOUT
... to open this instructional file and load it into the ProTERM Editor. When the file is loaded and you can see it on the screen, you can remove the ProTERM Master disk from the drive and replace any disks you had just removed.
- Read through this tutorial file and follow the suggested practice routines for a quick lesson on how to get the most from ProTERM.

Scrollback

CHAPTER SIX

From the moment you connect to a remote system, information is displayed on the screen, and as you work with the remote system, new information causes old information to scroll off the screen. Some information is important and some is not, but it's often difficult to tell which is which without spending a lot of time reading. In addition, after the information scrolls off the screen, it takes time to request the host system to resend (re-display) the information. If you're paying for time online (through access time charges or long-distance charges), the additional time can be expensive. ProTERM's scrollback feature allows you to browse information at your leisure without the costs, or the pressures of thinking you should hurry and get off line.

Using Scrollback

ProTERM's scrollback feature is dedicated to "remembering" all information that has scrolled off the top of the computer screen. You can find out how much scrollback your computer can store by choosing the *About ProTERM* command. This displays a line which says, *Scrollback Buffer: xxxK*, and tells you that ProTERM can remember up to xxx thousand characters that scroll off the screen. The information that scrolls off the top of your computer's screen accumulates in the computer's memory banks until the RAM available for scrollback memory fills up. When the available memory is full, the newest lines "push" the oldest lines out of scrollback. Any data "pushed out," is gone, and cannot be recalled. Scrollback is only temporary electronic (RAM) memory, and quitting ProTERM or losing power to your system causes the irrevocable loss of the contents of the current scrollback session.

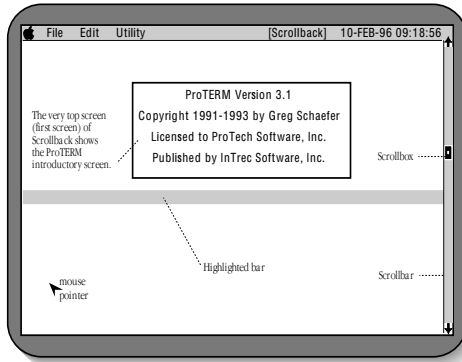
Entering and Navigating in Scrollback

To enter scrollback, choose Scrollback from the *Misc* menu, or enter COMMAND+Z or COMMAND+ARROW from the keyboard. After entering scrollback, the MenuBar changes to reflect the available scrollback commands, the current screen of scrollback data is displayed, and a *highlighted bar* (inverse line) the width of the screen appears. The highlighted bar acts as a one line cursor and indicates the current position within scrollback. While in scrollback, all of the data that previously scrolled off the screen is available for review in scrollback. As noted, the scrollback's capacity is limited only by RAM memory available to ProTERM.

Also see Scrollback in the Tutorial Chapter.

COMMAND = Open-Apple & OPTION = Closed-Apple.

Minimum memory of 128K constrains and slows ProTERM, while 256K adds to available scrollback capacity with the additional benefit of allowing ProTERM to keep more of its immediate chores in memory minimizing disk access. Up to 8 megabytes of memory can be used to increase and enhance ProTERM's scrollback capacity.



Scrollback Window

Viewing Data from The Keyboard

Use the ARROW and NUMBER keys to move the highlighted cursor bar to different points within the scrollback data. The Left and Right ARROW keys move the bar up or down one line, while the Up and Down ARROW keys move up or down one page. The NUMBER keys 1 through 9 position the cursor bar to relative points within scrollback. The number 1 key places the cursor at the beginning, and the number 9 key places the cursor at the end, or most current screen.

Viewing Data with The Mouse

Scrollback data can be viewed through the use of the mouse pointer and the *scrollbar*. Positioning the pointer on either the up or down arrows on the scrollbar and clicking, moves the highlighted bar up or down one line. By clicking in the “grey area” between either the top or bottom scrollbar arrows and the “scroll box” (the small square in the scrollbar), the bar moves up or down one page. Clicking and dragging the scroll box along the length of the scrollbar moves scrollback relative to the distance of the drag. The top of the scroll bar is relative to the beginning of the available scrollback and the bottom is the end, most current (the information that is the current terminal mode display).

Selecting Data

Besides being able to view scrollback, data can also be selected, saved, printed, clipped or copied to the ProTERM word processor. This is done by creating a selection, and then choosing a command to operate on the selection. Scrollback displays a selection by highlighting the data, which makes the screen data reverse from normal. One line is always selected — The highlighted cursor bar which is normally moved through scrollback is always a selection of one line. Selection size ranges from a single line to 32000 lines, and can be created from the keyboard or by clicking and dragging.

Create an anchor-point to begin selecting text.

To create a selection of more than one line, an anchor-point must be created and then the scrollbar is moved. Text is selected starting from an “anchor-point” which is a point in the text where the selection begins. Pressing and holding the OPTION key, or pressing the SPACEBAR one time, or pressing CONTROL+C, creates an anchor-point.

Selecting Data from The Keyboard

- Hold the OPTION key down and press the ARROW keys to create a selection from the point at which the OPTION key was pressed to the point at which it is released (the selection is the highlighted text). To deselect the text and continue navigating in scrollback, press an ARROW or NUMBER key without holding down the OPTION key. To extend a selection, hold down the OPTION key and use the ARROW keys to continue selecting data. The Up and Down ARROW keys select one full screen in their respective direction each time they are pressed. The Left and Right ARROW keys select one line at a time. Left selects upward and Right selects downward. Holding the ARROW keys down causes them to repeat their action.
- To select ALL or a proportion of the text, press the NUMBER keys. Pressing 1 in scrollback moves from the current position to the top or the beginning of scrollback, and pressing 9 moves from the current position to the bottom or end of scrollback (the last, or most current screen). Holding the OPTION and COMMAND keys down, and pressing 1 through 9 selects a proportional range relative to the number pressed. The lower numbers 1,2,3... selects toward the beginning and higher number 9,8,7... select toward the end. Try pressing COMMAND+OPTION+number, to get a feel for how the selecting process works.
- The second method of selecting from the keyboard is to press SPACEBAR or CONTROL+C both create an "anchor point" in scrollback. After creating an anchor point, use the ARROW and NUMBER keys to select the desired text. To remove, or "toggle" the selection off and return to the single highlighted bar, press SPACEBAR or CONTROL+C.

Selecting Data with The Mouse

To select data with the mouse, position the mouse pointer on the line where a selection is desired, hold the mouse button down and drag the pointer to the last line of the desired data. This is referred to as "click-drag." As you "drag" the mouse, the selection is highlighted on the screen. Positioning the pointer near the top or bottom of the screen causes the data to scroll on the screen and continue the selection.

Large selections can be made quickly and easily using the mouse. Move the pointer to the first line of the selection and click. This places the highlighted bar at the position of the pointer. Hold the OPTION key down to lock the anchor point, and click at another point in the text. All lines between the position of the two clicks are selected.

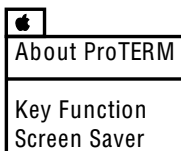
Another selection method is to drag the scroll box while holding the OPTION key down.

To remove a selection, release the OPTION key and click the mouse.

NOTE: It is also possible to select data by using the Find command. See the Find command below for details.

Scrollback Menu Bar Commands

When scrollback is entered, the menu bar changes allowing access to scrollback commands. Although the Apple menu is also available on the status bar while in scrollback, all other commands are specific to scrollback.



File	
New	
Open	⌘
Close	⌘W
Save As	⌘M
Save Selection As	⌘S
Print Selection	⌘P
Quit Scrollback	⌘Q

Clear the current contents of scrollback.

Convert scrollback to a text file using Save Selection As...

About ProTERM

Click on the Apple and choose *About ProTERM* display general information about ProTERM as well as memory allocation information. One line of the lines shows the amount of memory allocated to scrollback storage. Press any key, or click the mouse button to exit About ProTERM. For more information, see the Index: *About ProTERM*.

File Menu

New

WARNING: The *New* command clears the current contents of scrollback, and once cleared, the file is irretrievably gone. If *New* is issued while off line, scrollback is cleared to a single blank page. If issued while online, the current terminal mode screen is saved. To save a copy of the current scrollback to disk as *ascrollback* file, choose the *Save As* command prior to using the *New* command.

Open

The *Open* command opens an existing scrollback file from a disk, and replaces the current scrollback contents displayed on the screen. Using the *Open* command while online, appends the current terminal screen to the end of the new loaded scrollback file. The *Open* command in scrollback can only open scrollback files that were created in scrollback and saved in scrollback using the *Save As* command.

Close

Close saves the current scrollback contents into a file and then clears the current scrollback. It operates the same as choosing *Save As* followed by the *New* command. *Close* prompts for a *Save As* filename. Enter a name and pathname if necessary to save the existing scrollback as a disk file. For more details on this command see *Save As*.

Save As

Save As saves the entire scrollback contents as a special file with an SKB file type. This file can then be reopened as a scrollback file using the *Open* command. The file saved is NOT a text file, but rather a special binary file which preserves all the special mouse-text and inverse characters which may be part of the scrollback data. To save the current scrollback contents, choose the *Save As* command, enter a filename, and pathname if necessary, and press the *Save As* button. If the filename already exists, a choice is given: Append to this same file, Delete the existing file or Cancel. To save the file as another name, choose Cancel, choose *Save As* again, and enter an unused filename. To save the file as a text file, see *Save Selection As*.

Save Selection As

Save Selection As is very different than *Save* or *Save As*. When selected text is saved, the file is not saved as a scrollback file SKB filetype (see *Save* and *Save As* as above), the file is saved as a text (TXT filetype) or AppleWorks (AWP filetype) file (your preference). To save the current

selection, select the text in the scrollback file, and choose *Save Selection As* from the File menu, enter the filename, select the file type TXT for normal or AWP if you intend to use the file in AppleWorks, and select the *Save As* button. If the filename is already in use, the choices are, Append to the existing file, Delete the existing file, or Cancel the operation. To save the file as a another name, choose Cancel, choose Save As again, and enter an unused filename.

Quick Tip! After selecting text in scrollback, use COMMAND+D to paste the text directly to the Editor.

Quick Tip!
With text selected,
press the RETURN
key for a “quick”
menu.

Use the ESCAPE key
to exit scrollback.

Print Selection

Print Selection sends the current selected text to the printer. After creating a selection, choose *Print Selection* from the File menu, press RETURN, and press the Print button. Press the ESCAPE key to cancel the operation while printing. For detailed information on print parameters. See the Index: *Printing*.

Quit Scrollback

Quit scrollback exits scrollback and returns to terminal mode.

NOTE: The ESCAPE key also exits scrollback and is the same as choosing *Quit Scrollback*.

Edit Menu

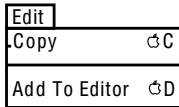
Copy

Copy places copy the current selection in the clipboard RAM memory. If the selection is too large, ProTERM displays an alert message that all of the information was not copied. The clipboard can only contain one item at a time, and subsequent Copy commands replace the previous clipboard contents. Copy does not require any option or parameter settings or changes.

Add To Editor

Add To Editor is perhaps one of ProTERM's most valuable quick and effective power-tool commands. It copies and pastes the current text selection from scrollback, directly and invisibly to the Editor with a keystroke. If text already exists in the Editor, new pasted text is appended to the end of existing text.

If the editor does not have enough space to hold the pasted selection, ProTERM displays an alert message. Add To Editor does not require any option or parameter settings or changes.



COMMAND+D.
Paste text
directly to the
Editor from Scroll-
back with a key-
stroke.

Utility	
Find	⌘L
Find Next	⌘G
Show Scrollbar ⌘T	

A search string means an exact text match.

Search for a single unique word.

Utility Menu

Find

Find searches scrollback for a string of text starting from the position of the highlighted cursor bar. Prior to using *Find*, the cursor bar must be positioned at the point where the search should begin.

Searching scrollback using *Find*:

- Position the highlighted bar to the start of the search area (press the 1 key to search from the start of scrollback).
- Choose *Find* from the Utility menu.
- Enter the find parameters to match your needs, and select the *Find* button.
- *Find* either locates a matching string of information, or displays an alert message: The search string could not be found in the scrollback text.

To create a selection using *Find*:

- Position the highlighted bar to the start of the selection.
- Anchor the selection pressing the SPACEBAR or CONTROL+C.
- Choose *Find* from the Utility menu.
- Enter the find parameters and press the *Find* button.
- The selection extends from the anchor point to the location of the found search string.

Find What?

Enter the text for the search into the *Find What* field. The search string will match both normal and highlighted (inverse video) data. Detection of upper and lower case is controlled by *Ignore Case* in the Search parameter. Since scrollback works in terms of an entire line at a time, each occurrence of a search can only include an item which occurs within a single line. Each character entered in *Find What* must exactly match a character in the scrollback data including spacing and punctuation.

NOTE: Whenever using search, it is best to keep search strings as small and unique strings of text. Longer text strings introduce opportunity for error.

Whole Words Only?

Using the Whole Words Only search command is a way of performing a very precise string search. When *Whole Words Only* is checked to “On”, scrollback only matches a string if it occurs as a complete word or string of words within the data. Within the scrollback data, the string must be surrounded by space(s) or occur at the start or end of a line. For example, without the Whole Word parameter, a search for “TOM” may find “aTOM” or “TOMmy” but when Whole Words Only is used (or if leading and trailing spaces were included in the search string), the search would find only “TOM” as a “whole word.”

Ignore Case in Search?

When *Ignore Case in Search?* is checked “On”, the search string will match the data regardless of the case in which it appears (“a” matches “A”). Otherwise, each character (upper or lower case) of the string must be an exact match (“a” does not match “A”).

Find Next

Find Next could also be called “Re-Find” since it finds the next occurrence of the string previously searched for with *Find*. *Find Next* does not require any options or parameters. If

Save preferences to save the scrollbar setting.

another occurrence of the string is found, Find Next positions the highlighted bar to the line containing the match. An alert message is displayed when there is no further match.

Toggle (Show) Scrollbar

The *Toggle Scrollbar* command removes or displays the scrollbar from the right side of the scrollbar display. The scrollbar can be toggled off and on as desired. Since the Scrollbar hides the 78th and 79th column and some prefer to toggle the scrollbar off by default and toggle it on when its needed. The current or default state of the scrollbar is one of the many preferences saved, when the Preferences window is saved (see the Index: Preferences).

Scrollbar Hints

Scrollbar is an extraordinarily powerful telecom tool and time-saver when understood. The following are some suggestions for taking full advantage of ProTERM's scrollbar.

Locating Individual Sessions

If adequate RAM is available, scrollbar can be quite large, and although it can be, scrollbar is normally not cleared (removed from RAM) between calls to different systems. When files are very large locating information from a particular online session can be difficult and time consuming just to scroll and look. ProTERM places a special header message in scrollbar each time a system is called and this makes finding sessions easy. Use the Find command to locate this header to position the cursor at the point of the start of a call to a particular system. A header message which is added to scrollbar on each call has the following format:

Connected With: *System Name*
Connected At: *Connect Date Connect Time*

Use Find to search for the string "Connected With:", and quickly locate the start of each online session. Use Find Next to find the next session.

Minimizing Online Time

To minimize online time, call a system, stay online as briefly as possible, let all incoming information be captured in scrollbar and terminate from the system. After terminating the call you can read, select, clip, save the entire file or parts of it, paste to the editor, and print the stored scrollbar text at your leisure.

Warning: Scrollback is stored in RAM memory. Do not quit ProTERM or turn off your computer until you have saved or preserved all or parts of what is important. When you quit ProTERM, the scrollbar text is gone. To save scrollbar see Save As above.

We suggest not trying to read or reply to messages when online with the remote system. Use the host's commands which show all new messages without pausing. When you have all the information retrieved, terminate from the system. After terminating, enter scrollbar and browse the material at your leisure. Even when calling systems without online charges (such as local BBS's), there are reasons to get your information quickly and sign off, for example, if the called service is a small system, there may be other users waiting to connect with that system. Practical consideration and use of your online time can be considered frugal and courteous.

When the call is finished and you are off line, there is no need to hurry — the pressure is off. Without time limits and accumulating costs, you can scroll, search and read data at any speed

you like. You can even use Save As from the File menu to save the entire scrollback file, and reload it at a later date.

When reading the scrollback file and you encounter information of interest, select the text and then save or print it.

When you find a message or mail you want to reply to, select it and press COMMAND+D (see the Edit menu) to copy/paste the text into the ProTERM editor. After adding all of the "reply" messages to the editor, press ESCAPE to exit scrollback and COMMAND+E from the ProTERM Main Menu (see the Misc menu) to enter the ProTERM editor.

After the above steps have been completed, the ProTERM editor, will contain all the messages you pasted directly from scrollback. Use the editor to type your response below each message. You can use all of ProTERM's power-formatting commands; margin controls and even dot commands (see Index: Dot commands). Use the Print Preview command (see File menu) to see how the reply will look when it is uploaded. When your replies are completed, press ESCAPE to exit the editor and call online to the system to upload your text.

For more information on sending online messages, see the Index: Send; ASCII.

Setup For Incoming Calls

CHAPTER SEVEN

While ProTERM is primarily used for outgoing calls, it can easily accept incoming calls. There are two supported modes of operation for incoming calls and they are both available from the "Misc" menu:

- The Answer Phone command goes into a manual terminal mode when it connects with the remote caller.
- The Unattended command is an automatic version of terminal mode which allows the caller to command ProTERM from a remote location.

Both Answer Phone and the Unattended mode offer methods to change from a voice call to a data call without terminating the current call. Each topic is described in detail in this chapter.

Misc	
Editor	⌘E
Scrollback	⌘Z
Answer Phone	
Unattended	⌘U
Macro File	
Read Globals	
Transfer Stats	
Preferences	
Install	⌘I

Answer Phone

The Answer Phone command is used to establish a connection with an incoming modem call and then resume terminal mode where the callers will each be in control of their own machines in a manual terminal mode where no automation is involved or required.

The Answer Phone terminal mode allows the users on either end to interact with, and control their individual computers, with both computers acting as local terminals and remote hosts at the same time. Since both systems are in a direct connect terminal mode, users communicate by typing messages to one another.

Can't See Text Typed at Local Monitor

Both users will need to choose Duplex: "Half" from the Online/Parameters menu, because in terminal mode, what is being typed on the local keyboard will be sent to, and be visible at the host (called) monitor, but will not be sent to or seen on the local monitor. Half duplex sends local keyboard input to the host and also echoes the same information at the local monitor. For more information on half and full duplex and how they work, see the Index: Duplex.

Since Answer Phone terminal mode is a manual operation on both ends, the operators coordinate their file transfer actions via "on-screen chat." To transfer a file, one operator must manually set their system up to send a file, and the other operator must manually set their system up to receive a file. When everything is set, ProTERM detects the requirements of the file transfer, and begins, completes, and ends the file transfer.

Setup for Answer Phone

To set up for an incoming call to be handled in terminal mode, choose Answer Phone from the Misc menu. The Connect Time: [30] secs parameter has a default time of 30 seconds which is usually more than a adequate time for a modem to connect with your system. This time can be changed as needed. Enter the Pathname information, choose the OK button, and ProTERM sets up the Waiting for Call mode. These and the other parameters in the Unattended Access window are discussed in detail below. To cancel the Waiting for Call mode, press the ESCAPE key or choose the Cancel button. Choosing the Answer button will force the modem to "pick up the phone" (go online) and attempt a connection.

When using the same phone line on a voice call, the Answer Phone feature can be used to change from a voice to a data call. When both parties are ready to begin the "data call," they each choose Answer Phone from the Misc menu, and hang up their phones.

Call-Back or "Secure" Systems

Answer Phone can also be used to provide an additional level of security for some those systems using a technique referred to as "call-back" or "secure call-back." When you register with one of these systems, you are given password information which will act as your credentials or "key" to the system. Part of this registration process requires you to enter a phone number where the system can call your modem. To operate this type of system, you call in, a connection is made and when prompted, you enter your account and password information. After verifying this information, the call is terminated by the host, and the secure system then calls back at the predefined telephone number.

Using ProTERM Answer Phone and a Call-Back System

As soon the call is terminated, choose Answer Phone from the Misc menu. When the remote system calls back, ProTERM answers the phone, connects with the system in terminal mode and is ready for your input.

Although very unusual, some services may need special parameter changes such as an emulation change, data format change, phone number setup or others when they call back. If this situation occurs, some changes can be made while online. Open the Online > Parameters window and make the needed adjustments while connected to the host. For more detail, see the Index: System and its various sub-listings.

Make Call-Back a One Key Operation

Use a Macro

To create an AutoLogon Macro for use with a call-back system, first use AutoLearn (see the Index) to create a macro which will automatically enter the account and password information for all future calls. After using AutoLearn to create AutoLogon Macro, go to the System Macros (see the Index) for that system and add this macro statement to the end of your AutoLogon macro:

```
wh $o { wt 1 } do "Misc:ANswer", "[ ]"
```

This addition to the current logon macro consists of two parts:

- The WH (while) statement waits until the remote system has disconnected from ProTERM.
- The DO statement "pulls" the Misc menu down, chooses Answer Phone, accepts the default of OK "[]" to wait for the call-back.

See the Index: AutoLearn and AutoLogon Macros for more.

Unattended Access

ProTERM offers the capability of allowing your computer to be used as an automatic remote system. Users can call this system and exchange information with your computer. Unattended Access is also Unattended Operation since the local operator (you) need not be present. Certain security precautions may also be used to limit access by the caller.

To set up your system in the Unattended mode, choose Unattended from the Misc menu. Set up the Unattended window, adding to or changing the parameters (information) needed for an intended session. Path 1: MUST be filled in with a proper pathname or the operator will be prompted with the following message:

NOTE: Path 1 must be filled in with a valid ProDOS pathname. Use "/" to give access to all directories.

See the chapter on ProDOS for information on the use of pathnames.

Restricting Access To The System

A proper ProDOS pathname must be on Path 1. An important factor of using pathnames in the Unattended mode is the Unattended caller can always go to deeper directories from the listed pathname, but can never go higher than the listed pathname. For example, if the pathname was set at /HARDDISK/LETTERS, the caller could access any files within the "LETTERS" directory or if there were additional directories within the LETTERS directory, they could be appended (opened) with the *Log* command (see below). The caller would have upload and download file transfer privileges within the set pathname. An additional pathname can be listed on Path 2, and the same rules apply.

Allowing Access To The Entire System

To make all drives on the entire system available to the Unattended caller, a single slash can be put on one of the lines. This is a kind of "pass-key" to the entire system which allows the caller to use the *Log* command to change to any part of any directory (disk) attached to the system.

Unattended Mode & Going Online With A Voice Caller

Several commands are available to the remote caller from the host computer (use the "?" for a help menu), including all of the commands needed to change ProDOS paths if set, and *Send* or *Receive* (transfer) files with various protocols.

From a Voice Call – To a Data Call An Added Feature of Unattended —

During a voice phone conversation with an associate, you may find it convenient to exchange computer files with the other party. Changing from a voice conversation to a data exchange is easy if both parties have ProTERM 3. Typically, you would have to terminate the voice call, setup your respective computer systems, and then call back using your computer and the modem. ProTERM allows you to convert the present call directly from a voice conversation call to a data transmission call.

This assumes both parties are using the same phone lines that they will be using for their modems. To go from a voice call to a data mode, both parties must have modems connected to the same phone lines being used for the voice call. One caller of this “online” connection will need to act as the “caller” and the other will act as the “receiver” (also referred to as the *host*). As explained below, it’s not important who decides to be which because the “direction” of the call can be changed during the call allowing either party to be in the position of the host or the caller after the initial connect.

Making the “Connect”

- First party:
 - 1 Choose Quick Dial from the dial menu.
 - 2 Enter a lone comma, in the System Number text entry field.
 - 3 Press the RETURN key until the Dial button is selected and ready to for action.
- Second party:
 - 1 Choose *Unattended* mode from the Misc menu.
 - 2 Press TAB to select the fields in the Unattended Access window.
 - 3 All of the fields can be used with the information that is already in them, or changed to your preference.
 - 4 A Pathname must be set in Path 1: to allow the caller to access the disk or directory they will be calling for.
 - 5 When the Unattended Window is set up and ready, press TAB or RETURN to select the OK button and press RETURN to accept the this window and open the Waiting for Call window.
- First party:
 - 1 Press the RETURN key which presses the Dial button in the Quick Dial window and hang up the phone.
- Second Party:
 - 1 Hang up the phone when the modem from the first party is heard.

When the modems connect, the change from voice to data mode is complete.

Changing From Caller To Unattended And Vice Versa

To change ends of the respective host and caller, both operators press the ESCAPE key and then the party wanting to be the Unattended system, chooses Unattended mode from the Misc menu. Change the pathnames as necessary and choose OK. Instead of showing the Waiting for Call window, ProTERM will be connected with the other computer in the “called mode.”

Unattended and Password

If left blank, a password is not required, and the caller will see a terminal window in the Unattended Command and ready for action. If a password is requested by the host, it will

have to be entered before the caller can resume use of the Unattended mode. The password can be typed in by either user.

Unattended Operator and Changing The Pathname During The Call

Changing the Pathname must be done on the Unattended (host) end of the call, the caller cannot change the pathnames established by the Unattended operator. To make the change, press the ESCAPE key and choose Unattended from the Misc menu to get back to the Unattended window again. Change the pathnames as needed and press the RETURN key to return to the terminal window.

The Unattended Window Settings

Connect Time

The *Connect Time* parameter controls the length of time ProTERM will wait for a remote modem to make the connection after the local modem has gone online (picked up the phone). A *Connect Time* between 30 and 40 seconds is usually adequate. Some high speed modems may require additional time. The time can either be changed to a higher value, or if the modem is just about to connect, but more time is needed, see the Index: Connect time; extend countdown.

Inactivity Timeout

The *Inactivity Timeout* parameter controls the length of inactive time before ProTERM disconnects the remote user, and resets to the *Waiting for Call* menu. If the remote caller does not show input within the specified time, the host computer terminates the call. In addition, ProTERM cannot always detect when a remote user hangs up, and this timeout acts as a safety in this instance. The default time of 2 minutes is normally adequate, but the *Inactivity Timeout* can be set to a value from 1 to 9 minutes.

Password

For obvious security reasons, access to a called host system usually requires a password of some type. When ProTERM is set to the Unattended mode, the host computer can use the default password (HELLO), offer a custom password or leave the Password blank, allowing the caller to call directly in without having to enter a password. Passwords are not case-sensitive (i.e., "HELLO" is the same as "hello") and may be up to 8 characters in length. Callers are given three chances to enter the correct password before they are disconnected.

Welcome File

The *Welcome File* is optional. Its purpose is to show your personal announcement to callers when your computer is set up to receive incoming calls in the Unattended mode. After a caller connects and enters the correct password, a "Welcome File" (a text file of your own creation which displays information to the caller) will be displayed if present. If used, the welcome file must reside in the main ProTERM directory with all of the other "PT3" files, be a TXT filetype and its filename must be entered into "Welcome File:" field in the Unattended Access window. A file called PT3.WELCOME is provided with the ProTERM files. You can use PT3.WELCOME as is, delete it and have no welcome file, use the ProTERM Editor to alter this file, create a new one to fit your needs, or use other PT3.WELCOME files under other names.

For easy fast editing tips and commands within a text window, see the Index: *Editing, commands and text window.*

The ProTERM Editor can be used to view or change the current contents of the welcome file.

Take care when setting up pathnames.**Personalizing the Welcome File.**

The *Welcome File* name can be any name you choose. You can have several welcoming text files each with a different name, stored in the PT3 folder and have the file of your choice be the one which shows during a particular Unattended call setup. To show the file of choice, enter the name of the chosen file in the *Welcome File:* text window and the next call will receive the chosen welcome message. The welcome file name of choice can be saved as the default name for future calls by saving the Preference window.

After changing the setup of the Unattended Window, you may want to save the new configuration and even a different Welcome File: name. For more information, see the Index: Preferences; saving personal changes.

Path

ProTERM can allow the caller to access up to two pathnames on your system, but *Path 1:* MUST contain an accurate pathname in order for the Unattended feature to work (see the Index: *ProDOS; about pathnames*). The caller may access any files or subdirectories which reside in either of the pathnames. Specifying a pathname of "/" allows the caller to access to all volumes and subdirectories on your entire system. When a caller first connects with unattended, ProTERM will set the default directory to the pathname in path1. The pathname can be changed to the second designated pathname by entering the "L" (Log) command (see below in this chapter).

NOTE: To select a specific slot/drive combination for use, you can also enter "/slot,drive" as one or both of the pathnames (i.e., by entering /6,2 as a pathname, the caller will have access to the contents of slot 6, drive 2 no matter what the disk is named). See the Index: *ProDOS; about pathnames*.

Be very careful when allowing others to call into your system in the Unattended mode. If the pathnames are not set correctly, you may allow access to any and all of the files in your system. For example, the ProTERM files themselves could be downloaded including sensitive files such as system numbers and macros with your private passwords to those systems. If you fill in the pathnames for the exact areas you expect your callers to access, ProTERM's Unattended mode is totally secure.

Send Options

The send options parameter controls how files are encoded during protocol sends. If set to anything but *query*, the selected mode will be used during all protocol sends. Otherwise, ProTERM will prompt the caller as to which protocol send mode to use (ProDOS, Binary II or neither).

Receive Options

The receive options parameter controls how files are decoded during protocol receives. Normally, this should be set to *Binary II* to allow automatic decoding of Binary II files. This does not mean ProTERM will only accept Binary II files. Rather, ProTERM will accept all files, but will also decode Binary II files. For more information see the Index *Binary II*.

Calling into Unattended

Once your modem and the remote modem are connected, ProTERM sends the message "ProTERM Unattended." If a password was entered in the *Unattended Access Pathname* window, ProTERM gives the user three chances to enter it correctly. If the password is entered correctly (or none was set), ProTERM displays the optional "Welcome"

(PT3.WELCOME) file if a PT3.Welcome text file exists in the ProTERM folder, and then the "Command:" prompt is displayed. At this point, the caller can issue commands to your "Unattended" system.

If the *Preferences* window is saved while the *Pathname* text window is changed or blank, the change will be in effect for future uses of Unattended. See the Index: *Preferences*.

NOTE: At this point, your entire system could be available to the caller. Be sure you understand how you have it set up and to whom you have allowed access (see Path above).

Unattended Commands

In the *Unattended* mode, the remote user can issue commands from the *Command:* prompt. Commands are issued by typing the first letter of the command name followed by pressing the RETURN key. At any time, the caller may press CONTROL-S to pause the current output display or CONTROL-C to cancel a command. When data is typed on the host or local keyboard (the computer being called), the input is the same as if it was typed by the remote user. The commands listed under "?=Help" are available to the caller while in the unattended mode:

NOTE: If the local user presses Escape, ProTERM will quit or exit from the Unattended mode and go into Terminal mode with the remote caller still connected. One user can choose Unattended to get back to the automated mode.

?=Help – The Unattended Access Control Menu

Entering a question mark "?" displays the list of the valid unattended commands to the caller:

PT3 Unattended Commands

S = Send R = Receive
L = Log D = Dir
C = Chat V = View
H = Hangup

The Unattended Access Control Menu

NOTE: A often used convention in telecommunications is to show the command's first letter shown separated from the rest of the word by a parenthesis "(") for example: C)hat, D)irectory etc.. Another often used convention is to show an upper case letter as the default, and a lower case letter as the alternate choice, example: Y/n where Yes would be entered if either the Y or y key or the RETURN key is pressed. To enter no, the N or n key must be pressed.

S)end

Begin a file transfer to the caller. See more detail below.

R)ecieve

Begin a file transfer from the caller. See more detail below.

L)og

The log command allows the caller to set the current prefix. ProTERM will display the current pathname and either accept the new path entered or show the available paths. If a

new path is entered, it will be checked for legality. If the path is legal, the new prefix is set and displayed; otherwise, the current path is re-displayed.

D)irectory

The directory command displays all of the files in the current directory. The directory display can be canceled by pressing CONTROL-C.

C)hat

When the caller selects the *Chat* command, a bell on the local (Unattended) host rings (beeps) several times when the Chat command is given. To chat with a caller, the user on the host end can enter the Chat command "C" from the host keyboard and messages can be typed back and forth between users. Press CONTROL-C from the local keyboard to exit Chat mode. Also see the Index: *Split Screen Chat*.

V)iew

View allows any text file in the current directory to be displayed (and placed into Scrollback). Press CONTROL-C cancels view.

H)angup

The Hangup command allows the caller to terminate the call. After entering an "H" at the "Command" prompt, the caller will be asked for verification "Hangup?" and the caller can reply "Y" and press the RETURN key to terminate the session. ProTERM disconnects the caller and returns to the *Waiting for Call* screen.

File Transfer In The Unattended Mode

Perhaps one of the most difficult concepts to grasp when first starting to use Unattended is the fact that the caller is in charge of both systems. In order to transfer a file (in either direction), the caller must first instruct ProTERM *Unattended* mode to *Send* or *Receive*, and then instruct their own system to do the opposite. For example, you would like a file from an associate so you call their system which has been set up in the Unattended Mode. After connecting and entering the password, you choose the *Send* command, which makes their system the sender. After entering the transfer protocol and filename if necessary, you must give the commands to your own system to *Receive* the file. More specifics on file transfers follow:

Send

The send command allows one or more files to be sent to the caller. When Send is selected, the protocol and optionally the send mode, must be specified. All of ProTERM's protocols are supported in unattended mode. After specifying the protocol and mode, the file name(s), must be entered. The following example session is shown from the perspective of a user calling into ProTERM Unattended to download some files. For all of these commands, the caller is controlling both systems.

Example of Unattended Mode:

ProTERM Unattended

Password:

ProTERM does not show the actual password being typed, so the password is not displayed on the host or the caller's screen.

This is PT3 Unattended Mode.

At the Command Prompt, select the *L* for the *Log* Command and enter "?" to see a list of available pathnames.

Command (?=Help): ?
(Question mark always shows the Help menu.)

PT3 Unattended Commands

S = Send R = Receive
L = Log D = Dir
C = Chat V = View
H = Hangup

Command (?=Help): D

The *Directory* command is used to get a list of available files.

Directory
/LETTER.FILES/
(Pathname)

LETTER.GREG	TXT	24
LETTER.JERRY	TXT	13
BALL.GAME.SHK	LBR	21
BIG.FILE.SHKLBR	13	

Free = 185 blocks

Command (?=Help): S

(Use the send command to instruct Unattended to send one or more files to the caller.)

(X)modem, (Y)modem, (Z)modem, (K)ermit

Send Protocol: Z

("Z" is entered to instruct ProTERM Unattended to use the Zmodem file transfer protocol.)

Use (P)roDOS Extensions,
(B)inary II Encoding, or (N)either: B

(If the Send Options are set to "query," the line shown above prompts the caller to decide

which mode to use when sending the file. Entering “B” use Binary II encoding. See the Index: *Binary II* for other reference.)

Send File(s): LETTER.GREG LETTER.JERRY

(The names of the files to be sent are entered separated with spaces and the line is terminated when the RETURN key is pressed. When ProTERM Unattended displays the *Begin receiving now* message, the caller should choose Zmodem from the Receive menu. When the transfer is complete, the Unattended mode will display a new *Command* prompt.)

Begin receiving now...

Receive

The *Receive* command allows one or more files to be received from the caller. After *Receive* is selected, the protocol must be specified. All ProTERM protocols are supported in ProTERM's Unattended operation. The following example session is shown from the perspective of a user calling ProTERM in the Unattended mode to upload some files. Again, and as noted above, the caller is controlling both systems.

**ProTERM Unattended
Password:**

ProTERM does not show the actual password being typed, so the password is not displayed on the host or the caller's screen.

Command (?=Help): R

The *Receive* command is used to tell the ProTERM Unattended mode to Receive one or more files from the caller.

(X)modem, (Y)modem, (Z)modem, (K)ermit

(The above protocols are offered for selection.)

Receive Protocol: Y

Enter “Y” for Ymodem file transfer protocol.

Begin sending now...

When the Unattended mode displays the “Begin sending now” message, the caller should choose the protocol from the Send menu.

TIP: We recommend Zmodem or Ymodem protocols (in that order) whenever available.

NOTE: For the more experienced. - If only a single file is uploaded using the Xmodem protocol and the file is not Binary II encoded, ProTERM will prompt the user for a filename to be entered once the transfer is finished. After the transfer, Unattended displays the “Command” prompt again.

For more information on file transfers, protocols, and more, see the Index: *Transfer; files.*

Terminal Emulation

CHAPTER EIGHT

What is Emulation?

Terminal emulation refers to ProTERM's ability to appear to a remote host as a specific type of "terminal" by emulating (imitating or simulating) the keyboard and display of that terminal. In this context "emulation" refers to display and command specifications developed by the manufacturer of the original stand-alone terminal. For example, when DEC VT-100 emulation is selected, ProTERM communicates with the host terminal by making your Apple II appear to be a VT-100 terminal using the specifications set forth by the manufacturer Digital Equipment Corporation.

Using Emulation

To use terminal emulation, select the system to edit. With the Edit System ParmS window open, choose the parameter *Emulate* (to edit, see Index: *pop-up; windows*) and choose the desired emulation. The next time the system is called, ProTERM will automatically begin to use the specified emulation at the point the emulation is encountered. There are also four additional parameters which relate to the use of terminal emulation:

- AnswerBack
- Delete key
- Backspace
- Status bar

AnswerBack

Answerback is seldom used, and unless the terminal you call explicitly requests an AnswerBack code, ignore AnswerBack. Many terminal emulations support an AnswerBack String which is a string of characters sent to the remote host whenever a special enquire character is received. Typically the enquire character is a CONTROL-E (though this varies from emulation to emulation). The information provided by the AnswerBack String will be specified by the remote host. Enter the required information into the AnswerBack string field. To send a control character, use the caret-prefix notation (i.e., ^M (caret-M) for the CONTROL-M notation). See the Index: Control; Character.

**COMMAND key =
Open Apple
&
OPTION key
= Closed Apple.**

Delete Key

The *DELETE* key is located in the upper right corner of the keyboard, and is often the preferred backspace key (used for correcting data entry errors). Some hosts require the *DELETE* character (ASCII value 127) to correct errors while others require the *BACKSPACE* character (ASCII value 8). When set to *Send BS* (*BACKSPACE*) or *Send DEL* (*DELETE*), pressing the *DELETE* key will send either *BACKSPACE* or *DELETE* respectively. When set to *Emulate*, the character sent by the *DELETE* key will be determined by the current terminal emulation.

NOTE: Depending on the setting of this value, the *DELETE* key will send either *DELETE* or *BACKSPACE*. *OPTION+DELETE* always sends the character which is not sent by *DELETE* (i.e., if the *DELETE* key sends the *DELETE* character, *OPTION + DELETE* sends the *BACKSPACE* character and vice-versa).

Backspace

The backspace parameter controls whether an incoming backspace character is treated as destructive (delete) or non-destructive (back-over) to the character left of the cursor. Normally, an incoming backspace character is treated as non-destructive – It moves the cursor to the left, but does not change any of the display data. When this parameter is set to *Destruct*, an incoming backspace deletes the character under the cursor as the cursor is moved “onto” it.

Status Bar?

All terminal emulations supported by ProTERM expect to display an 80 column (across) x 24 line (deep) video display. Unfortunately, this is the same size as the Apple II 80 column screen. As a result, displaying the ProTERM status bar hides the top line of information. The information under the status bar is not lost, just obscured by the Status Bar. The ability to use the Status Bar will be determined by whether the remote host normally displays meaningful information on the top line. If it does, then the *Status Bar* should be turned off so all 24 lines of the display are visible. The parameter *Status Bar* in the *Edit System Params* window shows *check box* with a if the Status Bar is on, and a blank check box if the Status Bar is off. The *SPACEBAR* toggles the Status Bar on and off. When the Status Bar is turned off for a particular emulation, the information on the “normal” MenuBar can be made visible by holding the *COMMAND* key down or moving the mouse.

Scrollbar Capture

Because Terminal Emulation influences the way in which text is displayed on the local screen, it also has an effect on how text is captured by Scrollback. Normally, text is captured by Scrollback as it “scrolls” off the top of the screen. However, in some situations requiring emulation, scrolling may not take place. Instead, new text is displayed directly on top of the old (by clearing the screen or repositioning the cursor). In such situations, you may find the expected information is not captured by Scrollback (when Scrollback is entered you find none or very little text). To accommodate these systems, the method ProTERM uses to capture text for Scrollback can be customized.

Customizing Scrollback Capture

To customize how Scrollback text is captured, it is necessary to add a command to the AutoLogon macro for the particular host system. The macro command consists of the text “SET \$C=value” where value is explained below. This command works when inserted anywhere within an AutoLogon macro for the host system. For more information on Macros see the Index: Macro; AutoLogon. There are five different methods which can be used to capture Scrollback text. Any combination of the five can be used simultaneously. Each individual method has a “value” associated with it. The method can be selected by substituting this value into the “SET \$C=value” command. To select multiple methods, the values are added together and placed in the “SET \$C=value” command.

For example, ProTERM uses three different methods for capturing Scrollback text by default. These methods are:

- Capture on Scroll Down” (value 1)
- Capture on Clear to End of Screen” (value 4) and
- Capture on Clear Screen” (value 16).

Adding these values together (1+4+16) gives a total of 21. When ProTERM is operating normally it is just like having the command “SET \$C=21” in the AutoLogon macro for each host system. The following lists each of the capture methods and the corresponding values.

NOTE: ProTERM 3.0 had a preference called “Capture Lines on Cursor Reposition”. The effect of this preference can be achieved by adding “SET \$C=149” to the AutoLogon macro of a host system.

Capture on Scroll Down (1)

This is the most common Scrollback capture method and operates by capturing lines that normally “scroll” off the top of the screen. This method has a value of 1 and it is one of the default methods used by ProTERM.

Capture on Clear to End of Screen (4)

This method captures text normally erased when a host system sends an emulation code to clear all text from the cursor position to the end of the screen. This method has a value of 4 and it is one of the default methods used by ProTERM.

Capture on Clear Screen (16)

This method captures text normally erased when a host system sends an emulation code to clear the screen. This method has a value of 16 and it is one of the default methods used by ProTERM.

Capture on Clear Line (64)

This method captures text normally erased when a host system sends an emulation code to clear the line with the cursor. This method has a value of 64. It is useful on some host systems that never scroll the screen or clear it, but clear each line individually before displaying new text.

Capture on Cursor Reposition (128)

This method captures text whenever the cursor is moved to a new line. This method has a value of 128. It is useful because it captures text from almost any host system. The drawback of this method is that it often captures more text than is desired.

Keyboard Emulation

The concept of the emulation of keyboards may sound a little complex as you get started, but the following should help to ease your apprehensions and give an understanding of how it all works.

The Virtual Keyboard

Keyboard Emulation allows ProTERM to emulate (imitate or simulate) keyboards used by host terminals which are very unlike Apple computers, but can be imitated by ProTERM with excellent results.

Many terminals have special “function” or “editing” keys not available to an Apple computer. When one of these keys are pressed on one of the “real” host keyboards, a series of programmed events from the host computer are evoked. To produce these keys on the Apple II, ProTERM uses some creative “keyboard mapping” features to make the main-frame terminal think it really is connected to another computer just like itself.

There are two general models of the Apple II: The Apple IIe and IIc, (with at least two versions of each of those between the early and later stages) plus the Apple IIs. Each model has a slightly different keyboard, and the IIs was shipped with at least two differently configured IIs keyboards. In addition, the IIs can utilize the regular IIs, or the extended IIs keyboard of which there are also multiple configurations. Together with the fact that each host terminal has a different key layout, the combination of all of those variables makes more of keyboard layout combinations than could ever be illustrated. Instead of supplying a separate catalog of keyboard illustrations, the ProTERM user manual uses the concept of a “virtual keyboard.”

The Concept of the Virtual Keyboard

Three Apple II keyboard illustrations are shown below and none of them look like the keyboard you use on your computer because they are not graphic representations of real keyboards, they are cross reference maps showing emulated key combinations. That is, each of the Apple keyboard illustrations show the key or the key combinations needed which allow that style of keyboard to imitate the needed emulated keys on all of the various hosts they can imitate.

Finding Your Keyboard

To “read” the map for your Apple computer, first determine which keyboard you are using by looking at the name captions, not the pictures:

- Apple II (any apple IIe, or IIc) keyboard
- Apple IIs keyboard
- Apple IIs extended keyboard.

As noted above, the keyboard illustrated will NOT “look” like your keyboard, so match the caption instead of the illustration. Now find the keyboard illustration for the emulation you want to emulate.

These illustrations are NOT pictures of keyboards, they are maps showing key combinations.

As an example, note the DEC VT-100 keyboard shows keys labeled PF1, PF2, PF3 and PF4. These are the keys which are NOT on the Apple keyboard and will need to be emulated. Now look at the map of the keyboard captioned as describing your computer and see where those four "PF" keys are located. Note the keystrokes listed on those keys. For example, the Apple II keyboard map keys tell you, in order to create the emulation of a VT-100 PF1 key you would press OPTION-! (actually the keystrokes would be OPTION-SHIFT-1 to get the OPTION key plus the EXCLAMATION POINT). With DEC VT-100 emulation chosen in the Edit System Params window and when connected to a VT-100 host, this key combination instructs ProTERM to send the exact needed command to the emulated host. Also see the Index: *other function keys*.

Unlike the Apple IIgs, the Apple IIe and IIc keyboard have a limited number of keys available for alternative use. However, there are ways to work around the problem.

One difference is immediately obvious on the IIgs is that it has a number keypad as well as the number keys set across the top of the keyboard. Less obvious is the fact that the number keypad keys are wired separately, from the keyboard number keys, and this allows those keys to take on special functions. There were some Apple IIe computers manufactured with keypads, but alas, they are wired directly to the number keys along the top of the keyboard, so they cannot be used like the IIgs keypad keys.

Because the IIgs keypad is a separate set of keys, they can be used for separate emulation functions without modification, for example, the top number pad keys: Clear, Equals, Slash and Multiplication, are respectively dedicated as PF-1, PF-2, PF-3 and PF-4 key when using certain emulations such as VT-100. In addition and less obvious, the IIgs arrow keys are also wired separately from the keyboard keys. Where an Apple IIe and IIc arrow keys are really nothing more than a control key modification of four keyboard keys, e.g.: Cont-H, Cont-J, Cont-K and Cont-L are used for arrow keys.

Because the IIgs has keys that can be used directly for certain functions, e.g., arrow keys, the arrow keys are used directly and unmodified. However, because of the limitations of the IIe and IIc keyboards, it is necessary to use one of several key modifiers to make up the difference, and achieve the same effect.

Modifier keys (those held down to change the action of another key) available on Apple IIe and IIc keyboards are the:

- OPTION (Closed-Apple) key
- SHIFT key
- CONTROL key

Certain popular emulations such as VT-100 as set up in ProTERM for the Apple IIe and IIc, allow arrow keys to become a different key when the OPTION key is held down during their use. This modification allows the keys to act differently and give direct and desired interaction with the service being emulated. This key modification allows the user to move a cursor to react with the emulated interface.

Keys on the *Apple II Keyboard Mapping* chart showing a caret (^) prefix require the CONTROL key as part of the key sequence and keys with "opt" prefix require the OPTION key.

Apple IIgs Keyboard Mapping

The Apple II GS Keyboard is a little different than the Apple II keyboard because its physical construction supports ARROW and KEYPAD keys which are wired separately from the other keys. For example, the numbers on the keypad can be used (mapped) by software differently than the numbers across the top of the alpha character set. These keys allow some key combinations without additional keystrokes. The FUNCTION keys require the use of the OPTION key with the TOP-ROW NUMBER keys. The editing keys require the use of the OPTION key with the KEYPAD NUMBER keys.

Apple IIgs Extended Keyboard Mapping

The Apple II GS Extended Keyboard supports the ARROW keys, KEYPAD keys, EDITING keys and FUNCTION keys with only minor modifications. The FUNCTION keys F11 thru F20 require using the OPTION key while pressing F1 thru F10. The three EDITING keys on the top row also require the OPTION key while pressing the equivalent of the THREE BOTTOM ROW editing keys.

Printer Emulation

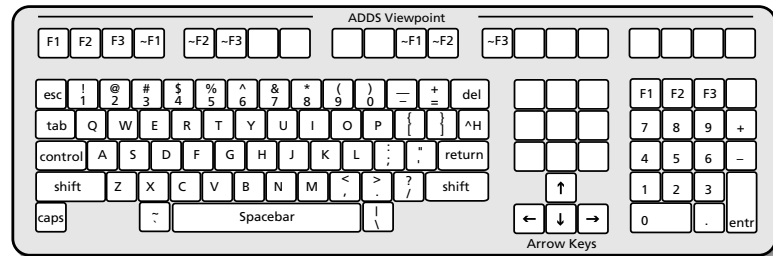
In addition to offering Display Emulation and Keyboard Emulation, ProTERM also offers *Printer Emulation* for those terminals which can utilize a printer. Many terminals have a printer port attached and include commands to allow the remote host to print data on the local printer. When applicable, ProTERM emulates these printer codes and allows the remote system to print data on your local printer.

NOTE: While ProTERM emulates the printer port, it does not emulate the printer codes. If the remote host wants to invoke special printing features such as underline or double-strike on the printer, the host must be told what type of printer is being used.

Terminal Emulation

The following lists the different terminals emulated by ProTERM along with capabilities and features. Those emulations which include keyboard emulation include a picture of the virtual keypad mapping. See *Keyboard Emulation* and *The Concept of the Virtual Keyboard* (above) for more information on how to determine which keystrokes produce which terminal inputs. Each emulation also provides a list of capabilities which are and are not supported.

ADDS Viewpoint

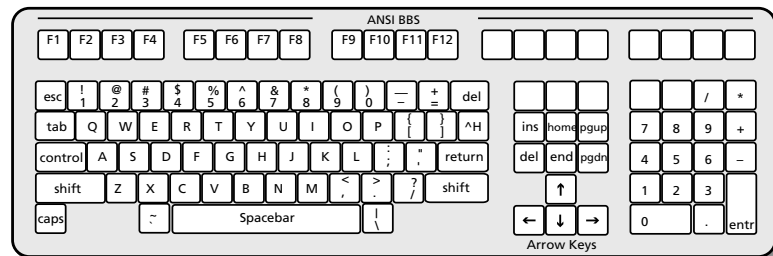


ADDS Viewpoint Keyboard Emulation

The Viewpoint is manufactured by Applied Digital Data Systems. It consists of an 80x24 video display, a detached keyboard and a printer port. ProTERM will emulate the display, keyboard and printer port.

All Viewpoint keys can be emulated with ProTERM. The ~F1...~F3 represents the SHIFT-F1...F3 keys. The function keys are located in two different positions for convenience.

ANSI BBS



ANSI BBS Keyboard Emulation

The ANSI BBS emulation models an emulation which has evolved out of the PC Compatible world of computing. Many bulletin board systems use ANSI BBS emulation as a standard way of doing display control. ProTERM supports both the display and keyboard emulation. ProTERM cannot handle color text display since this capability is not supported by the Apple II hardware.

- Cursor Up
- Cursor Left
- Cursor Position
- Forward/Reverse Tab
- Clear Screen
- Insert Char
- Cursor to Start of Line
- Clear to Start of Screen
- Clear to Start of Line
- Clear Line
- Delete Line
- Scroll Down
- Clear Character
- Redefine Function Key
- Cursor Down
- Cursor Right
- Enquire
- Beep
- Reset
- Delete Char
- Home Cursor
- Clear to End of Screen
- Clear to End of Line
- Insert Line
- Scroll Up
- Set/Reset Tab Stop
- Save/Restore Cursor

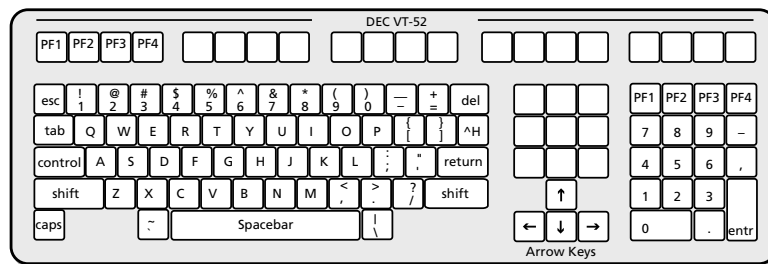
...are all supported by ProTERM. Set Video Mode is processed by ProTERM, but has no effect (only the 80x24 video mode is supported).

All ANSI BBS keyboard keys which are present on an "AT" style keyboard are emulated by ProTERM. The emulation also allows custom function key values to be setup by the remote host.

Control Show

When set to Control Show, ProTERM displays all incoming data in a special format so that all characters (including control and high-bit) are visible. Normal printable characters (those in ASCII range 32...127) are displayed as normal characters. Control characters (those in ASCII range 0...31) are prefixed by the ellipses character "...". High-bit characters are displayed in inverse (those in ASCII range 128...255).

DEC VT-52



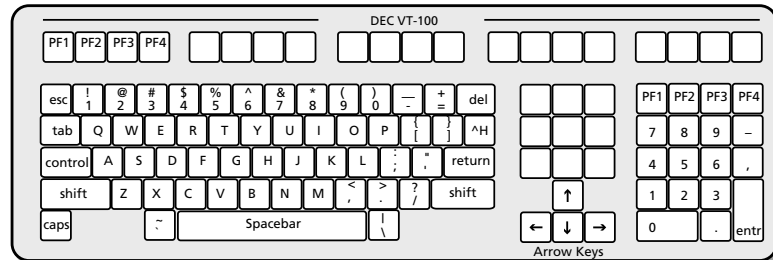
VT-52 Keyboard Mapping

The VT-52 is manufactured by Digital Equipment Corporation. It consists of an 80x24 display and includes special character graphics and an extended keyboard.

- Cursor Up
- Cursor Left
- Cursor Position
- Index
- Clear to End of Line
- Clear Screen
- Set/Reset Graphics Mode
- Cursor Down
- Cursor Right
- Identify Terminal
- Reverse Index
- Clear to End of Screen
- Home Cursor

...are all supported by ProTERM.

All VT-52 keys can be emulated with ProTERM. The PF1...PF4 keys are present in two different locations for convenience.

DEC VT-100**DEC VT-100 Keyboard Mapping**

- Cursor Up
- Cursor Left, Cursor Right
- Cursor Position Report
- Identify Terminal
- Set Vertical Margins
- Erase in Display
- Set/Reset Tab
- Reverse Index
- Select Character Set
- Linefeed/Newline Mode
- Origin Mode, Wraparound
- Cursor Down
- Cursor Position
- Device Attributes
- Save/Restore Cursor
- Device Status Report
- Erase in Line
- Index
- Reset
- Set Graphics Rendition
- Cursor Key Mode
- Keypad Mode

...are all supported by ProTERM. Smooth Scrolling Mode, 132 Column Mode and VT-52 Mode are not supported by ProTERM. To use VT-52 Mode, select the VT-52 emulation.

All VT-100 keys can be emulated with ProTERM. The PF1 thru PF4 keys are present in two different locations for convenience.

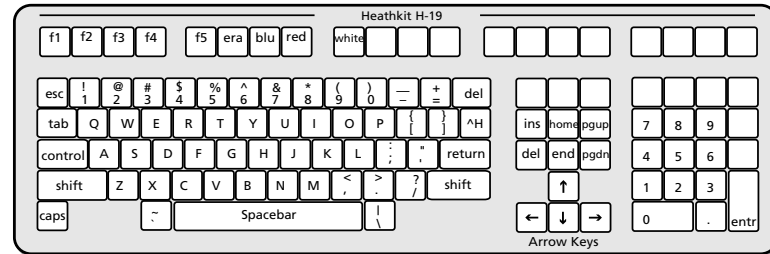
Other Function Keys

Real VT-100 terminals only have four function keys labeled PF1...PF4. However, some host systems require the use of additional function keys (often labeled PF5...PF12 or F5...F12). These function keys are specific to the individual host system being used. ProTERM cannot provide direct support for these function keys since they are specific to individual systems. To send one of these "special" function keys, you need to contact the administrators of the host system and enquire what ASCII characters are required to activate each function key. For example, instead of pressing the ProTERM key that represents PF3...PF12, you could press ESCAPE followed by "O" followed by "P". These are the ASCII characters which makeup the VT-100 PF3 function key. As mentioned above, the ASCII character sequences used for PF5...PF12 vary from system to system so ProTERM can provide no translation.

Let Macros Perform as Function Keys

System Macros and Global Macros can be used to send specific key combinations (extraordinary or customized function keys) once the key combinations are found. See the Index: *Macro; Global and/or System.*

Heathkit H-19



Heathkit H-19 Keyboard Mapping

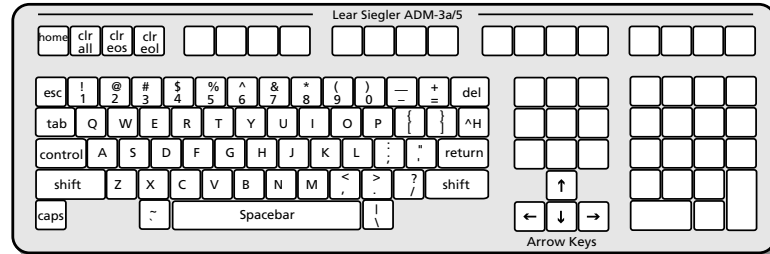
The H-19 is a powerful terminal which uses a superset of the DEC VT-52 emulation. While it does not support a printer port, it has many different display features and commands. Because it is not an ANSI terminal, it has very short escape sequences which often makes text display on the H-19 faster than on an ANSI or VT-100 terminal. ProTERM supports the 80x24 display along with the special character graphics.

- Cursor Up
- Cursor Left
- Cursor Position
- Home Cursor
- Index Down
- Clear Screen
- Clear to End of Screen
- Clear to End of Line
- Delete Line
- Identify
- Set Display Mode
- Cursor Down
- Cursor Right
- Report Cursor Position
- Tab, Index Up
- Set/Reset Insert Mode
- Clear to Start of Screen
- Clear to Start of Line
- Clear Line, Insert Line
- Delete Char
- Reset, Save/Restore Cursor
- Set Keypad Mode and Show/Hide Cursor

... are all supported by ProTERM. While the H-19 has an ANSI mode, ProTERM does not support this. To use ANSI, select either VT-100 or the ANSI emulation.

All H-19 keys can be emulated with ProTERM. The keypad will function based on emulation settings from the remote host. The editing keys are always available.

Lear Siegler ADM-3a/5



Lear Siegler ADM-3a/5

ProTERM's LSI ADM-3a/5 emulation emulates both the ADM-3a and the ADM-5 terminals. ProTERM supports the 80x24 display, the printer port option and the ADM-5 editing keys.

- Cursor Up
- Cursor Right
- Home Cursor
- Index Down
- Clear to End of Screen
- Aux Port On and Aux Port Off
- Cursor Down, Cursor Left
- Cursor Position
- Index Up
- Clear Screen
- Clear to End of Line

...are all supported by ProTERM.

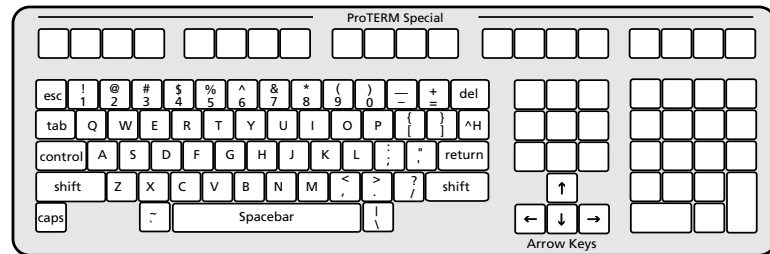
All ADM-3a/5 keys are supported by ProTERM. The "rubout" key on the ADM is the same as the ProTERM DELETE key.

No Emulation

When set to No Emulation, ProTERM will use a default "teletype" style emulation (also known as TTY). No assumptions will be made with regards to the incoming data. All printable characters will be displayed, and all other control characters will be suppressed with the following exceptions:

- ^M Move to start of next line
- ^H Backspace one character
- ^L Clear the screen

ProTERM Special Emulation



ProTERM Special Emulation Keyboard

The ProTERM Special Emulation (also called PSE) was designed to give BBS SysOps an easy way to take advantage of special programming effects involving graphics and sound which can be demonstrated to the caller. As a caller, PSE can be used instead of No Emulation. If the remote system supports PSE, then it will be used. Otherwise, PSE functions just as No Emulation. There is no harm in selecting it.

NOTE: If line noise is present, its effects may be amplified by the use of ProTERM Special Emulation. If there is a problem, PSE can be turned off by using the Emulation menu (see the Index: *Online; Menu*).

- Cursor Up
- Cursor Left
- Cursor Position
- Cursor to End of Line
- Enquire
- Sound Single Tone
- Normal, Inverse
- Tab
- Delete Line
- Insert Line
- Clear to End of Screen
- Bell
- Cursor Down
- Cursor Right
- Cursor to Start of Line
- Home Cursor
- Repeat Character
- Sound Dual Tone
- Mousetext
- Delete Character
- Insert Space
- Clear Screen
- Clear to End of Line

...are all supported by ProTERM. ProTERM Special Emulation has no special keyboard requirements.

ProTERM Special Emulation Programming

Controlling ProTERM Special Emulation consists of sending simple control character sequences. To allow compatibility with the Data media 1500 (the only thing approaching a standard in the Apple II world) PSE does not use a lead-in character. The following table lists all of the control codes supported by PSE along with any required parameters:

CONTROL-N	Set: inverse off, mousetext off.
CONTROL-O	Set: inverse on, mousetext off.
CONTROL-P	Set inverse off, mousetext on.
CONTROL-H	Move cursor left one character.
CONTROL-U	Move cursor right one character.
CONTROL-K	Move cursor up one line.
CONTROL-J	Move cursor down one line.
CONTROL-I	Move cursor to next tab stop (every 8 chars).
CONTROL-A	Move cursor to beginning of line.
CONTROL-B	Move cursor to end of line.
CONTROL-X	Move cursor to upper-left corner.
CONTROL-^ [X+32 Y+32]	Position cursor to the X, Y coordinates.

To position the cursor to any position on the screen (X can be 0 to 79, Y can be 0 to 23), just send the position code followed by the X and Y location, offset by 32. When the X, Y codes are sent, add 32 to the values to get the proper offset. For example, to position to column 27, line 5, you would send [CONTROL-^ ; %]. The ";" is the ASCII code for 59 (27+32), and "%" is the ASCII code for 37 (5+32).

ProTERM Special Emulation (Cont:)

CONTROL-D	Delete current character (under cursor).
CONTROL-F	Insert space at cursor.
CONTROL-Z	Delete current line.
CONTROL-V	Insert blank line.
CONTROL-Y	Clear to end of line.

CONTROL-W Clear to end of screen.
 CONTROL-L Clear the screen (and home cursor).
 CONTROL-E Inquire if using ProTERM Special Emulation.

When you send out [CONTROL-E] to a caller using ProTERM Special, the caller's ProTERM will send back [CONTROL-"] (ASCII code 29). This allows a BBS to transparently detect the use of PSE.

CONTROL-R [character count]
 Display character, count times.

This allows a three character code to be used to display multiple characters. For example, to display a window frame, it is necessary to show the top and bottom borders which are long lines of the same character (dashes, underlines, etc.). To draw a 64-character line consisting of equal signs, send [CONTROL-R = @] where "@" is the ASCII code for 64.

CONTROL-G Sound the bell.
 CONTROL-T [tone1 CONTROL-A duration]
 Sound single-tone for duration.
 CONTROL-T [tone1 tone2 duration]
 Sound dual-tone for duration.

The tone command has two forms. The first invokes the single-tone generator, which produces relatively pure tones. The second invokes the dual-tone generator, which produces some rather interesting sounds. The three parameters, tone1, tone2, and duration, can all take values from 1 through 127. There is currently no known translation between pitch/duration values and actual frequencies/times.

Split Screen Chat

ProTERM offers a split screen chat mode where the screen is divided into two parts: one for incoming data, and one for outgoing data. This is normally used in a situation where you have several parties "chatting" together in real-time on a large service. You compose all of your text on the lower screen, while incoming text from the service is shown on the upper screen. The split screen keeps text from the service from interrupting what you are typing.

Split Screen Chat — Editing

When using *Split Screen Chat*, the text you type is not sent to the remote system until the RETURN key is pressed. When the RETURN key is pressed, all of the text visible in the lower window is sent to the host. This allows you to compose and edit the text before sending it to the host. Although the host may not be able to accept it, you may enter up to 240 characters before pressing RETURN.

Split Screen Chat Editing Commands

Left Move cursor left one character.
 Right Move cursor right one character.
 Up Move cursor up one line.
 Down Move cursor down one line.
 CONTROL-B Move cursor to first character of first line.
 CONTROL-E Move cursor to last character of last line.
 CONTROL-A Move cursor to first character of current line.
 CONTROL-S Move cursor to last character of current line.
 CONTROL-D Delete character under cursor.

CONTROL-F	Insert space at cursor location.
DELETE key	Delete character to left of cursor.
CONTROL-X	Delete all text, move cursor to first character of first line.
CONTROL-Y	Truncate text at current cursor location.

Using the ESCAPE key in the *Split Screen Chat* Emulation mode will toggle between *Chat Mode* and full-screen emulation. So when Split Screen Chat is selected, and the Escape key is pressed, the screen will toggle between Split-Screen Chat mode and the No Emulation mode.

Split Screen Chat can be applied in different ways. By entering instructions in the *AnswerBack*: dialogue box, ProTERM will allow system connect options to be specified. The following characters can be placed as an AnswerBack string for the following special applications:

Four functional characters can be used in the Answerback window:

ASTERISK	*	Loggin with Full Screen active mode even though a "\$" may be used in the Answerback window to turn Split Screen Chat on. Using * alone will start in "No Emulation" mode. Pressing Escape will toggle into Split-Screen Mode.
DOLLAR	\$	Allow toggle from full screen to <i>Split Screen Chat</i> mode using the ESCAPE key. When the \$ is used, there will be no echo data locally when entered in Split-Screen Mode while in half duplex.
QUESTION	?	Used to Show Special Line to assist blind users so that Texttalkers can "read" the line and tell the unsighted user they are in Split Screen Chat.
AMPER	&	This can assist Delphi Apple users to deal with the 80 character line so that when the RETURN character is inserted, the line does not wrap single words to the next line when the last character falls on the end of the line.

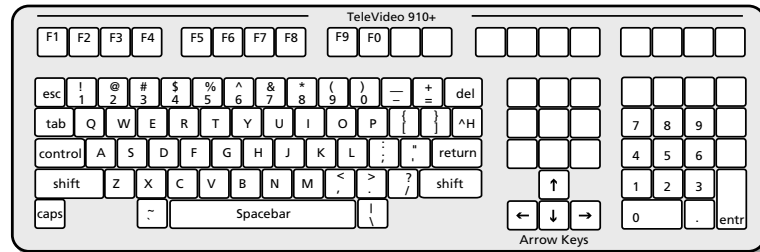
TIP: Try putting an ASTERISK and a DOLLAR "\$" which allows you to log on and be in Full Screen as you log on. The emulation remains normal (half duplex and full screen) until you press ESCAPE which toggles you to full duplex and Split Screen Chat mode.

As an example of how this works, place an ASTERISK (*) in the *Answerback*: dialogue window of the system you use to call with an emulation. Try calling one of the online systems such as CIS, or Delphi with Split Screen Chat chosen and an ASTERISK in the "Answerback:" window. For a Half Duplex system such as GENIE, use both the * and the \$ (their order does not matter). When you connect, you are not in the Split Screen mode, but pressing the ESCAPE key toggles in and out Split Screen mode.

Split-Screen Chat Mode – A Navigational Aid

Split Screen Chat mode can be a time saver when calling a host system that is slow to change prompts between commands. Pressing the ESCAPE key toggles the screen into the Split Screen mode and while the system has you on hold waiting to go to the next prompt, you can type in the next command. When the host system finally reaches the next prompt, just press the RETURN key to enter your waiting command.

TeleVideo 910+



TeleVideo 910+

The 910+ supports an 80x24 display, arrow and function keys and a printer port.

- | | | |
|-----------------------------|---------------|--------------------------|
| Cursor Up | • Cursor Down | |
| • Cursor Left | | Cursor Right |
| • Home Cursor | | • Position Cursor |
| • Report Cursor Position | | • Horizontal Position |
| • Vertical Position | | • Forward/Reverse Tab |
| • Beep | | • Set/Clear Tabs |
| • Insert Char | | • Delete Char |
| • Insert Line | | • Delete Line |
| • Clear Screen | | • Clear to End of Screen |
| • Clear to End of Line | | • Set Display Mode |
| • Display Control Character | | • Toggle Word-Wrap Mode |
| • Cursor On/Off | | • Set Display Mode |
| • Printer Control | | |
- ...are all supported by ProTERM.

All 910+ keys can be emulated with ProTERM. The keys labeled F1...F10 would be invoked by pressing the *Function* key and a numeric key on the 910+ keypad.

Installing New Emulations

One of the most flexible aspects of ProTERM is, additional terminal emulations can be installed independent of ProTERM releases. To install a new emulation, copy the emulation file (PTE.xx) to the main ProTERM directory. The next time ProTERM is run, the emulation will be available. No other changes are necessary. Additional emulation files will be made available through The InTrec BBS, the official support platform for ProTERM.

Macro = A set of instructions which operate an application.

Macros are part of ProTERM's REAL power.

Macros

CHAPTER NINE

A macro is a small computer program which can be activated within an application (program) to perform repetitive tasks simply by typing a key combination. A simplified description of a macro: a set of instructions for your computer, to do many keystrokes by pressing one, or at least very few keys (which start the macro). For example, when calling a remote host system, ProTERM can use a *logon macro* to automatically send account and password information. *Logon macro* or *AutoLogon macro* is a set of instructions which informs ProTERM what information to send (the account and password) and when to send it (after the appropriate prompt is given) when calling a host system.

NOTE: Correct punctuation calls for ending quotes (") to be on the outside of periods, exclamation marks and question marks as a sentence is ended. However, this chapter deals with macro language and the use of strings, commands and phrases which are complete as stated. To separate and set off these command notations when used in the context of explaining their use or function, they are placed within quotes in the sentence. Since placing a period or question mark (correctly) within the quoted command could alter the meaning of the command, the convention of this chapter is to let the quotes fall where they may and leave the command syntactically correct.

While simplifying its use, Macros greatly increase the use and flexibility of an application by allowing a user to create custom "commands" and "programs" for individualized needs. A couple of keystrokes can perform simple tasks like sending a simple string (set) of characters (such as a name) or even complete complex tasks like calling a remote system at a predetermined time, logging on, reading mail, reading new bulletins and other online chores all without user intervention. This ability to create macros to perform tasks not envisioned by the program designer is what makes them so powerful. Macros literally provide the power to extend the functionality of an application beyond its original design.

About the ProTERM Macros

ProTERM is equipped with a very complete macro language as well as a tool for automatic logon macro generation. The macro language includes over 60 different commands and functions, supports both string and numeric variables and can directly control the user interface. Users are often wary of macros since they apparently require "programming." While its true ProTERM does require programming for complex macros, auto logon macros used for automatically logging onto a system, plus the management of any redundant task can easily be created using ProTERM's AutoLearn command.

Reading about and experimenting with AutoLearn Macros and System Macros will get you started and make this documentation the most effective for you. Consider using AutoLearn to generate macros and then customizing them. Run the "PT3.CLOCK" macro file and invoke some of the "PT3.GLOBAL" macros. Use the ProTERM Editor to open and examine these files, see how they are written and change them to suit your needs. Work with copies of these files, add and subtract commands and text phrases, and see what makes them work. Use the example macros in this chapter to gain further insight on customizing ProTERM to fit your own needs. ProTERM supports the following three types of macros. Each type is explained in-depth later in this chapter. Also, we've taken advantage of some unused disk space on the 3.5" ProTERM disk and have provided some additional macros in a folder named "Utility." These and many more macros, examples and a lot of discussion and assistance is available by calling the InTrec support BBS. See the number on the back of this manual.

Three General Types of Macros

System Macros

A relatively short macro or set of macros directly associated with a specific host system's entry in the *Dial* menu. These macros are available for use while online with the corresponding system. System macros can be edited by selecting the host's system entry from the Dial menu and then pressing the Macro button.

Global Macros

These are short to medium sized macros available for use anytime ProTERM is running. Global Macros can be edited by opening the file "PT3.GLOBAL" with the ProTERM Editor, and then changing and saving it to disk and then trying it again. *See GLOBAL Macros* below.

Macro File

These are typically medium to large macros designed for a specialized purpose. These macros reside in individual files and must be run via the Macro File command. Macro Files can be edited using the ProTERM Editor.

AutoLearn Macro Generator

AutoLearn is a macro generator which creates System Macros automatically (without any programming on the part of the user). It does this by recording keystrokes during logon to a remote host system and uses that information to "learn" the logon procedures for that system. After the keystrokes are recorded, the information is compiled into a macro and the result is saved. After ProTERM goes through this "learning experience," subsequent logons to

that host are automatic. Select the system entry to be called from the Dial menu, press the Dial button and ProTERM does the rest. All the work of sending account numbers, passwords and other instructions required for logon is handled automatically. Once created, these macros can also be customized. If it becomes necessary to create a new logon macro (possibly because the host system changes, or your needs on the system change and the old macro no longer does what needs to be done), just use AutoLearn again and it replaces the existing logon macro.

Creating Macros with AutoLearn

Select a system entry from the *Dial* menu and press the *Macros* button from the *Edit System Params* window. When the System Macros window is displayed, change the "Macro to Execute after Logon:" to *Learn* and press the *Save* button. The next time you connect and logon to that system, ProTERM will be "watching." When you connect with the system, the message "AutoLearn Macros On" is displayed at the top of the screen. If it is not, "Macro to Execute after Logon" was not set to *Learn* prior to the call.

After connecting to the system, logon as you normally would. For the best results, type slowly and deliberately. Certain systems have a delayed echo and typing too fast may confuse the signals ProTERM is looking for. Be careful to type accurately as AutoLearn is recording everything you do. If you make a mistake and correct it, both the mistake and correction are recorded as part of your logon macro. When the logon procedure is completed (the system is at the point you want it to be after subsequent automatic logon), press COMMAND-N. AutoLearn processes the information it has recorded and presents the new macro for approval. Press *Save* and AutoLearn saves the new macro as part of the corresponding system entry in the Dial menu. If you made mistakes during the logon process, press *Cancel* and repeat the process by calling the system again. Future calls only require choosing the host system entry from the Dial menu and pressing Dial. Everything else is automatic.

NOTE: When a remote host system is called the first time, the logon procedures are typically specific to that call because you may be asked some questions to establish your account on that system. After the initial call, call back a couple of times just to get a feel for how the logon procedure works. When you are familiar with the logon process, call back with AutoLearn turned on and the logon procedure can be completed without mistakes.

It is also possible to use AutoLearn to create useful macros for purposes other than logon. While online with a remote host system, AutoLearn can be used to automate a frequently used set of keystrokes. To use AutoLearn in this way, choose *AutoLearn Macro* from the *Online* menu. When prompted for the *AutoLearn Macro Element*, enter the System Macro line number where the macro should start. Normally, this should be a line not currently containing any other macro information. If it does, the old information is replaced when AutoLearn generates the new macro. To check this, choose the system from the Dial list, choose *Macros* and note which lines of the system's macros are being used. If an AutoLogon Macro has been created, it will use the lines starting with line one and work down a line at a time until it is complete.

When an AutoLearn Macro is being created, a highlighted bar is displayed towards the top of the screen indicating AutoLearn is in operation. At that point, perform the online operations you want to automate. Press *COMMAND-N* when the operation is complete, and ProTERM's AutoLearn will generate the new macro and display it for approval. Press *Save* to save or *Cancel* if you are not satisfied. To run the macro, while using that host system, press *COMMAND-x* (where "x" is the System Macro line number entered above).

**COMMAND-N
finishes the Auto-
Logon Macro and
writes it to disk.**

**COMMAND = Open
Apple & OPTION =
Closed Apple.**

AutoLearn Examples

The following System Macro sets were created using AutoLearn. The first macro set performs a automatic logon for CompuServe. The second macro set performs a automatic logon for GENie. The third macro set includes an additional logoff macro generated for GENie. An “English translation” of each macro set is provided to give an intuitive feel as to how each macro operates.

NOTE: Users of half-duplex systems such as GENie should read through the GENie example below which explains how to keep account and password information from being displayed on half-duplex systems.

CompuServe AutoLogon Macro

```
k -1: WT 2 PR "^C" WT ": " PR "12345,123^M" WT ": " \
k -2: PR "PASS.WORD^M"
k -3:
k -4:
k -5:
k -6:
k -7:
k -8:
k -9:
k -0:
```

Translated, this macro set reads:

- Wait 2 seconds (WT 2).
- Send a CONTROL-C (PR "^C").
- Wait for a colon (WT ": ").
- Send the account number followed by RETURN (PR "12345,123 ^M").
- Wait for a Colon and a Space character (WT ": ").
- Go to line 2 and continue executing the macro(\).
- Send the password followed by RETURN (PR "PASS.WORD ^M").
- The macro terminates because it has run out of instructions.

GENie AutoLogon Macro

On half-duplex systems such as GENie, each key pressed on the keyboard is immediately displayed on the screen. This is known as “local-echo” since ProTERM (which is local) provides an “echo” (displayed on the screen) for each character sent to GENie. (See the Index: *Half Duplex* for more detail.) Unfortunately, when half-duplex is used, everything typed at the keyboard (or sent by a macro) is echoed, even if it is sensitive information like accounts or passwords. Fortunately, it is possible to modify a logon macro so the account and password information is not displayed.

When AutoLearn generates a macro it uses the “PR” (print) command in order to send data to a remote host system. On half-duplex systems, the PR command also displays the data on the local screen. By contrast, the “PR #1” (print without local echo) command sends data to a remote host system, but does not display the data on the screen. To generate a logon macro for GENie which does not display the account and password information, follow the steps outlined above to create a logon macro using AutoLearn. When COMMAND-N is pressed and the macro is presented for inspection, press the TAB key to highlight the line of the macro which contains the PR command which prints (sends) the account number and

Change “PR” to “PR #1” to hide sensitive information on half-duplex systems.

password information. Use the arrow keys to position the cursor following the PR command and type #1, (pound sign followed by 1 followed by comma). Press the TAB key until the Save button is highlighted and press the RETURN key.

NOTE: For more information about the PR command and its different options, read about device channels and PRint.

```
k -1: WT 2 PR "HHH" WT "=^Q" PR #1,"XXX1234,PASSWORD^M"
k -2:
k -3:
k -4:
k -5:
k -6:
k -7:
k -8:
k -9:
k -0:
```

Translated, this macro set reads:

- Wait 2 seconds (WT 2).
- Send HHH (PR "HHH").
- Wait for the string "= ^ Q" (EQUAL followed by CONTROL-Q) (WT "= ^ Q").
- Send the account/password followed by RETURN without displaying it on the console (PR #1,"XXX1234,PASSWORD ^ M").

GENie Logoff Macro

After a logon macro has been generated, it may be desirable to generate some other simple macros to aid your navigation of the system. An example of this is a macro which logs off of a system. While this is trivial in the case of GENie, it serves to illustrate the point. This macro was created using the AutoLearn command while online with GENie. The number “9” was entered in response to AutoLearn Macro Element. To invoke the logoff macro, press COMMAND-9 (k -9). As you begin to see what makes the macros work, you can experiment by selecting an empty line and write your own.

```
k -1: WT 2 PR "HHH" WT "=^Q" PR#1,"XXX1234,PASSWORD^M"
k -2:
k -3:
k -4:
k -5:
k -6:
k -7:
k -8:
k -9:PR "bye^M"
k -0:
```

Translated, this macro set reads:

- Print “BYE” followed by a RETURN character, CONTROL-M (PR "bye ^ M").

Changing AutoLearn Macros

AutoLearn is not a “type” of macro. Rather, it is a tool for generating System Macros. When reference is made to an “AutoLearn Macro”, it is really a reference to a System Macro

generated by AutoLearn. As a result, changing an AutoLearn Macro is the same as changing a System Macro. See the next section for information on changing System Macros.

System Macros

System Macros are a set of ten individual macros, each up to 63 characters in length. They may be tailored to suit each system entry in the Dial menu and are generally used for automatic logon and system specific commands. Each individual System Macro can be executed from terminal mode by entering COMMAND-*x* where *x* is one of the ten numbers of the macro (there are ten System Macros numbered 1..9 and 0). The System Macros differ in appearance from other text fields because they have no "wire frames" which are omitted due to space constraints.

Changing System Macros

Changing a System Macro involves selecting a system entry from the Dial menu and pressing the *Macros* button. The System Macros associated with the selected system are then displayed. They can be edited in the same way other text fields are (see *IndexText; Fields*). When editing is completed, press Save. If a mistake occurs during editing, Cancel exits the System Macros window without saving any changes.

System Macro Syntax

All the different types of macros (System Macro, Global Macro and Macro File) share a similar syntax. Each are entered as "free-form" text (spacing does not matter) and commas are optional (except between numbers). Syntax characteristics common to all the different macro types are discussed below under Macro Syntax. One item of note with regard to System Macros is the "\ (backslash) operator. This is used to indicate continuation to the next line of a macro. When a System Macro is run, each instruction in the line is executed in sequence until a "\ is encountered or the end of line is reached. When a "\ is encountered, execution continues at the first instruction on the next line.

Running System Macros

Each individual System Macro can be run from terminal mode by entering COMMAND-*X* where *X* is the number of the macro (there are ten System Macros numbered 1..9 and 0).

System Macro Examples

The following System Macro examples illustrate how to logon to SprintNet and Delphi. Macro element k-9 is an example of an autologoff macro.

SprintNet Logon Macro (Also see Delphi Login Appendix F)

```
k-1: WT "O^M^J" PR "@D^M" WT "L=" PR "^M" "^J@" PR "delphi^M"\  
k-2: WT ":" PR "youraccountname^M" WT ":" PR "password^M" EX  
k-3:  
k-4:  
k-5:  
k-6:  
k-7:  
k-8:
```

```
k -9: PR "bye^M" WT "in:" DO "O:H", "[]" EX
k -0:
```

Translated, this macro set reads:

- Wait 50/100 (1/2) second and send SPACE D RETURN with 5/100 second delay between each character (PR 50,5," D ^ M").
- Wait for "L=" (from the TERMINAL= prompt) from Telenet. If it is not received within 2 seconds, go to the start of line 1 (WT 2,~1,"L=").
- Send "d1" as the terminal identifier (PR "d1 ^ M").
- Wait for a LINEFEED @ prompt (WT " ^ J@").
- Go to line 2 and continue executing the macro (\).
- Send the name of the service for Telenet to connect with (PR "C service ^ M").
- Terminate macro execution (EX).

Terminal Server Logon Macro

```
k -1: SY "^m" WT 2,~1,"resource:" PR "campus.vax^m" \
k -2: WT "login:" PR "greg^m" WT "word:" PR "xxx^m" EX
k -3:
k -4:
k -5:
k -6:
k -7:
k -8:
k -9:
k -0:
```

Translated, this macro set reads:

- Send a RETURN character (^ M) until a response is received from the system (SY " ^ M").
- Wait 2 seconds for the string "resource:" to be received. If it is not received, go back to the start of line 1, otherwise continue executing line 1 (WT 2,~1,"resource:").
- Send the name of the system to be connected to (PR "campus.vax ^ m").
- Go to line 2 and continue executing the macro (\).
- Wait for "login:" (WT "login:").
- Send an account name of "greg" (PR "greg ^ m").
- Wait for "word:" (from Password:) (WT "word:").
- Send "xxxx" as a password (PR "xxx ^ m").
- Terminate macro execution (EX).

Global Macros

Global Macros are a set of resident macros available for use anytime ProTERM is running (thus the name "Global Macros"). Global Macros are generally used as shortcuts to allow a single keypress to activate complex ProTERM functions, such as automatically starting a protocol transfer. Since they are always (globally) resident, Global Macros can be used as a "macro subroutine library." Global Macros are activated by holding down the OPTION key and pressing a *letter* key. The activation key for each Global Macro is individually definable among the 26 upper and lower case alpha keys giving a possible 52 Global Macro combinations.

When a Global Macro is running, it executes instruction after instruction until an "EXit"

command (see Macro Commands below) is encountered. Unlike System Macros, Global Macros do *not* stop running when one macro runs into another. If two or more macros in the Global Macro file are not separated by “EX” commands, the top-most macro can run into the macro(s) below running the next macro(s) in sequence.

Changing Global Macros

Global Macros are stored in a text file called “PT3.GLOBAL” which resides in the ProTERM directory (the area of the disk containing the other ProTERM files). On a 5.25" disk it is on the PROGRAM side of the disk. Since this file is read into memory every time ProTERM is run, Global Macros are always available for use. The Global Macros file can be edited with the ProTERM Editor. However, changes made to the Global Macros file do not affect the Global Macros resident in memory. To make the macros in the changed Global Macros file ready for use, see Loading Global Macros below.

Loading Global Macros

“PT3.GLOBAL” is the default filename for the set of Global Macros which loads when ProTERM starts, but it is also possible to load different sets of Global Macros stored under other filenames. To load a different Global Macro file automatically during startup, name the file “PT3.GLOBAL.” To load a different set of Global Macros (or if you have edited the current set and need to update the set currently in memory), choose the Read Globals command from the Misc menu. Enter the Global Macro filename to be read into the file selection window and press the Read button. The new Global Macro set replaces the existing Global Macro set and remains resident until a new set is loaded or ProTERM is restarted. As a shortcut, one of the default Global Macros automatically reloads the “PT3.GLOBAL” file with a single keystroke. To run the Global Macro which reloads “PT3.GLOBAL”, press OPTION-Z.

Global Macro Syntax

All the different types of macros (System Macro, Global Macro and Macro File) share a similar syntax. Each are entered as “free-form” text (spacing does not matter) and commas are optional (except between numbers). Syntax characteristics common to all the different macro types are discussed below under Macro Syntax. The most important item to note with regard to Global Macros is, a macro executes until it reaches an explicit EXIT command. Unlike System Macros which stop executing at the end of a line, Global Macros continue to execute until an EXIT command is encountered.

Running Global Macros

Global Macros are activated by holding down OPTION and pressing a letter. The activating letter for each Global Macro is individually definable for the 26 upper and lower case alpha keys giving a possible 52 Global Macro combinations. If there is only one Global Macro using a certain alpha character, it can be run by press OPTION-letter where letter is *either* upper or lowercase. However, if there are two Global Macros, one using the upper case letter and the other using the lower case letter, pressing OPTION-letter runs the Global Macro corresponding to the exact case of the letter. For example, if there was a Global Macro “a” but not “A” (or vice versa), either Option-a or OPTION-A would run that macro.

NOTE: The label of the Global Macro represents how you invoke the Macro. For example, consider a label “@@x” (where “x” equals any upper or lower case alpha key “a” through “Z”). Since its possible to use upper and lower case labels in Global Macros, e.g. “@@A” and “@@a” (respectively) create separate distinct Macro Labels. This makes it possible to use the 26 lower and 26 upper case letters (called Macro Labels) for a total of 52 different Global Macros.

Global Macro Examples

The following examples demonstrate the versatility of the Global Macros. Because they are always resident and only a keystroke away, Global Macros allow extra functionality to be added to ProTERM.

Online Toggle Macro

```
@@T * toggle between offline and online *
SEt $O=128-$O      * $O is online control: <128=offline, >127=on-
line *
EXit
```

Translated, this macro reads:

- Run macro when OPTION-T is pressed (@@T).
- Set the value of variable \$O to 128 minus its old value (SEt \$O=128-\$O).
- End the macro (EXit).
- Text between "*" are comments and do not affect the way a macro runs.

Reload "PT3.GLOBAL" Macro

```
@@Z ; reload the pt3.global file
IF ($D),{ DO "File:Quit" }
DO "Misc:Read", "<%sPT3.GLOBALS> []", <Path>
EXit
```

Translated, this macro reads:

- Run macro when OPTION-Z is pressed (@@Z).
- Text to the right of a ";" and extending to the end of the line are comments and do not affect the way a macro runs.
- If variable \$D (ProTERM area: 0=terminal, 1=editor, 2=scrollback) is not zero, choose the Quit command from the File menu (IF (\$D),{ DO "File:Quit" }).
- Choose the Read Globals command from the Misc menu and pass the ProTERM pathname followed by the filename PT3.GLOBAL (DO "Misc:Read", "<%sPT3.GLOBALS> []", <Path>).
- End the macro (EXit).

Default Global Macros

ProTERM includes a default set of Global Macros which perform many useful functions. The following lists the default Global Macros and the keyboard commands which run them:

- OPTION-a: Open a Receive ASCII file under the name "SAVED.FILE". If the file already exists, append the new data.
- OPTION-A: Toggle Receive ASCII "Hold" (On/Off) with a single keypress. Requires OPTION-a (above) to start the Receive ASCII first.
- OPTION-C: Run the "PT3.CLOCK" Macro File.
- OPTION-K: Clear the Editor from terminal mode.
- OPTION-I: Launch a program called "MY.PROGRAM".
- OPTION-L: Launch a different application (bypass ProDOS quit code).
- OPTION-M: If "PT3.CONVERT" is Present, run it (used to convert an old ProTERM 2.2 Dialing List to current ProTERM format). NOTE: After the "PT3.CONVERT" program has been used, this macro may be removed and "PT3.CONVERT" can be removed from the disk.
- OPTION-N: Print the Answerback string to the remote system or the ProTERM Editor. This little macro is useful because it allows the Answerback

field to be used as a name field. Enter your name or handle (however you are called on a particular system) into the Answerback field. Then, press OPTION-N to send that name to the remote system (from terminal mode) or to insert it into the ProTERM Editor.

- OPTION-p : Set the print parms for "Wide-Mode" and print a file from within the ProTERM Editor. This macro changes the print parms to allow an ImageWriter printer to print up to 136 characters on one line. Open the document with the ProTERM Editor and enter OPTION-p (lower-case p) to print.
- OPTION-P : Set the print parms for "Wide-Mode" and print a file from disk. This macro changes the print parms to allow an ImageWriter printer to print up to 136 characters per line. To use this macro, the AutoSave pathname should be filled in with a directory name (see Index: Preferences). Make sure the disk containing "MY.FILE" (this name can be changed by changing the Global Macro) is online and enter OPTION-P (upper-case P) to print.
- OPTION-q : Paste a user's online name or address from a line in the Editor to the online prompt. An "address book" file can be kept for often used names on various systems. It can be named anything convenient for you, but the name "ADDRESS" will make it rise close to the top of the file selector when you need to open it with the Editor. The syntax and form of the user-names and the addresses are as follows: The identifying name is to the right and the address part of the line must be to the left and separated by at least 5 (or more) spaces or a TAB equaling at least 5 spaces. Do not use when COMMAND-Z (Show Special) is turned on. The file "ADDRESS" should be formatted something like this example:

```

InTrec - Tech   proterm@intrec.com
InTrec - Sales  sales@intrec.com
InTrec - Delphi Tech   proterm@intrec.com
InTrec - GEnie Tech   proterm@intrec.com
InTrec BBS Jerry    1

```

When you need a user's address while online, press COMMAND-E to goto the ProTERM Editor. Then, move the cursor to the line containing the user's name and online address. Once the cursor is on this line, press OPTION-P to send the address to the remote system.

- OPTION-r : Change selected Editor text to Paragraph mode and then select the *Reply Format* command. This is useful because text captured from a remote host system needs to be changed to Paragraph mode prior to changing to *Reply Format* so short leftover lines are not intermixed with longer lines.
- OPTION-s : Send the text in the Editor to a remote system directly from Terminal Mode.
- OPTION-S : Send the text in the Editor to The InTrec BBS using prompted send. This macro instructs The InTrec BBS to provide prompts by sending ".P" command, sends the actual text from the Editor and then saves it by sending ".S".
- OPTION-T : Toggle between the online and offline mode. When used in the online state, the command returns to the Main Menu. When used in the offline state, the command removes the Main Menu returns to

**Toggle Online/
Offline.**

the online state (command mode) with an active cursor. Use the Online Parameters to change the current mode as needed for the online manipulation.

- OPTION-V : OPTION-V is a one-key shortcut to view files.
- OPTION-W : Show the time connected with Mark/Log buttons.
- OPTION-X : Format a text file and upload it via Xmodem. If you want to use Xmodem to post a text file to a remote system, use this Global Macro. It takes the text file and first formats for the remote system (using Print to Disk). Then, it uses Xmodem to upload the resulting file.
- OPTION-Z : Reload the current "PT3.GLOBAL" file. Use after making changes to the "PT3.GLOBAL" file to read the updated file into memory.

Macro Files

Macro Files are macros stored as a text file and provide an efficient method of performing complex tasks. Because Macro Files are stored in individual text files, they can be highly specialized. There are no limits on the number of different Macro Files which can be used. Individual Macro Files have a length limitation (around 8000 characters not counting spaces and comments) but multiple Macro Files can be "chained" together allowing large macro systems to be developed. The "8000" character limit may seem small but is somewhat deceiving. While ProTERM Macro statements such as "P~~ri~~nt" and "R~~ep~~eat" can be written in "longhand" making them easier to read, when writing these easy-to-read commands only the characters "PR" and "RE" are actually counted. In addition, commas, spaces (except between quotes) and comments are not counted, so when the macro is actually "digested" it is *much* smaller than it seems.

Changing Macro Files

Macro files are just text files containing macro commands. They can be changed using the ProTERM Editor or any other text editor.

Macro File Syntax

All the different types of macros (System Macro, Global Macro and Macro File) share a similar syntax. Each are entered as "free-form" text (spacing does not matter) and commas are optional (except between numbers). Syntax characteristics common to all the different macro types are discussed below under Macro Syntax. The most important item to note with regard to Macro Files is, a macro executes until it reaches an explicit EXit command. Unlike System Macros which stop executing at the end of a line, Macro Files continue to execute until an EXit command is reached. To run one macro file from another, refer to the CHain command below in Macro Commands.

Running Macro Files

To run a Macro File, choose the Macro File command from the Misc menu and select the name of the Macro File. Execution begins at the first macro command in the file and continues until an EXit command is reached.

Macro File Examples

The following examples show two different uses for Macro Files. The first is an automated Email and bulletin retrieval system for CompuServe. In normal use, a System Macro would perform automatic logon to CompuServe and would then chain to this Macro File. The second example is a stand alone macro which displays a digital clock on the screen. While the clock macro has no real practical value related to telecommunications, it is an interesting example of the flexibility and power of the ProTERM Macros.

CompuServe Auto-Retrieve Macro

```
DO "receive:ascii", "<CIS.INFO> [] [] [] su:1 [] [append] []"
WT "choice", %20, "Mail waiting."
WT "choice" PRint "go mail^M"
WT "choice!" PRint "read all^M"
%%10
WT "enter choice!", %20, "<CR> to continue"
PRint "save^M"
GOto %10
%%20
PRint "go appuser^M"
WT ":>" PRint "rea new^M"
WT ":>" PRint "go apiiven^M"
WT ":>" PRint "rea new^M"
WT ":>"
DO "receive:ascii", "[close]"
PRint "bye^M"
EXit
```

Translated, this macro reads:

- Open a Receive ASCII file of the name CIS.INFO. If it already exists, append the following to it. (DO "receive:ascii", "<CIS.INFO> [] [] [] su:1 [] [append]") []. The "su" selects the Suppress Control Characters option and the "1" puts a [✓] checkmark in that box. The "[]" is the same as pressing the left-most button in the window.
- When logging onto CompuServe, if mail is waiting, it displays the message "You have Electronic Mail waiting." Otherwise, the menu of commands is displayed followed by the prompt "Enter choice!" or "Enter choice number!". The macro waits for either "choice" or "mail waiting." (IF "choice", %20, "Mail waiting."). If "choice" is received, the macro continues executing at macro label %%20. If "mail waiting" is received, the macro continues to run on the next line.
- At this point, the macro knows there is mail waiting on CompuServe. It waits for the "Enter choice number!" prompt (WT "choice") and then sends "go mail" to go to the mail system (PRint "go mail ^ m").
- The macro waits for the "Enter choice!" prompt which CompuServe displays within its mail system (WT "choice!"). After getting the prompt, the macro sends "read all" to tell CompuServe to display all the mail (PRint "read all ^ m").
- After CompuServe displays a letter, the prompt "Enter command or <CR> to continue" is displayed. At this point the caller (the macro in this case) must specify whether the letter should be saved or deleted. This macro saves letters (print "save ^ M") but could be made to delete them by changing this command to (PRint "delete ^ M"). If there are more letters, the next letter is displayed and the cycle

repeats. However, if this letter is the last one, "Enter choice!" is displayed by CompuServe. To handle these two possibilities, the macro waits for either "choice!" or "<CR> to continue" (IF "enter choice!" ,%20, "<CR> to continue"). If it gets "choice!", it knows there is no more mail and jumps to the label %%20. Otherwise, if "<CR> to continue" is received, it sends "save" to save the letter (PPrint "save ^ m") and repeats this cycle (GOTO %10).

- After the mail has been read, the macro sends the command to go to one of CompuServe's forums (PPrint "go appuser ^ m").
- Wait for a prompt " :>" before sending the next command (WT " :>").
- Tell CompuServe to display the new forum messages (PPrint "read new ^ m").
- Wait for a prompt " :>" before sending the next command (WT " :>").
- Close the Receive ASCII file since all the information has been received (DO "receive:ascii", "[close]").
- Send "bye" to logoff of CompuServe (PPrint "bye ^ m").
- Exit the macro (EXIT).

If you decide to use the preceding macro and don't want the new messages continually appended to the old ones, replacing the word "[append]" with "[delete]" to cause the file to be deleted each time. This forces the macro to create a new Receive ASCII file each time the macro is used. To change the name of the Receive ASCII file or the path where it is saved, change the macro text "<CIS.INFO>" to the desired pathname such as "<MY.DISK/COMPUSERVE>" where *MY.DISK* is the name of the disk to save the file named *COMPUSERVE*. If you don't want to save the text in a file, remove the following lines from the macro or place a SEMI-COLON ";" in front of each of the following lines:

```
DO "receive:ascii", "<CIS.INFO> [] [] [] su:1 [] [append] []"
DO "receive:ascii", "[close]"
```

PT3.CLOCK Macro File

Because of the size of this particular Macro File, its contents are not included within the text of the manual. You can examine the actual file by using the ProTERM Editor to open the "PT3.CLOCK" file.

Translated, this macro reads:

- The first part of the macro checks to see if there are enough string variables free for the macro to run. The number of string variables available for use is inversely proportional to the size of the Global Macros. The macro asks the user if it is ok to unload "PT3.GLOBAL" if there are not enough strings available. By removing "PT3.GLOBAL" from memory while the macro is running, more string space is made available to the macros.
- The next part sets up string variables with data representing the digits on the screen. The sequence of numbers used for each digit represent a horizontal line of data: (1 = • __, 2 = __ •, 3 = • _ •, 4 = • • •)
- The next part sets up numeric variables in an array to represent the horizontal position on the screen where each digit is displayed.
- Next, the macro loads ProTERM Special Emulation (which is used for the drawing and sound), clears the screen and draws the dividing colons for the time.
- Next is the loop which reads and displays the time. It starts by comparing the current time to the previous time displayed on the screen and makes a count of the number of changed digits. If the time has not changed, the macro loops and checks again.
- By using device channel #4 (output to emulation), the macro sends a code to ProTERM Special Emulation to make the "click" sound.

- Then the macro displays the time from right to left (since the right-most digits change the most frequently). Only the changed digits are re-displayed.
- After the user presses SPACE, the macro quits by resetting the emulation and reloading "PT3.GLOBAL" if it was previously unloaded due to memory constraints.

Writing a Macro

Writing a macro can be a challenging experience for the first-time user, and like any challenge, the results are very satisfying for even the most simple macros. The design of the ProTERM macros allows a great deal of programming flexibility. All of the macros (System, Global, and Files) use the same commands and obey the same formatting rules. This section gives some ideas on developing macros. Keep the ProTERM Quick Reference Guides handy while writing macros as they are valuable resources.

Strategy

Writing a macro is a matter of providing ProTERM with a set of instructions to perform a particular task. When attempting to write a macro, the first thing to do is to separate and break the problem into small simple steps, write the steps as a series of notes and then refine the notes until they are, in effect, the needed macro. For example, a macro to perform an automatic logon macro for CompuServe might be decomposed into the following steps:

- (1) Get the attention of the remote host system.
- (2) Send the account information.
- (3) Send the password.

This is a reasonable first attempt, but the problem needs to be divided to each occurring event. Starting with the above steps, the problem can be changed to:

- (1a) Announce our presence by sending an attention string to the remote host.
- (2a) Wait for an account number prompt.
- (2b) Send the account number information.
- (3a) Wait for a password prompt.
- (3b) Send the password information.

At this point the problem can be translated into a macro. The key is to make the individual steps simple enough so there are macro commands which can implement the task. For example, the preceding steps might be changed into a macro which looks like:

```
PRint "^C"
WT "User ID:"
PRint "12345,678^m"
WT "Password:"
PRint "abcdefg^m"
```

The evolution from idea to macro is now complete. The most important concept is decomposing a problem into simple steps. While there is no macro command to "logon to CompuServe", there are macro commands which can send data and wait for prompts. By taking a problem and decomposing it into simple steps, a single complex problem can be broken into many simple problems. Depending on the complexity of a problem, it may take

The DO Command!

multiple tries before a problem is made simple enough to translate into a macro. However, there are very few problems which can not be solved using this approach.

The DO Command

The DO command merits special attention because it is the mechanism by which macros can perform really useful functions. It provides an interface between the macros and the ProTERM User Interface by which the macros can choose commands, enter text, change options and press buttons. In short, the DO command allows the macros to operate ProTERM just as a user does.

The syntax of the DO command is:

DO "pulldown:command", "parameters..."

The first string consists of the name of the pulldown menu containing the command followed by a colon followed by the command name. However, the entire pulldown menu or command name is not required and the text is not case sensitive. Use just the characters needed to insure the name is not ambiguous. For example, DO "File:Catalog" or DO "f:ca" are equally valid while DO "f:c" is not (since it gets confused with "File:Copy").

The second argument to the DO command is the one which normally gives users problems. It does not have a specific format like the first argument. Instead, its format is determined by the chosen command. The following example analyzes a complex DO command in depth to try and give an intuitive feel to how it operates. The command DO "@:Screen", "Screen:1 Timeout:<10> Activate:3 [OK]" may seem complex but it is really just a translation of the text in the Screen Saver dialog. The first argument is the name of the pulldown followed by the name of the command (the name of the Apple "Ⓜ" menu is represented by the @ character). The second argument is a step-by-step procedure on how to set each parameter in the dialog. "Screen:1" selects the check box [✓] "Screen Saver Enabled" ("S", "s", "scr", "screen saver", and similar derivations would allow the check box to be selected because they all match the label of the check box) and turns the option on (the possible values for a check box are 1=On, 0=Off). "Timeout:<10>" selects the text field "Timeout Before Activation" and enters a value of 10 (the contents of a text field, list or pop up are enclosed by "<" and ">"). In this example since that label does not appear in the DO command, no value is assigned to the "Never Activate" radio buttons and it remains unchanged. "Activate:3" selects the Lower-Left value (the 3rd value) for the "Activate Now" radio-buttons. Finally, "[OK]" presses the OK button and accepts the changes to the dialog.

The following summary lists the "rules" for writing the second argument to a DO command:

- The basic form of an argument is "label:value". The label field is not case sensitive and only enough characters are needed to make it clear which item in the window is being accessed.
- A "label:" reference is analogous to pressing TAB until the dialog item with that label is highlighted.
- Not every dialog item needs to be assigned a value. Like a normal dialog, all the items have default values which remain if they are not changed.
- A File Selector does not have a label associated with it. However, when a window containing a File Selector is displayed, the File Selector is selected by default. As a result, no label is needed to specify a filename. For example, to write a DO command to delete a file, you could write DO "File:Del"; "<pathname/filename> [delete]". To select multiple filenames in dialogs allowing it, just list each file in a row surrounded by "<" and ">" (DO "File:Del"; "<filename1> <filename2> ... <filenameN>", "[delete]").
- The order in which dialog items are changed is not important (except for file selection

as mentioned above). Just as you can TAB to the last item, then the first, then one in the middle, etc., the same thing applies to the DO command. The only exception is the “[button]” reference must be the last item (obviously, after you have pressed a button, it is a bit late to keep making changes).

- Legal values for a check box are 0 (off) and 1 (on). Note these values also work directly from the keyboard in normal dialog entry.
- Legal values for a radio button are 1 thru the number of buttons. Note these values also work directly from the keyboard in normal dialog entry.
- Legal values for text entry, lists, file selection and pop-ups are enclosed within “<” and “>”. In the case of lists, file selection and pop-ups, only as many characters as are needed to uniquely identify the desired item are required.
- To press a button, enclose its name with brackets “[button]”.
- Specifying “[]” presses the left-most button and is the same as pressing COMMAND-RETURN from the keyboard.

One interesting function of the DO command is to use it to specify some of the parameters to a dialog, but allow the user to fill in others. For example:

```
DO "Misc:Unattended", "path 1: </> connect: <45> password:"
```

looks incomplete, but where the command ends, the user takes over. In this case, the DO command selects the Unattended Access window, fills in the “Path 1” and “Connect Time” fields, highlights the “Password” and then waits for the user to make any other changes and press the OK button.

Learning to write macros.

A lot of users get lost writing DO commands because while typing them, they cannot remember what the windows really look like. Again, as noted above, break the problem down. Solve it by creating a visual image on a work sheet using pencil and paper. Go through the command to be automated, and write down the names of the fields and the values which are displayed in the dialog. Then start at the top and write the DO command. When you have it written out, compare your notational steps with the DO command and then try it. It may not work the first try. If it doesn't, look at the values which did get changed and those which didn't. It takes some patience, but with some experience most DO commands can be coded into functional commands in a couple of attempts. It may help to print a picture of the screens you are referencing by using the *CONTROL-OPTION-P* command.

Macro Trace Mode

Macro Trace Mode is enabled by adding a BAR command to a macro (see BAR below in Macro Commands) and allows you to monitor execution of a macro as it runs. When macro trace mode is enabled, the current macro statement being executing is displayed in a highlighted bar at the top of the screen. A further enhancement to tracing is *single-step* mode in which ProTERM pauses and waits for a keypress between each macro command so the trace information can be analyzed. This is a very valuable tool for diagnosing macros while they are being developed.

White space and RETURN do not affect macros.

Macro Syntax

All three different types of macros (*System Macros, Global Macros and Macro Files*) share a similar syntax. The differences between them is discussed above in the corresponding sections. The following items make up the Macro Syntax and each is explained below in detail:

- Formatting
- Label declarations
- Keywords
- String expressions
- Code blocks
- Label references
- Numeric expressions
- Device channels

Macro Formatting

Macros are entered in a “free-form” text format meaning the macro commands can be arranged in any format. Spaces, tabs, character case, and other formatting elements are ignored (except within quotes). For example, both macros in this example are equally valid:

```
wt "command?" print "quit^m"
* Long comments can be
  hidden between two
  ASTERISKS. *
;This is a hidden comment.
*This is a hidden comment.*
```

Comments are an important part of macros because they allow a way to document code for later reference. Comments are invisible to the macro language and are included only for human convenience. Text surrounded by asterisks “* comments*” – or – to the right of a semi-colon and going to the end of a line “; *comments*” are transparent to the macro language. They do not influence the limits on the size of macros and are ignored when the macro is run. When editing macros, comments are visible for reference.

NOTE: Because of formatting limitations in this manual, some comments wrap to the next line. With exception of placing a SEMICOLON (see above) at the head of a line for a comment, formatting does not matter, it is not an issue in the real macros. The commands can be entered and executed regardless of the formatting.

The comma is normally an optional character and is treated just as “white-space” except when delimiting numbers. For example, the function (EQ 2 3) is not valid because the “23” is seen as 23 (the “white-space” is ignored). The valid syntax would be (EQ 2,3) with the comma separating the numbers. However, the function (EQ \$2 \$3) is legal since by removing the white-space (EQ\$2\$3) still has the same meaning. In addition to using the comma to delimit numbers, feel free to use it anywhere it makes code easier to read. Like comments, commas do not use extra memory.

Label Declarations

A label declaration identifies a location in the macros which can be referenced later. Both Global Macros and Macro Files use label declarations (System Macros have pre-declared labels). The three valid forms of label declaration are:

- @@key Declare a Global Macro keyboard binding (key = A..Z or a..z)
- @@num Declare a Global Macro label (num = 1..127)
- %num Declare a Macro File label (num = 1..127)

Global Macros can be invoked from terminal mode, from within the Editor or while using Scrollback by pressing OPTION A...Z or a...z (use the SHIFT key if there is an upper and lower case label for the same key). Execution of the Global Macro begins at the point where the corresponding label is declared. For example, if OPTION-D is pressed on the keyboard, ProTERM searches the current Global Macros for the label "@@D". If it locates the label, execution begins at that point. Otherwise, it changes the case of the label ("@@D" to "@@D") and searches again. If it locates the label, execution begins at that point. Otherwise, the keypress is ignored.

Within the Global Macros, the 52 keyboard bindings (equivalents) are supplemented by 127 Global Macro labels. These labels must be declared as @@num within the Global Macros and can be referenced from any type of macro. The keyboard bindings and Global Macro labels correspond to each other via the ASCII value of the keyboard binding. For example, "@@A" and "@@65" are the same label (the ASCII value of "A" is 65). Therefore, the label values between 65...127 are shared between the labels and the keyboard bindings. Global Macro variables "@@1" thru "@@9" are reserved for special functions and should not be used as normal Global Macro labels. See Special Global Macros at the end of this chapter for more information. Within Macro Files, labels are declared as "%num" (where num is in the range 1...127). Make sure you use "@@" declarations in Global Macros and "%" declarations in Macro Files.

Label References

Within a macro, a label is referenced by using a form similar to its declaration. The valid forms of label reference are:

- ~ num References System Macros 1...10
- \ References the next System Macro line.
- @key References "@@key" declaration (key = A...Z, a...z)
- @num References "@@num" declaration (num = 1...127)
- %num References "%num" declaration (num = 1...127)
- ~0 Continue execution at end of current command.

Labels "~1"..."~10" reference System Macros 1...10, "@1"..."@127" reference Global Macro label declarations and labels "%1"..."%127" reference Macro File label declarations. Because the label references all have different forms, any kind of label can be referenced from any kind of macro. For example, you can reference "@23" (a Global Macro label) from a Macro File or "~5" (a System Macro label) from a Global Macro. The label "~0" causes execution to continue at the end of the command in which it appears. For example, in the command (WT"x1",~0,"x2") a match on the string "x1" causes execution to continue following the WT command.

Keywords

A Keyword is the two-character letter sequences which corresponds to a macro command. Only the first two characters of a keyword are used by ProTERM as a part of a macro command name but for the sake of clarity and understanding, the entire keyword can be spelled out. Any letters of a keyword after the first two are "white-spaces" as far as the macro is concerned. In addition, the case of the characters does not matter. For example, PR, pr, PRI, pri, PRIN, PRint, prINT and PRINT all access the "PR"int command. When Global Macros or Macro Files are loaded, the extra characters are automatically removed (so the only "cost" associated with using full command names is the extra text or disk space required to store the file). Throughout this chapter macro keywords are shown using the full keyword, but only the first two characters capitalized.

Literal Values

Literals are values included as a literal part of the macro text (versus variables which are symbolic values). For example, 5, "Hello", 978, and 'X' are all literal values.

Literal Numbers

Literal numbers must be in the range 0 to 65535 (negative numbers are not accepted). Numbers greater than 65535 assume random values. Keep in mind a "white-space" is not a valid delimiter for literal numbers. Functions requiring two numeric arguments *must* be separated by commas. For example, <MID "abcde",2,3> and <MID "abcde" 2 3> are interpreted differently. After processing, the second function becomes <MID "abcde"23>.

Literal Strings

Literal strings are 0...250 characters in length and are enclosed by delimiting characters. Legal string delimiters are ' (single-quote) and " (double-quote). In order to use delimiters as part of the string data or to include characters which can not be normally typed, ProTERM uses the caret (^) as a special prefix character. Control characters in the ASCII range 0...31 can be included by including "^@"... "^_" as part of a literal string. To include the caret character itself you must use "^ " (caret followed by SPACE) since "^ ^" represents a CONTROL-caret (ASCII 30) character. To include a delimiter, prefix it with a caret ("^" or "^"). The delete key (ASCII 127) can be included by using "^?". The ASCII character chart located in the appendix gives the appropriate notation for each character.

Macro Variables

Variables are a mechanism by which a value can be represented by a symbol. The ProTERM macros support three different types of variables: user numeric, system numeric and user string. As the name implies, the user numeric and user string variables are available for general use by the user. The system numeric variables provide information about ProTERM directly to the macros. Certain macro DO commands also return values via the macro variables "\$0" and "&0". As a result, these variables should generally not be used for persistent values. See DO below in Macro Commands for a list of functions which return values in "&0" and "\$0".

User Numeric

There are 31 user numeric variables numbered 0...30. They are accessed as "\$number" (dollar sign followed by the variable number). For example, "\$0" is numeric variable 0 and "\$30" is numeric variable 30. Like literal numbers, numeric variables can contain values in the range 0...65535.

System Numeric

There are 26 system numeric variables numbered A...Z. They are accessed as "\$letter" (dollar sign followed by the variable letter). For example, "\$A" is system variable A and "\$Z" is system variable Z (system numeric variables are not case-sensitive). Like literal numbers, system variables can contain values in the range 0...65535. The meanings of the different system variables is listed at the end of the chapter under Macro Summary.

User String

String variables are of the form "&number" (AMPERSAND-number) and can store strings from 0...80 characters in length. All string variables are user definable and none have preset values (values such as the date, time and pathnames are handled as string functions). Because the number of string variables varies (depending on the size of the current Global

Macros), there is a variable which returns the current number of string variables available. The larger the Global Macros is, the fewer the strings which will be available. The "\$S" system numeric variable returns the number of string variables.

If you are writing a macro-file application requiring a large number of string variables, it is possible to unload the Global Macros (read in an empty Global Macro file) so all strings are available. Before your application finishes, you simply need to read back in the default "PT3.GLOBAL" file. When Global Macros are reloaded, all string variables except "&0" will lose their values. See the "PT3.CLOCK" macro file for an example of this technique.

Expressions

An expression is a way of combining literals, variables and functions into a new form. The word expression refers to anything which can be "expressed" within a language. The macros support both numeric and string expressions.

Numeric Expressions

Numeric Expressions can include literals, variables, functions, symbols and parenthesis. Functions are of the form "(keyword arg1, arg2, ...)" such as "(Equal \$1,\$3)". The use of open and close parenthesis surrounding a function indicate its result is numeric.

Numeric expressions can also include the symbols "!, +, -, (and)" (such as "!(5+6-7)"). The plus "+" and minus "-" signs are used to indicate addition and subtraction within an expression. The exclamation point "!" returns the logical-not of a value (!0 = 1 and !1 = 0). Parenthesis can be used both for functions and for specifying order of evaluation. "((4+5)-6)" and "(4+(5-6))" are both valid. The following are some example expressions:

3	The number 3.
\$5	The contents of variable 5.
\$3+1	Contents of variable 3 plus 1.
128-\$0	128 minus contents of variable 0.
(VAL "24")	The value of the string "24" which is 24.
(Equal 4,\$2)	If variable 2 equals 4 then 1, else 0.
!(Equal 4,\$2)	If variable 2 equals 4 then 0, else 1.

String Expressions

String Expressions can include literals, variables, functions and symbols. Functions are of the form "<keyword arg1, arg2, ...>" (such as "<LE &4, 4>"). The use of less-than "<" and greater-than ">" symbols around a function indicate the result is a string. String expressions can also include the plus "+" sign which means concatenation (i.e., "yes"+"no" is "yesno").

"Hello"	The literal string Hello.
'Hello'	The literal string Hello.
"Hello"+"^m"	The string Hello with a RETURN character appended.
<String (5+7)>	The string "12."
<Char (AS "*", 40)>	A string of 40 asterisks (*).

NOTE: Within literal strings, control characters are inserted using caret-prefix notation (for examples, a CONTROL-M is entered as "^m"). A full list of all the caret-sequences is included in the ASCII Character Chart in the appendix.

Macros are not case sensitive except between quotes.

^M = RETURN

Device Channels

A device channel is used to specify where data is read from or written to. A device channel is specified as "#number" where number is zero through seven. If a device channel is not specified in a command where it is optional, channel zero is used. The eight channels are:

- 0- Modem: Send data directly to the modem port, but provide a local echo if half duplex is selected. This is the default channel for output.
- 1- Modem Only: Send data directly to the modem port, but do not echo even if half duplex is selected.
- 2- Console: Display data on the local console. The macro variables \$X,\$Y,\$Z all affect or are affected by this channel.
- 3- Incoming: "Stuff" data into the modem input buffer. This makes the data appear as if it is coming from the remote system.
- 4- Emulation: Send the data through the emulation. The emulation interprets control codes and handles the data based on its own emulation-specific rules.
- 5- Disk: After a file has been opened using the OPEN command, data can be written to it via this channel. See OPEN and CLOSE below in Macro Commands for more information.
- 6- Editor: If used in terminal mode or Scrollback, data is appended to the end of the Editor. If used from within the Editor, the data is inserted at the cursor location.
- 7- Printer: The data is sent directly to the printer. Note the printer init string is not sent as part of using this channel.

Code Blocks

Commands which act on a condition such as WT (wait for), IF, WHILE or REPEAT/UNTIL execute macro code based on the result of some condition. The code executed can be in the form of a label (which transfers control to that label) or a code block. A code block consists of one or more macro commands enclosed in curly brackets. The following are some examples of code blocks:

```
IF $O,{ PPrint #2,"online^m" },1,{ PPrint #2,"offline^m" }
WHILE (1),{ DO "Online:Send Break" WT 2,"",{ BReak } }
IF !$A,{
    NOf "Not in terminal mode"
    EXit
}
WHILE (SEqual <LEft &0,1>," " ),{ SEt &0=<MId &0,1> }
```

Macro Commands

ProTERM supports many different macro commands and functions, all of which are listed below. Function names are surrounded by either "<>" or "()" indicating whether the function returns a numeric (such as "(ANd)") or string (such as "<ANswerback>") result. The commands and functions are listed together in alphabetical order. The macro summary at the end of the chapter divides the commands and functions by type. The following notation is used throughout all command and function listings:

```
num_expr  Any valid numeric expression (like 4+$0).
str_expr  Any valid string expression (like "hello").
```

#device Any valid device channel (like #2).
 label Any valid label reference (like @a).
 { block } A code block (like { EXit }).
 [item] The item in brackets is optional (like [num_expr]).
 [...] There can be multiple items of previous type.
 x | y Either “x” or “y” are valid.

(ANd)

The (ANd) function returns 1 if its arguments are all “true” or 0 otherwise. An argument has a “true” value if it is non-zero (otherwise it is “false”).

Syntax: (ANd num_expr, num_expr [, num_expr] [...])

```
IF (ANd (Equal $1,$2),(Equal $3,$4)), ~5
    * if $1=$2 and $3=$4 goto ~5 *
SEt $0 = (ANd $1,$2)      * if $1>0 & $2>0, $0=1 else 0 *
IF (ANd $1,$2,$3), { PPrint #2,"all true" }
    * if $1>0 & $2>0 & $3>0,print *
```

<ANswerback>

The <ANswerback> function requires no arguments and returns the Answerback string for the current system entry in the Dial menu. Since the Answerback string is rarely used, this is a simple way to save system specific parameters for use with macros. The Answerback string can contain control characters encoded using caret-prefix notation.

Syntax: <ANswerback>

PPrint #2,"Current Answerback String:"+<ANswerback>

@@N PPrint <ANswerback> EXit * send answerback to host *

(AScii)

The (AScii) function returns the ASCII value of a string character in the range 0...127. The AScii function always returns the ASCII value of the first character of the string.

Syntax: (AScii str_expr)

```
PPrint #2,<FFormat "ASCII(%S) = %D^M",&0,(AScii &0)>
    * show ascii value of &0 *
```

BAr

When a macro is initially executed, macro trace mode is disabled. BAr is used to control macro trace mode as well as display status messages. The “BAr 0” command can be used to hide the “AutoLogon Macro Running” message which is displayed after a connection with a remote system. The “BAr 1, "Message"” command displays a message in the status bar. The “BAr 2” or “BAr 3” command enables the normal or single step macro trace mode starting at the point of insertion. Single-Step mode displays every macro command in the status bar and waits for a keypress before it is executed. The BAr command is a useful tool for troubleshooting macros as they are developed.

Syntax: BAr num_expr

```
BAr 0 ; disable macro trace (hide macro status)
BAr 1,"Message" ; display msg in status area
BAr 2 ; enable macro trace mode
BAr 3 ; enable macro trace mode with single-step
```

(Bits)

The (Bits) function returns the binary-and of two values. Since numeric values are 16 bits, this function returns a 16-bit result.

Syntax: (Bits num_expr, num_expr)
PRint #2,<FOrmat "7 & 3 = %d^m", (Bits 7, 3)>
IF (Bits (MOdem), 2), { PRint #2,"DCD is High^m" }

BP

The BP (beep) command sounds a single bell, a three-bell sequence or enables the siren. The siren can be disabled by a local keypress or by using the "BP 3" command.

Syntax: BP num_expr
BP 0 * beep the bell once *
BP 1 * sound the 3-bell sequence *
BP 2 * turn on the "siren" *
BP 3 * turn off the "siren" *

BReak

The BReak command causes the macros to exit from *awhile-loop* or *repeat-loop* even though the loop condition may not yet be satisfied. If a BReak command is used outside of a while-loop or repeat-loop, it has no effect. The BReak command is useful for exiting a loop when an unusual condition has been encountered (other than the loop condition).

Syntax: BReak
WHile (\$1),{ * while \$1 is non-zero *
WT 1,"exit",{ BReak } * if "EXIT" rcvd, break out of while *
SEt \$1=\$1-1 * count down iterations *
}

WHile (\$1),{ * while \$1 is non-zero *
WT 1,@34,"exit" * if "EXIT" not rcvd in 1 sec, goto @34 *
BReak * break out of the loop
@@34
SEt \$1=\$1-1 * count down iterations *
}

CALL

The CALL command calls a subroutine and then returns to the point following the CALL command. Any label can be called as a subroutine and an EXit statement returns to the statement following the CALL. ProTERM can support eight levels of subroutine calls.

Syntax: CALL label
CALL ~label * call a System Macro element *
CALL %label * call a Macro File label *
CALL @key * call a Global Macro key *
CALL @label * call a Global Macro label *

CHain

The CHain command transfers execution to a Macro File. The named Macro File is loaded and execution continues at the start of the file (or at a label if one is passed).

Syntax: CHain str_expr [,label]

CHain "macro.file",%32

<CHar>

The <CHar> function returns a string consisting of a character specified by its ASCII value. An optional second argument allows an entire string of such characters to be created.

Syntax: <CHar num_expr [,num_expr]>

PRint #2,<CHar 33,40>+"^m" * print 40 ! characters *
PRint #2,<Char 65> * print ASCII char 65 (A) *

CLOSE

The CLOSE command closes an open text file. CLOSE should be used on a file previously opened with the OPEN command. The file closed corresponds to the one previously opened using that same channel. Therefore, if "OPEN #5,"testfile" was the last open command, "CLOSE #5" closes testfile.

Syntax: CLOSE #device

CLOSE #5 * close the file opened with OPEN #5,"filename" *

CONTINUE

The CONTINUE command immediately repeats the condition test in a while-loop or repeat-loop. It has the same effect as a GOTO to the closing bracket in a loop. This does not just restart the loop, but also tests the loop condition. If the loop condition is no longer true, execution continues beyond the loop.

Syntax: CONTINUE

```
SEt $1=10                                        * set $1 to 10 *
WHile ($1),{                                    * while $1>0 do the {} stuff *
  WT 1,"exit",{ GO @23 },                    * if EXIT rcvd, goto @23 *
  "stop",{ CONTINUE }                        * if STOP rcvd, do WH ($1) *
  SEt $1=$1-1                                 * count down $1 *
@@23                                            * loop back and test WH ($1) again *
}
```

NOTE: In the above example, receiving either "exit" or "stop" has the same effect. When "exit" is received, the macro will GOTO the closing curly bracket which restarts the while statement. When "stop" is received, the macro uses CONTINUE to restart the while statement.

CREATE

The CREATE command creates an empty text-file. CREATE should be used prior to an OPEN/CLOSE if you want to use a new file.

Syntax: CREATE str_expr

CREATE "testfile" *create a text-file called testfile *

<DAte>

The <DAte> function requires no arguments and returns the current date as a string. If the date is available it is in the format "DD-MMM-YY", otherwise "<NO DATE>" is returned. Since the result is a string, the date can be manipulated using other string functions like Left, Mid and Right.

Syntax: <DAte>

```
PRint #2,"Today's Date: "+<DAte>+" ^ m"
```

DElete

The DElete command deletes a file from disk. If the file does not exist, then the command does nothing and no error message is generated.

Syntax: DElete str_expr

```
DElete "testfile" * delete a file called testfile *
```

DO

The DO command allows a macro to "run" ProTERM. It can issue all ProTERM commands and operate the program just as a user can. The two DO arguments tell ProTERM which command to execute (required) and what arguments to pass (optional).

Syntax: DO str_expr, str_expr

```
DO "pulldown:command","field1:<arg1> field2:<arg2> [button]"
```

```
DO "online:parms","line:<off> [ok]"
```

```
DO "mi:pre","[xfer] askymodem:1 [ok] [ok]"
```

```
DO "mi:read","<%spt3.global> [ ]",<path>
```

The first string argument tells ProTERM which command to execute from the pull-down menus. The command is specified by "pulldown:command." The text for both the pull-down menus and the command is not case sensitive and works on a first-match basis. For example, m, M, mi, MI, mis, MIS, misc, and MISC all match the Misc pull-down menu.

The second string argument tells ProTERM which parameters to select within the command. This command is optional and if not supplied, then the user must manually supply the parameters to the command. Argument values take the form "field:value" where field is the name of a parameter to set. The value specifies the new value for the parameter. If the field is a toggle switch, then value is 0 (Off) or 1 (On). If the field is a radio button, then value is 1 for the first selection, 2 for the second, and so on. If the field is a pop-up, list, file selection, or input then the value is the appropriate string enclosed by "<" and ">". The name of the button to be activated is enclosed in brackets ("[" and "]"). In addition, a set of empty brackets "]" always presses the default button (the left-most) and is the same as pressing COMMAND-RETURN. In order to make passing arguments easier, the second argument accepts the same formatting commands as the FOrmat function (see below).

Certain ProTERM commands behave slightly differently when executed from a DO command instead of the keyboard. The changes are designed to aid macro programming by making the commands more predictable. The following lists the commands which behave differently:

Send: Protocol, Receive: Protocol

The protocol routines always operate in "query mode" if a dditional parameters are supplied

(beyond the pathname window). For example: DO "receive:xmodem-1k","<> []
rec:<binary> []" always initiates a Binary II download.

Receive Protocol

If a single file is downloaded, then additional parameters may be supplied to assign the filename. For example, DO "re:zm","<> [] [] new:<xyzy> []" would download a file and save it under the filename xyzy. In addition, after a protocol receive, the strings variable "&0" contains the filename under which ProTERM saved the file. Numeric variable "\$0" returns 1 if the name was assigned from a Binary II header.

Online: Editor Capture, Online: Printer Capture

The capture commands normally act as toggles, however when invoked from a macro, they can be turned off, on or toggled. The command DO "online:editor" toggles Editor capture mode, DO "online:editor","[]" always turns Editor capture on and DO "online:editor","[cancel]" always turns Editor capture off. The Printer Capture command operates in the same way.

Misc: Read Globals

When the command DO "mi:read","[cancel]" is used, the Global Macros are unloaded from memory. This makes all of the Global Macro memory available for string variable storage.

Misc: Transfer Stats

When called from a DO "mi:tr","[]" , this command returns the last used protocol type in "&0" and the CPS performance in "\$0".

File: Quit

When executed from a DO command, the Quit command is replaced with the Launch command. With Launch, it is possible to execute another application of your choice directly from ProTERM. To launch a different application, use a command of the form:
DO "fi:quit","path:</pathname> prog:<aapl name> []"

Dial: all dialing options

When a remote host system is dialed from a DO command, execution of the macro continues immediately after dialing. The Dial command does not display the "Unable to Connect" message. To dial a remote system, use DO "dial:sysname","[dia]" and then check "\$0" to determine whether a connection was made or not. Continuous redial works in the same way except ProTERM attempts "\$R" redials before it cancel's the attempt. Again, check "\$0" to determine whether a connection was made.

Misc: Macro File

Do not use the Macro File command from a DO command as it will result in an error message. Instead, use the CHa in command (see CHa in above).

(EOF)

The (EOF) function returns 1 if the specified device is at the end of file. This is normally only used with file device #5.

Syntax: (EOF #device)

IF (EOF #5),{ PPrint #2, "At EOF^m" }

(Equal)

The (Equal) function compares two values and returns 1 if they are equal or 0 otherwise.

Syntax: (Equal num_expr, num_expr)

IF (Equal \$2,\$3),{ PPrint #2,"\$2 and \$3 are equal^m" }

(EXist)

The (EXist) function checks to see if a file exists. If it does, it returns the filetype, or zero if the file does not exist. If the file has a filetype of zero, the value one is returned. Keep in mind this command returns the decimal filetype (1...255). A translation from the decimal filetype to the three-character abbreviations is available in most ProDOS programming manuals.

Syntax: (EXist str_exp)

IF (EXist "xxx"),{DO "Fl:DEL", "<xxx>["]}

** if xxx exists, delete it **

PPrint #2,<FOrmat "Filetype (xyzy): %d^m", (EXist "xyzy")>

** if 0, no such file **

EXit

EXit returns from a subroutine or terminates a macro. If a subroutine is executing then EXit exits that subroutine, otherwise it terminates the macro. "EXit 1" terminates a macro regardless of whether a subroutine is executing or not.

Syntax: EXit

EXit * return from a subroutine or exit macro *

EXit 1 * exit macro immediately *

<FOrmat>

The <FOrmat> function creates a string based on a format string which acts as a template for the arguments. By placing expression specifiers of the form "%type" in the format string, strings, numbers and characters can be displayed. Valid expression types are "S" for string, "C" for character or "D" for decimal number ("%%" allows the percent sign to be printed). Expressions which correspond to items in the format string must follow the format string.

Syntax: <FOrmat str_expr [,expr1] [...]>

PPrint #2,<FOrmat "Date: %s %s^m", <Date>, <Time>>

SEt &3 = <FOrmat "%s %d", &1,&1>

PPrint #2,<FOrmat "ASCII Value %d is %c^m", \$0, \$0>

GEt

The GEt command gets one or more characters of input and stores those characters into string or numeric variables. An optional timeout value (expressed in seconds) controls the maximum amount of time GEt waits for input. When GEt is used with a numeric variable, the ASCII value of the character is returned in the variable. In the case of a timeout, a string variable returns empty (no value, length equals zero) and a numeric variable returns 256. One interesting application of the GEt command is to load binary data from a file.

Syntax: GEt #device [,num_expr], var [,var] [...]

GEt #2,5,&0 * wait 5 secs for char from console *

GEt &0 * get a char from the modem *

INput

INput data into variables. The input is controlled by a "format string" which directs how data is assigned to variables. The format string consists of prompt characters and variable specifiers. The device parameter specifies which device the input comes from. Input from the modem or console allows simple editing (backspace and line-cancel). An optional time-out controls the maximum time which is spent waiting for input. If the time limit is exceeded, numeric variables return zero and string variables are empty.

Syntax: INput #device,[num_expr,] str_expr, var [,var] [...]

INput #2,"%S^M%D",&1,\$2

** get two input lines: string & number **

INput #2,"%D,%D,%D",&1,\$2,\$3

** get 3 numbers divided by commas **

INput #2,"%S^m%D",&0,\$2

** get str on line 1, num on 2 **

INput #2,5,"%s",&0 * wait 5 seconds for a string *

Variable specifiers have the form "%type" where type "S" is string and "D" is decimal number ("%%" allows the percent sign to be used as a prompt). The INput command always inputs at least one line of data. For each "^M" used as a prompt, an additional line of data is input.

(INstring)

The (INstring) function checks to see if one string is a sub-string of another. The first argument string is searched for within the second argument string. If a match is found, the position of the start of the sub-string is returned, otherwise zero is returned. Note, if a string occurs starting at the first position, INstring returns 1. This is different from the Mid function where 0 refers to the first character of the string.

Syntax: (INstring str_expr, str_expr)

PRint #2,<SString (INstring "PL","APPLE")>

** prints 3 **

SEt \$0=(INstring "XF","APPLE")

** sets \$0 = 0 **

JSr

The JSr command is used to call an assembly language program in memory. This command should only be used by an expert programmer! When passed numeric arguments, the first value is assigned to A, and the second value is assigned to Y/X (Y is high). When a string argument is passed, the string is zero-terminated at \$1000 and A=\$10, X=\$00, Y=string length (without terminator).

Syntax1: JSr num_expr [,num_expr] [,num_expr]

Syntax2: JSr num_expr, str_expr

JSr 4096,27,258

** jsr to \$1000; A=27, X=2, Y=1 **

JSr 8192,"Hello World"

** jsr to \$2000; A=\$10, X=0, Y=11 **

KEy

The KEy command "stuffs" a keypress in the Editor or Scrollback and can choose commands which do not appear on pull-down menus (command which cannot be invoked with DO).

The KEy command can stuff both normal keystrokes and COMMAND keys. Only a single keypress can be stuffed with each KEy command.

Syntax: KEy str_expr

```
KEy "^b"          * stuff a ctrl-b *
KEy "#1"         * stuff a COMMAND-1 *
KEy "##"        * stuff a # character *
KEy "#^H"       * stuff a COMMAND-Left ARROW *
```

<LEft>

The <LEft> function returns the left part of a string. The number of characters returned is controlled by the second argument (zero is not a valid argument).

Syntax: <LEft str_expr, num_expr>

```
PRint #2,<LEft "APPLE", 3>      * print "APP" *
```

(LEn)

The (LEn) function returns the length of a string in characters. The result will be in the range 0...250.

Syntax: (LEn str_expr)

```
PRint #2,<SString (LEn "HELLO")> * print 5 *
```

(LT)

The (LT) (less-than) function compares two values and returns 1 if the first value is less than the second value or 0 otherwise.

Syntax: (LT num_expr, num_expr)

```
IF (LT $2,$3),{ PRint #2,"$2 < $3^m" }
IF !(LT $2,$3),{ PRint #2,"$2 >= $3^m" }
```

NOTE: To check if a value is less-than or equal to another value, negate the result of the greater-than function (i.e., !(GT \$2,\$3)).

MArk

MArk sets the position of the read/write pointer within a file. It is normally only used with file channel #5. If no argument is specified, the read/write pointer is placed at the end of the file (ready to append new data).

Syntax: MArk #device [,num_expr]

```
MArk #5          * append to a file *
MArk #5,0       * position to the start of a file *
MArk #5,35     * position to byte 35 of the file *
```

(MArk)

The (MArk) function returns the read/write pointer position of a file. Currently, only file channel #5 can be used with this function.

Syntax: (MArk #device [,num_expr])

```
PRint #2,<FO "File position = %d^m", (MArk #5)>
                                     * show file pos *
SEt $0=(MArk #5)                    * get current file position *
```

ME

MEemory allows a byte or bytes of memory to be changed. This command should only be used by an expert programmer. Changing the contents of the wrong memory location can cause unpredictable and undesired results! When passing a hex string, white space is ignored within the string.

Syntax1: MEm num_expr, num_expr

Syntax2: MEm num_expr, str_expr

MEm 49168,0 * clear keyboard buffer (\$C010) *

MEm 4096,"a9 03 4c 05 08" * save code in memory *

MEm 4096,"a9034c0508" * alternate form of above *

(ME)

The (ME) function returns the value from a byte of memory. This function should only be used by expert programmers.

Syntax: (ME num_expr)

IF (LT (ME 49152), 128) { PPrint #2,"No key waiting^m" }

<Mid>

The <Mid> function returns a substring starting from a position specified relative to the left side of the string. The first character position is zero and thus the mid-string from position zero is the original string. Note, this is different from the INstring function which considers one as the first character position. An optional second argument selects the maximum number of characters to return.

Syntax: <Mid str_expr, num_expr>

PPrint #2,<Mid "APPLE",3> * this prints "LE" *

PPrint #2,<Mid "APPLE",1,3> * this prints "PPL" *

(M)

The (M) function returns the status of the serial port. This is a bit-encoded field. When a bit is on, it has the following meaning:

Bit	Meaning when on:
0	Port is ready to transmit
1	Carrier detect is high
2	Data set ready is high
3	Clear to send is high

Syntax: (M)

IF (BIts (M),2),{ PPrint #2,"DCD is High^m" }

NO

NOte displays a note on the console. The argument is a string which can contain RETURN characters to designate a new line. Make sure none of the lines exceed 70 characters in length. The final line does not need to be terminated with a RETURN. Note the string supplied to NOte must be longer than 10 characters or else nothing happens.

Syntax: NOte str_expr

NOte "Hello World" * display hello world and wait for a keypress *

OPen

OPen opens a text file so it can be read and written using the INput and PPrint commands. After a file has been opened and its data used, it must be closed with CLose.

Syntax: OPen #device, str_expr

```

OPen #5,"testfile" * open the file called TESTFILE *
WHile !(EO #5),{ * while not at the end of the file *
INput #5,"%s",&0 * load a line of text into &0 *
PPrint #2,&0+"^m" * display the line of text *
}
CLose #5 * close previously opened file TESTFILE *

```

(OR)

The (OR) function returns 1 if any of its arguments are "true" or 0 otherwise. An argument has a "true" value if it is non-zero (otherwise it is "false").

Syntax: (OR num_expr, num_expr [,num_expr] [...])

```

IF (OR (Equal $1,$2),(Equal$3,$4)),
  { PPrint #2,"$1=$2 or $2=$3 (or both)^m" }
SEt $0 = (OR 3,$5) * set $0=1 (since 3 is > 0) *

```

Overlay

The Overlay command is used to load in and execute an assembly language program. This command is for use by expert programmers only! Overlay loads a binary file up to 3K in length at \$1000 and then executes it.

Syntax: Overlay str_expr

Overlay "pt3.convert" * run pt2.2 converter *

(PARTIAL)

The (PARTIAL) function checks to see if one string is a partial match of another. The comparison checks the entire contents of the first string against the left-side of the second string. Only as many characters as appear in the first string must match the second. The comparison is not case sensitive (upper and lowercase match each other). In addition, the first string can contain "?" (question-mark) characters to match any character in the corresponding position in the second string.

Syntax: (PARTIAL str_expr, str_expr)

```

IF (PARTIAL "B", "b 27"),{ PPrint #2,"yes^m" }
  * print "yes" *
IF (PARTIAL "A", "ABC"),{ PPrint #2,"yes^m" }
  * this prints "yes" *
IF (PARTIAL "B", "ABC"),{ PPrint #2,"yes^m" }
  * this doesn't print "yes" *
IF (PARTIAL "", "xyzyzy"),{ PPrint #2,"^^^ always matches anything^m" }
  }

```


<PAth>

The <PAth> function returns one of ProTERM's preset file pathnames. The five paths which can be returned are: the ProTERM root directory (0), the download path (1), the upload path (2), the Editor path (3) and the AutoSave path (4). When used without an expression, the path function always returns the root directory. If the preset pathname is blank in the preferences window, then the ProTERM root directory is returned for that path (the same as <PAth 0>).

Syntax: <PAth [num_expr]>

PRint #2,"ProTERM's Root Directory: "+<PAth>+"^m"
PRint #2,"Download Path: "+<PAth 1>+"^m"

<PHome>

The <PHome> function requires no arguments and returns the phone number string for the current system.

Syntax: <PHome>

PRint #2,"Current Phone Number: "+<PHome>

POp

POp removes a return address from the subroutine stack. If the stack is already empty, no error occurs.

Syntax: POp

CALL %45 * call a subroutine *
PRint #2,"Hello World^m" * print Hello World *
EXit * done with macro *

%%45 * start of subroutine *
IF \$3,{ * if \$3 is non-zero, bail-out of macros *
POp * pop the return address *
EXit * exit macro since no return address *
}
PRint #2,"INput @45^m" * show we're in the subroutine *
EXit * Return to caller *

PRint

PRint sends a string to a device (if the device is not specified, it is sent to the remote system). An initial delay and character pacing parameter control the rate at which data is sent in 1/100th of a second. To display a more complicated formatted expression, use the FOrmat function as the string to print.

Syntax: PRint [#device,] [num_expr,] [num_expr,] str_expr
PRint #2,"hello^m" * display the string "hello" on the console *
PRint 50,10,"@D^M"
 * use initial delay of 50/100 sec, pace of 10/100 *
PRint #2,<FOrmat "It is: %s %s^m",<date>,<time>>
 * show date & time *
PRint #5,"hello^m" *save hello to the open disk file*

Syntax: (SEqual str_expr, str_expr)
IF (SEqual &1,"HELLO"), { PPrint #2,"&1 = HELLO^m" }

SEt

SEt allows you to set the value of a variable. Both string and numeric variables can be set.

Syntax1: SEt \$ num_expr=num_expr

Syntax2: SEt &num_expr=str_expr

SEt \$4=12 * set numeric variable 4 to 12 *

SEt &2="Hello" * set string variable 2 to Hello *

SEt \$R=5 * set macro redial limit to 5 *

<STring>

The <STring> function converts a numeric value into a string of digits. The string value is returned without leading spaces.

Syntax: <STring num_expr>

PPrint #2,<STring 12345>+"^m" * print 12345 *

SYnc

SYnc attempts to sync-up with a remote host system which requires character(s) to be sent at intervals in order to detect the correct baud rate. The string is sent at a specified interval (the default is two seconds) until there is some sort of response from the host. This is commonly used at the beginning of logon macros.

Syntax: SYnc [num_expr,] str_expr

SYnc "^m" * send return every 2 seconds, until response *

SYnc 1,"@D^m" * send @D^m every second until response *

<SYstem>

The <SYstem> function requires no arguments and returns the current system name string.

Syntax: <SYstem>

PPrint #2,"Current System Name: "+<SYstem>

<Tlme>

The <Tlme> function returns the current time if it is available in "HH:MM:SS" format. Because it is a string, it can be manipulated using other string commands like Lf, Mf and Rf.

Syntax: <Tlme>

PPrint #2,"The Current Time Is: "+<Tlme>+"^m"

<UPper>

The <UPper> function returns a string with all lowercase letters converted to uppercase.

Syntax: <UPper str_expr>

PPrint #2,<UPper "testing^m"> * print TESTING *

(VAlue)

The (VAlue) function returns the numeric value of a string. Numeric strings can contain spaces and periods between the digits, but no symbols or other printable characters (periods are treated as spaces).

Syntax: (VAlue str_expr)

```
SEt $0 = (VAlue "12345")           * $0 = 12345 *
SEt $0 = (VAlue "1 2 3")          * $0 = 123 *
SEt $5 = (VAlue "27ABC")          * $5 = 27 *
SEt $3 = (VAlue "hello world")    * $3 = 0 *
SEt $3 = (VAlue "12.34")          * $3 = 1234 *
```

Video

The Video command issues video commands which alter the local console. Most commands operate on the current cursor location (the cursor can be moved with XY and read from \$X, \$Y). There are thirteen video commands:

Num	Use
0	Clear the entire screen.
1	Clear to the beginning of the screen.
2	Clear to the end of the screen.
3	Clear the entire line.
4	Clear to the beginning of the line.
5	Clear to the end of the line.
6	Scroll the screen up one line.
7	Scroll the screen down one line.
8	Delete the line.
9	Insert a line.
10	Delete the cursor character.
11	Insert a space at the cursor.
12	Inverse the character at the cursor.

Syntax: Video num_expr

```
Video 0           * clear the screen *
Video 8           * delete the line with the cursor *
```

WHile

WHile allows a loop be executed without the use of labels. In a while loop, a condition is tested and the loop executed based on the result of the test. The COntinue command can be used to transfer execution back to the test of the while condition. The BReak command can be used to explicitly exit a loop. The WHile command is useful for situations in which the number of iterations of the loop is dependent on a calculation. Also see the REpeat-UNtil command.

Syntax: WHile num_expr, { block }

```
SEt $1=5           * set counter $1 to 5 *
WHile ($1),{      * while $1 is non-zero *
  PPrint #2,<ST $1>+"^m" * print the value of $1 *
  SEt $1=$1-1     * count down $1 *
}
```

Window

The Window command draws a window frame and positions the cursor to the first position within the window. Window coordinates are given by the upper-left corner and the width/length. Make sure the coordinates are valid before attempting to draw the window.

Syntax: Window num_expr, num_expr, num_expr, num_expr
Window 20,8,40,9
** draw a window at 20,8 with width=40,len=9 **

WT

WT (wait) causes the macros to wait for a string or strings from the remote system. WT requires one or more parameters, separated by commas. Although only a single time-out value can be set, multiple strings can be entered. When an incoming string matches the time-out expires, the code following that item is executed. If a blank string is entered as an argument, any incoming data matches the string. This is normally used to detect the absence of incoming data.

*Syntax1: WT [num_expr] [,label] [str_expr][,label]
 [,str_expr][,label] [,...]*
Syntax2: WT [num_expr] [{ block }] [str_expr][,{ block }] [,str_expr][,{ block }] [,...]
WT 5 ** wait 5 seconds **
WT 5,{Print #2,"t/o^m"},"-->"
** if --> not seen in 5 secs, print t/o **
WT "HELLO" ** wait for the string HELLO **
WT 6,"HELLO" ** wait for 6 seconds or HELLO **
WT 3,"" ** wait 3 seconds or any incoming data **
WT "YES",%1,"NO",%2 ** wait YES/NO, link to %1/%2 **

(XOr)

The (XOr) function returns 1 if an odd number of arguments are "true" or 0 if an even number of arguments are "true" (logical exclusive or). An argument is considered "true" if it is non-zero (otherwise it is false). The XOr function always evaluates all of its arguments and returns a result based on the number of arguments (odd, even) which are true.

Syntax: (XOr num_expr, num_expr [,num_expr] [,...])
IF (XOr \$1,\$2),{ Print #2,"\$1>0 or \$2>0 (but not both)" }
SEt \$0=(XOr \$3,\$5) * \$0=1 if \$3>0 & \$5=0 or \$3=0 & \$5>0 *

XY

The XY command positions the cursor to the coordinates specified by the parameters. Valid horizontal coordinates are in the range 0...79 and vertical coordinates are in the range 0...23. Coordinates which are out of range are placed at their maximum values.

Syntax: XY num_expr, num_expr
XY 0,0 ** move cursor to upper-left corner **
XY 79,23 ** move cursor to lower-right corner **

Macro Summary

The following summary gives a list of all the different macro commands and functions as well as the system variables.

Macro Commands

BAr	Enable/Disable macro trace mode.
BP	Sound the speaker.
BReak	Break out of a while-loop.
CALL	Call a macro subroutine.
CHain	Chain to a Macro File.
CLOse	Close a disk file.
COntinue	Retest the condition of a while-loop.
CReate	Create an empty text-file.
DElete	Delete a file.
DO	Execute a ProTERM command from a macro.
EXit	Exit a subroutine or macro.
GEt	Input a single character to a variable.
GOto	Transfer execution to a label.
IF	Evaluate an expression and branch on the result.
INput	Input a number or string to a variable.
JSr	Call an assembly language routine.
KEy	Stuff a keypress (used in Editor/Scrollback).
MArK	Set file read/write position (set mark).
MEm	Poke a byte into memory.
NOte	Show user a message.
OPen	Open a disk file.
OVerlay	Load and call an assembly language routine.
POP	Pop a return address from the subroutine stack.
PRint	Print a string to the modem (or any other device).
PUSh	Push a return address on the subroutine stack.
REpeat	Repeat a code block until a condition is satisfied.
SEt	Assign a value to a variable.
SYnc	Get the attention of a remote system.
UNtil	Repeat a code block until a condition is satisfied.
VIdeo	Do a video command like clear the screen.
WHile	While a condition is true, execute a code block.
WIndow	Draw a window frame & move cursor to upper-left.
WT	Wait for a string from the modem.
XY	Move cursor to x,y position.

Numeric Functions

ANd	Return 1 if all values are non-zero.
AScii	Return the ASCII value of the first character of a string.
BIts	Return the binary-and of two values.
EOf	Return 1 if device is at end-of-file.
EQuAl	Return 1 if two values are equal.
EXist	Return the filetype of a file if it exists.

GT	Return 1 if value1 is greater-than value2.
INstring	Return the position of one string within another (0=no match).
LEn	Return the length (in characters) of a string.
LT	Return 1 if value1 is less-than value2.
MARk	Return the current file position.
MEM	Return the contents of a memory location.
MOdem	Return the modem port status.
OR	Return 1 if any arguments are non-zero.
PARtial	Return 1 if string1 occurs at the left of string2.
RANdom	Return a random number between 0...65535.
SEqual	Return 1 if two strings match identically.
VAlue	Return the numeric value of a string.
XOR	Return 1 if an odd number of values are non-zero.

String Functions

ANswerback	Return the Answerback string for the current system.
CHar	Return a character based on its ASCII value.
DAte	Return the current date string in "DD-MMM-YY" format.
FOrmat	Return a formatted string.
LEft	Return the left-part of a string.
MId	Return the mid-part of a string.
PAth	Return a ProDOS pathname (0...4).
PHone	Return the phone number string for the current system.
RIght	Return the right-part of a string.
SCan	Return the contents of a screen line (scan a line).
STring	Return a string of digits based on a number.
SYstem	Return the name of the current system.
TIme	Return the time string in "HH:MM:SS" format.
UPper	Return a string in uppercase.

Label Syntax

~num	References System Macro (num = 1...10).
@@key	Declare a Global Macro keyboard binding (key = A...Z).
@key	References @@key declaration (key = A...Z).
@@num	Declare a Global Macro label (num = 1...99).
@num	References @@num declaration (num = 1...99).
%%num	Declare a Macro File label (num = 11...99).
%num	References %%num declaration (num = 1...99).
~0	Continue execution at end of current command.

System Variables

\$A	Current autosave (receive ascii) status: 0=off, 1=on, 2=hold.
\$B	Modem line speed (DCE): 110...57600.
\$C	Scrollbar data capture characteristics.
\$D	Current program area: 0=term mode, 1=editor, 2=scrollback.

\$F Last file operation result: 0 = no errors.
 \$H Number of seconds required for last transfer.
 \$I Number of errors during last transfer.
 \$J Number of files sent/received during last transfer.
 \$K Number K-bytes sent/received during last transfer.
 NOTE: This variable is only updated after DO "MI:TR","[]".
 \$M Hide local messages: >0 = hide message (such as disk errors).
 \$N Number of numeric variables available.
 \$O Online flag: >127 = online.
 \$P ASCII-send prompt timeout (0..255) = 0..2.55 sec.
 \$Q Quiet mode: >0 = don't display incoming data on screen, don't show cursor during input, don't flush screen on connect.
 \$R Redial limit: max times to redial from macros (0=no limit).
 \$S Number of string variables available (each is 80 chars).
 \$T Last file transfer status: 0 = no errors.
 \$V Contains the memory address of the first string variable &0.
 \$W Result of last button press: 0=default button, >127=cancel.
 \$X Current horizontal cursor position (read only).
 \$Y Current vertical cursor position (read only).
 \$Z Current display mode for channel #2 (0=normal, 64=mousetext, 128=inverse).

Turnkey Macro Operation

When ProTERM is run, the first thing it always does is execute global macro "@@1". If this macro is not present, then it has no effect. By always running "@@1" at program startup, it is possible to make changes to ProTERM which occur every time it is run.

After Global Macro "@@1" is run, ProTERM checks to see if a startup filename was passed by a program launcher (like ProSel or the GS/OS Finder). If a filename of the form "PTD.name" is passed, ProTERM immediately dials that system. If the filename has any other form, then ProTERM attempts to run it as a macro file (the file must be in the main ProTERM directory). If no filename is passed, ProTERM looks for two default files. If there is a dialing entry called PTD.STARTUP, then ProTERM dials it immediately. If there is a macro file called PT3.STARTUP, ProTERM runs it immediately. Otherwise, ProTERM goes to the Main Menu and waits for a command.

Converting ProTERM 2.2 Macros

Many macros can be converted from ProTERM 2.2 to ProTERM 3 with little or no change. While ProTERM 3 macros represent a super-set of the ProTERM 2.2 macros, there are changes to certain commands which require some adjustment. The following points outline the major changes needed to make ProTERM 2.2 macros operate under ProTERM 3.

- Change all System Macro references from number to ~NUMBER (TILDE-NUMBER) (that is, change GO 5 -to- GO ~5).
- Replace all occurrences of DI with PR.
- All DO commands must be rewritten to use ProTERM 3 syntax.

- System variables are a potential problem. For more details, check the Macro Variables section of this chapter.
- The auto-increment/decrement set command must be changed (i.e., SE \$0+ needs to be changed to SE \$0=\$0+1).

Special Global Macros

As was mentioned earlier in this chapter there are 127 labels available to the Global Macros from “@@1” to “@@127”. The labels in the range “@@65” to “@@90” correspond to key bindings “@@A” to “@@Z” and the labels in the range “@@97” to “@@122” correspond to key bindings “@@a” to “@@z”. In addition to these dual purpose labels, labels “@@1” to “@@9” are reserved for special use by ProTERM. These labels do not need to be defined. If they are, they should be used as documented below. As mentioned in the preceding Turnkey Macro Operation section, the label “@@1” is called every time ProTERM is run. In addition, several other labels have special uses and others are reserved for future expansion. The following list of Global Macro labels are special and should only be used for their designated purposes:

- @@1 Used as a turnkey started macro. Executed immediately after ProTERM is run.
- @@2 This macro is called whenever the mouse button is pressed while pointing to the date.
- @@3 This macro is called whenever the mouse button is pressed while pointing to the time.
- @@4 This macro is called whenever the mouse button is pressed while pointing to the 10-characters left of the date.
- @@5 This macro is called after a protocol send is completed.
- @@6 This macro is called after a protocol receive is completed.
- @@7...@@9 Reserved for future expansion.




Part Three

THE MENUS

The Apple Menu

CHAPTER TEN

This chapter details the commands in the Apple Menu. These commands can be accessed by choosing them from the Apple Menu with the mouse or by pressing COMMAND-TILDE (~) and using the ARROW Keys and the RETURN key to select them. The Apple Menu is available in Terminal, the Editor or Scrollback modes.


About ProTERM
Key Function
Screen Saver

About ProTERM

About ProTERM presents version, copyright and memory utilization information for ProTERM. Press any key or click anywhere on the screen to exit this command. Four different memory utilization parameters are displayed:

- Scrollback Buffer is the amount of memory available for use by Scrollback.
- Editor Buffer is the amount of memory available for the Editor (the maximum is 46K).
- The Transfer Buffer is the amount of memory available during protocol transfers (the maximum is 63K).
- The Code-Cache Buffer is the amount of memory available for ProTERM to keep recently used code modules in memory (the maximum is 63K).

See Index: Preferences for more information about ProTERM memory utilization.

Key Function

The Key Function command provides a way of practicing the keystrokes needed for the different terminal emulations. Since different keyboards require different keystrokes to generate the keys needed for emulation, this command allows those keys to be tried offline. Just press a keyboard combination, and Key Function displays the name of the resulting keypress. For example, pressing OPTION-5 on a normal Apple IIGS keyboard displays "F5" while on a Apple IIe keyboard it displays "Keypad 5". The Key Function command is another method of illustrating the information contained on the emulation keyboard maps.

Screen Saver

The phosphor on the inside of the monitor screen is light sensitive and after long periods of use can deteriorate and become less effective. If a nonchanging screen image is projected for long periods of time, eventually the image burns into the phosphor. A burned image can even be seen when the monitor is turned off. A screen saver operates by waiting for a period of non-activity and then clearing the screen so there is nothing to burn into the phosphor.

The ProTERM Screen Saver waits for a predetermined period of non-activity and then clears the screen. It then displays the letters of the word ProTERM bouncing around the screen (because a changing image does not damage the phosphor). The screen returns to its previous display as soon as the mouse is moved, a key is pressed or data is received from the modem. The following parameters control the operation of the Screen Saver.

Screen Saver Enabled

When checked, the Screen Saver activates after a predetermined amount of non-activity (see Timeout Before Activation below). When NOT checked, Screen Saver is disabled and never activates.

Timeout Before Activation

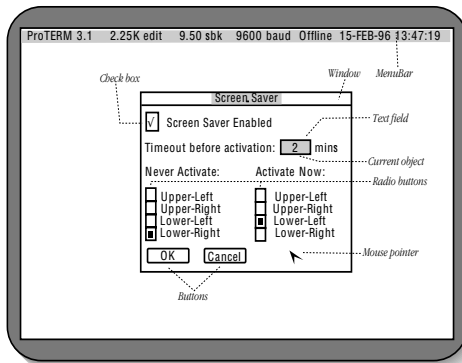
The number of minutes the Screen Saver waits before it activates. Times can be set from a minimum of one minute to maximum 30 minutes. To change the time, highlight this field, press the DELETE key to clear the current information and enter the new time from 01 to 30.

Never Activate and Activate Now

If your computer has a mouse, the Screen Saver routine can be controlled by placing the mouse in the corners of the screen. The corners for controlling this action are named *Never Activate* and *Activate Now*. The Screen Saver default is set up so placing the mouse pointer in the lower left corner of the screen prevents activation of the Screen Saver as long as the mouse remains there. Placing the mouse in the lower right corner makes the Screen Saver activate immediately (where immediately is about 8 seconds).

To edit the Never Activate, and Activate Now Corners, TAB to the radio buttons and use the ARROW keys to select the one which indicates your corner of preference.

NOTE: Only one radio button in a section can be selected at a time. When another in the same section is selected, the previous selected one is deselected.



Screen Saver Window

Saving the Changes

Changes made to the Screen Saver effect only the current ProTERM session. As with other personal preferences made to ProTERM, to make the changes permanent, it is necessary to save the new preferences. Choose the *Preferences* command from the *Misc* menu and choose the *Save* button. This saves the new Screen Saver and other ProTERM preferences.



The File Menu

CHAPTER ELEVEN

File
Copy Files
Delete Files
Emulate Files
Print Files
Rename Files
Set File Info
View Files
Catalog
New Directory
Format Disk
Quit ⌘ Q

ProTERM takes full advantage of Apple's ProDOS Operating System. All ProDOS storage devices are supported along with the hierarchical directory structure. ProTERM additionally supports the concept of a "parent directory" and "slot/drive naming" which are not a part of standard ProDOS, but make using it much easier. For more information on using ProDOS with ProTERM see the chapter, *Using ProDOS*. The commands documented in this chapter are available from the File menu. Most of these commands make use of the *File Selection*, *Batch Selection* or *Path Selection* windows explained in *The ProTERM User Interface* chapter.

Copy Files

Copy Files, copies one or more files from one directory to another. To copy files, choose Copy Files from the File menu. From the batch selection window, use SPACEBAR and/or OPTION-ARROW to tag one or a list of files to be copied. If a directory is tagged, all files within that directory are copied along with the directory itself. After the files to be copied have been tagged, press the Copy button. A path selection window will be displayed which allows the destination of the files to be specified. Select the destination directory, press Copy and ProTERM will copy the files. As it copies files, ProTERM displays a status window telling how many files remain to be copied. If the file being copied is a directory or already exists in the destination directory, ProTERM prompts for confirmation before continuing.

Delete Files

Delete Files deletes one or more files or directories. To delete files, choose Delete Files from the File menu. From the batch selection window, use SPACEBAR and OPTION-ARROWS to tag the list of files to be deleted. If a directory is tagged, all files within that directory are deleted along with the directory itself. After the files to be deleted have been tagged, press Delete to delete the tagged files. ProTERM prompts for confirmation prior to deleting the files in a tagged directory.

Emulate File

Emulate File displays the contents of a text file using one of the terminal emulations. This command is normally used to view text files which contain embedded emulation codes such as ProTERM Special Emulation movie files. In addition, Emulate File also allows large text files to be loaded into Scrollback, where they can be viewed, printed, clipped, etc. To emulate a file, choose Emulate File from the File menu, select the file to be emulated from the file selection window and press the Emulate button. ProTERM will then display a window of emulation options. After selecting the Emulate File parameters, press Emulate and ProTERM will emulate the file.

NOTE: After setting the Emulation Parameters up once, subsequent files can be viewed quickly by pressing COMMAND-RETURN as soon as the Emulate File window opens. COMMAND-RETURN activates the default button in any ProTERM window.

While ProTERM is emulating a file, there are several commands which can be used to control the speed of the display:

- The Left-ARROW slows down the display.
- The Right-ARROW speeds up the display.
- The SPACEBAR pauses the display.
- The ESCAPE key cancels the display.

NOTE: Emulate File should not normally be used while online with a remote host system because it may reset emulation parameters which were previously set by the remote host. If ProTERM suspects using this command may cause a problem, an alert message is displayed.

Setting Up to View Emulation

The following parameters may be set from the Emulate File option window:

Emulation

The *Emulation* parameter selects which terminal emulation will be used when ProTERM processes the file. When emulating a file which contains terminal emulation codes, select the corresponding emulation. For example, to display ProTERM Special Emulation movie files, select *ProTERM Special Emulation*. If the file does not contain emulation codes, select *No Emulation*.

Add Linefeed to Return?

This parameter selects whether ProTERM should append a LINEFEED to each RETURN character encountered in the file. Because some emulation files are captured with the LINEFEED characters missing, it is necessary to have a mechanism to add them back in. If *Emulate File* results in all the data being displayed on a single line, try turning the *Add Linefeed to Return?* parameter on. Normally this parameter needs to be on when viewing ProTERM Special Emulation movie files.

Save Data Into Scrollback?

This parameter controls whether the data which is displayed on the screen is also saved as part of Scrollback. If *Emulate File* is being used to load a file into Scrollback, the *Save Data Into Scrollback?* parameter should be turned on.

Print File

The *Print File* command prints the contents of a file from disk. To print a file, choose Print File from the File menu, select the file to be printed and press the *Print* button. Select the desired print options (generally, these can be left at default) and press the Print button. To cancel printing, press the ESCAPE key. Print File also converts the optional dot-command processing and margin control. For more information on the Print Parameters window, see the Index: *Print; Parameters*.

Rename Files

The *Rename Files* command renames one or more files or directories. Choose Rename Files from the File menu, and from the batch selection window, use SPACEBAR or OPTION-ARROWS to tag (apply checkmark by selecting the file and pressing SPACEBAR) one or more files to be renamed. If a directory is tagged, just the directory itself is renamed (as opposed to the contents of the directory). After tagging the files and directories, press the Rename button. For each file or directory tagged, ProTERM displays a window with the current filename and a text entry field for the new name. Enter the new name and press Rename. Repeat until all the tagged files and directories are renamed.

Set File Info

Set File Info changes the filetype, auxiliary filetype and access (whether file is locked or unlocked) for one or more files. This is especially useful for changing files which have been downloaded and stored to disk with an incorrect filetype. To change the file information, choose Set File Info from the File menu. From the batch selection window, use SPACEBAR and OPTION-ARROWS to tag one or more files. If a directory is tagged, all files within that directory will be tagged as well. After the file(s) are tagged, press Set Info and ProTERM will allow the file parameters to be changed for each tagged file (see below). After entering the file parameters, press Set Info to apply the changes or press Skip to move to the next file without making any changes.

Use Same Info For All Files?

Set File Info has two modes of operation determined by the setting of *Use Same Info For All Files?* When this option is checked, all selected files are affected by the changes made. That is, ProTERM prompts for the file information once and applies it to all tagged files. If this option is not checked, ProTERM prompts for the information for each individual file.

Filetype

A file's "*Filetype*" determines what kinds of programs can access a file, and the *Filetype* parameter allows this value to be changed. The Filetype parameter can be entered using a textual equivalent (such as "TXT", "LBR" or "BIN") or by its hexadecimal value. For example, to change the filetype to "LBR", enter the text "LBR" or the hexadecimal equivalent "\$E0". Either way, when the file is later displayed in a file selector or catalog, the filetype will display as "LBR". When the Filetype parameter is left blank, ProTERM does not change the filetype.

File Access

The *File Access* parameter determines whether a file is “locked” or “unlocked.” When locked, a file cannot be renamed, written to or deleted:

- To lock a file, enter “L” in this field.
- To unlock a file, enter “U” in this field.
- Leave this field blank to keep the File Access unchanged.

Auxiliary Filetype

The *Auxiliary Filetype* parameter determines the auxiliary filetype of a file. This is expressed as a 16-bit hexadecimal value (such as \$8000). ProTERM does not change the Auxiliary Filetype when this field is left blank.

View File

View File allows the keyboard or mouse to be used to page through the contents of one or more files. To view files, choose *View Files* from the *File* menu. From the batch selection window, use SPACEBAR and OPTION-ARROWS to tag files for viewing. If a directory is tagged, all files within that directory are viewed. After the files have been tagged, press the *View* button and ProTERM will display the contents of the first file. The following explains the function of the buttons and the status information present at the bottom of the view window.

View File Information

In the lower right corner of the View window, ProTERM displays the current *FILENAME*, the *current screen number* and the *current/total bytes*, (number of total characters) in the file. The *Screen indicator number* can be used in conjunction with the *Goto* button in order to resume viewing a file at a previously known screen position. Press the *Goto* button and a *Goto* window will open allowing you to enter the screen number to go to. The byte indicator gives a general “feel” for the relative position within the file.

Next

The *Next* button advances to the next screen of the file. At the final screen, the *Next* button does not advance any further but displays a “[End of Data]” message instead.

Prev

The *Prev* button backs up to the previous screen of the file. At the first screen, the *Prev* button does not backup any further. A “[Start of Data]” message is displayed at the top of the first screen.

Goto

The *Goto* button positions to a specific screen number within a file where a “screen” is equal to 20 lines of text. The screen number indicator in the lower right corner of the View window can be used for reference.

Edit

Starting from the current screen, the *Edit* button allows one or more screens of data to be loaded into the Editor. When the Edit button is pressed, a window prompts for the number of screens to be loaded into the Editor. In the View file area, a "screen" is equal to the amount of data which View displays on one screen (20 lines). If *Number of Pages to Copy*: is left blank, ProTERM loads from the current screen until the Editor is full or the end of the file is encountered, whichever occurs first. When View Files is used from Terminal mode, Edit appends data to the end of the current Editor document. When used from within the Editor, Edit inserts data into the document at the current Editor cursor position.

NOTE: The View file command is also available from within the File menu in the ProTERM Editor.

Done

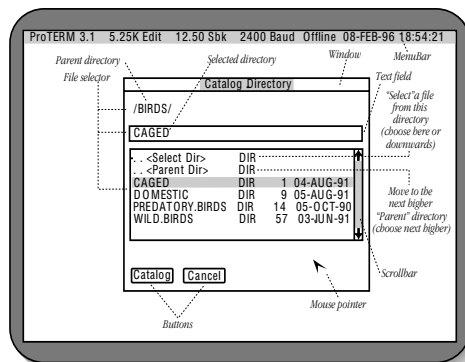
The *Done* button cancels the viewing of the current file and displays the next file (if more than one file was tagged). If the current file is the last (or only) one tagged, then *Done* cancels *View*.

Cancel

The *Cancel* button cancels the viewing of the current file and returns to terminal mode, regardless of whether additional files are tagged or not.

Catalog

Catalog displays the names of all files within a directory along with information about each file including the size in blocks and bytes, the modification and creation dates and times, and the main and auxiliary filetypes. To catalog a directory, choose *Catalog* from the File menu. From the pathname selection window, select the directory to catalog and press the *Catalog* button. ProTERM displays up to sixteen files in a window. The *Next* and *Prev* buttons are used to display those respective windows in the directory. Pressing *Next* moves forward one window and *Prev* moves back one window. When finished viewing the catalog, press *ESCAPE* or the *Cancel* button.



Example Catalog

New Directory

New Directory creates a new directory within a directory, sometimes referred to as a “sub-directory.” To create a new directory, choose New Directory from the File menu, select the directory in which to create the new “sub” directory, enter a name for the new directory and press the New button. ProTERM creates the new directory using the specified name.

Format Disk

Format Disk formats a 5.25" or 3.5" floppy disk for the storage of ProDOS files. To format a disk, choose Format Disk from the File menu, specify the slot/drive location of the disk to be formatted and select the Format button. ProTERM prompts you to insert the disk to be formatted into the drive, and asks for a name for the new volume. The volume name must be a valid ProDOS filename and should not include a leading or trailing slash. After entering the volume name, press the Format button to format the disk. If any problems are detected during the formatting process, an alert message is displayed. If the disk was previously formatted as a ProDOS volume, ProTERM shows the old volume name and requests permission to erase it.

Quit

The *Quit* command causes ProTERM to exit to the “ProDOS quit code.” Keep in mind quitting from ProTERM loses the contents of the Editor and Scrollback forever. If you wish either of these to be saved, do so prior to quitting ProTERM. To quit ProTERM, choose *Quit* from the File menu and press the OK button. Documentation on the ProDOS Quit Code is available in the Apple ProDOS Users Manual available from Apple Computer.

Press the TAB key to place the cursor in the Edit System Params window.

Dial
Create System
Quick Dial
Rotary Dial
The InTrec BBS

“System” is a name for the computer hosts you call. Its also called a service.

“Params” is a short way of saying parameters which is a set of values.

The Dial Menu

CHAPTER TWELVE

This chapter offers additional information on how to customize and dial your System entries. “Systems,” are the files containing the name, phone number and all parameters relating to a specific host computer. System parameters (sets of values for each system) are explained in more detail along with additional information on different dialing modes in different parts of this manual. See the Index: *Dial*. Also see *Params*.

Installations at the system level are for, and allow customizing of each individual host system you will be calling.

Editing System Parameters

Besides the basic parameters (parms or values) which are entered for each system when it is created, there are three additional windows of parameters which can be customized. All of these parameters have been assigned default values which work for most applications and do not require changing unless you would like to customize them for a specific need. To get to the Edit System Params menu, choose the name of the system from the Dial menu.

System Number

Each system must have a *System Phone Number* associated with it. Normally, phone numbers are no different than you would dial to make a voice call, but for special situations, the phone number can be up to 32 characters long and can contain several “meta-characters” (special dialing instructions for the modem) in addition to the digits of the phone number. ProTERM always defaults to dialing phone numbers using Touchtone™. If your phone system does not support Touchtone dialing, then insert a “P” as the first character of the phone number to force pulse (rotary) dialing. The actual list of valid characters varies from modem to modem, but the following table lists those supported by almost every modem (consult your modem manual in the dialing section for an exact list of valid dialing characters).

Most parameters are already set to default, when in doubt, accept them.

Creating your “default” system.

Meta characters are what make up the phone number as seen by your modem. Actually, they are the instructions ProTERM sends directly to the modem within the dialing string. The “P” used to change the default of Touchtone dial to rotary dial is a meta character.

Meta Characters

Character Function

T	Dial subsequent digits in tone mode.
P	Dial subsequent digits in pulse mode.
0...9	Dial the digits 1,2,3,4,5,6,7,8,9,0.
#	Make the pound–sign tone (touch–tone only).
*	Make the asterisk tone (touch–tone only).
,	Pause for two seconds.
W	Wait for a second dial tone before continuing.

Your Default System (Main System Called)

After you have several systems entered, you’ll see them alphabetically arranged. Your favored system may be buried in the list, but you can make one favored system to always be the default (automatically selected as you boot into ProTERM).

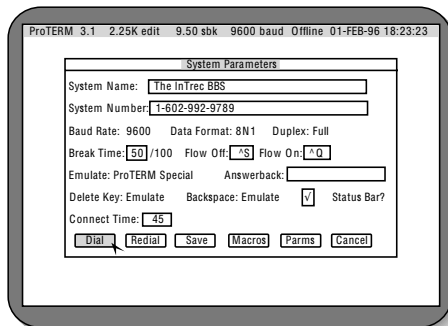
The System Name must be activated by at least opening the *system Parm*s window for that system. This tells ProTERM *this is the current system*. After having selected this system press the ESCAPE key to go to ProTERM’s Main menu screen. Choose the *Misc* pulldown menu, then choose Preferences, and press the RETURN key. When the Preferences window opens, notice *Save* is already chosen. Pressing the RETURN key closes the window and saves all personalized changes you have just made throughout ProTERM. In this case, the system you chose will now be the default system and will be chosen every time you boot ProTERM.

Call Waiting

To disable *Call Waiting* for a single call, insert *1170*, (1-1-7-0-) at the start of the phone number. Note the comma is part of this special number string. An example phone number might look like, *1170,123-4567*. The special number “1170,” sends a signal to your local phone company to temporarily disable the Call Waiting and the comma “,” tells ProTERM to wait 2 seconds while the change is being processed by the phone system’s equipment. The rest of the number is then dialed normally. This option only disables Call Waiting for the duration of one call. Call Waiting is reinstated automatically at the completion of the call. The “1170,” routine works with both tone and pulse phone lines in many parts of the United States. You may also want to try the Touchtone version of entering **70*, in place of the *1170*, which also works in many parts of the USA.

NOTE: If you have problems with this option, consult your local phone company for the procedure to temporarily disable Call Waiting.

**Tab to edit items in window.
See Chapter 2.**



**System Parameters
Window**

Baud Rate (BPS)

The term “Baud Rate” is a actually incorrect terminology. In truth, BPS (bits per second) is the correct term to refer to the speed of a modem. In the days of 300 baud modems, the two terms meant the same thing. However, in the case of higher speed modems, BPS refers to the speed of the modem and baud refers to a characteristic of the modem signal. Even though the term baud rate is a redundant term and technically incorrect we've chosen to use it at this time because it is the contemporarily accepted and familiar term.

Baud Rate is a pop-up window and the selectable rates are; 110, 300,1200,2400,4800,9600, 19,200, or 38,400.

NOTE: ProTERM lists 38400 as a valid baud rate selection. This rate is only available when using a modem connected to the Apple IIGS Modem Port. In addition, using this speed is not generally recommended. Currently there are very few modems available which can actually sustain data transfer rates anywhere near this speed. Most of these modems send short bursts of data at this speed, but have only a net throughput of a round 19200. It is much easier for the software to communicate with a modem which is consistently sending data at 19200 than with a modem which sends short bursts at 38400.

Data Format

ProTERM supports data formats of “7E1, 7O1, 8N1, 8N2, 7E2, 7O2” (see the Index: *Data Format* for more detail). The most common data format is “8N1” which works with most all of the systems in use today.

The Format option controls how data is “packaged” when it is transferred to a service. By far, the most common format used is “8N1” which stands for “8 data bits, no parity, 1 stop bit.” A few services also use the “7E1” format which stands for “7 data bits, even parity, 1 stop bit.” The rest of the formats are rarely ever used.

Supported Data Formats

7E1	7 data,	even parity,	1 stop
7O1	7 data,	odd parity,	1 stop
7E2	7 data,	even parity,	2 stop
7O2	7 data,	odd parity,	2 stop
8N1	8 data,	no parity,	1 stop
8N2	8 data,	no parity,	2 stop

Duplex

The *Duplex parameter* controls how ProTERM handles data typed at the local keyboard.

- *Full duplex* systems (the most common) echo back characters which are sent to them. Therefore, all data typed at the local keyboard is sent only to the remote system and not to your monitor. On a full duplex system anything entered at the keyboard is only seen after it is echoed back from the remote system.
- *Half duplex* systems do not echo back the characters sent to them. To enable you to see what you are typing when using a half duplex system, all data typed at the local keyboard must be simultaneously displayed locally as it is sent to the remote system, if ProTERM is set at Half Duplex, what is typed locally is being sent directly to the monitor as well as to the host. Also see the Index: *Duplex*

What happens if the wrong duplex is used? If a half duplex system, such as GENie™ was called using full duplex, GENie would react to your commands because the commands are received, but the commands would not be displayed on your monitor. On the other hand, if you called a full duplex service such as CompuServe™ with half duplex selected, you would see double characters when you type; one copy being displayed as it is sent directly from the keyboard and the other echoed from CompuServe. Also see the Index: *Duplex*.

Break Time

Some host systems allow the use of a *Break Signal* to stop action in certain situations. The break signal acts as an interrupt to get the attention of a remote system when it is busy doing other things. When do you need to take a “brake?” If you encounter a situation where data just seems to scroll and scroll without end, sending the break signal will sometimes stop the display and return the system to a command prompt. The *Break Signal* parameter controls the length of time (duration) the break signal being sent. The default Break Signal default setting is 1/2 second. COMMAND-B sends the Break Signal to the remote host.

Flow Off & Flow On

Because there are times when ProTERM is not able to accept incoming data from a remote system, a mechanism called *Flow Control* is used to regulate the flow of data. The flow control parameters are used to specify how the flow of incoming data can be stopped and restarted. When left blank, ProTERM selects flow control characters based on your modem configuration. To override ProTERM's default settings and use a specific flow control technique, use the following notation:

Notation	Method	Meaning
^ <i>char</i>	software	Send CONTROL- <i>char</i>
<i>char</i>	software	Send <i>char</i>
R0	hardware	Drop RTS
R1	hardware	Raise RTS
D0	hardware	Drop DTR
D1	hardware	Raise DTR

Emulate

Terminal Emulation refers to making ProTERM emulate, or “function like,” a specific type of stand-alone terminal. If the system requires the use of a certain type of terminal, select the corresponding terminal emulation from the list. If the system does not require emulation, select *No Emulation*. *Split-Screen Chat* emulation is used on real-time conferencing systems

and allows outgoing messages to be composed in one area of the screen while incoming messages are displayed in another. For more detail, see the Index:*Emulation*.

AnswerBack

The *AnswerBack* parameter is used in conjunction with the *Emulation* parameter. If *Emulation* is being used, then this parameter is not used. Otherwise, its use is explained in detail elsewhere in this manual, see the Index:*Emulation*. Also check for the specific terminal by name.

Delete Key

The *DELETE Key* is conveniently located at the upper-right corner of all Apple II keyboards which makes it ideal for use as a "backspace" key during text entry. You may notice that different systems require different characters to be sent for this purpose. Since almost all systems require either a DELETE or a CONTROL-H character, this parameter allows the DELETE key to send either of these values. If you're not sure of which value to send, set this parameter to *Emulate*. Don't be afraid to experiment. You might find setting this parameter to *Send BS* (Send Backspace) on CompuServe, Delphi and GENie make their online text editors much easier to use. Also see the *Backspace* parameter below.

Backspace

The *Backspace* parameter allows an incoming backspace character to be treated in a destructive or non-destructive manner. In destructive mode, the backspace causes the cursor to move left one character and destroys the underlying character. In non-destructive mode, the cursor moves left, but the screen is not changed. For most systems, this should be set to *Emulate*. However, for systems such as CompuServe, Delphi and GENie, you may find the *Destruct* setting is preferable.

Status Bar

The *Status Bar* keeps you up to date as to current status of ProTERM. It displays useful information including the amount of data in the Editor and Scrollback, the current baud rate (BPS), the connection status and the date and time. Only 24 lines can be viewed at one time on the Apple computer. When the status bar is turned on, it displaces one line of possible text leaving 23 lines available for viewing incoming data. All 24 lines of incoming data can be displayed by turning the status bar off. TAB to entry and press the SPACEBAR to toggle the Status Bar [✓] parameter on and off. For more information see the Index:*Status Bar*.

Connect Time

The *Connect Time* controls the amount of time the local modem waits for a connection when calling the remote system. Since most modems support *busy signal detect*, there is no penalty associated with setting the Connect Time too long. However, if the Connect Time is set too short, the modem may fail to make a connection because ProTERM cancels the attempt before the connection is completed. The default Connect Time of 45 seconds works well for the slower (300, 1200 & 2400 BPS) applications but higher speed modems need more time to negotiate logon procedures. Times of a 60 seconds or even more may be required. Experiment with the system in question until it works. Press and hold the OPTION key to stop the countdown.

**Hold the
OPTION key
down to stop the
"countdown."**

Parms – More System Parameters

By selecting the *Parms* button from the Edit System Parms window, another window of *System Parameters* can be displayed. While the parameters listed on the *Parms* window are less frequently used than the main parameters, they allow additional customizing of ProTERM for a specific system's needs. As with all ProTERM parameters, all of these parameters are pre-assigned with default values which are adequate for most applications. For more detail see the Index: *System Parameters*.

Per Minute and Per Hour Cost

In order to allow online costs to be displayed and recorded, ProTERM has fields to indicate the *Per Minute* and *Per Hour Cost* for accessing a system. Normally, per minute cost is used to enter calling charges such as long distance or network phone connect charges, while per hour cost is used to enter host access charges. Whenever ProTERM displays the resulting charges, both fields are taken into account using the formula:

$$\text{total_cost} = (\text{per_minute} + (\text{per_hour}/60)) * \text{minutes_online}$$

Show Cost

The *Show Cost* option causes the connect costs to be displayed on the top line of the display. As connect time increases, the connect cost is updated.

Log Cost to Disk

Press TAB until the cursor selects this option, then press the SPACEBAR to place a checkmark [✓] here. When this option is used, a file named *PT3.LOG* is created in the ProTERM directory. The *Log Cost* option causes a summary line to be appended to the *PT3.LOG* file at the termination of a connection. The summary line displays the system name, connection time and connection cost. The *PT3.LOG* file should be periodically deleted or moved to another disk as it starts to grow in size. Otherwise, it continues to grow and grow, using up disk space as it grows. A special note for those using a 5.25" disk: Since they are so limited in storage size, it is important to remove this file often. The file can be copied to another disk using the ProTERM File copy utility. This file can be deleted from the ProTERM directory and the next time the option is used, it will create a new *PT3.LOG* file.

Default Data Capture Mode

Online data can be *Captured* to the ProTERM Editor, printer or written to a disk as a file, using two different methods.

- Char(acter) Mode: If the data contains control characters or emulation codes, they are saved as part of the data.
- Line mode: An "image" of the data as is seen on the screen is captured. Using this mode, all emulation and control codes have already been processed and the captured data looks just like what was displayed on the screen. Processing and removing control characters is important if the text is to be sent to a printer. Control characters are what gives a printer its instructions and strange instructions out of context can cause printer difficulties.

ASCII Send Parameters

The next six parameters (*Send Width*, *Send Prompt*, *Send Mode*, *Fix Blank Lines*, *Char Pace* and *Line Pace*) all control ASCII send options. A more detailed explanation of each

**When in doubt,
accept the
installed
defaults.**

parameter along with ASCII send technique is provided elsewhere in this manual. See the Index: *Transferring Files*.

Note: ASCII stands for American Standard Code for Information Interchange. A standard 7-bit code is used to establish compatibility among data services.

Send Width

The *Send Width* parameter controls the width of lines sent to a system during an ASCII send. Also when working with system, it sets the ProTERM Editor Ruler to the system's data width in the ProTERM Editor. So when text is composed while working with this system, it will be preset to the correct margins. Most systems use a width of 80 characters, but some commercial online services use a line width of less than 80. Once this parameter has been set, it will be used as the default value for ASCII sends (file transfers) and the Editor when using this system.

Send Prompt

A *Send Prompt* is a character which some systems provide during an ASCII send (a text upload from the ProTERM Editor or from disk), to inform (prompt) the sender the host is ready for the next line to be sent. This allows individual lines to be sent very quickly while the pace between lines is controlled by the remote system. Common prompt characters include ">" and ":".

The next time you are using the system you wish to send ASCII text to, check what (if anything) is used as a new line leader as you are typing. For example, you may see a line prompt which looks like "1:" or maybe "1>" or as noted above, just the prompt will show as a new line is available. The reason using a "send to prompt" is important to you is, the prompt is the signal the host has processed the last line and is ready for a new one. When you send to a prompt, the file is being uploaded as efficiently as is possible. You are not waiting too long and you are not sending so fast as to overwhelm the system which usually causes missing characters especially near the beginning of each line.

Some systems do not show a prompt. Some do not show a prompt automatically and some that do show a prompt, allow the prompt to be changed. Check the individual system help files for details. An example of a system which does not show a prompt but will show one on request is a GBBS BBS system such as the InTrec BBS. To turn the prompt on, when using a GBBS system enter the dot command ".P" (PERIOD-P) and press RETURN. Now every time a line is entered, you will get a ">" for a prompt. Although the prompt can be seen on the screen during the upload, the prompt will NOT be a part of the final text. A neat trick you can use when sending a file to a system which does show a prompt on request is to imbed the request in your text. To do this, enter ".SC.P" on the first line of the document at the very top of the text.

Send Mode

ProTERM supports ASCII sends in both *Line Mode* and *Character Mode*:

- In line mode, ProTERM sends an entire line of data, waits for an optional send prompt if the Send Prompt parm has a character in it, and then sends the next line.
- In character mode, ProTERM waits for the echo of each individual character (full duplex systems send back a copy of every character sent to them) before sending out the next character.

If a pressing RETURN exits the host editor then “FIX Blank Lines!”

Fix Blank Lines

A favorite telecom text format is to separate paragraphs with a blank line. However, certain host systems can create a problem when these text formats are uploaded as ASCII text files. These systems look for and screen out consecutive RETURN characters and when found, these host systems interpret the second RETURN as the end of the file and attempt to save the file to disk. How it works: When a paragraph ends, it has a RETURN character on the end of it. If there is a blank line between paragraphs, then the blank line is normally made by a second consecutive RETURN character. Therefore to upload an ASCII text file to one of these systems, the paragraphs must either NOT contain blank lines between them, or the host system needs to be fooled into thinking there are no blank lines. This is done by inserting a SPACE character just before the second RETURN character. The host system sees the first RETURN character, and then it sees the SPACE character and the second RETURN shows up, but the system did not see two consecutive RETURN characters so the scheme works.

The *Fix Blank Lines* parameter converts consecutive RETURN characters (blank lines) as the data is being sent. The text is screened for “RETURN-RETURN” characters to a “RETURN-SPACE-RETURN” sequence. A SPACE character on the new line is placed ahead of the second RETURN character making the host think the “fixed-line” was a legitimate paragraph.

Char Pace

The *Character Pace* feature controls the rate at which data is sent to a remote system during an ASCII text file send. When in *Character Send* mode, this selects how many characters may be sent before the echo of the first character is received. In Line mode, this represents the send speed as a percentage of the current baud rate (BPS).

Line Pace

After a line of data has been sent, the *Line Pace* parameter controls the delay before the next line is sent. The parameter is expressed in 1/100 of a second.

Protocol Transfer Parameters

The following six parameters (*Protocol Speed*, *Duplicate Filename*, *Upload Options*, *Download Options*, *Auto Protocol Start* and *Zmodem-Resume*) all control Protocol Transfer options. A more detailed explanation of each parameter along with protocol transfer technique is provided elsewhere in this manual, see the Index: *Transferring Files*.

Protocol Speed

The *Protocol Speed* parameter selects the relative speed at which the remote system can process protocol transactions. By dropping the speed down to slow, ProTERM will wait longer for responses from the remote system than normal.

Duplicate Filename

When certain receive protocols are used, the remote system can supply filenames for the new files. However, if a filename already exists in your directory, ProTERM must make a decision either to delete the existing file and replace it with the new one or to rename the new file. The *Duplicate Filename* parameter allows you to control that decision. *Rename* is used, the current name will have a period and a three character number affixed to it. Example: If “MY.FILE” existed and was downloaded again using the *Rename* option, the second name would be “MY.FILE.001” the next would be “MY.FILE.002” and on and on to .999.

Upload Options

The *Upload Options* parameter controls how files are sent to a remote system. ProTERM supports both Xmodem/Ymodem ProDOS extensions as well as Binary II encoding:

- *None* – Files being sent are transferred without intervention.
- *ProDOS* – Transfers ProDOS files with all attributes and extensions if it is available in the protocol.
- *Binary II* – Encodes the files into a Binary II envelope during the transfer.
- *Both* – Uses both ProDOS and Binary II methods. The file will be treated as a ProDOS file and will be encoded with Binary II.
- *TXT/BNY* – Text files are uploaded as TXT files. All other files are encoded with Binary II.
- *Query* – Is a manual mode which presents a window asking for the operator to choose the transfer options for each transfer session.

NOTE: See Index: Binary II for more on .BIN & .BXY.

NOTE: If the file being sent is already Binary II encoded, ProTERM will not “double-wrap” the file.

NOTE: See the Index – Binary II, * for more information on how and why this function is used in telecommunications.

Download Options

The *Download Options* parameter controls how files are received from a remote system. ProTERM supports both Xmodem/Ymodem ProDOS extensions as well as Binary II decoding:

- *None* – Incoming Binary II files are saved without change and the encoding headers are saved as part of the file data.
- *Binary II* – The Binary II encoded files are decoded and files are saved as the original ProDOS filename, filetype, file status and other attributes just as they were before they were encoded with Binary II. This does not effect non-Binary II files and they are saved normally and without intervention.
- *Query* – Is a manual mode which presents a window asking for the operator to choose the options before the files are received.

The Xmodem/Ymodem ProDOS extension decoding is always done by ProTERM and does not require a parameter.

NOTE: See the Index – Binary II, for more information on how this function is used in telecommunications.

Auto Protocol Start

The *Auto Protocol Start* parameter controls whether ProTERM automatically detects Zmodem or Kermit transfers. When either a Zmodem or Kermit send command is initiated on a remote system, ProTERM can detect the start of the transfer and will begin the receive process without further intervention from the user. When this parameter is set to *Zmodem* or *Kermit* and the command is initiated, the file immediately starts to transfer to the default download path. It is important to have the *Default Pathnames* set (see *Preferences* in the *Misc* menu, also see Index: *Preferences*) or ProTERM will choose the directory used last or where the ProTERM files are, as a default pathname.

**To stop the
countdown
Connect Time:
Hold the OPTION
key down.**

Zmodem–Resume

If a Zmodem download fails part way through a transfer, it is possible to resume the transfer where it failed. If this parameter is turned on, and a file is downloaded with the same name as one that failed, ProTERM automatically resumes the transfer and downloads the remaining portion of the file.

System Macros

By selecting the *Macro* button from the Edit System Params window, a window of system macros can be displayed. Each system has ten system macros associated with it. Macro operation is explained in detail elsewhere in this manual, see the Index: *Macros*.

AutoLogon Macro

When ProTERM connects with a system, this parameter allows one of the macros to be executed to allow for automatic logon. To disable automatic logon, simply set this parameter to “Off.” If you would like ProTERM to create an *Auto Logon Macro* for you, set this parameter to *Learn*. During your next call to the system, ProTERM will record the procedure you use to logon, and subsequent logons will be automatic. See the Index: *AutoLearn*.

Macro Elements

There are 10 *Macro Elements* for each system and each element can contain up to 63 characters. The macros can be activated from terminal mode by the key sequence displayed to the left of the macro. Pressing the COMMAND key and one of the numbers, activates the applicable macro. While there are no “wire-frames” around the macros, each line is a standard text entry field and the normal text entry and editing commands apply. See the Index: *Macro and AutoLearn Macro*. For more detail on how these work. For editing details, see the Index: *Text; windows; editing*.

Saving System Changes

After making any changes to a system entry, the changes need to be saved to disk. Changes are automatically saved if the system is either dialed or redialed after the changes are made. If you’re not going to dial the system immediately, select the *Save* button to save the changes. This saves the changes and returns to the Main Menu.

Dialing a System

Dialing a System is simple once it has been created and customized. By selecting either the Dial or Redial button from the Edit System Params window, the system can be dialed in a single dialing attempt or by using a continuous (redial) mode.

Dial

When the *Dial* button is selected, ProTERM dials the system and attempts to make a connection. If the connection attempt is not successful, the *Unable to Connect* window is

displayed showing three buttons: *Dial*, *Redial* and *Cancel*. Select the *Dial* button to attempt another connection with the system. If the connection attempt fails, ProTERM returns to this window. Select the *Redial* button to begin a redial sequence which will continue to dial until a connection is established or the sequence is canceled.

Redial

When the *Redial* button is selected, ProTERM continuously redials the system until a connection is established or the redial operation is canceled. To cancel the redial operation, select the *Cancel* button or press ESCAPE while ProTERM is trying to make a connection. Selecting the *Dial* button during a continuous redial places ProTERM back into single dial mode (see explanation above in *Dial*).

NOTE: Upon making a connection after a continuous redial, ProTERM sounds the bell three times. There is a parameter in the setup screen which allows the connect sound to be disabled or to be changed to a "siren."

Quick Dial

Quick Dial is a feature which allows a system to be dialed quickly and simply without going through the process of entering all of the system parameter information. Quick Dial numbers are a "one-shot" operation. The number can be *Dialed* or *Redialed* but if another Quick Dial number is entered or you quit from ProTERM, the information in Quick Dial will be gone. Nothing in the Quick Dial menu is saved when *Preferences* are *Saved*.

Rotary Dialing List

The *Rotary Dialing List* is an efficient method for calling a group of systems which is especially helpful for serious BBS users. Using Rotary Dial, ProTERM calls a system from a list and if busy, calls the next system on the list. When ProTERM is unable to connect with a system, it dials the next system in the list. After connecting to a system, that system is removed from the rotary dialing list.

To use the Rotary Dialing List, choose Rotary Dialing from the Dial menu. This displays a window with your system list. Use the ARROW keys and SPACEBAR to select the list of systems to dial (a checkmark \checkmark is displayed to the left of a marked system). When all of the systems have been selected, select the *Rotary* button. ProTERM will dial the first system in the list. If a connection is not made, ProTERM will cycle through the dialing list calling different systems until a connection is made.

Using ProTERM without a Modem

ProTERM can be operated without a modem through the use of the "Null Modem Driver." Possible applications for this include the direct transfer of files between different computers connected with cables or demonstrations of ProTERM or BBS software. To operate without a modem, use the Install command and select the "Null Modem Driver."

When operating with the Null Modem Driver, ProTERM operates normally with the following exceptions:

- When ProTERM first starts, it sends the modem init string to the remote system, but does not wait for a response.
- When ProTERM “dials” a system, it sends the phone number string to the remote system and immediately goes online.
- The *Hangup* command drops DTR to break the connection.

NOTE TO SysOps:

System files are saved in the ProTERMPT3.DIAL directory as a file name like “PTD.SYSTEM.NAME. Each file is a complete System file for each entry called. It contains all of the attributes, even the AutoLogon Macros. The power of PTD files lies in their structure of being complete, but loose and independent of each other. This gives you the capability of using them as a marketing tool for your system. You could create one of these “PTD.” files for a BBS system complete with the phone number and a guest AutoLogon macro or even make the AutoLogon macro to log a new user on to the point where the new user takes over to enter their personal information. Upload your BBS-PTD file to various other system libraries making it readily available to potential users. The new prospective user could download the file and copy it into their PT3.DIAL directory. When they start ProTERM again, your file would be on their directory ready to select, call and run the AutoLogon macro. Your not only giving them the phone number, your giving them everything they need to call your system!

Online	
Parameters	⌘ L
Time Connected	⌘ W
Editor Capture	⌘ C
Printer Capture	⌘ P
AutoLearn Macro	⌘ N
Paste to Modem	⌘ V
Send Break	⌘ B
Hangup	⌘ H

Use the Online menu to experiment and find what parameters work best for the host system being called.

The Online Menu

CHAPTER THIRTEEN

remote system. While some of this information has already been covered elsewhere in this manual, this chapter provides in depth information for working with *Online Parameters*. Entries in here are grouped according to the order of the commands as they are presented in the *Online* menu, *COMMAND-L* from the *Main ProTERM* menu. Additional references on specific entries may be found in the Index.

By going to the *Online menu* while you are actually connected to the host you can experiment to see which effects work best. When parameters for the host system are found to be the ones always preferred, change them in the *System Params* window for that host. Then whenever that system is called, the parameters will be set.

This chapter deals with all the commands available while Online, *terminal mode*, with a

Online Parameters

The *Online Parameters* window allows access to, and change of communication parameters which are NOT specifically pre-set to the system being called. All of the options, with the exception of *Line Status*, found in *Online Parameters* may be also be set as defaults in the individual system's defaults.

Baud Rate (BPS)

The *Baud Rate* parameter controls the speed at which ProTERM communicates with the modem through the modem port. Keep in mind this is the port speed and not the connection speed. There is no way to tell the modems to change speed after the connection. This parameter changes the rate at which ProTERM communicates with the local modem.

NOTE: ProTERM lists 38400 as a valid baud rate selection, but is only available when using the Apple IIGS Modem Port. In addition, using this speed is not generally recommended. Currently there are very few modems available which can actually sustain data transfer rates anywhere near this speed. Most of these modems send short bursts of data at this speed, but only have a net throughput of around 19200. It is much easier for the software to communicate with a modem which is constantly sending data at 19200 than with a modem which sends short bursts at 38400.

Data Format

ProTERM supports *Data Formats* of:
7E1, 7O1, 8N1, 8N2, 7E2 and 7O2 .

Respectively, these stand for:

7 data bits	Even parity	One stop bit.
7 data bits	Odd parity	One stop bit.
8 data bits	No parity	One stop bit.
8 data bits	No parity	Two stop bits.
7 data bits	Even parity	Two stop bits.
7 data bits	Odd parity	Two stop bits.

NOTE: ProTERM's default of 8N1 is the most common data format, and it works with almost all systems in use today:

- Parity – A way of checking the accuracy of transmitted data by counting the number of bits which have the value of 1.
- Data bit – The character that is the actual data being transmitted.
- Stop bit – One or two bits that signal the end of the transmission of a byte.

Also see the Index: *Data Format* and *Duplex*.

Duplex

The *Duplex* parameter controls how ProTERM handles the data typed at the local keyboard.

Full Duplex

The most common are full duplex systems where all data typed at the local keyboard is sent only to the remote system. The Full Duplex parameter only shows the data received from the remote system.

Half Duplex

When using a half duplex system, all data typed at the keyboard is not only sent to the remote system, but it is also sent directly to the local console to be displayed on the monitor.

Break Time

Some systems make use of a *break signal* which can be sent by the user get the attention of the host system in certain situations. This parameter controls the duration of the break signal. The default setting is 50/100 (1/2) second. The actual break signal is sent via the COMMAND-B command. See the Index; *Break; Time*, or *Break; Signal*, for other references.

Flow Off & Flow On

Because there are times when ProTERM is not able to accept incoming data from a remote system as fast as it may be available, a mechanism called "flow control" is used to regulate the flow of data. The flow control parameters are used to specify how the flow of incoming data can be stopped and restarted. When left blank, ProTERM selects a flow control method based on the characteristics of your modem. To manually specify a technique, use the following notation:

Notation	Method	Meaning
[^] <i>char</i>	software	Send CONTROL- <i>char</i>
<i>char</i>	software	Send <i>char</i>
R0	hardware	Drop RTS
R1	hardware	Raise RTS
D0	hardware	Drop DTR
D1	hardware	Raise DTR

Emulate

Terminal Emulation refers to making ProTERM function like, or emulate, a stand-alone terminal. If the system requires the use of specific type of terminal, select the terminal emulation from the list. If the system does not require emulation, select *No Emulation*. For users of real-time conferencing systems, there is an emulation called "Split-Screen Chat" which allows outgoing messages to be composed in one area of the screen while incoming messages are displayed in a nother. For more information on emulations and their use, see the Index: *Terminal; Emulation*.

AnswerBack

The *AnswerBack* parameter is used in association with the Emulation parameter. *No Emulation* is being used, then this parameter is not used. For more information on *AnswerBack*, refer to the specific terminal. See the Index: *Terminal; Emulation*.

Delete Key

The *Delete key* is conveniently located at the upper-right corner of all Apple II keyboards which is ideal for correcting typing errors and we're used to seeing this function as a BACKSPACE/DELETE key. However, when calling remote hosts, you'll find different host systems have different needs and require different characters to be sent to create the effect of deleting a character from the screen. Many, if not most, systems will work as expected by just using the default *Emulate*, but others may require either a delete or backspace character to be sent to create the desired effect. The three choices for the *Delete Key* are:

- *Emulate*: *Emulate* allows the host to function with its normal commands as but also considers the influence of any system *Emulation* (see *Emulation*) you may have in effect.
- *Send DEL* (*Send Delete*): Causes your terminal to send a Delete character to the host.
- *Send BS* (*Send Backspace*): *Backspace* is just a CONTROL-H character which moves the cursor one space to the left without disturbing the character it moves to the left of.

Since hosts differ in their methods of creating a desired effect, they may not interpret a *Send Backspace* or *Send Delete* and give you the desired results therefore, it may be necessary to change the *Delete Key* in combination with the *Backspace* commands to get the desired effect.

For systems such as CompuServe Delphi or GENIE, *Send DEL* is usually preferred. Also see *Backspace* which has a related effect.

Backspace

The *Backspace* parameter allows an incoming backspace character to be treated as:

- *Emulate*: *Emulate* allows the host to function with its normal commands as but also considers the influence of any system *Emulation* (see *Emulation*) you may have in effect.
- *Non-Dest*: The cursor moves to the left one character but leaves the character intact on the screen.

While using ProTERM parms menus, holding the COMMAND key and pressing RETURN key saves all changes and closes the window immediately!

- **Destruct:** The cursor moves one character to the left deleting the underlying character as it moves.

For systems such as CompuServe, Delphi and GENie, the *Destruct* setting is usually preferred. Also see *Delete Key* which has a related effect.

Status Bar

The ProTERM *Status Bar* displays useful information including the number of characters in the *Editor* and in *Scrollback*. It shows the current *Baud* (BPS), the Connection Status and the *date* and *time*. If the status bar is turned on, it is displayed with 23 lines of incoming data beneath it. Certain emulations, VT-100 for example, need all 24 lines of the display screen. In fact some may show their command prompt on the very top line and if the Status Bar is on the screen, the prompt line may be hidden. Turn the Status Bar off if all 24 lines of the screen are needed: Place the cursor on the *Status Bar?* selection box check box and press the SPACEBAR to toggle the [✓] checkmark off. When set and the emulation is encountered during the call, the Status Bar will disappear and all 24 lines will be visible and usable by the emulation.

Auto Protocol Start

When either a Zmodem or Kermit send is initiated on a host system, ProTERM is capable of detecting the start of the transfer as the host begins and can begin the *Receive File* process automatically and without further intervention from the user. This parameter controls whether ProTERM detects Zmodem or Kermit transfers or None. For information on this parameter, see the Index: *Transferring Files* and also *Zmodem* and *Kermit*.

Line Status

The *Line Status* parameter controls whether ProTERM is in an *Online* or an *Offline* state. In the *Offline* state, the *Main Menu* is displayed, and all local keypresses are assumed to be commands directed at ProTERM. When set to *Online*, ProTERM is in terminal mode and local keypresses are sent to the remote system. To direct local keypresses (commands at the local console) to ProTERM when in the *Online* mode, the COMMAND key must be held down while entering a valid ProTERM command.

Time Connected

The *Connect Time* command displays a special and separate *Connect Time Status Line* which shows the connection duration and cost. The display continues to update until the command is selected again, at which time the display toggles off (is removed). The total cost is computed according to the following formula:

$$\text{total_cost} = (\text{per_minute} + (\text{per_hour} / 60)) * \text{minutes_connected}$$

Per Minute Cost

Per Minute Cost is normally used to calculate calling charges (i.e., long distance or network charges). The cost must be entered in an "x.xx" style format (i.e., "1.10" or "0.10" is legal while "1.1" or ".10" is not). If the field is left blank, ProTERM assumes no per minute cost.

Per Hour Cost

Per Hour Cost is normally used to calculate service access charges. The cost must be entered in an "x.xx" style format (i.e., "1.10" is legal while "1.1" is not). If the field is left blank, ProTERM assumes no per hour cost.

Editor Capture

Editor Capture toggles the redirection of incoming data to the Editor as well as the screen. Incoming data may be sent to the Editor in one of two selectable modes.

Copy Raw Incoming Characters

When *Copy Raw Incoming Characters* is selected, all incoming data is sent to the Editor exactly as it was presented and without processing. In this mode all control characters and emulation codes are preserved as part of the data.

Copy Entire Processed Lines (Default)

By contrast to the above, *Copy Entire Processed Lines* sends processed lines of text to the Editor. The parameters for processed data is to never:

- Contain control characters.
- Exceed 80 characters in width.
- Contain any emulation codes.

The stored data is an image of the data as it was displayed on the screen. An "image" is considered as "plain" ASCII text characters (this is normally the mode which should be used).

Printer Capture

Normally, incoming data goes only to the monitor, but it can be desirable to have data go to the printer as you view it on the monitor. *Printer Capture (or Printer Online)* toggles the redirection of incoming data to the printer as well as the screen. Incoming data may be sent to the printer in one of two selectable modes. COMMAND-P toggles the printer on or off to control whether data is printed while on line.

Copy Raw Incoming Characters

When *Copy Raw Incoming Characters* is selected, ALL incoming data is immediately sent to the Editor without being changed (processed), and all CONTROL characters and emulation codes are passed through as part of the data.

NOTE: Since CONTROL codes are also used to send instructions to the printer, this can have the side effect of causing the printer to take on its own personality, doing creative incantations such as changing type size and style, rolling out sheets of paper, or refusing to function at all.

Copy Entire Processed Lines (Default)

By contrast to the above, *Copy Entire Processed Lines* sends processed or "filtered" lines of data to the printer. The parameters for processed data is to never:

- Contain control characters.

- Exceed 80 characters in width.
- Contain any emulation codes.

The stored data is an image of the data as it was displayed on the screen. An “image” is considered as “plain” ASCII text characters and is normally the mode which should be used.

AutoLearn Macro

The *AutoLearn Macro* command allows ProTERM to “watch” as you go through certain keystrokes for example, when calling a service, and then issuing the commands to log on and navigate to the level of the service where you always want to be taken when you call. After watching you, ProTERM will duplicate the same actions you just executed, and create a small program called an auto-logon macro which will issue all of those same commands when you press a single key.

An AutoLogon macro is created from the Macro section of the Dial window, and an AutoLearn macro is created from the Online menu, but they do the same kind of work, the AutoLogon macro is just more specialized.

When chosen, the AutoLearn command asks for a starting macro element (line) in which to begin to build the macro (the AutoLogon macro automatically uses line one). If you already have an AutoLogon macro built for the system you are calling, it probably starts at element 1 (line 1). To see which Macro Elements are used or available, enter COMMAND-D to go to the Dial List. From the Dial List, choose the system you’re concerned with and choose Macros. The list of ten Macro elements are shown in the Macro window of the individual system. Select any available or empty line. If something does not go just right, try again, just repeat the process. Also see the Index: Macros; autolearn.

After entering the number for the starting macro element, ProTERM returns to terminal mode to “watch” what you type to the remote system. Enter the commands to the host carefully and deliberately and keep in mind any mistyped keys or DELETE-key strokes become part of the macro. Also remember it is easy to start over and try again.

When you are finished issuing commands to the remote system, choose the AutoLearn Macro command again. ProTERM will create a macro which will send the same keystrokes as you just entered. The macro can be activated by holding the COMMAND key down and the macro number which was originally entered. You can enter as many of these as needed for each system until all ten Macro Elements are full. For more information see the Index: *Macros*.

Paste To Modem

The *Paste To Modem* command allows a quick way to send the contents of the clipboard to the remote system. This command sends the current clipboard contents to the remote system. Although this feature is really meant to be used with a limited amount of text, usually just a few lines, approximately 250 characters, the size of the clipboard, can be copied or cut (see the Index: *Copy, Cut and Paste*) and pasted to the host through the modem. Larger amounts of text will normally work as long as a reasonable allowance for pacing is used (see Index: *Parms*). Pressing the ESCAPE key during a paste cancels the operation. This feature is very handy for cutting and pasting numbers or other abstract strings such as online addresses which can be difficult to remember.

CONTROL-X always clears text entry windows fast and easy.

Send Break

The *Send Break* command sends a break signal to the remote system. The duration of the break signal is controlled by the break time parameter in the Online Parameters window or the Edit System Params window. The break duration is expressed in 1/100 of a second with the default time being 50 or 1/2 second. The maximum valid break time is 99/100 of a second (almost a full second). For more information, see the *Index:Break*.

Hangup

The hangup command forces ProTERM to disconnect from the remote system. As has been previously mentioned, it is generally more courteous to tell the remote system to disconnect, but this command allows ProTERM to break the connection. If ProTERM does not return to the main menu after this command, then ProTERM is unable to communicate with the modem for some reason. In such cases, it is often best to turn the modem off and on and then choose hangup again.

Pause Mode

The Pause command is not available from the pull-down menus but is activated by pressing COMMAND-SPACEBAR. This command stops incoming text from being displayed. When Pause mode has been activated, the status bar shows *Paused* in place of *Online*. Any subsequent keypress or click of the mouse will resume data output. Keep in mind while you are paused, activity time-outs imposed by the remote system are probably in effect and the host may terminate the call unless your interaction resumes within a given period of time.

NOTE: Many users use CONTROL-S to pause a remote system. While this works with lower-speed modems, many high-speed modems use hardware handshaking. When the COMMAND-SPACEBAR command is used, ProTERM can stop the data from the remote system regardless of the technique being used.

Printing the Screen

From any point in ProTERM, it is possible to print the entire contents of the screen. Everything visible (windows, the status bar, etc.) is printed. This process is often referred to as a "screen dump." To print the screen, make sure your printer is on and ready, and press OPTION-CONTROL-P. There are no messages displayed or windows opened by this command. ProTERM simply and quickly prints the screen and then returns to business as usual.

**Use COMMAND -
SPACEBAR to stop
incoming data.**

NOTE: If the screen being printed has any inverse spaces (such as on the status bar), these characters print as asterisks "*" to distinguish them from normal spaces. In addition, if the command is used with ProTERM's Main Menu visible, it will not print because the Main Menu disappears when these keys are pressed and unless there is something on the screen, there is nothing to print and the printer rolls out a blank "screen-full" of paper.

**Toggle
On/Off line.**

Toggle Online

A special Global Macro which works with the key combination OPTION-T is provided in the default PT3.GLOBAL Macro file which will toggle the modem on and off line each time it is pressed.

The Send & Receive Menus

CHAPTER FOURTEEN

The ability to exchange files with a wide range of hosts from bulletin board systems to large commercial services and other terminal programs is one of ProTERM's most powerful features. The design of ProTERM's ASCII Send command is powerful and easy to use and supports "on-the-fly" text formatting. ProTERM supports the Xmodem, Ymodem, Zmodem and Kermit file transfer protocols, can exchange single or multiple (batch) files, a automatic Binary II encoding and decoding, and even resume from failed Zmodem downloads. This chapter is divided into six generalized sections and discusses the following features:

- General Overview
- Sending ASCII Files
- Receiving ASCII Files
- Binary II and Archives
- Sending with Protocols
- Receiving with Protocols
- Selecting a Protocol
- Protocol Information

General Overview

The word "ASCII" is an acronym for "American Standard Code for Information Interchange." ASCII is a name for the actual text information you see on the screen when connected to a remote host system or when using the ProTERM Editor. In the United States, ASCII is the most common way of representing text in digital form. The ASCII code set contains 128 characters: 96 printable characters (text) and 32 non-printable characters (control characters). See the Index: *ASCII Chart* for a complete ASCII character list.

Both ASCII and protocol transfers are valuable and needed in communications, one could not replace the other, and ProTERM has both.

- Using the Paste to Modem command, sending text directly from the Editor, or using the Send ASCII command to send a text file are examples of ASCII transfers.
- Using Send Xmodem or Receive Zmodem to transfer files to/from a remote host system are examples of protocol transfers. Protocol transfers always send a file from disk whereas ASCII transfers can send text directly from the ProTERM editor or from a disk.

**"ASCII"
is an acronym.**

Typing online is a simple form of ASCII send and receive.

Protocol is just a matter of both sides following a set of understood rules.

Protocols are discussed in detail later in this chapter.

Send
ASCII
Xmodem
Xmodem CRC
Xmodem-1K
Xmodem-4K
Ymodem
Ymodem-G
Ymodem-4K
Zmodem
Kermit

ASCII Transfer Defined

Simply stated, an ASCII transfer is the process of sending or receiving a string (phrase) of raw text characters (such as your type-written name) from one computer to another. There are no checks or balances. If an “a” is sent, then hopefully an “a” is received, then a “b” is sent and hopefully it arrives, and so forth. If an error such as a line-noise spike occurs during the transfer, the error becomes part of the transferred file. This is not to imply ASCII transfers are inferior, for certain purposes they are superior to protocol transfers. A simple example of an ASCII transfers is the text from a remote host system being displayed on your system, or when you are typing commands to a remote host.

Protocol Transfer Defined

The alternate method of transferring files is called a protocol transfer. A protocol is to file transferring what an accounting is to a business. Protocols check for errors and prevent mistakes. Simply stated, a protocol is a set of rules understood and obeyed by both sides during a transfer. When a file is sent with a transfer protocol, it is guaranteed to arrive in exactly the same condition it was sent. Even if a glitch such as a line-noise spike occurs on the phone line, the protocol’s accounting procedure takes corrective measures to resend the damaged part of the data thus insuring an accurate transfer.

While protocol transfers are highly specialized for what they are designed for, they cannot replace ASCII transfers. They are both valuable and different tools.

Data transferred via a protocol transfer is continually checked by comparing the data sent, to the data received. During the transfer, a “portion” (called a packet) of the file is measured, the data is counted in the measured packet, and the packet and its accounting information is transferred. On arrival, the packet’s statistics are checked against its accounting data, and if both ends agree that the packet was transferred successfully, the next packet is sent. When a problem is found with a packet, the packet is transferred again, and again if necessary, until the transfer is successful or until the transfer is canceled due to lack of progress. This process continues until the entire file is transferred.

Send ASCII

ProTERM has a variety of modes and options for sending text to a remote host system, and can send a normal text “TXT” or AppleWorks word processing “AWP” files without any special conversion. Sending ASCII text is really very simple. Using the default settings already setup by ProTERM, an ASCII transfer might look like:

- After logging onto a remote host system, prepare the host to accept the ASCII text. This is often done by entering the host’s text editor where text is normally entered while online.
- Choose ASCII from the Send menu.
- If given the choice, choose File or Editor to indicate where the text should be sent from. If the text is stored on disk, enter the filename and press the Send button.
- At the Send ASCII parameters window make whatever changes are required for the particular remote host system (these parameters are explained in detail below) and press the Send button.
- If necessary, the send can be canceled by pressing ESCAPE prior to or during the send.

Sending ASCII text is just that easy. The following explains the operation of the Send ASCII parameters. At the end of this section there are examples of using Send ASCII with some specific remote host systems.

Send Mode

ProTERM offers two different methods of sending ASCII text: *Character Mode* and *Line Mode*:

- Character Mode, sends a character and ProTERM waits for that character's echo to be received from the remote host system before sending the next character. Since characters sent to the host are only echoed by full-duplex systems, character mode can only be used with full-duplex systems (see Index: *duplex*).
- Line Mode sends the data using preset timing values. Both modes allow an optional prompt character to be specified. Line mode is used by default because it is generally faster and more flexible than character mode.

Send Prompt

ProTERM's defaults are chosen to work with as many remote host systems as possible without modification, but this can result in text being sent at a less than optimum rate on some services. One of the fastest and most robust ways to sending ASCII text is to use a "prompt" character to tell ProTERM when to send. When a prompt character is specified, ProTERM waits for that character to be received from the host before sending. Some systems provide a prompt by default while others can be instructed to send a prompt. If the prompt character for the host system is known, enter the character as the Send Prompt value. Otherwise, leave this field blank.

Some host systems have difficulty receiving ASCII text at higher speeds, but this problem can be controlled by using a Send Prompt. Systems providing a prompt character (a particular character which appears on every line as soon as the host is ready to receive the next line) are the easiest to control. Generally, the fastest technique to send ASCII text is to instruct ProTERM to send the next line of text as the prompt character is presented. This process works well because the pace is controlled by the remote host system, since it controls when the prompts are sent. Some systems do not allow this method of ASCII transfer while others allow choices among several prompt characters. Here are some examples of some Send Prompts used by different host systems:

1: This example shows lines with a COLON

2: prompt.

> This example shows lines with a GREATER-THAN

> prompt.

Some systems show the lines numbered and some do not. The numbers are not a part of the prompt because they change with each new line. In these cases the ">" or ":" character can be used as the prompt character.

NOTE: Sending to a Send Prompt is an optimum method of uploading text. If you are sending to a Send Prompt, try setting Line Send Pace and Character Pace to zero by leaving their values blank.

NOTE: Some BBSystems send a prompt if instructed to do so. For example, the original versions of GBBS "Pro" display a ">" prompt into the message editor if the dot command ".P" (PERIOD-P) is entered on a line by itself followed by RETURN. As with all send prompts, the prompt character does NOT show up in the final text and is only visible while sending a message. The ".P" can be the first line of text sent to the message editor to automatically turn on prompt mode.

Text Width (Send Width)

While the default of an 80 character line width is generally acceptable, certain systems have maximum line size limitations of less than 80. When a line of text is sent which contains more characters than the remote host system allows on one line, some character loss may be noted.

When sending text to systems offering a send prompt (CompuServe, GEnie and others), you may feel more comfortable using a shorter line so formatted text appears without lines wrapping as they are sent. Consider the composition of the line and how it fits on the screen. The first four or so spaces of the line are often used up with a prompt like "12>". By setting the Text Width to 72, each line is sent without being wrapped. ProTERM automatically inserts RETURN characters where needed so none of the lines exceed the specified width. RETURN characters are always inserted at word breaks so words are not split. Some remote host systems reformat the text after it is received, so the shorter lines end up as full length lines anyway.

Change Blank Lines To SPACE+RETURN

Some remote host systems use two consecutive RETURN characters to indicate the end of a message. This can be very frustrating if you use the convention of separating paragraphs with a blank line, because this results in two RETURN characters being sent (one to end the paragraph and another for the blank line). The Change Blank Lines to SPACE+RETURN parameter solves this problem by sending a SPACE followed by a RETURN character to indicate a blank line. When ProTERM encounters the end of a paragraph, it sends a RETURN to end the paragraph followed by a SPACE followed by a RETURN to create the blank line. The text appears in the message just as it was sent, but two consecutive RETURN characters are never sent. Turning this parameter on, "tricks" the host into allowing paragraphs to be separated with a blank line. This parameter is turned on by default, and should be left on unless there is a specific reason to turn it off.

Character Send Pace

Depending on the send mode used, *Line* or *Character*, this parameter has two different meanings.

Character Send Pace and Line Send Mode

When the Send Mode (above) is set to *Line*, the number shown here is the percent of the port speed at which data is sent. For example, if the character send pace is set to 50 during a 2400 baud connection, ProTERM sends the data at 50% of 2400 baud which is 1200 baud. Setting this parameter to zero allows ProTERM to send at full speed. A setting of 80-90 is adequate for most systems. If you experience sporadic character loss during ASCII transfers with a particular service, try decreasing this value in increments of 5.

NOTE: When determining the speed to Send text, ProTERM uses the speed at which the two modems are communicating for reference, and this speed is displayed in the ProTERM Status Bar during the connect.

Character Send Pace and Character Send Mode

When the Send Mode (mentioned earlier) is set to *Char*, each of the two digits (right and left) set a different character pacing parameter. The digit on the left (in the “tens” column) controls the number of “outstanding” characters which are sent before ProTERM looks for the return of the echo from the first character. The digit on the right (in the “ones” column) controls the time ProTERM waits for an echo before it assumes the echo was lost and sends the next character. For example, a value of 32 allows 3 outstanding characters with a timeout of 1.2 seconds per character. The actual values of the right digit is approximately .4 (four tenths) of a second, e.g., 0=.4, 1=.8, 2=1.2 and so on. Always use numbers for these values — other characters will cause unpredictable results.

Line Send Pace

After each line of text is sent, ProTERM can wait up to one second before sending the next line of data. This parameter specifies the wait in one/hundredths of a second. If a Send Prompt is being used (see Send Prompt above), then this delay takes place after the prompt is received. A delay of 5 (five one/hundredths or one twentieth of a second) is not uncommon. If Line Mode is used without a Send Prompt, this parameter is very important, as it controls how fast the lines of text are sent to the host. If the lines are sent too fast, character loss can occur. If the lines are sent too slow, time is wasted waiting for the transfer to finish. To find the minimum delay needed by a remote host system, start with a line pace of 50. If no text is lost during the send, drop the pace to 25 for the next transfer attempt. Continue to adjust the send pace by halving the value each time a transfer is successful and taking the mid-value between those which did, and did not work.

NOTE: Sending to a Send Prompt is an optimum method of uploading text. If you are sending to a Send Prompt, try setting Line Send Pace and Character Send Pace to zero by leaving their values blank.

Interpret Dot-Commands

Dot Commands are a formatting power-tool that allow easy formatting with professional flair. This ProTERM power feature allows you to format documents “on-the-fly” as they are being sent. This means a completely formatted document containing margins, text justification and paragraph margins can be formatted offline and sent with full formatting. Just like printing a document with dot-commands, but the finished document is sent to the remote host system. For most applications, this parameter should always be turned on unless you will be sending data which contains periods in the first character position (on the left margin) then this option may need to be turned off. For more information, see *Index* and *Quick Reference* cards: *Dot-Commands*.

NOTE: ProTERM understands and uses conventional Dot Command language. Dot-Commands designed for other software may not be interpreted correctly by ProTERM. See the *Index: Dot-Commands*.

Sending your first message.

Common Send ASCII Settings.

OPTION+CONTROL+P prints the screen, and is a good way to print help menus.

Receive
ASCII
Xmodem
Xmodem CRC
Xmodem-1K
Xmodem-4K
Ymodem
Ymodem-G
Ymodem-4K
Zmodem
Kermit

Send ASCII Review

ProTERM allows Send ASCII to be customized for the needs of each remote host system, but the default settings generally work as they are. Trying using the settings outlined below when using Send ASCII for the first time. As you learn the “tricks” of each host, change the parameters as needed and save them for future use. To change the Send ASCII parameters for a system and make them permanent, select that system from the Dial menu and press the *Parms* button. Change the parameters for that system as needed and press the Save button. The changed values will become the new defaults for that system.

To send ASCII text, choose ASCII from the *Send* menu and press *File* (to send a file from a disk) or *Editor* (to send a document from the Editor). The most commonly used parameters are already set to allow ProTERM to be used as-is. Change only those parameters actually needing change. Once the parameters are set, press Send to send the text to the remote host system. The following steps could be used to send ASCII text to a host:

- Enter the remote host systems editor where you would normally begin typing a letter while online.
- Choose ASCII from the Send menu.
- Select the file to send.
- Set the Send Mode to Line (the default).
- Leave the Send Prompt blank (the default).
- Set the Character Pace to 80 (the default).
- Set the Line Pace to 20 (the default).
- Press the Send button.

As *Send ASCII* is transferring text to the remote host system, the progress can be followed because the text is also displayed on your local screen. When the text transfer is finished, some additional input is generally needed to inform the host the transfer is finished. Enter and Send the needed commands to the host required to save the text. Different hosts use different commands, refer to the host’s online help files for needed commands. The command generally must be entered on the left margin in order to work. Here are the commands used by several popular remote host systems:

- | | | |
|-------------------------------|-------|------------|
| • GBBS and ProLine Systems | .s | .h=menu |
| • CompuServe (message system) | /post | /exit=menu |
| • CompuServe (mail system) | /send | /exit=menu |
| • GENie Information System | *s | *h=menu |

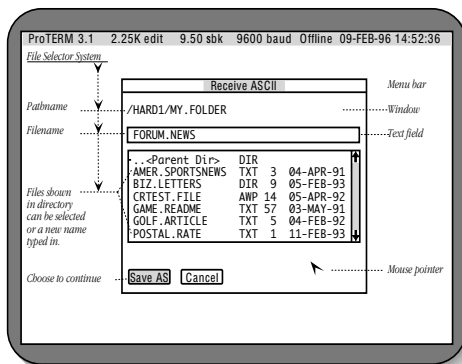
Experiment with the hosts you call until you feel comfortable with them. Find out early how to delete or kill your own posts by reading the host’s help menu. Try using Send ASCII to send messages to the host. If you don’t like what you see, kill the message and try it again. Its a great way to gain proficiency with the Send ASCII routines.

Receive ASCII (AutoSave)

Receive ASCII is also referred to as “AutoSave” and provides a way to save information to a file as it is displayed on the screen. Although transferring a file using Receive ASCII follows a protocol with regards to receiving and storing the file, it does no error checking and so is not formally considered a protocol transfer. To start Receive ASCII you need to be connected to a remote host system and then follow these steps:

Note: Also see Scrollback which is a type of AutoSave that is always in effect, and always saving text when you are online.

- Choose ASCII from the Receive menu.
- Select the ProDOS path to save the file. See the Index: *ProDOS; about pathnames* for more information.
- Select a file to append to, or type a filename for the new file and press the *Save As* button.
- Select the appropriate Receive ASCII parameters (explained below).
- Press *OK* to begin Receive ASCII.
- Send the appropriate commands to the remote host system to display the desired information.
- When all of the needed information has been displayed on the screen, choose *ASCII* from the *Receive* menu again.
- Press the *Close* button to save the text to the file and turn off *Receive ASCII*.



**Receive ASCII
File Window**

Receive ASCII Parameters

These settings are generally correct for most services. Although you do not have to make any changes to have it work correctly for you in most instances, changes can be made to match up with those services needing different values. To receive ASCII text to a file, choose ASCII from the Receive menu. Select the name for the file and press *Save As*. Select the appropriate parameters (listed below) and press *OK*. If the selected filename is already in use, ProTERM prompts you to *Delete* or *Append* to the existing file.

Save File As Type

This field allows the filetype of the file to be selected. ProTERM can save either “TXT” text files or “AWP” AppleWorks® word processor files. AppleWorks files have other characters (referred to as “overhead”) which are used for formatting and other customizing by the

If in doubt, press RETURN to use the default.

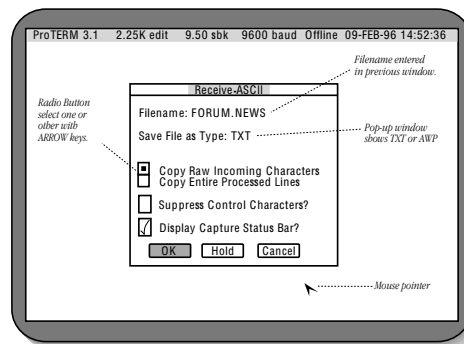
AppleWorks program. By selecting “TXT” or “AWP” respectively, the file is saved to disk as that filetype. If an existing file is being appended to, this field has no effect because the filetype of the existing file is preserved. Also see the Index: *Preferences; saving personal changes* to make this a permanent preference.

Copy Raw Incoming Characters

This is the default capture mode and allows the data to be saved just as it is without processing, conversion or filtering. All control characters and emulation characters are saved as part of the text. The text is stored without change just as it comes from the remote host system. This parameter is marked with a dot [•] when it is on.

Copy Entire Processed Lines

This capture mode saves processed (converted or filtered) lines of text. Processed text never contains control characters, exceeds 80 characters in width or contains any emulation characters. It is basically a copy of the data as it is displayed on the screen. This parameter is marked with a dot [•] when it is on.



Receive ASCII Parameters

Suppress Control Characters

This option is used in conjunction with the Copy Raw Incoming Characters parameter. As the unfiltered characters are received, ProTERM saves the data “as is” with this parameter unchecked. When Suppress Control Characters is checked [✓] (turned on) the incoming text is filtered and all control characters except RETURN and TAB are removed before the text is saved.

Display Capture Status Bar

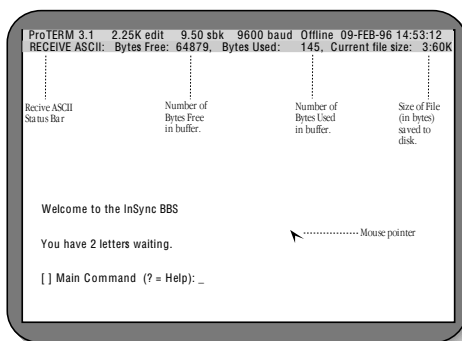
Receive ASCII is normally enabled and a special status bar displays the progress of the transfer (see *Receive ASCII Status Bar* below). By removing the checkmark from this parameter, the status bar is disabled (not displayed). When the status bar is disabled, there is no visible indication of the progress of Receive ASCII or even that it is operating.

Receive ASCII Status Bar

Once Receive ASCII is enabled, an additional highlighted status line is displayed at the top of the screen. This shows the current status of Receive ASCII and changes as new text is received. As text is received by ProTERM, it is saved into a buffer which acts like a “text reservoir.” Except for the fact the disk access light may be seen occasionally as the file is

saved to disk, the saving of text is transparent to the user. When the text buffer becomes full, the text is saved to the file, and the process of filling the buffer starts again. As new text is saved it is appended to the file and the file grows larger. When Receive ASCII is disabled, the text remaining in the buffer is saved to the disk file. The information in the Receive ASCII status bar from left to right is:

- *Bytes Free* shows the size of the text storage buffer in characters (bytes). Bytes Free decreases as the buffer fills. The size of this buffer (memory reservoir) is dependent on the available memory. This is one of the several parts of ProTERM which works more efficiently when additional memory is available. When the buffer is full, the data is saved to disk and it starts to fill again. ProTERM stops all incoming text as the file is being saved. After the save is complete, the buffer is emptied and the process starts over again. As additional ASCII text is received, it is appended to the same file.
- *Bytes Used* shows the size of the text in the storage buffer in characters. This field increases as ASCII text is received to the buffer.
- *Current File Size* shows the size of the file in “K” (thousands of characters). Each time the file is saved to disk, this figure increases to show the new size of the file.



Receive ASCII Status Bar

Receive ASCII “Hold” Mode

After *Receive ASCII* has been enabled, it can subsequently be disabled or placed on *Hold*. Choose *ASCII* from the *Receive* menu to disable or temporarily put the Receive ASCII command on Hold. Press the *Close* button to disable further data from being saved to the file. Press the *Hold* button to temporarily stop saving data to the file. Hold places Receive ASCII in a kind of neutral condition. When Receive ASCII has been put on Hold, a subsequent Receive ASCII command starts saving data to the file again.

NOTE: Receive ASCII text files are saved as one file and the file can get to be very large. See the commands Print File and View File to work with large files or parts of large files.

Using Scrollback Instead of Receive ASCII

If adequate memory is available to ProTERM, Scrollback offers an attractive alternative to Receive ASCII. Because all text displayed on the screen is also saved in Scrollback, it is possible to let text accumulate into Scrollback and then save it to a file. Provided there is enough memory to allow Scrollback to record all of the information during your call, this method of saving incoming text is effectively the same as using Receive ASCII in “capture line” mode. See the *Index: Scrollback* for more information.

Send
ASCII
Xmodem
Xmodem CRC
Xmodem-1K
Xmodem-4K
Ymodem
Ymodem-G
Ymodem-4K
Zmodem
Kermit

The default parameters are generally acceptable as they are.

Sending with a Protocol

ProTERM supports four main protocols, Xmodem, Ymodem, Zmodem and Kermit as well as five related protocols, Xmodem CRC, Xmodem-1K, Xmodem-4K, Ymodem-G and Ymodem-4K. The advantages and disadvantages of each protocol are discussed later in this chapter. To send a file or files to a remote host system, the host must first be given a command to begin its “protocol receive cycle” (this command will vary from system to system, see the host service’s help menus for directions). During this selection process the desired protocol is selected from the host’s menu. Wait until the remote host system is ready to receive, and then choose the desired protocol from the ProTERM Send menu. The exact same protocol *must* be chosen on the host and within ProTERM.

Once the protocol has been chosen from the ProTERM Send menu, a file selection window is displayed. One or more files (Xmodem transfers only single files) can be selected at this time. When all the files have been selected, press the Send button. Depending on how your preferences (parameters) are set, ProTERM either begins the protocol transfer or asks for additional protocol send parameters. The protocol send parameters are listed below.

Text and Binary Mode

Zmodem and Kermit have separate send modes for text and binary files (Xmodem and Ymodem send only in binary mode). When using Zmodem and Kermit protocols, ProTERM allows you to select which mode you would like to use. The “Text” and “Binary” selections send files in the respective mode regardless of the actual filetype. The “Auto” selection (only available with Zmodem) determines the mode based on the filetype of each file sent. In Auto mode, text files (type “TXT”) are sent in text mode while all other filetypes are sent in binary mode. When a file is sent in text mode, the protocol changes the contents of files. The sending system takes the files and converts them into a special format, sends the special formatted data to the receiver, where the receiving system converts the data back into text and saves it. In binary mode, the contents of a file are transferred without any formatting or conversion.

Send Options

ProTERM supports five different Send Options which control the way files are encoded and sent during the transfer process. Both the ProDOS protocol extensions and Binary II encode ProDOS-specific file information (such as exact filesize, filetype, auxiliary filetype, etc.) and send this information along with the file:

- *None*: is the default option. It uses neither the ProDOS protocol extension nor the Binary II encoding option.
- *ProDOS*: sends using the ProDOS protocol extension for Xmodem and Ymodem. This option has no effect with Zmodem or Kermit.
- *Binary II*: encodes the file with a Binary II header and will operate with any protocol.
- *PDOS/BNY2*: uses both ProDOS and Binary II encoding (Xmodem and Ymodem only).
- *TXT/BNY*: encodes all non-text files with a Binary II header.

All the protocols support Binary II encoding, but Xmodem and Ymodem are the only ones which support ProDOS protocol extensions. ProDOS protocol extensions should only be used when sending to other Apple II hosts. Most large commercial services such as CompuServe and Genie require all Apple II uploads be encoded with Binary II. If the file which is being sent is already encoded with Binary II, ProTERM does not encode the file again.

NOTE: If a file has been encoded with a Binary II header and then encoded again with some other header type, ProTERM will encode with Binary II again if that option is set. ProTERM can only detect Binary II if it was the most recently used encoding technique.

Protocol Speed

The protocol speed parameter is used to give ProTERM an idea of the response speed of the remote system. The *Fast* setting is recommended for general use. When using services where response times are slow, set this option to the *Medium* or *Slow* settings. This instructs ProTERM to slow down the pace and wait longer for responses from the remote system during a protocol transaction.

When all protocol options have been specified, press the Send button to begin the transfer. It is important to note the options listed above can be changed for a particular system entry in the Dial menu. To change the parameters for a particular system, choose the system's entry from the Dial menu and press the Parms button in the Edit System Parms window. Change the Upload Options and Protocol Speed parameters to customize the protocol send parameters for that particular system.

NOTE: IMPORTANT! Even though ProTERM offers literally hundreds of parameter combinations and preference changes, the normal telecom user can usually just accept the defaults (what is normally already set) by just pressing the RETURN key. Most of these options are provided for telecom users who want to customize the software for specialized applications.

Note on Defaults.

Receive
ASCII
Xmodem
Xmodem CRC
Xmodem-1K
Xmodem-4K
Ymodem
Ymodem-G
Ymodem-4K
Zmodem
Kermit

Receiving with a Protocol

ProTERM supports four main protocols, Xmodem, Ymodem, Zmodem and Kermit as well as five related protocols, Xmodem CRC, Xmodem-1K, Xmodem-4K, Ymodem-G and Ymodem-4K. The advantages and disadvantages of each particular protocol are discussed later in this chapter. To receive a file or files from a remote host system, the host must first be given a command to start sending files. This command will vary from system to system, but is generally a selection from their individual version of a "download menu." When the host indicates it is ready to send the file, choose the desired protocol from the Receive menu. Since a protocol is a strict set of rules used to transfer a file, the receive protocol chosen from the Receive menu must be the same as the protocol chosen on the remote host system.

Once the protocol has been chosen, a pathname selection window is displayed. The default pathname is controlled by the Download Pathname parameter in the Preferences window (see Index: *Preferences*). Select the pathname (volume and directory) for the incoming file or files and press the Recv button. Depending on the protocol being used and your current preferences, ProTERM either begins receiving the file or asks for the following additional parameters.

Receive Options

ProTERM supports two different receive options which control the way files are decoded when they are received: When set to *None*, an incoming file is saved exactly as it was sent. When set to *Binary II*, the Binary II wrapper is removed (if present) and the file is saved using the filename and ProDOS file information supplied in the wrapper (see Binary II later in this chapter for more information). If the file is sent with a ProDOS protocol extension, it is detected by ProTERM automatically and the supplied ProDOS file information is used.

Protocol Speed

The protocol speed parameter is used to give ProTERM an idea of the speed of the remote system. Use the *Fast* setting unless you experience problems transferring files from slow remote host systems. If difficulties are experienced when using services where response times are slow, set this option to the *Medium* or *Slow* settings. This tells ProTERM to wait an additional period of time for the responses from the remote system during a protocol transaction.

Duplicate Filenames

When a file is received, there is a chance it could have the same filename as one of your existing files in the same directory. This parameter allows you to select the action taken in the event of a duplicate filename. If set to *Replace*, the original file is deleted and the newly received file is saved in its place. If set to *Rename*, the received file is renamed so it does not conflict with an existing filename. This is done by appending a version number to the new filename. For example, if the file XYZ is being received but already exists in the same directory, the new file is saved as XYZ.000. If the file were received again, the name given would be XYZ.001 and the file numbers would continue to increment as XYZ.002 up to XYZ.999.

NOTE: When a Binary II encoded file is received, ProTERM attempts to save the file using the (file's original) name as supplied within the Binary II wrapper, since that is the file's real and intended name. However, if that filename is already in use in that directory, ProTERM saves the file using the (external) name of the Binary II file. There is good reason for this; the Binary II filename is not visible until after the file is received, and the operator should be the one to make this choice of this file is named. ProTERM will NEVER replace a filename (possibly destroying a valued file) in this situation.

Default Filetype

The Default Filetype parameter allows the filetype to be specified in the event it is not supplied by the protocol or during the Binary II encoding process. The most common default filetypes are "TXT" or "BIN". After a file is received, if necessary, its type can be subsequently changed by using the *Set File Info* command in the *File* menu.

NOTE: When using the Kermit protocol the default filetype has the additional function of determining the receive mode (text or binary). Since the Kermit receive mode must match the Kermit send mode, it is important the default filetype parameter is correctly set to "TXT" or "BIN" when receiving files with Kermit.

Protocol Receive Filename

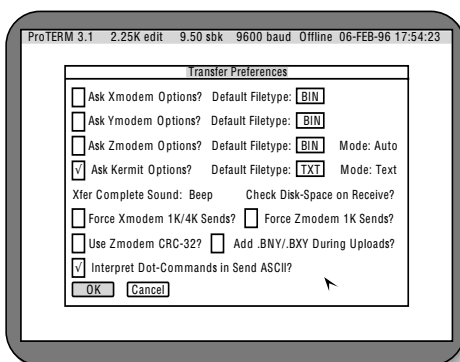
If a file is received using Xmodem and it is not Binary II encoded, when the transfer is complete, ProTERM send a prompt to enter a filename. ProTERM displays the name which the file was saved as (generally of the form "UNKNOWN.xxx") along with a text entry window to enter a new name. The new name may be any valid ProDOS filename. ProTERM assigns the filename "UNKNOWN.xxx" if the field is left blank.

NOTE: The Ymodem, Zmodem and Kermit protocols all send the filename along within the file data so it is not a concern. Binary II encoded files also contain a the filename. The Xmodem protocol by itself does not pass the filename information.

NOTE: When choosing a protocol, choose in reverse alphabetical order: Zmodem, Ymodem, Zmodem and Kermit. Generally speaking, this is in the order of ease of use, automation and “smartness.”

Transfer Preferences

All protocol parameters have default values which can be set from the system entries in the Dial menu or by the Preferences command in the Misc menu. To change any of the default parameters described below, choose Preferences from the Misc menu and press the Xfer button. This displays the Transfer Preferences window. After making changes to this window, press the OK button and then the Save button. The Transfer Preferences window with its default values is shown below.



Transfer Preferences Window

Ask Protocol Options

When any of the “Ask Options” checkboxes are toggled “On” with a checkmark [✓], an additional window of parameters is displayed after a protocol send or receive is chosen. This is the same window of parameters which can also be displayed by setting the Upload Options or Download Options fields to Query in a Dial menu system entry.

The additional protocol send parameters are:

- Send Mode (Text, Binary or Auto).
- Send Options (None, ProDOS, Binary II, PDOS/BNY2, TXT/BNY).
- Protocol Speed (Fast, Medium, Slow).

The additional protocol receive parameters are:

- Receive Options (None or Binary II).
- Protocol Speed (Fast, Medium, Slow).
- Duplicate Filenames (Replace or Rename).
- Default Filetype (TXT, BIN, etc.).

Default Filetype

Each protocol family can have a separate default filetype. When the “Ask Options” toggle is checked [✓] “On”, the filetype shown in this window is displayed as the default and can be changed before each protocol receive.

Mode

Each protocol family which supports a send mode can have the default set here. When the “Ask Options” toggle is checked on [√], the send mode selected in this window is displayed as the default and can be changed before each protocol send.

Xfer Complete Sound

The Transfer Complete Sound parameter can be set to *None* (no sound), *Beep* (three beeps) or *Siren* (a long wailing sound). At the completion of a protocol send or receive, ProTERM makes the announcement with the selected sound via the computer speaker.

Check Disk-Space on Receive

At the start of a protocol receive, this parameter instructs ProTERM to check if a dequate disk space is available to save a file. Since file size information is sent at the beginning of Ymodem and Zmodem transfers, this option works only with those protocols. (Obviously, if the file length is not supplied, ProTERM is unable to determine the amount of disk space required by the file.) ProTERM cannot know if the file being received will replace an existing file and thus free up disk space. If a received file will not fit on disk, then ProTERM displays a Disk Full error message.

Force X/Ymodem 1K/4K Sends

Xmodem and Ymodem packet size is normally determined by a special string (phrase) of information sent by the receiver to inform the sender of its capabilities. By setting this parameter, Xmodem-1K, Xmodem-4K and Ymodem-4K send files using their respective block sizes even if the receiver does not indicate the ability to receive them. This option should only be used if you understand why you should change use it, and are certain the host has the capability to process the desired block size but does not send out a capability string.

Use Zmodem CRC-32

Zmodem does error correction by performing a special computation on the data and sending the computation result along with the data. The receiver performs the same computation on the data, and compares its result to the what the sender indicates was sent. Zmodem supports two such computations known as CRC-16 and CRC-32. The CRC-16 algorithm is slightly faster and requires slightly less data, but is susceptible to undetected errors (undetected errors are measured in thousands of years for CRC-16 and millions of years for CRC-32).

Add .BNY/.BXY During Uploads

This parameter acts globally for all protocol sends and tells ProTERM to add “.BNY” or “.BXY” extensions to filenames. For example, when this option is turned on, a file called “MYFILE” sent with Binary II encoding turned off becomes “MYFILE.BNY”. The designation between “.BNY” and “.BXY” indicates whether the file is a Binary II encoded file, or a Binary II encoded ShrinkIt file. Neither extension is added if Binary II encoding is disabled. The default for this preference is set to Off and it should not be changed unless it is needed by all systems you call.

Interpret Dot-Commands in Send ASCII

This parameter controls the default setting for this same parameter in the Send ASCII window. Since this parameter does not interfere with normal applications or files, it should always be left on, so documents containing ProTERM dot-commands can be correctly formatted as they are sent.

Transferring Files Between Computers

Transferring a file refers to transmitting between computers (systems). The modems are usually connected via a call using telephone company as a go between and we think of as being the standard, but it is not the only way to transfer files between computers.

Direct Connect

Computers can also be connected together by using a length of phone wire between two modems. Set one system in an Unattended mode (awaiting a call) and set the other system to dial the waiting system using just an asterisk "*" for a phone number. The asterisk fools ProTERM into thinking there is a real phone number available to dial and when this "phony" number is dialed, it is enough to announce to the other system that it is being called so it goes online and the two systems are then connected. This configuration operates the same as a conventional call, using modems and phone lines — The called system is a host and the calling system is the terminal. The connect speed will be set by the speed of the slowest speed on either modem.

Even More Direct

Another alternative is to use a special null modem cable directly between the two system serial ports without using a modem. For more on this see the Index: *Null modem*. The connect speed can be set at 4800 or 9600 for an Apple IIc, up to 19,200 for a super serial card and up to 57,600 for an Apple IIs.

File Transfers — What to Expect the First Time

Explaining what you might see, and what you might expect the first times you call a system is difficult. Every system is designed by an individual and every one will be different. There are some generic commonalities which we can mention that will hopefully make the new world of telecommunication more friendly and familiar during those first attempts to exchange files with that other computer.

The Exchange

File transfers are meant to move files from one computer to another. What happens after the exchange depends on the type of file, if it has been altered for transfer, and what machine it is to be used on. This will be covered one step at a time.

The Type of File

The full range of kinds files available is beyond the scope of this brief mention, but a few are listed here to illustrate the example. Some files, such as the one you're reading are text (TXT filetypes) files and are meant to be read, printed, edited and so forth. Others may be used as games, puzzles, utility types to assist us in various needs such as copying, or spell checking. Others are more complex, and important to our needs, such as word processors, data bases and spread sheets. All of these files can be transferred from one computer to another.

Will The Files Work On The Other Computer?

Just because a file can be transferred from one system to another, doesn't mean it can be used on that system. An example could be made of many BBSystems. They are repositories of

**Protocols means
“follow the rules.”
Both Systems MUST
be set the same.**

many machine types of files. Macintosh, IBM, Apple and more can be found side by side in the same libraries. But being stored in this environment, and being functional in that environment is a very different situation. Apple II files can be uploaded and stored on a Mac or IBM system, downloaded by another Apple II computer and they will be totally functional. A text file uploaded to one of these other machine types, can usually be read by the text file reader application for that machine as they are very generic. That is about where it stops though. An Apple game or word processor, cannot be functional on a Mac or IBM.

Selecting a Protocol

ProTERM supports four protocol families along with five protocol extensions. With nine protocol choices available, it is often difficult to judge the proper choice. The following list of the ProTERM protocols explains the situations in which each should be used. The important detail to remember is, the sending and the receiving protocol must always match. If the remote host only supports Xmodem-1K, then ProTERM must also use Xmodem-1K.

NOTE: Just because ProTERM has the ability to use a particular protocol does not mean it can be used. Both sides (ProTERM and the remote host system) must have the same capabilities and use the same protocol.

Xmodem

Xmodem sends with 128-byte packets and uses a 1-byte checksum for error checking. It can automatically detect and use the Xmodem ProDOS extension if the remote host supports it. Xmodem should be used only when no other version of Xmodem or Ymodem or Zmodems protocols are available.

Xmodem CRC

Xmodem CRC requests CRC-16 error checking be used instead of the 1-byte checksum. If ProTERM is the receiver, make sure the host service supports Xmodem CRC before choosing it. If it does not, the protocol will time-out waiting for something to happen. ProTERM can automatically detect and use the Xmodem ProDOS extension if the remote host system supports it. Xmodem CRC, if available, should be used instead of standard Xmodem.

Xmodem-1K

Xmodem-1K requests CRC-16 error checking and 1K packets. This gives much better performance than standard Xmodem because of the reduced handshaking overhead. ProTERM can automatically detect and use the Xmodem ProDOS extension if the remote host supports it. If available, Xmodem-1K should be used instead of Xmodem CRC.

Xmodem-4K

Xmodem-4K requests CRC-16 error checking and 4K packets. This gives an additional performance increase by further reducing the number of handshakes over Xmodem-1K. ProTERM can automatically detect and use the Xmodem ProDOS extension if the remote host supports it. Xmodem-4K should be used if it is available. In a high-error environment, the errors will force the larger packets to be resent resulting in what could be a much slower process than if smaller packets protocol were used.

When available, use Ymodem rather than Xmodem.

Ymodem

Ymodem uses 128/1K packets and CRC-16 error checking to transfer data. If the remote host supports it, Ymodem automatically transfers the ProDOS file information. Unlike Xmodem, Ymodem supports batch transfers. If Ymodem is available on your host, use it instead of any of the Xmodem protocols.

Ymodem-G

Ymodem-G should only be used when an error-free connection has been established with the remote host system and your modem supports hardware handshaking. Ymodem-G is not an error-correcting protocol and if an error is detected, the transfer is canceled. Ymodem-G is only for use in select situations. Ymodem-G is the fastest protocol supported by ProTERM (even faster than Zmodem).

Ymodem-4K

Ymodem-4K uses 128/1K/4K packets and CRC-16 error checking to transfer data. Ymodem-4K automatically transfers the ProDOS file information if the remote host system accepts it. If this protocol is available, it should be used in preference to Ymodem unless you are in a high-error environment. Because of the large packet size Ymodem-4K, errors force more data to be retransmitted than Ymodem.

Zmodem

Zmodem is the most powerful protocol supported by ProTERM. If the remote host system supports Zmodem, then it should be used. In a high-error environment, Ymodem may give better results depending on the responsiveness of the remote host system. If Zmodem seems to take an excessive amount of time to recover from errors, Ymodem may offer better all-around performance.

Kermit

Kermit communicates with almost any remote host system, but is slow. On large mini and mainframe systems, Kermit is often the only protocol available. If one of the other protocols is available, it will generally be much faster than Kermit. Kermit was not designed for speed, its major objective is to support most any communications environment. See *Kermit* later in this chapter.

When available, Zmodem is the best choice.

Binary II and Archives

When files are to be transferred to a remote host system, two popular techniques used in order to prepare file for the "journey." The first technique, called "Binary II encoding" provides a method of keeping the ProDOS attributes intact. The second technique, called "archiving" (sometimes called "shrinking"), is used to compress and group files to increase the efficiency of the transfer and storage. Most archived files are also Binary II encoded.

Binary II

Binary II encoding is a method of turning a file into a self-contained unit by placing the file information into a "wrapper." The primary reason for this wrapper is to allow ProDOS files to be stored on non-ProDOS computer systems and still maintain all of the ProDOS file attributes. When such a file is downloaded and the Binary II wrapper is removed, the file returns to its original form. Because of the way Binary II "wraps" a file, it can be generically

stored on most any system without damage or loss of content. This process is sometimes referred to as putting the file into a “plain brown wrapper” or an “envelope.”

Binary II encoding provides a protective means of sending the “attributes” of a file, such as the filename and ProDOS information (filetype, file status, etc.) and of course the file itself, to almost any system. Files uploaded with Binary II wrapper to a non-ProDOS based host can be successfully downloaded to another ProDOS based system and be perfectly usable after the Binary II wrapper is removed. Any file can be encoded with Binary II. Files uploaded to a ProDOS based system generally do not require Binary II encoding. Although shrinking (using an archiving application) allows files to be combined and can save file transfer time, it is not a prerequisite to using Binary II.

Binary II and ProTERM

Adding and removing Binary II wrappers to files is normally a transparent process in ProTERM. By default, ProTERM always checks during a download to see if the file has a Binary II wrapper. If it does, the wrapper is removed during the download, and the file is stored using its original name. Adding a Binary II wrapper to a file is simply a matter of setting the Upload Options to Binary II for a system entry in the Dial menu. Archived files still need to be unpacked with an archive utility such as ShrinkIt after downloading.

Archiving

Archiving refers to placing one or more files, directories or disks into a single archived file. This process also compresses the data in the files so the resulting archive is smaller than the sum of the original files, saving both disk space, and transfer time. The archive utility, ShrinkIt for example, that created the archive file must be used to remove the files from the archive and save them back to disk in a usable form.

Some remote host systems request the person sending the file to consider the size or the type of the file being uploaded before shrinking because shrinking a very small file can be counter productive. Unless there is a reasonable space savings, or more than one file is to be maintained in a “set,” the hassle of archiving is not justified. In addition, text files are often not archived or even Binary II encoded because ASCII text format is generic to all computers. By uploading text files without any encoding or archiving, the file is usable to all computer users regardless of the type of computer. Check the individual host requirements and guidelines before uploading files.

Archive applications are often referred to as file compression utilities. ShrinkIt, for example, can make files smaller and even pack several files, directories or whole disks into one “archive” file. Placing files in archives is optimal for transfer via modem since smaller files use less disk space and take less time to transfer. Since an archive allows several related files or an entire disk to be packed together into a single file, related files and directories remain together in their proper order. When they are removed from the archive, they are restored to their original condition.

ShrinkIt is a popular Apple II FreeWare utility program used for archiving Apple ProDOS and GS/OS files. It is available from user groups, other Apple computer users, most BBSsystems and the Apple II areas on the major online services. As a convenience to ProTERM owners and since there is ample room available, the ProDOS 8 version of ShrinkIt is included on the ProTERM 3.5” disk in the “UTILITIES” directory. This version works only with ProDOS 8 files, not GS/OS specific files. A GS/OS version of ShrinkIt is available from the above listed sources.

Binary II versus Archiving

Binary II and Archiving are different tools for different jobs. If a ProDOS file which had not been Binary II encoded were uploaded to a remote host system such as GENie, CompuServe or PC based system, the file would be stored in what could be considered a hostile environment. When the file was downloaded, it would no longer have the ProDOS attributes it started with and probably would not function as expected. On non-Apple based hosts, files typically are archived and Binary II encoded. Files stored on Apple Bulletin Board Systems are typically archived to save space and transfer time.

Unpacking an Archive

When an archive is downloaded, it needs to be processed to make the file usable. If the file is Binary II encoded, ProTERM removes the Binary II wrapper during the download process and saves the just archived file. The archive itself must then be converted to a normal file using an archive utility like ShrinkIt.

Archive Suffixes

When an archived file is saved to disk, it normally has a special suffix appended to filename to indicate what kind of archive utility was used to create it. The following is a list of both current and obsolete archive suffixes (listed alphabetically):

.ACU

The .ACU archive format was once used by America Online. These files can be unpacked with ShrinkIt.

.BNY

.BNY indicates a file with a Binary II wrapper which is not shrunk. The Binary II format is not really an archive format. It is a protective "envelope" used to preserve ProDOS file attributes during uploading and downloading. ProTERM can automatically add and remove Binary II wrappers during protocol file transfer. ShrinkIt can also remove the Binary II wrappers from files.

.BQY

.BQY indicates a "squeezed" (compressed) file within a Binary II envelope. These files were created with an older utility program called "BLU". When these files are downloaded with ProTERM, the Binary II wrapper is removed and a ".QQ" or ".SQ" file remains (see below). "BQY" files can be unpacked with ShrinkIt.

.BXY

BXY indicates a shrunk disk, a file or a group of files within a Binary II wrapper (a NuFX archive within a Binary II envelope). This is the format currently required for new uploads to the Apple II libraries on most online systems including GENie and CompuServe. When these files are downloaded by ProTERM, the Binary II wrapper is removed and a ".SHK" file remains (see below). These files can be created and unpacked with ShrinkIt.

.QQ

When a Binary II envelope is removed from a ".BQY" file, the squeezed files it contains have the suffix ".QQ" or ".SQ". These files can be "unsqueezed" with ShrinkIt.

.SDK

SDK indicates a shrunk disk with no Binary II wrapper. This is a "NuFX" format. The disk can be "unshrunk" to another disk with ShrinkIt.

Both sides agree to a set of rules.

.SHK

SHK designates a shrunk file with no Binary II wrapper. This files can be created and unpacked with ShrinkIt. It uses what has been designated as a “NuFX” format.

Protocol Information

A protocol in computer terms is a predefined method of executing a communications task. A protocol is a standard, or set of rules for sending or receiving data to or from a remote host system. The following is a short discussion of protocols and some historical development notes.

What is a Protocol?

When a file is transferred with a protocol, it simply means both the sender and receiver obey a set of rules while transferring a file. The protocol type (Xmodem, Ymodem, Zmodem, Kermit and even ASCII) determines the exact rules to be used during a transfer. The following is an example of a very simple protocol:

- 1: Send a line of text.
- 2: Terminate each line with a RETURN character.
- 3: Wait for a “:” character and when it appears, repeat step 1.
- 4: After all the text is sent, send the “.S” command to complete the transfer and save the file.

This simple example illustrates the concept behind a protocol. As long as both sides understand the rules, the file is transferred correctly. Each side knows what to expect from the other for each different condition. The biggest problem with this example protocol is that any interference on the phone line can introduce random (garbage) characters into the file as it is being sent. Such a problem could even cause the prompt to get lost bringing the transfer to a halt. To eliminate these kinds of problems there are classes of protocols which have “error detecting” and “error correcting” capabilities.

Error-Detecting Protocols

Most file transfer protocols employ some form of error detection. This is normally done by having the sender break the file data into small units called packets, performing a special arithmetic computation on the data in the packet, and sending the result of the computation along with the packet. When the receiver gets the packet, it also performs the same computation and compares its result to the sender’s. If they match, the data in the packet is assumed to be free of errors. If they don’t match, an error has occurred in the transmission of the data packet, and a request is made for the packet to be resent.

The ProTERM protocols use two different types of error detection algorithms. The first protocol is called “checksum” and involves adding the values of all data in the packet, then sending the remainder of the total divided by 256 (64 in case of Kermit). The second protocol is called “CRC” (short for Cyclic Redundancy Check) and involves treating the data as a long integer number and dividing it by a large prime number. The probability of CRC-16 failing to detect a single 1-bit error is so small if files were transferred at 9600 BPS, 24 hours a day, it would take a approximately 3000 years to fail the detection the error. Using CRC-32, this figure increases to over 100 million years.

Error-Correcting Protocols

In addition to being able to detect errors, most file transfer protocols can also correct errors as well. In such protocols, when the receiver detects an error in a packet (using the technique described above), the receiver tells the sender to resend that packet. When the file transfer is finally completed, all of the data in the file is correct since the receiver instructed the sender to resend any packets not "passing the test."

Fault-Tolerant Protocols

In addition to the error problems caused by a noisy phone line, there are also communication failures (i.e., the modem is disconnected from the remote system midway through a transfer). Protocols which have the ability to recover from these kinds of errors are called "fault-tolerant protocols." With such protocols, after the communications failure has been repaired (i.e., the modem is reconnected with the remote system), the transfer can be restarted from the point at which the failure occurred.

Protocol Development History

ProTERM supports four different protocol families (Xmodem, Ymodem, Kermit and Zmodem) along with several different derivations. The following outlines the development of these protocols along with their contributions to telecommunications.

Xmodem

The most popular and widely implemented of the error-free protocols is Xmodem, which was developed in 1977 by Ward Christensen and was designed to run under CP/M, the most popular operating system of the day. As a result of its early introduction, ease of implementation, and good performance, Xmodem has probably become the most widely implemented microcomputer protocol. The Xmodem protocol standard is very simple:

- The protocol requires an 8-bit serial port.
- Data is sent in 128-byte packets.
- Each data packet is prefixed by a 2-byte packet number.
- Each data packet is followed by a 1-byte checksum.
- Receiver responses are simple 1-byte control characters.
- The protocol is receiver driven.
- A simple timing scheme avoids deadlock.

One drawback to Xmodem was, it did not send the filename along with the file and thus it was not possible to do "batch" transfers. However, an extension to Xmodem was developed which allowed the filename to be sent along with the data. This is commonly referred to as Xmodem Batch or MODEM7 (MODEM7 was the name of the first CP/M program to implement the new batch-mode Xmodem). Because the filename transfer was not as clean and simple as the rest of Xmodem and filenames needed to be in CP/M format (an eight character filename with a three character extension), Xmodem Batch was never widely used outside of the CP/M environment.

Since Xmodem used only a 1-byte checksum to do error checking (all the bytes in a packet were added together, the total was divided by 256 and the remainder was the "checksum"), undetected errors could occur during transfers. To correct this problem, an extension to Xmodem called a 2-byte CRC-16 was developed which substituted the Xmodem CRC 1-byte checksum. By using CRC-16 with Xmodem's small 128 byte packets, the chance of undetected errors dropped to almost zero.

With the addition of CRC-16, Xmodem was quite reliable. However, the small 128 byte packets caused the protocol to be slow. It was found the handshake between packets (the point at which the receiver tells the sender to send the next block or to resend the current block due to an error) was actually quite slow. Therefore to minimize the number of handshakes between the sender and receiver, Xmodem-1K was developed. In this extension, 1024 (1K) byte packets, were used instead of 128 byte packets which were eight times smaller. With this protocol, files required only 1/8 the number of handshakes as were previously used. Since handshakes are needed but non-productive, and consume a large amount of the transfer time, the efficiency was greatly improved.

Unlike CP/M, both Apple DOS 3.3 and Apple ProDOS files contain special information (such as file type and locked/unlocked status) which is not actually part of the file. In addition, Apple ProDOS has several other parameters, such as exact file length, also not a part of the file. Since Xmodem was developed for CP/M, no provisions were ever made for "machine specific" information.

When ASCII Express "The Professional" was released for DOS 3.3 by Southwestern Data Systems, it was the first Apple communications program with the ability to send files using Xmodem and still retain the proper file type. To accomplish this, ASCII Express added another extension to Xmodem to send the filetype before the data was sent. This extension to Xmodem is now commonly called Xmodem DOS.

Later, when the ProDOS version of ASCII Express was released, the same problem was faced again. However, unlike DOS 3.3 which needed only one additional filetype byte, ProDOS required an extra 23 bytes to send the filetype, a auxiliary filetype, modification date/time, creation date/time, access and exact file length. To accomplish this, Xmodem ProDOS was developed which sent an additional identification sequence at the start of the file, and an extra packet at the end with the additional parameters.

With all of the extensions and modifications to Xmodem, things were starting to become a little confused. Each new extension generally tried to support all previous extensions with varying degrees of success. The Xmodem batch facility had never worked particularly well, and fallback from CRC-16 to checksum error checking was somewhat unreliable. Fortunately, Chuck Forsberg designed Ymodem, which incorporated the best extensions to Xmodem, cleaned up batch mode and added the facility for special file information.

Ymodem

Ymodem was basically a combination of Xmodem with CRC (no checksum mode), both 128 and 1K packets and an initial data packet with the filename, exact file length and modification date. Because the name was changed from Xmodem to Ymodem, there was no longer any obligation for backwards support. This was very important because it allowed Ymodem to start with "a clean slate."

The main improvements of Ymodem are; 1) the protocol uses a standard data packet to send the filename along with any machine specific information, 2) it always uses CRC error checking, and 3) due to its new name, it is not obligated to support Xmodem and its derivatives. This last fact was actually very important considering the number of Xmodem derivatives which had accumulated. Ymodem implementation supports both 128 and 1K blocks and is significantly faster than Xmodem.

One option known as Ymodem-G was offered as part of the initial protocol release and allowed Ymodem to operate in "streaming mode." In this mode, the sending protocol would

The development of Kermit.

divide the file into packets and send the error detection information as in normal Ymodem. However, it would not wait to handshake with the receiver after every packet. This made Ymodem-G incredibly fast, but gave up the ability to do error correction. If even a single error is detected during a Ymodem-G transfer, the entire transfer must be canceled. Normally, Ymodem-G is only used with error correcting modems where the hardware insures an error free connection.

While Xmodem and Ymodem were both running well with microcomputers, they both required an asynchronous 8-bit communications path. In the meantime, file transfer was also a problem for users of mini and mainframe systems which commonly operate in 7-bit communications environments and have special timing needs. Frank da Cruz and Bill Catchings of Columbia University came to the rescue with a new protocol called Kermit.

Kermit

Kermit's design philosophy was radically different from Xmodem and Ymodem. Kermit was specifically designed for character-oriented communications links, taking into account the requirements of diverse operating environments including: buffering, duplex, parity, character set, etc. Kermit sends everything in packets, including the control sequences for the remote system, unlike Xmodem's single control characters. Kermit normally uses only 96 of the 256 ASCII characters. Control character and high-bit characters are sent using a special "prefixing" method. While Kermit tends to be much slower than Xmodem or Ymodem, it can communicate through almost any environment. As with Xmodem, Kermit has no provisions for sending machine specific information such as file type.

Unlike Xmodem and Ymodem which are "binary" mode protocols (the data is unchanged after it is transferred), Kermit also supports a "text" mode. The important factor here is, different computers store text files differently. On Apple computers, text files are stored with just a RETURN at the end of each line. On PC Compatible computers, text files are stored with a RETURN + LINEFEED at the end of each line. On computers which run UNIX, text files are stored with just a LINEFEED at the end of each line. When Kermit's text mode is used, the end of line character(s) are converted for use on the receiving system.

With the first release of ProTERM, a new extension to Ymodem was included to allow ProDOS specific information to be included as part of the initial filename packet. Ymodem ProDOS used the same parameter ordering as Xmodem ProDOS, but the parameters were placed in the second half of the Ymodem filename packet.

With the development of packet-switched networks (such as PC Pursuit), high-speed error-correcting modems and slow responding hosts, Xmodem and Ymodem began experiencing performance problems. Because Xmodem and Ymodem require a handshake after each packet, their performance will decrease as transmission latency increases. (Latency is not the measure of capacity, it is the time required to send a character from one point to another.

Zmodem

In order to attain high performance in high latency environments, Zmodem was developed by Chuck Forsberg. Unlike Xmodem and Ymodem, Zmodem does not handshake after each packet is sent. It sends packets without waiting for an immediate response from the receiver. If the receiver detects an error, it transmits the position of the error back to the sender which will begin resending from the position of the error. In high-latency situations, Zmodem can offer such substantial performance increases it can double the transfer speed of Ymodem.

Besides having excellent latency characteristics, Zmodem also supports both text and binary mode transfers and control prefixing. Thus it can operate in many environments under which Xmodem and Ymodem cannot, though it still requires an 8-bit data link. Unlike the other protocols, Zmodem can also resume a transfer previously failed part way through. The only drawback to Zmodem is, it can be slow at error recovery due to the streaming nature of the sender. However, with error correcting modems, this becomes less of an issue.

More recently, extensions for Xmodem and Ymodem have been developed which increase the maximum packet size from 1K to 4K. This cuts down on the amount of handshaking done by a factor of 4 which helps improve performance in high-latency environments.

Error Messages

The following is a list and description of the ProTERM protocol error messages. There is often more than one cause for an error message, and this guide is designed simply to give a general idea as to the status of a transfer in progress. At the end of each error description, the protocol(s) which can generate the error are listed in parenthesis.

Block Number Complement Mismatch

The block number and its complement did not match. ProTERM sends a NAK and wait for the sender to respond. (Xmodem/Ymodem)

Block Number Out of Sequence

ProTERM received a data packet which was out of sequence. ProTERM sends a NAK packet and wait for the sender to resend the packet. (Xmodem/Ymodem/Kermit)

Checksum Does Not Match Data

ProTERM received a data packet which contains an error as identified by a checksum mismatch. ProTERM sends a NAK packet and wait for the sender to resend the packet. (Xmodem/Kermit)

CRC Does Not Match Data

ProTERM received a data packet which contains an error as identified by a CRC check. ProTERM sends a NAK packet and wait for the sender to respond. (Xmodem/Ymodem/Zmodem)

Data Subpacket Too Long

ProTERM received a Zmodem data subpacket longer than 1024 bytes. ProTERM sends a ZRPOS to force the sender to begin resending from the point of the error. (Zmodem)

Got Subpacket Instead of Header

ProTERM was waiting for a Zmodem header packet but received a data subpacket instead. ProTERM sends a ZRPOS to force the sender to begin resending from the point of the error. (Zmodem)

Got ZRINIT Instead of ZACK

ProTERM sent the ZFILE filename packet and received a ZRINIT packet instead of a ZACK packet. ProTERM immediately resends the filename packet. (Zmodem)

Got ZRPOS: Resending Data

ProTERM received a ZRPOS error packet and begins resending the data from the point specified in the packet. (Zmodem)

Got ZRPOS at EOF

ProTERM sent the ZEOF end of file packet and received a ZRPOS packet instead of a ZACK packet. ProTERM immediately begins to resend the data from the point specified in the packet. (Zmodem)

Invalid ProDOS Signal Packet

ProTERM received a ProDOS signal packet from the sender which contained an error. ProTERM sends a NAK and wait for a new packet. (Xmodem)

Position Of Sender Is Invalid

ProTERM received a ZDATA packet containing the wrong data. ProTERM sends a ZRPOS to force the sender to begin resending from the point of the error. (Zmodem)

Resent Packet Due to NAK

ProTERM received a NAK (negative acknowledge) from the receiver and is resending the data block. (Xmodem/Ymodem)

Timeout After CRCW Packet

ProTERM sent a CRCW data packet and requested the receiver respond once it was received. No response was detected from the receiver. (Zmodem)

Timeout After Sending EOF

ProTERM sent the ZEOF end of file packet and has not received a response from the receiver. ProTERM will wait for a ZRPOS packet from the receiver and start sending data from that point. (Zmodem)

Timeout During Data ACK/NAK

ProTERM sent a block of data and has not received a response from the receiver. ProTERM will send the block again and wait for a response. (Xmodem/Ymodem)

Timeout During Filename ACK/NAK

ProTERM sent the filename packet and has not received a response from the receiver. ProTERM waits for a nother startup character before sending the filename packet again. (Ymodem)

Timeout During Filename Send

ProTERM sent the ZFILE filename packet and has not received a response from the receiver. ProTERM waits for a new ZRINIT packet before sending the filename packet again. (Zmodem)

Timeout During Parms Handshake

ProTERM has timed out waiting for the receiver to prompt it to send the ProDOS parms packet. The parms packet exchange is normally initiated by the receiver. (Xmodem)

Timeout During EOF ACK / NAK

ProTERM sent the end of file message and has not received a response from the receiver. ProTERM sends the end of file message again and wait for a response. (Xmodem/Ymodem)

Timeout During Transfer End

ProTERM sent the ZFIN end of transfer packet and has not received a response from the receiver. ProTERM sends the end of transfer packet again and wait for a response. (Zmodem)

Timeout Requesting ProDOS Params

ProTERM requested the sender send the ProDOS params packet but has received no response. (Xmodem)

Timeout Waiting For Block Number

ProTERM is waiting for the block number of a data packet from the sender but has received nothing. ProTERM sends a NAK and waits for the sender to respond. (Xmodem/Ymodem)

Timeout Waiting For CRC

ProTERM received a data packet but timed out waiting for the accompanying CRC information. ProTERM sends a NAK packet and waits for the sender to respond. (Xmodem/Ymodem/Zmodem)

Timeout Waiting For Packet Data

ProTERM is waiting for a data packet from the sender but has received nothing. ProTERM sends a NAK and wait for the sender to respond. (Xmodem/Ymodem/Zmodem/Kermit)

Timeout Waiting For Packet Header

ProTERM is waiting for a data packet header from the sender but has received nothing. ProTERM sends a NAK and waits for the sender to respond. (Xmodem/Ymodem)

Misc	
Editor	⌘E
Scrollback	⌘Z
Answer Phone	
Unattended	⌘U
Macro File	
Read Globals	
Transfer Stats	
Preferences	
Install	⌘I

The Misc Menu

CHAPTER FIFTEEN

The Misc Menu contains all of the different ProTERM commands which were, in fact, “miscellaneous” and did not have any direct association with any other menus or features. In addition, some of the ProTERM features, the ProTERM Editor and Scrollback, for example, are so large there are individual chapters covering them and their individual parts. For information on ProTERM other commands, see the introductory chapters and also look in the Index under the appropriate command name.

Editor

Due to its size and complexity, the Editor is discussed in a chapter of its own. See the Index or Table of Contents: *Editor*.

Scrollback

Due to its size and complexity, Scrollback is discussed in a chapter of its own. See the Index or Table of Contents: *Scrollback*.

Answer Phone

The *Answer Phone* command is used to establish a connection with an incoming modem call and then go into terminal mode such that the system on each end of the call are each in control. Terminal mode allows the users on either end to interact with their individual computers, with both computers acting as local terminals and remote hosts at the same time. Since both systems are in a direct connect terminal mode, users can communicate by typing messages to one another. It is recommended both users set *Duplex* to *Half Duplex* in the Parameters window in the Online menu. When Duplex is set to FULL, typing on the local

keyboard is sent to the remote computer, but is not displayed on the local screen. As a result, both users can type to each other, but neither can see their own typing. For more information on half and full duplex and how they work see *Index: Duplex*. Since terminal mode is a manual operation, both users must coordinate operations such as file transfer via “on-screen chat.” To transfer a file one user must instruct their software to send a file while the other user instructs their software to receive a file. For a more automated call of this type, see the *Index: Unattended*.

To allow an incoming call to be answered in terminal mode, choose *Answer Phone* from the Misc menu. The *Connect Time* parameter has a default time of 30 seconds which is usually more than a adequate time for a modem to make a connection, though this time can be changed as needed. After entering the connect time press OK and ProTERM will wait for an incoming call. To cancel the waiting process, press the Cancel button or the ESCAPE key and ProTERM will return the Main Menu. To force ProTERM to answer the phone (even if it has not rung) and attempt a connection, press Answer. Once a call comes in and a connection is established, the screen is cleared and ProTERM enters terminal mode.

NOTE: It is possible to change from a voice to a data call without hanging up. See *Index; Data; to voice calls, changing*.

Call-Back or “Secure” Systems

To provide an additional level of security, some systems use a technique referred to as “call-back” or “secure call-back.” When you register with one of these systems, you are given password information which acts as your credentials or “key” to the system. Part of this registration process requires you to supply the phone number of your modem phone line. To logon to this type of system, call, connect and enter account and password information like any other system. However, unlike most other systems, after verifying the account and password information, the system disconnects and then calls back at the pre-supplied phone number. When the system calls back, your modem answers the phone and makes a connection and the logon process is complete.

Using ProTERM with Call-Back

To use ProTERM with a call-back system, use *Create System* to create an entry in the *Dial* list for the host system. Set up all relevant parameters: *Phone Number*, *Baud Rate*, *Data Format*, *Emulation*, and whatever other parameters applying to your calling the host system. Dial the system and logon according to the host system's procedure. When the system disconnects and instructs you to setup your modem to receive a call, choose the *Answer Phone* command from the *Misc* Menu. Leave the *Connect Time* at its default value and press OK. When the system calls back, ProTERM will answer the phone and establish the connection. You will in terminal mode where and ready to work.

Automating the Call-Back Process

Just as it is possible to write a logon macro to automatically logon to a remote host system, it is also possible to automate the call-back process. Use *AutoLearn* to create a logon macro for the system. This will automate the sending of the account and password information. Select the system entry from the *Dial* menu and press the *Macros* button. Press TAB to highlight the last line which contains data and append a “\” (backslash) to end of that line. Then press TAB once more (to advance to a blank line) and type:

While \$O { WT 1 } DO "Misc:Answer", "[]"

This addition to the logon macro consists of two parts:

- The While command waits until the remote system has disconnected.
- The DO command “pulls” the *Misc* menu down, chooses *Answer Phone*, presses *OK* and waits for the call-back.

Just this much will take care of logging you into your secure system, but macros can do much more for you in making the work easy and enjoyable. Now that you are able to see how they work and what they do, you may want to customize your calls even further. Searching data bases, printing or navigating through the host system are just a few ideas of how macros can assist and ease some of the more redundant chores. See the Index or the Table of Contents: *Macros* for more information regarding macros.

Unattended

Due to its size and complexity, Unattended mode is discussed in a chapter dealing with incoming calls. See the Index; *Unattended*.

Macro File

The Macro File command is discussed in the Macros chapter. See the Index or the Table of Contents: *Macros*.

Read Globals

The Read Globals command is discussed in the Macros chapter. See the Index or the Table of Contents: *Macros*.

Transfer Stats

The Transfer Stats command is discussed in the Send & Receive Menus chapter. See the Index: *Send* and its sub-headings, or *Receive* and its subheadings, or the Table of Contents: *Send & Receive Menus*.

Preferences

There are many different parameters, options and default values throughout ProTERM which influence how it operates. Collectively, these are all referred to as *preferences* since they represent the preferred way in which ProTERM should operate. Some parameters like *Hot-Keys* can be changed directly from the *Preferences* command while others like Screen Saver timing are changed by other commands. However, regardless of where a parameter is changed, the Preference command is used to save those changes. When the Preferences

window is saved, the ProTERM Editor and *Print Parm*s settings are also saved as the defaults for the next time ProTERM is started:

- Selecting *OK* in the *Preferences* window allows you to exit Preferences without saving any current changes to disk, but allows these changes to remain in effect during the current session. When you quit from ProTERM, unsaved changes are lost.
- Pressing the Cancel button or the ESCAPE key cancels any preference changes.
- To revert back to ProTERM as it was before the changes, see *Loading and Saving Preferences*.

Loading and Saving Preferences

ProTERM maintains preferences for many different parameters throughout the program. These preferences can be saved at any time so they become the default values the next time the software is run. Conversely, the existing preferences can be replaced by those which were active at the time the software was run. Finally, there is also a way to delete the saved preferences and return the software to “factory defaults.”

Saving Preferences

When preferences are saved, **all** preferences (all of the changes which have been made to ProTERM and not only those in the Preferences window), are saved as currently set. To do this, choose the Preferences command from the Misc menu and choose the *Save* button. The next time ProTERM is run, it will use the same preferences as are currently in effect. The first time this is done a file named “PT3.PREF” is created. When subsequent preference changes are save, the “PT3.PREF” file is updated.

Loading Preferences

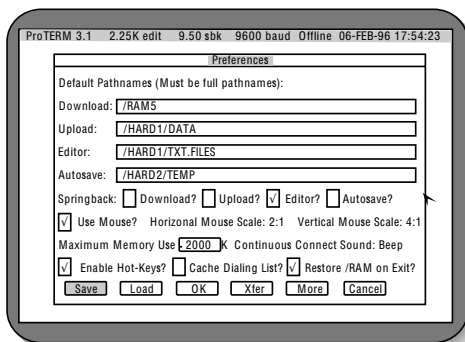
When ProTERM is run, it loads “PT3.PREF” which contains the preferences as they were last saved, and uses them to establish the current default values (see Saving Preferences above). If changes are made to current preferences, but the Save button has not been chosen in the Preferences window, the preferences can be changed back to the way they were when ProTERM was run in this session by reloading the saved preferences file. To reload the saved preferences, choose the *Preferences* command from the *Misc* menu and press the *Load* button. The preferences will reset to the way they were when ProTERM was started in this session.

“Factory” Preferences

At some point, the preferences may get changed to the point it is desirable to set them back to the “factory settings” — the way they were on the original ProTERM diskette. To do so, delete the file named “PT3.PREF” from the directory containing your ProTERM files and then *Quit* and rerun ProTERM. The “PT3.PREF” file can be deleted using the Delete command in the File menu.

Changing Preferences

There are three windows of preferences containing more than 40 different options which can be changed from the Preferences command. Each different preference is listed below along with a brief description. The main window of preferences can be changed by choosing the Preferences command from the Misc menu. The additional two screens of preferences can be changed by pressing the Xfer or Misc buttons in the main preference window.



Preferences Window

Preset the pathnames you use most.

Default Pathnames

Default Pathnames allow preferred directories to be specified for use with different functions of ProTERM. For example, the Download pathname allows downloaded files to be saved to a preset directory and all subsequent download operations will default to that directory. All pathnames must be entered as full pathnames with a leading slash such as /MY.VOLUME/UTIL.FILES.

NOTE: If a default pathname field is left blank, ProTERM uses the most recently accessed directory as the default directory.

Download Pathname

The Download pathname selects the default directory in which ProTERM will save files received when using protocol transfers.

Upload Pathname

The Upload pathname selects the default directory from which ProTERM will send files when using protocol transfers.

Editor Pathname

The Editor pathname selects the default directory ProTERM will use when loading or saving text from the Editor or Scrollback.

Autosave Pathname

The Autosave pathname selects the default directory ProTERM will use when saving data using the Receive ASCII command.

Pathname SpringBack

The SpringBack parameters control whether the Default pathnames are used as temporary or permanent defaults. When a SpringBack pathname parameter is toggled on, ProTERM will

“spring back” to the default pathname each time the corresponding command is chosen. For example, when *the Download SpringBack* is enabled and a protocol receive function is chosen, ProTERM first defaults to the Download pathname as set in the preferences window. If the pathname for the download is changed while setting the parameters for the receive operation, then when the operation is finished, ProTERM will “SpringBack” to the set Download pathname. If SpringBack is not enabled and the pathname is changed while setting the receive parameters, the download pathname takes on the new “changed” value and will not be changed back to the path specified in the preferences window until ProTERM is quit and restarted.

NOTE: When SpringBack is not used, previously saved pathnames can be reset to their defaults using the *Load* command. See *Loading Previously Saved Settings* at the beginning of this chapter.

NOTE: If the corresponding pathname parameter is left blank, the SpringBack parameter has no effect.

SpringBack: Download?

The *Download SpringBack* parameter controls whether ProTERM returns (springs-back) to the set Download pathname when a pathname has been changed during a protocol receive operation. If this parameter is not selected, the pathname will remain the same as in the last operation.

SpringBack: Upload?

The *Upload SpringBack* parameter controls whether ProTERM returns (springs-back) to the set Upload pathname when a pathname has been changed during a protocol send operation. If this parameter is not selected, the pathname will remain the same as in the last operation.

SpringBack: Editor?

The *Editor SpringBack* parameter controls whether ProTERM returns (springs-back) to the set Editor pathname when a pathname has been changed during a load or save operation. If this parameter is not selected, the pathname will remain the same as in the last operation.

SpringBack: Autosave?

The *Autosave SpringBack* parameter controls whether ProTERM returns (springs-back) to the set Autosave pathname when a pathname has been changed during an ASCII receive operation. If this parameter is not selected, the pathname will remain the same as in the last operation.

Use Mouse?

If your system has a mouse but you do not want to use it in ProTERM, deselect this parameter by removing the checkmark. The mouse will have no effect and the pointer will not be displayed.

Note: It is difficult for ProTERM to know if the Apple IIc has a mouse or not. In some circumstances, a mouse may be indicated when even though it is not present. Actions such as the ProTERM Screen Saver acting as if the mouse pointer was jammed in a corner to always have the Screen Saver on can occur. If you own an Apple IIc without a mouse, it is advised the *[√] Use Mouse?* parameter NOT be checked.

NOTE: This parameter does not take effect unless the preferences are saved and ProTERM is quit and restarted.

Horizontal Mouse Scale

This parameter controls the relationship of distance the mouse must be moved as to how far the pointer moves on the screen. When set 1:1, a short mouse movement moves the pointer a long distance. When set 8:1, the mouse must be moved farther to move the pointer the same distance. The default is 2:1.

Vertical Mouse Scale

This parameter controls the relationship of distance the mouse must be moved in order to move the pointer on the screen. When set 1:1, a short mouse movement moves the pointer a long distance. When set 8:1, the mouse must be moved farther to move the pointer the same distance. The default is 4:1.

Maximum Memory Use

This parameter controls the maximum amount of memory ProTERM allocates for its own use. In most situations it should be set to the amount of memory in the computer (or higher). This makes all of the computer memory available for use by ProTERM. However, there are several situations where it is beneficial to restrict ProTERM's memory use. Users of Apple Memory Cards can use this parameter to partition memory between the RAM drive and ProTERM. Apple IIe bank-switched RAM card users can use this parameter to keep ProTERM away from RAM drive memory in the event the RAM drive software is not recognized by ProTERM. Apple IIGS GS/OS users may wish to keep a small amount of memory free for use by Init/DA's.

Continuous Connect Sound

This parameter selects the alert sound ProTERM makes after making a connection in the continuous redial mode:

- *None* No sound on connect.
- *Beep* Makes "bell" sounds three times.
- *Siren* Make a "siren" sound.

The siren is particularly useful if you like to start a continuous redial and then leave the room because it easily attracts your attention when the connect is made. To stop the siren, press any key.

Enable Hot-Keys?

The Hot-Keys option allows ProTERM commands to be executed with a single keystroke. For example, pressing COMMAND-"Letter" where letter is the first character of a button name, the action is immediate at the press of a key without the need to press an additional RETURN key. This feature makes ProTERM responsive and quick. The single keystrokes allow you to move through your normal routines quickly.

Alphabetize Files?

When ProTERM displays a file selector, it normally alphabetizes the files. By disabling this preference, files are listed in the order in which they occur in the directory. Keep in mind when alphabetization is disabled, partial filename matching is also disabled (that is, when you type in an incomplete filename, the closest matching filename is no longer selected). The default is for files to be alphabetized but this can be defeated by using the CONTROL-X command in file selection windows. CONTROL-X toggles alphabetization on and off.

**Hot-Keys makes
ProTERM FAST!**

Even more preferences!

Restore /RAM on Exit?

Normally, ProDOS maintains a 64K ram-disk called /RAM on your system. When ProTERM runs, it disables /RAM because it uses the memory allocated to this ram-disk. When disabled, /RAM is not restored when ProTERM quits. The only advantage to disabling this option is it increases the Editor size by 512 bytes.

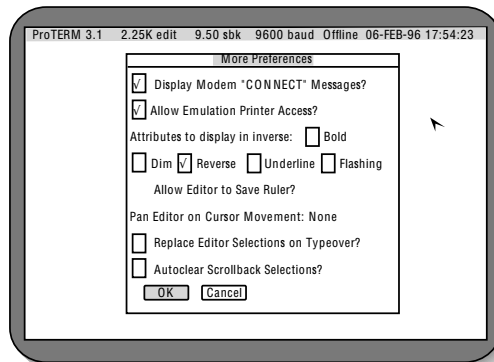
NOTE: Some applications require /RAM be present when run even though they do not actually use the RAM-drive. If this option is disabled and such an application is run, it may make the complaint your computer does not have 128K.

Transfer Preferences

ProTERM contains one entire window of (preferences related to file transfer. To change any of the transfer preferences, press the Xfer button in the Preferences window, change the desired preferences and press OK. The individual transfer preferences are discussed in the Send & Receive Menu chapter. See the Index: *Transfer Preferences*.

More Preferences

The *More Preferences* window contains addition ProTERM preferences. To change any of the preferences in the More Preferences menu, select the *More* button from the Preferences menu. After changing the desired preferences, select the *OK* button to return to the Preferences menu.



More Preferences Window with Default Values

Display Modem "CONNECT" Messages?

Normally, ProTERM keeps the incoming communication information hidden from the modem. When this parameter is enabled, ProTERM includes the modem "connect" messages at the start of a connection. This is useful for users of high-speed modems which return protocol and error correction information as part of the connect message.

Allow Emulation Printer Access?

Many of the emulations offered by ProTERM include printer support. This means the remote host can send data directly to your local printer. If you do not want the remote host to have access to your printer, disable this parameter.

Check Attributes to Display in inverse

Apple II computers only support normal and inverse (reverse) video, but ProTERM allows you to specify how special emulation attributes should be displayed. For example, when ProTERM is emulating a VT-100, the remote host may tell ProTERM to display data in underline mode. Since the Apple II computer does not support showing underline characters on the screen, ProTERM must either display the data as normal or inverse text. The following five parameters allow you to specify how ProTERM will display emulation attributes.

Bold Video

When a remote host tells ProTERM to display data in bold video, this parameter determines whether the data is displayed as normal or as inverse.

Dim Video

When a remote host tells ProTERM to display data in dim video, this parameter determines whether the data is displayed as normal or as inverse.

Reverse Video

When a remote host tells ProTERM to display data in reverse video, this parameter determines whether the data is displayed as normal or as inverse.

Underline Video

When a remote host tells ProTERM to display data in underline video, this parameter determines whether the data is displayed as normal or as inverse.

Flashing Video

When a remote host tells ProTERM to display data in flashing video, this parameter determines whether the data is displayed as normal or as inverse.

Allow Editor To Save Ruler**Pan Editor on Cursor Movement**

The ProTERM Editor has the ability to display up to 249 characters on one line by panning the screen. This preference controls how the Editor acts when the cursor is moved "off of the screen." When set to *None*, the Editor never "pans" (scrolls) automatically. When set to *Horiz*, the Editor pans when the cursor is moved horizontally, but not vertically. When set to *All*, the Editor pans anytime the cursor is moved off the screen.

Replace Editor Selection on Type-over?

The ProTERM Editor does not have an "undo" command, so selections are not automatically replaced when a key is pressed. This is simply to avoid the mistake of pressing a key while text is selected and deleting the data by mistake. When this preference is enabled, ProTERM *will* replace a selection of text with a keypress. When the text is deleted in this manner, it is lost. This a very convenient and powerful editing tool, but it must be used with care.

Auto-Clear Scrollback Selections?

This parameter allows ProTERM to automatically deselect Scrollback selections after a command is executed. When this parameter is disabled, the Scrollback selection must be manually deselected by pressing one of the ARROW keys.



Part Four

REFERENCE

Warranty and Service

APPENDIX A

THIS WARRANTY IS EXPRESSLY IN LIEU OF ANY AND ALL WARRANTIES EXPRESSED OR IMPLIED. NEITHER INTREC SOFTWARE NOR PROTECH SOFTWARE, INC. MAKE ANY WARRANTY, EITHER EXPRESSED OR IMPLIED, TOWARDS THIS SOFTWARE, THE ACCOMPANYING MANUAL, QUALITY, PERFORMANCE, OR USEFULNESS TOWARDS AN APPLICATION. THIS SOFTWARE IS PROVIDED IN "AS-IS" CONDITION. NEITHER INTREC SOFTWARE INC. NOR PROTECH SOFTWARE, INC. SHALL BE HELD RESPONSIBLE FOR ANY DAMAGES OR LOSSES CAUSED BY THE DIRECT OR INDIRECT USE OF THIS PRODUCT.

Every reasonable effort has been made to ensure this software product functions properly and this software will perform substantially as described in this manual. While we cannot and will not accept any liability for direct or indirect damages which the user may believe this software has caused.

InTrec Software Warranty and Technical Support

With the change of ProTERM from a commercial product to Freeware status, InTrec is no longer able to provide direct, one-on-one technical support. Support for this product has been regulated to the community of users who will benefit from its availability. A specific support forum has been setup at <http://16sector.com/forum/> and there will undoubtedly be other avenues.

**Mail your
warranty
card now!**







Modems and Cables

APPENDIX B

Getting modems connected and operational is usually easy, because with ProTERM, you can just choose the modem from the menu. If your modem is not one listed on the Install menu, hopefully it is designed to be compatible with one of the popular models on the list, and choosing one of them will work. When the modem does not function as expected, solving the problem can be a frustrating experience. Many different models of modems are being sold, and most attempt to be “more or less ‘AT’ compatible.” Add the variables of all of the different cable styles available and the task can seem to get more and more complex. Hardware compatibility is often one of the most difficult and frustrating problems a computer owner can face. Just because equipment physically connects together, means it will work — NOT! This Appendix is meant to be a general guide to assist in the installation of modems and their serial port interfaces as well as a diagnosis and construction guide for the cables used to link the equipment together. As noted later, cables are very often the center of the problem and if a “correct cable” is needed to solve the problem, information on where to acquire ready-made modem cables is at the end of this appendix.

Modem Support

ProTERM supports many different modems directly from its *Install Modem* menu. The following list gives a brief description of each modem driver and how it works. This information is somewhat technical and is intended for those who either are using a modem not directly supported by ProTERM 3 and need technical information, or want in depth information about the modem driver (the programming code used to instruct modems) they are using. ProTERM modem drivers are updated on a continuing basis. This list was current at the time this manual was printed but the information is always changing and up to date information is available by calling the InTrec BBS system. See *Index InTrec BBS*.

ProTERM's Hardware Support

The Hardware listed here is what has been tested with ProTERM over the years. If you have something not listed here, you will still be able to use it, in most cases just as it is. Most hardware is compatible with some of the brands listed here. This section alone is an incredible asset with regards to getting your modem working with the Apple II and in it's day, was well worth the price that ProTERM once sold for, alone.

Modem Drivers

- Apple Modem 300: Same as Hayes Smartmodem 300.
- Apple Modem 1200: Same as Hayes Smartmodem 1200.
- Apple Personal Modem: Same as Hayes Smartmodem 1200.
- AE DataLink 1200 (internal): Same as Hayes Smartmodem 1200 with Apple Super Serial Card.
- AE DataLink 2400 (internal): Same as Hayes Smartmodem 2400 with Apple Super Serial Card.
- AE DataLink II Express: Same as Hayes Smartmodem 2400.
- Boca Research 14.4KBPS (RTS/CTS): Same as the Hayes Smartmodem V9600 except error correction is disabled on low-speed calls using the dial string "ATN0&Q6DT".
- CTS Fabri-Tek 2424ADH/AMH: Same as Hayes Smartmodem 2400.
- Epic 2400 Classic II: Same as Hayes Smartmodem 2400 with Apple Super Serial Card.
- Epic 2400 Mini: Same as Hayes Smartmodem 2400.
- Epic 2400 PLUS: Same as Hayes Smartmodem 2400.
- Generic 2400 Baud Driver: A special modem driver which attempts to use as few "modem specific" commands as possible. Only one init string which can be edited by the user is sent to the modem. The driver does not contain any &-commands (there are two in the init string, but they can be removed by the user). This driver works with a wide range of "almost Hayes compatible" modems.
- Generic 9600 Baud Driver: A general 9600 baud driver which does not try to use any "modem specific" commands. This driver sends the init string at 9600 baud. The modem dials using a standard ATDT string at the baud rate specified in the system parameters. The CONNECT string returned by the modem is used to adjust the connect speed.
- Generic Fixed-Speed (RTS/CTS): A high-speed modem driver for use with modems which exclusively use speed-buffering (locked serial port rate). This driver sends the init string at 9600 baud. It sends an ATDT command at whatever speed the dialing parameters are set for. The resulting CONNECT message is used only to display the connect rate on the status bar. ProTERM never changes the serial port rate after getting a CONNECT message.
- Generic MNP3 Driver (RTS/CTS): A high-speed modem driver for use with modems equipped with MNP and use the \-commands to control operation. In particular, the modem must support \N and \J to use this driver. Calls placed at 300..2400 have error correction disabled; calls at 4800..9600 have error correction enabled, but connect at the "line" rate; calls at 9600+ communicate with the modem at the calling speed regardless of the actual connect speed. To enable error correction/data compression, this driver uses the \N3 command.
- Generic MNP6 Driver (RTS/CTS): A high-speed modem driver for use with modems equipped with MNP and use the \-commands to control operation. In particular, the modem must support \N and \J to use this driver. Calls placed at 300..2400 have error

correction disabled; calls at 4800..9600 have error correction enabled, but connect at the "line" rate; calls at 9600+ communicate with the modem at the calling speed regardless of the actual connect speed. To enable error correction/data compression, this driver uses the \N6 command.

- Hayes Personal Modem 1200: Same as the Hayes Smartmodem 1200. This modem has a cable with a Mini DIN-8 connector which plugs directly into the Apple IIGS. The cable connects the carrier detect pin of the computer to the ring-indicator of the modem. The ProTERM Apple IIGS Modem Port driver ignores the status of carrier detect so this is not a problem.
 - Hayes Personal Modem 2400: Same as the Hayes Smartmodem 2400. This modem has a cable with a Mini DIN-8 connector which plugs directly into the Apple IIGS. The cable connects the carrier detect pin of the computer to the ring-indicator of the modem. The Apple IIGS Modem Port driver ignores the status of carrier detect so this is not a problem.
 - Hayes Smartmodem 300: This is just a simple single speed modem driver. The ATDT command is sent to the modem at 110 or 300 and a CONNECT message tells ProTERM to go online.
 - Hayes Smartmodem 1200: This driver supports both 300 and 1200 baud operation. The ATDT is sent at the dial speed and the CONNECT message causes the baud rate to be set to the corresponding value.
 - Hayes Smartmodem 2400: This driver supports 300, 1200 and 2400 operation. Calls at higher than 2400 baud are clamped to 2400 baud. The CONNECT message allows the call to fallback to a lower baud rate.
 - Hayes Smartmodem V9600 (RTS/CTS): A high-speed modem driver for the Hayes V-series products. This driver requires the use of a hardware handshaking cable. Calls placed at 300..2400 have error correction disabled and dial using "ATN0&Q0DT". Calls at 4800+ have error correction enabled and dial using "ATN1&Q5DT". With high-speed calls, this driver allows the modem to use a separate port and carrier rate.
 - No Modem in System: Allows ProTERM to be used without a modem.
 - Novation Professional 2400: Same as Generic 2400 Baud Driver with a custom init string.
 - Null Modem Driver: Allows ProTERM to be used in a "direct-connect" situation.
 - OKIDATA Okitel 9600: Same as Generic 9600 Baud Driver with custom init string.
 - OKIDATA Okitel 9600 (RTS/CTS): Same as Generic Fixed-Speed Driver with custom init string. NOTE: The Okitel 9600 can also be configured as the Generic MNP \N3 Driver which allows more flexibility in calling.
 - Prometheus Promodem 1200: Same as Hayes Smartmodem 1200.
 - Prometheus Promodem 1200A: Same as Hayes Smartmodem 1200 with Apple Super Serial Card.
 - Prometheus Promodem 2400A: Same as Hayes Smartmodem 2400 with Apple Super Serial Card.
 - Prometheus Promodem 2400 Mini: Same as Hayes Smartmodem 2400.
 - Quality Computers Q-Modem 2400: Same as SupraModem 2400/Hayes Smartmodem 2400.
 - SupraFaxModem Plus (RTS/CTS): Same as Hayes Smartmodem V9600.
 - SupraFaxModem v32bis (RTS/CTS): Same as Hayes Smartmodem V9600.
- Note: Modems with a ROM revision older than 1.2F should get the newer ROMs in order to correct a problem with carrier detect.
- SupraModem 2400: Same as Hayes Smartmodem 2400.
 - SupraModem 2400 Plus: Same as Hayes Smartmodem 2400 with custom init string.
 - SupraModem 2400 Plus (RTS/CTS): Same as Generic MNP Modem driver with custom init string.
 - US Robotics Password: Same as Hayes Smartmodem 1200.

- US Robotics Courier 2400: Same as Generic 2400 with X7 instead of X3 in the init string.
- USR Courier HST/HST Dual: Same as Generic 9600 Baud Driver with custom init string.
- USR HST/HST Dual (RTS/CTS): A high-speed modem driver for the USR HST products. This driver requires the use of a hardware handshaking cable. Calls placed at 300..2400 have error correction disabled; calls at 4800..9600 have error correction enabled, but connect at the “line” rate; calls at 9600+ communicate with the modem at the calling speed regardless of the actual connect speed. The driver now recognizes the connect 16800 message.
- Zoom/Modem MX 2400R: Same as Hayes Smartmodem 2400.

Init String Warning

While ProTERM allows the modem init string to be changed, it is important to understand the implications of such changes. In particular, don’t change E0 to E1. Doing so “breaks” the disconnect detection mechanism. Carrier Detect is always set to &C0 since many serial cards use it as receiver enable. There is no benefit to setting it to &C1 and will potentially create problems. Data Terminal Ready is always set to &D0 since the Apple IIGS serial port uses this same pin for hardware handshaking. When using a serial card which supports separate DTR and RTS or using a modem which does not require RTS, &D2 can be used. However, there is no particular benefit to doing so since ProTERM can hangup the modem regardless of how DTR is set.

Modem Switches

Most of the modems sold today no longer include dip-switches to select the modem’s options. Instead, options are selected by the software by sending special (softswitch) commands to the modem. Some older modems still contain dip-switches however, and if you are using a modem which does have the “hard switches” and are experiencing problems with operation, make sure the switches are set for the following options: DTR is ignored (or forced high) and DCD is always high (“high” or “true” is synonymous with on).

DTR is ignored (or forced high) and DCD is always high.

NOTE: Some switches are sliders & some rockers.

DB25 and RS232 are used interchangeably.

Slot 2 is the standard or accepted conventional modem slot.

Serial Cards

The only serial cards supported by ProTERM are those cards which are compatible with the Apple Super Serial Card. Most of these cards have two parts which need to be configured:

- A connector or jumper block which specifies whether the card is to be connected to a modem or printer.
- Switches or jumpers which determine how certain electrical signals and interrupts are handled.

Serial cards are normally installed in computer slot 2 when being used to communicate with a modem. When the card is installed, a short “pig-tail” connector (supplied with the card) is attached to the card. This “adaptor” is generally a short (2 to 6 inch) cable, with a “D shaped” 25 pin connector on one end and a “card-edge” connector on the other. The edge connector plugs into the card’s matching receptor and the larger end attaches to the computer’s back-plane. The cable from the modem, usually a DB-25 (also called an RS232), plugs into this back plane connector.

Slot 3 is “sacrosanct!” Be very careful what you place in it.

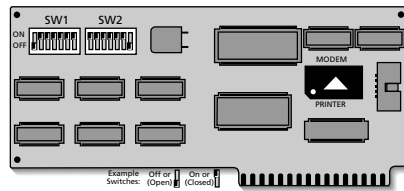
Easy setting to remember ... ALL are UP –except the first and the last!

Interrupts MUST be enabled (turned on).

Note the two card edge connectors. You want “MODEM.”

Make sure switch 2 on the left switch bank is in the closed position.

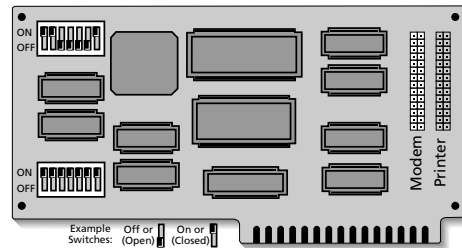
Most serial cards use either a jumper block device, see the Apple Super Serial Card, or dual connectors, see the Practical Peripherals SeriALL Card and the Applied Engineering Serial Pro illustrations in this chapter. The jumper block, should be set in the “Modem” position, pointing upwards (towards the telephone poles) in the case of the Apple Super Serial Card. If a card has dual edge card pin connectors, the cable should be connected to the connector labeled “Modem.”



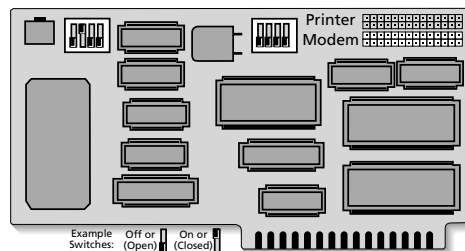
Apple Super Serial Card Properly Configured for Telecommunications Use

Note: Some serial cards have switches that slide up & down and some have switches that rock back & forth.

Some Super Serial Compatible Cards have eight switches per bank instead of seven. In such cases, the eighth switch on each block is usually not connected. Pretend this switch does not exist and set the remaining seven switches using the configuration shown above.



Practical Peripherals SeriALL Card Properly Configured for Telecommunications Use



Applied Engineering Serial Pro Card Properly Configured for Telecommunications Use

NOTE: The Applied Engineering Serial Pro Card comes shipped with interrupts disabled which prevents it from operating a modem with ProTERM. Make sure switch 2 on the left switch bank is in the closed position before using the Serial Pro with ProTERM.

Modem Cables

Cables differ from application to application, and even though the connectors on the cable ends are the same, and the cable has the exact same external appearance, the internal wiring can be completely different. The connections between the wires and pins determine how the cable operates. For more information regarding problems caused by cables, see *Index: Unable to Init Modem*.

Disclaimer: InTrec Software does not guarantee the accuracy of this information and may not be held responsible for damage resulting from its use.

There are many different types of modem cables made for many different applications. The following information lists three different cable configurations which will connect any Apple II family computer to a standard DB25 connector (99% of all modems on the market have this configuration). If you are using a modem which does not have a DB25 connector and an adaptor cable is not available, contact InTrec Technical Support for more information on assembly of a cable for that modem. Each cable is specified in terms of a connector at each end (a diagram of different connector types and pin numbers is shown below) along with which pins are connected to which.

The cable pinouts listed below have all been tested and are known to work. However, they are not the only cable configurations which will work. However, just because a cable does not match the pinouts given below does not mean it will not work, many other cable configurations which may work just as well. All of the pinout configurations here include an asterisk (*) marking certain connections important to telecommunications. These indicate connections which MUST be made in order for the cable to operate with a modem. If ProTERM will not communicate with the modem and the cable does not at least show the continuity of these connections, then the cable is most probably the source of the problem (see *Cable Diagnosis* below and *Index: Trouble Shooting*). The connections not showing an asterisk are not necessarily critical to the operation of the modem. However, these other connections can affect the performance of options such as Hardware Hangup and Hardware Handshaking. If you have a question about your cable, feel free to call InTrec Technical Support with the pinout configuration, we may be able to tell you what the cable supports.

Constructing or Checking a Cable

Cable construction requires the two end connectors, a length of multi-wire cable and some minimal electronic working tools such as solder and a soldering iron or a crimper, pliers, a screwdriver and wire clippers. Connect the pins listed in the cable chart using the pin numbering information shown on the connector chart. When you finish, check and recheck the connections. It is easy to make mistakes in this kind of work. After the cable is constructed, follow the directions under *Diagnosing a Cable* to verify the cable was put together correctly — Then check it again.

DB25 is a “D” shaped connector with up to 25 pins. Also called a RS232.

Note the “*” marking the essential connections.

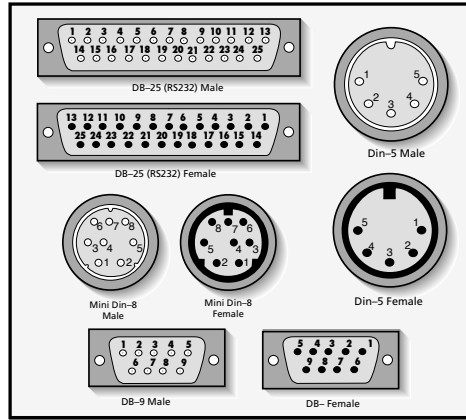
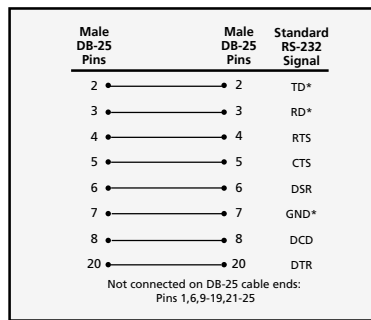


Diagram of Popular Connector Styles Showing Pin Numbering.

NOTE: While many D style connectors have pin numbers molded into the insulation material at the base of the pins, many MINI DIN-8 and DIN-5 connectors do not or if they do, the numbering scheme is different than cables used by Apple computers (for the correct pin number arrangements see the *Diagram of Popular Connector Styles* below).

Standard Modem Cable with Hardware Handshaking

- From: Serial Port with female DB25 25-pin connector.
- To: Modem with female DB25 25-pin connector.
- Needed: 2 DB25 Connectors, 8 conductor cable.



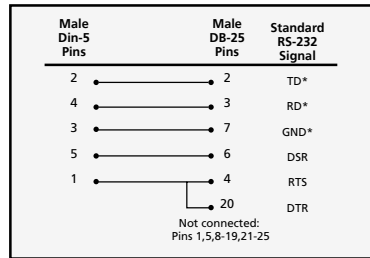
Standard Modem Cable with Hardware Handshaking

Apple IIc, Laser 128, Laser 128EX Modem Cable.

- From: Internal Modem Port with female DIN-5 connector.
- To: Modem with female DB25 25-pin connector.
- Needed: 1 Male DIN-5, 1 Male DB25, 5 conductor cable & spare small pieces of wire.

Wiring Diagram Definitions

TD	Transmit data.	RD	Receive data.
RTS	Ready to send.	CTS	Clear to send.
DSR	Data set ready.	GND	Signal ground.
DCD	Data carrier Detect.	DTR	Data terminal ready.



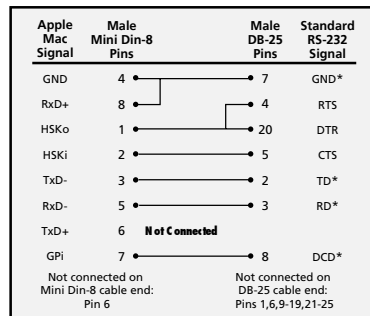
Apple IIc Modem Cable

NOTE: Because of Apple IIc, Laser hardware limitations, true bi-directional flow control cannot be supported. Connect computer pin 5 to modem pin 6 (DSR) to use RTS-only (input) flow control. If computer pin 5 to modem pin 5 is connected, ProTERM will perform pseudo-RTS/CTS flow control within the limitations of the hardware.

* Indicates connections which MUST be made for the cable to operate with a modem. See *Modem Cables* in this chapter.

Apple IIGS, IIc+ Modem Cable with Hardware Handshaking.

Hi-Speed "handshaking" cable.



Apple IIGS, IIc+ Modem Cable with Hardware Handshaking.

Need a special telecom cable? See the end of this Appendix.

NOTE: This cable supports hardware handshaking only on the Apple IIGS. The Apple IIc+ Modem Port has the same limitations as the Apple IIc Modem Port in regards to hardware handshaking.

NOTE: This cable requires "short circuits" to be placed in the cable. This consists of creating a "Y" connection between the three pins. On the MINI DIN-8 end, pins 4 and 8 should be connected to each other as well as to pin 7 of the DB25. On the DB25 end, pins 4 and 20 should be connected to each other as well as to pin 1 of the MINI DIN-8.

* Indicates connections which MUST be made in order for the cable to operate with a modem. See *Modem Cables* earlier in this chapter.

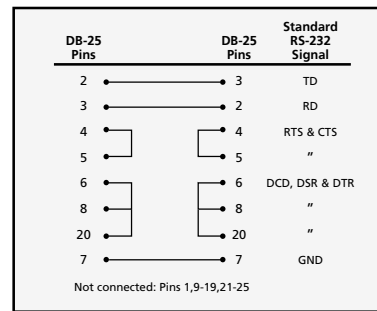
Connecting Two Computers Directly

There are situations where it is often desirable to directly connect two computer modem ports together for the purpose of sending data back and forth. The device shown below is commonly referred to as a "null modem adaptor." It has the effect of making previously incompatible cables compatible. The idea is to setup both computers with modem cables and then connect the two modem cables together with the Null Modem Adaptor. The adaptor can be constructed with either gender connectors on each end. The most common configuration is Male/Female or Female/Female.

From: Apple Super Serial Card with female DB25 25-pin connector in one computer.

To: to an Apple Super Serial Card with female DB25 25-pin connector in a second computer..

Needed: 2 Male DB25 connector, 6 conductor cable, small pieces of spare wire.



Null Modem Adaptor

A cable may NOT be what it seems to be!

Troubleshooting & Cable Diagnosis

Cable type is determined by both physical appearance (the type of connectors used on both ends) and internal wiring (often referred to as the "pinouts"). While the connector types can be determined from visual inspection, internal wiring is another matter. Unfortunately, a cable can have exactly the right "look" but not be able to work in the desired capacity.

Cables designed especially for printer use and cables designed for modem use can look exactly alike externally but are wired differently. One example of physical similarity is a cable used between the ImageWriter I and a serial card and a cable used to drive a modem with a serial card. These two cables look identical externally but when you compare the two wiring diagrams shown in this Appendix, you can easily see that neither cable can replace the other because they're wired differently. There are literally hundreds of cable designs and it's much too easy to mix them up if they are judged by physical appearance alone. Unless they are clearly marked, once they're separated from their original packaging, they can only be distinguished by electrical diagnosis (discussed below).

More than ninety percent of the phone calls to the InTrec Tech Support department stating modem initialization failure, occur because the customer has a cable designed to be used with a printer. In almost every case, the customer doesn't believe they could have the wrong cable, because, "The dealer sold me the right one" or the package was marked "modem cable" meaning it has to be correct. Apparently, unfortunately and seemingly, some dealers look at a cable's connectors, and if they match up with the computer and the modem — "That's the right cable." As often happens, after some checking, we often get a call or letter thanking us for pointing out the problem, verifying that the cable was wrong. We therefore include the following information on how to electrically diagnose a cable to find its "pinouts." See *Index: Unable to Init Modem* for more details.

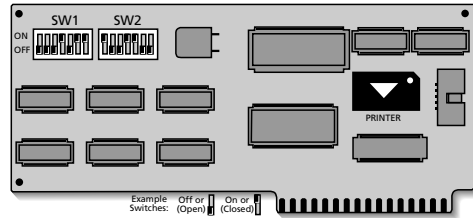
Great care is taken to write the following in "layman-speak," so hopefully you will be able to easily understand it. The easiest way to check continuity is to use a device called a continuity tester such as an Ohm meter or a device with a light or buzzer indicator which gives notification when the two probes are touched together and complete a circuit (circle of electricity). "Continuity" means the electricity continues. A continuity tester can be as simple as a flashlight battery with wires taped to each of a battery's connecting poles and a light or buzzer in the circuit. When the wires are touched to complete the circuit, the light or noise indicates the circuit is complete. A continuity tester can be purchased for only a few dollars from a mass merchandising auto parts store. You can purchase the similar device from electronics store, but the price is usually higher. Just keep in mind the device you need has to have a power supply (such as battery) of its own and when you touch the two probes together, it should light, buzz or swing a needle to indicate continuity.

To use the device, touch one probe to a pin on one end of the cable while touching the other probe to each pin on the other connector to find the continuity between the pins (which pins are connected). Note that is not unusual for a single pin on one end to be connected to more than one pin on the other end, or even the same end (see the cable diagram for your computer and modem). Make a list of all pins connected to each other. When complete, this list is called the "pinout" for the cable. You can compare this to see if it matches (or comes close to) the pinouts listed above. If you find pins seem to be "switched" (that is, RD goes to TD and TD to RD) you most probably have a printer cable and not a modem cable. Instead of checking the entire cable, you can generally just check RD and TD to determine whether it is a modem or printer cable. If RD, TD and GND are connected correctly, but other pins are not, you can call InTrec Technical Support to find out if it will work with ProTERM.

NOTE: When finding the pinouts of a cable with DB25 connectors, you only need to check pins 2 through 8 and 20 since they are the only ones used for serial communication.

Printer Hookup

If your printer is already functioning with other software, don't make any changes. If you are having trouble getting ProTERM to work with your printer, see *Appendix B: Troubleshooting*. If your printer is not attached to your system (or does not work with any of your software), then read on. The following shows the configuration of an Apple Super Serial Cards for use with a printer. Try setting the jumper block and switches to the positions shown in the illustration and then use the appropriate cable shown below.



Apple Super Serial Card properly configured for Use with a Printer

NOTE: Some Super Serial Compatible Cards have eight switches per bank instead of seven. In such cases, the eighth switch on each block is usually not connected. Pretend this switch does not exist and set the remaining seven switches using the configuration shown above.

Cable Sources

Make sure the supplier understands your needs when you buy a cable. Cables from other than Apple computer supply sources may not understand what is really needed for the job. Some cables generically supplied in the market may look right, but are wired differently. If they tell you they have a cable that "looks right," try another source.

Correctly wired data cables may be difficult to find, InTrec Software also stocks and sells the right cable for your communication needs. Call, write or FAX for information on availability and pricing.

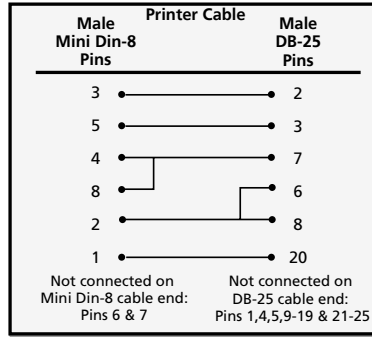
InTrec Software, Inc.
 3035 East Topaz Circle
 Phoenix, AZ 85028-4423
 602/992-5515 – Sales (Voice)
 602/992-0232 – FAX
 602/992-1345 – Tech Support (Voice)
 602/992-9789 – BBSsystem
 proterm@intrec.com – Internet

Printer Cables

There are many different types of printer cables for many different applications. The following is a list of cables allowing the Apple Super Serial Card to connect with an Apple ImageWriter I or ImageWriter II printer.

Apple Super Serial Card to Apple ImageWriter II.

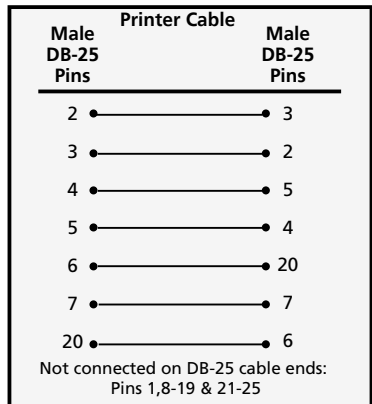
- From: Apple Super Serial Card with female DB25 25-pin connector.
- To: Apple ImageWriter II with female MINI DIN-8 connector.
- Needed: 1 Male DB25, 1 Male MINI DIN-8, 6 conductor cable, small pieces of spare wire.



Apple Super Serial to Apple ImageWriter II

Apple Super Serial Card to Apple ImageWriter I.

From: Apple Super Serial Card with female DB25 25-pin connector.
 To: Apple ImageWriter I with female DB25 25-pin connector.
 Needed: 2 DB25 Connectors, cable with 8 wires.



Apple Super Serial to Apple ImageWriter I

Troubleshooting

APPENDIX C

Every attempt has been made to make ProTERM intuitive, easy to use and as dependable as is possible. However, if a problem is encountered, this Appendix lists some common problems and solutions. If you are unable to find a solution here, you can call InTrec Technical Support, see the Index: *Technical Support*, or you may want to contact your local Apple Computer user group. See the Index: *user groups*.

General Startup Problems

**ProTERM
won't boot.**

**Rule of thumb:
Never install any
device in slot three.**

Message: UNABLE TO FIND A ".SYSTEM" FILE Message: UNABLE TO FIND PRODOS

Certain hardware configurations can prevent ProDOS from booting correctly. For example, in almost all cases, hardware of any kind should *never* be installed in slot 3 because it is reserved and used by the computer. Devices claiming they can be used in slot three are probably just tapping power. However if you are having problems, ANY device used in slot three is highly suspect.

Hardware Troubleshooting

When a hardware problem is suspected, the easiest way to isolate it is to remove any and all unneeded hardware from the computer. For example, the bare essentials needed to run ProTERM are the modem and serial card in slot 2 (if needed) and a disk drive in slot 6 or 7. If you have a hard drive and still have problems, depending on the nature of the problem (conflicting desk accessories or inits in GS/OS for example) it may be necessary to boot from a floppy and ProDOS 8 to make sure some unsuspecting CDEV or INIT or hard-drive

software is not causing the problem. An Apple IIe also requires an 80 column card in the "AUX SLOT" (slot zero).

Message: "ProTERM cannot run without a 65C02 Processor." –or–

Message: "Relocation/Configuration Error"

If you have an Apple IIe and get a message "ProTERM cannot run without a 65C02 Processor" or "Relocation/Configuration Error" when you boot ProTERM, your Apple IIe was manufactured prior to mid 1980s and has never had an "Apple IIe Enhancement Kit" installed. Another way to check this is to turn your computer on without putting a disk in the drive and note the message on the screen. If you see "Apple II" on the screen, the computer does *not* have the enhancement chip set. If you see "Apple IIe" on the screen, the machine does have the enhanced chip set installed. The Enhancement Kit is a set of four chips which includes a more efficient (65C02) processor, a newer character generator ROM (with mousetext characters), and firmware ROMs (which allow BASIC to understand lowercase.) State of the art Apple II software such as ProTERM requires this chip set. The Apple IIe Enhancement Kit is available from Apple dealers and the large Apple II mail order dealers. The kit includes an easy to follow set of set of installation instructions. Tools needed: Finger nail file or small screwdriver to pop the chips up.

The enhancement kit allows the Apple IIe computer to:

- Run state of the art software.
- Efficiently show pull down menus.
- Show icons (pictorial characters such as Open or Closed Apple or file folders).
- Scroll faster with select applications.
- Show smooth-looking character graphics.
- Speed-up select applications.
- Run without having to stop what it is doing and check each device periodically. Devices can ask for the attention of the computer directly. Software which asks for these interrupts can run up to 30% faster.
- Boot ProDOS from devices from other than the 5.25" disk drive.
- Understand commands in AppleSoft BASIC which are typed in upper or lower case.
- Have the ability to use a built in mini-assembler for programming.

Message: "ProTERM must have a minimum of 128K memory."

An Apple IIe with 128K of memory is not what is being referred to as "enhanced" (see above) although ProTERM does require a minimum of 128K of memory. If you see the message "ProTERM must have a minimum of 128K memory" you will need to put at least a 64K memory card in the Aux-slot (slot 0) of the Apple IIe. The 64K built into the computer plus the 64K on the card equals 128K. While 128K is the bare minimum required to run ProTERM, ProTERM can make good use of any additional memory as well. If you need to purchase a memory card, we strongly recommend getting one which can be expanded to at least 256K. A 256K memory expansion card will dramatically improve ProTERM's performance and ease of use. See the Index: *Hardware Requirements*.

128K is minimum but 256K makes a dramatic difference in the operation of ProTERM.

Message: "Please insert the program disk..."

A 3.5, /RAM or hard disk is being used and you get the message: "Please insert the program disk (flip disk) and press RETURN."

This message is given when the *PT3.DIAL* directory is missing or incorrectly named. To correct the problem, either copy the file "PT3.DIAL" from the original disk or create a directory named "PT3.DIAL." This directory is where ProTERM stores all of the system entry files. These files contain the information about the systems you call such as phone numbers, macros, parameter information. Because of storage space limitations, the PT3.DIAL directory is on the "Program Disk" or second side of the 5.25" PT3 disk. There is ample room on a larger disk for all of the PT3 files, consequently when ProTERM gets to the point of loading this segment and can't find the PT3.DIAL directory, the first assumption is the 5.25" Program Disk needs to be put online.

ProTERM Locks-Up or Freezes while Initializing the Modem.

The cable may not be firmly attached to computer and modem. Double check the cable is firmly attached and the modem powered on. Reboot the system and try starting up ProTERM again.

Use a disk utility to delete the file "PT3.BIOS" from the ProTERM disk. After ProTERM is run again, it will boot into the *install* menu. Reconfigure the software and try again.

If booting from GS/OS, there can be an accessory file (Inits, CDevs and DAs) conflict. Try booting into GS/OS with the SHIFT key held down to suppress the accessories. It is even better to turn the machine off and boot directly to a copy of the ProTERM disk. If this cures the problem, remove the accessories and reinstall them one at a time until the offending one(s) are found.

Character Loss

If booting from GS/OS, there can be an accessory file (Inits, CDevs and DAs) conflict. Try booting into GS/OS with the SHIFT key held down to suppress the accessories. Actually the best way to do this is to turn the machine off and boot directly from a copy of the ProTERM disk. If this cures the problem, remove the accessories and reinstall them one at a time until the offending one(s) are found. Screen savers and other "time related" accessories are often the source of the problem.

Message: Unable to Initialize Modem

Testing the hardware using the *Null Modem Driver* can help to isolate the problem. The following steps will help narrow the problem by connecting the hardware (computer/cable/modem) directly as a "dumb terminal" which is analogous to being in BASIC.SYSTEM in a telecom application. When ProTERM is using the Null Modem Driver, the *Init:* window will be blank, there is no attempt to do any kind of "modem control." Instead, all characters typed at the console will be sent directly to the modem without additional processing or influence from ProTERM. This "native" mode allows direct control of the hardware. Effectively, ProTERM is removed from the test, there is no influence from the software other than to be able to send direct commands from and to the hardware.

**Isolating
Modem
Problems.**

- Choose the Install button from the *Modem Failure (ProTERM was unable to init your modem what would you like to do?)* window and ProTERM will enter into the *Install Hardware* mode.
- Choose *the Modem* button and then instead of choosing your regular modem, choose *Null Modem Driver* from the list.
- If you are using a modem attached to the Apple IIGS, IIC or Laser 128 Modem Port, select the appropriate modem port driver. Otherwise, select the appropriate serial card for the modem port.
- After installing the *Null Modem Driver*, choose the *OK* button and ProTERM will display the Main Menu.
- Choose the *Online* menu and then the *Parameters* command.
- Use the TAB key to move the cursor to *Baud Rate* the Online Parameters window.
- Using the ARROW keys, set the baud rate at or below the highest supported by your modem.
- Set the line status to *Online* and select the *OK* button. If you have a modem with a baud rate of less than a 2400 press the caps lock down.

At this point, you will have a blinking cursor and a blank screen. Press the RETURN key 3 or 4 times. The receive and or send lights should both flash. Type "ATZ" and press the RETURN key, then type "AT&F&W" and press the RETURN key. Type "AT" and press the RETURN key, you should see "OK" on the screen and the SD and RD lights on the modem (if available) should flash when the RETURN key is pressed. If you do not get an "OK" message displayed on your screen, you could have one of the following problems:

NOTE: When your computer is set to null modem, the software is out of the picture and just the hardware is trying to "talk" to itself. If you don't get the expected results, the problem is in the hardware.

By far, the most common problem encountered by first-time users is related to cables which are either not connected or wired correctly. Unfortunately, it is not possible to determine the type of cable from external visual inspection. The problem occurs so often because a data cable, the one needed here is identical, in external appearance, to a printer cable. Internally, where it really counts, they're wired differently. If the modem lights do not blink when you type, and the cable is properly connected and the software is correctly configured, see the Index: *Cable; diagnosis*, to learn how to analyze your cable and verify it is correct. If you are in need of a "correct" data cable for your system, see the Index: *Cable; sources*.

If the modem SD and RD lights flash but no response is received from the modem, check to see if the modem has switches. If it does, make sure they are set for DTR override and DCD override. If your modem can be set with "soft-switches" and can interpret Ampersand commands, you can also try typing AT&C0&D0&W while in the null modem command state (see above) which may correct the situation. Note that some modems claiming "Hayes compatibility" do not have Ampersand commands.

If the modem SD and RD lights flash but no response is received from the modem (or one character is displayed after your keys are pressed — and not necessarily corresponding to the key(s) pressed), check to make sure the modem (if internal) or serial card has interrupts enabled. This is normally controlled by a switch on the card. See the Index: *Serial Card*.

So many brands and models of modems are being manufactured today it is difficult to keep up with all of the features or in some cases, non-features. The standard "flag" you should look for is Hayes[□] or "AT" compatibility and then hope the modem actually meets those standards.

Call the other modem with your voice phone.

To extend the "Connect Time" while waiting to connect, hold the OPTION key down.

Unable to Connect with a Remote System

The connect time may be set too short. Increase the connect time by 10 seconds, call again, and see if a connection is established with the remote system. Call the host system using the voice phone and listen to the sequence of events to determine what is happening and how long the connect takes as you listen. Don't be afraid to call this way, the only thing that can happen is you will eventually hear the squeal of the modem as it attempts to make the connection. It will hang up and reset after you hang up your phone.

The baud rate may be set incorrectly. Perhaps the baud rate is set wrong for the system being called. Always set the baud rate on the high side. ProTERM will step down, but cannot step higher than it is set or than the modem will allow.

Maybe you are not calling a modem. Try calling the number with a normal voice telephone and listen for a modem to answer with its high pitched tones. Check the number of rings. If more time is needed before the called system answers, increase the Connect Time in the System Parameters window to a number of seconds that will exceed what the called system needs. Maybe it does not answer at all. If the line is answered, is it a person or answering machine or does it send a high pitch tone like a modem does when it answers?

Perhaps the number is not dialing correctly. If you are going through a switchboard or dialing long distance, you may need to adjust the dialing sequence by adding time between certain sequences. Do you have to enter a "9" to get an outside line? See the Index: *Meta-Characters* for more information.

Hanging Up

The Hangup Command Fails

The modem timing may not be exactly what ProTERM expects. Modem timing varies not only between manufacturers, but even between models of the same manufacturer. If your modem is not hanging up (terminating) and giving you the *Main Menu*, at the end of a call, add "S12=35" to the end of the modem *Init*: string in the *Install* window.

Excessive Hangup Delay

There are two techniques used by ProTERM to have the modem hangup. The faster technique involves using the DTR signal to reset the modem. Check to see if your modem has dip-switches. If it does, check the modem manual and set DTR Override to Off to speed up the hangup process.

Failure to Detect Disconnect

When ProTERM gets a "NO CARRIER" message, it performs a check to see if the message was from the modem or the remote system. If the modem init string has been changed and an E1 or Z or &F is added, the NO CARRIER check incorrectly indicates the message was from the remote system, not the modem. If Z or &F is added to the init string, it should be followed by an E0 (E-zero) to avoid this problem.

Printer problems.

File Transfer Problems

High-Speed Zmodem/ASCII Sends Fail

The modem cable may not support hardware handshaking. The Zmodem protocol requires the use of hardware handshaking when used with a high-speed modem. See the Index: *high-speed; cable*, for pinouts of cables which support hardware handshaking and can be used with high-speed modems. Also see the Index: *cable; source*, for sources of special cables.

Printing Problems

The Printer Is Not Printing

The first thing to do is to verify the printer is working correctly with software other than ProTERM. If the printer is not working with any software, then check the following:

- Power the printer off and back on and try printing again.
- Verify the printer cable is correctly and firmly attached at both ends.
- Will the printer do a self test? See the printer manual.
- Verify the printer is not out of paper.
- Verify the printer error light is not on.
- Verify the printer select light is on.
- Verify any printer A-B switch boxes are set correctly.

If the printer works with other software but not with ProTERM, then check the following:

- Verify ProTERM has been installed for the printer card.
Go into the Install window and verify ProTERM is correctly configured for the printer interface card being used.
- Try installing the Pascal 1.1.1 Printer Driver.
The Pascal 1.1.1 Printer driver is very versatile and works with many printer interface cards. If this printer driver fails, try the Generic Printer Driver (below).
- Try installing the Generic Printer Driver.
The Generic Printer Driver is the most versatile printer interface driver which ProTERM supports. If the printer still fails to function, call InTrec Technical Support for help.

Not sure the printer works at all

- Turn the system off.
- Remove all disks from all drives and turn the system on.
- While holding the CONTROL key down, press and release the RESET key, then release the CONTROL key. The booting disk drive light should go out.
- Turn the printer on.
- Type PR#1 and press the RETURN key. The printer should make a slight noise as it “comes to attention” and advances the paper one line.
- Type “PRINT” followed by RETURN.

If the printer prints:

**"JPRINT"
? SYNTAX ERROR**

...the printer card, cable and printer are seemingly working together okay. In this case, the problem may be the way ProTERM is installed. Go back through the ProTERM installation procedure again and recheck your configuration. If the printer did not respond, then the problem is most likely hardware related since the test does not use any software.

The Printer Does Not Advance Paper

If the printer prints on the same line and does not advance paper, your printer needs to be set to add linefeeds, or Generic Printer Driver w/Line Feeds should be selected. You may also wish to check your printer interface card manual in reference to line feeds. Any one of the above can cause the problem.

Printer Double Spaces Between Lines

If the printer double spaces, your printer needs to be set to NOT add linefeeds, or Generic Printer Driver (without linefeeds) should be selected. You may also wish to check your printer interface card manual in reference to line feeds. Any one of the above can cause the problem.

RAM Problems

ProTERM Doesn't Recognize RAM Disk Software

RAM Drive Software may not have been installed prior to running ProTERM. When ProTERM is first run, it will allocate all system memory for its own use. If a RAM Disk Driver is not present, then ProTERM will assume all memory is available for use. Make sure RAM Drive Software has been installed prior to running ProTERM to protect your Ram Disk contents.

ProTERM may not recognize the RAM Disk Software. ProTERM has been designed to recognize and honor the presence of RAM Drive software from Applied Engineering, Checkmate Technology and Glen Bredon, but there are other versions of RAM software available which are not as standard. If ProTERM shows more RAM than should be available, call InTrec Technical Support for information on keeping ProTERM away from your RAM Disk. Also see the Index: *RAM and memory*, and their various sub-categories; also see *Preferences: Maximum Memory Use*.

NOTE: Whenever ProTERM is run, the small 64K RAM disk which is created by ProDOS will be destroyed. This memory will be used for Scrollback and the Editor.

ProTERM Is Not Utilizing RAM Card Memory

ProTERM may not support your RAM card. While it has been designed to take advantage of the three major styles of RAM Cards (Apple IIGS Memory Expansion, Apple II Bank Switched, and "Slinky" Ram Cards), there are RAM Cards which use their own access protocol. Contact InTrec Technical Support for information on the latest RAM Card support.

Garbage characters on the screen.

If an Apple IIGS is being used, is there a RAM card set aside? ProTERM will not use any RAM which has already been spoken for.

There may be a problem with the memory on the card. If some of the RAM is bad, ProTERM may not recognize the memory. Try running the RAM test software supplied with the card.

ProTERM Crashes Upon Entering Scrollback

Some IIGS RAMcards have jumpers which tell the IIGS how much RAM is on the card. If these jumpers are set incorrectly to indicate the card contains more memory than it actually does, ProTERM can crash as it enters Scrollback.

If an expansion RAM Card contains bad RAM, then ProTERM can crash upon entry to Scrollback. This is because ProTERM stores data in the RAM Card. If that data becomes corrupted due to bad RAM, ProTERM can crash. Try running the diagnostic software which came with the RAM card to diagnose problems and identify bad RAM.

General Problems

Incoming Data is Garbled

ProTERM defaults to a data format (often referred to as parity) of 8N1 because most systems, especially those involving Apple computers use a data format of 8 data bits, no parity and 1 stop bit. The computer you are calling may be using 7E1, 7E2, 7O1, 7O2, or 8N2. Double check the format of the remote computer and change ProTERM to that format if necessary.

Random Garbage Characters Are Displayed

Just like people, modem's have individual personalities. When certain modems connect, they just don't like to talk to each other and they generate a lot of garbage characters. The way to identify this phenomenon is to see if the garbage characters are confined to the use of a particular system. If they are, then very little can be done to correct the problem.

The ability of a modem to transfer data without errors is partially dependent upon the quality of the phone line on which it is operating. Phone lines which experience frequent "pop" or "hiss" noises are guaranteed to generate a lot of garbage characters. Try using a regular voice phone call to "sample" the line. Try some voice calls on the same line and listen carefully for transient noise. Sometimes it only happens on certain calls and hanging up and calling again solves the problem. See *Line Noise* below.

Line Noise

Line noise is often heard as clicks or slight hisses during a voice phone call but is displayed by ProTERM as something like “}g}b}” and can be one of the most annoying and frustrating aspects of telecommunications. These bursts often contain the curly bracket character “}” and seemingly come from nowhere. Line noise can often be confusing and is sometimes severe enough to terminate a call. Because it is difficult to establish which end of the connection the line noise is being generated on (sometimes just your computer experiences the noise and other times both you and the remote host experience it), trying to edit out or work online with line noise can be almost impossible.

Before you spend any real effort or money to find the problem, make sure the problem is not a result of natural causes such as wet phone lines, electrical storms or sunspots. Evaluate the problem over a period of at least a week to see if it is connected to some natural phenomenon.

The first thing to establish is if your line noise problem is actually related to your local phone service. If you only encounter line noise when calling particular systems, then the problem is most probably on the other end of the call. In such cases, there is nothing which can be done locally to correct the situation. However, if you seem to get line noise regardless of which system you call, it is most probably a problem on your end. When you make local voice calls, listen carefully to your phone for any unusual noise. If you can hear static, hissing, buzzing or clicking noises on the phone, there is a good chance these are what you are seeing on your monitor. If you do not hear anything suspicious, try borrowing a different modem from a friend. If a different modem does not demonstrate line noise problems, chances are the problem is with your modem. Check all other possibilities before assuming the phone lines are the problem. Trying to track down a nonexistent phone line problem can be very difficult.

Once you have established you are experiencing a problem with your phone lines, you must decide how to solve the problem. It is important to understand the phone company maintains phone line quality up to your house at no extra charge. However, problems within your house are not the responsibility of the phone company unless you subscribe to an optional “wire maintenance plan.” This is a monthly service sold by the phone company in which they will take care of any needed maintenance or repair with the phone wiring within your house. If you believe you have a problem with your phone wiring and you have such a plan, it is best to call the phone company and let them find the problem. After all, that is the point of the service.

If you do not subscribe to a wire maintenance plan, you must determine where the source of the line noise problem lies. If you call the phone company to complain of poor phone quality, and the problem is found to be within your house phone wiring, you may have to pay the phone company an extra service charge for the call. The following guide should help you determine whether the problem is inside or outside of your house. If it is inside, we outline procedures for correcting many common problems.

Line noise can be caused by something as simple as a loose connection or oxidation at wire terminals (such as the connecting screws in the phone jack wall interface.) Bad connections like this increase the resistance making it more difficult for the needed signal to get through the line. Over a period of time, connections can oxidize and even corrode if the area is damp, especially at the junction of two dissimilar metals such as copper wire and steel screws. Sometimes noise can be lessened or even eliminated by removing the wall jack cover

and loosening and retightening the wire connectors. If there seems to be a question about the connectors being oxidized, some cleaning or scraping, or in extreme cases replacement of the wall jack interface may be needed to correct the problem.

Your modem is probably not connected to the only phone jack in your house. Keep in mind anywhere the phone wires are connected to a phone jack, there could be a problem. This condition may be even worsened if your computer is “downline” from the problem (the phone line comes into the house and joins a connector which has developed problems and from there continues to your modem phone jack.) If any of your phone jacks have problems, regardless of their location, they may contribute to the problem.

Unless you’re leasing your phones, the phone company does not own the phones in your house. What this means is phone maintenance is your responsibility. Since most people don’t spend money to keep phones in perfect condition, it is possible they may experience problems over time and become the cause of line noise problems. Disconnect any phones not needed while tracking down the source of the problem. Once you have the problem isolated, you can get your phone system back to normal.

Unplug a voice phone set and take it outside to the box where your phone line comes to your house. The various phone companies are trying to establish a convention of having the wire pair from the phone company end in a box with a female modular phone jack. This box is mounted on the outside of the house as an interface between the phone company’s incoming wires and your house phone wiring. Therefore, the house wiring can be disconnected by unplugging this male jack. With the house wiring disconnected, plug a voice phone directly into this female jack or if you prefer, get a phone extension wire long enough to reach from this junction box to where you use your phone or computer.

After connecting up to the outside jack, see if you still experience the same line noise symptoms. If the line noise is gone, it’s a pretty safe bet the problem is in the house wiring. If the noise is still present, you may want to call the phone company service department and inform them of your findings and how you arrived at your conclusions. Let them know you believe the problem is before the phone line gets to your house. If you have done your homework as noted above, you have some pretty conclusive evidence.

When individuals do their own phone wiring, they often neglect to check the polarity of the wires when hooking up phone jacks. Standard house phones use two wires called “tip” and “ring.” While it may not seem to make any difference which wire is which, it actually does. By switching tip and ring differently at different phones, it is possible to cause an audible hum on the phone line. While this doesn’t normally degrade the quality of the phone line, it seems it may make a modem more susceptible to line noise.

If you want to make sure your phone wires are not switched, you can get a phone line indicator device from many hardware stores or Radio Shack™ for less than \$10. Just plug this device into the wall phone jack or extension cord in question. It will show red if the wires connected to the jack are reversed and green if they are correct. If the wires are reversed, you can take the phone jack apart and correct the wiring.

If you make up your own phone extension cords or repair them, note one side of the flat phone “modular-type” or “base cord” wire has a marker or “runner” on one side of it. Make sure this marker goes into each of the two modular phone jacks the same. If it goes into one with the marker on the clip side, then it must do the same on the other end or the pair will be twisted as noted above. It will still work, but may cause a quality deterioration in some situations and in telecommunications, we need all the help we can get.

NOTE: Phone extension cords are often called "base cords" and are available in 6 to 100 foot lengths and can even be joined with modular female connectors to attain additional length.

A Point of Interest in Phone Wire and Wiring

We want to thank the US West Phone Company for their assistance, direction and patience during our investigation of line noise and phone wiring. There is no need to feel secretive about hooking up your phones or modems. In general, the phone companies have agreed upon standards for home and small business phone wiring and are in the process of adapting to and making these standards available to the public.

The standard for internal wiring has recently changed. The phone company is now recommending internal wiring of either three or six pair twisted wire. Each wire pair is twisted and then all pairs are twisted. Strip a piece of the wire back and examine how the wires are arranged relative to pairs and groups of pairs. The significant difference here is control or dampening of external interference. This wire has just recently become available but not too difficult to find. Check local electronic supply companies, many of them stock this wire in bulk. If you have additional questions, contact InTrec Technical Support and/or your local phone company.

Do all of the checking possible before you call the phone company. Because noise problems can be random and evasive, achieving noise free lines could include more than one visit from the phone company. It could be expensive if the problem is in the house, and you are unable to locate it yourself. As noted earlier, unless you have a wire maintenance plan, wiring repair within your house is not a free service. It is not uncommon for the phone company to charge a fifty dollar minimum which usually covers the first half hour. Another alternative is to hire an independent contractor or home repair expert to assist in resolving the problem if you think it is in your house wiring.

If the phone company tells you, "We only guarantee voice quality lines, not data transmission integrity," you may want to consider the following: 1200 and 2400 BPS modems are designed for use with normal voice quality phone lines. Telecomputing from home is not special; it is commonplace. It represents a service no different than normal pickup and delivery service by the various package carriers. Don't let the phone company try to convince you a modem is a "business" item. Kids doing homework via online encyclopedias, families accessing the local library card catalogs, at home banking, shopping, and personal stock brokering, even FAX machines all represent legitimate "personal" telecommunication applications. Telecommunications is no longer the exception, it's the rule.

Minimum Line Testing Requirements as Set by the FCC

The FCC imposes certain minimum standards on the phone company to maintain a certain level of quality in their lines. Lines not meeting these standards can be a source of considerable difficulty in the transfer of data between computers. A noisy line can even make it difficult to make the "handshake" connect with a host.

When a customer complains to the phone company about line noise, the local phone service may offer to sell a service known as "line conditioning." The idea behind this service is, the phone company will regularly "balance" and correct line problems and keep the standards of the phone line above what is required for normal voice quality. However, 2400 BPS (and many higher speed modems as well) are designed for use with "normal" voice quality phone lines. If your phone lines meet the minimum voice quality requirements as set forth by the

FCC, there should be no reason why your modem should experience excessive line noise. Keep in mind "line conditioning" is different from a "dedicated line." Line conditioning involves improving the quality of your existing phone line while a dedicated line is a separate additional phone line usually for a distinct purpose.

Other Problems & Solutions

User groups offer excellent local support and current information on services such as local BBServices. Most Apple user groups even offer personal assistance and training on a wide variety of computer related questions, including telecommunications and especially ProTERM. To locate the Apple computer user group nearest you, call 1/800-538-9696 Ext. 500. For other user group references in this manual, see the Index: *user groups*.

ASCII Character Chart

APPENDIX D

ASCII (American Standard Code for Information Interchange, pronounced “AS-KEE”) — A standard 7-bit-plus-parity binary code set used to establish compatibility among data services.

The following ASCII character chart shows the decimal and hexadecimal values for all 128 ASCII characters: 96 printable (text) characters and 32 non-printable (control) characters. To compute a “high-bit” ASCII value, add 128 to a decimal value or \$80 to a hexadecimal value.

Caret Prefix Notation

To enter one of the 32 Control Characters (ASCII characters 0 through 31 as well as the DELETE character 127) as parameters, ProTERM uses a convention called *caret prefix notation*. This is a method of notating (writing) text in which the caret “^” character is used to represent a control character through its association or influence of the character immediately adjacent to it. Control characters always require a two-character sequence, the caret character and the influenced character. For example, a RETURN character (CONTROL-M), is represented as “^M” (CARET-M). To find the prefix notation for a needed control character, locate the character in the *ASCII Character Chart* and look under the column labeled *Prefix*. To insert a normal (non-influencing) caret character that is not a “control notation,” use “^” (CARET followed by SPACE). This differentiates between the caret acting as a control character prefix and the caret representing itself. For example, the string “^GREG” is evaluated as “CONTROL-G” R E G while “^GREG” is evaluated as, “CARETGREG.”

ASCII Character Chart

ASCII Character List 00-63

DEC	HEX	CHAR	Key	Prefix	DEC	HEX	CHAR	Key	Prefix
00	00	NULL	Ctrl-@	^@	32	20		SPACE	SPACE
01	01	SOH	Ctrl-A	^A	33	21	!	!	!
02	02	STX	Ctrl-B	^B	34	22	"	"	"
03	03	ETX	Ctrl-C	^C	35	23	#	#	#
04	04	ET	Ctrl-D	^D	36	24	\$	\$	\$
05	05	ENQ	Ctrl-E	^E	37	25	%	%	%
06	06	ACK	Ctrl-F	^F	38	26	&	&	&
07	07	BEL	Ctrl-G	^G	39	27	'	'	'
08	08	BS	Ctrl-H	^H	40	28	(((
09	09	HT	Ctrl-I	^I	41	29)))
10	0A	LF	Ctrl-J	^J	42	2A	*	*	*
11	0B	VT	Ctrl-K	^K	43	2B	+	+	+
12	0C	FF	Ctrl-L	^L	44	2C	,	,	,
13	0D	CR	RETURN	^M	45	2D	.	.	.
14	0E	SO	Ctrl-N	^N	46	2E	.	.	.
15	0F	SI	Ctrl-O	^O	47	2F	/	/	/
16	10	DLE	Ctrl-P	^P	48	30	0	0	0
17	11	DC1	Ctrl-Q	^Q	49	31	1	1	1
18	12	DC2	Ctrl-R	^R	50	32	2	2	2
19	13	DC3	Ctrl-S	^S	51	33	3	3	3
20	14	DC4	Ctrl-T	^T	52	34	4	4	4
21	15	NAK	Ctrl-U	^U	53	35	5	5	5
22	16	SYN	Ctrl-V	^V	54	36	6	6	6
23	17	ETB	Ctrl-W	^W	55	37	7	7	7
24	18	CAN	Ctrl-X	^X	56	38	8	8	8
25	19	EM	Ctrl-Y	^Y	57	39	9	9	9
26	1A	SUB	Ctrl-Z	^Z	58	3A	:	:	:
27	1B	ESC	Ctrl-[^[59	3B	;	;	;
28	1C	FS	Ctrl-\	^\	60	3C	<	<	<
29	1D	GS	Ctrl-]	^]	61	3D	=	=	=
30	1E	RS	Ctrl-^	^^	62	3E	>	>	>
31	1F	US	Ctrl- _~	^ _~	63	3F	?	?	?

ASCII Character List 64-127

DEC	HEX	CHAR	Key	Prefix	DEC	HEX	CHAR	Key	Prefix
64	40	@	@	@	96	60	`	`	`
65	41	A	A	A	97	61	a	a	a
66	42	B	B	B	98	62	b	b	b
67	43	C	C	C	99	63	c	c	c
68	44	D	D	D	100	64	d	d	d
69	45	E	E	E	101	65	e	e	e
70	46	F	F	F	102	66	f	f	f
71	47	G	G	G	103	67	g	g	g
72	48	H	H	H	104	68	h	h	h
73	49	I	I	I	105	69	i	i	i
74	4A	J	J	J	106	6A	j	j	j
75	4B	K	K	K	107	6B	k	k	k
76	4C	L	L	L	108	6C	l	l	l
77	4D	M	M	M	109	6D	m	m	m
78	4E	N	N	N	110	6E	n	n	n
79	4F	O	O	O	111	6F	o	o	o
80	50	P	P	P	112	70	p	p	p
81	51	Q	Q	Q	113	71	q	q	q
82	52	R	R	R	114	72	r	r	r
83	53	S	S	S	115	73	s	s	s
84	54	T	T	T	116	74	t	t	t
85	55	U	U	U	117	75	u	u	u
86	56	V	V	V	118	76	v	v	v
87	57	W	W	W	119	77	w	w	w
88	58	X	X	X	120	78	x	x	x
89	59	Y	Y	Y	121	79	y	y	y
90	5A	Z	Z	Z	122	7A	z	z	z
91	5B	[[[123	7B	{	{	{
92	5C	\	\	\	124	7C			
93	5D]]]	125	7D	}	}	}
94	5E	^	^	^ SPACE	126	7E	~	~	~
95	5F	-	-	-	127	7F	DEL	DELETE	^?

Using ProDOS

APPENDIX E

ProTERM's design takes full advantage of Apple's ProDOS Operating System. All ProDOS 8 storage devices are supported, along with the hierarchical directory structure. ProTERM additionally supports the navigation concept of using a "parent directory" as well as "slot and drive naming." These conventions are not normally a part of standard ProDOS, but make using it much easier. Additional information on ProDOS is available in the *Apple ProDOS User's Manual* published by Apple Computer.

The syntax of filenames and structure of directories is controlled by ProDOS not by ProTERM.

What is a formatted disk?

About ProDOS

ProDOS (an acronym made from the words *Pro + Disk Operation System*) is the name of the *operating system* developed by Apple Computer to support the Apple II family of computers. An operating system is a special program used to start the computer, and as ProDOS loads, it gives the computer instructions on how to operate and use other software such as ProTERM. Apple's ProDOS operating system provides a uniform interface between applications (ProTERM is an example of an application) and storage devices such as floppy, RAM and hard disks used with those applications. Whenever ProTERM requires any type of disk access, the instructions are actually given to ProDOS and it performs the appropriate action to read and/or write from a storage device. The syntax (method of filename and pathname arrangement) of communicating filenames and the structure of directories is controlled by ProDOS not by ProTERM.

Directory

When a volume, also referred to as a disk or device, is first formatted, it is given a name and a file directory. This directory is referred to as the volume or root directory and anything saved on that volume has an address in, and is accessed through that directory. An analogy to formatting a disk would be to think of a vacant piece of land where a contractor plans to build an apartment complex with a central mail box. He grades or levels the land, surveys the site, determines the exact size, establishes roads and walks, and makes arrangements for

Directory, subdirectory and folder are synonymous.

A PTD.filename file is a ProTERM Dial File.

each blocked off area to have an address. Think of the entire complex as a disk volume. The root directory could be thought of as the central mail boxes of the apartment complex. Think of each of the apartment buildings as a folder or directory (also called subdirectories) in this analogy. Each apartment is given a name, and several families (think of them as files) are in each apartment. The centrally located mailbox contains the address locations (directory) for each apartment building and each family. When folks move in, the information is changed on the central directory, just as when a file is saved to disk, and the root directory contains the name, file type and address of that file. When apartments become vacant (files are erased), they make space available and the root directory contains all of that information and record activity.

Directories as Folders

Directory is a name synonymously used as folder such as you are used to seeing in a file drawer system. Directories provide a way to keep related files together, just as a folder does in a file drawer. With other files in their respective folders, the files can all be together on one disk, but still be separated from non-related files. Any directory visible by cataloging a disk's "root directory" is referred to as *adirectory*. If Catalog is chosen from the File menu, a list of files is seen and this list is referred to as a file catalog. If the ProTERM disk /PT3 is cataloged, the files which make ProTERM run are shown. One of the files is a directory named PT3.DIAL, and it contains the phone numbers and macros for each of the remote host systems you call. While looking at the catalog of PT3, if the PT3.DIAL directory is highlighted the RETURN key pressed, this directory will be opened revealing a group of ProTERM Dial Files you have hopefully created by now. Each file has a "PTD." prefix. If you had created a host system entry for the InTrec BBS, it would appear as in the PT3.DIAL directory as "PTD.INTREC" (or whatever name you gave the InTrec file, would be appended to "PT3.").

Subdirectories

As noted above, a directory within a directory is sometimes referred to as a subdirectory, but this name is not as popular as it was in the past, and is not often used. A directory within a directory is more commonly referred to as just a directory. Placing directories within directories does not change them in any way, it just allows files to be grouped logically forming a hierarchy and finer division.

ProDOS Filenames

A ProDOS file can have a filename from one to fifteen characters. Short ProDOS filenames are recommended simply because they are easier to remember and less likely to have mistakes when typed. Four letter words make good ProDOS names. They are long enough to be meaningful and short enough to type quickly with fewer mistakes. ProDOS filenames must start with an alphabetical character. After the first character, alpha letters, numbers and periods are allowed, but other symbol characters such as SPACE, COMMA, HYPHEN or PLUS etc. are not permitted. Although the ProDOS operating system is not case sensitive and files are normally displayed in UPPER case, filenames can be referenced in either upper or lower case. If an invalid character is entered as part of the filename, ProTERM will truncate (end) the name at the first non-valid filename character.

Help on ProDOS pathnames.

A slash is used as a separator.

A directory name is often shown with a leading slash, such as /PT3.

ProDOS Name Examples:

/MY.DISK.12 Periods work well as spaces.
/PROTERM/DATA2 Showing subdirectory.

Examples of illegal ProDOS names:

/IMORE.DISK Name must start with alpha character.
/MY DISK Name cannot contain spaces.
/DATA,DISK'S: Only periods are allowed for punctuation or delineation.
/DATA.DISK.FOR.PROTERM Only 15 characters allowed.

ProDOS, like most other contemporary operating systems, supports a hierarchical (also referred to as a “tree” or “branching”) type of directory structure. The *root directory* is a list of the files seen when a disk is catalogued or listed. A root directory is the file directory put on the volume when it is formatted. A freshly formatted disk does not show any files of course because none exist in its new directory, but the empty catalog can be viewed. A root directory is the base or starting point of every disk. As files and directories are added, they are all listed in the root directory. When a new directory (folder) is created in the root directory, files can also be placed in this “second” level. A new directory can be created within this new directory and it would be considered a third level and so on.

The root directory for a volume can be found by cataloging the different storage devices available to your computer (online) which would include any floppy disk drive, RAM-disk, hard drive, etc.). Select the volume and show the files contained on the volume.

To summarize, each storage device can contain both files and directories (subdirectories) which in turn contain other files and other directories. Because ProDOS is hierarchical (tree or storage cabinet like), a storage device can contain multiple identically named files as long as each of these files are in different directories. The convention of organizing the directories and files, starts at the root (main) directory, files and directory names are written in a “string” referred to as a pathname.

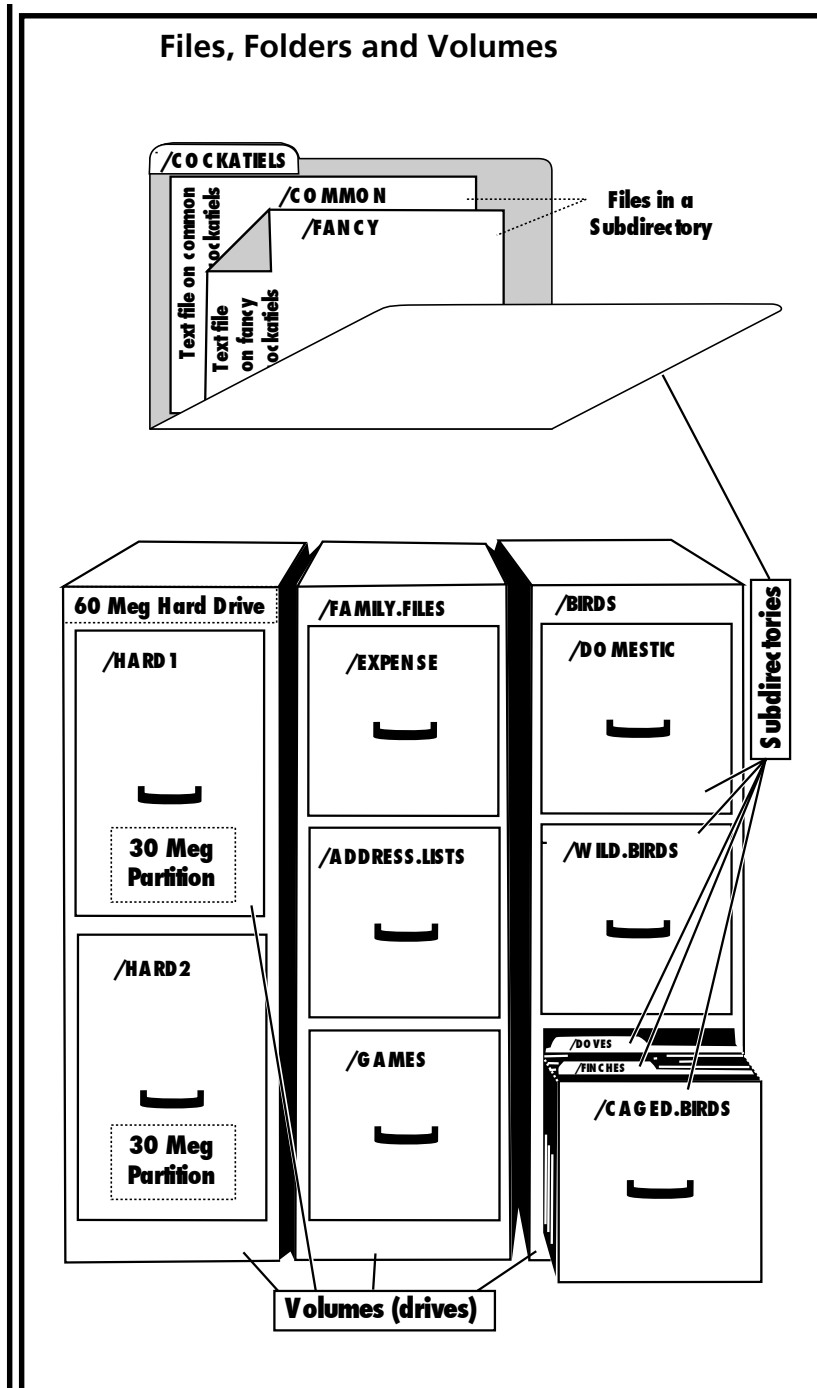
A full pathname would indicate the name and location of a file starting from the “root” of the file system. It begins with a slash followed by a volume name, the name of the file or directories leading to the file. The forward slash (/) is used as a delimiter to separate the volume, directory and filenames. For example:

/MY.VOLUME/LETTERS/PERS.LETTERS/MOMS.LETTER

... would reference a file called /MOMS.LETTER which is in /PERS.LETTERS which is itself in /LETTERS which is located on a storage volume (device or disk) called /MY.VOLUME. (The slash marks (/) are element separators (dividers) and are referred to as delineators or delimiters. Only the /SLASH is used and never the \BACKSLASH. When a slash is included as a filename, such as /MY.VOLUME that file is usually assumed to be a directory.

Understanding Pathnames by Example

A pathname can be thought of in terms of an electronic file cabinet or a road map which provides directions to ProDOS to locate a file. Just as a map provides a list of street names to take you from one place to another, a pathname provides navigational information to find files within your computer system. A pathname always begins with the name of the storage media device (a floppy disk, RAM-disk or hard drive) because ProDOS knows where to find these devices. A pathname can only include one volume at a time, it can never address two different device or drives. In addition, every volume online (available to be cataloged), must



A pathname can be compared to a road-map.

Saving a file to a directory is like putting it in a folder.

The similarities of a file drawer system is a good comparison a hierarchal system such as the ProDOS operating system.

When a disk is formatted, a directory is also created to store and record filenames.

have a unique name, because ProDOS cannot deal with duplicate volume names or duplicate filenames in the same directory.

ProDOS cannot locate duplicate volumes. Beyond the volume name, the individual components of the pathname act much like street names so ProDOS can navigate the directories and find your file. Consider the pathname:

```
/HOME/MY.ROAD/I.15.FWY/BASE.STREET/SIDE.AVE/DESTINATION
```

Following this analogy of a map, to get from one place to another, certain streets are followed. If an outline were written on how to follow this "path," each new direction would probably be written on a new line for clarity. ProDOS pathnames must be on the same line and each new direction is separated using a forward slash for a delimiter. The number of characters in a complete pathname cannot exceed 64.

In the context of a map, this can be read as follows: start at *HOME*, take *MY.ROAD* to *I.15FWY*, take *I.15FWY* to *BASE.STREET* and take *BASE.STREET* to *SIDE.AVE* where *DESTINATION* is the location (where you are trying to go). In terms of ProDOS this reads, start at device *HOME*, find directory *MY.ROAD*, within *MY.ROAD* find directory *I.15FWY*, within *I.15FWY* find directory *BASE.STREET*, within *BASE.STREET* find directory *SIDE.AVE* and within *SIDE.AVE* locate the file named *DESTINATION* (the file you want).

Different points of view give better perspective of a model. The following is a different way to look at the same problem:

Computer storage devices can also be thought of as electronic file cabinets where the individual drawers represent entries in the main directory and folders within the drawers are directories (directories inside of directories). Just like a file cabinet, it is also possible and desirable to put folders inside of folders. ProDOS has a limitation that must be watched, particularly on large disks. The main ProDOS storage device (root) directory, has a maximum limitation of 51 entries files or directories. However, other than the limitation of disk size and within practical reason, there is no limit imposed on the number of files or sub-directories which can be stored in a sub-directory (folder). Don't confuse file size versus disk storage size and number of directories allowed in a root directory. One large file could fill a disk's storage capacity but the root directory only has space for the quantity of 51 entries (files or directories), without regard of their size.

Using the analogy shown below, the catalog of a root directory is like a listing of the file drawers on the in a file cabinet. The cabinet is a volume and each drawer would be considered directory in that volume. Looking inside of a drawer could reveal files and other folders (sub-directories). As noted above, once inside a directory or sub-directory, the problem of *how many* files can be stored no longer exists. Hundreds of files can be put into a directory (the drawer in our analogy) or subdirectories (folders nested inside of another).

		FILE CABINET OR DISK/VOL NAME
/BIRDS		
/DOMESTIC.BIRDS		DIRECTORY (DRAWER1)
/CHICKENS	DIRECTORY	
/CHIC.VARIETIES		DIRECTORY
/WILD.BIRDS		DIRECTORY (DRAWER2)
/MOCKINGBIRDS		FILE
/DOVES		DIRECTORY/FOLDER
/WHITE.WING		FILE
/INCA		FILE
/WRENS		DIRECTORY/FOLDER
/CACTUS		FILE
/CAGED.BIRDS		DIRECTORY (DRAWER3)
/FINCHES		FILE
/DOVES		FILE
/COCKATIELS	DIRECTORY/FOLDER	
/COMMON		FILE
/FANCY		FILE

An Example ProDOS Volume

The above example shows the directory structure of a ProDOS disk and represents the contents of a single electronic file cabinet. To find the file:

/BIRDS/CAGED.BIRDS/COCKATIELS/FANCY”
 (Volume) (Directory) (Directory) (File)

ProDOS would locate the storage device (file cabinet) BIRDS, locate the directory (drawer) CAGED.BIRDS, locate the sub-directory (folder) COCKATIELS and locate the file FANCY.

The Current Directory

ProTERM allows the use of partial pathnames as well as full pathnames as noted earlier in this chapter.

When using a command on a file requiring action (opening sending, etc.), ProTERM always references the most recently used directory, the “current directory” first. This is true unless *Springback* is set to on in the Preferences window, and then the reference always springs back to the directory as set up in the Preference window. For details on these features, see the Index: Preference and or Springback.

The current directory is always the starting reference when moving up or down from the current directory.

When referencing files within the current directory, the current directory is already a part of the pathname. That is, if the filename or part of the filename is typed without any leading information such as a slash or other part of a pathname, this references the file within the current directory. To move up and out of the directory, select ..<Parent> and ProTERM will move upwards to the next highest directory level. To move down from the current directory into, or opening a directory within the current selected directory, select a file showing the file type “DIR” and press the RETURN key. When a file or a directory is selected, the default choice becomes “<Select Dir>.” That is, pressing the RETURN key chooses and opens (selects) the “current file or directory.”

**Selecting
“<Parent>”
always searches
upwards.**

**Selecting the file
type “DIR” always
searches down-
wards (opening the
chosen the direc-
tory).**

**.. <Parent> to move up one level
Select to move down one level.**

Move through directories fast and easy.

Parent Directory is any directory directly above a subordinate directory.

When moving down in a directory (adding the next lower subdirectory to the pathname), the slash is not used. Typing the name of the directory without a leading slash "attaches" that directory to the pathname. A name with a leading slash causes the file selection process to look up and out of the current directory for another directory with the *name* just typed. A filename without a leading slash causes ProTERM to look in the current directory. In other words, typing a name without a slash, is either requesting access to a file, or a directory within the current directory. The easy alternative is to choose the file or directory from the file selection list.

<..Parent Directory>

The current directory of files is the list of files and directories currently inside of the current *parent directory*. ProTERM shows the current files in the current "<..Parent> Dir." and Choosing <..Parent> Dir causes ProTERM to search upward for a new parent directory. Choosing parent directory again will cause the search to go higher and higher until the final level or root directory of the volume is reached, and then ProTERM will go to the final level, and poll (look for) all available devices (disks or volumes) online (available to your computer). The list will be displayed, and at that point you can choose the volume you want from the list. You can then choose "Select" to open the volume. If you choose to change the disk in the drive and want to poll the drives again, choose <..Parent> or just type a single slash and press the RETURN key, this is the same as choosing <..Parent> until all root directories were cataloged.

Moving Through Pathnames Fast and Easy

ProTERM introduces three naming concepts not normally found in ProDOS:

1. Reference a parent directory by entering two periods in a row (..) in the file selection window. Entering the two periods and pressing the RETURN key instructs ProTERM to seek the *Parent Directory*. Choosing "Parent" always searches to the next higher level. This procedure is common in other operating systems. As an example of how this works, press COMMAND-F, press the "C" key to choose *Catalog* and press the RETURN key. The default choice is "<Select Dir>" and pressing the RETURN key would catalog the current directory. However, if two periods were typed and the RETURN key pressed, ProTERM searches upward to the next higher directory. Continuing this would cause ProTERM to search higher until the highest level of the volume is reached and then all available drives would be polled. This can be carried further, if you were deeper in a directory and wanted to move up two levels of directories, two periods a forward slash and two more periods (../..) would cause ProTERM to search two levels higher. For each two periods and slash entered, the upward search level is increased by one level.
2. Move to the highest level and poll all drives online by entering a lone forward slash "/" in the Text Selection window and press the RETURN key.
3. Allow a storage device to be referenced by its Slot/Drive location ("/S,D" where S is the *Slot* number and D is the *Drive* number) will reference the device connected at that location. To access *slot six, drive one*, "/6,1" is entered in the filename text box. That drive will be accessed and the volume in that drive will be listed by name. Combining the functions of ProDOS and ProTERM provides many different ways to reference a file. The following is an example file system.

Entering “/” as a filename shows the names of all online drives.

Either of the following pathnames could be used (are legal) to access a volume named / BIRDS used in slot seven.

```
/BIRDS/CAGED.BIRDS/FINCHES
/7,1/CAGED.BIRDS/FINCHES
```

This example shows a directory with three subdirectories:

```
/BIRDS/CAGED.BIRDS
    /DOMESTIC.BIRDS/CHICKENS
    /WILD.BIRDS/MOCKINGBIRDS
```

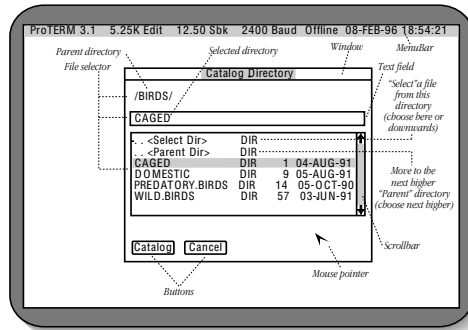
Assume we are in the subdirectory /CAGED.BIRDS and want to move to the subdirectory /MOCKINGBIRDS. Entering the notation of two periods would raise us to the level of the /BIRDS parent directory and then entering a slash and the pathname, it would look like this:

```
../WILD.BIRDS/MOCKINGBIRDS
```

... and would take us up one and down two levels to /MOCKINGBIRDS.

Moving up, down and laterally within directories.

This figure shows the file selection method.



Example File Selection “Catalog” Window

ProTERM often makes reference to a “Parent Dir” (Dir is short for directory). If the current directory is:

```
/MY.VOLUME/DIR1/DIR2
```

... then the parent directory would be just above it:

```
/MY.VOLUME/DIR1
```

If the current volume is:

```
/MY.VOLUME
```

... then the parent directory would be:

```
/
```

NOTE: Entering a slash alone causes all the drives on the system to be polled (looked at) and all storage devices connected to the system would be listed by volume name for selection.

File Selection

Whenever a command requires a filename to be selected, ProTERM displays the File Selection Window. This window consists of a text entry field, a current pathname indicator, a list of files in the current directory and two or more buttons. In some cases, the window also includes items to specify options such as a file type. The items in the window behave exactly

Navigating the ProTERM system.

Using the File Selection windows.

Typing part of a filename will position you at the location of the file.

Naming and saving files.

File selection methods.

as any other dialog items except for the relationship between the filename input field and the filename list. The difference is explained below.

Selecting a File with the Keyboard

There are two methods for selecting a file from the keyboard. The first uses the ARROWS and RETURN to “navigate” through the file system and locate the desired file. Select <Parent Dir> to search upward in the hierarchy or select *aDIR* (directory) to search (down into) that directory. Using this method, it is possible to navigate to any volume or directory throughout your system.

After selecting the directory, choose the desired filename and press the RETURN key to cause the desired action on the file. If you are creating a new file, after the directory has been chosen, just start typing the new filename and you will see the filename appear in the Text Input Field. When finished typing, press the RETURN key to save the new file. If you prefer to save the file as an AppleWorks file, when the *Save Filetype as Type:* is selected, use the ARROW keys to toggle the value in the window from TXT to AWP. The file will be saved as an AppleWorks word processor file and can still be opened by the ProTERM Editor as a TXT file if desired. (To make a change like this permanent, see the Index: Preferences.)

The second method for selecting files involves typing the complete or partial pathname, or just the filename, if you are in the directory where the file is stored. Try this just to see how easy it is. Choose Open from File menu and just start typing in a filename that you know exists on the currently active disk. As soon as the first character of the name is detected, ProTERM highlights the *Input Field* and continues to accept input. When a pathname is entered, ProTERM processes the pathname until it finds the path it can follow to locate the file. If the pathname also contains a filename which already exists, or even the first letters of a filename, that file or a file with a similar name is selected. To return from the input field to the file list, press TAB. To cancel press ESCAPE. To select a file in the current directory:

- Use the ARROW keys to highlight the filename and press the RETURN key.
- Type all or part of a filename and press the RETURN key.
- Type the first letter of the filename followed by pressing the RETURN key. This will position the selector near the desired filename. You can then use the ARROWS to select the actual name.
- COMMAND-1...9 will position the selector within the directory. 1 positions to the start of the directory, 9 to the end, and 2 through 8 place you at points respectively between the top and bottom.

Selecting a File Using the Mouse

To select a file with the mouse pointer, select the directory containing the file. If the directory containing the file is not open, use the Scrollbar to scroll the files, double click on the directory name to open it, then select the file itself. To change directories, double-click on the “Parent Dir” entry to move to the parent directory or on a directory entry to move into that directory.

NOTE: The list of files displayed by ProTERM is normally determined by the filetype of the files. For example, in the view file command, only text files and AppleWorks files are displayed, because other files are generally not applicable in this area of ProTERM. However,

Double-click on the filename or directory to open it.

ProTERM can view any file (it will treat it as text file regardless of the type). To enable ProTERM to display ALL of the files in the current directory, press CONTROL-Z while the file list is selected.

Batch Selection

The batch selection window looks identical to the file selection window but allows multiple files to be selected instead of just one. The technique for navigating through directories is the same as for File Selection. Any file or directory within the current list can be “tagged” as part of the batch. Files which are tagged will have a checkmark[] displayed next to them. ProTERM will not allow the “Parent Dir” entry to be tagged, but if any other directory is tagged, ProTERM may perform the commanded action upon the directory or the files contained within. This will vary from command to command. The following can be used to tag files as part of a batch:

SPACEBAR	Toggles the tag of the highlighted file plus moves the cursor in last used direction.
OPTION-ARROW	Toggles the tag of the highlighted file plus moves the cursor in the arrow direction.
OPTION-CLICK	Toggles the tag of the file being clicked.
OPTION-DRAG	Sets the tags of the files from the initial press of the mouse button through dragging, selecting and release.
CONTROL-A	Tags all the files.
CONTROL-N	Tags none of the files (“untags” all).

Path Selection

Some commands require that only a directory is specified, not an actual filename. In such a case, the Path Selection Window will be displayed. While similar in design to the File and Batch Selection windows, the Path Selection Window includes a <Select Dir> entry in the file list. The techniques for navigating through directories are the same as for File Selection (which see). Once the desired directory has been selected, choose the <Select Dir> entry.

Duplicate Files

If ProTERM attempts to create a new file, and a file of the same name already exists, the Duplicate File name window is displayed. From this window, ProTERM allows the existing file to be deleted or the command to be canceled. Depending on the command which is executing, an option to append the new data to the old may also be displayed. If selected, ProTERM will preserve the original file appending the new information to the end of the existing information.

File Locked

If ProTERM tries to write to a locked file, the File Locked window is displayed. From this window, you can cancel the command or unlock the file which will allow the command to continue. For more information on locking and unlocking files, see the Index: *Set File Info*.

Available Services

APPENDIX F

Many services are available with easy access and each will provide varieties of different types of information. From academic to reference, entertainment to business, the amount of information available is overwhelming. You only need to choose which service to call. This chapter suggests several popular commercial services as well as some probable free services you may find in your own community.

The InTrec BBS

There are two major reasons one might choose to call the InTrec BBS:

- 1 If you have never called an online service before, we have enclosed step by step instructions for you to call and sign on to the BBS, just so you can go through the steps and understand the process. (See the enclosed BRIGHT YELLOW CHEAT SHEET)
- 2 The InTrec BBS is the official support site for InTrec Software products. New information about InTrec products is always released first to the InTrec BBS and the InTrec Web site (which see below).

Even though the BBS may be a long distance call, you may find it beneficial to call periodically and use the Global QuickScan feature to quickly retrieve new information. The InTrec BBS also provides online technical support for registered ProTERM owners. Special message boards and software libraries allow discussion and software transfers.

While there is no charge to access the InTrec BBS, the call is to a Phoenix, Arizona phone number and normal long distance charges apply to callers outside of the Phoenix, Arizona area. Calling during the low-cost evening and weekend hours is popular with most long distance callers.

InTrec Bulletin Board Service 602/992-9789

Speeds to 14,400 bps (v.32bis support).

24 hours a day — 7 days a week.

Voice Tech Support: 602/992-1345 Mon-Fri 8 AM-5PM MST.

Internet: proterm@intrec.com

Technical assistance is limited to registered ProTERM licensees.

Local Bulletin Board Services

The most difficult part of making your first call is finding the number for the first local bulletin board service (BBS). However, many services include references or even complete lists of other bulletin board services in the same area, so once you find one, it will generally lead you to others.

Look through your local newspaper, computer magazines, and the local small pulp magazines referred to as “shoppers” for local bulletin board service references. Also, check your phone book yellow pages under “Computer-Bulletin Boards” for a listing of local services. If you find a local BBS number, but the subject matter of the service is not of interest, explore that service for references to other services. Since telecommunications is a general interest, you will experience a certain “domino effect.” Once you find one, you find others, which leads to still others.

Local Apple user groups are an excellent information source, and often have their own local bulletin board services. To locate the Apple computer user group nearest you, dial 800/538-9696. You will be asked for your Zip code and the operator will provide you with information on user groups close to your area.

Most Internet connections require VT-100 emulation.

Investigate Telecom Academia

Many local libraries now have their card catalogs and some research facilities in a computer database, and many have these databases available online as a local modem call. In addition, colleges, universities and other academic institutions have educational services and even encyclopedias online and available to the community. Call these institutions (on your voice phone) and ask about telecom access. Ask them for the phone number, data format, speed (bps) and whether they require the use of an emulation such as VT-100 or ANSI to access their service. With that information, you can set up a ProTERM connect file for the service, and you are ready to connect to the library, search card catalogs for books and subjects of interest and even edit and print a “shopping” list. You can often even make arrangements with your library to pick up the books, have them sent to a local branch or even delivered, depending on the services they offer.

Also check local availability of a Freenet provider in your area. These are free Internet accounts often available to local residents through local universities.

Internet

The most popular and fastest growing areas of communications is the Internet. The Internet is made up of thousands of computers, located throughout the world, all connected to one another. That is the power of the Internet; one computer on the Internet can communicate with other computer also on the Internet. With ProTERM and a modem, your own computer can be a part of that system.

Stay in touch!

IMPORTANT: Send us your email address. Email a note to proterm@intrec.com with a note saying "Here's my email address!" We'll put you on our newsletter email list.

An Internet service provider (ISP) is an organization usually local in large metro areas. They are usually commercial, but some are free. The ISP has a computer connected to the Internet, and by accessing their computer via modem, you can in turn access Internet services. Most ISPs charge a monthly fee which includes a number of hours of access each month. If you can find one in your local area, you can avoid long distance charges and the cost is that of the provider.

To connect to the Internet using an Apple II computer, it is necessary to have access to a "dial-up shell account." The popular PPP accounts cannot be used with Apple II computers, so you will need to be able dial directly to the service. Tell your ISP you want a dial-up shell account so that you can use the Pine mail system and the Lynx Web browser. Those are the important facts you'll need when you sign up for an Internet account using an Apple II computer. Also see the Index: VT-100 emulation. This emulation is needed for most parts of the Internet.

Some Internet resources include:

- Email (electronic mail) on the Internet is similar to Email on a BBS, however, it is much more powerful on the Internet due to its international size. There are millions of users on the Internet located worldwide, and you can send mail to any one of them if you know their Internet (email) address.
- NetNews is like the message area on a BBS except that messages can be read and posted from any computer on the Internet. Like Email, NetNews is special because of the size of the Internet. There are hundreds of distinct "news groups" each focused on a particular topic.
- FTP is like the file transfer area on a BBS. FTP allows files (such as public domain software) to be transferred from one computer on the Internet to another. If using an Internet service provider, FTP is used to transfer files from the Internet to the service provider, and then a protocol transfer (such as Zmodem) is used to send the files from the service provider to your computer. Normally, you will use the Internet Lynx system to send the file via FTP to your home directory, and then you can download the file from your home directory to your computer.
- Cyberspace is a term that can be thought of as the place where your email is as its being sent. Think of a phone conversation taking place between callers, wires, satellites, computers and switching stations. It is not where the people are, but where the actual communications information is when it is enroute from one point to another. When people converse through cyberspace, each person is in a different physical location, but they are "all together" in cyberspace.

Unfortunately, understanding how to utilize the Internet is beyond the scope of this manual, but there are hundreds of books on and about Internet, and many more being published. In addition, user groups are an excellent resource for finding out about this fast growing resource. To locate a user group in your area, see the Index: User groups.

The important parts of the Internet to an Apple II user are the Lynx, web browser, Pine mail and Usenet (like an Internet level BBS with literally thousands of interest forums).

The Major Commercial Services

Large commercial services available for national and international calls include CompuServe Information Service (CIS), Delphi, Genie, Dow Jones News/Retrieval. Locally, you can call services such as libraries, city government and local bulletin board services. At this time, Delphi is the most active text based system that can be accessed using ProTERM A2.

NOTE: The following is provided as a service to ProTERM owners and does not constitute an endorsement or recommendation to use these firms or services. Information is based upon that provided to us by ProTERM users currently using these services. While every attempt has been made to make this information as correct as possible, this information may become incorrect over time as the services change their features.

These services are not free, but Delphi has several time to cost ratio packages, talk to their sales people to find the one that satisfies your needs. Some services also provide a new user practice area where there is a reduced or no charge "safety net" area.

The online commercial services generally stop the charges during the time files are being uploaded (sent to them). This encourages callers to share non-copyrighted programs and text information with other callers. The services allow this "free time" because when the files are subsequently downloaded by other callers, they are charged for the time.

When signing up for one of these services, be sure to read and understand the agreements. By agreeing, you are signing a contract that usually includes a monthly charge and perhaps even an additional hourly charge.

The large commercial services can usually be accessed through local phone numbers in most metropolitan areas. In such cases, the phone call is free (though there are charges for accessing the service). If there is not a local phone number for the service, then you must pay long distance rates as well as the charges for accessing the service. Some services have an 800 number which is used on the first call to determine a local access phone number. Some also have special 800 numbers at an extra charge for rural customers who do not have direct access to the service nodes located in the metropolitan area.

CompuServe

Note: CompuServe has eliminated all text access except for one very small Apple II forum.

To sign up for CompuServe:

1. Choose *Create a System* from the ProTERM File menu.
 2. Enter a system name of *CompuServe*.
 3. Enter a system number of *1-800-346-3247*.
 4. Set the Baud Rate to *2400* or higher.
 5. Set the Connect Time to *45*.
 6. Enter a "Save Name As:" *COMPUSERVE* and select the Save button.
 7. Select the *Dial* button to call CompuServe.
-

Important: Do not miss step #8 or #14

(depending whether you are just signing on for the first time, or if you already have a CIS account and just signing on with ProTERM with an existing CIS account.

8. After connecting with CompuServe, press *CONTROL-C* (press and hold the CONTROL key then press the C key and release both). A prompt should appear on the screen.
9. At the "*User ID*" prompt type "*PHONES*" and press the RETURN key.
10. CompuServe will ask you to enter you local area code and phone number. After doing

this, CompuServe will respond with a local access phone number for your area.

11. Type *BYE* to disconnect from CompuServe.
12. After the disconnect, choose CompuServe from the ProTERM Dial menu.
13. From the ProTERM Main menu, select Dial, and select your new CompuServe entry from the Dial menu. With the CompuServe Edit System Parms window open, press the TAB key until the System Number field is selected. Press the DELETE key to delete the 800 number dialed earlier, and enter the local access number provided by CompuServe in step 10.
14. Have your credit card handy for reference, and press the RETURN key to dial. After making the connection with CompuServe, and when the screen clears, press CONTROL-C to allow the CIS host to detect your carrier and you will get the "User ID:" prompt.
15. At the *User ID:* prompt CompuServe will ask for your user number and password.
16. Enter 177000,2000 — press RETURN.
17. Enter EXPLORE/WORLD and — RETURN.
18. When asked for the Agreement number, enter: LC1297 — press RETURN.
19. When asked for Serial Number, enter: 44877211— press RETURN.

**See the Index:
AutoLearn macros
to learn how to
create an
AutoLogon Macro.**

As you proceed you will be asked for name, address and billing information. You will also be given an opportunity to read the CompuServe service agreements.

For more information contact:

CompuServe Customer Service

800/848-8990 NOTE: If your interest is for Apple II use, files and overall help and assistance, Delphi offers the largest and strongest Apple II support area. Delphi also offers Internet connections and service for Apple II users.

Delphi

Note: At this time, Delphi offers the most value for the text based software such as ProTERM.

**How to Sign up for
Delphi Online
Service**

Delphi can give you direct connect to the Internet where you can browse the Web with your Apple II computer. Delphi also gives you the largest Apple II user community online anywhere. Large discussion forums and software libraries. You not only have access to the files, but you're with a friendly group where you can discuss your needs and request assistance. This is a warm, enthusiastic group of helpful folks, and they're waiting for you to ask for assistance - They are anxious to assist, and actually thrive on questions asked by new users, so consider their needs, and ask LOTS of questions. :-)

**The Command key,
used to be called
"Open-Apple."**

Steps 1 thru 12 are automatically done for you if you do this:

1. Press D on the keyboard
2. Choose Delphi from the Dial menu
3. Press Return to dial.

Specific Delphi signup tips for ProTERM users:

1. Press the COMMAND key and then press the D key to open the Dial menu.
2. Choose Create System from the Dial menu — RETURN.
3. Enter a system name Delphi — RETURN.
4. Enter a system number of 1-800-695-4002.
- 5- Set the Baud Rate to 2400 or higher to match your modem.
- 6- Set the Connect Time to 45.
- 7- Enter a Save System Name: of DELPHI, press RETURN to select the Save button, and

- save this information. A larger window will open.
- 8. Select the Dial button to dial Delphi.
- 9. When you connect with Delphi, press the RETURN key a couple of times.
- 10. You will see:

```
+: JOINDELPHI
Please enter your password: _
```

- 11. Type the introductory Password:INTRECSOFT and press RETURN.
- 12. Follow the online signup instructions to establish your account.

NOTE: If at any time you want to quit the signup process for Delphi, enter /exit and press RETURN. The process will stop with no signup having taken place.

You will be asked personal information to sign up your new Delphi account, and you will need a credit card to complete the process.

As you go through the Delphi signup process, you will be given a phone number to dial Delphi from your area. You will be asked to enter a name you will want to be known by as you use Delphi. This name will also become your email address on Delphi. It can be anything you like, from 3 to 12 letters and numbers, with no spaces or other punctuation. Once chosen, it can NEVER BE ALTERED OR CHANGED, so choose carefully!

You will also be asked to choose a password, have one ready. Your password can be changed anytime you like.

When you are given your local Delphi phone number and your logon and password information, you will want to enter that information into the Delphi service dialer:

- 1. Press COMMAND+D and choose Delphi - Press RETURN.
- 2. Press TAB until the cursor is in the Phone Number field
- 3. Press DELETE until the entire 800 phone number is deleted
- 4. Type the new phone number in the phone number field.
- 5. Press COMMAND+M which should select the Macros button - Press RETURN
- 6. You should see:
Macro to Execute after Logon: 1
- 7. Press the right facing ARROW key one time and that will change the "1" to "Learn" to enable ProTERM to watch you log on to Delphi on your next call.
- 8. Press COMMAND+S and press RETURN to save this information.
- 9. You should be at the "System Parms" window for Delphi.

Logging onto Delphi the first time with your own account

If you followed steps 1-9 above, you are ready to call and teach ProTERM how to log you on automatically from now on.

- 1. Press RETURN to dial.
- 2. When the screen opens, follow the steps you learned while signing onto Delphi. Enter your keystrokes carefully and slow because ProTERM is watching everything you do, even when you make a mistake, ProTERM records that as part of the process. If you make a mistake, it is not a problem, because you can always go back and set the ProTERM macro to Learn and do it again until you get it right.
- 3. When you get to the Delphi main menu, enter:
go com a2 for <= (This translates as: GO COMPUTING, APPLE II, FORUM.)

- ...and press the Return key. This places you in the Delphi Apple II user forum.
4. Press COMMAND+N to tell ProTERM to record the macro script it just learned.

Now you are ready to explore Delphi. Press the ? key for help.

Note: ProTERM Emulation for Delphi should be set to DEC VT-100 emulation.

ProTERM Mac & A2 Calling Delphi Using SprintNet

1. Enter the SprintNet number in the ProTERM Phone Number field.
2. Press the RETURN key to dial.
3. When you connect, press the RETURN key twice to notify SprintNet you are there.
4. Hold the SHIFT key down, and press the 2 key and then press the D key. This prints @D on the screen. Press the RETURN key.
4. When you see "TERMINAL=" press the RETURN key.
5. When you see "@" type C DELPHI and press the RETURN key.
6. At "User name:" enter your membername (given during signup), and press the RETURN key.
7. When you see "Password:" enter your password (given during signup) and press the RETURN key.

Welcome to the Delphi Main menu. Press ? for help menus.
Leave all ProTERM default settings as you found them, and Delphi will work fine. The standard default settings are: 8N1 (8 Data Bits, No Parity 1 Stop Bit), Duplex Full, Echo No, RTS/CIS enabled.

See the ProTERM user manual Index: AutoLearn macros to learn how to create an AutoLogon Macro.

For more information and assistance, about Delphi Services, contact:
Delphi Member Services
800/695-4005

Dialog

Dialog is a business oriented online system with high end data bases related to any business need. Dialog may be a little expensive for the average user, but the wealth of information is certainly worth the cost of the service when the information is needed.

Dialog Information Services, Inc., 3460 Hillview Ave, Palo Alto, CA 94304, 800/334-2564

Genie

Note: The strong Apple user community that were once Genie A2, are now on Delphi A2

1. Choose *Create a System* from the File menu.
2. Enter a system name of *Genie*.
3. Press the TAB key and enter a system number of *1-800-638-8369* (or *1-800-387-8330* in Canada).
4. Set the Baud Rate to *2400* or *9600*.
5. Set the Connect Time to *45*.
6. Enter a Save System As: name of *GENIE* and select the Save button.
7. Set the Duplex to *Half*.

8. Select the Dial button to dial *Genie*.
9. When you connect with *Genie*, enter *HHH* (three H characters) but do not press the RETURN key.
10. When the *U#=* prompt is displayed, enter *XTX99458,PROTERM* and press RETURN.
11. Have a credit card ready. In the U.S., you may also use your checking account number.
12. After the requested information is entered, *Genie* will provide you with your own personal user identification information; password and local access phone number for use in all subsequent calls.
13. After disconnecting from this first *Genie* call, choose *Genie* from the ProTERM Dial menu. Press TAB and change the System Number from the 1-800 number to the local access number provided during the *Genie* signup account and select the *Save* button. See the Index: AutoLearn macros to learn how to create an AutoLogon Macro for use with *Genie*.

For more information contact:

Genie Customer Service
800/638-9636
GE Information Services
PO Box 6403
Rockville, MD 20850-1785

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