

MYTERM

User's Guide

For the CTS Modem and the Osborne 1
or the Osborne Executive



MYCROFT
LABS INC

MYTERM

Version 1.0

A Data Communications System for CP/M

MYCROFT
LABS_{INC}

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FCC Notice

This modem generates and uses radio frequency energy. If the modem is not installed and used properly, the modem can cause interference with radio and television (TV) reception. The modem has been type tested and found to comply with the limits for a class B computing device as specified in FCC Rules, Part 15, Subpart J, which is designed to provide reasonable protection against reception interference in a residential installation. If the modem causes interference to radio or TV reception (this can be determined by turning the set on and off), correction may be effected by trying one of the following:

1. Reorient the receiving antenna of the radio or TV
2. Relocate your computer with respect to the radio or TV
3. Move your computer away from the radio or TV
4. Plug your computer into a different outlet on another branch circuit so that the computer and radio or TV are on separate electrical circuits.

If necessary, the user may consult an experienced radio/TV technician for additional suggestions. You may find the following booklet prepared by the FCC helpful:

"How to Identify and Resolve Radio-TV Interference Problems"

This booklet is available from the U. S. Government Printing Office, Washington, D.C. 20402, Stock No. 004-000-00345-4.

User Notice

The 103JCTSOSB1 Modem is registered with the FCC for direct connection to a telephone line. Before installing the modem, the modem user must provide the following information to the local telephone company:

1. Phone number to which the modem is connected
2. FCC registration number: CEF8E2-68583-DM-R
3. Ringer equivalence: .8B
4. Connecting jack used: RJ11C or equivalent.

Items 2 and 3 above and the modem's serial number are also on the label attached to the modem.

You should notify the telephone company of each telephone number and extension on which the modem will be used. The modem should not be connected to a party line or to a pay telephone. You should also notify the telephone company, if you permanently disconnect the modem from a telephone line.

If problems occur with the modem or telephone line, you should disconnect the modem from the telephone line immediately.

User adjustments to the modem void the warranty and may violate the federal license for the use of the modem.

The telephone company may change its equipment and operations in ways that affect the proper function of the modem. If this happens, the telephone company should give you adequate written notice so uninterrupted service can be maintained.

MYTERM User's Guide

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General Information

This manual has four basic components:

- 1 - An introduction with installation notes,
- 2 - a section for the first-time data communications user,
- 3 - sections on each of the eight principal menus,
- 4 - descriptions of advanced usage.

The beginning user should read this Section and Section 2 - "Introduction for Beginners" before proceeding to the menu descriptions. The experienced user should read this Section and skip to Section 3 - "Main Menu". The experienced user may also wish to review Section 12 - "Examples of Usage".

MYTERM is a flexible menu-driven data communications and file transfer package for computers running the CP/M Operating System (tm Digital Research). It is especially simple to learn and use, even by non-technical personnel, and has a number of "user protection" features. It has three principal applications:

- 1 - Accessing on-line timesharing systems, such as might be found at many corporate and university computing centers, or on-line data base utilities. Virtually any system that supports ASCII terminals can be accessed with full text file transfer capability. Some of the more popular compatible systems are:

DEC	All models, e.g., PDP-11, Vax-11
CDC	6000 series, Cyber 170 series, etc.
DG	Nova, Eclipse, etc.
PRIME	All models
HONEYWELL	Level 62, Level 6, etc.
HARRIS	All models
IBM	With TTY communications

Most on-line data base utilities are compatible with MYTERM, including virtually every service available through TELENET and/or TYMNET such as The Source, CompuServe, Dow Jones, etc.

- 2 - Accessing on-line remote CP/M systems (RCPM), Computerized Bulletin Board Systems (CBBS - (c) Ward Christensen), and many other such message and/or public domain software systems. MYTERM supports the standard "XMODEM" protocol, as used on most RCPM systems, for error-free transfer of any CP/M files, including raw object code (.COM files).
- 3 - File exchange with other CP/M microcomputer systems running MITE or XMODEM through a modem or through a direct connection.

MYTERM also supports a large number of manual-dial modems. The specification of the modem to be used with MYTERM has been pre-selected.

All communications parameters (including the phone number and any macro strings) specific to a given site can be easily selected via the menu options, then saved on a "parameter file" for future use. Once this is done, all parameters can be set in a single operation by specifying this file as an argument on the command line (or via an option on the Main Menu). All options can be set with a minimum of effort, many with a single keystroke.

MYTERM has numerous "user protection" features to help prevent accidental loss of captured data or disk files. Any time a file is created (e.g., when capturing a file or saving parameters), the directory is checked to see if there is already a file with that name. If so, you are given the choice of overwriting it, or aborting the current operation so that a different file name can be specified. When exiting to CP/M, if a capture operation is in progress, the data will be automatically flushed to disk. Also, if the carrier is still present at that time, you are informed of this fact and given the option of hanging up.

System Requirements

MYTERM runs on Digital Research's CP/M versions 1.4, 2.2 or 3.0. The system must have a minimum of 56K of memory. The system must have at least one floppy disk unit.

Installation Notes

The 103JCTSOSB1 Package

The 103JCTSOSB1 Package provides communications support for either the Osborne 1 or the Osborne Executive microcomputer. The package includes the following items:

1. A CTS 103JCTSOSB1 modem for your Osborne microcomputer which fits in the diskette pocket below Drive A of your computer.
2. A MYTERM Communications Program diskette and manual for software control of the 103JCTSOSB1 modem.
3. And either
 - a flat ribbon cable for connecting the modem to your Osborne 1 microcomputer,
 - or
 - a conversion cable for connecting the modem to your Osborne Executive microcomputer.

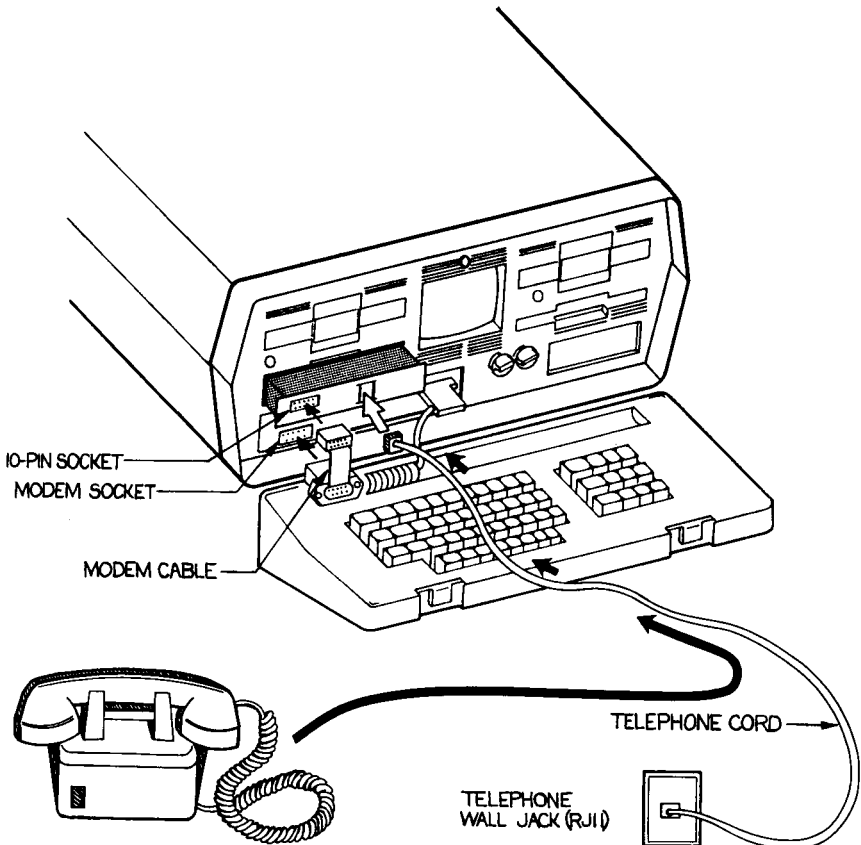
Modem Installation

The CTS Modem (103JCTS0SB1) for your Osborne connects to an RJ11C or equivalent telephone jack. The RJ11C jack is the current standard used by the telephone companies. If you have an old style plug, an adapter can be used or call the telephone company to replace your old plug.

The CTS Modem fits in the diskette storage pocket below drive A of your Osborne microcomputer. Install the modem as follows (DO NOT FORGET TO REMOVE ANY DISKETTES YOU HAVE STORED IN THE POCKET).

If you have an Osborne 1, proceed to step 1. If you have an Osborne Executive, go to step 6.

1. Turn off power to your Osborne 1 microcomputer.



2. **Osborne 1 with Tan Cases**

Slide the modem into the diskette pocket so the 10-pin socket on the modem is directly over the Modem socket on the front of the computer.

Osborne 1 with Blue Cases

Carefully snap off the eight (8) plastic tabs on the top and bottom edges of the modem. If necessary, gently file these edges smooth after snapping off the tabs.

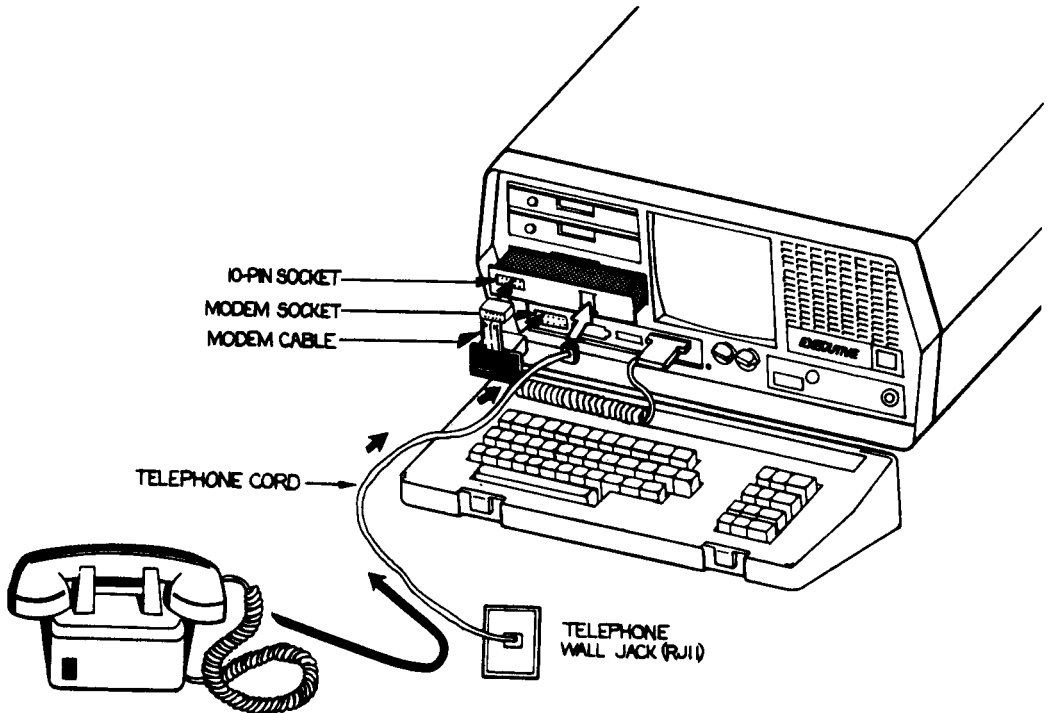
Slide the modem into the diskette pocket so the 10-pin socket on the modem is directly over the Modem socket on the front of the computer.

3. The flat modem cable has a plastic connector on each end. Plug the small, rectangular connector on the modem cable into the 10-pin socket on the modem. This connector will fit only one way.

We suggest you leave this connector attached to the modem.

4. Plug the large connector on the modem cable into the Modem socket on the front of the computer. This connector also fits only one way. **Because the Osborne 1 has only one internal serial port, you may NOT have any other device, such as a printer, plugged into the other serial port while the modem is plugged into the modem socket.**
5. Skip to step 10.

6. Turn off the power to your Osborne Executive microcomputer.



7. Slide the modem into the diskette pocket so the 10-pin socket on the modem is directly over the Modem socket on the front of the computer.
8. Notice the conversion cable has a plastic connector on each end. Insert the 25-pin cable connector into the modem interface connector on the front of the Executive. This connector will fit only one way.
9. Plug the small connector on the end of the ribbon cable into the 10-pin connector on the front of the modem.

10. Identify the phone wire running from the wall plug to the base of your telephone.

Unplug this wire from your telephone and plug it into the socket on the front of the modem.

Since you have the 103JCTSOSB1 Package for your Osborne supported by MYTERM, no installation of MYTERM is necessary. The installation procedure is as follows:

1. Make a working copy of the distribution disk on one of your own diskettes. Place the distribution disk in a safe place, since you may need it at a later time. **DO NOT USE THE DISTRIBUTION DISK EXCEPT FOR MAKING COPIES.**
2. Mount the new diskette in drive A and run MYTERM.

Running MYTERM

To run MYTERM, type its name in CP/M command mode. This will result in reasonable default values being used for all parameters, or the parameters may be loaded from a file as an option on the Main Menu. Optionally, a parameter file may be specified as the first argument:

```
A>myterm source
```

In this case, all parameters will be read from the file "SOURCE.PAR". If a file type is specified on the argument, it will override the default file type of ".PAR". In either case, at this time the Main Menu will be displayed, and any necessary changes to the parameters may be made and optionally saved for future use.

A second parameter may also be specified, which, if present, is taken as the first option on the Main Menu. This parameter allows the user to start up directly in answer or originate mode. For example:

```
A>myterm cyber g
```

would read all the parameters from the file cyber.par and then invoke the go command.

At the head of each menu the following three lines are displayed:

```
MYTERM vx.yy - Copyright (c) 1983, Mycroft Labs, Inc.  
XXXXXXX. Bytes Captured = nnnnn/nnnnn. Capture = XXX.  
Site ID = xxx ... xxx
```

In the above display, the "vx.yy" is the current version number 'x' and release level "yy" of MYTERM. The second line lists the status of three items as of the time the header was written. The first field will contain DIRECT, ONLINE, or OFFLINE. This reflects the current state of the carrier signal. The second field tells how many bytes have been captured out of the number it is possible to capture in your particular system. For example, Bytes Captured = 1254/15725 would mean you have currently captured 1254 bytes out of a possible 15725. The third field tells whether capture mode is currently ON or OFF. This status line allows the user to get some quick feedback on these three items, as well as reassuring you that carrier has not been lost while you are in the menu system. The third line is the current Site ID.

Introduction for Beginners

The purpose of this chapter is to provide you with a non-technical introduction to concepts and terms that will be used in explaining the operation of the MYTERM program and to give you the information you will need to get MYTERM running on your machine.

The Role of MYTERM

MYTERM is the program that you will run to allow communications between computers. The sequence of events is generally this:

1. The originator of the communication runs MYTERM on his/her computer, configuring it to send data at a predetermined speed.
2. The originator calls another computer (either micro or mainframe) that has been configured to receive telephone communications.
3. The originator selects file transmission options from a menu and sends the other computer a file, or requests a file from the other computer
or
the originator uses the computer as a terminal to another computer.
4. When all desired files have been transmitted and/or received or use as a terminal has been completed, the originator hangs up.

MYTERM is a very versatile program and it allows on-screen communication between the users before and after any file transmission process. There are other ways that MYTERM can be used in the direct connect situation, and in connection via telephone to commercial information services such as CompuServe. The first step in using MYTERM (after your hardware is properly connected) is in copying the MYTERM master disk.

Getting Started

In this section we will attempt to walk you through the steps that you will need to use MYTERM. Since you have a specific way you wish to use MYTERM, you should look at the list below to determine what you should read next.

- 1) Copying the MYTERM Master Disk2-2
- 2) Procedure for Using MYTERM for a Modem Connection.....2-3
- 3) Sample Session in Modem Connection Mode.....2-5

- 4) Procedure for Installing MYTERM for Hard Wire
(Direct Connect).....2-6
- 5) Transmitting Files in Direct Connection Mode.....2-9

Conventions:

In this manual we will be presenting a set of steps involving the use of the computer. In these steps we have adopted the following notation:

- 1) <CR> means to press the RETURN key.
- 2) A "^" before a letter means to press and hold the CONTROL key while typing the letter that follows. For example, ^C means to hold down the CONTROL key while typing the letter 'C'.
- 3) Control-C means the same as 2) above.

Copying the MYTERM Master Disk

It is never a good idea to use your **master disk** in the microcomputer when sending or receiving data. Through a mistake or equipment failure, this disk may be destroyed. Therefore, you should make a **working copy** of your MYTERM Master disk. In order to do this, follow the steps below.

- 1) Put your CP/M systems master in drive A.
- 2) Put a blank disk in drive B.
- 3) Format the blank disk, and put a CP/M system image on the disk (make it bootable). The procedure for formatting a disk and making it bootable varies from computer to computer, so you will have to consult the manual for your computer.
- 4) Copy the PIP.COM program from the systems disk onto the blank disk by typing the following at the A> prompt;

```
PIP B:= A:PIP.COM
```

The B: disk should now be bootable and contain PIP.COM. Now remove the systems disk from drive A and replace it with the disk from drive B.

- 5) Reboot the system by ^C (hold down the CONTROL key while typing C). If the system does not reboot and return an A>, you most likely forgot to put a system image on the disk.
- 6) Put your MYTERM Master disk in drive B.
- 7) At the A> prompt, type PIP A:= B:*. * This should transfer all the files on the MYTERM Master disk to the blank disk.

- 8) You now have a copy of the MYTERM Master disk which can be used to run MYTERM. to be installed for your equipment. We suggest at this point that you repeat the above steps and make two working copies so that you may put your original safely away where it won't be harmed and proceed to using the program.

Procedure for Using MYTERM for a Modem Connection

The following steps should help you use MYTERM for a modem connection.

Step

- 1) Make a copy of the MYTERM Master disk.
- 2) Insert the working disk you just made into drive A. (It may already be there).
- 3) Reboot the system by typing ^C (hold down the CONTROL key and type C).
- 4) At the A> prompt, type MYTERM<CR>
- 5) You should see the Main Menu.

```
MYTERM v1.xx - Copyright (c) 1983, Mycroft Labs, Inc.
OFFLINE. Bytes Captured =      0/####. Capture = OFF.
Site ID =
```

MAIN MENU

```
G - Go Start Communications
H - Hang Up Phone
I - Enter Site ID
L - Load Parameters from Disk File
S - Save Parameters on Disk File
C - Catalog of Files
```

Sub-Menus:

```
P - Parameter           O - Option
U - Text File Upload    D - Text File Download
B - Binary File Xfer    M - Macro Definition
F - Character Filter
```

```
X - Exit to CP/M
```

Enter Option: _

Notice that in the upper left-hand corner is the word OFFLINE. This means that this is a modem installation and that the program does not detect connection with another computer. Beneath that you see the Main Menu and a list of

sub-menus. You will have to set some parameters, so type a 'P' for Parameter Menu.

6) You should now see the Parameter Menu.

```
MYTERM v1.xx - Copyright (c) 1983, Mycroft Labs, Inc.  
OFFLINE. Bytes Captured = 0/#####. Capture = OFF.  
Site ID =
```

PARAMETER MENU

```
B - Baud Rate           = 300  
D - Data Bits           = 7  
P - Parity              = EVEN  
S - Stop Bits           = 1  
  
R - Role (ANS/ORG)     = ORG  
M - Mode (Duplex)      = FULL  
N - Phone Number       =  
  
X - Exit to Main Menu
```

Enter Option: _

This menu contains the information the program needs to effectively transfer data. Notice that the BAUD RATE is already set at 300. This is a normal value for MODEM connections. Leave the baud rate set at 300.

- 7) Also note that there is a place to type in a phone number. Since you have an auto-dial modem, you would type the number of the computer you want to call. For now we can ignore the other parameter settings, but notice one thing. The role of the computer is set in ORG (originate) mode. This parameter can be changed to ANS (answer) mode by pressing the 'R' key. Notice this is a toggle operation. If you press 'R' again, it will flip back to ORG. When calling another computer, your microcomputer will be in ORG mode. If another computer is going to be calling you, you will have to be in ANS mode.
- 8) Press X to exit to the Main Menu.
- 9) Look at the Main Menu and you will see an 'S' option to save the parameters you just changed. Doing this will make it easier to use MYTERM the next time. Type S, and when asked for the file name, call it MODORG for modem connect, originate mode. From now on you can change the parameters by simply typing the L option from the Main Menu to "load" the parameter file, MODORG, into the computer or entering MODORG as the first parameter on the MYTERM call (e.g., myterm modorg).

- 10) You are almost ready to call the remote computer. We are assuming that the other computer is running a communications program (MYTERM or something similar), that it is in the answer mode, and that it awaiting your call.

There are several ways you can use MYTERM in the modem mode. For instance you can call a mainframe, and assuming you have proper access, you can operate the mainframe using your computer as a terminal. You can also save the results of a session with the mainframe using MYTERM's file capture option. These options are explained in more detail in the General Information Section. What follows is a sample session with MYTERM. It involves calling another computer. In this session, we will transfer a text file from our machine to the computer we are calling. This is referred to as uploading a text file.

Sample Session in Modem Connection Mode

First, we must call the other computer.

- 1) If you put the number of the computer you wanted to call into the Parameter Menu, type **G** (for GO) with the Main Menu showing and MYTERM will start dialing the remote computer and establish the connection.
- 2) You should see a sign-on message from the remote computer at this point. If you were connecting with a mainframe, you would have to enter your user number and password.
- 3) You are in "terminal mode"; you can return to the Main Menu by pressing **^J**. This will not disconnect you from the other computer. Try this now.
- 4) From the Main Menu select option **'U'**, "text file upload". This will display the Text File Upload Menu.
- 5) At this point, type **U** and you will be prompted for the file name to be uploaded.
- 6) Type in the name of the text file you wish to send (include the drive designator, e.g., **B:SAMPLE**)
- 7) When you press **<CR>** after the file name, the computer will send the text file to the other computer. To retrieve a text file from another computer you would use option **'D'** from the Main Menu (text file download). See the Download instructions in the User's Guide.

Procedure for Installing MYTERM for Hard Wire (Direct Connect)

Step

- 1) Turn off your computer. Remove the CTS flat modem cable on the front of the computer. Connect your microcomputer to another microcomputer with the appropriate cable. Turn your system back on and insert the MYTERM working disk into drive A. (It may already be there).
- 2) Reboot the system by typing ^C (hold down the Control Key and type C).
- 3) At the A> prompt, type MYTERM<CR>
- 4) You should see the following menu.

```
MYTERM v1.xx - Copyright (c) 1983, Mycroft Labs, Inc.  
OFFLINE. Bytes Captured = 0/#####. Capture = OFF.  
Site ID =
```

MAIN MENU

- G - Go Start Communications
- H - Hang Up Phone
- I - Enter Site ID
- L - Load Parameters from Disk File
- S - Save Parameters on Disk File
- C - Catalog of Files

Sub-Menus:

- | | |
|----------------------|------------------------|
| P - Parameter | O - Option |
| U - Text File Upload | D - Text File Download |
| B - Binary File Xfer | M - Macro Definition |
| F - Character Filter | |

X - Exit to CP/M

Enter Option: _

- 5) Now enter an **O** for the Option Menu and you should see the following menu.

MYTERM v1.xx - Copyright (c) 1983, Mycroft Labs, Inc.
 OFFLINE. Bytes Captured = 0/#####. Capture = OFF.
 Site ID =

OPTION MENU

E - Escape Trigger Char	= 0AH = ^J
M - Macro Trigger Char	= 1BH = ^[
B - Break Trigger Char	= 02H = ^B
K - Local Command Char	= 0BH = ^K

C - Caps Lock	= OFF
L - Auto LF after CR	= OFF
D - Direct Connect Mode	= OFF
Q - Expand Tabs to Console	= ON

X - Exit to Main Menu

Enter Option: _

- 6) Type a **D** for Direct Connect Mode and then an **X** to return to the Main Menu.

Notice that in the upper left-hand corner of the display is the word **DIRECT**. This means that this is a direct connect or hard wire installation. Beneath that you see the Main Menu and a list of the sub-menus. To complete the installation, we will have to set some parameters, so type a 'P' to invoke the Parameter Menu.

- 7) You should now see the Parameter Menu.

MYTERM v1.xx - Copyright (c) 1983, Mycroft Labs, Inc.
 DIRECT. Bytes Captured = 0/#####. Capture = OFF.
 Site ID =

PARAMETER MENU

B - Baud Rate	= 300
D - Data Bits	= 7
P - Parity	= EVEN
S - Stop Bits	= 1

R - Role (ANS/ORG)	= ORG
M - Mode (Duplex)	= FULL
N - Phone Number	=

X - Exit to Main Menu

Enter Option: _

This menu contains the information the program needs to effectively transfer data. The first parameter we will set is BAUD RATE. Notice that the baud rate is already set at 300. This is a normal value for **modem** connections, but for direct connections we can transmit data much faster. (Many computers will allow transfer at 9600 baud, but some will not.) For now we will set the BAUD RATE at 1200:

- a) type B
- b) type 1200<CR>

You should see 1200 next to Baud Rate on the Parameter Menu.

- 8) For now we can ignore the other parameter settings, but notice one thing. The role of the computer is set in **ORG** (originate) mode. This parameter can be changed to **ANS** (answer) mode by pressing the 'R' key. Notice this is a toggle operation. If you press 'R' again, it will flip back to **ORG**. When direct connecting between two computers, one computer will have to be in **ORG** mode and the other will have to be in **ANS** mode.
- 9) Press X to exit to the Main Menu.
- 10) Look at the Main Menu and you will see an 'S' option to save the parameters you just changed. Doing this will make it easier to use **MYTERM** the next time. Type S, and when asked for the file name, call it **DIRORG** for direct connect, originate mode. From now, on you can change the parameters by simply typing the L option from the Main Menu to "load" the parameter file, **DIRORG**, into the computer.
- 11) You are almost ready to start transferring data. But first you must install **MYTERM** on the other computer following the same steps as you did for the first computer, **EXCEPT**, the role of the second computer should be set to **ANS** (answer)...See step 8 above. Save this parameter file as **DIRANS** (direct connect, answer mode).

PLEASE NOTE: You need two copies of **MYTERM** (or a program for the other computer which supports the **XMODEM** protocol, e.g., **MITE**) -- one for each computer. Since each version of **MYTERM** is sold for a specific type of computer, you will most likely have to buy a second copy.

You are now ready to start transferring files

Both computers are now connected and both are running an installed version of **MYTERM**, one is in **ORG** mode and the other is in **ANS** mode. The Main Menu should be showing on both computer screens. Type G for **GO** on both computers. Now you should have complete interaction. That is, anything typed on one computer will appear on the screen of the other. This is also true of two computers connected via telephone with **MYTERM**. This

communication capability would allow two operators to "talk" by typing messages to the other's screen.

Try this out now -- You should see the message appear on both screens simultaneously. This is the best way to verify that you have indeed connected the two machines properly.

Type ^J to return to the Main Menu.

Trouble Shooting

If you have problems, this is the first time they will show up. If you do not see the message on both computers, there is most likely a problem with the cable or the baud rate that you set in the Parameter Menu. Type a ^J to return to the Main Menu. Now type a 'P' to see the Parameter Menu. Check to see if the baud rate on both machines is the same, and that one machine is in ORG mode and the other is in ANS mode. If so, change the baud rate to 1200 on both machines. Go back to the Main Menu, and type G again to see if the problem has been solved. Some machines can not transmit at the higher speeds. If this still does not solve the problem, you may have the wrong cable. If you presently have a standard cable, try a flipped cable, or if you are using a flipped cable, try a standard cable. Finally, if all else fails, get help from your dealer or by calling MYCROFT LABS.

Transmitting Files in Hard Wire (Direct Connect) Mode

There are two types of files: text files and binary files. A text file is something that yields meaningful results when listed to the console with the "TYPE" command. An example of a "binary" file is a .COM executable object file, a .REL relocatable object file, Wordstar internal files, various data files created by programs like SuperCalc, etc. In order to transfer this kind of file, a more powerful transfer mechanism is needed. Note that simple text files are a special case of "binary file", and may also be transferred with this mechanism. If binary file transfer is possible, then that is the preferred mechanism, as retransmission of blocks is performed automatically on detection of errors. This greatly improves the chances of getting the file to the remote site intact. For the most part, binary file transfer is only practical with another CP/M system.

You will notice on the sub-menus that there are options for text file upload, text file download, and binary file transfer. Upload means to send a file from your computer to the other computer. Download means to transfer a file from the other computer to your computer. Both text files and binary files can be transmitted using the binary file transfer option; the difference being that the text will be verified during transfer, but the text will not appear on the screen while it is being transferred. For direct connect applications, it is preferable to use the binary file transfer option.

Transmitting a File Using the Binary Transfer Option

Step

- 1) From the Main Menu, press B for the Binary File Transfer Menu.
- 2) Choose to send a file. When you choose to send a file, you will be asked for the file name you wish to send. When you press <CR>, the computer will attempt to send the file.
- 3) The other computer will be receiving the file, so you first must be sure that there is enough room on the disk to receive the file. One simple way of doing this is to put a blank, formatted disk in drive B of the receiving computer.
- 4) On the receiving computer, type X to exit to the Main Menu and type B for Binary File Transfer.
- 5) Finally, type R to receive a binary file.
- 6) You should see "ATTEMPTING TO SYNCHRONIZE" on both computers now and a series of dots should appear on the screen. This indicates a successful transfer is taking place. At the end of transmission, a message indicates completion will be displayed.

If you get a series of characters, like RRRRRRRR, the transfer is not working. After a short time the attempt to transfer will abort and a message to that effect will be displayed. The most common reason for failure is that the baud rate is set too high for your system. Go back into the Parameter Menu and reset the baud rate to a lower rate, and try again.

SUMMARY

This is only the beginning of learning to use MYTERM. The following sections contain detailed information about the menus and how to use them. As you become more familiar with MYTERM you will want to incorporate some of the advanced features described in the Advanced Usage Section. We suggest you skim the next section to familiarize yourself with the contents and use it as a reference guide to help you in your use of MYTERM. For other sample sessions and tips on usage, please review the Examples of Usage Section. The Examples of Usage may prove to be valuable templates for your use of MYTERM.

The Main Menu

MYTERM v1.xx - Copyright (c) 1983, Mycroft Labs, Inc.
OFFLINE. Bytes Captured = 0/####. Capture = OFF.
Site ID =

MAIN MENU

G - Go Start Communications
H - Hang Up Phone
I - Enter Site ID
L - Load Parameters from Disk File
S - Save Parameters on Disk File
C - Catalog of Files

Sub-Menus:

P - Parameter O - Option
U - Text File Upload D - Text File Download
B - Binary File Xfer M - Macro Definition
F - Character Filter

X - Exit to CP/M

Enter Option: _

This is the principal menu which starts MYTERM and provides access to its other features through the sub-menus.

The **G** option takes you from the menu system to the terminal mode. The action taken depends upon:

1. whether you are in the Answer(ANS) or Originate(ORG) role,
2. whether or not you are using your auto-dial/auto-answer modem,
3. whether you have the direct connect option ON.

If you have not changed the default settings of MYTERM and you have connected your auto-dial modem, you simply type 'G' to initiate the terminal mode in the ORG role.

The ORG role causes MYTERM to attempt to establish a connection with the other system. If you type 'G' and the carrier is already present, the message "**Now resuming previous call**" is displayed and you are placed in the terminal mode. If you are using your auto-dial modem and you have entered a phone number (the N option on the Parameter Menu), MYTERM will dial the phone and wait up to forty-five seconds for the modem to detect a carrier signal indicating that the connection has been established.

If you are in the ANS role, MYTERM waits for another system to establish communications. If the carrier signal is not present, MYTERM displays "Awaiting incoming call - abort with escape". If you are using the auto-answer feature of your modem, it will detect an incoming call, answer the phone and bring up the carrier detect signal. This will tell MYTERM to enter the terminal mode.

If you are in the direct connect mode (two computers connected without modems) and in either the ORG or ANS role, MYTERM assumes that the connection has been accomplished and responds to the 'G' by placing you in the terminal mode.

Once the connection has been established, MYTERM enters the terminal mode. In this mode, any character typed on the console keyboard will be sent to the remote system, and any character received from the remote system will be written to the console display. The only exceptions to this are the "trigger" characters (escape, macro, etc.) and the unwanted characters listed in the unwanted character filter (see UNWANTED CHARACTER FILTER MENU). For example, the "macro trigger" is used in conjunction with a second character to invoke one of the ten macro strings.

The H option can be used to hang up the phone at any time. With some on-line systems, this may be the only way to terminate a session. Not all such systems support a "BYE" or "OFF" command that causes their carrier to go away. If you try to exit to CP/M with carrier still present, you will be reminded that it is still present, and asked if you wish to hang up at that time. Normally, when the carrier is lost, the phone is automatically hung up and control returns to the Main Menu. It is then possible to exit to CP/M. The proper functioning of this option depends on the actual implementation.

The I option allows you to enter a one-line description of your site or the site you will be using. This "site ID" will be printed on the third line of each menu page. When using MYTERM in the ANSWER role, this site ID should be set to something identifying YOUR site. This ID will be sent to the user dialing into your system, along with the standard MYTERM greeting. If you are in the Originate role, the site ID is purely informational.

The L option allows you to load parameters from a previously saved parameter file. You will be prompted for a file name, which should be entered in the "d:fn.ft" format (e.g., B:SOURCE.PAR, RATOFF.1, B:CPMNET, etc.). If a file type is not specified, the

default file type .PAR will be used. If the specified file is not found, you will be notified, and control will return to the Main Menu. If the file is found, the following parameters will be loaded:

<u>Byte</u>	<u>Size</u>	<u>Contents</u>
0	1	ASCII character 'M'
1	1	Version number * 10 + release number
2	20	Not used
22	2	Baud Rate (high byte first)
24	1	Parity (0=NONE, 1=ODD, 2=EVEN)
25	1	Number of Data Bits (0=SEVEN, 1=EIGHT)
26	1	Number of Stop Bits (0=ONE, 1=TWO)
27	1	Duplex (0=HALF, 1=FULL)
28	1	Escape Trigger character
29	1	Wait-For-Echo option (0=OFF, 1=ON)
30	1	Flow Control option (0=OFF, 1=ON)
31	1	Flow Control Start Character
32	1	Flow Control Stop Character
33	1	End-Of-Line Handshaking option (0=OFF, 1=ON)
34	1	Auto-LF option (0=OFF, 1=ON)
35	1	Caps option (0=OFF, 1=ON)
36	1	Macro Trigger Character
37	1	Protocol (0=XMODEM)
38	60	Site ID
98	1	Garbage Character count
99	1	Turnaround Character
100	1	Intercharacter delay, msec
101	1	Role (0=ORG, 1=ANS)
102	1	Break Trigger Character
103	1	Not used
104	1	Printer Echo (0=OFF, 1=ON)
105	1	Local Command Trigger Character
106	1	Not used
107	10	Unwanted Characters
117	1	Direct Flag
118	10	Not used
128	640	Macro Strings (10 strings, 64 characters each)
768	30	Number to be dialed

If anything other than a valid parameter file is specified, MYTERM will abort the load command and issue the following message:

"Invalid Parameter File"

If a parameter file created with an earlier version of MYTERM is loaded, then you will be warned:

"Warning - old parameter file."

At this point you should check all parameters, change if necessary and resave them (on the same file, normally) with the new version of MYTERM.

The S option allows you to save the current parameters on a disk file for future use as a command line argument or as input for the L option. You will be prompted for a file name, which should be entered in the "d:fn.ft" format. If no file type is specified, the default file type .PAR will be used. All parameters listed under the L option will be saved.

The C option provides the user with the directory of the current logged disk drive. The files are listed as found in the directory and not necessarily listed alphabetically.

Sub-Menus

The remaining options allow you to transfer control to any of the sub-menus. From the sub-menus, you will normally return to the Main Menu, once you have accomplished the desired operation(s) on that sub-menu.

The P option selects the PARAMETER MENU. From this menu, you can easily check or set various communications parameters, such as the baud rate, the number of data bits, etc. Once control is transferred to this menu, it remains there until you exit to the Main Menu with the X option.

The O option selects the OPTION MENU. From this menu, you can select the "trigger characters", as well as several other options. Once control is transferred to this menu, it remains there until you exit to the Main Menu with the X option.

The U option selects the TEXT FILE UPLOAD MENU. From this menu, you can initiate the uploading of a text file to the remote system, or select various options which effect how this is to be done. Once control is transferred to this menu, it remains there until you exit to the Main Menu with the X option (with the exception of the "upload" function itself, which automatically returns control to the terminal mode once the upload is complete).

The D option selects the TEXT FILE DOWNLOAD MENU. From this menu, you can turn the text file capture mode ON or OFF. You can decide whether "flow control" (XON/XOFF handshaking) is used, and if so, what characters are used to start and stop the flow of data from the remote system. Once control is transferred to this menu, it remains there until you exit to the Main Menu with the X option.

The B option selects the BINARY FILE TRANSFER MENU. From this menu, you can initiate a transfer of any CP/M file (including executable files, etc.) to or from another CP/M system running XMODEM or an RCPM system. Once control has been transferred to this menu, it remains there until you exit to the Main Menu with the X option. As with the text file "upload", once the actual Send or Receive functions have completed, control is automatically returned to the terminal mode.

The **M** option selects the MACRO STRING DEFINITION MENU. From this menu, the user can view or change any of the ten macro strings which may be invoked via the "macro trigger" character. Once control has been transferred to this menu, it remains there until you exit to the Main Menu with the X option.

The **F** option selects the UNWANTED CHARACTER FILTER MENU. From this menu, you can view and modify up to 10 ASCII characters that should be discarded immediately upon receipt. These unwanted characters will not be displayed to the console or saved in memory. The first two of these characters default to 7FH (DEL) and 1AH (Control-Z). The NULL character (00H) is automatically discarded. Once control has been transferred to this menu, it remains there until you exit to the Main Menu with the X option.

The **X** option allows you to exit to CP/M. You will be asked to confirm this action before the exit is done:

"Are you sure (Y/N)? "

If you wish to exit at this time, type a "Y" or "y". Any other response will return control to the Main Menu. If you do elect to exit, and a capture file is currently open, MYTERM will automatically close it for you and inform you of this operation with the following message:

"Capture Complete. Now closing file d:fn.ft"

If the carrier is still present, MYTERM will inform you with the following message:

"Warning... Carrier still present. Hang up (Y/N)? "

If you are finished with the session, reply with anything starting with "Y" or "y", and MYTERM will hang up before exiting. If you merely wish to return to CP/M temporarily and plan to resume this link, reply with anything else (typically "N" or "n") and the hang up function will not be performed.

The Parameter Menu

MYTERM v1.xx - Copyright (c) 1983, Mycroft Labs, Inc.
 OFFLINE. Bytes Captured = 0/####. Capture = OFF.
 Site ID =

PARAMETER MENU

B - Baud Rate	= 300
D - Data Bits	= 7
P - Parity	= EVEN
S - Stop Bits	= 1
R - Role (ANS/ORG)	= ORG
M - Mode (Duplex)	= FULL
N - Phone Number	= 224-6824
X - Exit to Main Menu	

Enter Option: _

The current value of the parameter is displayed to the right of the option description for most options. If the value is changed, it is immediately updated on the menu display. Some of the options prompt the user for input (e.g., Baud). Others merely toggle between two or three states when selected (e.g., Mode). This approach makes it easy to determine the current setting of all parameters at a glance and gives immediate feedback when they are being changed. With all parameters, options, macro strings, etc., any change(s) you make will stay in effect only until you exit to CP/M, unless you use the S option on the Main Menu to make the change(s) permanent.

The B option allows you to select a new baud rate. You will be prompted as follows:

"Enter New Value: "

This rate may be entered in any base, with post radix, the default (and normal) base being decimal. If an illegal value is entered (one not supported by your implementation and/or hardware), the message "Illegal Value" will be displayed, and the rate will remain unchanged. If an empty line (i.e., immediate CR) is entered, the rate will remain unchanged. The default value is 300.

The D option allows you to select the number of data bits in each character. This option toggles between the values 7 and 8. Most timesharing systems use 7 data bits, and most systems that support binary file transfers use 8. The default value is 7.

The P option allows you to select the parity of each character. This option toggles between the values NONE, ODD and EVEN. Most systems that use 7 data bits will use EVEN parity, while most systems that use 8 data bits will use NONE. The default value is EVEN.

The S option allows you to select the number of stop bits on each character. This option toggles between the values 1 and 2. Most 110 baud (and slower) systems use 2 stop bits, virtually all other systems use 1. The default value is 1.

The R option allows you to select the "role" that MYTERM will play in a connection. The choices are ORG (originate) and ANS (answer). Selecting this option toggles between ORG and ANS. If you are dialing into another system, you should select the ORG role. If someone else is going to be dialing into your system, you should select the ANS role. Note that not all hardware will support the answer role. The default value is ORG.

The M option allows you to select the mode (or duplex) of the transmission. It toggles between the values FULL and HALF. When running in FULL-duplex, it is up to the remote system to echo any characters typed on the local keyboard back to the local display. In HALF-duplex, it is up to the local system to perform this echo function. If you are getting NO echoes of characters you type, you are probably running FULL-duplex on a HALF-duplex system. If you are getting TWO characters for every character you type, you are probably running HALF-duplex on a FULL-duplex system. Most on-line systems use FULL-duplex. The default value is FULL.

The N option allows the user to specify the phone number of the remote site. The phone number can be entered in several formats, e.g., 555 1212, 555-1212, or 5551212 are all acceptable. An asterisk (*) in this string will cause a one second pause before proceeding. This is useful when you must first procure an outside line before dialing the desired number (e.g., 9*1-904-555-1212). To enter a blank phone number, enter at least one blank character. If the phone number field is blank, the dialing procedure will be skipped. Thirty characters are reserved for this string.

The X option allows control to return to the Main Menu.

The Option Menu

MYTERM v1.xx - Copyright (c) 1983, Mycroft Labs, Inc.
 OFFLINE. Bytes Captured = 0/#####. Capture = OFF.
 Site ID =

OPTION MENU

E - Escape Trigger Char = 0AH = ^J
 M - Macro Trigger Char = 1BH = ^[
 B - Break Trigger Char = 02H = ^B
 K - Local Command Char = 0BH = ^K

C - Caps Lock = OFF
 L - Auto LF after CR = OFF
 D - Direct Connect Mode = OFF
 Q - Expand Tabs to Console = ON

X - Exit to Main Menu

Enter Option: _

The E option allows the user to specify an "Escape Trigger" character that will allow control to be transferred from the link back to the Main Menu. Any time this user-specified character is typed while in link mode, the screen will be erased and the Main Menu will be displayed. From the Main Menu it is possible to initiate various functions, exit to CP/M, return to the link, or go to other menus. This "Escape Trigger" character should be specified as something not required on the remote system. The normal default value is 0AH (10 decimal), which is the ASCII Line Feed (LF) character. When this option is specified, the user will be prompted for a new ASCII character, which may be entered in any of three ways:

- 1) as a numeric value in any base with post radix (e.g., 10, 0AH, 00001010B, etc.) Note: the first character must be a decimal digit 0 to 9.
- 2) as a control code by entering a caret (^) followed by the character you are taking the "control" of (e.g., ^C for Control-C).
- 3) by entering an ASCII code directly (e.g., the TAB key). Simply pressing the key will result in the ASCII character with that value being entered. Note that if a numeric key is desired, the user must use the first method above for entering the value.

With the third method, certain characters cannot be entered because they have special meaning in CP/M and are processed according to their function. These include Control-P, Control-M (CR), Control-J (LF), Control-H (BS), Control-X, Control-U, and Control-R. Also, notice that both the hexadecimal value and the ASCII representation of the character are displayed in the menu. Control codes are represented as an upper case alpha character preceded by a caret (e.g. ^F for Control-F). Since many function keys use ESC as the first character of their output sequence, you should avoid using ESC as the "Escape Trigger" character. The Line Feed character (LF, OAH, ^J) is a good alternative.

The M option allows you to specify the "Macro Trigger" character. Any time this user-specified character is typed while in the link mode, a second character will be read. If it is a digit in the range 0 to 9, the corresponding macro string will be sent to the remote site as if it were coming from the keyboard. As with the "Escape Trigger" character, it should be specified as something not normally required for use on the remote site. A new value may be specified in the same manner as with the "Escape Trigger" character described above. The normal default value is 1BH (ESC). If the character selected is required by the remote site, it may be sent by typing it twice.

The B option allows you to specify the "Break Trigger" character. Any time this user-specified character is typed while in the link mode, a communications line BREAK function (SPACE condition for 150 milliseconds) will be performed. A BREAK is NOT a real character and is rather out-dated, but is still required by certain computer systems (mostly IBM).

The K option allows you to specify the "Local Command Trigger" character. Any time this user-specified character is typed while in the link mode, you will be prompted with "Local Command?". For further information, see "Local Commands" in the Advanced Usage Section. This function is disabled when the value 00H (null) is selected. The recommended value is ^K (OBH).

The C option allows you to select an automatic conversion of lower case characters to upper case both to and from the remote system. This affects only alphabetic characters and serves the same function as a CAPS LOCK key. The default value is OFF. Each time this option is selected, the value toggles between ON and OFF.

The L option allows you to select an Automatic LF (Line Feed) character to be sent on the local console any time a CR (Carriage Return) character is received. Some timesharing systems send only a CR at the end of each line, whereas most CP/M console terminals require both a CR and a LF to advance to the next line. The default value is OFF. Each time this option is selected, the value toggles between ON and OFF.

The D option allows you to go into direct connect mode. This mode is used to "fool" the computer into thinking that a modem carrier signal has been received. This option should be used when connecting two computers together without the use of modems. In most cases, this option should remain OFF.

The Q option allows the user to expand tab characters to spaces or send the tabs themselves to the console. This will not expand tabs on transmission to the remote system, but only to the console. If this option is ON, any tab character sent to the console will be expanded to spaces to place the cursor at the next 8th character position. When receiving terminal control codes that MYTERM does not recognize, positioning of the cursor with tabs will cause invalid expansions. The escape codes will be counted as characters sent, but will have no effect on the cursor position. This option may be turned off to allow the terminal itself to position the cursor upon receipt of a tab. Each time this option is selected, the value toggles between ON and OFF. The default is ON.

The X option allows you to return control to the Main Menu.

The Text File Upload Menu

MYTERM v1.xx - Copyright (c) 1983, Mycroft Labs, Inc.
 OFFLINE. Bytes Captured = 0/#####. Capture = OFF.
 Site ID =

TEXT FILE UPLOAD MENU

U - Upload Text File

D - Interchar. Delay	= 000
E - Await Char. Echo	= OFF
H - CR/LF Handshaking	= ON
T - Turnaround Char.	= 00H = ^@
G - Garbage Char. Count	= 000

X - Exit to Main Menu

Enter Option: _

The **U** option allows you to "upload" (send) a text file to the remote system as if it were coming from the keyboard of the local console. When this option is selected, you will be prompted for a file name, which should be entered in the "d:fn.ft" format. The specified file will be sent to the remote system, using the conventions selected by the other options on this menu. Once the file has been sent, the communications link will be resumed automatically. If an XOFF character (13H, or ^S) is received from the remote system during transmission, MYTERM will pause until an XON (11H or ^Q) is received before continuing to transmit the file. This will prevent many systems from losing data while transmitting. An upload can be aborted at any time by typing an ESC on the console keyboard.

The **D** option allows you to specify an "intercharacter delay" of 0 to 255 milliseconds. This delay allows you to slow down the outgoing text to the point that a "slow" remote system can accept it. This function works in both FULL- and HALF-duplex. It is the only way to slow down text in HALF-duplex. The time starts with the actual transmission of the character, not counting the transmission time at whatever baud rate you are running. If the actual delay time is less than a single character time, there will be no effect. For example, at 300 baud, each character takes about 33 milliseconds to transmit, so values below 33 will have no effect. A value of 100 will result in about 10 characters per second being sent. This option does NOT affect baud rate, it merely inserts a variable length delay between characters which are being sent at the normal baud rate. The intercharacter delay works for text being sent through the macro strings as well as from a file. Since these characters are not being entered from the keyboard, the delay will be in effect. When this option is selected, you will be prompted for a new value. The default value is 0.

The E option allows you to enable or disable a "wait for character echo" mode. When this mode is enabled, MYTERM will wait for each character that it sends to be echoed back by the remote system before it sends the next character. This insures that data will not be lost even on the "slowest" remote systems. The overall throughput is much slower (usually about half) than the rate without the "wait-for-echo" enabled. When this option is enabled, MYTERM will compare each echoed character it receives against the character it sent and list the number of characters that didn't match at the end of the transmission (nnnnn **Compare Errors**). Each time this option is selected, the value will toggle between ON and OFF. The default value is OFF.

The H option allows you to select the end-of-line (CR/LF) handshaking mode. When this mode is enabled, any time a CR (Carriage Return) is sent, MYTERM will wait until the remote system sends back a LF (Line Feed) before sending the next line. This feature is required on most timesharing systems, as they are usually "deaf" during this interval. If the user wishes to communicate with a remote printer or simple data communications utility (such as those found on many commercial word processors), it may be necessary to turn this option OFF, as the remote site in these cases will not send a LF in response to a CR. Each time this option is selected, the value will toggle between ON and OFF. The default value is ON.

The T option allows you to specify a "turnaround" character. When set to OOH, this option is disabled. When set to any other value, MYTERM will wait at the end of each line until it sees the specified character before it begins to transmit the next line. This feature allows the user to upload text to remote systems that prompt with a question mark (?), or some other prompt. If the turnaround character is not seen within twenty seconds, MYTERM will send the next line. Typing the escape key during this twenty second timeout period will cancel the timeout and cause MYTERM to immediately send the next line. When this option is selected, you will be prompted to enter a new ASCII character. The default value is 0.

The G option allows you to set the "Garbage Character Count". This count refers to the number of characters that MYTERM will wait for, after transmitting a line, before starting to send the next line. Each such "garbage" character has a one-half (.5) second timeout. This feature allows the user to upload text to remote systems that send nulls, line numbers, or other extraneous characters at the start of each line before they are ready to receive the new line. When this option is selected, you will be prompted to enter a new value. The default value is 0.

Note : The H, T and G options can be used in combination. The H option is processed first, then the T option, then the G option. This combination allows the user to select a mode such as "At the end of each line, wait for a '?', then ignore the next 2 characters with a one-half (.5) second timeout on each, then send the next line". Using the various options, it should be possible to upload text to virtually ANY on-line system.

The X option allows you to return control to the Main Menu.

The Text File Download Menu

MYTERM v1.xx - Copyright (c) 1983, Mycroft Labs, Inc.
OFFLINE. Bytes Captured = 0/#####. Capture = OFF.
Site ID =

TEXT FILE DOWNLOAD MENU

C - Capture	= OFF
A - Append Captured Data	
W - Write Captured Data	
R - Reset Capture Buffer	
P - Printer Echo	= OFF
T - Type Capture Buffer	
F - Flow Control	= OFF
Q - Flow Start Character	= 11H = ^Q
S - Flow Stop Character	= 13H = ^S
X - Exit to Main Menu	

Enter Option: _

The C option allows you to turn the text capture mode ON or OFF. The first time capture mode is enabled (or the first time after a Write operation), the user will be prompted for a file name:

"Enter Filename: "

This file name should be entered in the "d:fn.ft" format (e.g., FRED.TXT). Note that it is possible to specify any CP/M logical device (LST:, PUN:, RDR: or CON:) in addition to disk file names. If the specified file already exists, you will be notified of this fact and asked if you wish to overwrite it. If you later exit to CP/M without writing the captured data to disk with the W option, MYTERM will automatically write it for you at that time. Each time this option is selected, the value will toggle between ON and OFF. The initial value is OFF.

The A option allows the user to write a partial file from the capture buffer. The data captured will be written to the file specified earlier and the buffer pointer will be reset to empty. Also, the capture mode will remain ON and the output file will remain open. This allows the user to capture several long sessions to the same file, flushing the buffer each time.

The W option is used to write any captured data to the file that was originally specified when capture mode was first enabled. If flow control is enabled, this may actually be the last (partial) buffer. When the write is complete, MYTERM will remind the user which file was being used:

"Capture Complete. Now closing file d:fn.ft"

The Write option will set the capture mode to OFF and reset the capture buffer to empty. When this option is selected, the write operation is performed at that time.

The R option allows you to reset the capture buffer to empty. This option is useful only when flow control is disabled.

The P option allows you to turn the "printer echo" function ON or OFF. Any time the printer echo is ON, any character that is written to the console during a link will also be written to the list device. In order for this to function properly, the list device must operate at an effective baud rate that is higher than that of the communications link. For slower printers, it may be necessary to use the "capture to LST:" mechanism or to capture the data to a disk file for later printing. This option does not support serial printers, because the serial port has been used to connect the modem. Each time this option is selected, the value toggles between ON and OFF. The initial value is OFF.

The T option allows you to list the current contents of the capture buffer to the console. The listing will pause every 23 lines (and at the end of file), until you hit a CR to continue or ESC to abort the listing. Control-S can be used to cause a pause in listing at any time. This feature is normally of use only when flow control is disabled (otherwise you can only list the last "partial buffer").

The F option allows you to select whether "flow control" handshaking is to be used while capturing text. XON/XOFF (Control-S/Control-Q) characters are usually used to accomplish this handshaking. Many systems will pause when you type Control-S and start back up when you type Control-Q. If flow control is enabled, MYTERM will attempt to use this mechanism to cause the remote system to pause while it writes the data to disk it has captured since the last pause. This is normally done every 2048 bytes. When the flow stop character is sent, MYTERM will wait until a full second has elapsed since the last character arrived before writing to disk. This is necessary since some systems have characters in transmission when the flow stop character is read. If the remote system supports this convention, it is highly recommended that you take advantage of it. Each time this option is selected, the value will toggle between ON and OFF. The default value is OFF.

The Q option allows you to specify the flow start character as described under the F option. Most systems that have this feature use Control-Q. When this option is specified, the user will be prompted for a new ASCII character, which may be entered in any of three ways:

- 1) as a numeric value in any base with post radix (e.g., 10, 0AH, 00001010B, etc.) Note: the first character must be a decimal digit 0 to 9.
- 2) as a control code by entering a caret (^) followed by the character you are taking the "control" of (e.g., ^C for Control-C).
- 3) by entering an ASCII code directly (e.g., the TAB key). Simply pressing the numeric key will result in the ASCII character with that value being entered. Note that if a numeric key is desired, the user must use the first method above for entering the value.

With the third method, certain characters cannot be entered because they have special meaning in CP/M and are processed according to their function. These include Control-P, Control-M (CR), Control-J (LF), Control-H (BS), Control-X, Control-U, and Control-R. Also, notice that both the hexadecimal value and the ASCII representation of the character are displayed in the menu. Control codes are represented as an upper case alpha character preceded by a caret (e.g. ^F for Control-F). The default value is ^Q.

The S option allows you to specify the flow stop character as described under the F option. Most systems that have this feature use Control-S. When this option is specified, the user will be prompted for a new ASCII character, which may be entered in any of three ways:

- 1) as a numeric value in any base with post radix (e.g., 10, 0AH, 00001010B, etc.) Note: the first character must be a decimal digit 0 to 9.
- 2) as a control code by entering a caret (^) followed by the character you are taking the "control" of (e.g., ^C for Control-C).
- 3) by entering an ASCII code directly (e.g., the TAB key). Simply pressing the numeric key will result in the ASCII character with that value being entered. Note that if a numeric key is desired, the user must use the first method above for entering the value.

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(CR), Control-J (LF), Control-H (BS), Control-X, Control-U, and Control-R. Also, notice that both the hexadecimal value and the ASCII representation of the character are displayed in the menu. Control codes are represented as an upper case alpha character preceded by a caret (e.g. ^F for Control-F). The default value is ^S.

The X option allows you to return control to the Main Menu.

The Binary File Transfer Menu

MYTERM v1.xx - Copyright (c) 1983, Mycroft Labs, Inc.
OFFLINE. Bytes Captured = 0/####. Capture = OFF.
Site ID =

BINARY FILE TRANSFER MENU (XMODEM)

S - Send File and Return to Link
R - Receive File and Return to Link

X - Exit to Main Menu

Enter option: _

The binary protocol used is the XMODEM protocol. It is the protocol used on most RCPM systems. It is compatible with MODEM7, XMODEM, MODEM80, and various other intelligent terminal programs. Be sure that the system with which you plan to communicate supports at least one of these protocols.

The **S** option allows a file to be sent using the XMODEM protocol. When this option is selected, you will be prompted for a file name, which should be entered in the "d:fn.ft" format. At this time, MYTERM will start sending the specified file to the remote system. A period (".") will be displayed on the console for each block sent and acknowledged as correct. An 'R' will be displayed for each block that was rejected. When the file has been completely sent, MYTERM will display the message: "File Sent" and the terminal mode will be resumed automatically.

The **R** option allows a file to be received using the XMODEM protocol. When this option is selected, you will be prompted for a file name, which should be entered in the "d:fn.ft" format. At this time, MYTERM will start receiving the specified file from the remote system. A period (".") will be displayed on the console for each block received correctly. An 'R' will be displayed for each block that is received in error. When the file has been completely received, MYTERM will display the message "File Received" and the terminal mode will be resumed automatically.

The **X** option returns control to the Main Menu.

The Macro String Definition Menu

MYTERM v1.xx - Copyright (c) 1983, Mycroft Labs, Inc.
 OFFLINE. Bytes Captured = 0/#####. Capture = OFF.
 Site ID =

MACRO STRING DEFINITION MENU

```

0: mailck^M
1: mail read^M
2: post scan cp/m^M
3: off^M
4:
5:
6:
7:
8:
9: ^M@W^M@E@T=d1^M@T@c 30128^M@T>id tcm495 xxxxx^M
  
```

X - Exit to Main Menu

Enter Option or ? for help: _

This menu allows you to view and/or define up to 10 pre-stored macro strings each of which can be up to 62 characters in length. These strings are saved and loaded along with the parameters in the .PAR file. Typical uses for macro strings include semi- or fully automatic login or favorite commands. The example shown above might be used on The Source. To define the "n"th string, type the number of the desired string (0 to 9). You will be prompted for a new string, which will then be displayed in the menu following the string number. To exit from this menu, use the X option. Any printable ASCII characters can be entered directly. To enter control codes (such as CR, LF, Control-X, Control-H), enter a caret (^) followed by the printable character corresponding to it. The following table will help in determining which characters to use for various control codes:

NUL	00H	^@	BS	08H	^H	DLE	10H	^P	CAN	18H	^X
SOH	01H	^A	HT	09H	^I	DC1	11H	^Q	EM	19H	^Y
STX	02H	^B	LF	0AH	^J	DC2	12H	^R	SUB	1AH	^Z
ETX	03H	^C	VT	0BH	^K	DC3	13H	^S	ESC	1BH	^[
EOT	04H	^D	FF	0CH	^L	DC4	14H	^T	FS	1CH	^\ ^]
ENQ	05H	^E	CR	0DH	^M	NAK	15H	^U	GS	1DH	^^
ACK	06H	^F	SO	0EH	^N	SYN	16H	^V	RS	1EH	^^
BEL	07H	^G	SI	0FH	^O	ETB	17H	^W	US	1FH	^^

For example, to enter a CR (Carriage Return, or ODH) use the code ^M. Note that two carets in a row (^^) will be interpreted as a single caret. This means that the RS control code cannot be

entered in this manner and therefore, it cannot be entered in a macro string.

There are several special control codes that may be used to automate the login process on many remote systems. The example in the menu above is for The Source. The characters currently available are as follows:

```
@E   Turn on wait-for-echo mode
@N   No echo wait (default)
@W   Wait until no characters received for 1 full second
@P1  Wait until no characters received for "1"/10 second
@Tn  Trap on the ASCII character "n"
@Li  Link to Macro String "i" (0-9)
^M   Carriage Return
```

If macro string 9 is defined, it will be sent automatically the first time a connection is established on an outgoing call. The console keyboard is also active when a macro string is being sent, and all characters except ESC will be sent to the remote system as usual. The ESC character is used to abort the current string. NOTE: because remote system logins vary, none of the "auto login" features of currently available programs will work on all systems or even every time on a given system.

As an example of an auto login, the following string may be used to logon to The Source via TELENET:

```
^M@W^M@E@T=d1^M@T@c 30128^M@T>id tcm495 xxxxx^M
```

When invoked, this string performs the following functions:

```
^M       First CR to get attention (not echoed)
@W       Wait for 1 second
^M       Second CR to get attention (not echoed)
@E       Turn on wait-for-echo mode
@T=      Input and display characters until "=" is seen
d1^M    Response to "Terminal=" question on TELENET
@T@      Input and display characters until "@" is seen
c 30128^M Response to "@" prompt on TELENET
@T>      Input and display characters until ">" is seen
id ...^M Source logon command
```

The "wait-for-echo" mode forces MYTERM to wait for the echo of each character that it sends before proceeding to the next character. This mode defaults to OFF at the start of each string. Some systems will lose characters if this wait is not enabled. However, many systems do not echo initial CR characters, passwords, etc., and require a means of turning this mode on and off on a character-by-character basis.

Macros are transmitted through a two-character sequence consisting of the "Macro Trigger Character" and one of the "index characters".

The Unwanted Character Filter Menu

MYTERM v1.xx - Copyright (c) 1983, Mycroft Labs, Inc.
OFFLINE. Bytes Captured = 0/####. Capture = OFF.
Site ID =

Unwanted Character Filter Definition Menu

0: 7FH =
1: 1AH = ^Z
2: 00H = ^@
3: 00H = ^@
4: 00H = ^@
5: 00H = ^@
6: 00H = ^@
7: 00H = ^@
8: 00H = ^@
9: 00H = ^@

X - Exit to Main Menu

Enter Option: -

This sub-menu gives the user the capability of ignoring certain characters received from the remote system. This feature may be useful when a micro is communicating with a mainframe that uses the delete character (7FH) as a pad character. Many microcomputers will do a character delete from the screen when the delete character is received. In order to prevent this deletion, the user would select the 7FH as a character to ignore from the remote system. The 7FH character is a standard character to be ignored.

Another example of when the unwanted character filter is useful involves the Dow Jones Service. This service will sometimes send a 1EH code which will cause certain computers to home the cursor without clearing the screen which can cause havoc for the user.

Three methods of entering the value are allowed. The ASCII value of the character may be entered in decimal or in hexadecimal. The control character may be entered by pressing the Control key along with the appropriate character. In some cases CP/M will trap this and not return it to MYTERM. For these cases a third method of entry is needed. Enter "^" followed by the character (e.g., "^M" to indicate a carriage return, 0DH).

Advanced Usage

Local Commands

Experienced users frequently find themselves leaving the terminal mode and going back through the menus to check their directory, initiate file transfers, etc. The constant interruption of the screen display by menus can be an inconvenience for this more sophisticated user. Local Commands help you avoid these interruptions. The Local Commands are intended to duplicate menu functions in a way that the more practiced user will find to be faster and less intrusive. Local Commands are, therefore, shortcuts; they provide a somewhat simpler way to accomplish certain commonly needed communications functions. However, Local Commands can only be used when MYTERM is in terminal mode. Terminal mode is when your microcomputer, through MYTERM, is acting as a terminal to a remote system. Terminal mode can also be described as the condition where a character typed on your console is sent to the device on the other end of the communications link without interpretation by your system.

There are several exceptions to this non-interpretation in the terminal mode by your system. One exception is the CAPS LOCK feature. If it is ON, any lower case characters will be converted to upper case before they are sent to the other system. Another exception occurs when a "trigger character", for example the MACRO trigger, is typed. The "trigger character" will be interpreted by your system and will invoke the prescribed option of MYTERM. The "trigger character" will not be transmitted to the device at the other end of the communications link.

You establish terminal mode by typing a G (for GO) in the Main Menu of MYTERM. If the device on the other end of the communications line is a system also running MYTERM or MITE, it also must initiate terminal mode by typing G with the Main Menu showing. In other cases, the device on the other end of the communications link may or may not need an overt action to establish communications from its end.

To invoke the use of a Local Command in terminal mode, the user would type the "Local Command Trigger" character. The default (preset) and recommended character is ^K. This "Local Command Trigger" can be changed through option K on the OPTION MENU. Do not set the trigger value to OOH, since this effectively disables the function. Whenever the "Local Command Trigger" character is typed on the Local console while in terminal link mode, the prompt **Local Command?** is displayed. At this time, any one of the Local Commands listed below may be entered. Once the command has been processed, terminal mode will be automatically resumed. Note that only the first four characters of the Local Commands need be entered. If a file name is omitted, MYTERM will ask for it later.

Syntax of Local Commands

APPEnd

Allows the user to write the captured data to the disk file without closing the file. Capture mode must be ON before you use APPEnd. The capture mode is left ON after the writing operation is completed. Since the file is not closed by APPEnd, another append or write to the same file is allowed. This is the same as the A option on the TEXT FILE DOWNLOAD MENU.

BUFFer

Prints the capture buffer statistics (i.e., number of bytes captured out of total space available).

CAPTure ON or CAPTure OFF

Allows user to turn text capture mode ON or OFF. The first time capture is enabled or the first time after a WRITE, MYTERM will ask for a file name. This is the same as the C option on the TEXT FILE DOWNLOAD MENU.

DIR

Displays directory of the currently logged disk drive.

ECHO ON or ECHO OFF

Allows the user to turn the printer echo function ON or OFF. This is the same as the P option on the TEXT FILE DOWNLOAD MENU.

EXIT

Exits to CP/M. Closes open files. Does not hang up the phone

HELP

Lists available Local Commands to the console.

MACROs

Lists all non-blank macro strings to the console.

READ d:fn.ft

Reads specified file from disk and sends it as if it were coming from the local keyboard without interpretation by your system. 'd' is the drive name, "fn" is the file name, and "ft" is the file type. The drive name is optional; if it is not specified, the drive name is assumed to be the current logged drive. This is the same as the U option on the TEXT FILE UPLOAD MENU.

RECV d:fn.ft

Receives file transmission onto specified file using the XMODEM binary protocol. 'd' is the drive name, "fn" is the file name, and "ft" is the file type. This is the same as the R option on the BINARY FILE TRANSFER MENU.

SCREEn OFF or SCREEn ON

This option allows the user to turn screen output OFF or ON. When OFF, characters received over the communications link will not be displayed on the screen. It is useful on those systems whose video displays are too slow to keep up with communications. This most often occurs on machines without a separate terminal. Problems with losing characters at the beginning of lines would indicate this option might be necessary when uploading or capturing files.

SEND d:fn.ft

Sends specified file from disk using the XMODEM protocol. 'd' is the drive name, "fn" is the file name, and "ft" is the file type. This is the same as the S option on the BINARY FILE TRANSFER MENU.

WRITE

Allows the user to write the captured data (or the last part of it, if flow control is enabled) to disk. Capture mode must be ON before using WRITE. A WRITE closes the file and turns the capture mode OFF. This is the same as the W option on the TEXT FILE DOWNLOAD MENU.

Examples of Usage

Creating Parameter Files

Once a parameter file has been created for a given site, it is quite easy to dial into that site and begin using it without having to look up a phone number, password, etc. To create such a file, the typical procedure is as follows:

1. Bring up MYTERM either with all defaults or with another parameter file if one exists that is similar to what you want (for example, identical except for phone number).
2. Bring up the Parameter Menu and change any parameter values. The most common items to be changed are the phone number, baud rate, parity, number of data bits, number of stop bits and mode (full- or half-duplex). Most on-line systems use 300 baud, 7 data bits, EVEN parity, 1 stop bit, and full-duplex.
3. Bring up the Option Menu and change any incorrect values. The most common items to be changed are trigger characters that might conflict with characters needed at the remote site.
4. If you plan to send text files TO the remote system, bring up the Text File Upload Menu and change any parameter values. Typically the values on this menu would be set based on trial and error once a connection had been established, but some options may be obvious on certain systems.
5. If you plan to capture text files FROM the remote system, bring up the Text File Download Menu and change any incorrect values. The most common items to be changed are whether or not flow control is supported and the specification of the start and stop characters.
6. If any pre-stored macro strings (such as logons, passwords, and favorite commands) are desired, bring up the Macro String Definition Menu and define them. If you do enter any passwords here, be careful not to let this file fall into the wrong hands. Note that most strings should be terminated with a ^M to cause a carriage return to be sent at the end of the string.
7. Return to the Main Menu and select the S option. The name specified in response to the "Enter Filename: " prompt may be specified on the command line (or in response to the L option) in future sessions.

Uploading and Downloading Text Files

At any point, you can turn on the text capture mode (see the Text File Download Menu). The first time you do this, you will be asked for a file name. This is the name of the file to which you want the captured data written. Until you terminate this mode with the W command, or by exiting to CP/M, any character written to the screen while in link mode will be captured on that file. It is possible to temporarily disable the capture mode by turning it OFF, then back ON later. This mechanism can be used to make a permanent record of an entire session. If flow control is enabled, you may notice short pauses every 2,000 characters or so. Do not let these worry you - this is MYTERM taking a second to write a buffer of data to disk. Characters defined in the unwanted character filter are automatically discarded. The ASCII characters 00 (NUL), 1AH (Control-Z or logical EOF), and 7FH (DEL) are defaults in the unwanted character filter. To change delete these characters from the filter or to add other characters to the filter refer to the Unwanted Character Filter Section.

It is also quite easy to send text files to the remote system as if they were being typed on your keyboard. This can save a great deal of time on long-distance calls or on systems that charge on a "connect-time" basis. It can also allow you to leave nicely formatted messages (which you have created with a word processor before making the connection). To send files, put the remote system into a mode where it would normally expect you to start typing a message or text file (e.g. insert mode in an editor), then go to the Text File Upload Menu and issue the U command. You will be asked for a file name. This is the name of the file that you wish to send. DO NOT SPECIFY A BINARY FILE. It would probably confuse the remote system rather badly. You have several options concerning how the file is to be uploaded. See the Text File Upload Menu description for details.

A Typical Session on The Source

A typical session on The Source might proceed as follows. In this session, you are dialing into The Source and uploading a message into its Electronic Mail system. You are also capturing the entire session for future reference.

1. A disk containing MYTERM.COM is mounted in your system in Read/Write mode.

2. MYTERM is executed with a parameter file named "source":

```
A>myterm source
```

3. The G option is selected from the Main Menu. This prompts MYTERM to dial the pre-stored phone number. Once carrier is detected, MYTERM will inform you of this fact and you will be in terminal mode.

4. At this point, the login can be performed automatically as described under the Macro String Definition Menu.

5. In this example, since a disk copy of the entire session is desired, the capture mode will be turned on and left on for the entire session. None of the other operations will adversely affect this capturing. To turn the capture mode on, the "escape trigger" character (in this case LF) is entered, which returns control to the Main Menu. The D option is selected, which brings up the Text File Download Menu. On this menu, the C option (Capture) is selected. Since this is the first time this option has been selected, you are asked for a file name. Because the remote system supports flow control, an arbitrarily long session may be captured (assuming sufficient disk space). After the file name is entered, the X option is used to return to the Main Menu where the G option resumes the link.

6. A pre-stored command is invoked (with a single function key) to check for incoming mail (via the command MAILCK).

7. An outgoing message for someone has been previously created on a disk file with an text editor. The commands necessary to put the remote system into a mode where the text of the message, which would normally be entered manually, are issued: "MAIL SEND XYZ123". At this point, the "escape trigger" character (LF) is typed, which returns control to the Main Menu. The U option is selected, which brings up the Text File Upload Menu. Under the Text File Upload Menu, the U option is selected, which asks for a file name. The name of the previously created text file is entered. At this point, the contents of that file are sent to the remote system as if they were being typed on the keyboard. Once the entire file is sent, terminal mode is resumed automatically, and the message can be closed out and mailed.

8. To terminate this session, the system is logged off with another pre-stored macro string (OFF). On most systems, logoff would cause carrier to drop, which would automatically return control to the Main Menu. On this system, the user is returned to TELENET without the carrier being dropped. The "escape trigger" character is used to return to the Main Menu one last time. The X option is then used to exit to CP/M. The first question asked is "Are you sure?". You are, so you type Y (for yes). Since you haven't written the last buffer to disk with the W option on the Text File Download Menu, this is now done automatically and the name of the file is printed to remind you. Since carrier is still present, you are reminded of this and offered the option of hanging up at this time. Since you are finished, this option is selected, after which MYTERM exits to CP/M.

Sending and Receiving Binary Files

Not all files under CP/M are simple "text files", i.e., a file that yields meaningful information when displayed on the console with the "TYPE" command. Some CP/M files are "binary" files. Examples of "binary" files are .COM executable object files, .REL relocatable object files, Wordstar internal files, and the various data files created by programs like SuperCalc. In order to transfer binary files, a more powerful transfer mechanism is needed. Simple text files are a special case of "binary files" and may also be transferred with this mechanism. If binary file transfer is possible, then it is the preferred mechanism, as retransmission of blocks is performed automatically on detection of errors. This greatly improves the chances of getting the file to the remote site intact. For the most part, binary file transfer is only practical with another CP/M system.

There are numerous "on-line" CP/M systems around the country that have a large number of public domain programs on them. These systems are referred to as "Remote CP/M" (or RCPM) systems. They all have a program called XMODEM that supports file transfers in either direction, with error checking and automatic recovery. Any kind of file may be transferred using this program. In order to transfer files, you must have a program on your computer that knows how to communicate with XMODEM.

One of the nicer features of MYTERM is support for the file transfer protocol used by XMODEM. This protocol may also be used for file transfer between two MYTERM systems. Most of these on-line systems have documentation on how to use XMODEM. Very briefly, it is run by specifying either an "R" (to receive) or an "S" (to send) as the first parameter and a file name as the second parameter (e.g., "XMODEM R FRED.ASM" to receive a file from you and write it to FRED.ASM on the RCPM system).

To receive a file from an RCPM system onto your disk:

1. Login to the RCPM system like you would with any other on-line system. Few, if any, of these systems have passwords.
2. Start the XMODEM program (in Send mode) on the RCPM system: "XMODEM S fn.ft".
3. Escape from the terminal mode and bring up the Binary File Transfer Menu (option B on the Main Menu). Select the R option (to Receive a binary file) and specify the file name under which you want this file saved.

To send a binary file to an RCPM system from your disk:

1. Login to the RCPM system like you would with any other on-line system.

2. Start the XMODEM program (in Receive mode) on the RCPM system: "XMODEM R fn.ft".

3. Escape from the terminal mode and bring up the Binary File Transfer menu (option B on the Main Menu). Select the S option (to Send a binary file) and specify the name of the file you want to send.

In either case, a period will be printed on your console for each 128 byte block that is transferred successfully. An R will be printed for each block that had to be retransmitted. Once the transfer is complete, control will be returned automatically to the terminal mode.

103JCTSOSB1 Modem Specifications

FCC Registration No.	CEF8E2-68583-DM-R	
Ringer Equivalence	.8B	
Type	Originate/Answer - Bell System 103A compatible. Approved by FCC for direct telephone line connection to RJ11C jack (or equivalent).	
Modulation	Frequency Shift Keying	
Data Format	Serial, asynchronous binary transmission up to 300 bits/second	
Operation	Full-duplex on two-wire, unconditioned telephone lines	
Carrier Frequencies	Receive	Transmit
Mark	1270, 2225 Hz	2225, 1270 Hz
Space	1070, 2025 Hz	2025, 1070 Hz
Transmit Level	-10dBm into 600 Ohm load	
Receive Sensitivity	0dBm to -43dBm into 600 Ohm load	
10-pin Interface	Connector	
	Pin	
	1	Signal Ground
	2	Transmit Data
	4	Modem Status Bit
	6	Receive Data
	7	+12.6 v DC
	8	Modem Control Bit
Operating Requirement	Temperature - 0 to 50 degrees C	
	Relative Humidity - 0 to 95%	
	Altitude - 0 to 10,000 feet	

