

FastTerm II

Version 4.xx

**Copyright 1992
by Mel Patrick**

BBS Support (604) 574-2072

8056 - 164A Street
Surrey, B.C., Canada, V3S 7S7

Chapter 1 : Starting and Navigating FastTerm II. 2

Initializing FastTerm II.	2
FastTerm II Command Mode.	2
Invoking the Command Mode.	2
Exiting the Command Mode.	2
Moving the Command Mode Window.	2
Returning to the Command Mode.	2
Quick Command Menu Selection.	3
Custom Selection Window.	3

Chapter 2 : Echo Menu. 4

Echo Explained.	4
Selecting Echo.	4
What is Remote Echo?.	4
What is Local Echo?.	4
Typical Echo Mode Settings.	4
Printer Echo.	5
Control and Graphics Characters to Printer.	5
Masking Control and Graphics Characters.	5

Chapter 3 : Uart Control. 6

Uart Overview.	6
Changing the Baud Rate.	6
Changing the Word Length.	6
Changing the Stop Bits.	6
Changing the Parity.	6
Masking the 8th Bit.	6
Determining Settings.	7
Video Scrolling.	7
Viewing the Video Buffer.	7
Exiting the Video Buffer View Mode.	7

Chapter 4: Buffer Control. 8

Buffer OverView.	8
Buffer Size.	8
Buffer Size with Memdisk or other programs.	8
Buffer Information Displayed.	8
Opening the Buffer.	8
Closing the Buffer.	8
Saving the Buffer Contents.	9
File Error in Saving.	9
Viewing the Buffer Contents.	9
Quick Buffer Command Key.	9
Appending to the Buffer.	9
Screen Capture to Buffer.	10
Capture Buffer FULL Procedure.	10

Chapter 5: Dial Menu. 11

Dial Overview.	11
Dialing a Number.	11

Multi-Dial Option.	11
Dialer Capacity.	11
Selecting the Dialer Directory Page.	11
Entering a Phone Number (manual).	11
What is a Prefix Dial Code?	12
Defining Dial Code Prefixes.	12
Imbedding a Carriage Return in Prefix.	12
Imbedding a PAUSE in Prefix.	12
Non-Radio Shack Modems.	13
Setting Baud Rate for Dialing.	13
Setting WORD/PARITY/STOP for Dialing.	13
Enabling a Script File.	14
Specifying a Prefix Code to Use.	14
Syntax Order in Dialer for Options.	14
End of Number Marker.	14
Embedding ASCII in the Phone Number.	14
Reprogramming a Number.	14
Using the Redial Option.	15
Redialing a Number.	15
Setting the Redial Time.	15
Setting the Limit on Redialing.	15
Redial Attempts.	15
Build # Entry (prompted).	15
Display Format of Elapsed Time and Charges.	15
Accuracy of Charges and Elapsed Timer.	16

Chapter 6: Script Menu. 17

Script Overview.	17
Saving the Configuration.	17
Error in Configuration Saving.	17
Configuration Parameters Saved.	17
Elapsed Time Clock.	17
Clock Accuracy.	17
Reset the Clock to 00:00:00.	18
Automatic Clock Reset after Autodialing.	18
Script Files.	18
Selecting the Script Page.	18
Entering the Script Filename.	18
Activating a Script File.	18
Resuming with another Script File Line.	18

Chapter 7: LSDOS/TRSDOS Library Command Menu. 19

Library Overview.	19
Entering a Library Command.	19
Library Command Error.	19
Library Commands using CLS.	19

Chapter 8: File Transfer Menu. 20

Transfer Overview.	20
YMODEM Batch SEND.	20
Receive a YMODEM batch transfer.	20
Uploading an ASCII File (Sending, non-prompted).	21
Uploading an ASCII File (Sending, prompted).	21
Uploading XON/XOFF Control.	21

Aborting during the Upload.	21
Disk Error during Uploading.	21
Download an ASCII File (Receive).	21
Data Display during Downloading.	21
Completion of Downloading.	22
Downloading ASCII XON/XOFF.	22
Aborting during ASCII Downloading.	22
Disk Error during Downloading.	22
Output File (1Kxmodem).	22
Input File (1Kxmodem).	22
Send File XMODEM Protocol.	22
Receive File XMODEM Protocol.	23
X/Y/1K XMODEM Block # Display.	23
X/Y/1K Xmodem Total Blocks.	23
Total Size.	23
Data Field Display during X/Y/1K Xmodem.	23
X/Y/1K Xmodem Time Out.	23
X/1K Xmodem Error Re-trys.	23
Aborting X/Y/1K Xmodem Transfer from Keyboard.	23
Free Space Map.	24
Transfer Block Size.	24
Xmodem/ 1K xmodem File Overwriting.	24

Chapter 9: Status Menu. 25

Status Information.	25
Changing the Open/Close Buffer Value.	25
Buffer Disable.	25
Toggle Auto-Sending during Split Window.	25

Chapter 10: FastTerm II Printer Control. 26

Printer Spooling from FastTerm II.	26
Enabling the Printer Option.	26
Printer Buffer Overflow.	26
Printer Output Cancel.	26
Printing Control Characters.	26

Chapter 11: FastTerm II Command Key Lists. 27

Special Control Keys in Terminal Mode.	27
--	----

Chapter 12: Terminal Emulation. 29

Terminal Emulation.	29
Terminal Emulation Provided.	29
Selecting Emulation Mode.	29
Saving the Emulation Mode.	29
Video Buffer Action during Emulation.	29
Setting Compuserve for Emulation.	29

Chapter 13: FastTerm II Personalization. 31

Customizing FastTerm II.	31
Methods of Changing the Program.	31

Changing the Configuration Filename.	31
Changing the Cost Log Filename.	31
Changing the XLATE Table.	32

Chapter 14: Split Screen Communications Mode. 33

FastTerm II Split Screen Overview.	33
Enabling the Split Screen Mode.	33
Disabling the Split Screen Mode.	33
Typing in the Split Screen.	33
Sending Text from the Split Screen.	33
Suppressing the C/R during a Send.	33
Screen Clearing During Split Mode.	33
Split Screen during Emulation.	34
Control Characters in the Split Mode.	34
Auto-Sending on Full Window.	34
Enable/Disable Auto-Sending.	34

Chapter 15: FastTerm II Scripting Language. 35

What Script Files are.	35
How to Write a Script File.	35
Script Language Types.	35
Defining Script Variables.	36
Retrieving Script Variables.	36
Scripting Window.	37
Scripting Literals.	37
Script Command List.	37
Special Control Characters.	42
Script Activation from Terminal Mode.	42
Script Menu Window.	42
Script Errors.	42
Scripting Hints.	42

Conventions

Throughout this manual you will find designations such as [CTRL], [BREAK], [ENTER], [SHIFT], [F1], [F2], and [F3]. These words or letters within the “[]”s refer to the keys on your TRS-80 Model 4/4D/4P keyboards. Although the window menu items in FastTerm II may use the “<>” signs to hold the letters, for clarity I will use the “[]” signs throughout this manual.

For example, if the manual states that to send a BELL to the remote computer, you have to press [CTRL] [G], it means that you PRESS and HOLD the [CTRL] down and then press the [G] key. The same holds true for any [SHIFT] key functions required by FastTerm II.

In FastTerm II there are two modes of operation. The first being the COMMAND mode. This mode allows using all of the available menu selections. The second is the TERMINAL mode which is used for computer to computer communications generally via the keyboard but has control key designations for certain functions if required. Both are referred to throughout this manual. Ensure that you are in the correct mode if a command does not appear to work at first.

FastTerm II is a stand alone application. This means that you do not need the COMM/DVR installed to use it. If you have been using another terminal program which did require the COMM/DVR, you will have to remove it first before using FastTerm II. The easiest way to remove COMM/DVR is to reboot your Model IV and hold down the [CLEAR] key. You can also place FastTerm II on a disk of its own rather than have it on a TRS/LS DOS system diskette although you will lose some of the obvious advantages of using FastTerm II.

The first time that FastTerm II runs it will create a configuration file of about 4K in length and will load it upon execution each time thereafter and update that configuration file when you elect to save the phone number directory or script filenames.

I suggest that you read this manual very thoroughly to become proficient with FastTerm II. I'm sure that once you have used FastTerm II, you will find that it fills any current communication needs you have quite nicely and likely any you will require in the future.

Program support can be obtained by either writing to me with a detailed outline of your problem(s) or calling the FastMaster BBS which I maintain at (604) 574-2072.

Chapter 1

Initializing FastTerm II

Before you execute FastTerm II for the first time, make sure you have about 4K of free space on drive 0. Type in FT (or whatever you called it) and press [ENTER]. The program will load and try to locate its configuration file. If one is found it will be loaded, otherwise it will be created on drive 0.

The filename is FT/CFG and it may be copied any hard drive partition or onto your terminal disk and removed from drive 0 after you exit FastTerm II. The configuration file contains all the phone numbers and macro definitions as well as some house keeping information.

FastTerm II Command Mode

When you first execute the FastTerm II program and the configuration file has been loaded or created, you will be prompted to press [ENTER]. You will be in the TERMINAL mode. A copyright message will be displayed at the top of the display followed by a line of commands supported by FastTerm II. Below that is the TERMINAL communications area.

From under each of the command mode selections a window menu is available. This window may appear to overwrite text which is in the terminal communications area, but when the selection task is complete, the window will disappear and the previous text will again become visible.

Invoking the Command Mode

To enter the command mode you merely press one of the function keys located above the numeric keyboard on your keyboard. FastTerm II uses the [F1] key. A menu window will immediately be displayed under one of the nine command selection headings. The heading selected will be highlighted by graphics blocks on either side.

Exiting the Command Mode

To exit from any command mode window, simply press a key which has no meaning in that window. This can be any letter or symbol but I suggest you use the [SPACE BAR], [ENTER], [F1] or [BREAK] key to exit these window menus.

Moving the Command Mode Window

When the [F1] key is pressed the last menu selected will be displayed. If you have just executed FastTerm II this will be the ECHO menu. To select a different menu, use the right and left arrow keys :

[RIGHT ARROW] will move one menu selection to the right.

[LEFT ARROW] will move one menu selection to the left.

Returning to the Command Mode

Whenever the command mode is re-entered from the terminal mode the last menu selection will be the one displayed. This is very efficient if you are doing any repetitive operations such as file transfer. i.e. you get the menu you want instantly without having to go through a number of other menus.

Selecting a Command Window Option

When a command window menu is displayed, there will normally be letters residing within "[]" signs. To invoke that option simply press that letter. The [ENTER] key is not required unless noted in this manual. After selecting an option, some windows will remain active. Use a non-valid key to exit from these command windows.

Quick Command Menu Selection

After you have used FastTerm II and become familiar with it, you may wish to use another special feature available. Normally to select a command window, the [F1] key must be pressed and then the menu selected using the or arrow keys. For those who would rather just go directly to a command menu you may do so by using the [CLEAR] key in conjunction with the first letter of the menu word. Note that when the Custom Selection Window mode is active, these quick command can not be used.

[CLEAR] [E] - Echo Menu
[CLEAR] [U] - Uart Menu
[CLEAR] [B] - Buffer Menu
[CLEAR] [D] - Dialer Menu
[CLEAR] [M] - Script Menu (this menu is the exception since it was originally a macro function)
[CLEAR] [L] - Library Menu
[CLEAR] [T] - Transfer Menu
[CLEAR] [W] - Who Menu

Once you have entered the command mode by using these command keys, the arrow keys are still active and may be used to reposition the command mode selection window.

The quick selection keys can not be used to skip from one command mode selection to another once a menu window is active. The arrow keys must be used for that.

Custom Selection Window

There is an alternative to using the standard window selection and that is called the Custom Selection Window. Pressing [SHIFT F3] will toggle this mode on/off. As noted in the first part of this chapter, pressing [F1] will normally highlight the menu directly. When the custom mode is selected, you will get a menu of all the menus (so to speak). This one window will contain all the information necessary to select any window, terminal command key (which are normally the CLEAR + LETTER options), and any of the options which normally use the function keys.

The reason for this inclusion was so that FastTerm II can be used with the TRS/LS DOS KSM/FLT (key stroke multiply) feature. KSM uses [CLEAR] + all the letters from A-Z which FastTerm II uses as well. With the Custom Selection Window invoked your KSM filter remains active.

Chapter 2

Echo Explained

If you have been using FastTerm II before reading this manual, you may have noticed that there isn't a HALF/FULL duplex command. This is because the Model 4 is always in FULL DUPLEX regardless of what other terminal programs have led you to believe. In most of those terminals, what they are actually referring to is LOCAL echo (they call it HALF DUPLEX). This simply means that your modem, or the remote computer you are communicating with, is incapable of echoing any characters you type in, back to you. This is usually the case when two TERMINAL programs are communicating with each other.

A BBS, or HOST on the other hand will always send (echo) back any characters it receives. Most terminal programs refer to this as FULL DUPLEX, which is incorrect.

If you prefer to use the HALF/FULL duplex idea in FastTerm II, simply use the following guide :

HALF DUPLEX = Local Echo ON
FULL DUPLEX = Local Echo OFF

Selecting Echo

Pressing the key inside the "[]" signs will toggle that mode ON/OFF. FastTerm II supports LOCAL and REMOTE echo. Use the [R] or [L] keys to select the option. Press any key other than the two available selections to return to the terminal mode.

What is Remote Echo?

Remote Echo will cause any character received by FastTerm II to first be displayed on your screen, and secondly to be sent back to the remote system so that they can see it on their screen as well. If both terminals use this form of echo, an endless loop will be entered with the next character sent, i.e you echo it, they echo it, etc etc.

What is Local Echo?

When you type a character it will first be displayed on your screen, then it will be sent to the remote terminal or host. If you are receiving double characters each time you press a key, this would indicate that the remote terminal has their remote echo on. Either turn theirs off, or turn off your local echo to cure this problem.

Since the characters are sent to your screen and then to the remote computer, you really have no way of being sure that the character which was displayed on your screen is the same one that the remote received.

If the remote operator reports that they are receiving a lot of incorrect characters (a nice name for garbage), I suggest you check the phone connection (or try for a better connection), or simply reduce your baud rate (providing that is possible).

Typical Echo Mode Settings

Terminal to Terminal :
Host (you), LOCAL ON, REMOTE ON
Remote (them), LOCAL OFF, REMOTE OFF

Terminal to BBS :
LOCAL OFF, REMOTE OFF

Printer Echo

Pressing the [P] key will toggle the output of incoming text to the printer (provided one is connected and ready), on or off. This command is also available as a command key when in the terminal mode, but was added to this menu to help remembering it.

Control and Graphics Characters to Printer

As FastTerm II is sending characters to the printer, there may be some control or graphics characters received and consequently sent. This can be due to possible line noise, or a bad connection, or when you are listing something which contains control characters. It can cause your printer to perform strangely like multiple form feeds. If you find this, press [CLEAR] [Q] which will cancel printing. Note that your printer probably has an internal buffer of RAM memory of its own which it will store information in. Therefore even if you cancel printing from FastTerm II the printer may continue for some time, depending on the amount of RAM in your printer and you may be forced to actually turn off the printer and turn it back on again to clear it.

Masking Control and Graphics Characters

If you are using a uart setting with an 8 bit word length, you can enable the Mask Bit 8 option in the uart to remove most graphics and some control characters. This will help prevent unwanted characters from begin displayed or printed.

Chapter 3

Uart Overview

FastTerm II supports baud rates from 300 to 19,200, 7 & 8 bit word, Even/Odd/No parity, and 1 or 2 stop bits. Depending on the communication mode you are in, you may have to use a lower baud rate to enable more reliable communications. Due to the hardware limitations of the Model 4, you may find that xmodem receive at 19200 does not work reliably, but send will. This is because of the incredible amounts of housekeeping done by the Model 4 which cause characters to be lost at 19200, but usually baud rates lower than that can be used reliably. This heavily depends on the terminal on the remote end. Some terminals are much faster than others are at sending information. Hence these are the ones FastTerm II will have trouble with.

Changing the Baud Rate

First use the [F1] and arrow keys to select the UART menu. The [B] key will advance the baud rate each time it is pressed with the current baud rate being displayed.

[B] --> 300, 600, 1200, 2400, 4800, 7200, 9600, 19.2K

Changing the Word Length

Pressing the [W] key will toggle the word length from 8 bit to 7 bit and vice versa.

Changing the Stop Bits

Pressing the [S] key will toggle the stop bits from 1 to 2 and vice versa.

Changing the Parity

Pressing the [P] key will change the parity from None to Odd to Even. After Even parity, it will start to repeat again with None.

Masking the 8th Bit

Pressing the [M] key will toggle the masking of the 8th bit in the received character. While this may sound mysterious, effectively what it will do is allow you to log on with settings of 8 bit word - 1 stop - and no parity and will not allow your terminal to receive any graphics characters. Only standard ASCII letters will be displayed. There are two cases where this command can be invaluable.

One is if you have phoned a system and they have sent characters to your screen which your computer interprets as graphics characters and causes your screen to display incorrectly. By using this option, you can MASK (cancel) any of those characters received.

The second usage is for a terminal to modem connection. Such as the TRS-80 Model 4P which seems to prefer programming the internal modem with a setting of 7N1 (it will display strange lists if you use 8N1; all graphics), but will allow you to connect with any system using 8N1. The modem is at fault here and is setting the 8th bit, which we can easily remove using the MASK option provided here.

The command option has no effect on the TRANSFER menu. It only affects characters received during the TERMINAL mode for display clarity.

Determining Settings

If you have trouble signing on to a system try different parity, word, and stop bit settings. You can usually tell if you have the wrong word length selected, as your screen will display some strange characters along with a usual mixture of graphics thrown in for seemingly good measure.

You can usually communicate with a system which uses an 8 bit word, if you are using 7 bit word. The reverse is not true and will result in the undesirable side affects previously mentioned. Also try using the MASK option and see if that helps.

Video Scrolling

When communicating with other terminals or host systems, the text on the screen will scroll off to make room for the newer incoming information. FastTerm II has the ability to store some of this text which would otherwise be lost, in a video buffer. Up to 24 lines of text can be stored so that you can view what was once there without having to redo any options on a host system for example.

Viewing the Video Buffer

Pressing [UP ARROW] will allow you to view the video buffer. Using the [UP ARROW] in conjunction with the [DOWN ARROW] will allow you to scroll in either direction through the buffer.

Exiting the Video Buffer View Mode

The view mode is a smart mode. It will remember your current screen display before entering the video display mode. Pressing [ENTER] during the display mode will restore the screen and return to the terminal mode. Pressing any other key, will restore the screen, return to the terminal mode, and send that key to the remote system.

Chapter 4

Buffer OverView

The buffer command option in FastTerm II is available to capture incoming ASCII information. There is approximately 8K of memory for information to be stored in. This is the normal figure for a 64K Model 4 with no high memory drivers, additional memory or filters installed.

This buffer may be opened and closed remotely if FastTerm II receives the proper open and close values from the remote computer, or may be done directly from your keyboard (providing you have enabled this option; see the Status Menu for additional information).

Buffer Size

When the program is first executed, it will examine the memory to see if the additional memory is available and unused. If you have upgraded your Model 4 to 128K and are not using the alternate banks of memory, FastTerm II will use them for itself. Thus giving you a buffer size of approximately 70K on a 128K machine. If you have an additional memory expansion that supports the standard LSDOS bank switching commands, this memory will be tested for in use and if possible be used as well up to a total memory of 960K. FastTerm II has been tested with the XLR8er board in this configuration and allows 328K of buffer space.

Buffer Size with Memdisk or other programs

Many people prefer to setup the alternate memory with Memdisk to use either as a SYSTEM or as a data disk. FastTerm II will recognize any usage like this. However, it is possible in Memdisk to use Bank 1 or Bank 2 or a combination of both. If you use only Bank 2, FastTerm II will use Bank 1, giving you approx. 40K of buffer space. If you use Bank 1, FastTerm II will assume that you are also using Bank 2 and will not use either. If at all possible always use the highest numbered bank for your other software. FastTerm II tries to start at bank 1 and test sequentially through them. As soon as it locates a non valid bank or once which is marked in use by other software it stops the search and sets the buffer size to that point.

Buffer Information Displayed

There are two numbers which are displayed to indicate how much of the buffer has been used and how much is left. These are :

BUFFER SIZE [0K] - indicates the number of characters in the buffer.
MEMORY FREE [328K] - indicates the amount of memory remaining for storage.

As the buffer receives characters these numbers will change accordingly. Note that if you have any window, including the BUFFER window displayed while receiving characters, they will not be stored in the buffer. Any time a menu is active, the capture buffer is deactivated. If you do not want to lose any incoming text, I suggest that you press [CTRL] [S] to pause the output coming from the remote host, then after you have saved the buffer to disk and reopened it for more text, press [CTRL] [Q] to indicate to the host to resume sending text information.

Also any time the buffer is open, the remaining buffer size will be displayed at the top left corner of the video display. This is to provide you with visual feedback when capturing information in the buffer.

Opening the Buffer

Pressing the [O] key will remove any previous information which was stored in the buffer in preparation for the new information. If you do not want the old information destroyed, use the [S] command option to save the buffer contents first. After pressing the [O] key, there will be a "*" character displayed within the brackets to indicate the buffer status. Also at the top right side of the display, the remaining buffer memory to the nearest K will be displayed (1328K for example).

Closing the Buffer

Pressing the [C] key will close the buffer and stop it from receiving any more information. The "*" character will reflect this change on the screen the same as the open command.

Saving the Buffer Contents

You may elect to save the buffer contents to disk for retrieving at a later date. Pressing the [S] key will place a row of graphic blocks after the FILE prompt at the bottom of the window menu. Due to the increased buffer size in this new version of FastTerm II make sure you have sufficient space to store the document before trying to save it. Use the FREE SPACE option in the file window to see how much free space you actually have.

You may enter in any VALID filename and drive to store the files. FastTerm II will then create and save that file to the drive specified. If a drive is not specified, it will be created on the first available drive.

If no characters are entered in, and [ENTER] is pressed, the option will be ignored. This provides a way out in case of a selection error.

File Error In Saving

If an incorrect filename or drive is specified, a disk is full, or any other disk related error is generated when saving the buffer to disk, an error will be returned. FastTerm II will emit a sound through the internal sound board (a beep), return to the terminal mode and display the error message on the screen.

Viewing the Buffer Contents

Pressing the [V] key will allow the buffer contents to be viewed. A solid graphic line will be displayed first to mark the beginning of the buffer, followed by the text. When the end of the buffer has been reached, another solid graphic line will appear to indicate the end and return to the terminal mode. When you exit the buffer view mode, the original screen will be restored so that you don't lose any information.

While you are viewing the buffer it will scroll 18 lines at a time. So in effect you see a screen full and then press [ENTER] to advance to the next screen. If you press the [BREAK] key during the scrolling, you will return to the terminal mode.

Quick Buffer Command Key

At times it may be necessary to open, close or append the buffer without invoking the BUFFER window menu. This is possible directly from the keyboard by using the following key:

[CLEAR] [G] - will toggle the buffer Open/Closed depending on its present state.

If the buffer was Closed it will be Opened. This will erase all the info presently in the buffer in preparation for receiving new information. If the buffer was Open and you toggle it Closed, it simply stops accumulating incoming information.

This option may be used at any time while receiving data to control your buffer.

Appending to the Buffer

Another feature of FastTerm II is the fact that you can append information to the buffer. Normally if you open the buffer FastTerm II will remove the previous contents of it and prepare to capture the new incoming information. By using the append option, you can add information to the buffer without destroying the present contents.

APPEND - [CLEAR] [X] - will re-open the buffer.

You may use the quick [CLEAR] [X] (to extend) and [CLEAR] [G] (to close) as many times as desired without destroying the buffer contents.

Screen Capture to Buffer

FastTerm II will allow a screen capture to be sent to it's buffer much the same as a screen dump would be directed to the printer.

[CLEAR] [C] - will copy current screen to buffer.

Each line (except the top 3 command lines used by FastTerm II itself) is copied from the screen and stored in the capture buffer. The characters on each line are copied up to the last non-blank character on the line. This results in a compact screen capture without wasting buffer space.

This command will ignore the current status of the buffer (open or closed). The captured information from the display will be appended to the buffer present contents if there was any but will not open the buffer if it was closed.

Should the buffer become full during this option a message to that effect will appear on the screen and you have only a partial screen capture.

Capture Buffer FULL Procedure

When you are capturing text information in the buffer it may become full. Should this occur FastTerm II will automatically send a [CTRL] [S] to the remote to suspend any more information from coming and close its buffer. Most systems will respond to the [CTRL] [S] by suspending their output until they receive a [CTRL] [Q] which indicates to them to resume output.

FastTerm II will report the buffer full condition on the screen immediately after sending the [CTRL] [S]. Use the simple procedure outlined below to handle this situation :

- 1> FastTerm II will have issued the BUFFER FULL msg and sent [CTRL] [S].
- 2> Press [F1] to select the BUFFER MENU automatically (or [CLEAR] [B]).
- 3> Press [S] and enter a valid filename to save current buffer contents.
- 4> Press [F1] again to return to the terminal mode.
- 5> Press [CLEAR] [G] to reopen buffer for additional incoming text.
- 6> Press [CTRL] [Q] to signal remote to resume output.

Chapter 5

Dial Overview

If your modem supports auto-dialing, you may use this function in FastTerm II to dial your modem. FastTerm II also will acknowledge a carrier detect on most modems and automatically exit from the dialer menu to the terminal mode. Some modems, particularly a Hayes 2400 or SupraModem 2400 have to have a special command prefix to ensure that FastTerm II can detect the carrier properly,

Dialing a Number

To dial any defined number in the dial directory, press the number (1-9) of the line desired. Dial lines not defined, will be ignored.

Multi-Dial Option

Pressing the [M] key will invoke the multi-dial option and you may select more than one number to dial. Press the numbers (1-9) of the dial definitions you want to dial and a ">" will be displayed beside that number. You may have up to 9 selections and they will be dialed in the order that they were entered.

Once you have selected all the numbers desired, you have two options to continue. Pressing [ENTER] will dial each number selected once. If a carrier is detected during this procedure you will return to the terminal mode. If not, it will return to the dial menu.

If you pressed [R], the redial option will be used on the numbers selected to the limit set for the REDIAL option.

If you make an error in a dial number selection, select the same number again to erase it from the multi-dial option. The ">" sign will erase immediately.

This option will work best with a Hayes or Hayes compatible modem. If you have a Radio Shack modem, it may not work nearly as well, or at all depending on the model you have.

When a connection is made and you return to the terminal mode, the number and any ASCII comments you had on the dialer line will be displayed to show which number you are connected to.

Dialer Capacity

FastTerm II has the ability to store up to 45 phone number entries. These are split into pages (displayed as Dialer Directory Page [1] through [5]). You may enter any number on any page in the dialer directory.

Selecting the Dialer Directory Page

Pressing the [UP ARROW] will step one page back in the directory and wrap around if necessary. Pressing [DOWN ARROW] will step to the next page in the directory and wrap around if necessary. These keys will allow rapid movement from dialer page to page.

Entering a Phone Number (manual)

To enter a phone number, press the [E] key. A '#' will then begin blinking at the top right side of the window menu. FastTerm II is now waiting for a number [1-9] to program.

Press one of the number keys [1-9] and a graphic block input line will appear immediately after that number, the number entered [1-9] will replace the blinking '#' at the top of the menu.

You may now enter the phone number and any special options you want invoked for that number. Use the following examples for your modem type. If your modem is not listed here, refer to the manual which came with your modem for dialing commands.

Hayes - 555-0000 or 555000,4P Internal Modem - 5550000X,DC2212 - 5550000X

There are obviously more modems on the market than this, but these should give you the basic idea for setting up a dialer menu. The commands shown were taken from the respective manuals and may not reflect any revisions which have been made to these modems.

Pressing the [ENTER] key after entering the number will store the number in memory and display it along with a "\ " (backslash) which indicates a stop code to FastTerm II.

A little work on getting this feature to work with your modem will make FastTerm II even easier to use. If you have a modem which is listed or not listed and have found a better way to use dialing commands and carrier detects, please send the information to me for inclusion with these manuals for other users. That's what shareware is about.

What is a Prefix Dial Code?

A prefix dial code is nothing more than the group or combination of characters and/or letters which will cause your modem to dial a phone number. For example if you had touch-tone dialing available and you were using a Hayes modem, you would always start your dialing commands with :

ATDT

This is followed by the actual number you wanted to dial. Obviously with each of the dialer entries this could get to be redundant. Hence to save keystrokes, you may "assign" either of the prefix codes available (#1 or #2) to any defined dialer key directory entry. In this way, FastTerm II will send the prefix to the modem before the number is sent. If your modem does not have DIP switches for controlling the carrier detect, this is where you would place the commands to allow carrier detect to work.

Defining Dial Code Prefixes

Pressing [P] will start blinking the 1 and 2 on the Dial Code prefix lines. This indicates you may select either number 1 or number 2. Press either [1] or [2] for your selection. I advise that you use entry #1 for local calls, and entry number 2 for long distance calls.

Imbedding a Carriage Return in Prefix

During the entry of a prefix code string, you may want to send a carriage return to the modem (to initiate the command previously sent to it for example). To do this use the [CLEAR] [ENTER] keys to generate an "_" (underline or cursor) character on the line. There is no limit as to how many of these characters you use on a line. In a practical example, if you had a Hayes modem and you wanted to reset it to power up defaults before you sent the new dialing command you would use a line like this :

ATZ_ATDT

Followed by the [ENTER] key. The ATZ would first off reset the modem (as per the examples actually given in the Hayes Manual), and then the ATDT would be sent to the modem to inform it we are going to TONE DIAL the following number (defined in our phone directory).

Imbedding a PAUSE in Prefix

It may become necessary to cause a pause or delay while sending the prefix code string to the modem. For example in the Hayes if you wanted to RESET the modem, the manual states that you must wait at least 1 second before sending the next command. In our previous example, there was no pause of any kind (see imbedding a carriage return for the example), so may not dial our number correctly.

Pressing [SHIFT] [@] will insert a tic which is the code to FastTerm II for pause. You may use as many of these pause codes as required. Each one will delay approximately 2 seconds. So to correct our previous example for the Hayes we would use a line like this :

ATZ_`ATDT

Followed by the [ENTER] key. This format will send ATZ (which will reset a Hayes modem), the “_” which will send a carriage return and then the dialing prefix itself ATDT. At that point it will refer back to the phone number entry we want to dial.

If you have a true Hayes 2400 or Supramodem 2400 (or any modem which supports the & command set; look in your modem manual) a typical dial prefix will look like :

ATZ_`AT&C1&D2_`ATDT

What this will do is control the carrier detect on your modem so that when you dial a number FastTerm II will be able to tell that you received a carrier and automatically exit back to the terminal mode. If you do not use a prefix like this, the multidial or the redial options will not function correctly. The previous example was for a local call using tone dial. For a long distance call append a 1 to the end of the ATDT (as in ATDT1). If you only have pulse dial, you would have to use ATDP in both of my examples. Note you must use the pause characters in these command lines (and maybe more than one) or your modem will not be programmed correctly.

Non-Radio Shack Modems

If you own a Hayes or Hayes compatible modem, you can follow my examples and those on the command windows. I have used and thoroughly tested both of these types of modems with FastTerm II.

Setting Baud Rate for Dialing

Unlike the majority of terminal programs for the TRS-80 Model 4, if your modem supports auto dialing, you may specify the baud rate during dialing. Hence you could dial a 300 baud BBS, a 1200 baud BBS, and then a 2400 baud BBS and the baud rate would be automatically set as the modem is being dialed.

The first character of the phone number entry is special if you want to do this. Use the following as a guide :

1> L, or 1> L; will set baud rate to 300
1> H, or 1> H; will set baud rate to 1200
1> U, or 1> U; will set baud rate to 2400
1> V, or 1> V; will set baud rate to 9600

After you specify the letter of the baud rate you want, it must be followed with either a [,] or [;] (comma or semicolon). Failure to do this will render the option invalid with unpredictable results.

Obviously your modem must support the baud rates indicated to take advantage of these additional features.

Setting WORD/PARITY/STOP for Dialing

In the event you communicate with a large number of systems, you may require different WORD/PARITY/STOP bit settings. Rather than dial the system, then use the UART command window to change these, you may set them before the number is actually dialed.

The syntax for this option is very exact and must be followed to the letter. If is not, the phone number may not be dialed correctly, or even work at all.

To set the word, parity, stop ensure that the first character is an ! (exclamation mark). This is FastTerm II's code for UART change. Use the follow examples :

1> L,!8N1, or 1> L;!8N1; - set 300 baud, 8 bit word, no parity, 1 stop,
1> H,!7E2, or 1> H;!7E2; - set 1200 baud, 7 bit word, even parity, 2 stop bits
1> U,!7O1, or 1> U;!7O1; - set 2400 baud, 7 bit word, odd parity, 1 stop bit
1> V,!7O1, or 1> V;!7O1; - set 9600 baud, 7 bit word, odd parity, 1 stop bit

Although the above examples show the dialer key #1, the remaining numbers from 2-9 work exactly the same. Please note the , or ; signs used to separate options. They act as the delimiters and failing to use them will cause unpredictable results.

Enabling a Script File

A script file is one which you write to help navigate a BBS or network. Script files are very powerful and can do many functions you would otherwise have to do manually. A whole chapter has been devoted to how and what a script file is in this manual. For this section it is sufficient to say that you can activate a script file after dialing a number or before dialing a number for totally hands free operation, or whatever you wrote the script to do.

To indicate to the dial section you have a script file you want activated, type in a CAPITOL S followed by a semicolon..

Specifying a Prefix Code to Use

You may select either one of the two available prefix codes to dial your number. To select use :

1> #1, or #1; - to select the prefix code

Following the , or ; will be the number you want to dial.

Syntax Order In Dialer for Options

To use the options in the dialer menu, they must be entered in a given (expected) order. Any straying from this order will usually render the option invalid and FastTerm II may not dial correctly. Items must be entered in the order shown :

Baud Rate, Uart Settings, Script Enable, Prefix and the actual phone number.

If one or more of these options is not required, simply leave them out but keep the remaining ones in the same order.

End of Number Marker

If your entry does not use the entire length of the line a "\ " will be displayed to mark the end of the number which was entered. i.e. #1,5550000\ where the "\ " marks the end of the number. If the entire line is used, there will be no end marker displayed.

Embedding ASCII in the Phone Number

If you would like to place some text at the end of the number as a reference and haven't used the full line input, use the [CLEAR] [/] keys to generate a backslash (\), and then enter in the ASCII text. For example :

1> #2,6045947398\Mel

Depending on the length of the number entered, there may be two "\ " signs displayed. Regardless, the dialer will only send out numbers and or letters until the first "\ " is reached.

Reprogramming a Number

If you have already defined a number and want to change it, simply enter that number again. The old one will be removed and the new one will take its place.

If you wish to erase a number, select it for input, then don't enter in anything. i.e. just press the [ENTER] key. The line will be changed back to a row of periods. Remember to use the SCRIPTS save option to permanently store your dialer and scripts list.

Using the Redial Option

To use the redial option your modem does not have to support DTR (which many modems do not). However they must respond to a character sent while waiting for a connection after dialing. Hayes and most compatible modems when waiting for a carrier will abort trying if you press any key from the terminal mode. They respond with NO CARRIER.

Radio Shack modems, seem to like the "*" sent to stop them from waiting for a carrier.

Therefore FastTerm II will wait the time limit specified in the window and then send a "*" to the modem if no carrier has been detected, resend the prefix code (if one was used; and why it is important to always return you modem to power up configuration with this string) followed by the phone number.

Redialing a Number

Pressing [R] will cause a blinking "#" to show up beside the <R>edial prompt. The next number you select from 1 to 9 will indicate which entry you want to redial. Pressing [BREAK] during a redial option will abort it.

The redial parameters are shown beside and above the prompt and will be outlined in the order they appear.

Setting the Redial Time

Pressing [T] will allow you to set the redial time from 1 (which is highly impractical) to 255 which is fairly long. The number you enter will be taken as seconds. i.e. 60 would be 1 minute or 60 seconds. Therefore each 60 seconds, the number would be automatically redialed until the LIMIT is reached or a carrier is detected.

If you specify a time too small and you are calling long distance, there may not be ample time for a connection to be made before FastTerm II wants to redial.

Setting the Limit on Redialing

Pressing [L] will allow you to specify how many times FastTerm II will try to dial the number before it gives up all hope of ever making a connection. Values from 1 through 255 are allowed.

Redial Attempts

This area in the window will display the current attempt FastTerm II is working on. It will eventually match the LIMIT set and will abort the redialing option automatically.

Build # Entry (prompted)

Since a number of people have expressed difficulty at programming their own dialer line definitions, this new option has been added to the Dialer Window. In effect with this command all you have to do is answer questions and it will fill in the line for you. The area at the bottom of the dialer window will display all the prompts in the same order they appear for a Manual Entry.

Therefore, it is strongly suggested you carefully read each section which relates to the prompt displayed and answer it accordingly.

Display Format of Elapsed Time and Charges

When you have specified using the elapsed timer and or the charge option, as soon as the dialer entry is selected, the top line of the display will change to reflect your selections.

ISI \$.00 FastTerm II Version x.x:Copyright 1990:Mel Patrick 00:00:00

The "ISI" indicates that a SCRIPT is active.

The "\$.00" indicates that a charge to this number has been applied.

Obviously when FastTerm II is dialing, the elapsed timer and any applicable charges will be active and counting. This is especially true when using the Redail option. However, as soon as a carrier is detected both the timer and any applicable charges incurred to that point in time will be reset to zero.

Accuracy of Charges and Elapsed Timer

Since the TRS-80 Model 4 has a software clock, and disk input/output is interrupt driven (which means the clock must be disabled during the reading or writing process), the charges and elapsed timer will suffer slightly. Under normal conditions it will be accurate enough to allow you to track all your expenses, but with heavy disk accesses you may find it could be out.

Unfortunately there is no easy answer to this problem unless we all owned the same hardware real time clock. Be that as it may, I understand there is even a problem when using a Hard Drive with external clocks, like the NewClock80™ from Alpha Technologies. One alternative would be to use the additional memory in your Model IV as a MEMDISK. This does not turn off the clock during reading/writing but it cuts down on your capture buffer size and limits you to 63K of file space. It would be acceptable for small downloads.

If you use a Hard Disk system you will find the clock system to be much more accurate because of the methods used to store and retrieve information from the hard drive.

Chapter 6

Script Overview

This window will save the phone directory lists, script filenames and some of the parameters in a configuration file called FT/CFG on the first available disk drive. It also allows you to enter up to 45 script filenames. Refer to Chapter 15 for more detail on the various scripting commands and guidelines for writing your own script files.

Saving the Configuration

After selecting the SCRIPTS option press the [S] key. FastTerm will try to locate its configuration file, i.e. look for FT/CFG on one of the available drives. If it is found it will copy certain settings out of the program and place them in that file so that the next time you execute FastTerm it will already be set to whatever the last settings were that you used.

Error In Configuration Saving

If the disk with FT/CFG on it was write protected the save will abort and a short beep will be emitted through the internal sound board. You will return to the terminal mode and the error message will be displayed on the screen.

If the file was not found, it will automatically be created so that in future it will load automatically when you execute FastTerm. Once the file has been created you may move it to any drive. FastTerm will scan all the drives for the file before trying to re-create it.

Configuration Parameters Saved

This command will save the following :

- 1> All of the dialer directory pages.
- 2> The bell status, on or off.
- 3> The CR+LF filter (removes unwanted line feeds).
- 4> The value for the remote to open FastTerm's buffer.
- 5> The value for the remote to close FastTerm's buffer.
- 6> All of the Script Filename pages.
- 7> Current Baud Rate, Word, Stop, Parity and Mask Settings used
- 8> Redial Time, and Redial Limits
- 9> Both Prefix Dial Codes
- 10> Terminal Emulation Selected

Elapsed Time Clock

FastTerm has its own elapsed time clock routine so that if you have the newer LS-DOS 6.3 (where time stamping is used), it will be fairly accurate when you are saving files to a disk. Pressing the [C] key will toggle the clock ON or OFF.

When the clock is on, the elapsed time will be displayed at the top right hand corner.

Clock Accuracy

The real time clock in the TRS-80 Model 4 is a software clock. This means that if a great deal of disk input/output is done (especially on a floppy based system), the accuracy of the clock will suffer because the clock is turned off during the disk access periods. Normal keyboard to keyboard communications, it will be fairly accurate. It was placed in FastTerm only to use as a guide, particularly for long distance callers and to calculate approximate charges for those types of calls.

Reset the Clock to 00:00:00

When you log onto a system, you may want to reset the clock to 00:00:00 to give an elapsed time indication. Pressing the [Z] key will reset the clock to 0.

Automatic Clock Reset after Autodialing

If you have dialed a number using the autodialer, as soon as a carrier is detected, the clock will be reset to 0, and control will return to the terminal mode. It does not matter whether the clock is currently being displayed or not, it will be set to 0 regardless. This causes it to act as an elapsed timer.

Script Files

There are 45 slots for Script Filenames. These may be used to save yourself keystrokes when signing onto a system, or as additional dialer numbers. As you can see in the illustration of the window, a page scheme is used much the same as in the Dialer window.

Selecting the Script Page

Press [UP ARROW] to step one page back in the script list and wrap around if necessary. Press [DOWN ARROW] to step to the next page in the script list and wrap around if necessary. Using these two key combinations you may rapidly move to any macro page.

The page counter will be updated exactly the same as is in the dialer window when you are stepping through the script pages.

Entering the Script Filename

Press the [E] (for Enter) and a blinking '#' sign will appear within the window. FastTerm is awaiting a number from 1-9 to define. Pressing [BREAK] will abort the entry and return to the terminal mode.

Once a valid number is entered, a graphic input line will appear beside the number selected. You may type in the filename and press the [ENTER] key to save it.

Activating a Script File

You may activate a script file at any time in the terminal mode by pressing first the [CLEAR] key and while holding it, selecting a number key from [1-9]. This will send the corresponding definition from the current script page being displayed. If that key has not been defined, FastTerm will ignore the function.

Resuming with another Script File Line

You may have different baud rates for calling the same number. Instead of entering in the same script filename to execute when you call that number, you may use a # sign followed by a number from 1-9 to inform FastTerm which line to move to. FastTerm will then move to the line specified and activate it (if possible). The program will not allow you to accidentally create an endless loop by referring one script line to another and vice versa.

Chapter 7

Library Overview

A feature has been provided in FastTerm II so that you can execute ANY library command without having to exit the program. Hence it is very easy to find the FREE space, or get a CATalog of a mounted diskette while still in the terminal program.

Entering a Library Command

Press the [C] key and there will be a graphic input line appear to enter your library command on. While FastTerm II will respond to any library command, I suggest you be careful in the selection you use. For example it is possible for you to use the library command LOAD to load a machine language program and it may use the same memory locations as FastTerm II, and cause a system reboot.

Library Command Error

If you accidentally generate an error for a library command, like requesting a CAT of a invalid drive, the menu will erase and the error message will be displayed in the communications area.

Library Commands using CLS

Some library commands (like DIR/CAT), when used will partially fill the screen then stop and wait for a key. After pressing any key the screen will clear and the remainder of the function will execute (like the rest of the DIR or CAT). However, this will also erase FastTerm II's command line at the top of the screen. Don't be alarmed, just press the [SHIFT] [CLEAR] keys to restore the command line.

This will only happen with TRSDOS 6.2.x, the newer LS-DOS 6.3 will not clear the video display and disrupt the window headings. It is suggested that you obtain LS-DOS 6.3 if you have not already done so.

In case you want to stay with your TRSDOS 6.2.x, use the following patch line to disable the CLS in the CAT/DIR mode :

```
PATCH SYS6/SYS.LSIDOS (D0A,5F=00 00 00:F0A,5F=3E 69 EF)
```

Chapter 8

Transfer Overview

This portion of FastTerm II is one of the most versatile. Most of the standard file transfer protocols are already within FastTerm II itself. There are no overlay files to load in to perform any of the transfer operations.

There are three protocols for file transfers. The first protocol is ASCII, which can be used on with any standard ASCII file, and the second is XMODEM which is an automatic error checking file transfer and can be used on any type of file, the third is 1K xmodem which uses the standard xmodem protocol but is faster due to the number characters sent before checking for errors. Lastly is the YMODEM protocol which can be used to download multiple files unattended. I.e. it sends the filenames for you.

YMODEM Batch SEND

Starting with versions 4.58 and newer, you may send out files using the standard Ymodem batch transfer protocol. Effectively this will allow you to enter in, either manually or through the use of a batch filename, up to 19 filenames which FastTerm II will then send to the remote system using the SAME names as your original documents.

Once you have selected a batch transfer, you will be prompted for either a group of filenames to be entered manually OR a filename which contains all the filenames you want to send. Selecting "F" for filename entry will cause FastTerm II to ask for nine filenames. Make sure that the filename you want to send is mounted on your drive and available. Secondly, make sure that you have spelled the name correctly. Unpredictable results will abound if you have used a filename which is not correctly spelled. The prompt mode will stop when you have either A> entered nine filenames or B> when you pressed [ENTER] for a filename prompt.

If you have chosen to use a BATCH FILE method, FastTerm II will try to read the filename you entered. So long as it was standard ASCII text with a carriage return at the end of each line, FastTerm II will load and automatically send the files you selected. Again, please note that spelling is critical and also the simple fact that the file MUST be available for sending.

Due to the inability of some computer systems to handle any form of filenames, you may experience problems when using batch sending. Specifically, IBM computer systems use a / (slash) for pathnames. When you select a filename such as STUFF/ARC, an IBM will try to move your file into a subdirectory called ARC. Generally PC terminal programs do not have the ability to modify the name they receive in a batch environment. Therefore to work correctly with a PC you will have to make sure you use filenames that do not have extensions. In the Macintosh environment, they use : (colon) to specify a pathname. Therefore if you use drive codes in your filenames, the Macintosh system will have trouble finding the directory you specified. It is strongly suggested that you do not use drive ID codes if you can avoid it.

Receive a YMODEM batch transfer

The newest form of transfer built into FastTerm II is ymodem. This protocol is much the same as 1Kxmodem except that it expects the host to send the filename information in the first block transferred. Therefore this protocol requires a compatible host so that you can indicate more than one file to send.

Pressing [Y] will indicate that you want to use the batch mode. A single digit prompt will appear on the filename prompt line. All that is required is for you to enter the number of the drive (0-7) where you want the files saved. It is important that your destination drive have sufficient space to hold all the files you expect to receive. Failure to do this will abort the receive at some point in time.

Once you have entered a valid drive number FastTerm II will request the filename from the remote and then open that file on the specified drive. If you are using a non TRS-80 type system, such as a Macintosh BBS or IBM, the filename will have to be modified for use with LSDOS. FastTerm II does this automatically for you so you need not concern yourself with it. However you should be aware of some of the formats you might expect and what they will be changed to.

A filename like USERS.BBS will be converted to USERS/BBS by FastTerm II. Any spaces will be removed and the filename shrunk to fill them in. FastTerm II will always display the name it is creating on your drive during the receive mode. Something to be aware of is that even FastTerm II can make mistakes. For example if there were two files on a system that you were downloading, RAM@4 and RAM4, FastTerm II would convert those to the same filename. Hence the second one would

overwrite the first. Generally in the TRS-80 or IBM world this isn't much of a problem, but in other domains this may prove to be. The best bet is to use an empty partition on your hard drive (if you have one) or a floppy (which will slow the transfer down).

Uploading an ASCII File (Sending, non-prompted)

Select the transfer menu, and press the [U] key. A "*" character will be displayed beside the Uploading command line and a graphic line will appear beside the FILE prompt.

Press the [ENTER] key after specifying the filename and it will automatically be sent to the remote computer.

Uploading an ASCII File (Sending, prompted)

This is done exactly the same as unprompted ASCII sending except that you can specify the prompt character. In effect this command expects a plain ASCII document which is terminated on each line with a carriage return. It waits for the remote to send a prompt character (like during message entry when you get the line numbers 1>... 2>... 3>... etc.). It reads in one line from the disk file and sends it to the remote system each time it receives that prompt character.

To invoke the prompted send in FastTerm II it requires a certain method of entry in the filename prompt. When you normally specify a filename it's just that, a filename. If during ASCII uploading you precede the name with a * it will use the next character following the * as the prompt character. I.e. a filename entry like *>MEL/TXT will use ASCII prompted uploading and the prompt character will be the ">" sign. There can only be one character for the prompt so try to use a character which is the same each time. Most systems use a ">" or ")" symbol.

Obviously this is a very good way to upload (send) a message to a remote BBS system, or network like GENie™ or CompuServe™. The first line will be sent without the prompt, after that point in time FastTerm II will wait for the prompt. If for some reason it misses the prompt due to line noise for example, you can use the [SPACE BAR] to send the next line to the remote.

Should you have to abort the sending, press the [BREAK] key.

Uploading XON/XOFF Control

During the uploading process, FastTerm II will respond to the XON/XOFF signals sent by the remote computer. Effectively this will stop FastTerm II from sending any more information until the remote terminal is ready to accept it. As soon as the remote is ready it will send an XON signal to indicate to FastTerm II to resume sending information.

Aborting during the Upload

If it becomes necessary to abort the uploading process, simply press the [BREAK] key. This will immediately abort the transfer.

Disk Error during Uploading

Should there be a disk error during uploading, the file will close and a beep will be heard from the internal sound board. FastTerm II will return to the terminal mode and the error will be displayed on the screen.

Download an ASCII File (Receive)

Pressing the [D] key will invoke the downloading option in FastTerm II. A "*" will be displayed by the downloading line and a graphic line will be displayed beside the FILE prompt. Enter the filename you want to save the downloaded file as.

Data Display during Downloading

All ASCII data which is received will be displayed beside the DATA prompt at the bottom of the window. This is meant to be an indication of when the transfer is done. i.e. no further activity.

Completion of Downloading

Since there is no command to inform FastTerm II when downloading is completed, it will continue to receive a file until you press the [BREAK] key. At this time it will finish writing the information to the file, close it, and return to the communications mode.

Downloading ASCII XON/XOFF

When downloading a file, FastTerm II has a 1536 byte buffer to store incoming information in. Should this buffer become full, FastTerm II will send an XOFF signal to the remote to tell it to stop sending, it will then write out all the information within the buffer and send the XON signal for the remote to resume sending information. If the remote does not support XON/XOFF do not use this method of transfer, as information could be lost during the disk input/output process.

Aborting during ASCII Downloading

Pressing the [BREAK] key during downloading will close the file specified for the download, erase the menu and return to the terminal mode.

Disk Error during Downloading

Should there be a disk error during the downloading process, the file will be closed and a beep will emit from the internal sound board. FastTerm II will return to the terminal mode and the error will be displayed on the screen.

Output File (1Kxmodem)

This will indicate to FastTerm II that you want to use 1K packets instead of the usual 128 character blocks. This option will allow faster uploading on larger files. If the file is shorter than 1K, normal xmodem will be used. Only CRC is supported for transfer.

This protocol is special and requires a compatible host or terminal on the receiving end. NOTE the receiver MUST request 1kXmodem, if it does not, FastTerm II will default to the normal 128 byte blocks.

Input File (1Kxmodem)

This will indicate to FastTerm II that you want to use the 1K packets for receiving and they will be requested from the remote terminal or host. Should the host or remote terminal be unable to process 1K packets, FastTerm II has the ability to accept normal xmodem blocks. Only CRC is supported for transfer.

This option requires a compatible terminal or host for the transmitting end.

Send File XMODEM Protocol

Pressing [S] will prompt for the filename and will enter into the XMODEM protocol for file transfer. FastTerm II now supports both CHECKSUM and CRC protocols. It will automatically detect what the receiver wants and send in the proper format.

Receive File XMODEM Protocol

Pressing the [R] key will prompt for the filename and will enter into the XMODEM protocol for file transfer. FastTerm II now supports both CHECKSUM and CRC protocols. It will first try to use CRC mode and if the host system doesn't respond within eight attempts, it will revert to checksum mode and try again. This is completely acceptable for most applications and you need not worry about it.

X/Y/1K XMODEM Block # Display

As each block is sent or received, the number beside the BLOCK prompt will increment by 1. Unlike other terminal programs, the block numbers will not start again at 1 after 255 is reached. FastTerm II will correctly count and display all block numbers.

X/Y/1K Xmodem Total Blocks

When transmitting (sending) a file via xmodem, FastTerm II will display the total number of blocks in the file. i.e. if you sent a 976 block file, TOTAL BLOCKS would display 976. This is just for quick reference so that you can see by the current block number how far along the transfer has progressed.

Ymodem will only display the blocks received for the present file. Each new file received will always reset this count to 0.

Total Size

This field display area will count the actual number of characters either sent or received when using the xmodem protocol. It has the capability to display up to 99,999,999 which is more than adequate.

Data Field Display during X/Y/1K Xmodem

The field beside DATA in the window will display either SUM for checksum mode, or CRC for CRC mode during xmodem transfers.

X/Y/1K Xmodem Time Out

FastTerm II will wait approximately 40 seconds for the signal from the remote computer. If it has not received the signal by that time, a beep will emit from the internal sound board and the transfer mode will be aborted.

X/1K Xmodem Error Re-tries

Any blocks which are sent and not verified will be automatically redone. If a block fails 10 times, the transfer mode will be aborted. A beep will emit from the internal sound board and you will return to the terminal mode.

Aborting X/Y/1K Xmodem Transfer from Keyboard

If for any reason you want to abort the file transfer, press the [BREAK] key during the transfer. FastTerm II will send 5 CTRL X codes and then five backspace codes. This is the standard abort for any xmodem type of transfer.

Aborting X/Y/1K XMODEM Transfer from Remote

Although there seems to be no real standard for canceling transfer during Xmodem, most of the better terminal programs I have tested support the CAN byte. CAN is short for CANCEL and can be generated from FastTerm II using [CTRL] + [X] while in the terminal mode. This will send a CHR\$(24) to the remote and providing it will recognize the cancel byte, transfer should be terminated.

They may have to hold down the [CTRL] + [X] keys to ensure that you receive it.

Free Space Map

When you are getting ready to receive a file, it's always nice to know where are you are going to store it. Pressing the [F] key will display the amount of free space (in K; which is times 1000), for all mounted and available disk drives (including hard drives).

This command only displays when asked, as soon as the window is re-drawn or your select a different window and return to this window, it will be erased again.

Transfer Block Size

In the previous versions of FastTerm II (or FastTerm) you were able to receive approximately 1K before it would write the received data to disk. With the new version of FastTerm II, this has been changed. If a script file is active, you may receive 1 block of ymodem or 1K xmodem information, or 16 blocks of normal 128 byte block xmodem before a write to disk.

However if you do not have a script active FastTerm II is able to receive 8 ymodem, 1K xmodem blocks, or 64 normal 128 byte xmodem blocks before a write to disk. This will increase the file throughput on a normal hard drive system considerably and will raise the efficiency of a floppy based system by at least 30%.

Xmodem/ 1K xmodem File Overwriting

It is possible to accidentally specify a filename to download and overwrite an existing filename. With earlier versions of FastTerm this was possible. However in FastTerm II it has been partially rectified. When you specify a filename which already exists on your drive, a beep will be heard and immediately below the filename you typed in will appear the message, "OVERWRITE Y/N". If you select Y, then the file will be overwritten, if you select N, you will be prompted for a new filename.

Note that during ymodem batch transfers, no checking for duplicate filenames is done. One will overwrite the other in the event of a duplicate filename.

00
00
00

Chapter 9

Status Information

The Status menu will show the current status of the BELL signal, the linefeed filtering (both input and output), the value for the remote system to open your capture buffer and the value for the remote to send to close your capture buffer.

The BELL and CR+LF and LF are also available using the same control keys while in the terminal mode. See the command key chapter for these keys.

Changing the Open/Close Buffer Value

The default to open your buffer is 18. This is fairly standard but you may access systems which require different values. To change this value use the following as a guide :

[UP ARROW] - increase the value by 1
[DOWN ARROW] - decrease the value by 1

The default to close your buffer is 20. This is again fairly standard but you may be required to change it. Use the following as a guide to do this :

[SHIFT] + [UP ARROW] - increase the value by 1
[SHIFT] + [DOWN ARROW] - decrease the value by 1

FastTerm II will only allow values between 1 and 31 to be set for either parameter.

Buffer Disable

If you should set the open and close values to the same number it will disable the open/close from remote system (which you may want to do).

Toggle Auto-Sending during Split Window

Pressing the [A] will toggle the auto send on full split window from on to off. Note that this selection is only valid when you are in the split window mode. It will be saved along with the dialer and macro definitions.

Chapter 10

Printer Spooling from FastTerm II

FastTerm II now supports printer output while in the terminal mode. There is a 500 byte buffer which is used as a holding area for data until the printer is ready to receive it.

Enabling the Printer Option

Pressing the [CLEAR] + [P] keys while in the terminal mode will toggle the printer output ON/OFF. When on, all information received will be sent to the printer.

Whenever the printer output is active, the screen will display a "I P I" at the top right hand side of the display screen.

Printer Buffer Overflow

If you are using a high baud rate, such as 2400 and a slow printer, it is possible to fill the printer buffer. If this happens, the buffer will automatically disable itself from receiving any further information, but will continue to printout the information it already contains.

Should this occur, FastTerm II will display a Buffer Full message on the screen.

Printer Output Cancel

As previously mentioned, even if the printer output is OFF, it will continue to print until the buffer is empty. This may not be desirable for your application and you can cancel printing entirely by pressing the [CLEAR] + [Q] keys.

This will stop printing immediately, and empty the printer buffer. Note that your printer may have an internal buffer capable of storing considerable information and to stop it printing you may have to turn the power off on it and then back on again.

Printing Control Characters

If you do receive some control characters and they are spooled to the printer, your printer may interpret these as control characters. In turn this could cause your printer to form feed, enter compressed mode, or just about any other combination. If this happens, stop the remote sysop with [CTRL] [S], use [CLEAR] [Q] to disable the printer output and empty the buffer, [CLEAR] [P] and then [CTRL] [Q] for the remote to resume.

Chapter 11

Special Control Keys in Terminal Mode

- [BREAK] FastTerm II will always ask twice before exiting to the DOS mode. This provides a small safeguard against accidental termination.
- [CTRL B] Send a true modem break of 350 ms.
- [F1] invoke command mode menu selection
- [F2] Generally the only time you will have to use the linefeed filter is if you require linefeeds. If you get double spacing on all the text that you receive try setting the CR + LF to ON.
- [F3] toggle bell sound on/off
- [SHIFT] [F1] will invoke the terminal emulation selection window
- [SHIFT] [F2] will enable the output of a linefeed each time you press the [ENTER] key. This is normally used with systems which utilize a separate linefeed and carriage return.
- [SHIFT] [F3] will toggle the Custom Selection Window. It provides a menu of all the selections shown on this page and disables the CLEAR + LETTER options shown below.
- [SHIFT][CLEAR] Should the display screen become unreadable for any number of reasons, use the [SHIFT] [CLEAR] combination to restore it to power up condition.
- [UP ARROW] will invoke the video buffer scroll mode. Once enabled, you may use the [DOWN ARROW] to scroll in the opposite direction. Press [BREAK] or [ENTER] to abort and return
- [CLEAR] [1-9] Load and execute the script filename that is reference by the numbers 1 to 9 in the script menu

- [CLEAR] [C] Capture Screen Display and Store in Capture Buffer
- [CLEAR] [F] Toggle Cost Charges ON/OFF
- [CLEAR] [G] Toggle Capture Buffer OPEN/CLOSED
- [CLEAR] [H] Fast Disconnect for Modems that support DTR Signal
- [CLEAR] [K] Toggle Elapsed Timer Display ON/OFF
- [CLEAR] [O] Output Cost Display on Screen to Log File
- [CLEAR] [P] Toggle Printer ON/OFF
- [CLEAR] [Q] Abort Printer Spooling and Empty Spooler Buffer
- [CLEAR] [R] Reset Charges or Elapsed Timer to Zero
- [CLEAR] [S] Suspend charges toggle (blinks a \$ to show suspended)
- [CLEAR] [V] Toggle Split Screen Mode On/Off
- [CLEAR] [X] Append incoming text to Capture Buffer
- [CLEAR] [Z] Toggle Cursor ON/OFF

VT100 Mode Keys

- | | |
|---------------------|---|
| [SHIFT UP ARROW] | ESCAPE |
| [UP ARROW] | CURSOR UP |
| [DOWN ARROW] | CURSOR DOWN |
| [SHIFT LEFT ARROW] | CURSOR LEFT |
| [SHIFT RIGHT ARROW] | CURSOR RIGHT |
| CTRL D | DELETE CHARACTER |
| CTRL L | INSERT A LINE AT CURSOR POSITION |
| CTRL E | ERASE LINE AT CURSOR POSITION |
| CTRL T | SEND C/R AFTER KEYPAD FUNCTIONS (TOGGLE ON/OFF) |
| CLEAR H | HOME CURSOR |
| F2 | INSERT ON |
| F3 | INSERT OFF |
| SHIFT F2 | INSERT ONE CHARACTER AT CURSOR POSITION |
| SHIFT F3 | KEYPAD FUNCTIONS ON/OFF (YOUR KEYPAD WILL EMULATE A VT100 KEYPAD) |

A "K" WILL FLASH IN THE TOP RIGHT CORNER OF THE VIDEO TO INDICATE YOU ARE IN KEYPAD MODE. PRESS SHIFT F3 TO ESCAPE FROM IT. WHILE IN KEYPAD MODE, USE CLEAR 1 THRU 9 & 0 TO GENERATE FUNCTIONS AND ALSO SHIFT CLEAR 1-8 FOR REMAINDER OF FUNCTIONS.

The numeric keyboard now works as a function key pad. You press SHIFT F3 and you'll get the function key pad (a K will flash on the screen for you to indicate the mode its in).

Keyboard Configuration for FT II

Cursor Keys		
Cursor up	UP ARROW	ESC [A
Cursor down	DOWN ARROW	ESC [B
Cursor right	SHIFT RIGHT ARROW	ESC [C
Cursor left	SHIFT DOWN ARROW	ESC [D
Home Cursor	F1	ESC [H
Insert 1 chr.	SHIFT F2	ESC [1@
Insert ON	F2	ESC [4l
Insert OFF	F3	ESC [4h

Toggle keypad to functions/numeric - SHIFT F3

When in NUMERIC mode you can send the normal number values. When in keypad functions, the following at sent :

0	ESC O p
1	ESC O q
2	ESC O r
3	ESC O s
4	ESC O t
5	ESC O u
6	ESC O v
7	ESC O w
8	ESC O x
9	ESC O y

You can also control the PF functions by using the following keys:

CLEAR SHIFT 1	ESC O P
CLEAR SHIFT 2	ESC O Q
CLEAR SHIFT 3	ESC O R
CLEAR SHIFT 4	ESC O S

Other VT100 control functions

CTRL D	single character delete	ESC [P
CTRL E	Erase line on display	ESC [L
CTRL L	Insert line on display	ESC [M
CTRL T	toggle CR output for function keys	

Script Command Keys

CLEAR SHIFT A	if there is a script in execution this will cancel it. There is no resume from an abort script command.
CLEAR SHIFT C	if the script is in a [WAIT FOR mode or [PAUSE this will cause it to continue processing.
CLEAR SHIFT Q	if in the command, with no script operational, you may use this to enter a script filename to execute.

CLEAR SHIFT V displays the current version of the script command processor.

CLEAR SHIFT W will display ALL of the vocabulary words supported by the script processor.

BELL

The internal bell (SOUND) routine in the Model 4 has been modified by FT when it runs so that when the bell sounds you won't lose any incoming chars like previous versions did. Of course for this you give up the clear sound the bell did make. If you are receiving characters and the bell sounds it will be somewhat choppy. Not the clear tone, but you will hear the bell.

TRUE MODEM BREAK

By pressing CTRL B (that is CONTROL B) FT will generate a TRUE BREAK for 350 ms and then return to normal. This will work in both VT100 and normal emulation modes. If you need a shorter or longer break, the timing value is contained in the first sector of the FT program. You may zap it (pls do it on a backup in case you don't get it right). It is stored in LSB MSB which means it is two bytes in HEX. The the two bytes are at SECTOR/RECORD 0, offset 46H and 47H, and the values there now are 9BH 5FH which are as mentioned about 350 ms. If you want to calculate your own value, use the formula :

BREAK VALUE (decimal) = ms / .0143

Then you have to convert that DECIMAL value you get into TWO HEX DIGITS. Don't worry about any remainder. For example our 350 ms break works out to :

$24475.52448 = 350 / .0143$

You forget the .52448 and convert 24475 to HEX you get 5F9B and you place the 9B in offset 46H and the 5F into offset 47H. Thats it.

Chapter 12

Terminal Emulation

Terminal emulation means that your TRS-80 Model 4 can simulate (or act) like a completely different brand of terminal. All of this is done through software to the limitation of the basic Model 4 hardware. Items like colour, windowing etc can obviously not be easily supported.

Terminal Emulation Provided

FastTerm II now provides three different types of emulation. One is the standard TTY or NONE which means as text appears on the screen it simply scrolls off when the screen is full. This is type 0 (zero).

Type 1 is mainly for use on Compuserve Information Services and is called Vidtex™. When using total Vidtex emulation Compuserve has the ability to control a number of items in your terminal program which I don't believe they should be able to. Hence in this mode, only cursor addressing is supported.

Type 2 is VT100 emulation, but again only partial emulation for cursor addressing on the screen. The Model 4 doesn't have enough keys to simulate all the controls of a VT100 terminal.

Selecting Emulation Mode

Press [SHIFT] [F1] to call up the emulation window. In the window you will see a choice of three modes. Mode 0 - None, Mode 1 - Vidtex, and Mode 2 - VT100. To select mode 0, press the [N] key. To select either mode 1 or 2, press [V] and then either a [T] to select VT100 or [I] to select Vidtex.

Saving the Emulation Mode

Whenever the Macro window SAVE option is used, the emulation currently in use will be saved. For example if you entered VT100 mode and then saved the script/dial list to disk, the next time you started up FastTerm II it would come up with a blank screen because it was in the VT100 mode last. Therefore I suggest you write a short script to switch to the VT100 mode after dialing the number you want and on exit, always switch back to the normal tty mode.

Video Buffer Action during Emulation

FastTerm II handles all modes of terminal emulation a little differently for the video scroll feature. For modes 1 and 2 (Vidtex and VT100), when FastTerm II receives a clear page or clear screen command it will store the current screen in the video buffer before displaying the new one. Up to two complete screens will be stored in the buffer and may be viewed at any time. A problem arises with host systems which send out screen addressing information and then the clear to end of page on each line before printing the information. This will render FastTerm II's video scroll option unusable in many cases.

For mode 0 (TTY or None), as each line at the top of the video display scrolls off it will be stored in the video buffer. There is room for up to 24 lines of text.

Setting Compuserve for Emulation

From the !_ prompt on Compuserve, type in GO TERMINAL and press [ENTER]. Once there select item #2 which allows you to define the type of terminal you are using. While you may select from the next menu either VT100 or VIDTEX, I suggest you select VIDTEX.

If you have selected VIDTEX, Compuserve will await a command string from your terminal. Since FastTerm II is not a true VIDTEX terminal, this string will not be sent. Compuserve will then inform you that this simple test has failed and ask you if you want VIDTEX emulation anyways. Select YES. Make sure you have Vidtex emulation on and you are ready. Before exiting the terminal set mode, two more changes will make your life a lot more pleasant on Compuserve.

First return to the menu from which you first selected to change your terminal type. Next look for an item which allows you to change parameters for that terminal type. What we are looking for is the screen size in use.

After you have found these, set the terminal width to 79 characters and the terminal height to 20 rows. These values will allow you to save the top menus and status while using FastTerm II. After that, you can elect to have these values stored permanently for all your future calls.

Chapter 13

Customizing FastTerm II

Although FastTerm II is 100% machine language, you can change certain areas for different responses if required. If you change anything in FastTerm II do so only on a BACKUP! And please do not send your "modified" version of FastTerm II to a BBS or network so that others can download it. Send your original unmodified version instead. Remember the other user may not fully appreciate your modifications and choose not to support the shareware concept. In the event that support stops, more or less so does the life of FastTerm II.

Methods of Changing the Program

There are two ways in which you can change the FastTerm II program. One is to use a disk zapper, like MicroZap for example. Any disk zapper which allows a file zap (or modify mode) can be used.

The second way is slightly more universal since everyone has the PATCH/CMD program and the examples shown here will be using that procedure. Use the BUILD command (TED) in TRS/LS DOS to create the /FIX file you need. Then execute it by typing in PATCH FT/CMD using "filename" (which is the file you created). There is a sample PATCH file on the DISK if you want to load it into your word processor or TED, edit it, save it and apply your patches using that file. It's called FTMOD/TXT and is actually a /FIX type file.

Changing the Configuration Filename

FastTerm II will create a blank configuration file the first time you execute it and will name it "FT/CFG". While this will prove adequate in most cases, your own personal installation may have a file conflict and want to change it. You must use 10 characters for this filename. If the filename you select does not require 10 characters, pad (or fill) it with spaces to give you the 10 character total. Do not use more than 10 characters or it will not work.

For example, supposed we wanted to change the name from "FT/CFG" to "TRM/CFG.MP" which would now give some password protection to that configuration file. Using PATCH the format would be :

```
D01,92="TRM/CFG.MP"  
F01,92="FT/CFG      "
```

Remember, you have 10 characters maximum, and any unused characters must be spaces. For those with disk zappers, the information you want to change is at SECTOR 1, BYTE 92...9B. Do not change or remove the 0D byte terminator at byte 9CH.

Changing the Cost Log Filename

When you have toll charges during a call, with FastTerm II you can elect to have those sent to a disk file either when the carrier is lost, or manually from the keyboard. The file these costs are stored in is in the following format :

```
07/17/87 12:26:20 00:08:54 $ 1.28 5555555
```

Which is the DATE the call was initiated at, the time of the connection, the length of the connection, the cost of that amount of connect time, and the number which was called.

You may want to change the name of this file to a name of your choice. The example below shows how to change the filename. This is what the patch file must look like :

```
D01,9E="TOLLCOST/DAT"  
F01,9E="FTCOST/LOG  "
```

There are 12 characters for the name of file and any unused letters in your entry must be padded with spaces. For those with file zappers, the information you want to change is at SECTOR 1, BYTE 9E...A8. Do not remove the 0D terminator byte at A9 or it will not work

anymore.

Changing the XLATE Table

During the growth of FastTerm II this customization was left out of the manual on purpose, it's well beyond the capability of most people to modify and understand a translation table. I am not going to elaborate on the purpose of the xlate table other than to say that FastTerm II uses the table to lookup a value whenever it receives a character from 00 through 1FH to see if it will pass it on to the terminal, or ignore it.

The table is in numerical ascending order and starts at Sector 1, Byte AD...CC. For the 31 characters it provides a lookup function. When a character is received it adds the value of the character received to find the offset into this table. It then retrieves the byte from the table (it does not use the actual character received). If that character in the table is zero, the received byte is ignored. If it is not zero, it will pass it along to the terminal.

Chapter 14

FastTerm II Split Screen Overview

FastTerm II supports a split screen should any user require it. A mode like this is handy for usage with packet radio, CB simulations and/or round table communications on large networks like GENie or Compuserve.

Effectively it allows you to have all received information to be shown in the bottom portion of the window, while in the top portion (under the menu selections), you can type in up to 159 characters which will not be sent out until you press [ENTER]. Therefore you can readily type in text without having the incoming information interfering.

Enabling the Split Screen Mode

Pressing [CLEAR] [V] will create a 2 line window directly under the menu selections on the screen. A graphic cursor will appear on the in this window and at the same time, you're normal cursor will be displayed below.

From now on, anything you type will be displayed in that top window, while anything you receive will be shown in the bottom portion.

Disabling the Split Screen Mode

Press the [CLEAR] [V] again. The split window will disappear and communications will return to the normal mode.

Typing in the Split Screen

When you are entering text in the split window, you may also be receiving text at the same time which will be displayed in the lower window. FastTerm II scans the RS232 first before looking at any possible input from the keyboard, hence you may find it falls behind slightly when you are typing but it will always catch up.

Sending Text from the Split Screen

There is only one way to send the text you have entered to the modem, and that is by pressing the [ENTER] key. This will send the characters starting with the first ones you typed in and continue until the last character is sent, and then it will send a [CARRIAGE RETURN].

Once this is done, the window will clear and the cursor will reset to the starting position in preparation to receive more text from you.

Suppressing the C/R during a Send

A time may come when you want to send the text, but not the carriage return which normally follows. If this is the case, make sure your last character is a "\" (backslash) sign. To generate a \, press the [CLEAR] [/] keys. The [ENTER] key must still be pressed to send out the text, but a carriage return will not be sent.

Screen Clearing During Split Mode

As with any communications program, it may be come necessary to clear the screen (like when you accidentally receive a number of control codes). In the normal mode FastTerm II will clear the screen and return the cursor to the HOME (top left) position. When you are in the split screen mode, the screen will still clear, but the split window will be re-drawn, and any text you had entered thus far will be redisplayed. As before, use the [SHIFT] [CLEAR] keys to clear the screen.

Split Screen during Emulation

While you wouldn't normally use a split screen during any emulation, you may still do so with the following limitations in mind.

The top menu lines of FastTerm II use 3 lines, and the split window uses 3 lines. Therefore you have only 18 lines remaining. If you are on Compuserve (other than a CB like mode), make sure you have the number of lines for your terminal set to something less than or equal to 18. Failure to observe this will cause some problems because FastTerm II can only compensate for the cursor position within its given limits.

Control Characters In the Split Mode

There are 2 control keys which are supported during text entry. These are the backspace [LEFT ARROW] which will back up one character. The other is the combination of [SHIFT] [LEFT ARROW] which will erase from the current cursor position to the start of the line.

Auto-Sending on Full Window

This last option is saved along with the dialer and macro key definitions. Effectively what it does is very simple. In the text entry mode, you may type in up to 159 characters, if you have the AUTO-SEND enabled, the full lines of text will be sent automatically when you reach the last character. If Auto-Send is off, you will have to press the [ENTER] key to send the line(s).

Enable/Disable Auto-Sending

To enable/disable auto-send of the split window text, select the STATUS menu and look at the very bottom item. Press the [A] key and the auto-send mode will toggle on/off. You can select this window even while in the split window mode (and all other windows too).

Chapter 15

What Script Files are

Scripting is a language much like BASIC and scripting is becoming more popular in the new generation of terminal programs. Since it is a language, it can be programmed (or written) by you to do whatever functions are within the confines of the script language commands. In the case of FastTerm II I have implemented over 40 commands. While these are very basic in nature, they are not in function. For example it is possible to write a script file which calls a BBS, reads all the new mail into a text buffer, saves the text buffer to disk, sends a new message to the Sysop, downloads a couple of files, uploads one or two files and finally terminates the connection. Which sounds like something most of us do almost every day. Only in this case you never touched a key. The script file did it all!

How to Write a Script File

Writing a script file is actually very easy. If you have ever done any Basic programming at all, you'll find scripting very easy to grasp. To start you need a plain ASCII text editor. I suggest you use something like TED. It is a line based text editor and comes on every LSDOS master system disk. It is not overly hard to learn and is nice for creating those "quick and dirty" script files. If you have a word processor which are you very familiar with and would prefer to use that, remember that maximum line length is 79 characters and each line MUST be terminated with a carriage return (the [ENTER] key). When you save your script, remember to save it as an ASCII file. To generate the '[' key in most word processors or TED use the [CLEAR] and [<] keys.

As with any language you have command words which will invoke certain functions. Unlike BASIC programming each script command takes one line. You can not mix scripting commands on a line. The reason for this is that the scripts are processed line by line and the end of each line is terminated by a carriage return. If you had more than one script command on a line any commands after the first one would be ignored. The second reason you can only have one script command per line is that it makes debugging much easier. Imagine having 20 or 30 commands on a line and trying to find the one that is giving you problems.

Script command words are just plain ordinary English words. FastTerm II needs a way of knowing if you want it treated as a command word. Therefore each script command word is prefaced with the [symbol. It will be the first character on the line and the script command word will be following it with no spaces.

Any line which does not have a script command on it will be treated as a SEND line. It will be sent directly to the modem.

The simplest script would be one with just the end statement. Like :

```
[END
```

A slightly more complex one would first clear the screen and then end like :

```
[CLS  
[END
```

As shown in both of the examples scripting is not all that difficult to write. It can become as complex as you want since some of the scripting commands are very powerful. On your disk are many examples of script files so that you can see how they are written.

When writing a script file remember that the script command processor runs within itself. It does not expect any outside help from you on what to do in most cases. If you write the script so that some user interaction is required, so much the better depending on your application. However like all good programs, no one can anticipate it all. Use the [REM statements as much as you can. They are not loaded into FastTerm II during the initial loading of a script file before execution. This also holds true for blank lines in your scripts. I.e. lines which only have a C/R on them.

If you find a script is getting too big to be manageable, split it into small sections and separate them by [REM statements or blank lines. If the script becomes too large to fit into the scripting area for FastTerm II use the [CHAIN command to load the correct module and when it has done executing, return to the menu module. In this way scripts of just about any size or complexity can be easily written.

Script Language Types

Script commands are very versatile in that they can pass or accept arguments with variables. Some command words are able to work with variables and literal strings. Literal strings are considered to be plain english text and are almost always enclosed within quotes so that the script processor knows where the string starts and stops. On the other hand, for a command word to use a variable, it is not important to be within quotes since a variable exists in memory and is referred to directly by using the % and variable number.

Defining Script Variables

With scripts command words are only half the power. The remaining amount comes from the variables supported by the scripting language. In FastTerm II version 1.50 or newer there are 5 variables which may be accessed and used in different ways. In FastTerm II version 3 or newer the length of the variable has been changed to 80 characters from the original 40. Other commands have also been added to manipulate variables. If you are more comfortable you may refer to them as "fields" since in effect that is what they really are.

There are five variables available. They are labeled V0 thru V4 and each has room for 80 alphanumeric characters. If you are used to programming in BASIC you may think of them as five variables which can store a string of 80 characters each, like A\$(0) thru A\$(4). To make it shorter and more manageable on a Model 4 I have taken the liberty of using V and a number. In the manual this is displayed as V# (where the # sign can be any number from 0 to 4). Once defined, each variable will remain intact until redefined therefore it can be used many times in the same script (even if you chain to a completely different script).

Using the variables is not really all that hard once you understand the syntax (format) expected by FastTerm II.

Since a variable is only powerful once defined, there are three ways to define one in FastTerm II. You may use which ever one suites your purpose and they are varied enough so that almost any circumstance can be handled. There are three commands which allow you to define a variable.

```
[GET LINE_V#  
[KEYIN_V#  
[SET V#
```

The _ (underscore) character in the above examples indicates a mandatory SPACE but is not used when you actually write the script. It was merely used here to show that there is a space. Don't try to shorten your script lines by leaving spaces out. Each of these commands affects a specific operation.

GET LINE will read up to 80 characters from the remote connection. If you are using the keyboard, say while typing in an answer to a prompt, GET LINE will capture up to 80 characters of it. If a return or linefeed character is received while getting the line, the mode will terminate with the line stored up to the point of the control character.

KEYIN is used when you want to define a variable for later use in a script directly from the keyboard. It will prompt you as "V# :" but this and your response will not be sent to the modem. The # in this case identifies (0-4) which variable is going to be used. When you press the ENTER key the mode is completed and the script processing will continue. While you are entering this string, you will not be able to receive any characters. Therefore it is important to make sure you not in the midst of receiving a lot of text.

SET is for defining a variable from within the script itself. While you may not find many uses for this command, it may be used on later versions of the script processor with additional script commands.

Retrieving Script Variables

Of course just being able to define a script variable is only half of the task. You still want to take advantage of using the newly defined script. Any time your are retrieving a variable the variable number will always be proceeded by a % (percent) sign.

Only certain commands are affected by the variables and they are :

BUFFSAVE, CHAIN, GET1KX, GETXMD, SND1KX, SNDASC, SNDXMD, WAIT FOR, WAIT TIME, CHARGE COST H/M , WRITE and others.

A typical usage for a variable would be where you want to call a system at a preset time. Instead of writing the script with the ABSOLUTE time, you would get the time you want from a variable. Such a script would read :

[KEYIN "Enter the time you want to proceed as HH:MM:SS (24 hr format)" V1
[WAIT TIME %1

At which point in time the script will stop and wait until the time of the Model 4 matches the time you entered. Obviously the time you entered as a variable is not checked for accuracy so it is possible to enter a non-valid time. But since scripting has made it so easy I had to leave something for you to do.

Another use may be where you want to use special filenames for sending or receiving files, or saving the capture buffer to disk. These can be utilized the same as in the previous example.

Scripting Window

FastTerm II now allows a six line window for your scripting file use. Effectively you write what you want to be displayed into a window and then display the window using the [WINDSP command. It will overlay the communications screen but when you use the [WINHIDE command it will restore the communications window to normal. In this way you can use your own window menus just like those in FastTerm II .

There are several commands which apply strictly to the new window routines. You can write literal text into a window at any line position (from 1 to 6), or selectively clear any line position. There are a maximum of 58 characters per line you may program. A variable may be used to pass the string to be inserted into the window.

An additional command allows input within the confines of the window so as not to disrupt the communications window display with inputs.

Combining windows within your scripts (use it as a menu) make not only a pleasing display, but make your script that much easier to use since you are working from a menu.

Scripting Literals

FastTerm II allows literal text to be used with certain commands. This means that you can enclose the literal text within quotes. Literals for FastTerm II are not analyzed or interpreted in any way. They are considered to be text and are simply displayed.

Commands literal strings may be used with are WINLINE, SEND, WAIT FOR, KEYIN, WINKEY and WRITE. You should get into the habit of using quotes where ever FastTerm II expects a string of information that way you won't get a syntax error. It was optional for FastTerm II 1.64 on the previous commands but starting with version 3 it should be used where ever required. You may mix literal strings and variables with some commands. I.e. [WRITE Welcome %1 "to the best BBS in" %2.

Script Command List

All script commands must be prefaced by a [sign when you create the script file. Once created you may call the script file anything you like. Script filenames always are entered in the SCRIPT menu box.

[APPEND	If the capture buffer has been used, you may use this command to append text to what is currently in the buffer without having to clear it out first. If the buffer has not be used this will work the same as the CAPTURE ON command.
[BAUD rate,WPS	where rate can be 300, 1200, 2400, or 9600. W = word, P = parity and S = stop bits. There are no spaces between uart parameters (the baud rate and word, parity and stop). A variable may be used to pass the uart information for setting. If you want only to change the uart parameters and not the baud rate use a comma followed by the word, parity and stop bits. I.e. [BAUD ,8N1 is an acceptable format. For variable passing, [BAUD %1 is an acceptable format.
[BEEP	will produce a BEEP from the Model 4 internal sound board.
[BREAK	will send a true break of 350ms to the modem. In some cases this may cause a disconnect.

[BUFFSAVE "filespec/ext:d"	will save anything in the capture buffer to disk providing there is actually something in the capture buffer. If not this command will be ignored. You must specify the filename, extension and drive if you want to save it specially. If no drive is specified it will be saved on the first available drive. [BUFFSAVE %1 is an acceptable format if you want to define the filename as a variable.
[CAPTURE on/off	will open or close the capture buffer depending on the ON or OFF word. If no word is present, ON will be assumed. A variable can not be used for the ON or OFF argument.
[CHAIN filespec/ext:d	where filespec, extension and drive number MUST be valid. i.e. there is such a file. A variable may be used to pass the filename to the command. I.e. [CHAIN %1 is an acceptable format.
[CHARGE AUTO on/of	fwill control the output of the charges on loss of carrier. If no argument is supplied, then ON is assumed.
[CHARGE COST H/M###	will set the cost of the call in H for hours or M for minutes to the number entered. Note please do not use periods to specify a decimal value. \$1.42 per hour would be entered as H142. if desired a variable can be used to the set the time period and cost. It may not be used to set the time period or cost alone. [CHARGE COST %1 would be acceptable.
[CHARGE on/off	will control the display the charges time cost on the video display. If no argument is supplied then ON is assumed.
[CHARGE RESET	will reset the cost charges timer to 00:00:00.
[CHARGE RESUME	will re-enable the charges to add up again. The \$ on the screen will stop flashing to indicate charge timing has resumed.
[CHARGE SUSPEND	will suspend cost charges from adding up until RESUME CHARGE is used. The \$ on the screen will flash to indicate suspension.
[CHARGE WRITE	if CHARGE is ON, this will write the total charges to the disk and turn off the charge display on the screen. It is generally used where noisy lines prevent the CHARGE AUTO from working properly.
[CLOCK on/off	will control the elapsed time as per the command word. If no command is supplied, ON is assumed.
[CLOCK RESET	will reset the elapsed timer to 00:00:00.
[CLS	will clear the screen.
[COPY %# %#	can be used where you want to copy from one variable to another. A space between the variables is not mandatory but should be used for ease of reading. And acceptable format would be [COPY %1 %2 which would copy the information contained in variable 1 to variable 2. It would not destroy the information in variable 2.
[CTRL \$	where the \$ represents a letter from A-Z to send. Before sending it FastTerm II will convert it from A-Z to a control value from 1 to 26 or 1H to 1AH. Only one control character per command line is allowed. Note the control character will NOT be displayed on your video display unless the host sends it back.
[CRLF on/off	FastTerm II has the ability to handle carriage returns and linefeed characters separately. If you have this option on, a CR will move the cursor to the start of the line and a LF will advance it one line. With it off, a LF character will be ignored and a CR will move the cursor to the start of the line and automatically generate a linefeed.
[DEFAULT	this will reset the following items (wether they are presently on or off) ; trace mode, remote echo, local echo, clock display, out going linefeeds, emulation set to TTY, no auto output of charges, charge display, printer output, capture buffer, and split screen.
[DTR	will cause the RS232 to drop DTR and will resume with the proper level in approximately 2 seconds later. This will almost always enable the modem to terminate the connection. Some modems may not

respond well to this method of interrupting the communications session. Also once you use this command, always leave at least two seconds before you try to send any commands to the modem. Many modems take that long to reset themselves after a DTR change.

- [ECHOL on/off will control the local echo as per the ON or OFF command. If nothing is specified, ON is assumed.
- [ECHOR on/off will turn the remote echo on or off as indicated by the ON or OFF word following the command. If not specified, ON is assumed.
- [END although this is an optional command word, try to get into the habit of using to end all of your scripts. I.e. this should be the last line of your script file.
- [ESC will cause FastTerm II to send an ESCAPE code to the remote. The esc value is 1BH or 27 decimal. This value will NOT be shown on your model 4 screen unless sent back from the remote.
- [FLUSH will completely empty the RS232 buffer of any received characters in it.
- [GET1KX filespec/ext:d will receive a file from the remote using the filename specified. It uses the 1K xmodem CRC protocol. If wanted, you may use a variable to pass the filename and drive to the command. [GET1KX %1 is an acceptable format.
- [GETLINE (#) V# where (#) is the length of the input up to 80 characters and V# is a variable from 0 to 4. This command will allow you to receive directly into one of the 5 variables allowed in FastTerm II up to 80 characters (default or whatever you have it set to). Storing in the variable will be terminated at the first control character, carriage return, linefeed or when the specified length is received and the script will then continue processing.
- [GETXMD filespec/ext:d will receive a file from the remote using the filename specified. Uses the standard xmodem protocol with auto CRC or Checksum detection. If required, you may use a variable to pass the filename and drive to the command. [GETXMD X %1 is an acceptable format.
- [GOSUB label where the label is defined elsewhere in the script as a label. The subroutine must always end with the [RETURN statement. Execution after the return from the subroutine will always start at the command following the GOSUB. You may use a variable to pass the label name to the GOSUB command. I.e. [GOSUB %1 is an acceptable format. You may also nest the GOSUBs up to 10 levels deep. Note that when you nest GOSUB commands it is in the normal computer based format. The first return found will return to the last GOSUB that was used. Therefore it is possible to have a serious logic error. Particularly if you use GOTO within a GOSUB routine. Be careful with this command.
- [GOTO label where the label is defined elsewhere in your script as a label. The goto is an unconditional move to a new location. You may use a variable to pass the name of the label you want to move to. Once there the script processor will start to execute code immediately following the LABEL command.
- [IBM if your TRS-80 is equipped with the Anitek ROM which allows you to display IBM PC graphic character set you may use this script command to enable it. Note you should also set the [MASKBIT command to off for this to work properly. When you are finished with this command you should also always use the [TRS command to return to the normal TRS character set.
- [IF {str1} {=?} {str2} Where str1 is the string you want to check for and str2 is the string you want to check it against. Options are = where both strings must match to the length of str1. Second option is ? which will check to see if the string in str1 is contained in str2. You may use variables for the str1 or str2 and a literal string for str1 (it must be enclosed in quotes if a literal string is used). Typical examples are :
[IF "Name" ? %0
do something
[ENDIF
[IF %1 = %0
do something
[ENDIF
All examples must end with [ENDIF as shown. Failure to end conditional IF statements with [ENDIF will cancel the script operation. Although you can not have nested IF statements you can use

any number of them in a sequential fashion as shown.

[KEYIN "text" V#	will display a prompt on the screen so that you may define one of the variables directly from the keyboard. The # sign may be a number from 0 to 4. Rather than use the [WRITE command to provide a prompt, you can use a literal string which will be displayed on the screen only and followed by the prompt. I.e. [KEYIN "Enter the Filename : " V2 is an acceptable format.
[LABEL label name	where label name is a name which was referred to by either a GOTO or GOSUB command. FastTerm II will take no action of any kind when reading or stepping through the script file when it comes across a label command. They are only used for the GOTO and GOSUB routines. Only alphanumeric characters are allowed in a label name.
[LINEFEEDS on/off	will control the outgoing linefeeds.. If no argument is supplied, ON is assumed.
[LWAIT FOR "text"	this command works exactly the same as the [WAIT FOR command with the exception that it will not time out after one minute of waiting. It will wait for the string indefinitely. You can force this command to continue by pressing CLEAR SHIFT C should you get tired of waiting.
[MASKBIT on/off	will enable/disable the 8th bit received as is done in the Buffer window menu.
[PAUSE	will immediately stop execution of the script file. The S at the top of the screen to indicate scripting is in effect will flash to indicate a pause mode. To remove the pause and continue with the script operation, use the key combination of CLEAR SHIFT C (for continue).
[PRINT on/off	will route incoming text to the printer depending on the ON/OFF selection.
[REDAIL phone number	will redial the number following this command. You should have a HAYES modem and be using the AT command set. It is not meant to be used with a Radio Shack modem. FastTerm II will continue to redial the modem until either a connection is made OR you use the SPACE BAR to cancel the redial and advance in the script. Pressing BREAK will cancel the script and will not advance. For maximum efficiency use the X3 option command in your command line. i.e. ATX3DT #####. If you don't use the X3 command your modem will dial out approximately once a minute. If you do it will redial when it receives a BUSY signal. If you have a 100% compatible HAYES modem, use additional commands &C1&D1 as well. In this case your command line would look like ATX3&C1&D1DT ##### etc. Those commands control your DTR and Carrier Detect settings for FastTerm II. If they are not set correctly it may not be able to detect a carrier properly. During a redial function FastTerm II will display calling progress by displaying either Busy or Timeout on the video with a counter for each time the number is dialed.
[REM	any thing appearing on this line will be ignored and serves only as a programming aid when you are writing scripts. Any line starting with this command will not be loaded into the script buffer so this will permit you to use as many REM statements in your script as you want without having to worry about losing buffer space.
[RESET TC	will reset both elapsed time and charge time to 00:00:00.
[RETURN	this command must always be used to terminate a GOSUB routine. Failure to do this will result in the script continuing execution from the subroutine to the end of the program.
[SEND "Text" or %1 {\}	this command will send out either a literal string enclosed in quotes or a variable. This command works slightly different than just placing the text on a line and having FastTerm II send the line directly. Normally FastTerm II will send out a carriage return after the text or variable is sent. By appending a backslash (\) to the command, there will be no carriage return sent.
[SET V# "text"	will define the variable referenced by the # sign from within the script. Only 39 characters may be used and any additional ones will be automatically purged. The # sign may be any number from 0 thru 4.
[SND1KX filespec/ext:d	will send an xmodem file to the remote using the 1K xmodem CRC protocol. If required a variable can be used to pass the filename and drive information. [SND1KX %1 is an acceptable format.

[SNDASC filespec/ext:d	will send an ASCII file to the remote using the filename specified. Note it will not be shown on your video display as it is sent (its direct from disk). If required a variable can be used to pass the filename and drive information. [SNDASC %1 is an acceptable format.
[SNDXMD filespec/ext:d	will send a standard xmodem file to the remote using the filename specified. Will automatically detect if you need CRC or checksum modes. If required a variable can be used to pass the filename and drive information. [SNDXMD %1 is an acceptable format.
[SPLIT on/off	will enable the split screen mode to be enabled or disabled. If no argument is supplied, ON is assumed.
[SWAP %# %#	this command will swap two variables. The # signs can be any variable numbers from 0 thru 5. The information in each variable will be exchanged with the other.
[TRACE on/off	using this command will cause the scripting processor to display 45 characters from each of the scripting commands read in from the script file. The very top line of the video will be used for the display. Each time the script command is displayed, there will be a two second delay so that the operator has time to see it.
[TRS	this command will cancel the [IBM script command which uses the Anitek ROM for an alternate character set.
[TTY	will select NO emulation of any kind.
[TWAIT ##	where the ## is the delay in seconds you want to wait. No characters can be sent during this mode and scripting is paused until the time specified is completed.
[VIDTEX	will cause FastTerm II to react to the Compuserve VIDTEX screen formatting commands.
[VT100	will cause FastTerm II to simulate a VT100 terminal.
[WAIT FOR "text"	will copy the string following this command to a special buffer and will pause scripting until the string is matched. The string may be a word, sentence or partial form of either so long as the total length is under 41 characters. This command will wait one minute for the string specified after which it will continue in the script as if it had received the information. This prevents FastTerm II from getting locked online. A variable can be used for the string but be aware that only 40 characters will be allowed for the match. Therefore if you variable is a full 80 characters, Wait For will only look through the first 40.
[WAIT TIME hh:mm:ss	will cause FastTerm II to wait until the time in the script matches the time on your clock of the Model 4. It provides an exact match so ensure that a correct time is used. The clock string must be in the format HH:MM:SS and in 24 hour mode. Scripting is halted until the time is matched so no characters will be displayed on your screen during that time. Your real time clock setting will be displayed on the underline under the WHO menu heading, the time you entered in the script will be displayed under the TRANSFER menu heading. This is to provide visual feedback. If you want to continue processing while in a WAIT TIME command just press the SPACE BAR. FastTerm II will cancel the time matching and continue operation. A variable may be used to pass the time argument to the script.
[WINCLR	erase all contents of the FastTerm II script display window. This is the window you fill with text using the Winline command.
[WINDSP	display current window (or whatever is in it at the time)
[WINHIDE	remove current window from screen (hide it).
[WINKEY "text" V#	does an input inside the displayed window. It only works properly if the window is active and there is no way to tell if the window is not present. Uses the bottom line of the window as an input line and doesn't disrupt the video display. Try to keep the text short since it must fit within the confines of the window. Usually 15 characters are available.

[WINLINE # "text"]

where # is the line number in the window, and text is what you want to move to there. Its always padded to remove any previous characters. A null simply erases that line. You may use a variable for the TEXT only part of the command. You can not use a variable as the LINE NUMBER of the window. There are 6 lines for your use in this command (1-6) which replace the # sign in the command. Up to 58 characters will be used from your literal text line or variable.

[WRITE "text"]

will display the string of text following to the screen but will not send it to the modem.

Special Control Characters

There are some special control characters which can be entered from the keyboard while in the scripting mode which will affect the operation of the script. Press and hold down the [CLEAR] and then [SHIFT] and finally the letter of the function.

- CLEAR SHIFT A will abort the script currently being used. There is no recovery from this command so make sure it is what you want when you select it.
- CLEAR SHIFT C if the script is in the [WAIT FOR or [LWAIT FOR modes and due to line noise or whatever it misses the matching string, you may press this key combination, in this order and it will send the string as if it had received and made a match. From this point the script will continue normally. Remember Wait For always times out in a minute. This key combination is also used to start the script file again after a [PAUSE command.
- CLEAR SHIFT E if your script has an error in it, such as a command not recognized use this command to bring the line error to the display. Then you can exit your terminal program and edit it with your text editor.
- CLEAR SHIFT V will display the current version of the scripting command processor. As new words are added or changes are made, this message will always reflect the version number. While the version of FastTerm II itself may not change the scripting version may.
- CLEAR SHIFT W will display the total word list currently supported by the scripting command processor.

Script Activation from Terminal Mode

You can invoke a script without having to dial a number. Use the CLEAR and number keys (1-9) to invoke any script in the current scripting window while you are in the terminal mode. If desired you can also start a script when you first execute FastTerm II. After you type in the FastTerm II filename append a comma and the script filename you want executed. I.e. FTII,myscript/scri;l

Script Menu Window

In the SCRIPT menu window there is a place for the length of your script to be displayed. Once it is loaded you can check this window and see just how long that script is. Beside it is another area called Status. If the script processor encounters a script word which is not in the vocabulary, a logic error, return without gosub, or syntax this box will show ERROR otherwise it will show GOOD.

Script Errors

If a script error is shown in the status box, you should return to the terminal mode and press CLEAR SHIFT E. FastTerm II will display the line in which the error occurred on your screen. If there was no error, nothing will be shown.

Scripting Hints

If you are writing scripts for speed it is always best to put your subroutines at the beginning of the file. The script processor in FastTerm II always starts looking for labels at the start of the program. If you place your labeled routines at the start of the file, FastTerm II will be able to find them that much faster. This is especially true when working with GOSUB. A gosub at the end of your program which refers to a label at the beginning of it will execute the script within the subroutine and return (since RETURN uses an address and not a label search) much faster than the other way around.

Use a GOTO to skip over any subroutines at the start of your scripts helps to get around subroutines. Use GOSUB as much as possible but be careful to always have a RETURN and not to have more than 10 levels deep. If you don't follow this, the script processor will not be able to find its way back and will cancel the script on you.

If you are in a Wait For mode or have control of the keyboard even though a script is running, you can view where the script pointer is if you have to. Use the BUFFER window and press "L" to list the script. A graphic bar is drawn where the script pointer is currently executing. This will let you see what commands are next. You should be aware that the commands are purged for [REM statements or any blank lines at loading so it will probably be a very compact script. If no script is running, this command option is not available.