VIP Terminal™

Tele-communications System

Operator's Manual

For the TRS-80 Color and TDP System 100 Personal Compute

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The VIP Terminal (TM) System Overview

The VIP Terminal is your key to the world of communications. Compuserve, Dow Jones, bulletin boards, the mainframe at work - all the information you need or want can be accessed by your Color Computer.

The VIP Terminal is a full fledged smart terminal program that allows the user to communicate with any host computer or microcomputer with RS-232 capabilities. It can handle any system and any kind of text. Once you master the simple concepts of communications you'll jump freely from transmitting to processing data.

The VIP Terminal is totally user-friendly, yet it has outstanding features to please even the most experienced user, such as:

* True Lowercase Display with descenders and option of 32 by 16 and 51, 64 and 85 by 21 or 24 displays.
* Memory Sense to automatically sense your computer's memory, from 16 to 64K, for maximum data storage.
* Word Wrap Around to eliminate a split-word display.
* Supports Graphics Mode for reception of pictures.
* Auto Buffer option for downloading BASIC programs.
* Change RS-232 Parameters to allow communication with computers using non-standard RS-232 protocol.
* Print all or any part of the information received from the host computer.
* Receive and send BASIC or machine language programs as well as ASCII files.
* Save and Load BASIC or machine language programs as well as ASCII files.
* Create ASCII files that are compatible with all VIP Library programs.
* Lower Case & Upper Case & the standard 128 symbol ASCII character set with ESCAPE & line break.
* Optional Lower Case Masking to the video display.
* Ten Key Stroke Multipliers (KSMs) to ease repetitive tasks and reduce on-line time.
* Selectable Trapping to mask out unwanted characters.
* Programmable Upload Prompt for efficient data transfer.

System Requirements and Loading Instructions
For the VIP Terminal

UNPLUG YOUR JOYSTICKS!

System Requirements

Use of the VIP Terminal requires at the very least that you own a 16K Color Computer, a modem, and if you want to print files, that you own a printer. The VIP Terminal may be used with any size Color Computer from 16 to 64K. It incorporates MEMORY SENSE to allow it to sense automatically the memory capacity of your computer and adjust to it to give you the full memory your computer has available. NOTE that the hi-res displays are not available with the 16K tape and disk versions.

Loading Instructions

ROMPAK VERSION If you have the ROMPAK version, turn off the computer, insert the ROMPAK and turn on the computer. A billboard will be displayed, Memory Sense will be performed and the program will take you to the master MENU. At the bottom of the master MENU will be displayed the amount of workspace available to you.

THE DISK VERSION Mount the VIP Terminal master diskette in Drive 0, type LOADM"TERMINAL" and press <ENTER>. The program will automatically load, and a billboard will be displayed. After the program has loaded it will perform a Memory Sense memory check, which will take several seconds. While the memory is being checked you will be so informed. When the memory has been checked the system will take you to the master MENU and at the bottom will appear the number of bytes of available workspace. When the MENU appears, the diskette should be removed for safe keeping.

About This Manual

This operation manual assumes you are familiar with the basics of communicating with computers, including the elementary concepts of terminal programs and modems. This manual cannot take the place of your modem manual and the books on the market explaining how to communicate with computers. If you want more background, we highly recommend that you read Microcomputer Data Communication Systems by Frank J. Derfler, Spectrum, 1982.

Getting Started

After loading the TAPE or DISK version, or upon power up of the ROMPAK, a MENU will appear with a list of single-key-entry Selections. This, as well as all other menus in the VIP Terminal are in the 32 by 16 screen display. Display options, including display size, color, inverse display and lines of text per page, are discussed in Selections <1> and <2>. The following is a list of the selections available with a brief description of their functions. The numbers preceding the selections will be used as reference numbers in this manual.

<1> Communications--Puts you on-line in the communicate mode to communicate with other computers.

<2> Chg Parameters--Allows you to select display size, baud rate, word length, parity, stop bits, duplex, etc...

<3> Clear Buffer & Auto Buffer--Allows you to clear your buffer of data received in the communicate mode and use AUTO BUFFER

<4> Tape to Buffer--Loads any BASIC or machine language program or ASCII file tape into the buffer.

<5> Buffer to Tape--Saves the buffer contents to tape in either ASCII or binary format.

<6> Display Buffer--Displays the information stored in the buffer to the screen.

<7> LPRINT Buffer--Prints the entire contents of the buffer to any printer at selectable BAUD rates.

<8> Maintain KSMS--Allows you to create and/or edit up to 10 messages that can be sent with a single keystroke.

<9> Disk Commands--Allows you to call a directory or save, load, kill, rename or append disk files (DISK version only).

<@> Exit to BASIC--Allows you to exit the program and return to BASIC (DISK version only.

At the bottom of the screen in the MENU is a display of your buffer space used and buffer space remaining. This information will be useful when you are downloading programs and other information.

A final section of this manual, entitled "Operational Guidelines", provides a general discussion of how to receive and transmit data to and from the buffer while communicating and how to communicate between two Color Computers each using the VIP Terminal.

<1> Communicating Using the VIP Terminal
(Connect MODEM Before Entering the Communications Mode)

Unplug Your Joysticks!

Pressing <1> will put you in the communicate mode. You will be in a default screen display of 51 characters per line and 21 lines per screen (51 by 21). To change from this display see Selection <2>. For the 51, 64 and

85 displays you may toggle between a white or green background by pressing <CLEAR>-<SHIFT><8>, and you may invert the screen (light characters on a dark background) by pressing <CLEAR>-<SHIFT><7>. In the 32 by 16 display <CLEAR>- <SHIFT><8> will toggle screen color between green and orange. You will stay in the display you have selected unless the GRAPHICS mode is being used, in which case the display will be changed automatically to the 32 by 16 display. Once the graphics have been received you will remain in the 32 by 16 display until you change the display. You may return to the display you were in from the Communicate Mode by pressing <CLEAR>-<SHIFT><9>, or you may go to any display you desire by going to Selection <2>.

The system is preset to allow word wrap around so that when you receive or transmit data, if a word would be split at the end of a line to continue on the next line, the whole word will appear on the next line. You may at any time toggle wrap around off or on by pressing <CLEAR>-<->.

In the Communicate Mode the VIP Terminal operates in standard RS-232 protocol as a standard 300 baud terminal with a word length of 7 bits, even parity, 1 start bit, 1 stop bit, and full duplex. This standard RS-232 protocol in most cases need not be changed.

While on line, you can type upper and lowercase or upper case only by pressing <SHIFT><0> just as with BASIC. The <BREAK> key sends a true line break. Pressing <SHIFT><@> at any time will return you to the MENU. Key Stroke Multipliers can be sent by pressing the appropriate key sequence (see Selection <8> and Appendix A). The <CLEAR> key acts as a CONTROL key. Any key pressed after the <CLEAR> key will be a CONTROL character.

EXAMPLE: If you press <CLEAR> then press <C>, the "C" is sent as a CONTROL C (decimal 3).

<CLEAR>-<L> is a clear screen command which may be used to clear the screen of your counterpart when in Full Duplex, and will clear yours and his screen when in Half Duplex.

Most communicating is done with the receiving computer in Full Duplex and the host computer in Echo-plex. Some systems, however, require the receiving computer to transmit in Half Duplex. The Duplex status may be set from Selection <2> (below).

You may at times have a need to switch from seven bit even parity to eight bit transmission (see Selection <2>) while in the Communicate Mode. This is particularly helpful for those modems which require programming in the eight bit mode, even if you will be transmitting in the seven bit even parity mode. (See "Using Intelligent Modems" in the Operational Guidelines section.) To toggle between these modes while in the Communicate Mode press <CLEAR>-<:>.

The entire standard 128 symbol ASCII character set, including Control A (CTRL A) through Control Z (CTRL Z) is supported (see Appendix A). An ESCAPE key (decimal 27) is generated by first pressing <CLEAR> then pressing <SHIFT> <DOWN ARROW>. The VIP Terminal automatically traps Nulls (decimal 0) and Rubouts (decimal 127) from entering the system to assure compatibility with other ASCII files. The VIP Terminal also has selectable character trapping to trap any character or range of characters (see Selection <2>).

Lowercase may be masked. Masking is enabled by pressing <SHIFT><0> to toggle the case mode. A case mode indicator is displayed on the upper right-hand corner of the screen as an "L" or a "U". An "L" indicates the lowercase mode; a "U" indicates the uppercase mode. When in the uppercase mode, all incoming lowercase characters will be converted to uppercase for the display, but will not be converted, and will remain as lowercase characters in the buffer.

The keyboard will also be solely uppercase. When in the lowercase mode the keyboard will function like an ordinary typewriter and lowercase characters will be displayed on the screen.

The VIP Terminal supports the G4 Graphics mode, used by Compuserve and other information services, for receiving pictures, etc. When the Graphics mode is going to be used the information service will send an ESCape G4 to turn it on. This will automatically switch the screen display to 32 by 16 and the word length to 8 since graphics are represented by 8 bit word lengths. When finished transmitting in the Graphics mode the service will transmit an ESCape GN command to turn off the mode. This will return your system to the word length you originally selected, but you will remain in the 32 by 16 display until you change it either back to your previous display by pressing <CLEAR>-<SHIFT><9> from the Communicate Mode, or to any display you desire by going to Selection <2>.

When you are in the Communicate Mode and are on line with another system, you will remain on line unless you hang up your phone or disconnect your modem. Thus, once you are on line you can go out of the Communicate Mode by pressing <SHIFT><@>) to change parameters (Selection <2>), clear your buffer (Selection <3>), save and load files (Selections <4>, <5> and <9>), create KSMs (Selection <8>), and display the buffer to the screen (Selection <6>). You cannot, however, print files (Selections <6> and <7>) and remain on line since printing requires that you disconnect the modem from the RS-232 port in your computer, as the printer also uses that port. Once you have finished, return to the MENU and press <1> to return to the Communicate Mode. Be aware, however, that some BBSs may have an auto disconnect feature to disconnect you if you do not act within a certain period of time. Thus, long tape saves may not be advisable.

See Appendix A for a complete list of key functions during the Communicate Mode. See also the final section of this manual entitled "Operational Guidelines" for a discussion of how to use the buffer while transmitting and receiving data during the Communicate Mode.

Compuserve User Note: Upon entry into the system, type <CLEAR>-<C> for Compuserve Information Service.

Key Functions During the Communicate Mode - Summary

ASCII	DEC	HEX	FUNCTION	KEY(S)
NONE			LINE BREAK	<BREAK>
NONE			CONTROL	<CLEAR>
CTRL C	3	3	CONTROL C	<CLEAR>-<C>
CTRL H	8	8	BACKSPACE	<LEFT ARROW>
CTRL J	10	0A	LINE FEED	<DOWN ARROW>
CTRL L	12	0C	FORM FEED	<CLEAR>-<L>
ESCAPE	27	1B	ESCAPE	<CLEAR><SHIFT><DOWN ARROW>
NONE			RETURN TO MENU	<SHIFT><@>
NONE			TOGGLE COLOR	<CLEAR><SHIFT><8>
NONE			TOGGLE DISPLAY	<CLEAR>-<SHIFT><9>
NONE			TOGGLE 8 BIT/7 BIT	<CLEAR><:>
NONE			TOGGLE INVERSE	<CLEAR><SHIFT><7>
NONE			TOGGLE WORDWRAP	<CLEAR><->

<CLEAR>-<A> thru <Z> are sent from the Communicate Mode by pressing <CLEAR>, then pressing the command letter from A to Z. See Appendix A.

<2> Changing Parameters

Parameters include the display parameters and the RS-232 parameters. Initially the parameters are set for a pleasing display and for communicating with almost all information services and bulletin board systems (BBSs). You may, however, desire a different display option; or you may need to change the RS-232 parameters to conform

to some system or to another computer. Thus, you may find yourself returning to this Selection occasionally while communicating to change parameters.

When selecting parameters you should be aware of some conventions. Each parameter has a default value selected for its general applicability. The default value will remain until changed. When coursing this menu selecting parameters for some new communication need, you may press the desired letter or number, or press <ENTER>. Pressing <ENTER> has a different effect depending on whether the parameter may be changed with a <Y>es or <N>o response or not. The effect of <ENTER> with those that may be altered with a <Y> or <N> is to ALWAYS select <N>, or the default parameter. Thus, if you have previously selected other than the default value in a <Y>/<N> selection by pressing <Y>, pressing <ENTER> the next time through the menu will act as a <N> and change the parameter back to its default rather than retaining your non-default selection. For example, if you press <Y> to have linefeeds sent to the screen, pressing <ENTER> the next time through will return to the default of no linefeeds.

On the other hand, in options not changeable with a <Y>/<N> response, pressing <ENTER> has the opposite effect. Although the first time through the menu pressing <ENTER> will retain the default value, once you have selected a non-default option, pressing <ENTER> on subsequent times through the menu will retain the new non-default option. Thus, for example, if you select a line length of 64 characters by pressing <2>, this will be retained the next time through if you press <ENTER>.

Pressing <BREAK> while coursing the menu will return you to the MENU, changing all parameters you have altered up to that point. The rest will remain what they were prior to your entry of the menu.

Display Parameters

The VIP Terminal offers an astounding variety of display options. There are nine different display sizes and four different display color choices (16K tape and disk users excepted). This variety should be able to satisfy just about every need and taste.

The display size options vary by the number of characters per line and the number of lines per page. You may choose from the standard 32 by 16 Color Computer display and several hi-res displays with lowercase characters: 51 characters per line and 21 lines on the screen (51 by 21), 51 by 24, 64 by 21, 64 by 24, 85 by 21 and 85 by 24. Lowercase is offered in all these displays, with descenders on lowercase characters which extend below the line. Additionally, in the 64 by 21 and 64 by 24 displays, you have the choice of two character sets, a narrow one and a wide one. The difference between the 21 and 24 line per screen options is that some people may find the character set more attractive and easy to read with only 21 lines per screen since there is more space between lines. The color options are black characters on a green or white background and green or white characters on a dark background (inverse display). (In the 32 by 16 display the color options are a green or orange background.) NOTE that in the inverse displays, although the background in the display area is dark, the border areas are either green or white (the same color as the characters). This is due to the video display generator ("VDG") graphics chip used in the Color Computer which cannot be changed.

The densest hi-res display, 85 characters per line, may be difficult for some to read well, and is nearly impossible to read when you have selected all uppercase characters. It is offered primarily for formatting, rather than for editing or reading text, so that you can look at your text to see if it was properly formatted.

Of course, if your TV or monitor allows you to read this display, so much the better.

Some may find all of the hi-res displays hard to read. This may be due to the inadequacies of the common color TV, the background color you have chosen, and/or the amount of interference you are experiencing. You can vary the color controls on your TV; you also can try to eliminate sources of interference with your TV or monitor by repositioning cables, etc. If none of these helps and you still desire to have a clear, crisp display, you may have to consider getting a new TV or monitor. This topic is discussed in Appendix C, "What To Do If Your TV Display Is Hard To Read."

OK, now you know the options. So what would make you choose any particular display? Aside from certain speed, graphics and host format considerations, the choice depends on your mood, your visual acuity, the quality of your monitor and the degree of interference you are experiencing when using your computer. First the speed consideration. The 32 by 16 display is the standard Color Computer display and is built right into the hardware. On the other hand, the other displays are software created, taking up memory space and requiring software routines to process and display characters on the screen. The extra processing time for the hi-res displays makes them somewhat slower than the 32 by 16 display. Thus, for example, you will notice that when you use the 32 display scrolling is quite fast, whereas, when you use the hi-res displays scrolling is somewhat slower. This effect is due to the extra processing time necessary. We assure you that everything is being processed as fast as is possible. Because of this processing speed difference, hi-res modes are limited to transmissions at 1200 baud or less, the vast majority of all communications; the system will automatically revert to the 32 by 16 display when you select a baud rate over 1200 (see Selection <2>). We recommend that if you are using a baud rate over 300 you should use the 32 display.

When downloading information from another system, we recommend that you select the 32 by 16 display and that you turn the word wrap feature off. Further, whenever transmitting at rates over 300 baud, yours and the host system should also be configured to have more than one stop bit. These actions should ensure error free transfer.

The graphics consideration was discussed in Selection <1>. The graphics mode requires the use of the 32 by 16 mode; however, the system is set up to automatically switch to the 32 by 16 display when graphics are being received. The display will remain at 32 by 16 until you change it back to what you originally selected by pressing <CLEAR>-<SHIFT><9>.

Host systems, BBSs, etc., also influence the display option you will choose since they often send text in predetermined line lengths, i.e., 40, 64 and 80 characters per line. The 51 display is the choice for systems which send 40 character lines, such as Apple bulletin boards. Since many BBSs set up for TRS-80 Models I and III use the 64 character line, the 64 display is ideal for such uses. The 85 display is excellent for systems that send 80 character lines. The system involved will tell you what its format is, and often you can actually specify the format you desire the system to use.

Outside of these constraints you have wide latitude to match VIP Terminal to your tastes and monitor or TV performance. Monitor performance was discussed above. Here it should be emphasized that the white background does not work very well on a color TV unless the color is turned down to give you a black and white display. This is because white, unlike green, is not one of the primary colors used by the color TV; instead, it is a composite of all three, red, blue and green. If you select the white display on a color TV you get color blooms and bleeding which blotch up the characters and make them very difficult to read. It is best to either

use the pure green display or turn the color down on your color TV.

As for your tastes, well, there's no accounting for tastes. What we hope is that given the available display options you will find one that perfectly suits your needs.

From Selection <2> you may choose any of the above displays, number of lines and character set, with the default display being 51 by 21. (NOTE that all menus remain in the 32 by 16 display.) Changes in display color and inverse displays are controlled from the COMMUNICATE mode, discussed in Selection <1>. Selection of the display size, line number and character set may ONLY be done from Selection <2>. To select the desired option press the corresponding number from the menu.

DISPLAY 0=32 1=51 2=64 3=85

Press the desired number for the line length desired. Pressing <ENTER> will give you a line length of 51 (or your previous selection). NOTE that the 32 display will be forced for baud rates over 1200 (see below). (We recommend that if your are using a baud rate over 300 you use the 32 display.) If you select <2> for a 64 character line, you will additionally be prompted for the character set:

Narrow Characters Y/N

Press <Y> for the narrow character set. <N> or <ENTER> will give you the wide set. You should be aware that you may find the narrow character set harder to read since the characters are narrower. NOTE that selection of character sets is only available with the 64 character display option.

Lines 1=21 2=24

Press the desired number for the number of lines desired. Pressing <ENTER> will give you 21 lines (or your previous selection).

RS-232 Protocol Parameters

Although the VIP Terminal is preset for standard RS-232 protocol which is used for almost every communication need, it allows you to change RS-232 parameters to conform to most any host computer which requires a different protocol. (In most cases the host computer will allow you to change its parameters as well. Consult the host computer operating manual for specific instructions.) You may change RS-232 parameters in the following order by making the desired selection. You do not have to change every parameter, you only have to decide about parameters up to the last parameter you want changed. If you then press <BREAK> to go to the MENU, the remaining parameters will remain as you selected them before.

Baud Rate

1 = 110	2 = 300	3 = 600	4 = 1200
5 = 2400	6 = 4800	7 = 9600	

BAUD rates under 2400 may be used with both Full and Half Duplex transmissions; BAUD rates of 2400 or more are limited to Half Duplex transmission. Moreover, the display will be forced to the 32 display for baud rates over 1200. (We recommend that if you are using a baud rate over 300 you should use the 32 display.) Upon initial setting of parameters press <ENTER> for 300 baud (or your previous selection) or press the number for the baud rate desired.

The Date Frame The following parameters, Word Length, Parity, and Stop Bits, constitute the elements of a data

frame which is the fundamental unit used to asynchronously transmit data via RS-232. Data is transmitted in "words" which are binary numbers with symbolic significance. For example, ASCII symbols have numeric equivalents (see Appendix A) up to 127 decimal, which, when translated into their binary equivalents, can take up to seven bits to represent. Therefore, standard ASCII is sent in the seven bit word length. Since the receiving computer must know when to begin and end reading a word, the words are preceded and followed by one start and one or more stop bits. An error checking bit, called a parity bit, is added when the word length is seven. All these bits, the start bit, the word bits, the parity bit, if any, and the stop bits as a unit are called a "data frame". If your communication need requires a data frame structure different from the standard RS-232 protocol, the exact structure of the data frame must be specified by you. It will be determined by the communication functions you are performing and the requirements of the communicating systems.

Word Length

Press <ENTER> to retain the preselected word length (initially 7 bits for standard ASCII and other seven bit transmissions) or select a word length 8 bits (not including the parity bit). When transferring files created using VIP Library programs, the eight bit word length should be chosen if you are including characters over 127 decimal, such as format markers, since these characters from the Extended ASCII Character Set require an eighth bit in their binary representations.

NOTE: Parity is only allowed with the 7 bit word length and will be set to <N>one if an 8 bit word length is selected. When the word length is reset to other than 8 bit, parity must be reset to the desired status or it will remain at NONE.

Parity: <O>dd <E>ven <N>one

Press <ENTER> to retain the preselected parity (initially Even) or select the desired parity: <E>ven, <O>dd, or <N>one.

Stop Bits

Press <ENTER> to retain the preselected number of stop bits (initially 1 bit) or select the number of stop bits from 1 to 9.

Duplex: <H>alf <F>ull <E>cho

Press <ENTER> to retain the preset duplex (initially Full) or select the desired duplex: <H>alf, <F>ull, or <E>cho.

NOTE: <H>alf duplex echoes what you are sending back to your screen; <F>ull duplex does not. <E>cho is restricted to 600 Baud or less and is used to communicate with FULL duplex only terminals which do not have local echo (I.E. VIDTEX(tm)*).

Line Feed: Y/N

Press <ENTER> if you do not desire line feeds after carriage returns on the video screen (initially set to <N>o), or press <Y>es if the incoming data has no linefeeds after carriage returns (text being over-written), and thus line feeds are necessary.

Pass Control Characters Y/N

The system allows you to elect whether you want to have control codes masked and reacted to when receiving text (i.e., Auto Buffer, bell, Graphics mode, etc.), or passed to the buffer to be stored without reaction. This selection may be implemented regardless of word

*Vidtex is a registered trademark of the Tandy Corp.

length. Press <Y> to have control characters passed to the buffer without reaction such as when you wish to receive binary files; <N> or <ENTER> will mask control characters for reaction by the system.

Character Trapping: Y/N

The VIP Terminal permits you to trap characters which you do not desire to be displayed on the screen. If you do not wish to use the character trapping feature, press <ENTER> since the system is initially set to <N>o. If you press <Y>, the system will present the following prompts for you to define the characters to be trapped:

Relation: <, =, >

Enter the desired relationship (only one may be selected), less than "<", greater than ">", or equal to <=> and then answer the following prompt:

Number: (0-255)

Type a number between 0 and 255 which corresponds to the decimal value of the character(s) which you wish to trap (not store in the buffer or display on the video screen) (see Appendix A for the decimal values of the letters).

EXAMPLE 1: < 8
EXAMPLE 2: = 10
EXAMPLE 3: > 126

In Example 1, the Relation "less than" and the Number 8 traps all characters with a decimal value from 0 to 7 (i.e., all control codes below decimal 8).

In Example 2, the Relation "equal to" and the Number 10 traps all linefeed characters (decimal 10)

In Example 3, the Relation "greater than" and the Number 126 traps all characters greater than Decimal 126.

Upload Mode

<D>elay <N>o Delay <P>rompted

The VIP Terminal incorporates an upload delay after each line is sent to wait for response from the HOST before sending the next line. Pressing <D> or <ENTER> will select the upload delay option. Press <N> to disable the upload delay option or press <P> for prompted upload.

Upload Prompt

If you press <P> the Upload Prompt is selected, and you may select any printable character as the prompt by typing it in. By pressing <ENTER> the default character ">" is selected. In addition, you can press <CLEAR> (CTRL) and any letter for a CTRL code prompt. An example of a CTRL prompt would be for uploading to Compuserve. Since Compuserve does not have a printable prompt, you must use a linefeed prompt Upload Prompt (CTRL J). To select CTRL J, press <CLEAR> and then <J>.

<X>on / <X>off Y/N

Xon/Xoff is a feature used by many BBSs, information services, micros and mainframes to control the receipt of data uploaded from other systems. When the receiving system can no longer receive information it sends a decimal 19 to automatically pause, temporarily, the transmitting system (Xoff). This is done to avoid "choking" the receiving computer, giving it time to process the data error free. When the receiving system is ready to receive data again it sends an Xon, a decimal 17. When this option is selected from the menu, the system will automatically respond to Won/Xoff when sent by the receiving system.

<3> Clearing Input Buffer & Hi-Res, Using Auto Buffer

Clear Buffer Y/N

This option will allow you to clear your input buffer so that you can accept new text. The status of your buffer can be checked on the indicators in the MENU. Press <Y> or <N> for the desired result, or press <ENTER> to leave the buffer untouched.

Kill Hi-res Y/N

You may opt to kill the hi-res display alternatives so that you can use the extra 7K of buffer space consumed by the system to create the hi-res displays. This feature may only be selected when your buffer is empty, since it clears the text buffer (but NOT the KSM buffer) when implemented. Thus, if you have determined that you need extra space to download or upload a long file or several files, first save anything of value in your text buffer, then kill the hi-res displays, and finally, go on line and download or upload your files. To kill the hi-res displays, press <Y> in response to the Kill Hi-Res Display Y/N menu selection. (<N> or <ENTER> will select use of the hi-res displays.)

Auto Buffer Y/N

Auto Buffer, a feature supported by most bulletin board systems (BBSs), allows you to automatically capture BASIC programs or other data being sent. It allows your computer to react to the control codes sent to perform the functions desired such as ringing a bell or opening and closing the buffer. The Auto Buffer option may not be used for sending binary files and will not work if you have elected to Pass Control Codes. The Auto Buffer is initially on.

When you have selected the Auto Buffer option, once you have indicated to the BBS that you are ready to receive the BASIC program, the BBS will send a Control R (decimal 18, hex 12) which will automatically open your buffer; when the BBS has finished sending the program it will send a Control T (decimal 20, hex 14) to close the buffer. In the Auto Buffer mode Linefeeds (decimal 10, hex 0A) are automatically stripped out from the incoming program. See the section entitled "Operational Guidelines."

<4> Loading a Tape into the VIP Terminal

The VIP Terminal will allow you to load an ASCII file, a BASIC program saved in ASCII, or a machine code program into its buffer. Press <4> to load a tape into the buffer. You may continue to load files until the buffer is full. You have to use Selection <3> to clear the buffer.

Ready Cassette Press Any Key

Ready the cassette player and press any key to begin the loading process. By pressing <BREAK> you will exit to the MENU. If an error occurs while loading press any key to exit to the MENU and press <4> to try again. If the textfile on the tape being loaded into your computer is too large for your buffer, a "FULL" message will be displayed on the screen.

NOTE: To be loaded, BASIC programs must have been saved in ASCII, i.e: CSAVE"TESTFILE",A (see your BASIC manual for more information about CSAVE"TESTFILE",A).

<5> Creating a Tape Using the VIP Terminal

The VIP Terminal allows you to save the buffer contents to a tape in one of two formats: ASCII or binary. Pressing <5> provides the following prompts to save the buffer contents.

1=ASCII 2=BINARY

Pressing <1> creates an ASCII tape that can be loaded back into the Color Computer as a BASIC program or into VIP Library programs, or an editor/assembler or any other program that uses ASCII files for further formatting, manipulation, etc. Pressing <2> makes a machine language program tape able to be loaded back into the Color Computer. <BREAK> returns to the MENU.

Name

Type the name of the file to be saved to tape (8 characters or less), or press <ENTER> for no name.

Ready Cassette Press Any Key

Ready the cassette recorder and press any key to begin saving. After saving, the MENU will appear.

NOTE: The VIP Terminal creates machine code tapes with a starting address of 0000. To load these tapes into the Color Computer enter the following:

CLOADM"TESTFILE",start address <ENTER>

The offset address specified serves as the start address. If the start and execute addresses are the same, type EXEC<ENTER>. Otherwise type EXEC (execute address) <ENTER>.

<6> Displaying the Buffer to the Screen

The VIP Terminal allows you to page forward through the entire buffer after loading a file or after receiving data in the Communicate Mode; it also allows you to selectively send any page of text to the printer. The text will be displayed in the display size you have

chosen from selection <2> when setting parameters, unless the buffer contains graphics, in which case you MUST select the 32 by 16 display to view the buffer.

Press <6> to display the buffer. Press any key to page forward ONLY through the text or press <BREAK> to return to the MENU.

Pressing <P> at any time will initiate printing by displaying a baud rate table and then ask if you want linefeeds to be sent to the printer (see Selection <7>). (The printer must be connected before attempting to use this feature.) After you select the appropriate baud rate (default of 600), and determined whether you want linefeeds because your printer needs them (default <N>o), the system will send the rest of the text in the buffer to the printer starting with the page of text presently being displayed. Pressing <SPACE BAR> will pause printing; press any key to resume printing; press <BREAK> to stop printing.

<7> LPRINT Buffer Contents
(Connect Printer Before Entering This Mode)

The VIP Terminal allows you to send the buffer contents to your printer at rates from 110 to 9600 baud. When you press <7> it will elicit a menu to select the baud rate and ask whether you want linefeeds sent to the printer. Once you have selected the desired baud rate, and determined whether you want linefeeds, the text will be sent to the printer.

Baud Rate

1=110	2=300	3=600	4=1200
5=2400	6=4800	7=9600	

Select the desired baud rate or press <ENTER> for 600 baud.

Linefeeds Y/N

Select the desired result or press <ENTER> for no linefeeds. The system will then print the entire buffer contents.

Pressing the <SPACE BAR> will pause printing; pressing any key will resume printing. You may press <BREAK> to return to the MENU. If the printer is not connected or not on-line, the system will wait until the printer is ready before sending any data. To selectively print the buffer contents refer to Selection <6>.

<8> Maintain KSMs (Keystroke Multipliers)

The VIP Terminal allows you to create up to 10 KSMs of up to 250 characters each. Each of the KSMs corresponds to its respective key sequence <CLEAR>-<0-9>. KSMs may be transmitted during the Communicate Mode and are useful to perform repetitive log-on tasks, send quick messages, etc.

Creating KSMs

To create a KSM press <8> for Maintain KSMs. "KSM=0" will be displayed at the upper left-hand corner of the screen. The following commands are used to create and edit KSMs.

<E>dit

Press <E> to edit (create) KSM0. You may now type KSM0. When you have finished typing, press <ENTER>. The newly entered KSM will be displayed on the top of the screen.

CR: Y/N

Pressing <Y>es will place a carriage return at the end of the KSM just entered. Pressing <N>o will not.

<UP(ARROW)> Move <DOWN(ARROW)> Move

At this point you have created KSM0. Press the <DOWN ARROW> key to move to the next KSM to be created or displayed. Pressing the <UP ARROW> key will move back through the previous KSMs. Press <E>dit and repeat the last few steps to create as many KSMs as you need (up to 10). To clear an old KSM, press <E>DIT and then press <ENTER>. This will erase the KSM. Pressing <BREAK> will exit to the MENU.

Saving and Loading KSMs

The entire set of 10 KSMs comprises a KSM file and can be saved to tape or to the diskette to be loaded at a later time.

<S>ave to Tape <L>oad from Tape

Saving and loading KSMs to and from tape follow directly from the KSM creation menu and have the same procedures as those for saving and loading regular tape files set out in Selections <4> and <5>. Once you have finished creating your KSMs you may save them by pressing <S>. You will be prompted for a name (up to eight characters). Once you have entered the name, ready your cassette, begin to record, and press any key. It's best to save your KSM files on separate tapes, well marked, so that you can easily use them later. To load your tape KSM file ready your cassette, press <L> from the KSM menu, press any key, and then press PLAY on your recorder.

Disk Access

KSM disk access is the same as regular disk access (see Selection <9>) except that you must use the commands "KL" (KSM load) and "KS" (KSM save) rather than "DL" and "DS". The "KL" and "KS" commands are reserved for the special KSM file buffer. All other system disk access rules and commands apply. It is suggested that the extension "/KSM" be used when saving KSM files to differentiate these files from your regular VIP files.

To save a KSM file to the diskette, mount a formatted diskette into Drive 0. Press <9> for Disk Commands. Now type <K>-<S> followed by the filename, the extension "/KSM" and press <ENTER>.

EXAMPLE: KSBBS80C/KSM<ENTER>

In this example, the file "BBS80C/KSM" will be saved to the diskette mounted in Drive 0.

IMPORTANT: Use "KS", not "DS", to save a KSM file, or the main file contents will be saved to the disk rather than your KSM file contents.

To load a KSM file from the diskette, mount the diskette into Drive 0. Press <9> for Disk Commands. Now type <K>-<L>, the filename, extension "/KSM" (if you have used this extension) and press <ENTER>.

EXAMPLE: KLBBS80C/KSM<ENTER>

In this example, the file "BBS80C/KSM" will be loaded from the diskette mounted in Drive 0.

IMPORTANT: Use "KL", not "DL", to load a KSM file or the KSM file will be loaded into the main file buffer rather than the KSM file buffer.

Using KSMs While Communicating

After creating your KSMs, press <1> to Communicate on-line. To send a KSM, press <CLEAR> and then the number (0 to 9) corresponding to the KSM you wish to send.

The uses for KSMs are endless, and can't be completely covered in this manual. One use for KSMs is to create a prepared message to be put on a BBS or information service. Sending message prepared before you call long distance will save you some money since you won't have to key them in when you get on line. Another use for KSMs is to log-on to a BBS. Try a simple log-on sequence using KSMs following the examples below:

KSM0= 987/654-3210 <CR> (auto dial modems only!)
KSM1= John Doe <CR>
KSM2= Secret password <CR>

KSM3 = Anytown, USA <CR>

The "<CR>" after each line represents a Carriage Return that is added at the end of the KSM as outlined above. If a <CR> is not added when the KSM is created, while on-line you will have to manually press <ENTER> after you send the KSM.

<9> Disk Commands (Disk Version Only!)

The VIP Terminal allows you to load "DL", save "DS", rename "DR", change default name "DN", and kill "DK" disk files, and display a disk directory "DI". Press <9> for Disk Commands. Pressing <BREAK> at any time after a command has been executed will return you to the MENU.

The system initializes a default extension of "/VIP" and a default drive number of ":0". These defaults can be changed at any time. The default extension assumes the last extension used and is changed by entering a new extension during any disk access ("DS", "DL" "DN" "DR" or "DK"). The same is the case with the default drive number. More about changing the defaults in later sections.

Displaying a Diskette Directory

To display a disk directory mount a diskette in Drive 0 (default drive), press <9> for Disk Commands, then press <D>-<I>-<ENTER>. The directory for Drive 0 will be displayed with the drive number and number of free granules displayed on the Command line. If the number of entries exceeds 1 page the display will pause. To continue to the second page of entries press any key except <BREAK>. A maximum of 68 entries is allowed. When you have found the file that you are seeking, press <BREAK> to escape the directory and freeze the last directory page displayed.

The directory gives the filename followed by the number of granules each file occupies on the disk, and an "A" or "B" indicating whether the file is in ASCII or binary.

EXAMPLE: TESTFILE/VIP 4 A

The "4" represents the number of granules that the file occupies on the diskette. The "A" indicates that the diskfile is saved in the ASCII format. Only ASCII files may be loaded from diskette into the VIP Terminal.

If the VIP Terminal, encounters a diskfile that has a fault in its granule allocation, an asterisk will appear in place of the number of granules in the directory. This indicates that the diskette is faulty, and MAY NOT be written to. The faulty diskfile MAY NOT be loaded, but diskfiles on the same diskette not followed by an asterisk MAY be loaded. (You may use VIP Disk-ZAP to correct disk errors.)

If you wish to display the directory for any drive other than Drive 0, type <D>-<I> followed by the drive number, and then press <ENTER>. The directory will be displayed for the drive number that you specified.

EXAMPLE: DI3

This example will display the directory for the diskette mounted in Drive 3.

Saving a File to the Diskette

The VIP Terminal saves files to a diskette in the ASCII format for compatibility with VIP Library files, BASIC programs saved in ASCII (see your BASIC manual) and all other programs using the pure ASCII format. There is no binary save format to disk.

The VIP Terminal verifies each sector after it is written to ensure accurate data storage. If an error occurs during a Disksave, an "ERROR" prompt will appear on the status line. If this happens, you should resave the file on a different diskette, or on the same diskette using a different filename.

Before the VIP Terminal saves a file to a specific drive it first checks to see if the file already exists on the diskette mounted in the drive specified. If the file exists, the system will save the new file over the old one, If the file does not exist the file will be saved to the diskette mounted in the drive specified.

To save any file to disk, press <9> for Disk Commands. Then mount a formatted diskette in Drive 0. Do not use the VIP Terminal master diskette. Type <D>-<S> followed by the filename (not to exceed 8 characters) and press <ENTER>. If the same file name already exists on the disk, you will then be prompted with: "ARE YOU SURE?" If you press <Y> the file will be saved; pressing any other key will abort the save. If the same file name is not on the disk, the file will immediately be saved.

EXAMPLE: DSTESTFILE <ENTER>

In this example the file "TESTFILE/VIP" will be saved on the diskette mounted in Drive 0, and "TESTFILE SAVED" will be displayed on the command line. Press <BREAK> to return to the MENU.

If you wish to use a different extension such as "/BAS", type the extension after the filename.

RULE: Extensions must be preceded by a "/" or a ".".

EXAMPLE: DSTESTFILE/BAS <ENTER>

In this example, the file "TESTFILE/BAS" will be saved on the diskette mounted in Drive 0.

If you wish to save your file to a diskette mounted in a drive other than Drive 0, type ":" followed by the number of the drive on which you wish your file to be saved.

RULE: Drive numbers must be preceded by a ":".

EXAMPLE 1: DSTESTFILE:1 <ENTER>
EXAMPLE 2: DSTESTFILE/BAS:2 <ENTER>

In example 1, the file TESTFILE/VIP will be saved on the diskette mounted in Drive 1. In example 2, the file TESTFILE/BAS will be saved to the diskette mounted in Drive 2.

Using and Changing Diskname Defaults

After you have saved a file to disk (or performed any other disk access), the filename, extension, and drive number are stored in a buffer and are retained for later use. To display the last filename used press <9> for Disk Commands, then type <D>-<N> <ENTER>. The last name, extension and drive number will be displayed on the Command line. Because the filename is retained in a buffer, you can save the same file without entering the filename, extension, or drive number each time. You can also change the default file name at any time to be able to automically access a file with a different name or extension. Just type <D>-<N>, the new file name default and then press <ENTER>. The same disk name rules discussed above apply.

To save a file using the existing filename type <D>-<S> and press <ENTER> <Y>. Your file will be saved to the diskette mounted in Drive 0 with the filename "TESTFILE/VIP".

To save a file using the existing filename to a diskette mounted in a drive other than Drive 0, type <D>-<S> followed by the drive number and press <ENTER>

<Y>. Your file will be saved to the diskette mounted in the drive specified with the filename "TESTFILE/VIP".

Loading a File from the Diskette

Only ASCII Files May Be Loaded from Diskette into the VIP Terminal

The VIP Terminal allows you to load any ASCII file from diskette including VIP Library files, BASIC programs saved in ASCII (consult your BASIC manual) and editor/assembler source files. You can not load binary files from the disk.

To load or append any file saved in ASCII press <9> for Disk Commands, then press <D>-<L< followed by the filename and drive number, then press <ENTER>. If no extension is specified, the default extension will be used.

EXAMPLE: DLTESTFILE/VIP:0

The VIP Terminal will look for the file TESTFILE/VIP on Drive 0. If the file is found, it will be loaded from the diskette. If the file does not exist, a "FILE NOT FOUND" message will appear on the Command line.

As mentioned earlier, the filename, extension and drive number are retained allowing you to load the previously entered file by typing <D>-<L> and pressing <ENTER>.

EXAMPLE 1: DLTESTFILE/BAS:2
EXAMPLE 2: DL

Example 1 will load the file TESTFILE/BAS from the diskette mounted in Drive 2. Example 2 will load the previously entered file, in this case, TESTFILE/BAS from the diskette mounted in Drive 2.

Appending Text Files

The system will allow you to load as many files as will fit in the buffer until the buffer is full. To append one file after another, load the first, then load the second. A "FULL" message will be displayed on the COMMAND line if the file to be appended is too large to fit in the buffer.

Using and Changing Diskname Defaults

As was discussed in the section on saving files to disk, a buffer retains the last filename accessed. See the discussion above for information on using and changing diskname defaults.

Renaming Disk Files

The system will allow you to rename your disk files without having to resave your file. All file name rules discussed above apply concerning filenames and extensions. To rename your file press <9> for Disk Commands, type <D>-<R> plus the file name you want changed and then press <ENTER>. After you have pressed <ENTER> the system will respond with the prompt: "NEW FILE NAME?" You may then type in the new file name and press <ENTER>. The system will then rename your file.

EXAMPLE: DRTESTFILE <ENTER> NEWNAME <ENTER>

The above example renames "TESTFILE/VIP" to "NEWNAME/VIP."

Killing Textfiles

To kill a file from the diskette, press <9> for Disk Commands, then type <D>-<K> followed by the filename, extension and drive number and press <ENTER>. The system will respond with "ARE YOU SURE?". A <Y> response will kill the file; any other key will abort the kill.

EXAMPLE: DKTESTFILE/VIP:0 <ENTER> <Y>

This example will kill the file TESTFILE/VIP from the diskette mounted in Drive 0.

As with all other commands, "DK" will kill the previously entered file by typing <D>-<K>-<ENTER> and answering the "ARE YOU SURE?" prompt with a <Y>.

EXAMPLE: DK<ENTER> <Y>

This example will kill the previously entered file TESTFILE/VIP from the diskette mounted in Drive 0.

Transferring Tape Files to Disk

The VIP Terminal supports cassette I/O allowing you to load any text file from tape and transfer it to the disk or vice versa. (See Selection <4>, Tape to Buffer, and Selection <5>, Buffer to Tape). The binary save and load formats are for cassette only, not disk.

<@> Exit to BASIC (Disk Version Only)

You may at times desire to permanently exit the VIP Terminal and return to BASIC to use another program, etc. To do so type <@> from the main menu. You will be prompted "Exit to BASIC Y/N." Press <Y> to exit to BASIC.

OPERATIONAL GUIDELINES

The following information is offered to help you with some of the common communication procedures.

Automatic Buffer Operation

The VIP Terminal has a unique Auto Buffer feature which allows you to download BASIC programs from Bulletin Board Systems (BBS) and other computers without lifting a finger. While on-line, the system waits for a CTRL R (decimal 18) to automatically open the buffer. Upon receipt of the CTRL R, the buffer is opened and the BASIC program is stored. At the end of the download the system waits for a CTRL T (decimal 20) to automatically close the buffer. Upon receipt of the CTRL T, the buffer is closed. You can now exit the Communications Mode and save the program.

Manual Operation

To manually open the input buffer, press <SHIFT> <LEFT ARROW>. To manually close the buffer, press <SHIFT> <LEFT ARROW> again. This toggles the input buffer status indicator in the upper left hand corner of the screen. When the indicator is ORANGE ("Open" in the 51, 64 and 85 displays) the buffer is open and the received data will be stored. When the buffer is within 120 characters of being filled, the video screen will flash to its opposite color to give you an early warning that the buffer is near full. When the buffer is full the buffer will close automatically, turning the buffer status flag to "@" ("Closed" in the hi-res displays).

Transmitting Information to Another Computer

1) Start by loading the data or program to be transmitted into the VIP Terminal.

2) Next set the RS-232 parameters to conform to those of the other computer if they are not seven bit, even parity, one start bit, one stop bit (see Selection <2>). NOTE: If the information to be transferred is machine language (binary), or a VIP Library file which contain characters over decimal 127, an 8 bit word length is required, and you must press <Y> in response to the "Pass Control Characters" option in Selection <2>.

3) Select the proper duplex setting to conform to the host computer.

4) Plug in your modem and enter the Communicate Mode. Now you're ready to communicate. If the computer on the other end will support automatic buffer open and close, you can open the buffer on the other end by pressing <CLEAR>-<R>, and close the buffer by pressing <CLEAR>-<T>. To transmit the data press the <RIGHT ARROW>. Press any key to stop transmission.

NOTE: If the data being sent is binary, it will appear as graphics blocks, cross hatch characters, and other assorted garbage. Do not be alarmed, this is NORMAL.

Receiving Information from Another Computer

1) First set the RS-232 parameters to conform to the other computer. If the information to be received is binary or you are transmitting VIP Library files containing characters with a value over 128 decimal, you must select the eight bit word length, and you must press <Y> to select the "Pass Control Characters" option in Selection <2>.

2) Now plug in your modem and go on-line. You will notice "Closed" ("@" in the 32 display) in the upper left hand corner indicating that the buffer is closed. When you are ready to receive data press <SHIFT><LEFT ARROW> to open the buffer and let the data flow in. If you are receiving a BASIC program, it is advisable to use the Auto Buffer option, if the host computer supports it, to insure that there will be no direct statement in file ("DS") error when loading the program into BASIC (see section on downloading BASIC programs below). If the amount of data is within 120 characters of filling the buffer, the screen will change to indicate full. If this happens you may be able to pause the host computer so you can save the data (see the host computer's manual for specific instructions). After the data is loaded, press <SHIFT><@> to return to the MENU. At this point the data can be displayed, saved, printed, etc. You can use the Buffer Open and Close command to selectively save what you are receiving.

Helpful Hints for Downloading BASIC Programs

Frequently, when trying to load a BASIC program that has been downloaded from a BBS into the Color Computer, you will encounter a "DS" (direct statement in file) error. There are numerous causes for this error. Sometimes it is caused by acoustic modems. More often than not, however, the error is due to improper file formatting, poor maintenance of program files by BBS operators (SYS-OP's) or even faulty or defective BBS equipment. If these errors persist, it is advisable that you contact the SYS-OP to rectify the problem.

In the event that an error such as this arises and you have the VIP Writer word processing system or some other pure ASCII file editor, the error can be corrected. To correct a "DS" error, load the program into the Color Computer and LIST the program to locate the last line number loaded. The error will lie just after this line. Load the program into the VIP Writer,

locate and correct the problem and re-save the program. Note that more than one error may be present in the downloaded program, making it necessary to repeat this procedure.

Helpful Hints for Uploading BASIC Programs

Uploading BASIC programs to BBSs is a common practice. After you have selected the upload option from the BBS menu the BBS prompts you to begin sending, and awaits your transmission. In most BBSs, end of transmission is signalled by the first null line received from you, i.e., the first line having only a carriage return. This practice causes some problems for those desiring to upload BASIC programs created on a Color Computer using Color or Extended BASIC.

BASIC programs are usually sent after having been saved in the ASCII format (CSAVE"FILENAME",A<ENTER> for tape and SAVE"FILENAME",A<ENTER> for disk). When saved in the ASCII format the first character put in the file by the computer is a carriage return. This start-of-file carriage return causes problems when uploading the program to a BBS. When you attempt to upload a BASIC program in its ASCII format to a BBS by pressing the <RIGHT ARROW> in the Communicate Mode, the first character sent is the start of file carriage return. Since BBSs often treat a bare carriage return as a null line, and thus as an end of transmission signal, they will stop receiving your upload when the first character of your BASIC file, the carriage return, is received, and will not accept any of your program.

The fix for this is simple. To fool the BBS, before sending your BASIC program, press <0> to indicate line zero, then press the <RIGHT ARROW>. Now the start-of-file carriage return will be received by the BBS after the <0> and will be interpreted as the end of a program line zero. The rest of your BASIC program will then be accepted.

Transmitting and Receiving Binary Files

Binary files range from machine language programs to tokenized BASIC programs. Transmitting and receiving binary files is simple and has only two requirements. You must select the eight bit word length, and you must select to Pass Control Codes when receiving binary files (see Selection <2>). Binary files include bytes with values from 0 to 255, requiring all eight bits of the data word, and thus cannot be transmitted in less than the eight bit word length. Moreover, if you don't pass control codes, they will be reacted to by the VIP Terminal.

Using Intelligent Modems

There are several excellent intelligent modems on the market. If you own such a modem, the instruction manual that came with it will tell you how to program it for your various purposes, including dialing telephone numbers.

Those of you who own a Radio Shack Modem II should know that all programming of this modem MUST BE done using the 8 bit word length (see Selection <2>). To recommence communication functions after fininshing programming the modem you will have to switch back to the 7 bit word length (if that's the word length you desire) and reset parity to EVEN if that's what you desire. Programming may be done from the Communicate Mode by pressing <CLEAR>-<:> to toggle from seven bit even parity to eight bit no parity for your programming and then toggling back to seven bit even parity when you have finished programming and wish to transmit in the seven bit word length.

Communicating Between Two VIP Terminals

To communicate with another Color Computer equipped with a VIP Terminal, one person must set his modem to the "ANSWER" mode and the other person must set his modem to the "ORIGINATE" mode (see modem operators manual). For proper operation, both VIP Terminals may be set to HALF duplex, or one to ECHO and one to FULL duplex.

Communicating with Dumb Terminals

To communicate with a dumb terminal using the VIP Terminal, one person must set his modem to originate (see you modem manual), and the Echo setting (Selection <2>) should be used to support the dumb terminal's video display.

A P P E N D I X A

Appendices (continued)

Key Functions During the Communicate Mode

ASCII	DEC	HEX	FUNCTION	KEY(S)
NONE			LINE BREAK	<BREAK>
NONE			CONTROL	<CLEAR>
CTRL C	3	3	STX	<CLEAR>-<C>
CTRL H	8	8	BACKSPACE	<LEFT ARROW>
CTRL J	10	0A	LINEFEED	<DOWN ARROW>
CTRL K	11	0B	VERTICAL TAB	<CLEAR><K>
CTRL L	12	0C	CLEAR SCREEN	<CLEAR><L>
CTRL M	13	0D	CARRIAGE RETURN	<ENTER>
CTRL R	18	12	OPEN HOST BUFFER	<CLEAR><R>
CTRL T	20	14	CLOSE HOST BUFFER	<CLEAR><T>
NONE	27	1B	ESCAPE	<CLEAR><SHIFT><DOWN ARROW>
NONE			TOGGLE DISPLAYS	<CLEAR><SHIFT><9>
NONE			TOGGLE INPUT BUFFER	<SHIFT><LEFT ARROW>
NONE			SEND BUFFER	<RIGHT ARROW>
NONE			RETURN TO MENU	<SHIFT><@>
NONE			TOGGLE COLOR	<CLEAR><SHIFT><8>
NONE			TOGGLE 8 BIT / 7 BIT	<CLEAR><:>
NONE			TOGGLE INVERSE VIDEO	<CLEAR><SHIFT><7>
NONE			TOGGLE WORDWRAP	<CLEAR><->

KSM COMMANDS DURING COMMUNICATIONS

<CLEAR>-<1>.....SEND KSM 1
<CLEAR>-<2>.....SEND KSM 2
<CLEAR>-<3>.....SEND KSM 3
<CLEAR>-<4>.....SEND KSM 4
<CLEAR>-<5>.....SEND KSM 5
<CLEAR>-<6>.....SEND KSM 6
<CLEAR>-<7>.....SEND KSM 7
<CLEAR>-<8>.....SEND KSM 8
<CLEAR>-<9>.....SEND KSM 9
<CLEAR>-<0>.....SEND KSM 0

DISK COMMANDS

<D>-<I>.....READ DIRECTORY
<D>-<K>.....KILL A DISK FILE
<D>-<L>.....LOAD A DISK FILE
<D>-<N>.....DISPLAY & CHANGE DISKNAME DEFAULT
<D>-<R>.....RENAME A DISK FILE
<D>-<S>.....SAVE A DISK FILE
<K>-<L>.....LOAD A KSM FILE
<K>-<S>.....SAVE A KSM FILE

Standard ASCII Character Set

The VIP Terminal offers a full 128 character ASCII keyboard. The following table describes how to create and recognize the 128 characters. The first column provides the ASCII symbol; the second column gives the display of that symbol by the Color Computer. The third and fourth columns give the numeric equivalents of the ASCII symbols in the decimal and hexadecimal number system. The final column tells you how to generate the ASCII character from the Color Computer keyboard.

A note about displays in the various screen options. The first 32 symbols have no screen representation since they are control codes, not standard alphabet, number, punctuation, etc. characters. Further, the hi-res screens display the ASCII symbols themselves wherever the 32 by 16 screen displays an inverse character. The RUB OUT character is displayed in the hi-res displays as a cross hatch character. All characters having a decimal value over 127, such as graphics blocks, are represented on the hi-res screen as a cross hatch character. These characters have the standard Color Computer representation in the 32 by 16 display.

ASCII	DISPLAY	DEC	HEX	KEY(S)
NULL	NONE	0	0	<CLEAR>-<@>
CTRL A	NONE	1	1	<CLEAR>-<A>
CTRL B	NONE	2	2	<CLEAR>-<B>
CTRL C	NONE	3	3	<CLEAR>-<C>
CTRL D	NONE	4	4	<CLEAR>-<D>
CTRL E	NONE	5	5	<CLEAR>-<E>
CTRL F	NONE	6	6	<CLEAR>-<F>
CTRL G	NONE	7	7	<CLEAR>-<G>
CTRL H	NONE	8	8	<CLEAR>-<H>
CTRL I	NONE	9	9	<CLEAR>-<I>
CTRL J	NONE	10	A	<CLEAR>-<J>
CTRL K	NONE	11	B	<CLEAR>-<K>
CTRL L	NONE	12	C	<CLEAR>-<L>
CTRL M	NONE	13	D	<CLEAR>-<M>
CTRL N	NONE	14	E	<CLEAR>-<N>
CTRL O	NONE	15	F	<CLEAR>-<O>
CTRL P	NONE	16	10	<CLEAR>-<P>
CTRL Q	NONE	17	11	<CLEAR>-<Q>
CTRL R	NONE	18	12	<CLEAR>-<R>
CTRL S	NONE	19	13	<CLEAR>-<S>
CTRL T	NONE	20	14	<CLEAR>-<T>
CTRL U	NONE	21	15	<CLEAR>-<U>
CTRL V	NONE	22	16	<CLEAR>-<V>
CTRL W	NONE	23	17	<CLEAR>-<W>
CTRL X	NONE	24	18	<CLEAR>-<X>
CTRL Y	NONE	25	19	<CLEAR>-<Y>

ASCII	DISPLAY	DEC	HEX	KEY(S)
CTRL Z	NONE	26	1A	<CLEAR>-<Z>
ESCAPE	NONE	27	1B	<CLEAR>-<SHIFT><DOWN ARROW>
FS	NONE	28	1C	<CLEAR>-<SHIFT><CLEAR>
GS	NONE	29	1D	<CLEAR>-<SHIFT><RIGHT ARROW>
RS	NONE	30	1E	<CLEAR>-<UP ARROW>
US	NONE	31	1F	<CLEAR>-<SHIFT><UP ARROW>
SPACE	SPACE	32	20	<SPACE BAR>
!	!	33	21	<!>
"	"	34	22	<">
#	#	35	23	<#>
$	$	36	24	<$>
%	%	37	25	<%>
&	&	38	26	<&>
'	'	39	27	<'>
(	(	40	28	<(>
)	)	41	29	<)>
*	*	42	2A	<*>
+	+	43	2B	<+>
,	,	44	2C	<,>
-	-	45	2D	<->
.	.	46	2E	<.>
/	/	47	2F	</>
0	0	48	30	<0>
1	1	49	31	<1>
2	2	50	32	<2>
3	3	51	33	<3>
4	4	52	34	<4>
5	5	53	35	<5>
6	6	54	36	<6>
7	7	55	37	<7>
8	8	56	38	<8>
9	9	57	39	<9>
:	:	58	3A	<:>
;	;	59	3B	<;>
<	<	60	3C	<<>
=	=	61	3D	<=>
>	>	62	3E	<>>
?	?	63	3F	<?>
@	@	64	40	<@>
A	A	65	41	<A>
B	B	66	42	<B>
C	C	67	43	<C>
D	D	68	44	<D>
E	E	69	45	<E>
F	F	70	46	<F>
G	G	71	47	<G>
H	H	72	48	<H>
I	I	73	49	<I>
J	J	74	4A	<J>
K	K	75	4B	<K>
L	L	76	4C	<L>
M	M	77	4D	<M>

ASCII	DISPLAY	DEC	HEX	KEY(S)
N	N	78	4E	<N>
O	O	79	4F	<O>
P	P	80	50	<P>
Q	Q	81	51	<Q>
R	R	82	52	<R>
S	S	83	53	<S>
T	T	84	54	<T>
U	U	85	55	<U>
V	V	86	56	<V>
W	W	87	57	<W>
X	X	88	58	<X>
Y	Y	89	59	<Y>
Z	Z	90	5A	<Z>
[	[	91	5B	<SHIFT><DOWN ARROW>
\	\	92	5C	<SHIFT><CLEAR>
]	]	93	5D	<SHIFT><RIGHT ARROW>
↑	↑	94	5E	<UP ARROW>
←	←	95	5F	<SHIFT><UP ARROW>
	INVERSE @	96	60	<CLEAR>-<SHIFT><1>
a	a	97	61	<a>
b	b	98	62	<b>
c	c	99	63	<c>
d	d	100	64	<d>
e	e	101	65	<e>
f	f	102	66	<f>
g	g	103	67	<g>
h	h	104	68	<h>
i	i	105	69	<i>
j	j	106	6A	<j>
k	k	107	6B	<k>
l	l	108	6C	<l>
m	m	109	6D	<m>
n	n	110	6E	<n>
o	o	111	6F	<o>
p	p	112	70	<p>
q	q	113	71	<q>
r	r	114	72	<r>
s	s	115	73	<s>
t	t	116	74	<t>
u	u	117	75	<u>
v	v	118	76	<v>
w	w	119	77	<w>
x	x	120	78	<x>
y	y	121	79	<y>
z	z	122	7A	<z>
{	INVERSE [	123	7B	<CLEAR>-<SHIFT><2>
|	INVERSE \	124	7C	<CLEAR>-<SHIFT><3>
}	INVERSE]	125	7D	<CLEAR>-<SHIFT><4>
~	INVERSE ↑	126		<CLEAR>-<SHIFT><5>
DEL	INVERSE ←	127	RUB OUT	<CLEAR>-<SHIFT><6>

Appendix B

64K and the VIP Library - Without Using Flex

All VIP Library programs have Memory Sense to automatically sense the amount of memory that is available with your system and adjust to allow you to make the fullest use of that memory.

You may obtain 64K with your Color Computer either by modifying your computer, or by purchasing the 64K version of the computer in the first place. The modifications necessary to obtain 64K have been ably discussed in the March 1983 issue of Rainbow and in the "64K Corner" columns in the January 1983 and February 1982 (reprinted in January 1983) issues of Color Computer News. The modifications suggested require some technical knowledge and experience. We recommend that you refer to these technical articles and the references therein for modification information. The authors of those articles have obvious expertise about such modifications and should be happy to answer any questions you have.

Appencis C

What to do if Your TV Display is Hard to Read

After loading your VIP Terminal program and using it for a while you may be dissatisfied with the screen display when you are using the 51, 64, or 85 displays. You may notice that when you are using color you have a rainbow of colors on the screen instead of the background color of green or white that you wanted, making it nearly impossible to read your text. This inability to have a sharp, clear, crisp display is NOT a problem with the program, it is a problem of the Color Computer and your particular TV.

Unfortunately, color TVs were not made to be used with computers. Color pictures are made from a composite of blue, green and red. Although they may be easily controlled by the scanning techniques used to generate TV shows, that scanning technique is not adequate to control the screen the way the computer does by controlling individual spots (or pixels) on the screen. Thus, when the background color is not a pure color, red, green or blue, the color cannot be controlled to be pure. Shadows and blooms of other colors mix in. This causes the black letters to sometimes be blotched or to have shadows so that they

are difficult to read. The smaller the letters the greater the problem. Thus, the 85 display may be very hard to read.

Of course the 85 display, and to some extent the 64 display, were not designed for entering and editing text unless you use a monitor. They were designed for formatting purposes. If you can use them to input text, so much the better.

There are some things that can be done to help make the displays more readable. First, you can use the green background to avoid the problems associated with color mixing. You could also get a color monitor for better control of your display colors. Alternatively, you can use a black and white TV instead of a color TV. If all else fails, the 32 by 16 display will definitely work with your color TV.

Although many find the 32 by 16 display too small, others like it because it is easier to read, and since the lines are short like those of a newspaper, review is faster. Of course, the 32 by 16 display retains the reverse video display used by the Color Computer for displaying lowercase characters, and you may find this unsatisfactory. There is, however, a fix for this. The LCA-47 Lowercase Adapter sold by Micro Technical Products, Inc., Mesa, Arizona will give you true lowercase with the 32 by 16 mode.

The final option is to buy a monitor, a special kind of video machine, for displaying your text. Since the Color Computer does not allow a direct connection to a monitor (only color TVs), you will have to purchase and install an adaptor. Although we cannot tell you how to do this, we can recommend a company that can. World Electronics, 177-27th Street, Brooklyn, New York 11232, sells a monitor adaptor called the "TV Buff" which will do the trick.

Appendix D

How to Use Other VIP Library Programs

Each of the programs in the VIP Library, with the exception of VIP Speller and VIP Disk-ZAP, were specifically designed to create files compatible with other programs in the Library. With the Library you can perform the essential home business tasks, and combine the results for many purposes.

The VIP Writer is one of the central programs in the Library. It contains the most sophisticated editing and printing features, and it is to be used to create all reports combining files created on other applicable Library programs. To it is placed a dependent program: VIP Speller. The Speller can be used to correct typos and misspellings in VIP Writer files.

"VIP Calc is used to create financial or mathematical reports. It contains sophisticated print functions for independent printing of such reports. You may create files usable by the VIP Writer for reports to be combined with other text, and you may create templates with the VIP Writer for use in VIP Calc.

VIP Terminal is a communications program capable of transferring and receiving any ASCII file, including VIP Library files. ASCII files can be transferred to the VIP Writer for further editing. The Terminal program also allows you to transfer files to work, clubs or friends. You can also print files received from others.

VIP Database, similar to VIP Calc, has its own sophisticated print functions for independent printing of database files. You can also create files for use with the VIP Writer to create combined text and database files.

VIP Disk-ZAP is a disk repair utility designed to repair any kind of file created using the Color Computer disk operating system. Of course, it therefore will also work on other Library files.

NOTES