CAMBRIDGE

vxConnect For Windows

Micro-To-Mainframe-Link Software

vxConnect For Windows

Micro-To-Mainframe
Link Software
For
Personal Workstations

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PREFACE

This manual explains how to use the Cambridge Computer Corporation micro-to-mainframe link software product vxConnect. It provides you with the following information about the program.

- How to set up your own configuration file.
- How to operate your personal computer so it emulates a variety of display terminals.
- How to transfer files between your personal computer and host system.

ASSUMPTIONS

This manual assumes that you are already familiar with the communications and terminal operation for your host system. You should refer to your host system manual to understand how to use that system.

ADDITIONAL INFORMATION

A document called **README.TXT** may contain additional information concerning the micro-mainframe link programs. It is important that you review this document prior to using vxConnect.

CONTENTS

CHAPTER 1
INTRODUCTION TO TERMINAL EMULATION

CONTENTS

EQUIPMENT EMULATED

The Cambridge Computer Corporation micro-mainframe link program (vxConnect) turns your personal computer into a terminal that can communicate with a variety of host systems that support the following terminals:

- ADDS Viewpoint
- Data General Dasher series
- DEC VT series
- Hazeltine 1500 series
- Hewlett Packard HP series
- Honeywell/Bull VIP and HDS/BDS/DKU series
- Lear Siegler
- PC Terminal
- Prime PT Series
- Tektronics 4010/4014
- TeleVideo 900 series
- Wyse

See Appendix E for a complete list of terminals emulated.

PREPARING A CONFIGURATION FILE

It is necessary to create a configuration file before you start emulation. This file contains configuration paramenters specified to accommodate your particular communications requirements. Your communication set up consists of equipment with characteristics or parameters that make up your own unique system. All of these parameters are stored in a file called a configuration file.

Usually, you will only need to create a configuration file once, but this file can be easily changed. Details concerning how to create a configuration file can be found in chapter 3.

EMULATING A TERMINAL

Emulation builds a link between your personal computer and a host computer. Once this link is established, the data you enter from the keyboard is sent to the host computer. Also, messages are received from the host computer and displayed on the screen of your PC. Thus you interact with the host computer by answering messages, receiving information, and sending information.

REQUIREMENTS

You need the following equipment and programs to operate the vxConnect micro-mainframe link program.

Equipment:

- IBM compatible 80x86 personal computer with
  - At least 1M bytes of memory
  - At least 1MB available disk space
  - A communications adapter, internal modem or network connection. Synchronous communications requires any of the adapters listed in Appendix C.
  - A communications adapter cable.
  - A switched (dial) or non-switched telecommunications line to match your host computer equipment. vxConnect can utilize an asynchronous connection, synchronous modem, modem bypass, Multiple Interface Unit (MIU), network or server connection.
  - If you want printed output you can use any printer

Programs and Files

- Microsoft Windows 3.0 or later
- The Cambridge Computer Corporation vxConnect micro-mainframe system disk containing the following files:
  - The emulation program (vxConnect)
  - The configuration files (vxConnect.cfg, sync.cfg)
  - The synchronous configuration program (Synccfg)
  - The specialized synchronous file transfer program (vxFTF)
  - The dynamic link libraries

SOFTWARE INSTALLATION

Before you run the vxConnect program you need to make a working copy of the software. It is recommended that you install the software on a hard disk system.

Installing on a Hard Disk System

Using the Windows File Manager open the device that contains the vxConnect distribution disk (i.e. A:) by double-clicking that device. Next drag the "Cambrdg" folder from that device to the hard disk (i.e. C:). This will create a folder (directory) called "Cambrdg" and copy the contents of the distribution disk to the hard disk.

Using the Windows Program Manager create a Program Group called "Cambridge" by choosing New from the File menu. Next add a Program Item to the group for each of the executables in the directory "Cambrdg".

You may place a configuration file name and/or script file name on the command line of the vxConnect Program Item to utilize these respective files.

Reference the publication *Microsoft Windows User's Guide* for additional information regarding the File Manager and the Program Manager.

Store the vxConnect distribution disk in a safe place and never use it except to make backup copies (for your own use). The software is not copy protected.

This completes the installation process.

CHAPTER 2
KEYBOARD INFORMATION

CONTENTS

GENERAL INFORMATION

This section tells you how the personal computer keyboard operates during terminal emulation.

We suggest that you skim through this chapter first. When you set up a configuration file in chapter 3 and perform terminal emulation in chapter 4, you may want to use this chapter for reference.

Keyboard Operation

You can use your personal computer as a stand-alone computer to run programs or to emulate a display terminal. You will find keyboard operations in both instances to be quite similar.

The PC has Alphanumeric Typewriter Keys, Cursor Control Keys and Special Keys. These keys perform similar functions on both the PC and display terminals.

We suggest that you familiarize yourself with the PC keyboard. The typewriter area of the keyboard is similar to a typewriter with letters, numbers and special characters.

Pay particular attention to the uses of the Shift, Caps Lock, Control and Alt Keys. If you are not an experienced PC user, you should pause at this point and consult the keyboard section of the *Personal Computer Users Manual.*

Keys Menu

Certain keys can be simulated via the Keys Menu. If you have a requirement for function that is not on this menu contact Cambridge Computer Corp. (See Appendix A). We will try to provide you with a solution.

ADDS VIEWPOINT EMULATION KEYS

The following is a list of Viewpoint terminal keys, the corresponding personal computer key and the function the key performs. The list also contains special keys that the Viewpoint terminal does not have but are utilized by vxConnect to perform special functions, such as file transfer, script processing and print redirection. These functions also can be selected from the Menu bar.

VP Key	PC Key	Function
Backspace	Backspace	Moves the cursor one position to the left See *General Terminal Features*, Backspace Key.
Back Tab	Shift-Tab	Causes the cursor to move backwards.
Break	Scroll Lock	Sends a signal to the host to end communications. The break signal duration can be modified. See chapter 3, *Communications Features* for additional infor mation.
DEL	Alt-Ctrl Backspace	Sends a DEL character to the host.
Delete Char tion	Delete	Deletes a character at the cursor posi-
Delete Line	Shift-Delete	Deletes the current cursor line. All succeeding lines are moved up one line and line 24 is blank.
Erase All	Alt-Pause	Clears the entire screen.
Erase EOF	End	Erases all data from the current cursor position to the end of the line.
Erase EOP	Shift-End	Erases all data from the current cursor position to the end of the page.
F1 thru F12	F1 Thru F12	Perform special functions that have meaning to the host application program.

VP Key	PC Key	Function
Home	Home	Moves the cursor to row 1, column 1.
Insert Char	Insert	Inserts one character at the current cursor position. The data on the line moves one position to the right.
Insert Line	Shift-Insert	The current cursor line and all succeeding lines are moved down one line. The cursor moves to the beginning of the new blank line.
Reset	Pause	Resets the operating mode.
Return	Enter	Moves the cursor to column 1 of the current row.
Tab	Tab	Causes the cursor to move forward.
Xmit	Keypad '+'	Transmits data to the host when in MSG or PAGE mode.

DATA GENERAL DASHER EMULATION KEYS

The following is a list of Dasher terminal keys, the corresponding personal computer key and the function the key performs. The list also contains special keys that the Dasher terminal does not have but are utilized by vxConnect to perform special functions, such as file transfer, script processing and print redirection. These functions also can be selected from the Menu bar.

DG Key	PC Key	Function
Backspace	Backspace	Moves the cursor one position to the left See *General Terminal Features*, Backspace Key.
Break	Scroll Lock	Sends a signal to the host to end communications. The break signal duration can be modified. See chapter 3, *Communications Features* for additional information.
C1 - C4	Alt-F1 Thru Alt-F4	Perform special functions that have meaning to the host application program.
CR	Shift-Enter	Moves the cursor to the left margin of the current row.
DEL	Delete	Sends a DEL character to the host.
Erase Page	Alt-Pause	Erases all characters in the current window, including protected characters.
Erase EOL	End	Erases all data from the current cursor position to the right margin.
F1 Thru F12	F1 Thru F12	Perform special functions that have meaning to the host application program.

DG Key	PC Key	Function
F13 Thru F15	Alt-keypad-3 Alt-keypad-4 Alt-keypad-5 (Alt-F5)	Perform special functions that have meaning to the host application program
Home	Home	Moves the cursor to the left margin of the top row of the current window.
New Line	Enter	Moves the cursor to the left margin of the next row in the current window.
Tab	Tab	Causes the cursor to move forward.

DEC VT / TEKTRONICS EMULATION KEYS

The following is a list of VT terminal keys, the corresponding personal computer key and the function the key performs. The end of the chapter lists special keys that the VT terminal does not have but are utilized by vxConnect to perform special functions, such as file transfer, script processing and print redirection. These functions also can be selected from the Menu bar.

VT Key	PC Key	Function
Break	Scroll Lock	Sends a signal to the host to end communications. The break signal duration can be modified. See chapter 3, *Communications Features* for additional information.
<–x	Backspace	Normally sends a DEL (delete) character. Many application use DEL to delete one character to the left of the cursor. You can make this key send a BS (backspace) character. See chapter 3, *General Terminal Features.*
Shift <-x	Shift Backspace	Sends a CAN (cancel) character.
Clr-Field	End	When in Edit mode, erases the characters in the current field.
Clr-Page	Shift-End	When in Edit mode, erases the characters in the current page.
Compose	Alt-Keypad 0-9	Lets you display characters that do not appear on the standard keyboard.
Delete Char	Alt-Backspace or Delete	When in Edit mode deletes a character from the current page. If not in edit mode the Del key sends a DEL (delete) character.

VT Key	PC Key	Function
Delete Line	F3	When in Edit mode deletes a line of character positions from the page.
Do (F16)	Alt-F6	Sends the appropriate escape sequence to the host.
Shift Do	Shift-Alt-F6	Sends the corresponding user defined key information to the host. See host application documentation for a description of the function performed.
Edit	Shift-Alt-T	Switches vxConnect between interactive mode and local editing mode.
Enter/ Transmit	Keypad '+'	When in Edit mode sends a block of characters to the host. Otherwise this key sends a CR (carriage return) if in KeypadNumeric Mode or the appropriate escape sequence if in Keypad Application Mode. See chapter 3, *General Menu*.
ESC	ESC	Sends the ESC (escape) character.
F6 Thru F10	F6 Thru F10	Sends the appropriate escape sequence to the host. See host application documentation for a description of the function performed.
Shift F6 Thru F10	Shift-F6 Thru Shift F10	Sends the corresponding user defined key information to the host. See host application documentation for a description of the function performed.
F11 (ESC)	F11	Sends the appropriate escape sequence to the host. See host application documentation for a description of the function performed.

VT Key	PC Key	Function
Shift F11	Shift-F11	Sends the corresponding user defined key information to the host. See host application documentation for a description of the function performed.
F12 (BS)	F12	In VT52/VT100 mode sends a BS (backspace). In VT200/VT300 mode sends the appropriate escape sequence to the host.
Shift F12	Shift-F12	Sends the corresponding user defined key information to the host. See host application documentation for a description of the function performed.
F13 (LF)	Alt-L or Alt-F3	In VT52/VT100 mode sends a LF (line feed). In VT200/VT300 mode sends the appropriate escape sequence to the host
Shift F13	Shift Alt-F3	Sends the corresponding user defined key information to the host. See host application documentation for a description of the function performed.
F14	Alt-F4	Sends the appropriate escape sequence to the host. See host application documentation for a description of the function performed.
Shift F14	Shift-Alt-F4	Sends the corresponding user defined key information to the host. See host application documentation for a description of the function performed.
F15 (Help)	Alt-F5	Sends the appropriate escape sequence to the host. See host application documentation for a description of the function performed.

VT Key	PC Key	Function
Shift F15	Shift-Alt-F5	Sends the corresponding user defined key information to the host. See host application documentation for a description of the function performed.
F16 (Do)	Alt-F6	Sends the appropriate escape sequence to the host. See host application documentation for a description of the function performed.
Shift F16	Shift-Alt-F6	Sends the corresponding user defined key information to the host. See host application documentation for a description of the function performed.
F17 Thru F20	Alt-F7 Thru Alt-F10	Sends the appropriate escape sequence to the host. See host application documentation for a description of the function performed.
Shift F17 Thru F20	Shift-Alt-F7 Thru Alt-F10	Sends the corresponding user defined key information to the host. See host application documentation for a description of the function performed.
Find	Home	In Edit mode the cursor moves to the top left corner of the scrolling region. Otherwise the appropriate escape sequence is sent to the host. See host application documentation for a description of the function performed.
Home	Home	In Edit mode the cursor moves to the top left corner of the scrolling region. Otherwise the appropriate escape sequence is sent to the host. See host application documentation for a description of the function performed.

VT Key	PC Key	Function
Help (F15)	Alt-F5	Sends the appropriate escape sequence to the host. See host application documentation for a description of the function performed.
Shift Help (F15)	Shift-Alt-F5	Sends the corresponding user defined key information to the host. See host application documentation for a description of the function performed.
Hold Scrn	Alt-Ctrl L	Pressing this key freezes incoming data on the screen, so you can read it. Press this key to release the screen, so new data can appear.
Insert Here (Insert/ Overstrike)	Insert	When in Edit mode this key switches vxConnect between insert and overstrike modes. Otherwise the appropriate escape sequence is sent to host. See host application documentation for a description of the function performed.
Insert Line (PF2)	Shift-Insert	When in Edit mode inserts a line of character positions on the page.
Local Print	Menu Bar File, Print Page Alt-F/P	Prints a copy of the contents of the screen. If redirection is active the data is written to the selected disk file. See Special Keys later in this chapter for information regarding print redirection.
Next Screen Next Page	Page Dn	When in Edit mode the next page in page memory is displayed on the screen. Otherwise the appropriate escape sequence is sent to the host. See host application documentation for a description of the function performed.

VT Key	PC Key	Function
PF1 Thru PF4	F1 Thru F4	When not in Edit mode the appropriate escape sequence is sent to the host. See host application documentation for a description of the function performed.
Prev Screen Prev Page	Page Up	When in Edit mode the previous page page memory is displayed on the screen. Otherwise the appropriate escape sequence is sent to the host. See host application documentation for a description of the function performed.
Remove	End	When not in Edit mode the appropriate escape sequence is sent to the host. See host application documentation for a de scription of the function to be performed. See Clr Field for local mode operation.
Return	Return	When in Edit mode sends a block of text to the host. Otherwise the return key sends a CR (carriage return) or a CR and a LF (line feed) if New Line mode is set. See chapter 3, General *Menu* for information regarding New Line.
Select	Alt-T	The appropriate escape sequence is sent to the host. See the host application documentation for information regarding the function performed.
Shift Select	Shift-Alt-T	See Edit earlier in this chapter.
Tab (PF1)	Tab or F1	When in Edit mode the cursor moves to the next unprotected field or tab stop. When not in local mode, this key sends a HT (horizontal tab) character.
Shift Tab (Shift PF1)	Shift-Tab or Shift F1	When in Edit mode the cursor moves to the previous unprotected field or tab stop.

VT Key	PC Key	Function
Transmit	Keypad '+'	See Enter Key earlier in this chapter for information.

HAZELTINE/PC TERM/TELEVIDEO/WYSE EMULATION KEYS

The following is a list of terminal keys, the corresponding personal computer key and the function the key performs. The list also contains special keys that the terminal does not have but are utilized by vxConnect to perform special functions, such as file transfer, script processing and print redirection. These functions also can be selected from the Menu bar.

Term Key	PC Key	Function
Backspace	Backspace	Moves the cursor one position to the left See *General Terminal Features*, Backspace Key.
Back Tab	Shift-Tab	Cause the cursor to move backward.
Break	Scroll Lock	Sends a signal to the host to end communications. The break signal duration can be modified. See chapter 3, *Communications Features* for additional information.
DEL	Alt-Ctrl Backspace	Sends a DEL character to the host.
Delete Char	Delete	Deletes a character at the cursor position.
Delete Line	Shift-Delete	Deletes the current cursor line. All succeeding lines are moved up one line and line 24 is blank.
Erase All	Alt-Pause	Erases all characters in the current window, including protected characters.
Erase EOF	End	Erases all data from the current cursor position to the end of the line.
Erase EOP	Shift-End	Erase all data from the current cursor position to the end of the page.

Term Key	PC Key	Function
F1 Thru F12	F1 Thru F12	Perform special functions that have meaning to the host application program.
F13 Thru F16	Alt-keypad-3 Thru Alt-keypad-6	
Home	Home	Moves the cursor to row 1, column 1.
Ins	Alt-Insert	Places vxConnect in insert mode permitting characters to be inserted at the cursor position.
Insert Char	Insert	Inserts one character at the current cursor position. The data on the line moves one position to the right.
Insert Line	Shift-Insert	The current cursor line and all succeeding lines are moved down one line.
Page	PageDn	Display the next page.
Shift-Page	PageUp	Display the previous page.
Repl	Shift-Alt-Insert	Takes vxConnect out of insert mode.
Send	Alt-Enter	Sends the data from the top of the page through the current cursor position.
Tab	Tab	Moves the cursor forward.

HEWLETT PACKARD EMULATION KEYS

The following is a list of HP terminal keys, the corresponding personal computer key and the function the key performs. The list also contains special keys that the HP terminal does not have but are utilized by vxConnect to perform special functions, such as file transfer, script processing and print redirection. These functions also can be selected from the Menu bar.

HP Key	PC Key	Function
Backspace	Backspace	Moves the cursor one position to the left See *General Terminal Features*, Backspace Key.
Back Tab	Shift-Tab	Moves the cursor to the left.
Break	Scroll Lock	Sends a signal to the host to end communications. The break signal duration can be modified. See chapter 3, *Communications Features* for additional information.
Clear Display	Shift-End	Clears display from cursor to end of memory.
Clear Line	End	Clears line from cursor to end of line.
Clear Tab	Shift-Alt-Tab	Clears a tab set in the column defined by the cursor.
Clr All Margin	Alt-F7	Clears all margins.
Clr All Tabs	Ctrl-Alt-Tab	Clears all tabs set.
DEL	Alt-Ctrl Backspace	Sends a DEL character to the host.
Delete Char	Delete	Deletes a data character at the current cursor position.
Delete Line	Shift-Delete	Deletes the entire line in which the cursor is located.

HP Key	PC Key	Function
Enter	Keypad '+'	Transmits a block of data to the host system.
F1 Thru F8	F1 Thru F8	Perform special functions that have meaning to the host application program.
Home	Home	Moves the cursor to row 1, column 1 or the first unprotected field.
Insert Char	Insert	Places the PC in insert mode permitting characters to be inserted at the cursor position. Pressing Ctrl-Insert will take the PC out of insert mode.
Insert Line	Shift-Insert	Inserts a single blank line at the line indicated by the cursor.
Left Margin	Alt-F5	Sets the left margin to the current cursor position.
Next	PageDn	Displays the next page.
Prev	PageUp	Displays the previous page.
Shift-Ctrl Reset	Alt-Pause	Hard reset. Initializes the terminal.
Shift-Reset Break	Pause	Soft reset. Restores the terminal to normal operation.
Return	Enter	Moves the cursor to the left margin.
Right Margin	Alt-F6	Sets the right margin to the current cursor position.
Select	F12	Host application specific.
Set Tab	Alt-Tab	Sets a tab at the current cursor position.
Tab	Tab	Moves the cursor to the next tab stop.

HONEYWELL VIP7200/7300/7800 EMULATION KEYS

The following is a list of VIP terminal keys, the corresponding personal computer key and the function the key performs. The list also contains special keys that the VIP terminal does not have but are utilized by vxConnect to perform special functions, such as file transfer, script processing and print redirection. These functions also can be selected from the Menu bar.

Standard Keyboard

VIP Key	PC Key	Function
Auto LF	Alt-A	Sets the PC to auto line feed mode. When set, using the return key causes a line feed after a carriage return.
Backspace	Backspace	When in character mode sends a BS (backspace) character. When in text or forms mode the cursor moves one position to the left. See *General Terminal Features,* Backspace Key.
Break	Scroll Lock	Sends a signal to the host to end communications. The break signal duration can be modified. See chapter 3, *Communications Features* for additional information.
Char	Alt-K/M/C	Sets the PC to character mode.
Clear	Shift-Pause	Clears the Screen
Del Char	Delete	Deletes a data character within a line or unprotected field.
Del Line	Shift-Delete	Deletes the entire line in which the cursor is located.
Erase EOF	End	Erase to end of line or end of field.
Erase EOP	Shift-End	Erase to end of page.

VIP Key	PC Key	Function
F1 thru F12	F1 Thru F12	Perform special functions that have meaning to the host application program.
Form	Alt-K/M/F	Sets the PC to forms mode.
Home	Home	Move the cursor to row 1, column 1 or the first unprotected field.
Init	Alt-Pause	Initializes the terminal.
Ins Char	Insert	Places the PC in insert mode permitting characters to be inserted at the cursor position. Depressing this key a second time will take the PC out of insert mode.
Ins Line	Shift-Insert	Inserts a single blank line at the line indicated by the cursor.
Line Feed	Alt-L	Moves the cursor down one line.
Reset	Pause	Restores the terminal to normal operation.
Tab	Tab	Moves the cursor forward to the next position at which a tab is set, or to the first position of the next unprotected field.
Shift-Tab	Shift-Tab	Moves the cursor backward to the previous position at which a tab is set, or to the first position of the previous unprotected field.
Tab-Clr	Shift-Alt-Tab	Clears a tab set by the tab set key in the column defined by the cursor.

VIP Key	PC Key	Function
Ctl-Tab-Clr	Alt-Ctrl-Tab	Clears all tabs set by the tabset key.
Tab-Set	Alt-Tab	Sets a tab in the column designated by the cursor for all lines of the screen.
Text	Alt-K/M/T	Sets the PC to Text Mode.
Transmit	Keypad '+'	Transmit data to the host.
Scroll-Up	Alt-Cursor-Dn	Moves data space up a line.
Scroll-Dn	Alt-Cursor-Up	Moves data space down a line.
Next Seg	PageDn	Causes next segment to be displayed.
Prev Seg	PageUp	Causes previous segment to be displayed.

Office Automation Keyboard

VIP Key	PC Key	Function
Abbrev	Alt-B	See Host Application.
Auto _	Alt-_	See Host Application.
Calculate	F4	See Host Application.
Center	F8	See Host Application.
Clear	Pause	See Host Application.
Code	Alt-O	See Host Application.
Command	Alt-D	See Host Application.
Copy	Alt-Y	See Host Application.
Dec Tab	F9	See Host Application.
Delete	Delete	See Host Application.
Erase	End	See Host Application.
Execute	Keypad '+'	See Host Application.
Format	F12	See Host Application.
Go to Page	Alt-G	See Host Application.
Help (OAS)	F3	See Host Application.
Indent	F7	See Host Application.
Insert	Insert	See Host Application.
Menu	Alt-M	See Host Application.
Merge	F11	See Host Application.
Move	Alt-V	See Host Application.

VIP Key	PC Key	Function
Note	Alt-N	See Host Application.
Page	Alt-P	See Host Application.
Print	F5	See Host Application.
Replace	Alt-R	See Host Application.
Search	Alt-Z	See Host Application.
Sign-On	F2	See Host Application.
Stop	Alt-T	See Host Application.
Super Sub	F10	See Host Application.
Tab	Tab	See Host Application.
Shift-Tab	Shift-Tab	See Host Application.

HONEYWELL VIP7700/DKU EMULATION KEYS

The following is a list of VIP terminal keys, the corresponding personal computer key and the function the key performs. The list also contains special keys that the VIP terminal does not have but are utilized by vxConnect to perform special functions, such as file transfer, script processing and print redirection. These functions also can be selected from the Menu bar.

VIP Key	PC Key	Function
Char I/D	Insert	Insert a character at the cursor position.
Ctr Char I/D	Delete	Delete a character at the cursor position. See *General Terminal Features*, Backspace Key.
Clear	Pause	Clears the display or erases all variable field data.
Ctr Clear	Shift-Pause or Ctrl-Pause	Clears the display. Initializes the to normal mode.
Home	Home	Move the cursor to row 1, column 1 or the first variable field.
Line Clr	End	Erases all characters from the cursor position to the end of the line.
Ctr Line Clr	Shift-End or Ctrl-End	Erases all characters from the cursor position to the end of the page.
Line I/D	Shift-Insert or Ctrl-Insert	Insert a blank line at the cursor position
Ctr Line I/D	Shift-Delete or Ctrl-Delete	Deletes the line at the cursor position.

VIP Key	PC Key	Function
Line Return	Enter	Returns the cursor to the left margin. If Enter is Transmit is set in*VIP Features* the Enter key will transmit data (see Transmit below).
New Line	PageDn	Positions the cursor to the first position of the next line.
Tab S/C	Alt-Tab	Enters a tab stop at the cursor position.
Ctr Tab S/C	Shift-Alt-Tab or Ctrl-Alt-Tab	Clears the tab stop at the cursor position
Tab	Tab	Moves the cursor to the next tab stop to the right or the first position of the next variable field.
Ctr Tab	Shift-Tab or Ctrl-Tab	Moves the cursor to the next tab stop to the left or to the previous variable field.
Transmit	Keypad '+'	Transmits data to the host.
Ctr Transmit	Shift or Ctrl Keypad '+'	Transmits the entire screen to the host.
	Alt-Insert	Insert duplicate line.
	Alt-F3	Repeat last data sent to host.

LEAR SIEGLER ADM EMULATION KEYS

The following is a list of ADM terminal keys, the corresponding personal computer key and the function the key performs. The list also contains special keys that the ADM terminal does not have but are utilized by vxConnect to perform special functions, such as file transfer, script processing and print redirection. These functions also can be selected from the Menu bar.

ADM Key	PC Key	Function
Backspace	Backspace	Moves the cursor one position to the left See *General Terminal Features*, Backspace Key.
Break	Scroll Lock	Sends a signal to the host to end communications. The break signal duration can be modified. See chapter 3, *Communications Features* for additional information.
DEL	Alt-Ctrl Backspace	Sends a DEL character to the host.
Delete Char	Delete	Deletes a character at the cursor position.
Erase All	Alt-Pause	Erases all characters in the current window, including protected characters.
Erase EOF	End	Erases all data from the current cursor position to the end of the line.
Erase EOP	Shift-End	Erases all data from the current cursor position to the end of the page.
F1 Thru F6	F1 Thru F6	Perform special functions that have meaning to the host application program.
Home	Home	Moves the cursor to row 1, column 1.

ADM Key	PC Key	Function
Reset	Pause	Resets the operating mode.
Return	Enter	Moves the cursor to column 1 of the current line.

PRIME EMULATION KEYS

The following is a list of PT terminal keys, the corresponding personal computer key and the function the key performs. The list also contains special keys that the PT terminal does not have but are utilized by vxConnect to perform special functions, such as file transfer, script processing and print redirection. These functions also can be selected from the Menu bar.

PT Key	PC Key	Function
Backspace	Backspace	Moves the cursor one position to the left See *General Terminal Features*, Backspace Key.
Back Tab	Shift-Tab	Moves the cursor to the left.
Break	Scroll Lock	Sends a signal to the host to end communications. The break signal duration can be modified. See chapter 3, *Communications Features* for additional information.
Cancel	Alt-F12	Action depends on how the key is defined by the currently running host application.
Clear	Pause	Releases soft lock.
Ctrl-Clear	Shift-Pause	Clears screen, notifies host.
DEL	Alt-Ctrl Backspace	Sends a DEL character to the host.
Delete	Delete	Deletes a character at the current cursor position.
End/Begin	Alt-End	Action depends on how the key is defined by the currently running host application.
Enter (Block Mode)	Enter	Signals host that screen data is ready for transmission.

PT Key	PC Key	Function
Erase	End	Erases a character, line, area or page. (with shift, ctrl and shift+ctrl).
F1 Thru F10	Alt-1 Thru Alt-0	Action depends on how the key is defined by the currently running host application.
Help	Alt-?	Action depends on how the key is defined by the currently running host application.
Home	Home	Move the cursor the home position.
Insert	Insert	Toggles between replacement and insertion modes.
Menu	Alt-M	Action depends on how the key is defined by the currently running host application.
PA1 Thru PA4	Alt-F1 Thru Alt-F4	Action depends on how the key is defined by the currently running host application.
PF1 Thru PF12	F1 Thru F12	Action depends on how the key is defined by the currently running host application.
PgDn	Page Dn	Displays next page of data.
PgUp	Page Up	Display previous page of data.
Prt Scn (host)	Alt-P	Print Screen.
Scroll Down	Alt-Cursor Down	Scrolls screen image one line down.
Scroll Up	Alt-Cursor Up	Scrolls screen image one line up.

PT Key	PC Key	Function
Scroll Left	Alt-Cursor Left	Action depends on how the key is defined by the currently running host application.
Scroll Right	Alt-Cursor Right	Action depends on how the key is defined by the currently running host application.
Stop	Alt-T	Action depends on how the key is defined by the currently running host application.
Tab	Tab	Move the cursor to the next tab stop or the next field.

SPECIAL KEYS

PC Key	Function
Alt-F/O	Opens and loads the selected configuration file. Loading a configuration will initialize vxConnect and cause the screen to clear.
Alt-F/S	Saves the current configuration file.
Alt-F/A	Saves the current configuration file as new selected file.
Alt-F/F	Execute a file transfer (see chapter 5).
Alt-F/T	Activate the script processor (see chapter 6).
Alt-F/D	Access the dialing directory (see chapter 4).
Alt-F/P	Print the screen. The data will be written to a file if print redirection is selected.
Alt-F/L	Print log mode toggle. When log mode is set data that is sent to the screen will be printed.
Alt-F/R	Redirects printer output (host or keyboard driven) to the selected disk file. Data will be appended to the file until redirection is cancelled or another file is selected. This allows the data to be utilized by another program .
Alt-Ctrl-L	Toggle key to place the PC in local mode. The PC will not send or receive data when in this mode. You can drop DTR (data terminal ready) when entering local mode. This can be used to activate host communications equipment when in asynchronous mode.
Alt-Ctrl-R	Toggle key which activates and deactivates the displaying of the current row and column on line 25 of the screen.
Alt-K/M/D	Toggle key which activates and deactivates the Display-All function. When the Display-All function is activated all commands are written to the screen but not executed. This is a helpful debugging tool.

PC Key	Function
Alt-C/x (User Defined)	Command text as defined in the configuration settings will be sent to the host when the corresponding command key is depressed. A script also can be executed with a command key. These keys can also be reassigned. See chapter 3, *Command Text*.
Alt-H	Help (emulation).

CHAPTER 3
SET UP YOUR CONFIGURATION

CONTENTS

WHAT IS CONFIGURATION?

Configuration is the way your computer and peripheral equipment are connected and programmed to operate as a system. From the information you supply about your equipment, a file is created called a configuration file. You configure your software to suit your communications needs. The way your system is configured determines how your system will operate during emulation and file transfer.

Read through this chapter first then contact your host system personnel to answer any questions regarding terminal configuration.

CONFIGURATION

To start the configuration procedure follow these steps:

1. Make sure the personal computer is turned on.
2. If you are operating from a diskette insert the vxConnect diskette in the drive and click the diskette icon.
3. If you are operating from a hard-disk double-click the program group that contains vxConnect (i.e. Cambridge).
4. Next double click the vxConnect icon.

This loads vxConnect.

USING THE MENU BAR AND MAIN MENU

After you load vxConnect you will see the Restricted Rights screen. Press any key or click the mouse to clear the screen. Bring the cursor to the menu bar on the top of the screen with the mouse and click SETTINGS (you may load a new configuration file by selecting OPEN from the FILE Menu).

The Main Set-Up Menu is the next screen you see when you want to set up your configuration file. This screen, or menu, has selections or options for you to choose.

After selecting an option on the Main Set-Up Menu using the mouse you will automatically receive another screen that asks for more information about that option.

Note: The default settings of each feature are indicated by **bold** type.

The first time you set your configuration file, we suggest that you select each one in sequence one at a time. Each time you enter a selection you receive another screen. Think of these following screens as menus which ask questions about the Main Set-Up Menu selections.

Before you select the first choice on the Main Set-Up Menu, read the following information to get an idea of how these screens work.

- Each menu has a number of features that pertain to that menu. Each feature has a setting to select and the current settings are indicated by a filled-in radio button.

- Select a setting for a feature with the mouse and clicking appropriate radio button or entering the desired text.

- Select OK or press return to accept the settings.

- Select CANCEL to cancel the settings.

- If you want to save your configuration select "Save Configuration" from the Main Set-Up Menu. This saves any selections just made and overrides any previous selections.

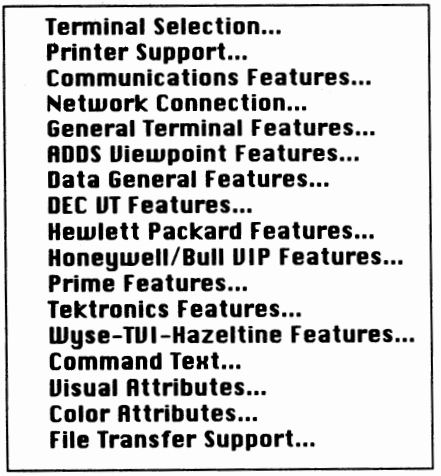


Figure 3-1 Main Set-Up Menu

TERMINAL SELECTION

This menu lets you select the type or mode of terminal you wish to emulate. This feature can also be modified via the script processor (see chapter 6, Viper command). Changing the terminal mode will initialize the emulator and cause the screen to clear.

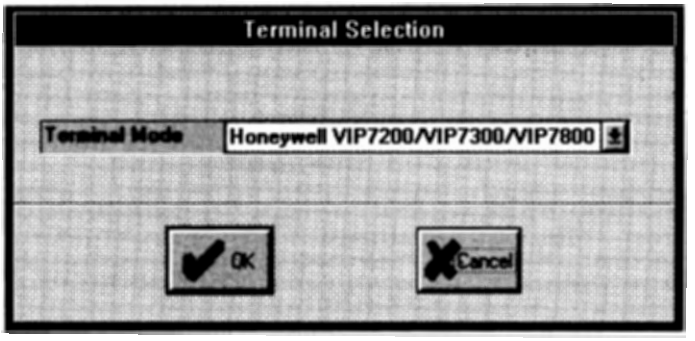


Figure 3-2 Terminal Selection

Feature	Setting	Description
Mode	ADDS	Emulates an ADDS Viewpoint or Regent terminal.
	Data General	Emulates a Data General D100, D200 or D400 series terminal.
	DEC VT52	Emulates a DEC VT52 terminal
	DEC VT100	Emulates a DEC VT100 or an ANSI 3.64 terminal
	DEC VT300-7	vxConnect will use all 7-bit controls and 8-bit graphic characters. Use this mode for VT200 applications.
	DEC VT300-8	vxConnect will use all 8-bit controls and controls and 8-bit graphic characters. Use this mode for VT200 applications that use 8-bit control characters.

Feature	Setting	Description
	Hazeltine	Emulates a Hazeltine HZ-1500, HZ-1510, HZ-1520 or Zentec 8000 terminal.
	Hewlett Packard	Emulates a Hewlett Packard HP2392A or HP700/92 terminal.
	HBI VIP	Emulates a Honeywell/Bull VIP7200/VIP7300/VIP7800 or HDS/BDS series terminal.
	HBI VIP7700	Emulates a Honeywell/Bull VIP7700/VIP7760/DKU series terminal.
	Lear Siegler	Emulates a Lear Siegler ADM 3A, ADM 31 or ADM 5 terminal.
	PC Term	Emulates a PC Terminal.
	Prime PT200/ PT250	Emulates a Prime PST100/PT200 or PT250 terminal.
	Tektronics 4010-4014	Emulates a Tektronics 4010/4014 terminal.
	TeleVideo 900	Emulates a TVI 900 series terminal.
	Wyse 50	Emulates a Wyse WY-50 or WY-50+ terminal.

PRINTER SUPPORT

This menu lets you select printer features, indicating whether a printer is attached to the PC and can the host send printing control characters.

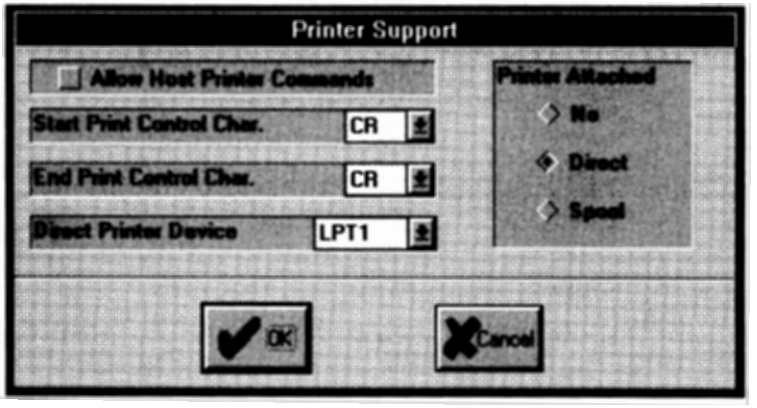


Figure 3-3 Printer Support Dialog

Feature	Setting	Description
Printer Attached	No	No printer is attached to the personal computer.
	Direct	Yes, a printer (i.e. epson) is directly attached to the personal computer.
	Spool	Write the printed data to a temporary file for printing.
Allow Host Printer Commands	**No**	Host cannot send printer control commands.
	Yes	Printer control commands can be sent by the host system.

Feature	Setting	Description
Start Print Control Char	**CR** LF FF	Select the character combination to be sent to the printer at the start of printing.
End Print Control Char	**CR** LF FF	Select the character combination to be sent to the printer at the end of printing.
Direct Printer Device	**LPT1** LPT2 LPT3 LPT4	Select the device of the directly connected printer.

COMMUNICATIONS FEATURES

This feature allows you to select the particular communications set-up required by your host system. The default values of comm. port 1, even parity, 7 data bits and 1 stop bit should work when communicating to the DEC or Honeywell/Bull host. This menu item allows you to override these default values.

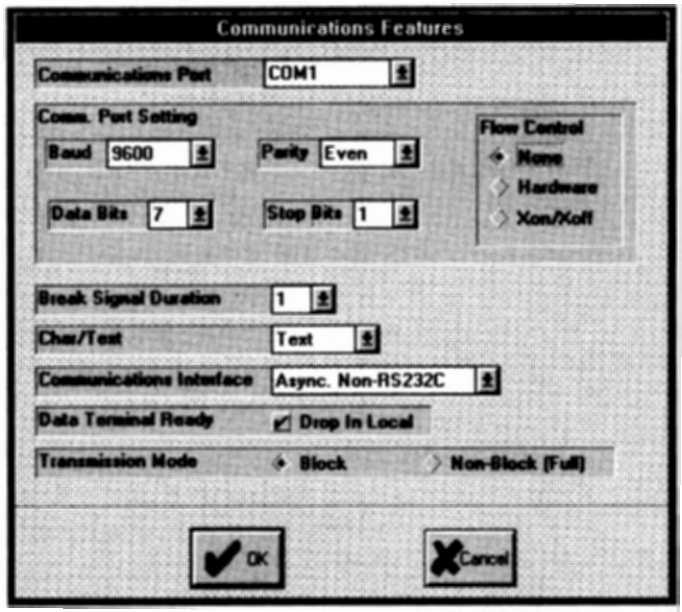


Figure 3-4 Communications Feature

Feature	Setting	Description
Comm Port	-	Select the correct port for asynchronous communications. ICCb is current loop.
Baud	**9600**	Select the correct baud rate required by your host system for asynchronous or NASI/NCSI/NETCI communications.
Parity	None Odd **Even** Mark	Select the parity required by your host system for asynchronous or NASI/NCSI/ NETCI communications.

Feature	Setting	Description
Data Bits	4-8	Select the number of data bits required by your host system for asynchronous or NASI/NCSI/NETCI communications
Stop Bits	1-2	Select the number of stop bits required by your host system for asynchronous or NASI/NCSI/NETCI communications
Flow Control	**None** Hardware Xon/Xoff	Select whether or not your host system supports this communications feature.
Break Signal Duration	1-6	Select the duration of the break signal (in 100ms) required by your async. communications equipment. Certain data switches require longer break signals to operate correctly.
Char/Text	Char	Characters are sent to the host and displayed on the screen as they are typed.
	Echo	Characters are sent to the hostas they are typed. The host returns the correct data character to the personal computer.
	Text	Data may be entered in any position of the data screen. Data is transmitted by the TRANSMIT key.
	Tx-Ret	Same as text mode. The ENTER key may be used to transmit data to the host system.
Comm. Interface	**Non-RS232** (Async.)	This option may be required to communicate to certain modems or protocol converters.
	RS232	Standard communications selection.

Feature	Setting	Description
Comm. Interface (Cont)	VIP Sync.	Honeywell VIP synchronous protocol. This utilizes any of the communications adapters indicated in Appendix C. See SyncConfig later in this chapter for information regarding synchronous configuration.
	Network VIP Server	Uses the Cambridge vxServer gateway product for connection to Honeywell/ Bull host systems.
	Network Int 14H	Uses BIOS interrupt 14 communication Many async. gateway products (i.e. Banyan) use this method for redirection to the communications server.
	Network NASI/NCSI (Int 6BH)	Uses the Novell NASI, Network Products Corporation NCSI or Ungermann-Bass NETCI protocol for connection to asynchronous or X.25 servers.
	Network TCP/IP	Uses the TCP/IP protocol for connection to the host system.
Data Terminal Ready	**Drop in Local**	The DTR signal is turned off whenever the PC is switched to local mode. May be required by certain data switch equipment (asynchronous only).
Transmission Mode	**Block**	Data is sent to the host in 256 character blocks.
	Non-Block (Full)	Data is transmitted in one continuous stream. See SyncConfig for the VIP synchronous setting of this feature.

NETWORKING CONNECTION

This menu item allows you to select the characteristics required for communications to the host system in a networking environment. Depending upon the communications interface selected in *Communications Features* one of the following dialogs may appear.

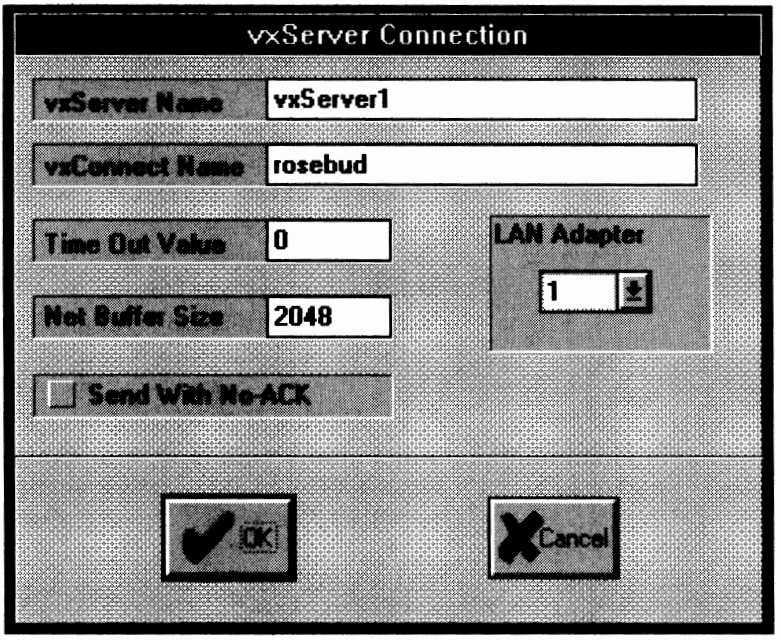


Figure 3-5 vxServer Connection

This dialog allows you to configure the connection to the vxServer gateway product. vxServer will utilize the poll address that is specified in the configuration via SyncConfig. Make sure you have specified the correct poll address or group assignment.

Feature	Setting	Description
vxServer Name	-	Enter the name of the VIP server you wish to connect.
vxConnect Name	-	Enter the name of this PC. Each session connected to vxServer must have a unique name. Maximum 16 characters.

Feature	Setting	Description
Time Out Value	-	Specifies the number of half-second periods that receive and send commands can wait for completion before timing-out and reissue the command. A low value may increase network traffic. Specifying a value of zero indicates that there is no time-out threshold associated with this session. Maximum value is 255.
Net Buffer Size	-	Enter the amount of adapter memory to be utilized by the network session. This value is subtracted from the Network Buffer Size that was specified in the LAN operating system configuration. A high value may cause a 35h or 38h (Requested resources not available) error, especially if you are running multiple session. A low value may degrade performance.
Send with No-ACK	**No**	An ACK is returned when data is sent to vxServer.
	Yes	An ACK is not returned when data is sent to vxServer. This may improve performance. If your LAN does not support this feature it will be automatically disabled.
LAN Adapter	1-4	Select the LAN adapter number that that you will be utilizing.

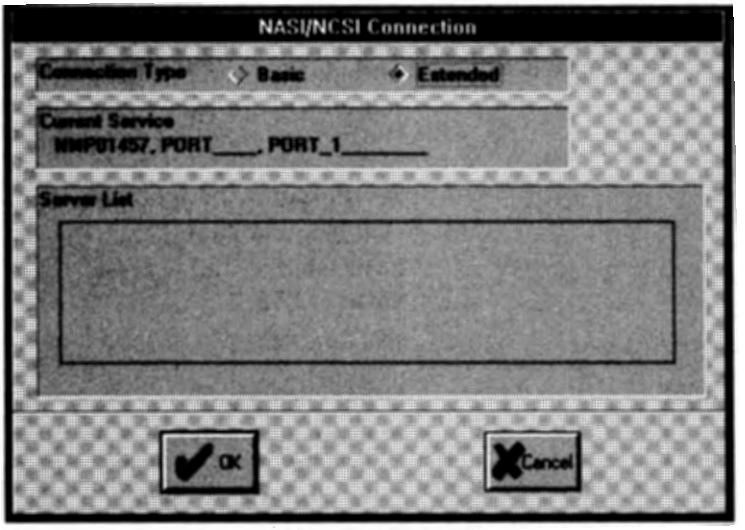


Figure 3-6 NASI/NCSI Connection

This dialog allows you to select the connection to a third-party asynchronous or X.25 communications server via Novell NASI (Network Asynchronous Services Interface), Network Products Corporation NCSI (Network Communications Services Interface) or Ungermann-Bass NETCI. The proper TSR (terminate and stay resident) application program must be loaded on your system. See the documentation that came with the communications server program for additional information regarding installation and set-up.

Feature	Setting	Description
Connection Type	**Basic**	Uses the NASI/NCSI command interpreter to access the server. Also required for a NETCI connection.
	Extended	Uses the network naming service to connect to the correct server and port. Also utilizes the communication parameters selected in *Communications Features* for access to the host system.

Feature	Setting	Description
Services List	-	Selecting extended above will cause a list of network services to appear. This list usually contains server name, general port names and port specific names. Select the service you wish to connect to by clicking the corresponding name with the mouse.

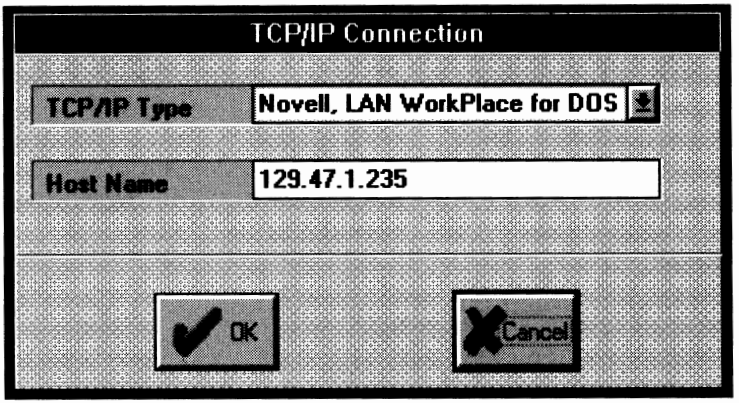


Figure 3-7 TCP/IP Connection

This dialog allows you to select the connection to the host system via the TCP/IP protocol. vxConnect currently supports Novell, LAN WorkPlace for DOS and FTP Software, Inc., PC/TCP implementation of the TCP/IP protocol. See the documentation that came with the TCP/IP software for installation instructions.

Feature	Setting	Description
TCP/IP Type	-	Select the proper TCP/IP implementation.
Host Name	-	Enter the name or address of the host connection.

GENERAL TERMINAL FEATURES

This menu allows you to select the features that are utilized by all terminal types.

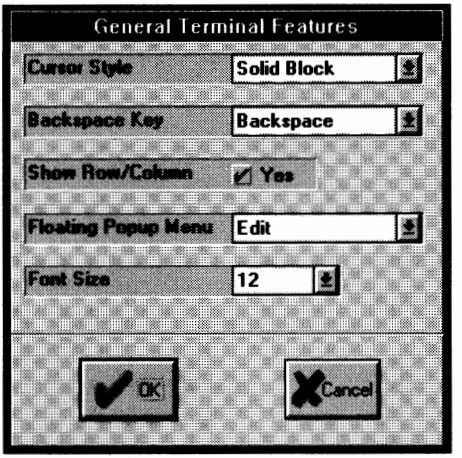


Figure 3-8 General Terminal Features

Feature	Setting	Description
Cursor Style	**Solid Block** Gray Block Vertical Line Horizontal Line	Select the desired cursor.
Backspace Key	Delete Cursor Left **Backspace**	The backspace key is a Delete, Cursor Left or an ASCII Backspace.
Show Row/Col	**No** Yes	Select whether you wish to display the current row and column on line 25 of the screen. You may also use the Alt-Ctrl-R keys to activate or deactivate this function.
Floating Popup Menu	**None** File Edit	Select the menu which will popup when the "other" mouse button is pressed.
Font Size	8 9 **12**	Select the size of the font required for emulation.

ADDS VIEWPOINT FEATURES

This menu allows you to select the options that affect the operation of vxConnect in ADDS Viewpoint and Regent modes.

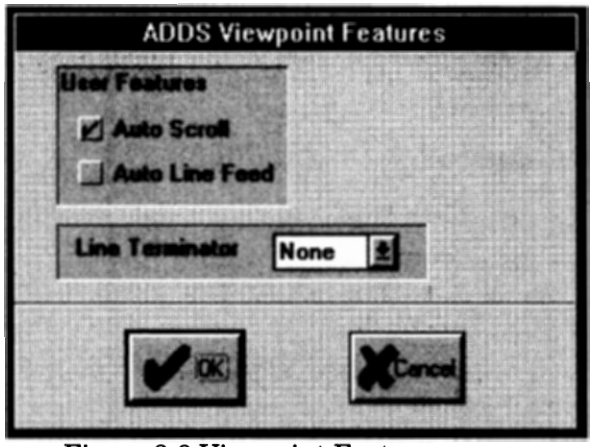


Figure 3-9 Viewpoint Features

Feature	Setting	Description
Auto Scroll	No	vxConnect does not scroll when a line feed occurs on line 24.
	Yes	Scrolling occurs.
Auto Line Feed	**No**	A carriage return will return the cursor to the beginning of the current line.
	Yes	A carriage return will return the cursor to the beginning of the next line.
Line Terminator	**None** CR CR-ETX CR-EOT	Select the proper line terminator required by your host system.

DATA GENERAL DASHER TERMINAL FEATURES

This menu item allows you to select the characteristics of Data General Dasher terminals.

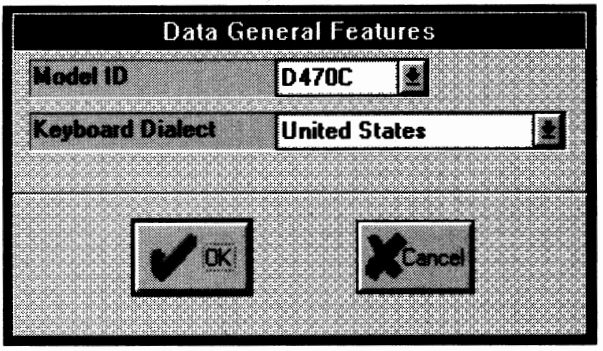


Figure 3-10 Data General Dasher Features

Feature	Setting	Description
Model ID	D100 D200 -- D470C	Select the proper model identification required by your host system.
Keyboard Dialect	-	Select the correct character set for the keyboard you are using. United States is the default. See Appendix D, Language Support.

DEC VT FEATURES

Selecting VT Features will cause a sub-menu to appear. This sub-menu contains features that pertain to the DEC VT series display terminal including the ReGIS graphics models.

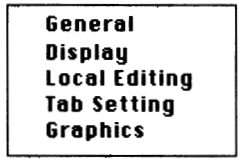


Figure 3-11 VT Features
Sub-Menu

DEC VT GENERAL FEATURES

This menu lets you select the general characteristics of a DEC VT terminal.

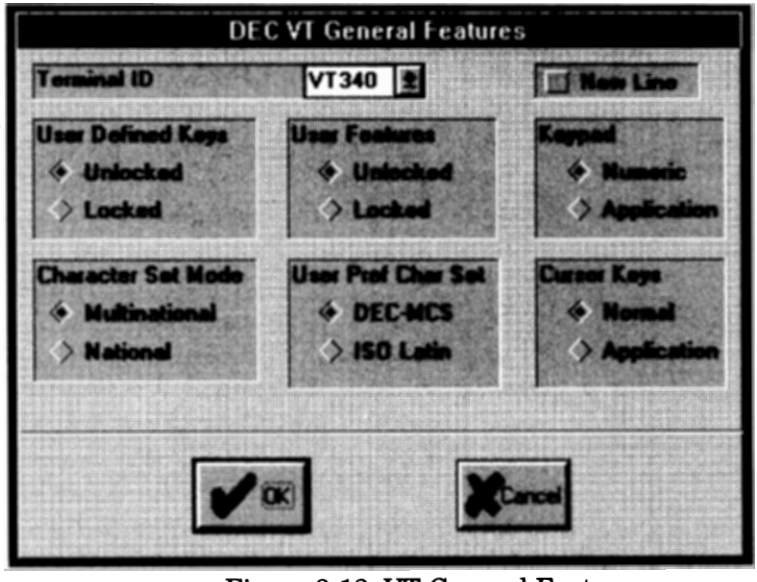


Figure 3-12 VT General Features

Feature	Setting	Description
Terminal ID	**VT330/VT340** VT240 VT220 VT131 VT125 VT102 VT101 VT100	Select the proper terminal ID or display response required by your host system.
New Line	**No**	Return key sends a carriage return only.
	Yes	Return key sends a carriage return and a line feed.
User Defined Keys	**Unlocked**	UDK's can be loaded.
	Locked	UDK's cannot be loaded by the host system.
User Features	**Unlocked**	Host can modify feature.
	Locked	Host cannot modify user features.
Keypad	**Numeric**	Causes the keypad to send ASCII character codes.
	Application	Causes the keypad to send escape sequences used by the host application.
Character Set Mode	**Multinational**	Supports 8-bit DEC Multinational or ISO Latin-1 set. Both sets include the 7-bit ASCII set. See User Pref. Set.
	National	Supports one of the National Replacement Character (NRC) sets.

Feature	Setting	Description
User Pref Char Set	**DEC-MCS**	Selects the DEC Multinational Character Set.
	ISO Latin-1	Selects the International Standards Organization (ISO) character set.
Cursor Keys	**Normal**	Cursor keys send ANSI cursor control sequence.
	Application	Cursor keys send application control functions.

DEC VT DISPLAY FEATURES

This menu has features that affect the way data appears on the screen.

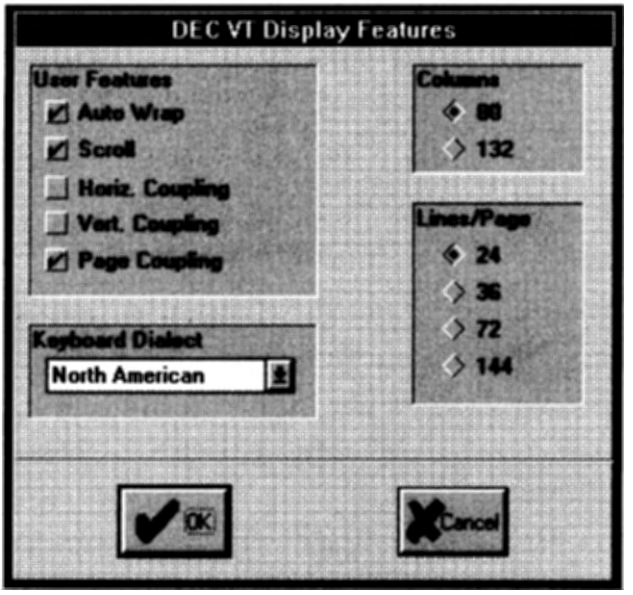


Figure 3-13 VT Display Features

Feature	Setting	Description
Columns	**80** 132	Select the number of characters per line.
Lines/Page	**24**, 36, 72 144	Select the number of lines per page.
Auto Wrap	No	When the cursor reaches the margin new characters will be displayed in the last column. Each new character overwrites the previous character at that position.
	Yes	When the cursor reaches the margin new character will be displayed on the next line.

Feature	Setting	Description
Scroll	No	Scrolling is disabled.
	Yes	The screen scrolls when data reaches the bottom of the screen.
Horiz. Coupling	**No**	Do not pan automatically.
	Yes	Pan automatically when the cursor moves beyond the right or left border.
Vert. Coupling	**No**	Do not pan automatically.
	Yes	Pan automatically when the cursor moves beyond the top or bottom border.
Page Coupling	No	Do not automatically display a new page
	Yes	Automatically displays a new page when the cursor moves to a new page in memory.
Keyboard Dialect		Select the correct character set for the fkeyboard you are using. North American is the default. See Appendix D, Language Support.

DEC VT LOCAL EDITING

The local editing dialogs provides you the ability to select the features required for the local editing mode. Usually the host application software selects the editing features that it requires. There are two local editing dialogs. The second will appear when you select 'ok' on the first.

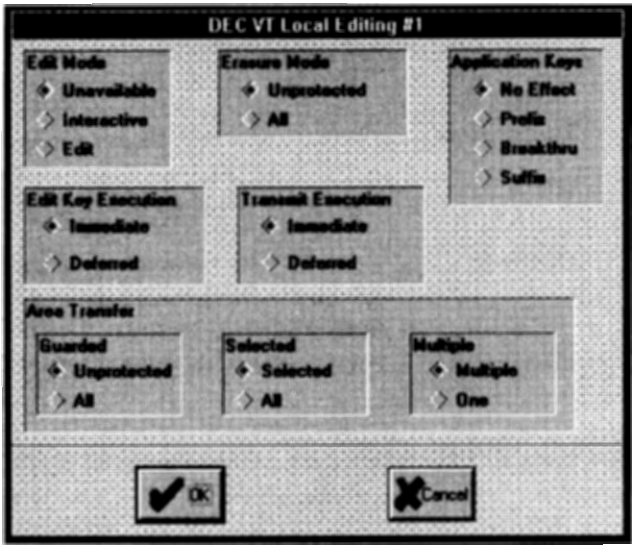


Figure 3-14 VT Local Editing Dialog One

Feature	Setting	Description
Edit Mode	**Unavailable**	Neither you or the host can select edit mode.
	Interactive	Each character typed is sent immediately to the host system. To enter edit mode press the Shift-Alt-T keys (Shift-Edit). The host can turn edit mode on and off.
	Edit	Edit mode is on. Each character typed is stored in page memory until you send the text to the host.
Erasure Mode	**Unprotected**	Only unprotected characters can be edited.
	All	Protected and unprotected characters can be edited.

Feature	Setting	Description
Edit Key Execution	**Immediate**	Pressing the Shift-Alt-T keys (Shift-Edit) immediately switches between interactive mode and edit mode.
	Deferred	Pressing the Shift-Alt-T keys sends a request to the host switch modes.
Transmit Execution	**Immediate**	Pressing the return key or the numeric keypad '+' key (Transmit) immediately sends a block of data to the host.
	Deferred	Pressing the return key or the numeric keypad '+' key notifies the host that data is available to be sent. The host will send a transmit instruction.
Application	**No Effect**	F6 thru F20 Keys do not work in local editing mode.
	Breakthru	Application keys work immediately in edit mode.
	Prefix	Pressing an application key sends that function to the host prior to sending a data block.
Application Keys (Cont.)	Suffix	Pressing an application key sends that function to the host after sending a data block.
Guarded Area Transfer	Unprotected	Pressing the numeric keypad '+' (transmit) sends unprotected characters to the host.
	All	Pressing transmit sends unprotected and protected characters to the host.

Feature	Setting	Description
Selected Area Transfer	Selected	Pressing the numeric keypad '+' (transmit) sends only selected areas to the host.
	All	Pressing transmit sends all characters on the current page to the host.
Multiple Area Transfer	**Multiple**	Pressing the numeric keypad '+' (transmit) sends all selected areas on the current page to the host.
	Single	Pressing transmit sends only the selected area containing the cursor.

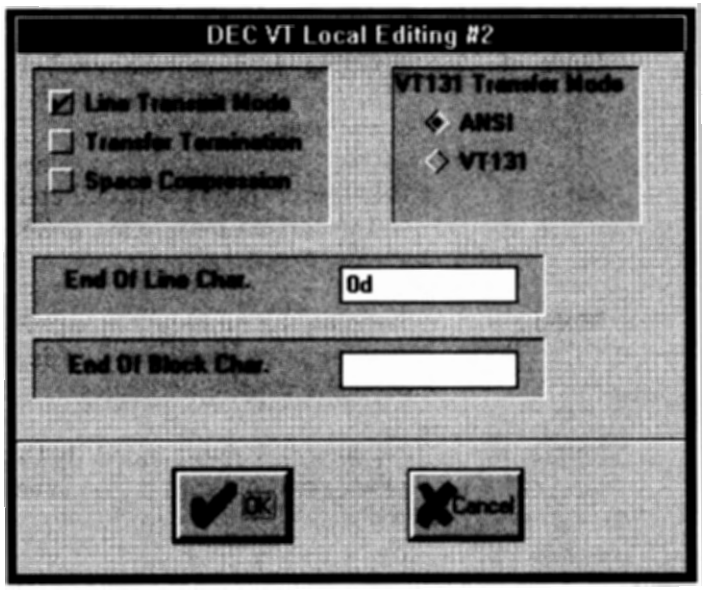


Figure 3-15 VT Local Editing Menu Two

Feature	Setting	Description
Line Transmit Mode	No	Pressing transmit sends a full or partial page.
	Yes	Pressing the numeric keypad '+' (transmit) sends only a line of eligible characters to the host.
Transfer Termination	No	Pressing transmit sends a block of data based upon the setting of *VT131 Transfer Mode*.
	Yes	Pressing the numeric keypad '+' (transmit) sends the data inside the scrolling margins (i.e. scrolling region).

Feature	Setting	Description
Space Compression	**No**	Send a space for each unused character
	Yes	Send a record separator in place of unused characters. The last field on a line contains an *End of Line Character.*
VT131 Transfer Mode	**ANSI**	Transfer data according to ANSI (American National Standards Institute) rules.
	VT131	Transfers data like a VT131. Use this setting to run software designed for the Digital VT131 terminal.
End Of Line Characters		Select the characters used to indicate the end of line (EOL) in a data block. The default is a Carriage Return. You can enter up to six hexadecimal characters. (hex 0d=13=carriage return).
End Of Block Characters		Select the characters used to indicate the end of a data block. There is no default. You can enter up to six hexadeci -mal characters.

DEC VT TAB SETTING

This menu allows you to set the number of tab stops on a line. When you press the tab key, within the emulator, the cursor advances to the next tab stop.

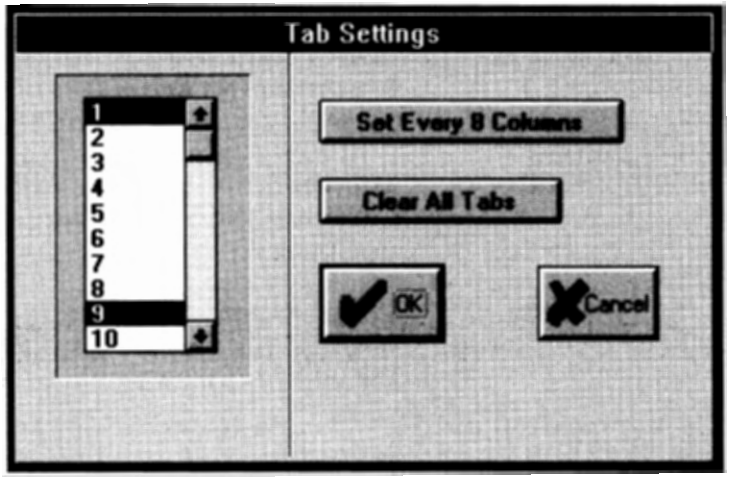


Figure 3-16 VT Tab Setting

Set or clear a tab setting by double-clicking the corresponding column on this menu. You may clear all the tab stops or set a tab every eight columns by clicking the appropriate button on this dialog. The default value is a tab stop every eight columns.

DEC VT GRAPHICS FEATURES

To create and display pictures or graphics symbols, the host must enter commands in a special graphics language. vxConnect can accept three different types of graphics command languages:

- ReGIS (Remote Graphics Instruction Set from Digital)
- Tektronics 4010/4014
- Sixel protocol

See the appropriate Digital Programmer Reference Manual for information regarding the commands used for each of the above protocols.

This dialog allows you to select the appropriate graphics features required by your host system.

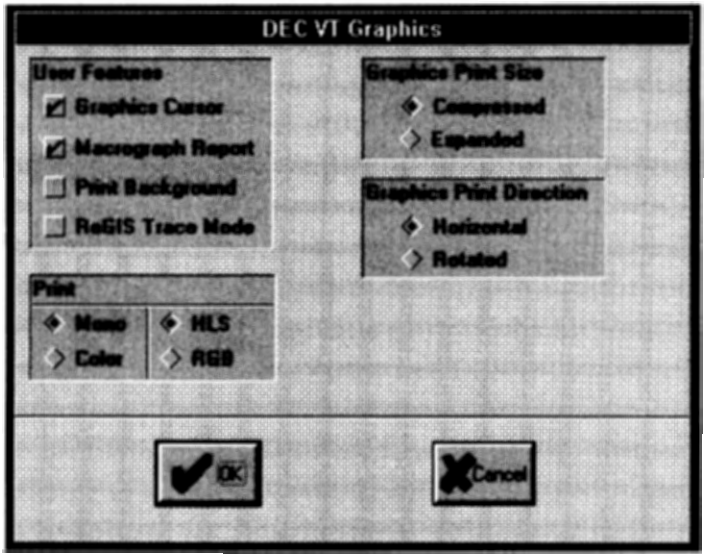


Figure 3-17 VT Graphics Features

Feature	Setting	Description
Graphics Cursor	No	The graphics cursor is not displayed.
	Yes	The graphics cursor is displayed.

Feature	Setting	Description
Macrograph Report	No	The macrograph report is not sent to the host system.
	Yes	Sends the contents of the macrograph report to the host in response to ReGIS report macrograph command.
Print Background	**No**	Do not print the background colors.
	Yes	Print the background colors. (for future use).
ReGIS Trace Mode	**No**	No trace is performed.
	Yes	Trace the ReGIS Commands as they are received from the host system. The trace will be written to a file named vxConnect.trc. If there is a problem this file can be sent to Cambridge technical support for analysis.
Graphics Print Size	**Compressed**	The size of the graphics image printed on the printer will be approximately 1/2 page.
	Expanded	Full page graphics image will be printed on the printer. (This feature is for documentation purposes only. Select this feature via Page SetUp on the Menu Bar).

Feature	Setting	Description
Graphics Print Dir	**Horizontal**	The graphics image printed on the printer will be in a landscape format.
	Rotated	The graphics image will be printed in a portrait format. (This feature is for documentation purposes only. Select this feature via Page SetUp on the Menu Bar).
Print Mono/ Color	**Mono**	Selects black and white printing.
	Color	Selects color printing. Used only with supported color printers. (for future use).
Print HLS/ RGB	**HLS**	Selects hue/lightness/shade system to send a color image.
	RGB	Selects red/green/blue system to send a color image. (for future use).

HEWLETT PACKARD FEATURES

This menu item allows you to select the characteristics required for Hewlett Packard emulation.

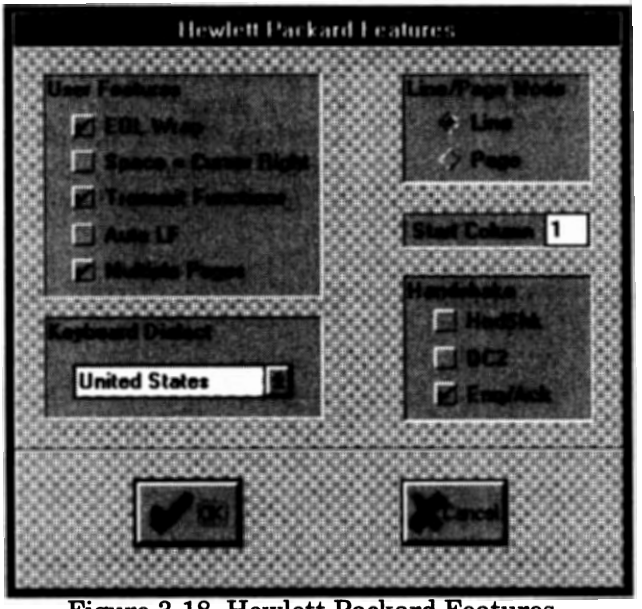


Figure 3-18 Hewlett Packard Features

Feature	Setting	Description
EOL Wrap	No	When the cursor reaches the right margin it remains in that screen column until an explicit carriage return or other cursor movement function is performed (succeeding characters overwrite the existing character in that screen column).
	Yes	When the cursor reaches the right margin it automatically moves to the left margin in the next lower line.
Space = Cursor Right	**No**	Spaces entered through the keyboard will overwrite existing characters.
	Yes	Spaces entered through the keyboard move the cursor forward but do not overwrite existing characters.

Feature	Setting	Description
Transmit Functions	No	The escape code sequences for the major function keys are executed locally but not transmitted to the host system.
	Yes	The escape code sequences generated by control keys are transmitted to the host computer.
Auto LF	**No**	The return key sends a carriage return only.
	Yes	The return key sends a carriage return and a line feed.
Multiple Pages	No	There is only one page of data consisting of 24 lines.
	Yes	There are three pages of data.
Keyboard Dialect	-	Select the correct character set for the keyboard you are using. See Appendix D, Language Support.
Line/Page Mode	**Line**	When operating in block mode the terminal will transmit data a line at a time.
	Page	When operating in block mode the terminal will transmit the data in display memory, either from the beginning of the memory or the current cursor position.
Start Col	-	If there is no logical start-of-text pointer in the particular line, data transmission begins at the designated start column. The default is one.

Feature	Setting	Description
Hndshk	**No**	Eliminates the use of D_1 handshake.
	Yes	A CR or CR/LF is transmitted to the host in line mode after the handshake.
DC2	**No**	Eliminates the use of $D_1/D_2/D_1$ handshake.
	Yes	Enables handshaking.
ENQ/ACK	No	There is no ACK response to an ENQ from the host system.
	Yes	The terminal sends an ACK in response to an ENQ message from the host system.

HONEYWELL/BULL VIP FEATURES

These features pertain to the terminal set-up for your individual site. These features are discussed in the Honeywell/Bull VIP7300, VIP7800 and HDS user's reference manuals.

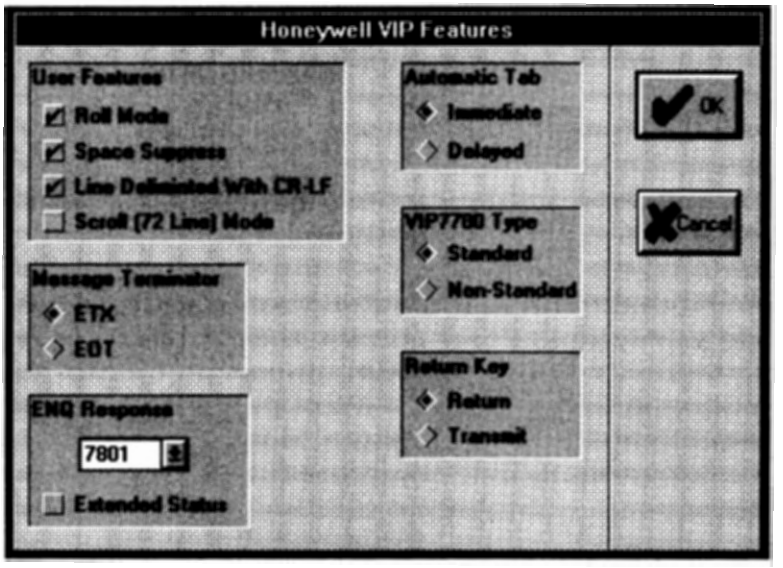


Figure 3-19 VIP Features

Feature	Setting	Description
Automatic Tab		In forms mode, when the last data character has been entered into an unprotected field there is an immediate tab to the first position of the next sequential unprotected field.
	Immediate	
	Delayed	The tab action does not occur until the next data character is entered or a horizontal tab (HT) is issued.
Roll Mode	No	Prevents rolling of data by a line feed (LF) on the last line of the screen.
	Yes	Allows rolling of data by a line feed on the last line of the screen

Feature	Setting	Description
Space Suppress	No	Trailing spaces are not suppressed.
	Yes	Trailing spaces in each line/field are to be suppressed on a data transmission to the host.
Line Delimiter CR-LF	No	No delimiter at the end of each line in text mode.
	Yes	A carriage return/line feed delimiter is to be sent at the end of each line in text mode.
Scoll (72 Line) Mode	**No**	72-line scroll mode is not used.
	Yes	72-line scroll mode is used.
Message Terminator	**ETX** EOT	Select the proper termination character required by your host system in text or forms mode. (Does not apply to VIP Synchronous or VIP Server communications mode)
ENQ	None **7801** - - - - 8803	Select the correct response to a host request for terminal type.
Extended Status	**No**	Extended status information is not sent in response to an ENQ.
	Yes	Certain Honeywell host software (i.e. One Plus) requires extended status information in response to an ENQ. Selecting this option will allow vxConnect to operate correctly with the One Plus software.

Feature	Setting	Description
VIP7700 Type	**Standard**	Emulate a Honeywell VIP7700.
	Non-Standard	Emulate an ITT Courier or Harris VIP7700-like terminal.
Enter Key	**Return**	The enter key sends a carriage return or positions the cursor to column 1 of the current row.
	Transmit	The enter key will act as the transmit key when vxConnect is in text or forms mode.

PRIME FEATURES

This menu item allows you to select the characteristics required for Prime emulation.

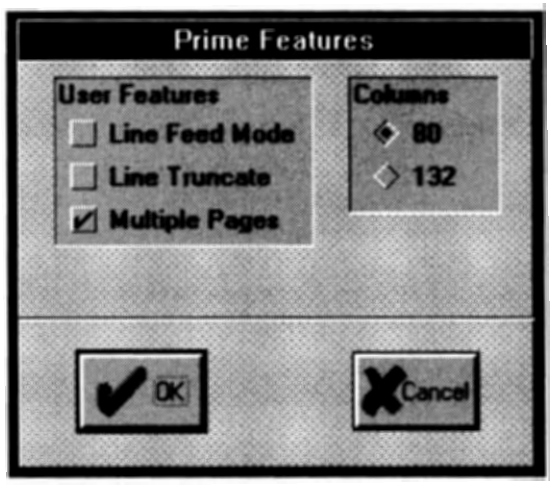


Figure 3-20 Prime Features

Feature	Setting	Description
Line Feed	**No**	A line feed move the cursor to the same column position on the next line.
	Yes	A line feed move the cursor to the first position on the next line.
Line Truncate	**No**	The cusor moves to column one of the next line when characters are typed beyond the last character position.
	Yes	The cursor remains at the last character position on the line as characters are typed past the last position.
Multiple Pages	No	There are 24 lines of display memory.
	Yes	There are 48 lines of display memory.

Feature	Setting	Description
Columns	**80** 132	Select the number of characters per line.

TEKTRONICS FEATURES

This menu allows you to select the options that affect the operation of vxConnect in Tektronics 4010/4014 mode.

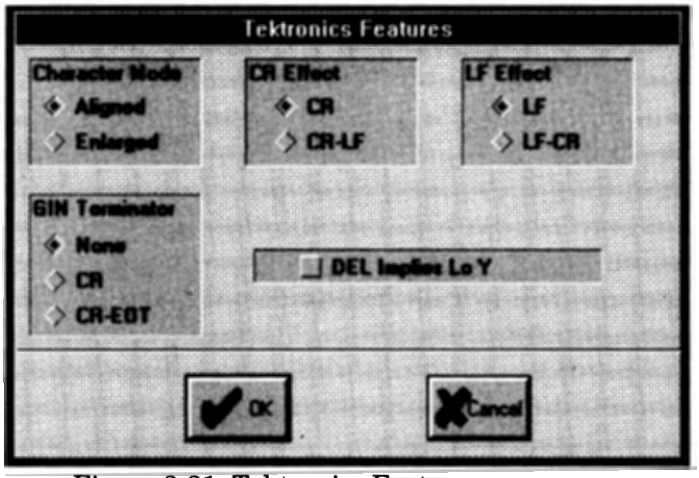


Figure 3-21 Tektronics Features

Feature	Setting	Description
Character Mode	**Aligned**	Displays smaller characters on the screen.
	Enlarged	Displays larger, easier to read characters on the screen.
CR Effect	**CR**	A received carriage return generates a carriage return only.
	CR-LF	A received carriage return generates a carriage return and a line feed.
LF Effect	**LF**	A received line feed generates a line feed only.
	LF-CR	A received line feed generates a line feed and a carriage return.

Feature	Setting	Description
GIN Terminator	**None**	No characters follow the Graphics Input Mode address transmission.
	CR	A carriage return follows the GIN.
	CR-EOT	A carriage return and end of transmission follows the GIN.
DEL Implies Lo Y	No	Disables this strap option.
	Yes	Emulates this Tektronics strap option.

WYSE/TELEVIDEO/HAZELTINE FEATURES

This menu item allows you to select the characteristics required for Wyse, TeleVideo or Hazeltine emulation.

Figure 3-22 Wyse/TeleVideo/Hazeltine General Features

Feature	Setting	Description
Auto Scroll	No	The cursor will be positioned at the first column of row 1, when data is entered at the last position of row 24.
	Yes	The screen will scroll up when data is entered past the right margin of row 24.
Auto Wrap	No	The cursor will remain stationary at the right margin.
	Yes	The cursor will wrap to the beginning of the next line when it passes the right margin.
ACK Mode	No	vxConnect will not send an ACK control code to the host system when printing is complete.
	Yes	An ACK control code is sent to the host system when printing is complete.

Feature	Setting	Description
Columns	**80** 132	Select the number of characters per line.
Return/Enter Key	**CR** CR/LF TAB	Select the value generated by the Enter key.
Block Terminator	**US/CR** CR/LF	Select the correct end of line/end of page characters for block mode.
Protect Mode Attribute	**High** Low Blink Inverse Underline	Select the visual attribute for protected data.
Hazeltine Control Code	**Tilde (~)** Escape	Select the control code for the Hazeltine terminal you are emulating. The HZ-1510 and HZ-1520 utilize the escape (ASCII 27) control code.
Zentec Support	Yes	Check this box if you require emulation for the Zentec 8000 version of the Hazeltine Modular One terminal. The tilde control code should also be selected. This emulation can be used in Cycare host environments.
TeleVideo Type	910 - - - 955	Select the type of TeleVideo terminal you wish to emulate. You must select TeleVideo in *Terminal Selection* to activate this feature. Use TeleVideo type 955 to emulate a Stratus Model V102 terminal.

WYSE/TELEVIDEO/HAZELTINE TAB SETTING

This menu allows you to set the number of tab stops on a line. When you press the tab key, within the emulator, the cursor advances to the next tab stop.

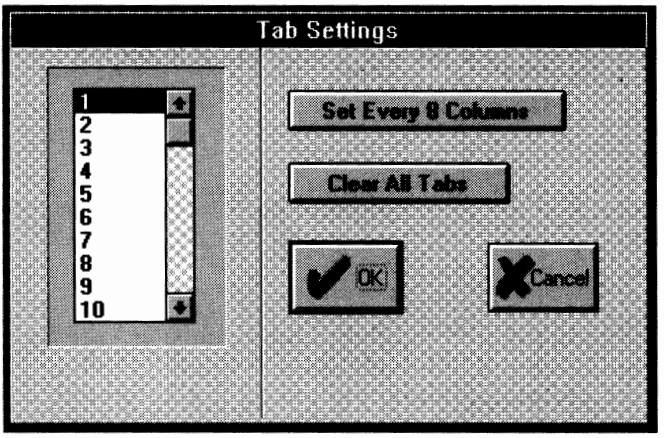


Figure 3-23 Wyse/TeleVideo/Hazeltine Tab Setting

Set or clear a tab setting by double-clicking the corresponding column on this dialog. You may clear all the tab stops or set a tab every eight columns by clicking the appropriate button.

COMMAND TEXT

This feature allows you to select the command keys, icon, description and the text that will be sent to the host system when the appropriate command key is depressed. The command keys can also be utilized from the menu bar item Commands.

Figure 3-24 Command Text Dialog

Change the icon representation by clicking the mouse in the icon box. The icon selections will appear at which point you may select an icon or choose not to have an icon.

You also may assign a description to the command keys. Place the '&' character before the character you wish to use as a command key. This character will be underlined in the Commands menu.

Enter the command text (max. 254 char. each key) to be sent to your modem or host system application. The character '@' will be interpreted as a carriage return, the vertical bar (|) will be interpreted as an escape, the '^' indicates a control character and the '&' indicates that a script file name follows. Calling a script from a command key allows you to perform a log-off function and quit the emulator, or execute a predefined file transfer.

The command key icons are located in a file called "VXICON.DLL". You may modify this file by utilizing any resource editor. The icon names must be a sequential number beginning at 256.

VISUAL ATTRIBUTES

This feature allows you to assign a text style to a visual attribute.

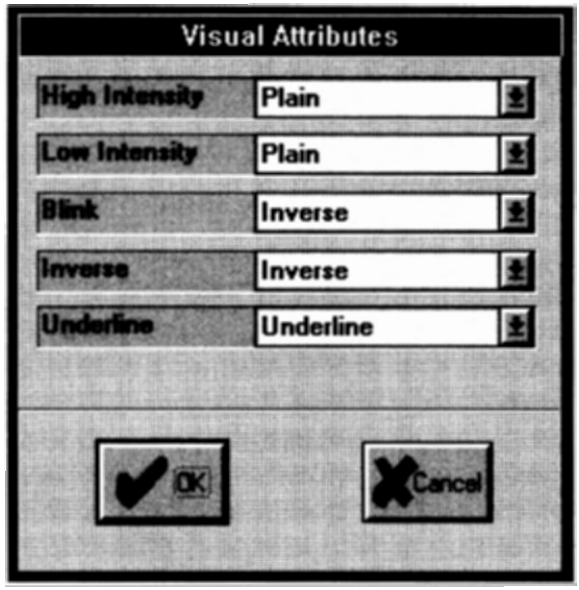


Figure 3-25 Visual Attribute Dialog

Feature	Setting	Description
High Low Blink Inverse Underline	Plain Bold Inverse Underline	Select the desired text style for each visual attribute. The bold and inverse combination may be difficult to read.

Note: Low intensity is the normal display intensity during DEC VT and Tektronics emulation. High intensity is the normal display intensity during other emulations.

COLOR ATTRIBUTES

This feature allows you to select a color for a visual attribute. You can select a single color, for each visual attribute, from the entire range the PC hardware can produce. vxConnect also supports the Honeywell/Bull host generated color attribute command. The CAT command has the following formats.

Esc [00X v	where X	= 1 for blue, 2 for green, 3 for cyan, 4 for red, 5 for magenta, 6 for yellow, 7 for white
Esc s Z	where Z	= X for blue, G for green, C for Cyan, S for red, V for Magenta, Y for yellow, W for White

The CAT command overrides any colors selected by the color picker system.

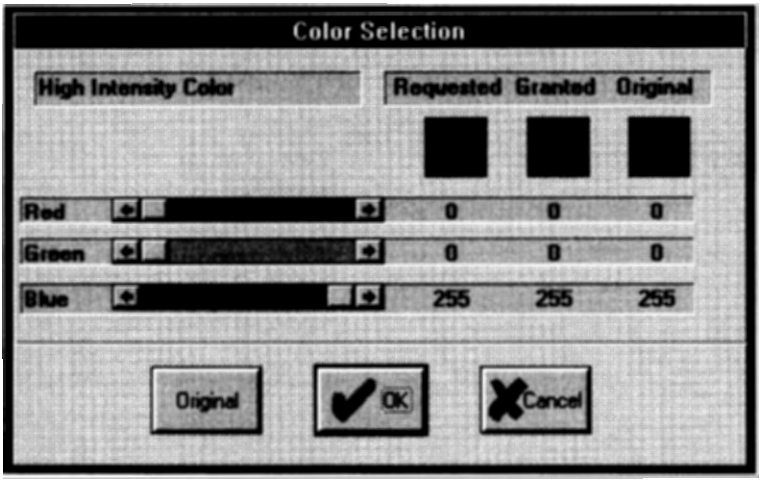


Figure 3-26 Color Attribute Dialog

After selecting the visual attribute the color picker menu will be displayed at which point you may select the desired color.

Note: Low color is the normal display color during DEC VT and Tektronics emulation. High color is the normal display color during other emulations.

KERMIT FILE TRANSFER SUPPORT

This feature allows you to select the type of host system you are communicating with and the type of Kermit program that resides on that host. vxConnect can communicate with standard and non-standard (KM62, KM63, KM82, KM83 and FTRAN) Kermit protocols.

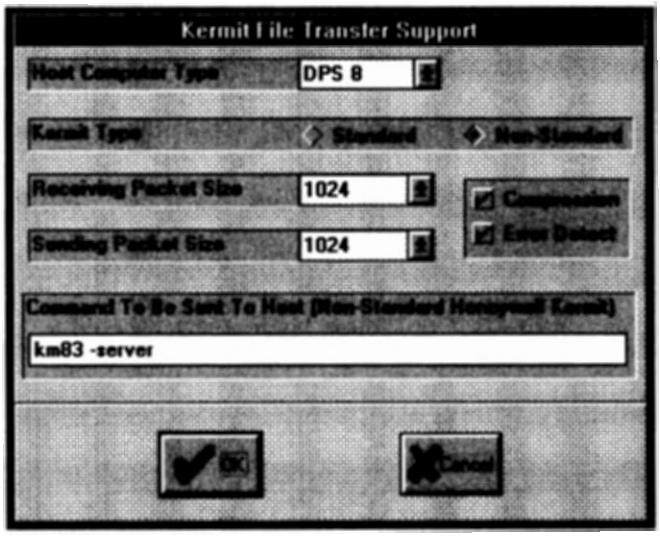


Figure 3-27 File Transfer Support Dialog

Feature	Setting	Description
Host Computer Type	DPS 6 DPS 7 **DPS 8** Vax Pick Unix DG	Select the appropriate host computer that contains the data files that you will receive from or send to. Note: Select DPS 6 for DPS 6000 systems, Select DPS 7 for DPS 7000 systems and select DPS 8 for DPS 8000 DPS 88, DPS 90 and Level 66 systems. Use Other for systems not listed.
Kermit Type	Standard	Columbia University Kermit
	Non-Standard	Honeywell version of Kermit. Includes KM62, KM63, KM82 KM83 and FTRAN.

Feature	Setting	Description
Receiving Packet Size	94 - - - **1024**	Select the size of the packet required to receive data (in characters).
Sending Packet Size	94 - - - **1024** 2048	Select the size of the packet required by the host network to send data. If you are in a block mode network the sending packet size cannot exceed 256. This is a Honeywell/Bull host restriction
Compression	No	No compression occurs during file transfer. The host may force compression.
	Yes	Compression is performed during the Kermit file transfer.
Error Detect	No	No error checking is performed during Kermit file transfer. You may wish to eliminate checking to improve performance while utilizing VIP synchronous, VIP Server, TCP/IP communications protocols or error correcting modems.
	Yes	Error checking is performed.
Command to be sent to host		Enter the command that will be sent to the host system to initiate the file transfer.

DPS 8 systems -
KM82 -server
KM83 -server

DPS 6 systems -
KM62 -server
KM63 -server
KERMIT -server

DPS 7 systems -
FTRAN microsystem

Note: vxConnect also supports host initiated file transfers available on DPS 6 and certain DPS 8 systems.

SAVE CONFIGURATION

Save the configuration by selecting SAVE from the FILE Menu. This feature saves all settings to the current configuration file. The default file is vxConnect.cfg.

Selecting SAVE AS from the FILE Menu will save the settings to a user specified file.

These configuration files can be utilized from the command line or the FILE/OPEN Menu item.

Configuration is set up only once, unless your requirements for communications should change. In that case you may wish to change some part of your configuration. To do this, start configuration and select the option(s) from the Main Menu that you wish to change. This time you don't have to go through all the Main Menu choices in sequence. Just choose the item you wish to change.

SYNCHRONOUS CONFIGURATION

SyncConfig is a separate program that allows you to set the poll address, wire type, block mode, parity check and quiescent utilized by vxConnect and vxFTF in a synchronous and VIP server environment. SyncConfig also allows you to set the correct sign-on and disconnect information required by vxFTF.

Double click the SyncConfig icon to load this program.

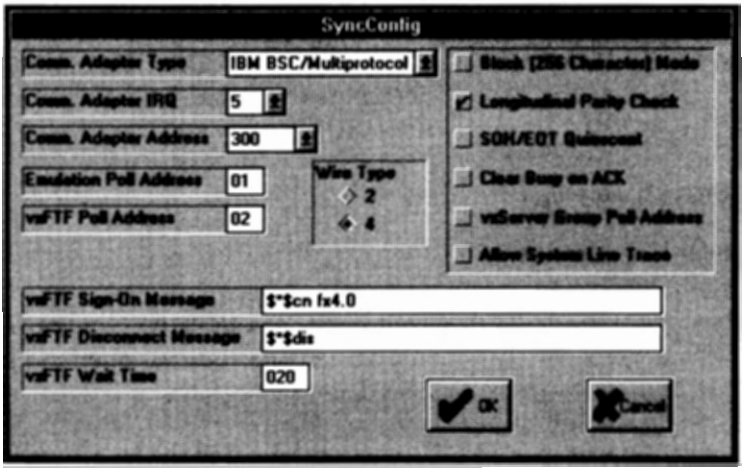


Figure 3-28 Synchronous Configuration

Contact your host system representative for the proper synchronous configuration and vxFTF sign-on information.

Feature	Setting	Description
Comm. Adapter		See Appendix C for communication adapter information.
Poll Address	00-31	Select the correct poll address required by your host system.
Block Mode	-	Click this box if you are in a block (256 character) mode network.
Parity Check	-	Click this box to enable longitudinal parity checking.

Feature	Setting	Description
Quiescent	-	Click this box to utilize the SOH/EOT quiescent. If this box is not checked the software will send an EOT quiescent.
Wire Type	**2** 4	Select the correct wire type required by your host system.
vxServer Group Poll Addr		Check this box to allow vxServer to designate the poll address from a predefined list.
vxFTF Sign-on Message		
vxFTF Disconnect Message		
Wait Time	**020**	The time that vxFTF waits to re-transmit data or the sign-on command if the host does not respond.

The file transfer program, vxFTF, can interact with the Honeywell/Bull host programs FX3.0, FX4.0 or FTF8. You must have the correct sign-on and disconnect data to interact with these programs.

The typical sign-on commands are:

$*$LOG24,FX3.0
$*$AA,24,FX3.0
$%$CN FX3.0

The typical disconnect commands are:

$*$D, $*$DIS, $%$DIS or BYE

Save the synchronous configuration by selecting 'OK'.

CHAPTER 4
TERMINAL EMULATION

CONTENTS

STARTING EMULATION

To start emulation follow these steps:

1. Make sure your communications adapter and proper cable are connected to your modem, MIU, network or host system.

2. Make sure the configuration interface, baud rate, parity, data bits and stop bits (or polling address and wire type for synchronous or VIP server communications) match your host system requirements.

3. If you are operating from a diskette, insert the vxConnect diskette in the proper drive.

4. If you are operating from a hard drive, go to the Program Group that contains the vxConnect programs (i.e. Cambridge).

5. Double-click the vxConnect icon.

You will see the Restricted Rights Screen.

At this point the screen will clear (unless there is a problem with the communications set-up).

Except for the status line the screen is blank. The cursor is in row 1, column 1 and the system is available for you to use.

If you have a Hayes compatible modem you may dial the host system using the AT command set. Refer to manual that came with the modem for dialing instructions and information regarding modem installation and modem switch settings.

While in emulation mode you should respond to the information being presented to you from the host system. We will not go into the requirements of the host system because such information is beyond the scope of this manual.

At this point, however, you may need to know something about the host application program you are connected to. Contact your host system representative for such information.

ENDING EMULATION

You should end your session with the host system by using the normal log off procedures required by your host for ending emulation. To exit from emulation:

Select EXIT from the Menu Bar Item FILE

After you press the Alt-F/X key sequence, the screen will clear, a "terminal disconnected" message appears on the screen and control returns to Windows.

PRINTING

The printing of textual information, whether it is host directed or activated via the Menu Bar item File (i.e. Print Page, Print Log Mode) or keyboard is accomplished via the directly connected printer port or a spool file.

Selecting Print Spool in the configuration will cause any printed output to be written to a temporary spool file. This file can then be printed when Print Spool File is selected from the File Menu. The data will be sent to the printer selected in Windows Control Panel. After printing is complete this data will be removed from the system. If you cancel printing the data will not be removed and additional printed data will be appended to this file.

If there is data in the spool file when you quit the application you will be asked if you want this file printed. Selecting No will cause the file to be removed from the system and the data will not be available.

Selecting Print Page from the Menu Bar item File will cause the current screen to print.

Graphical data can be printed by holding down the shift key and selecting Print Page from the Menu Bar.

The printed text data can also be redirected to a user specified file. See chapter 2, *Special Keys* for additional information.

COPY AND PASTE

vxConnect allows you to copy and paste information between a host session and a Windows document. If you are Pasting to a host session in character mode the speed at which the data will be sent to the host system is determined by the "Key Repeat Rate". This factor can be modified via the Control Panel. It is also possible to move the host cursor utilizing the mouse when vxConnect is in text or forms mode by double-clicking the mouse button at the appropriate position.

COMMAND KEYS

Command keys are available to send data to the host system or invoke a script. These keys can be reassigned and also given an iconic representation as indicated in chapter 3 *Command Keys*. The keys can also be utilized from the Menu Bar item Command.

CONFIGURATION SELECTION

vxConnect loads with the default configuration file vxConnect.cfg. You may select a different file via the command line or the FILE/OPEN Menu item.

SCRIPT PROCESSING SELECTION

You may execute predefined commands for automatic log-on's via the command line or the FILE/SCRIPT Menu item. If you are utilizing a configuration file on the command line the script file name must be after the configuration file name

(i.e. c:\cambrdg\vxConnect.exe vax.cfg signon).

A configuration file name is not required to use a script from the command line. vxConnect will utilize the default vxConnect.cfg file.

See chapter 6 for additional information regarding script processing commands.

DIALING DIRECTORY

A dialing directory is available for frequently called telephone numbers. Activate this feature by selecting Dialing Directory from the Menu Bar item File or utilizing the Alt-F/D keys. The following dialog will appear:

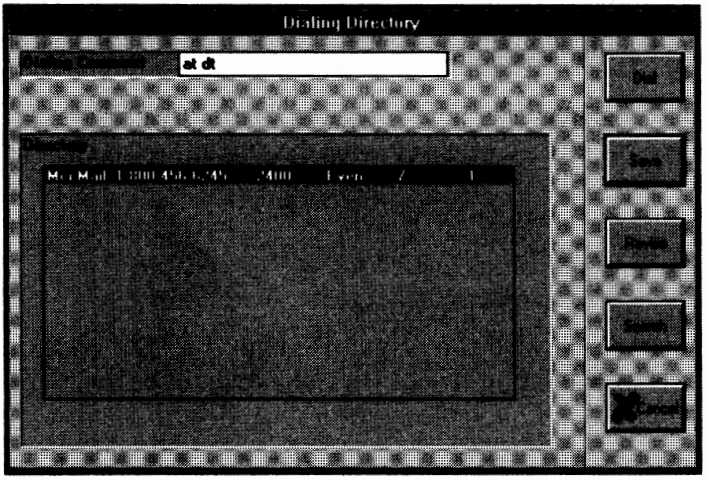


Figure 4-1 Dialing Directory

Dial the modem to access the host system by selecting the the correct entry in the directory list with the mouse and either double-click on the entry or select the Dial button. The following is a list of the functions:

Item	Function
Dialing Command	Enter the command to be sent to the modem for dialing.
Dial	vxConnect will utilize the Dialing Command and the telephone number of the selected entry to dial the host. The communications parameters will also be modified.
Save	Save the Dialing Command and the Directory in a file called vxConnect.dir.
Revise	Update the Directory. You must select the item to Delete or Change that item.
Search	Search for the specified Name in the Directory.

Item	Function
Cancel	Do not dial the modem.

The following dialog will appear when Revise is selected:

Figure 4-2 Dialing Directory Update

Perform the appropriate changes to the directory item and select the desired action. The item must be selected (highlighted) in the Directory to either Delete or Change the item.

CHAPTER 5
FILE TRANSFER

CONTENTS

FILE TRANSFER TYPES

vxConnect supports various methods of file transfer including: Kermit (standard and non-standard), Xmodem (checksum and CRC), Xmodem 1K, Xmodem 1K-G, Ymodem, Ymodem-G, Zmodem and Text ASCII (also known as non-protocol) . vxFTF is a separate file transfer facility.

The following is an overview of each file transfer protocol.

KERMIT

Kermit is a protocol for transferring sequential files between computers of all sizes over asynchronous and synchronous telecommunication lines using packets, checksums and retransmission to promote data integrity. Kermit is non-proprietary, thoroughly documented, and in wide use. The protocol and the original implementations were developed at Columbia University and have been shared with many other institutions.

For additional information regarding Kermit contact:

Kermit Distribution
Columbia University
Center for Computing Activities
612 West 115th Street
New York, NY 10025
(212) 280-5126

XMODEM

The Xmodem protocol is a public domain protocol used in several communications environments. This protocol is usually used to transfer files between personal computers and is a popular protocol used by many bulletin board system. The protocol operates in block mode and allows any type of data to be transferred imposing no restrictions on the contents of the data. Xmodem 1K utilizes a default block size of 1024 bytes as opposed to 128 bytes. Xmodem typically uses asynchronous communications with 8 data bits, 1 stop bit and no parity.

YMODEM

The Ymodem protocol is sometimes referred to as Ymodem Batch, which is an extension of Xmodem. One problem that frequently confuses users of communications software is the fact that the Xmodem-1K file transfer protocol is frequently referred to as Ymodem. The Ymodem file transfer protocol is distinguished from Xmodem-1K by virtue of the fact that it sends a special block that contains the name and size of the file to be transferred.

Xmodem-1K-G and Ymodem-G are extensions of Xmodem-1K and Ymodem respectively and provides maximum throughput when using an error-free modem or communications link, such as an MNP error correcting modem.

ZMODEM

The Zmodem file transfer protocol uses a CRC error calculation method and block sizes up to 1024 bytes. Similar to Ymodem this protocol sends a special frame containing the name and size of the file to be transferred. Zmodem can operate in a streaming mode which greatly speeds throughput. This implementation of Zmodem is based on *The Zmodem Inter Application File Transfer Protocol* by Chuck Forsberg of Omen Technology Inc. We have implemented what Mr. Forsberg asserts is "public domain".

TEXT ASCII (NON-PROTOCOL)

This option provides the user the ability to send or receive files in a non-protocol manner. Data that can be "listed" or "printed" can be saved to a disk file. Files can also be sent to your host system text editor.

Minimal error detection/correction is provided with this method of transferring files.

vxFTF

vxFTF is a separate facility providing for menu selected file transfers between the PC and Honeywell/Bull host systems in a synchronous environment. vxFTF emulates the transfer of files between a Honeywell/Bull host computer and a Honeywell/Bull Level 6/DPS 6 minicomputer. vxFTF makes the host "think" it is communicating with a DPS 6 system.

PROTOCOL vs NON-PROTOCOL FILE TRANSFER

Protocol file transfer, in general, offers three advantages over other asynchronous file transfer methods. First, some protocols allow the user to select the transfer block size. By selecting the block size smaller than the receive buffer on the receiving end of the communication link, the transmitter can ensure that a receive buffer overflow will not occur regardless of the speed-mismatch between the transmitter and receiver. Second, protocol transfer allows the user to transfer non-ASCII data files between computers because it calculates the end of a file based on file size and uses handshake signals to indicate the end of a file instead of relying on an end of file marker character to terminate a file transfer. Finally, protocol transfer error-checking is superior to normal asynchronous parity error-checking. The parity method of error-checking is 95%

effective if the software on the receiving end checks for parity errors. Protocol error-checking is 99.5% to 99.9% effective, and the software on the receiving end must check for errors. Parity errors detected also do not result in automatic retransmission of the bad data; protocol detected errors result in "data retransmission" until no errors are detected or until a specified number of retransmissions have been attempted.

START FILE TRANSFER

Start the file transfer by pressing the Alt-F/F keys or by selecting File Transfer from the FILE Menu Bar. A sub-menu will appear requesting the direction of the transfer.

A window will appear indicating the type of file transfer, the name and type of host file, the name of the PC file and an optional macro file to save this file transfer session.

DIRECTION OF TRANSFER

Figure 5-1 Direction of Transfer Menu

Select the direction you wish to transfer the data file.

Selection	Description
Send Data to Host	Send the data file from the personal computer to the host system.
Receive Data From Host	Receive the data file from the host system and transfer it to the personal computer.
Macro File	If you previously saved a file transfer session, you may now replay that file transfer.

FILE TRANSFER DIALOG

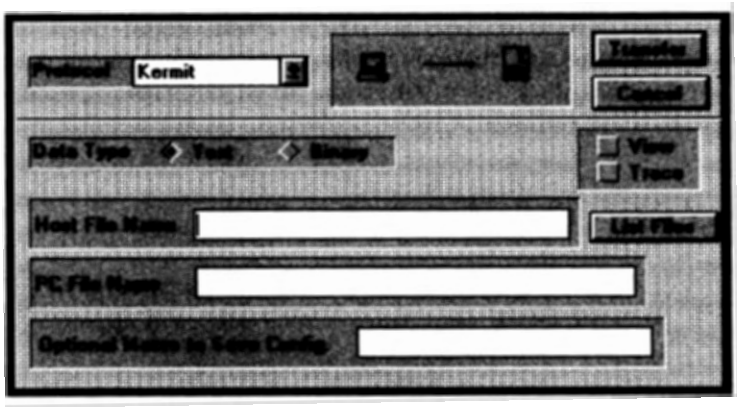


Figure 5-2 File Transfer Menu

PROTOCOL

Select the type of file transfer you want to use

Selection	Description
Kermit	Columbia University Kermit protocol. Including Honeywell/Bull version, i.e. KM83, KM63 and FTRAN.
Xmodem Xmodem-1K Xmodem-1K-G Ymodem Ymodem-G Zmodem	You must use eight (8) data bits, one (1) stop bit, no parity to utilize Xmodem or Ymodem Used to transfer data between PC's.
Text ASCII	Non-protocol, such as transferring data to or from a text editor.

DATA TYPE

Select the type of data you wish to send or receive.

Selection	Description
Text	ASCII text files.
Binary	Host program files.

Select whether you wish to view or trace the file transmission.

Selection	Description
View	Display the file transmission.
Trace	Display system control data.

Note: Viewing or Tracing the transfer session will cause the file transfer to operate substantially slower.

HOST FILE NAME

Enter the name of the host file that is being transferred. The full path may be required by your host.

PC FILE

Select or enter the name of the personal computer file that is being transferred.

OPTIONAL MACRO TO SAVE CONFIG

You may save this file transfer session to replay it at a later time. It is recommended that you use macro file names with an extension of .MCR. See file transfer type and chapter six (6), script processing for additional information.

The file transfer can be stopped by selecting CANCEL during the file transfer session. It may take a minute for the file transfer to stop.

At the end of the file transfer you will be asked if you wish to transfer another file. Answer the question accordingly.

Note: File transfer can also occur from the script processor. See chapter six (script processor, &F command).

HOST INITIATED FILE TRANSFERS

vxConnect supports host initiated file transfers available on Honeywell/Bull DPS 6 systems (or any other system which supports the same protocol).

vxFTF

vxFTF emulates the file transfer between a Honeywell/Bull host and a Honeywell/Bull Level6/DPS 6 mini-computer. The host "thinks" it is communicating with a Level6/DPS 6 system. vxFTF interacts with the host programs FX3.0, FX4.0 or FTF8. You must have the proper file transfer software on your Honeywell/Bull host computer.

vxFTF has the following features:

- Supports ASCII, BCD and Binary data types

- Supports host sequential and relative data files containing fixed or variable-length records, or fixed-relative files with or without deletable records. The transfer of indexed sequential files is also supported.

- Supports the following host file organizations:
  - -Unified File Format (UFF) sequential
  - -GFRC Systems Standard Format (SSF)
  - -UFF relative
  - -UFF indexed sequential

- Extensive interactive manipulation including:
  - -Data compression during transmission
  - -Verification of transfer unit sequence number
  - -Operator notification of inconsistent/illegal parameters and arguments
  - -File identification security features

- Transfer initiation from the personal computer

- Conversion of file to/from PC ASCII and host EBCDIC and BCD code

SETTINGS

vxConnect allows a communications interface to the host system via VIP synchronous, VIP server and TCP/IP. Select the proper interface from the menu bar item Settings. See *Network Connection* in chapter 3 for information regarding vxServer and TCP/IP set-up.

START vxFTF

Start the vxFTF file transfer by double-clicking the vxFTF icon. The following screen will appear when selecting New or Open.

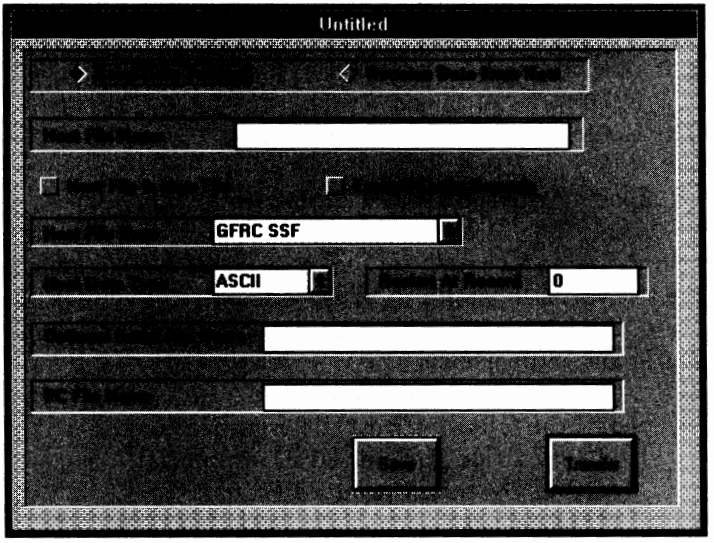


Figure 5-3 vxFTF Macro Template

After completing the Macro Template you may Save the template information by selecting Save from the Menu Bar File. This allows you to replay the file transfer at a later time.

Selection	Description
Send Data to Host	Send the data file from the personal computer to the host system.
Receive Data From Host	Receive the data file from the host system and transfer it to the personal computer.
Host File Name	Enter the name of the host file that is being transferred. The full path may be required by your host system.
Host File is a New File	Select this option when sending data to the host system and the host file does not exist. The host will create a new file.

Selection	Description
Expand Empty Rec.	Select this option when sending data to the host system and you want vxFTF to expand records which do not have data in them. The record will be expanded by one space character. Selecting this option will eliminate the 3019 error generated by the host system.
Host File Type	Select the proper host file type -GFRC SSF -UFF Sequential -UFF Relative -UFF Indexed Sequential
Host Data Type	Select the proper host data type -ASCII -BCD -Binary
Restart At Rec.	Enter the record count to restart the file transfer. The host and PC files will be repositioned to this record and the file transfer will commence. Restart can be performed if the direction of the transfer is host-to-PC unless the host file is UFF sequential in which case restart can occur in either direction.
Optional Script File Name	vxFTF allows you to utilize a script file to access the host processor. This is particularly useful if you are in a network requiring various log-on commands. If utilizing the Cambridge script processor you must send the command to the host requesting execution of the file transfer program (FX3.0, FX4.0 or FTF8). This is usually sent after the "HOST CONNECTED" or similar message.
PC File Name	Select or enter the name of the PC file that is being transferred.
Transfer	Clicking this box will begin the file transfer process. During the sign-on process the host may request certain information. Key-in the proper data when requested.

The file transfer can be stopped by selecting CANCEL during the transfer session.

You may also operate vxFTF from the command line with format:

VXFTF macro

This also allows you to execute vxFTF from a batch file in an unattended environment.

The following are examples of operating vxFTF with a macro template file:

vxFTF MACRO
if errorlevel = 1 goto errs

or

vxFTF MACRO /HOSTFN \PCFN

or

vxFTF MACRO /HOSTUSER/HOSTFN \PCFN

where:

MACRO is the macro template file

/HOSTFN is the host file name which is APPENDED to the host file information in the macro template file.

/HOSTUSER/HOSTFN is the host userid, host catalogue and host file name which REPLACES the host file information in the macro template file.

\PCFN is the PC device, path and file name which REPLACES the PC file name in the macro template file.

The host and PC file names are optional and may be in any sequence. The macro template file is positional and must be after the vxFTF command.

CHAPTER 6
CAMBRIDGE SCRIPT PROCESSOR

CONTENTS

GENERAL INFORMATION

This feature allows the user to execute a file which contains "Cambridge Script Processor" commands. Data can be sent to the host system, data can be received and analyzed. The script processor can be invoked in one of three ways:

1. From the keyboard. Press the keys Alt-F/T or select SCRIPT from the FILE Menu Bar and then select the script processor file.

2. From the keyboard. Press the a Command Key, select a command from the Menu Bar or select an icon. A script file name must be assigned to the corresponding command key to execute a script (see chapter 2).

3. From the command line (vxConnect script.fil). Selecting this file will cause vxConnect to execute with the vxConnect.cfg configuration and the selected script. Placing a configuration file name before the script file name causes vxConnect to utilize that configuration.

   This can provide for automatic log-ons.

Script files are text files created by any text editor that contain Cambridge Script Processor commands. These commands allow automatic logon's, print logging, print redirection and the ability to perform a file transfer.

An easy way to create a script file is to :

1. Start vxConnect.
2. Redirect printed output to a disk file (Alt-F/R).
3. Enter log print mode from the Menu Bar. All data displayed on the screen will be written to the disk file selected in #2.
4. Sign-on to your host and perform any function you wish to duplicate.
5. Cancel print redirection (Alt-F/R).
6. Quit the emulator.
7. Use text editor to modify the file created in step #2 above.

The Cambridge Script Processor commands are indicated by the first character in the command. This command is normally a '&'; however it can be modified by the '&C' command, Set Script Processor Command Indicator. The second character indicates the type of command. This can be either upper or lower case. The third character clarifies the type of command or will contain a string of characters utilized by the command.

Depress the Scroll Lock or Break keys to stop script processing at the conclusion of the current command.

SCRIPT PROCESSOR COMMANDS

The following are Cambridge Script Processor Commands.

&A - Sound Alarm

Alarm is indicated. Can be used to indicate a problem.

&BAx - Branch Always to label x

Label x can be before or after this command. If there are multiple labels with the same name the results are unspecified.

CAUTION: UPPERCASE is not the same as lowercase for label names.

&BEx - Branch to label x if the last condition was equal (true)

The last condition can be a compare of a counter (&I) or a wait for host string (&W).

Label x can be before or after this command. If there are multiple labels with the same name the results are unspecified.

CAUTION: UPPERCASE is not the same as lowercase for label names.

This command resets the condition flag to unequal.

&BFx - Branch to label x if the vxConnect file transfer failed.

The file transfer can be executed from the script or host initiated.

Label x can be before or after this command. If there are multiple labels with the same name the results are unspecified.

CAUTION: UPPERCASE is not the same as lowercase for label names.

&BUx - Branch to label x if the last condition was unequal (false).

The last condition can be a compare of a counter (&I) or a wait for host string (&W).

Label x can be before or after this command. If there are multiple labels with the same name the results are unspecified.

CAUTION: UPPERCASE is not the same as lowercase for label names.

&Cx - Set Script Processor Command Indicator

x = the character that indicates a script processor command. Must be Non-blank

Default = &

&Dx - Delimiter Indicator

For commands that require a delimiter (i.e. escape command, wait for host string, send string to host).

x = delimiter. Cannot be space, at-sign (@) or tilde (~).

Default = double quote (").

&E"Command or User Program"
- Escape to a command or user program

This feature allows you to execute a command or user (commodity) program that is indicated between the delimiters.

CAUTION: Returns immediately after the program is launched.

&F"vxConnect File Transfer Macro File Name"
- Start a file transfer

Macro file name is the name of a file which contains information regarding a previous file transfer. See chapter 5.

&GC - Cancel Log Print

Log printing is inactive.

&GP - Activate Log Printing

All data displayed on the screen will be printed or written to a disk file if redirection is active.

&In x y - Increment Counter n By x And Compare To y

n = counter to increment (0 thru 9)
x = amount to increment
if x = 0, blank or not-numeric the counter is cleared
y = is optional. The condition flag is set accordingly.
y cannot = 0 (zero).

Fields must be separated by spaces.

Can be used for looping purposes.

&Kc"text" Compare "text" to user input

Compare the text within the delimiters to the user input from the &UH command. Sets the condition flag accordingly.

c = S The compare is case-sensitive. The compare must be exact with regard to UPPERCASE and lowercase characters

= I The compare is case-insensitive. UPPERCASE and lowercase characters are considered the same.

The &B command can be used to branch to the proper label.

Note: The compare is dependent upon the length of the above text. If the user input is 123 and the text is 12 the compare is considered EQUAL.

&Lx - Label

x = The one (1) character label name for this line.

If there are multiple labels with the same name the results are unspecified.

CAUTION: UPPERCASE is not the same as lowercase for label names.

&Mx - Monitor Display

x = D Display data on the screen from the host or script processor (default).

= N Do not display data on the screen.

This vxFTF script command can be used for security purposes.

&N - Screen Print

The contents of the screen are printed or written to a disk file if redirection is active.

&Pnnn - Pause nnn Seconds

&P"hh:mm" - Pause Until Time hh:mm

&P"d.hh:mm" - Pause Until Day d, Time hh:mm

nnn can be any length, leading zeroes are not required
hh = hours in military time, 00 thru 23
mm = minutes, 00 thru 59
d = day 0 thru 6, 0= Sunday, 1=Monday...

&Q - Quit Emulation

Emulation ends and control returns to Windows.

This command with the ability to execute the script processor from the command line allows vxConnect to operate in an unattended mode.

&RC - Cancel Redirection of Printed Output

&RN - Do Not Cancel Redirection at End of Script Processing

&RP"File Name" - Redirect Printed Output

Redirect all printed output to the file specified between the delimiters (quotes). Printed data will be written to this file until redirection is cancelled or another redirect command is encountered or the end of script processing.

Data will be appended to this file.

If the file name is missing a file with the name of yyyymmdd.prt (system date) will be used (i.e. 19921007.prt).

&S"text to send" - Send the text with delimiters (quotes) to the host

The delimiters can be modified. See Delimiter Indicator Command (&D).

If the character @ (at-sign) is encountered a carriage return (and possibly EOT or ETX) will be sent to the host. Only the last @ is translated. If in Text mode there is no need to supply the at-sign.
If in character mode the character " | " (vertical bar) will be interpreted as the transmit key (ENTER) and the appropriate escape sequence will be sent. If in text mode the vertical bar will be sent as a vertical bar (|).
If the computer is in forms mode and there is no text between the delimiters, the data on the screen will be sent to the host system. This is similar to the transmit key (ENTER).

&Tnn - Wait Time For Incoming String

Use this command to change the amount of time the "&W" command waits for a string of characters from the host.

nn = number of seconds to wait. (nn can be any length, leading zeroes not required).

Default = 30 seconds.

&Ut "Prompt" - Get User Input and Hold or Send To Host

Display the text, within the delimiters, get the user input and hold or send to the host system. Using a tilde (~) in the prompt will cause the input to be hidden.

t = S Send user input to host.
= H Hold user input. The data can be interrogated by the compare command (&K).

CAUTION: There is no time-out for this command. Do not use in unattended mode.

&Vx - Viper Command

Execute a Viper command.

x = B - Send a break signal to the host.
C - Character mode.
I - Initialize - clear screen.
L - Local toggle, can be used to drop DTR (async).
M - "MIN" = minimize, "MAX" = maximize window.
T - Text mode.
R - Reset Communications. (&VR C P D S B)
C = Communications Port 1,2,3,V, S, C, or T
V = VIP, S = VIP Server
C = NASI/NCSI, T = TCP/IP
P = Parity, N=None, O=Odd, E=Even
D = Data Bits 4 thru 8
S = Stop Bits 1 or 2
B = Baud Rate 300 thru 115,200
All the communications information must be entered.

S - Set Terminal Type.
(&VS"xxxxxxx")
where xxxxx =

DG400 -	Data General
HAZELTINE -	Hazeltine 1500 series
HP2392A -	Hewlett Packard HP series
LEAR3A -	Lear Siegler
PCTERM -	PC Terminal
PT250 -	Prime PT200/PT250
TEK4014 -	Tektronics 4010/4014
TVI900 -	TeleVideo 900 series
VIEWPOINT -	ADDS Viewpoint
VIP -	Honeywell/Bull 72/73/7800
VIP7700 -	Honeywell/Bull VIP7700
VT52 -	DEC VT52
VT100 -	VT100 or ANSI 3.64
VT300-7 -	VT200 or VT300 7-Bit
VT300-8 -	VT200 or VT300 8-Bit
WYSE50 -	Wyse 50

Note: Remember to use delimiters (quotes).

&W"text string" - Wait For Text From Host

Waits for the indicated text, within delimiters, from the host system. If the indicated text is sensed the condition is set to EQUAL (see &BE, branch-if-equal command) and proceeds to the next command.

If the wait time has exceeded the limit (default is 30 seconds , see &T command) the condition is set to UNEQUAL and proceeds to the next command.
This command is case-sensitive. That is, UPPERCASE is not the same as lowercase.

The character at-sign (@) in the above string is considered a carriage return.

&Yw r c "Text String" - Display Text String On The Screen And Continue

Display the text within the delimiters at window w, row r and column c.

w = 0 for current window (recommended)
1 for new window
r = 0 for current row
1-25 is actual row
c = 0 for current column
1-80 is actual column

&Z"File Name" - Zap to Another Script and Return.

The script file name within the delimiters is executed. The Maximum number of levels that can be called is five (5). Each level of script has a set of counters , condition flags and indicators. There is no checking for endless loop situations (i.e. script "a" calling script "b" calling script "a").

Note: vxFTF does not support script commands that involve printing or print redirection.

List the file SAMPLE.SRP contained in the vxConnect disk for an example of script processing usage.

If you have a requirement for other commands please contact Cambridge Computer Corp. (See Appendix A).

SCRIPT EDITING

You may use any text editor, such as notepad, to build your script files. It is recommended that you use file names with an extension of .SRP.

Note: Each script command must be on a separate line.

CHAPTER 7
VXSERVER

CONTENTS

OVERVIEW

vxServer is a separate product that allows vxConnect and vxFTF to access Honeywell/Bull host systems via any NetBIOS supported local area network. Currently vxServer supports the Honeywell/Bull VIP synchronous protocol for connection to the host computer. vxServer can support up to 32 vxConnect/vxFTF sessions. Each session can have a unique poll address or is assigned to a group where vxServer will designate the next available address.

REQUIREMENTS

vxServer requires the following equipment and programs to operate in a VIP synchronous host connect network.

Equipment

- IBM compatible 80x86 personal computer with
  - At least 1M bytes of memory
  - At least 1M bytes available disk space
  - A synchronous communications adapter.
    vxServer can support any of the adapters listed in Appendix C.
  - A communication adapter cable.
  - A telecommunication line to match your host computer equipment. vxServer can utilize a synchronous modem, modem bypass or Multiple Interface Unit (MIU).
  - A Local Area Network connection to the PC's.
    vxServer can utilize any NetBIOS supported network.

Programs and Files

- Microsoft Windows 3.0 or later
- Cambridge Computer Corporation vxServer system disk

SOFTWARE INSTALLATION

Before you can run the vxServer program you need to make a working copy of the software. It is recommended that you install the software on a hard disk system.

Using the Windows File Manager open the device that contains the vxServer distribution disk (i.e. A:) by double-clicking that device. Next drag the "cam_serv" folder from that device to the hard disk (i.e. C:). This will create a folder (directory) called "cam_serv" and copy the contents of the distribution disk to the hard disk.

Using the Windows Program Manager create a Program Group called "vxServer" by choosing New from the File Menu. Next add a Program

Item to the group for the program vxServer.exe in the directory cam_serv.

Reference the publication *Microsoft Windows User's Guide* for additional information regarding the File Manager and the Program Manager.

Store the vxServer distribution disk in a safe place and never use it except to make backup copies (for your own use). The software is not copy protected.

This completes the installation process.

CONFIGURATION

Prior to using vxServer you must configure the software to match your host communications and LAN environment. After loading the software click the menu bar item Settings and select Network. The following dialog will appear.

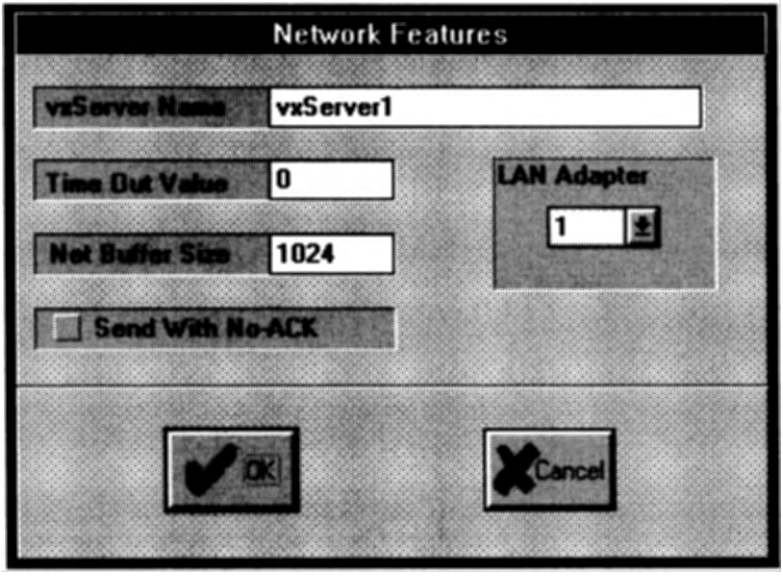


Figure 7-1 Network Features

Feature	Setting	Description
vxServer Name	-	Enter the name of this PC. Maximum 16 characters.
Time Out Value	-	Specifies the number of half-second periods that receive and send commands can wait for completion before timing-out and reissue the command. A low value may increase network traffic. Specifying a value of zero indicates that there is no time-out threshold associated with each session. Maximum value is 255.
Net Buffer Size	-	Enter the amount of adapter memory to be utilized by each network session. This value is subtracted from the Network Buffer Size that was specified in the LAN operating system configuration. A high value may cause a 35h or 38h (Requested resources not available) error. A low value may degrade performance.
Send with No-ACK	**No**	An ACK is returned when data is sent to vxConnect.
	Yes	An ACK is not returned when data is sent to vxConnect. This may improve performance. If your LAN does not support this feature it will be automatically disabled.
LAN Adapter	1-4	Select the LAN adapter number that that you will be utilizing.

Select VIP synchronous from the menu bar item Settings and the following dialog will appear.

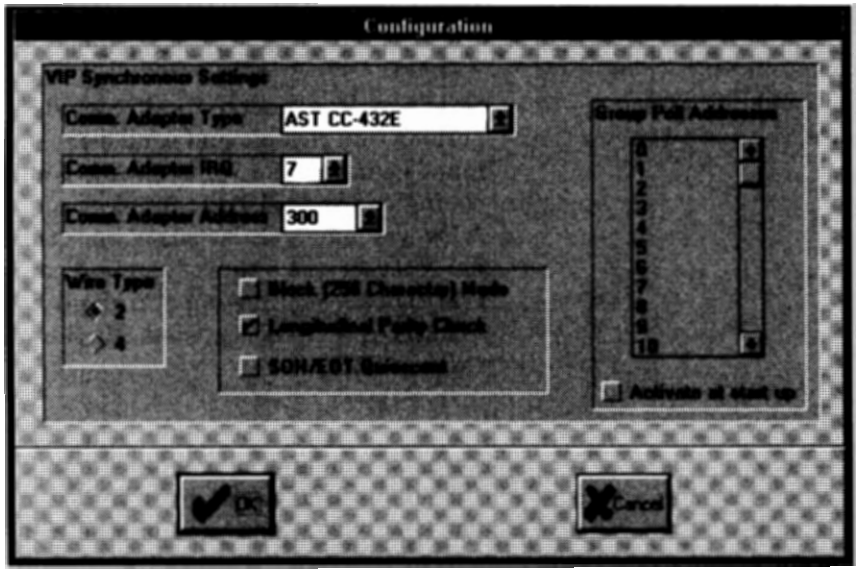


Figure 7-2 VIP Synchronous Features

Feature	Setting	Description
Comm. Adapter		See Appendix C for communication adapter information.
Wire Type	**2** 4	Select the correct wire type required by your host system.
Block Mode	-	Click this box if you are in a block (256 character) mode network.
Parity Check	-	Click this box to enable longitudinal parity checking.
Quiescent	-	Click this box to utilize the SOH/EOT quiescent. If this box is not checked the software will send an EOT quiescent.

Feature	Setting	Description
Group Poll Addresses		Select/deselect the poll addresses that are assigned to a group by clicking the corresponding number. This only pertains to vxConnect users who have selected vxServer Group Poll Address via SyncConfig. These users will be assigned the first available poll address in this group.
Activate at start up		Checking this item will cause vxServer to respond to polls for each selected address in the above list at start up. This can improve log-on performance for vxConnect/vxFTF users. However, if the host sends data to the workstation and the individual is not logged-on there is a possibility that buffers will be exhausted.

Save the configuration by selecting Save Configuration from the menu bar item Settings.

OPERATING VXSERVER

Load vxServer as you would any other application program. You may obtain a status of activity by selecting Status from the menu bar item File. No other operator intervention is necessary.

CHAPTER 8
DYNAMIC DATA EXCHANGE

CONTENTS

GENERAL INFORMATION

The Dynamic Data Exchange is a quick and easy method to develop software for the Windows environment which can communicate with the host system via vxConnect/vxServer. The large cost of development can be greatly reduced by this programmable interface, while giving you the flexibility for a custom program.

vxConnect utilizes the Windows Dynamic Data Exchange and allows development in any programming environment that can interface with DDE.

The directory DDE located on the vxConnect distribution disk contains a sample program written in "C", which is designed to perform simple terminal emulation. This demonstration program can provide you with the core of your development effort.

DEVELOPMENT INTERFACE

The programming sequence that occurs to access host data is as follows:

1. Initiate the session with vxConnect.
2. Send an advise message indicating a warm link or a hot link.
3. Send data.
4. Request data (warm link).
5. Receive data.
6. Terminate the session.

The remainder of this chapter provides an overview of the interface. It is recommended that you review the sample program (Sample.c) and the publications *Microsoft Windows, Guide to Programming:* Chapter 22, "Dynamic Data Exchange" and *Microsoft Windows, Programmer's Reference:* Chapter 15 " Windows DDE Protocol Definition" for programming details.

Initiate The Session

The following steps are required to initiate a session with vxConnect:

Broadcast a WM_DDE_INITIATE message identifying the application as "vxConnect" and the topic as "HOST".

vxConnect will respond with a WM_DDE_ACK message.

Advise vxConnect
Post a WM_DDE_ADVISE message to vxConnect with the following parameters:

parameter	value
fAckReq	TRUE
fDeferUpd	FALSE = Hot Link TRUE = Warm Link
cfFormat	CF_TEXT
atomItem	Your application name

vxConnect will respond with a positive acknowledgment indicating that it can supply the data; a negative acknowledgment indicates that it cannot.

Send Data
Sending data to the host system via vxConnect is accomplished by posting a WM_DDE_POKE message with following parameters:

parameter	value
fRelease	TRUE
cfFormat	CF_TEXT
value	The data to be sent
atomItem	The length of the data

Request Data
If you sent an Advise message indicating a warm link (fDeferUpd = TRUE), you must request that vxConnect send you the host data. This occurs after vxConnect has indicated that data is ready with a WM_DDE_DATA message of NULL.

To request data, post a WM_DDE_REQUEST message with the following parameters:

parameter	value
atomItem	Use the values provided by vxConnect

Receive Data
If you receive a WM_DDE_DATA message from vxConnect get the following parameters:

parameter	value
value	The data from the host
atomItem	The length of the data

If the data message is NULL, this indicates a warm link, and you must post a WM_DDE_REQUEST message to receive the data.

Respond with a WM_DDE_ACK message if acknowledgments are required.

Terminate Session
Post a WM_DDE_UNADVISE message. vxConnect will respond with a WM_DDE_ACK. After receiving the acknowledgment, post a WM_DDE_TERMINATE message. After receiving the corresponding terminate message you may optionally request vxConnect to shut down by posting a WM_DESTROY message.

CHAPTER 9
PROBLEM SOLVING

CONTENTS

GENERAL INFORMATION

The purpose of this chapter is to help host personnel guide you in problem determination for personal computer/host communications. Since it is assumed that host personnel are familiar with the problem determination tools available with their host system, the information included here does not attempt to be host-specific or all-inclusive. Instead, the information is intended to provide a systematic, structured approach to problem determination through a general set of guidelines for symptom's cause.

Using the basic structure given here, you and host personnel should be better able to look into methods of problem determination appropriate for your particular system. This way you can take into account your system's unique configuration, requirements and resources.

PROBLEM DETERMINATION GUIDELINES

You and your host system representative have a number of resources to help you investigate the cause and determine the solution for problems that may arise during emulation. These resources include:

- Host system messages and prompts that appear on your personal computer screen and often help identify procedural problems that you can correct without outside intervention.

- Micro-mainframe program error messages appear on your personal computer screen. These error messages may have enough information for you to correct the problem. If not, you can look up detailed information on error messages in Appendix B. This appendix lists the error message, followed by the cause of the error, and the suggested corrective action.

- The personal computer User's Manual which shows you how to run several diagnostic tests.

- Host support personnel, who should be contacted when you need additional help.

PRELIMINARY CHECKS

When a communications problem first occurs, you can perform a number of preliminary checks to isolate the cause of the problem. These preliminary checks involve analysis of error messages and your system's equipment and programs.

ERROR MESSAGES

Host Systems Messages: Have any messages been received on your screen or printer, at your host console or on your host console log? If they have, refer to the appropriate programming guide for the meaning of the message, its cause, and the recommended response.

Once you read the message and have corrected the problem, continue with the operation.

Personal Computer Messages: Have you noticed any messages or prompts issued by the personal computer? If so, make sure you take the recommended action.

Once you know the cause of the message and you have corrected the problem, continue with the operation.

EQUIPMENT AND PROGRAM CONSIDERATIONS

Does the Problem Involve a New Or a Modified System?

1. Have recent equipment changes been made? For example, has a new modem been installed at either location, or have configuration changes been made to the host communications controller?

2. Has the existing host system or application program been modified? For example, has a new release of a program product or any program maintenance been applied?

Do Other Non Personal Computer Terminals in the System Have the Same Problem? If they do, notify the appropriate host personnel that the problem probably is a host equipment or program resource. If they do not have the same problem continue with the next step.

Do Other Personal Computer Terminals in the System Have the Same Problem? If they do, continue with problem isolation. If they do not, check the hardware and program of the personal computer with the problem against that of a personal computer that operates correctly. Are there differences in:

- Modem type of modem setup
- Communications setup
- Logon procedure
- Initial connection

Make the necessary changes and retry the operation

SYMPTOM ANALYSIS

If you still cannot find the cause of the problem after you perform the above preliminary checks, try symptom analysis. The procedure for symptom analysis that is used here is chronological and based on operation flow. The broad, general symptoms that can be evident during personal computer/host operations are:

- No communication connection established
- Line dropped or disconnected
- Data transmission errors
- Incorrect data at the personal computer

Select the general symptom that is appropriate and read through the more specific symptoms that follow. Each specific symptom has a number of questions (checkpoints) that may isolate the cause of the problem.

Remember, the specific symptoms that follow and the questions associated with them are not meant to be host-specific or all-inclusive. Our intention is to help you logically search for the cause of a problem, which will perhaps trigger other questions that can be asked.

NO COMMUNICATIONS CONNECTION ESTABLISHED

No Telephone Answer From Host (Switched Line)

1. Did you dial a correct number (switched line)?
2. Is the host system power on and available?
3. Is there power at the host modem wall outlet?
4. Are all cables properly connected at the host modem?
5. Is the host modem plugged into the appropriate port and are the modems compatible?
6. Was a host modem self-test done to verify operation?
7. Does the host modem have the auto-answer function, and was auto-answer enabled (switched line)?

8. Was a line defined for the personal computer? Usually the host program requires a line definition to generate communications support.

9. Is the host program line correct? Check the operands of the line definition for compatibility with line protocol, line speed, and modem characteristics.

10. Was the line started or enabled? The host program that services the communications line must be started to enable auto-answer and polling.

Personal Computer Does Not Answer Host

1. Did you dial a correct number (switched line)?

2. Is the personal computer powered on, and has the program been loaded?

3. Is there power at the personal computer modem wall outlet?

4. Are all cables properly connected at the personal computer modem?

5. Is the personal computer modem plugged into the appropriate adapter?

6. Has the communications equipment been checked at the personal computer? Perform the modem self-test to verify modem operation. Refer to your modem operations manual for a description of the available modem tests.

7. Is the personal computer communications adapter set to the proper port setting (port 1 or port 2)? If you have more than one communications adapter be certain that the two adapters are not set to the same port address.

8. Is the host program definition correct? Check the line definition operands for compatibility with line protocol, line speed and modem characteristic.

Line Busy (switched line)

1. Did you dial the correct number?

2. Is the communications port available? Ask the host operator to inquire about the line status to see if another terminal is using the line.

3. Was the line disconnected after a previous operation with the personal computer or another terminal? If not, have the host operator cancel or restart.

4. Someone else may be dialing the host at the same time.

LINE DROPPED OR DISCONNECTED

No Response From Answering Terminal Or Line Dropped Immediately

1. Did power drop or has the modem become unplugged a teither location?

2. Is the cable between the personal computer and the modem plugged in?

3. Are the operating parameters of the two modems compatible (line speed and strapping options, for example)?

4. Is the selected personal computer communications setup compatible with host line definitions, protocols, operating procedures and the modem line descriptions?

5. Did a time-out occur either at the host or at the personal computer?

6. Is the host program definition correct? Check the line definition operands for compatibility with line protocol, line speed and modem characteristics.

Line Disconnected

1. Did power drop, or has the modem become unplugged at either end?

2. Has the cable between the personal computer and the modem become unplugged?

3. Is the selected personal computer communications setup compatible with host protocols and operating procedures?

4. Did a time-out occur either at the host or at the personal computer?

Logon Rejected

1. For a leased line, is your line active? Ask the host operator to inquire about the line status and start the line if it is not active.

2. Was the personal computer previously logged on, and is it still active? Ask the host operator to inquire about the terminal status. If the personal computer (terminal) is active, log off the terminal or cancel and restart the line.

3. Was the logon complete, and was the syntax correct? Be sure to follow the host system syntax requirements.

DATA TRANSMISSION ERRORS

Cannot Send Data To The Host

1. Were you logged on successfully? Check messages received from the host after logon, and have the host operator inquire on the terminal status. If not logged on correctly, refer to the previous section, "Logon Rejected".

2. Was the host application started?

3. Is the host program definition correct? Check the line definition operands for compatibility with line protocol, line speed and modem characteristics.

Incorrect Data At The Personal Computer

1. Does the host application have a programming logic error? Check the application's output file at the host for the same formatting errors. This may indicate an application program error.

2. Did the host application end abnormally? Check program listings or host output for error messages.

3. Did the host application format the data for a terminal type other than the one emulated by the personal computer.

APPENDIX A
TECHNICAL SUPPORT

If you require technical assistance call Cambridge Computer Corp. at 203/288-6004 and ask for technical support. Technical assistance is available from 9:00am to 9:00pm Eastern Time. Our objective is to respond to a problem within 2 hours.

The following information will assist us in helping you:

1. A clear and concise description of the problem.

2. Version of vxConnect you are using.
(from Menu Bar, Help, About)

3. Type of host computer and version of operating system.

4. The configuration of the personal computer
(i.e. type of computer, version of the operating system, amount of memory, type communications network).

5. Version and operating mode of Microsoft Windows.

APPENDIX B
MESSAGES

Error Reading Configuration

- The configuration file does not exist. Select Settings from the Menu Bar.

Not Enough Memory . . .

- This message may occur if you are running multiple programs.

Cannot Open Communications . . .

- This can occur if another program or the mouse is utilizing the selected communication or printer port.

The following are possible error messages generated by the host system during vxFTF file transfer. This list contains the cause of the error and corrective action.

Level 66/DPS8 /DPS 90/DPS 8000/DPS 9000 Systems

Message Number	Text/Description	Corrective Action
1001	INITIATE MESSAGE EXPECTED BUT NOT RECEIVED OR ILLEGAL BLOCK SIZE Possible internal error	Attempt rerun. If error persists contact Cambridge Computer.
1002	INITIATE MESSAGE DID NOT INCLUDE FILE NAME STRING Possible internal error	Attempt rerun. If error persists contact Cambridge Computer.
1003	FILE DIRECTION CODE INVALID Possible internal error	Attempt rerun. If error persists contact Cambridge Computer.
1004	INITIATE MESSAGE FORMAT ERROR ILLEGAL INDICATOR CODE "X" Possible internal error	Attempt rerun. If error persists contact Cambridge Computer.
1005	ILLEGAL CHARACTER IN FILE NAME -"X" Possible internal error	Rerun with valid host file name
1006	FILE NAME SIZE IS ZERO OR NOT PRESENT IN INITIATE MESSAGE Possible internal error	Attempt rerun. If error persists contact Cambridge Computer.
1007	EXPECTED CHARACTER NOT FOUND -PROCESSING INDICATOR CODE "X" Possible internal error	Attempt rerun. If error persists contact Cambridge Computer.
1008	ILLEGAL FILE TYPE CODE "X" Possible internal error	Attempt rerun. If error persists contact Cambridge Computer.

Message Number	Text/Description	Corrective Action
1009	ILLEGAL DATA TYPE CODE "X" Possible internal error	Attempt rerun. If error persists contact Cambridge Computer.
1010	ILLEGAL RECORD SIZE "0000" Possible internal error	Attempt rerun. If error persists contact Cambridge Computer.
1011	BAD FILE VERSION CODE "X" Possible internal error	Attempt rerun. If error persists contact Cambridge Computer.
1012	COMM LINE I/O STATUS BAD Error with communications line	Attempt rerun.
1013	NON-NUMERIC MESSAGE SIZE IN INITIATE MESSAGE Possible internal error	Attempt rerun. If error persists contact Cambridge Computer.
1014	EXPECTED BLANK MISSING FROM END OF FILE NAME Possible internal error	Attempt rerun. If error persists contact Cambridge Computer.
1015	FILSYS CODE XX Host file I/O error	Attempt rerun. If error persists contact your host representative.
1016	ILLEGAL COMBINATION OF "INPUT" AND "NEW" FILE New file cannot be input	Correct and rerun.
1017	CAN'T OPEN UFF FILE Host cannot open selected UFAS file	Correct file name and rerun.
1018	FILE IS UFF BUT NOT FILE ORGANIZATION EXPECTED File organization specified does not match host	Correct file name or file type and rerun.

Message Number	Text/Description	Corrective Action
1019	FILE NAME SIZE TOO BIG FOR BLOCK COUNT Catalogue/file name too large	Correct file name and rerun.
1020	NEW FILE FROM TERMINAL TO HOST MUST HAVE A ZERO SEQUENCE NUMBER Attempting to restart a new file	Change file names or do not restart.
1021	ONLY UFF SEQUENTIAL FILE CAN BE RESTARTED L6 TO L66 Restart can be performed only if the direction of the transfer is host-to-micro unless the host file is UFF sequential in which case restart can occur in either direction	See description.
1022	FILE/DATA TYPE COMBINATION NOT SUPPORTED Host file type/data type does not match	Correct and rerun.
3001	TUSN NOT NEXT EXPECTED Possible internal error or in block mode when non-block mode is required. See SyncConfig	Attempt rerun. If error persists contact Cambridge Computer.
3002	RECORD SEQUENCE NUMBER ERROR Possible internal error or in block mode when non-block mode is required. See SyncConfig	Attempt rerun. If error persists contact Cambridge Computer.
3003	INPUT BLOCK CHARACTER NOT "U", "P" OR "R" Possible internal error or in block mode when non-block mode is required. See SyncConfig	Attempt rerun. If error persists contact Cambridge Computer.
3004	ILLEGAL M/C Possible internal error or in block mode when non-block mode is required. See SyncConfig	Attempt rerun. If error persists contact Cambridge Computer.

Message Number	Text/Description	Corrective Action
3005	RECORD SENT IN WAS LARGER THAN EXPECTED Record size of the PC file is larger than 1272 characters	Change PC file and rerun.
3006	ERROR IN POSITIONING FILE TO REQUESTED RECORD Restarting at a record beyond end-of-file	Restart at different record.
3007	ATTEMPTED TO REWRITE RECORD WITH DIFFERENT SIZE Self-explanatory	Contact your host representative.
3008	CAN'T OPEN UFF FILE FOR EXTEND Self-explanatory	Contact your host representative.
3009	CAN'T OPEN UFF FILE FOR EXTEND-ITS NOT SEQUENTIAL Self-explanatory	Contact your host representative.
3010	NON-NUMERIC RSN FOLLOWING M/C Possible internal error or in block mode when non-block mode is required. See SyncConfig	Attempt rerun. If error persists contact Cambridge Computer.
3011	NON-NUMERIC CHARACTER COUNT FOLLOWING "P" OR "R" Possible internal error or in block mode when non-block mode is required. See SyncConfig	Attempt rerun. If error persists contact Cambridge Computer.
3012	COMM LINE I/O -BAD STATUS Error with communications line	Attempt rerun. If error persists contact your host representative.
3013	NON-NUMERIC RECORD SEQUENCE NUMBER Possible internal error or in block mode when non-block mode is required. See SyncConfig	Attempt rerun. If error persists contact Cambridge Computer.

Message Number	Text/Description	Corrective Action
3014	NON-NUMERIC RSN FROM INITIATE MESSAGE Possible internal error	Attempt rerun. If error persists contact Cambridge Computer.
3015	M/C NOT "P" OR "C" IN RESPONSE TO LAST TRANSMISSION Possible internal error or in block mode when non-block mode is required. See SyncConfig	Attempt rerun. If error persists contact Cambridge Computer.
3016	ACK'D RSN NOT = RSN + 1 OF LAST COMPLETE RECORD Possible internal error or in block mode when non-block mode is required. See SyncConfig	Attempt rerun. If error persists contact Cambridge Computer.
3017	RSN - nnnnn REJECTED - CONTENTS ARE NULL Attempting to send a PC file which contain records with no data. See vxFTF *Expand Empty Records*	Change PC file or use expand option and rerun.
3018	UFAS ERROR CODE -XX FILE TRANSFER IS TERMINATED Host file I/O error	Contact your host representative.
3019	RECORD SIZE OF ZERO OR OCTAL 7777 IS ILLEGAL Attempting to send a PC file which contain records with no data. See vxFTF *Expand Empty Records*	Change PC file or use expand option and rerun.
3020	INCORRECT 8 BIT TO 6 BIT TRANSLITERATION BY L6 Possible internal error during binary file transfer	Attempt rerun. If error persists contact Cambridge Computer.
3021	ATTEMPT TO WRITE BEYOND END OF UFF RELATIVE FILE Self-explanatory	Contact your host representative.

Message Number	Text/Description	Corrective Action
3022	FILE TRAN CANNOT HANDLE GREATER THAN 99,999 RECORDS Maximum of 99,999 records per file transmission. This is a host restriction.	Split file and rerun.
3023	DELETED RECORDS IN UFF RELATIVE FILE IS NOT SUPPORTED Self-explanatory	Contact your host representative.

APPENDIX C
COMMUNICATIONS ADAPTER SUPPORT

vxConnect supports the following communications adapters in VIP synchronous mode. The ICC Unicard is also supported in asynchronous RS232, RS422 and Current Loop operation. The list contains the adapter's required hardware interrupt number (IRQ) and the input-output (I/O) address utilized. Certain communications adapters are designed with fixed interrupts and addresses and they cannot be modified.

If you have a requirement for additional adapters call the Cambridge Computer technical support center at 203/288-6004.

Adapter	IRQ	Address	Comments
IBM BSC/ Multiprotocol	3 and 4	3A8h	The IRQ and address are fixed
Honeywell/Bull Multifunction			Same as IBM BSC
ICC Unicard	2-7	300-370h	The IRQ and address can be modified. SyncConfig must reflect the hardware settings.
AST CC-432-E	2-7	300-330h	The IRQ and address can be modified.
Paradata			Same as AST.
Quatech BCA-100			Same as AST.
Zenith Z304/ Z404	3-7	270h	The IRQ can be modified. The address is fixed. Older versions of this adapter have a fixed IRQ of 3.

Note: Windows may not allow you to operate with IRQ 2.
Note: IRQ3 and IRQ4 may conflict with a serial mouse.

APPENDIX D
LANGUAGE SUPPORT

vxConnect supports the following keyboard languages in DEC VT mode:

North American
British
Flemish
Canadian (French)
Danish
Finnish
German
Dutch
Italian
Swiss (French)
Swiss (German)
Swedish
Norwegian
French/Belgian
Spanish
Portuguese

vxConnect supports the following keyboard languages in Data General Dasher mode:

United States
Swiss (French)
Swiss (German)
Canadian (English)
Canadian (French)
Katakana
Italian
United Kingdom
French
German
Swedish (Finnish)
Spanish
Danish (Norwegian)

vxConnect supports the following keyboard languages in Hewlett Packard mode:

United States
Danish
Dutch
Finnish
French
Canadian/English
Canadian/French
German
Flemish
Italian
Norwegian
European Spanish
Latin Spanish
Swedish
Swiss/German
Swiss/French
United Kingdom

APPENDIX E
TERMINALS EMULATED

The following are the terminals that vxConnect emulates:

ADDS

- Regent 40
- Regent 60
- Viewpoint 60

Data General

- D100
- D200
- D210
- D400
- D410
- D450
- D460
- D470C

DEC

- VT52
- VT100
- VT102
- VT125
- VT131
- VT220
- VT240
- VT241
- VT320
- VT330
- VT340
- VT341

Hazeltine

- HZ-1500
- HZ-1510
- HZ-1520

Hewlett Packard

- HP2392A
- HP700/92

Honeywell/Bull

- VIP7200
- VIP7201
- VIP7205
- VIP7301
- VIP7303
- VIP7700
- VIP7700R
- VIP7705
- VIP7705R
- VIP7705W
- VIP7760
- VTS7710
- VIP7801
- VIP7802
- VIP7803
- VIP7804
- VIP7805
- VIP7809
- VIP7813
- VIP7814
- VIP7815
- VIP7816
- VIP7817
- VIP7824
- VIP7825
- VIP7826
- VIP7827
- HDS7302
- HDS7304
- HDS7806
- HDS7807
- HDS7808
- BDS7505
- BDS7506
- BDS7807
- BDS7808
- DKU7105
- DKU7205

Lear Siegler

- ADM 3A
- ADM 31
- ADM 5

Prime

- PT200
- PT250

Tektronics

- 4010
- 4014

TeleVideo

- TVI 910
- TVI 912
- TVI 920
- TVI 925

Wyse

- WY-50
- WY-50+

Other

- ANSI 3.64
- PC Term
- TTY
- Zentec 8000

GLOSSARY

The sending and receiving of data between a host system and your personal computer is called communications.

While using your personal computer for transmission and reception of data, you may come across many technical terms.

For your convenience, this part of the book contains definitions of many of these communications terms.

ACK: Means acknowledge. A control character or message sent by a receiving station. It means that the station received the message successfully.

To respond to a message. The characters or data that a receiving station transmits in response to a message.

ADAPTER: A mechanism for attaching parts.

ADDRESS: The location or a data source or destination. To refer to a device or data item by its address.

ALPHAMERIC OR ALPHANUMERIC: Pertaining to a character set that contains letters and digits.

ANSWER TONE: An audio signal that indicates the completion of a physical connection on a switched (dial) line.

APPLICATION PROGRAM: A program written by or for a user which applies to the user's work. For example, a payroll application program would be a typical program for the personal computer. Host application programs are usually written for a wide variety of different users who deal interactively with the host system.

ASCII (American Standard Code for Information Interchange): A standard 8-bit code (usually 7 data bits and 1 parity bit) used to represent data. This is the standard used for your personal computer.

ASYNCHRONOUS COMMUNICATIONS: Data communications where each character of data is individually synchronized on a communications line, usually by using a start bit and a stop bit. Also called start-stop communications. Only one byte at a time is sent.

ATTENDED MODE: In data communications, some equipment requires a person at each station to establish the line connection. For example, one person dials a location, waits for the other person to answer; then each person pushes a button to switch from voice to data communications.

ATTRIBUTE: A property or characteristic of one or more items. An attribute can specify a data field displayed on the screen as protected or unprotected, numeric, alphanumeric, intensified and so on. The vxConnect software allows you to assign a color to an item's attribute for added emphasis.

AUDIBLE ALARM: A special feature that causes a short, audible tone to sound automatically under certain conditions, such as when a signal is received from the host telling the personal computer to beep. Without this feature, the terminal ignores the host beep command.

AUTO ANSWER: A capability of a communications station or modem to automatically answer a call on a switched line.

BAUD: The minimum time interval that must elapse between successive signals on a line.

BAUD RATE: Rate of change of the signal on a transmission line. Higher baud rates mean faster data communication.

BINARY: Pertaining to a condition that has two possible values. Also, refers to the Base 2 numbering system.

BINARY SYNCHRONOUS COMMUNICATIONS (BSC): Communications between computers using binary coded data. Synchronization between the transmitting and receiving stations is maintained with a specific bit pattern called a SYN character. BSC uses a protocol that requires synchronous modems.

BIT RATE: Number of bits per second (bps) that can be transmitted on a transmission line. Usually a whole number increment of the baud rate depending on how many bits there are in each baud.

BLOCKED RECORDS: A collection of contiguous records recorded as a unit. Each block may contain one or more records.

BSC: See binary synchronous communications.

BUFFER: A method of storing data temporarily until it can be accepted by the computer or printed on the printer.

BYTE: A character of information. Eight bits.

CALLING STATION: On a switched line, the station that starts the communication (dials the phone).

CARRIAGE RETURN CHARACTER (CR): A character that causes the print or display position to move to the first position on the same line.

CHANNEL: See line.

CHARACTER: A letter, number or special symbol (such as an asterisk, comma or percent sign) contained in data or used to control communication devices.

CLEAR TO SEND (CTS): A control signal sent to the transmitting computer indicating that the communications link has been established, and it's okay to send data.

COMMON CARRIER: See communications common carrier.

COMMUNICATIONS COMMON CARRIER: A company that offers communications services to the public (i.e. AT&T, MCI, GTE).

COMMUNICATIONS FACILITY: Any of the equipment (modems, lines and so on) used to send data from a terminal to a host computer system in a communications system.

CONTROL CHARACTERS: A set of characters used to control the transfer of data on communications line. Examples are carriage return and end-of-file characters.

CRT: Cathode ray tube. Another name of the display screen.

CURSOR: A unique symbol (a block or line on the personal computer) that identifies a character position at which the next character entered from the keyboard will be displayed.

CTS: See clear to send.

DIALED LINES: A dialed line is a normal dialed telephone line. It is also called switched.

DATA BLOCK: See blocked records.

DATA COMMUNICATIONS EQUIPMENT (DCE): A term used to describe the equipment in a communications system. It includes the modems and all the equipment between the modems.

DATA COMPRESSION: Any one of a number of techniques for transforming data so that it can be transmitted using fewer characters.

DATA LINK CONTROL CHARACTERS: See control characters.

DATA SET: See modem.

DATA TERMINAL EQUIPMENT (DTE): A term used to describe the equipment in a communications system from the terminal up to, but not including, the modem.

DATA TERMINAL READY (DTR): A signal sent from a terminal or personal computer telling the host computer that the terminal or personal computer is ready to communicate.

DATA SET READY (DSR): A signal sent to the terminal or Macintosh from the modem telling the terminal or personal computer that the host is ready to communicate.

DCE: See data communications equipment.

DEC: Digital Equipment Corporation.

DEVICE ADDRESS: An address used by the host to select an input/output device.

DIRECTORY: A table of identifiers and references to the corresponding data files (items of data). For example, the directory for a disk contains the names of files on the disk (identifiers), along with information that tells the software where to find the file on the disk.

DISC: See disconnect signal.

DISCONNECT SIGNAL (DISC): A signal transmitted to a receiving station to show that the line is to be disconnected.

DISPLAY: (1) A visual presentation of data. (2) To present a display image on the screen.

DSR: See data set ready.

DTE: See data terminal equipment.

DTR: See data terminal ready.

DUPLEX: Data transmission in both directions at the same time. Same as full-duplex.

EXTENDED BINARY CODED DECIMAL INTERCHANGE CODE (EBCDIC): An 8-bit code (eight data bits) used to represent data. This is the most common standard for many computers, though not for the personal computer.

END OF FILE (EOF): A *marker* immediately following the last record of a file, signaling the end of that file.

END OF TEXT (ETX): A BSC control character that indicates the end of a message.

END OF TRANSMISSION (EOT): A BSC control character sent to indicate the end of the transmission.

ENQ: Means inquiring. A control character sent by a transmitting station which asks a receiving station if it can receive data. Also sent to ask a station's type.

EOF: See end of file.

EOT: See end of transmission.

ETHERNET: A local area network communications facility providing high-speed data exchange among computers and other digital devices.

ETX: See end of text.

FIELD: In a record, a specific data area used for a particular category of data.

FILE: A set of related records treated as a unit.

FLOPPY DISK: A disk consisting of a circular sheet of plastic coated with a magnetic oxide and contained within a square plastic cover.

FOREGROUND: The part of the display area that is the character itself.

FORMAT: The particular arrangement or layout of data on a data medium, such as the screen or a disk.

FORMATTED DISPLAY: A display where the attributes of one or more display fields have been defined.

FOUR-WIRE FACILITY: A communications line consisting of four conductors. For example, when four wires are coming into your location, the line is a four-wire line.

FULL-DUPLEX: Full duplex means that the data can flow in both directions at the same instant. See also duplex.

FUNCTION KEY: If you have a personal computer extended keyboard there are twelve keys labeled F1 through F12 on the top row of the keyboard.

On a terminal keyboard, a key that passes a signal to a host program to call for a particular display operation.

GLITCH: Undesirable electrical signal on a communications line that can interfere with or distort data signals.

HALF-DUPLEX: Data transmission in both directions on the line, but not at the same time. But, the direction can be reversed in as little as 50 to 250 microseconds.

HARD COPY: A printed copy of machine output.

HEXADECIMAL: A numbering system used by computers. It uses 16 characters (0-9, A-F) to represent numbers instead of the usual 10 numbers in the decimal system.

HIGHLIGHTED: See intensified display.

HOST SYSTEM: The remote computer system your personal computer

IBM: International Business Machines Corporation.

INPUT FIELD: An unprotected field on the screen where data can be entered, modified or erased manually (through use of the keyboard).

INTENSIFIED DISPLAY: An attribute of display field; causes data in that field to be displayed or highlighted at a brighter intensity than other data on the screen. For example, during configuration your default values are intensified or highlighted.

JOB: One of several data transfer functions (send, print) that the micro-mainframe link program carries out while communicating with the remote system.

K: When referring to memory capacity, two to the tenth power or 1024 in decimal notation.

LAN: See Local Area Network.

LAT: See Local Area Transport.

LEASED LINE: A leased line is a dedicated line between two or more points. It is often referred to as polled or nonswitched.

LINE: The electrical path between data communications equipment (also called Channel).

LINE BID: An attempt to gain control of the line to send data.

LINE RATE: The speed at which data travels across the communications line. Usually expressed in bits per second (bps).

LINK PROTOCOL: The set of rules by which a logical link is established, maintained and terminated, and by which data is transferred across the line. See also protocol.

LOCAL AREA NETWORK: A data communications network connecting systems in a limited geographical area. Usually within the same building.

LOCAL AREA TRANSPORT: Protocol required to utilize DEC's ethernet local area network.

LOGON: See sign on.

MENU: A list of available options on the display screen. You select which option you want from the list.

MODEM: Means Modulator/Demodulator. A device that changes digital computer code into analog signals that can be transmitted across the communications line, and then changes the analog signal back into digital computer code. This is necessary because your personal computer is digital; and the world of telephone communications is analog. A modem converts data between digital form and analog form.

MOUSE: A device used to move the graphics input cursor on the screen and to enter data to an application program. Moving the mouse along a flat surface changes the position of the cursor. Pressing the button(s) on top of the mouse sends commands to the personal computer.

MULTIPOINT: Consists of a communications line with two or more stations attached. Multipoint stations must communicate over leased lines.

NAK: Means negative acknowledgment. A control character sent by a receiving station to tell a transmitting station that it did not receive the message correctly. The transmitting station will repeat the message.

NETWORK: The interconnection of many computers and computer terminals to permit them to communicate with each other.

NONSWITCHED LINE: A communications line that is always connected to the remote system or terminal (also called leased).

OVERWRITE: To record into an area of storage, such as display screen or disk file, so as to destroy the data that was previously stored there.

PARITY CHECK: Checking a data character for an even or odd number of 1 bits.

PIXEL: Picture element. The smallest unit of display on the video screen. All graphic characters are displayed with pixels.

POINT-TO-POINT: A communications line that connects only two terminals.

PROTOCOL: The set of rules that devices and terminals use when communicating to ensure that the data is transferred correctly and reliably. The correct series of steps that allows your personal computer to communicate with the host is the protocol.

PRIMARY STATION: On a multipoint line, the station that controls communications. The primary station selects the terminal to send the data. At the same time the primary station tells the sending terminal exactly when to send that data.

On a point-to-point line, the station that gains control of the line if both stations bid at the same time.

PROMPT: A message issued by a program that requests either information or computer operator action to continue processing.

PROTECTED FIELD: A display field that cannot be used to enter, erase or change data. Contrasted with unprotected field.

READ: To acquire or interpret data from a storage device, from a storage medium or from another source.

RECORD: A collection of related information treated as a unit. For example, in stock inventory each invoice might be one record.

RECORD LENGTH: The number of characters forming a record.

REGIS: Remote Graphics Instruction Set. Digital's graphics instruction set that lets you build images from standard geometric forms, such as lines, curves and circles.

REMOTE SYSTEM: The computer system at the other end of your communications line. Also known as the host system.

REQUEST TO SEND (RTS): A signal from the host or the personal computer that it wants to send data to the receiving station.

SCROLL: To move all or part of the display image vertically or horizontally so that new data appears at one edge as old data disappears from the opposite edge.

SIGNAL CONVERTER: See modem.

SIGN ON: A code or sequence of characters required by some host system before they will communicate with you.

SIXEL: A unit of graphics information peculiar to DEC. A sixel represents a column of six pixels on the screen.

STATION: One of the input or output points of a system that use telecommunication facilities. These are usually one or more computers, terminals, printers or other devices at a particular location that communicate with a host computer or with each other.

START-STOP: See asynchronous communications.

STORAGE: A device or part of a device that can retain data. or memory.

SYN: A bi-synchronous control character used by bi-synchronous stations to provide a signal from which synchronization may be maintained.

SYNCHRONOUS: Synchronous means that a long stream of data bits is sent one at a time. The long stream of bits requires that both the sending and receiving modems be closely synchronized.

SYNTAX: The rules governing the structure of a language.

TCP: Transmission Control Protocol. TCP is a transport layer, connection-oriented, end-to-end protocol. It provides reliable, sequenced and unduplicated delivery of bytes to a remote or local user. TCP provides reliable byte stream communication between pairs of processes in hosts attached to interconnected networks.

TELECOMMUNICATIONS: Transmitting signals over long distances.

TERMINAL: Any device that can send and/or receive data over a communications line. When connected to a host system, the personal computer can be used as a VIP terminal, for example.

TIME-OUT: The end of a time interval during which a station waits for a certain operation to occur.

TRANSMIT: To send data from one place to be received elsewhere.

TWO-WIRE FACILITY: A communications line consisting of two conductors. For example, when only two wires are coming into your location, the line is a two-wire line.

UNBLOCKED RECORDS: Records that are sent over a communications line individually.

UNPROTECTED FIELD: On a display terminal, a display field where you can enter, modify or erase data. Contrast with protected field.

WRAPAROUND: The technique for displaying items whose coordinates lie outside the display area.

WRITE: To record data in a storage device or on a data medium.

vxConnect for Windows

vxConnect allows IBM compatible computers utilizing Microsoft Windows the ability to emulate the following terminals:

ADDS
- Viewpoint/Regent

Data General
- D100/D200/D400

DEC
- VT100/VT200/VT300

Hazeltine
- HZ-1500 Series

Hewlett Packard
- HP2392A/HP700

Honeywell/Bull
- VIP/HDS sync/async

Lear Siegler
- ADM

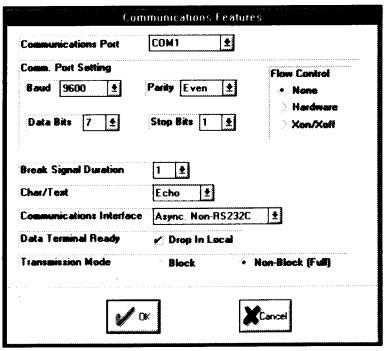
Prime
- PT200/PT250

Televideo
- TVI 900 Series

Tektronics
- TEK4010/4014

Wyse
- WY-50

Communications



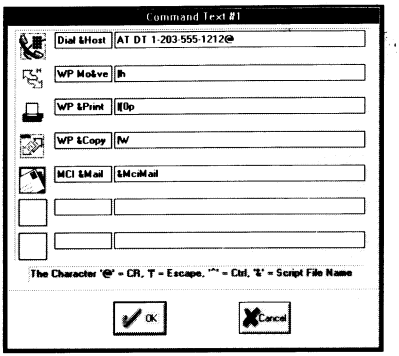
Connect to the host system via asynchronous, VIP Synchronous, VIP Server or Network communications.

Network support available via Int 14H, Int 6BH, Novell NASI, Network Products Corporation NCSI, Ungermann-Bass NETCI, Cambridge vxServer and TCP/IP.

Color

Select any color that the personal computer can produce and assign that color to any visual attribute.

Command Keys



vxConnect's Command keys allow user-selected keys, menu items and color icons to be programmed for frequently used commands, host functions or to execute scripts.

Script Processing

vxConnect's scripting capabilities allow users to build a Windows front-end for host applications. All of vxConnect's functions - setting of communications parameters, logging onto a host or performing a file transfer are accessible.

Printing

vxConnect allows host directed, page and log printing to any printer.

Automatic log-on

Double-click the vxConnect icon and you will be logged-on your host system.

Mouse Support

Copy and paste information between Windows documents and host session. Use the mouse to navigate the host cursor.

Dynamic Data Exchange

Develop programs to interface with the communications capabilities of vxConnect.

File Transfer

Supports Kermit (Honeywell/Bull and Columbia University versions), Xmodem (checksum and CRC), Xmodem-1K, Xmodem-1K-G, Ymodem, Ymodem-G, Zmodem, Text/ASCII and vxFTF file transfer protocols.

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