

AccuTerm 2K2

Users Guide

MultiValue Edition



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INTRODUCTION

Welcome to **AccuTerm 2K2 – MultiValue Edition**. We've worked hard to give you the fastest and most accurate terminal emulation package on the market. We have also tried to make it easy to use. Our philosophy has been to add the features that will be most useful without sacrificing ease of use, accuracy or performance.

This User Guide is intended to help you install, configure and use AccuTerm 2K2. A separate Programmers Guide is available, and it includes information on programming AccuTerm, control codes, escape sequences, scripting, ActiveX/OLE features, the GUI development environment and Windows/host integration.

Features of AccuTerm 2K2

Multiple sessions using **MDI** (Multiple Document Interface). This means that you can run two or more terminal sessions at the same time without running two copies of AccuTerm. It works the same as other programs that allow you to work with more than one document at a time like word processors, spreadsheets, etc. so it's easy to work with. You don't have to learn a new way of working. Also, by using MDI instead of running multiple copies of AccuTerm, you use less system resources and memory. You can still run multiple copies if you choose, we just think MDI works better.

User interface has Office 2000 look and feel, including context menus accessed by clicking with the right mouse button. The new toolbar can be hidden completely and also features balloon help that shows you what the buttons mean. Toolbar, menu, session bar and status bar can be customized by the user.

Full OLE Automation / ActiveX support allows integration with other Windows applications. AccuTerm 2K2 acts as both automation client and automation server. AccuTerm exposes its application and session objects, which allows other applications complete control of AccuTerm.

ActiveX component (OCX) terminal emulation & communications engine may be used in custom VB applications where accurate terminal emulation is required.

Secure Shell connections ensure privacy using public key encryption technology. SSH1 and SSH2 protocols are supported, and several ciphers are available.

Accurate emulations. When you use AccuTerm everything will work just like the terminal being emulated. No strange problems with word processors or spreadsheets. No messed up screens. No hassles.

Modem connections use Windows built-in dialer, and unlimited phone directory entries.

Fast File Transfer capabilities using industry standard protocols like Xmodem, Ymodem, Zmodem, and Kermit. MultiValue file transfer wizard and utilities import and export MultiValue data in a variety of formats. And direct Host-to-Host file transfer, too!

Scripting language and macro recorder allows users to record macros or write scripts using Visual Basic for Applications (VBA).

Enhanced scroll back window saves up to 2500 lines for instant recall.

Extended screen support of up to 160 columns by 60 rows.

Automatic font scaling so that you can always see the full screen. This is a great feature. Once you get used to it, you'll never want to go without it!

Enhanced network support for Telnet , Secure Shell (SSH1 & SSH2) and PicLan.

GUI Development Environment helps you build user-friendly GUI front-ends for your MultiValue applications.

Tabbed setup screens efficiently organize settings and preferences.

Image and sound support lets you to display images anywhere on the terminal screen. You can also play Wave and MIDI sound files.

wED Windows based program / data editor includes BASIC syntax highlighting in an MDI environment.

Tektronix graphics terminal emulation in both color and monochrome.

Visual Styles and full color mapping lets you choose any foreground and background color combination for any terminal visual attribute, and attach a border effect to the attribute. Application of Visual Styles can give character-based applications an instant face-lift!

Easy to use. AccuTerm follows the Windows Interface Application Design Guide more closely than many other terminal emulation programs. This makes AccuTerm easier to learn and use.

Hardware and Software Requirements

Memory:	128MB
Processor:	Pentium 200 or better
Windows:	95, 98, ME, NT 4.0, 2000, XP
COM port:	Any serial port, modem or network adaptor supported by Windows
Mouse:	Any mouse supported by Windows

Note: in order to open a Secure Shell connection, you must have 128 bit encryption installed in Windows. To check Windows encryption, open Internet Explorer and select "About Internet Explorer" from the Help menu. If the Cipher Strength is less than 128 bits you will need to either upgrade to Internet Explorer 6.0 (or above) or install the High Encryption Pack for your version of Internet Explorer. Search Microsoft's web site for "High Encryption" for more information.

GETTING STARTED

This manual assumes that you have a working knowledge of the Windows environment. If you are new to Windows, there are many good books available. They do a much better job of explaining the basics than we could do in this manual.

Installation

To install AccuTerm 2K2, insert the AccuTerm 2K2 program CD and click the “Install AccuTerm 2K2 Standard Edition” button when the startup screen is displayed. If the startup screen does not display, select “Run” from the Start Menu, and enter “D:\Autorun.exe” in the “Open” text box, then click OK (change D: to the letter for your CD drive).

- 1) The AccuTerm 2K2 installation wizard will guide through the installation process. You will be prompted to enter your authorization key, registration information, select the destination directory and select a start menu program folder. You move forward through the installation process by clicking the **N**ext button. You can click the **B**ack button to move back, or the **C**ancel button to cancel the installation.
- 2) The first item you need to enter is your Authorization Key. Enter each half of the key into two text boxes. Click **C**ontinue after you have entered your key. After clicking on the **C**ontinue button, the software license agreement will be displayed. You can scroll through text of the license and if you accept the license terms, click the **O**K button.
- 3) The *Welcome* dialog is displayed. Click the **N**ext button.

- 4) The **Registration Information** dialog box is displayed. Please enter the user, company and location in this dialog, then click the **Next** button. Depending on your software license, some fields may not be displayed.
- 5) Select the directory where you want the AccuTerm program files to be installed, then click the **Next** button. The default installation directory is C:\Program Files\Atwin.
- 6) Select a “home” directory. The default “home” directory is the current user’s “My Documents” directory. This is the directory where AccuTerm will start from when using Open and Save for reading and writing session configuration files. After selecting the “home” directory, click the **Next** button.
- 7) Choose whether you want files which are replaced during installation to be saved in a backup directory. If you select this option, when you click the **Next** button, you can select the directory where replaced files are saved.
- 8) Select a “Start Menu” folder for the AccuTerm 2K2 shortcut. If you would like a shortcut to AccuTerm 2K2 placed on your desktop, select the “Place shortcut on desktop” option. If you want the shortcut to be available to all users of the PC, select the “Make shortcut available to all users” option. Click the **Next** button.
- 9) To begin installing files, click the **Next** button. The installation progress will be displayed.
- 10) Some features of AccuTerm 2K2 utilize the Microsoft Data Access Objects (mainly importing and exporting data to and from Microsoft Access databases). If you do not already have version 3.5 (or higher) of the Microsoft Data Access Objects installed on your computer, you can select to have these components install at this time. A system reboot will be required during this installation.
- 11) When the installation is complete, you can view the release notes by checking the “View release notes” box, and clicking **Finish**. If you do not want to view the release notes at this

time, simply clear the “View release notes” box and click **Finish**.

During installation, you may get a message indicating that the OLE or system files are in use and need to be updated. If this occurs, please shut down all other applications, then click the **OK** button to restart Windows. After Windows restarts, the installation process will resume (if it does not resume automatically, simply start the installation over again; this time the OLE or System files should have already been updated and you will not get this message again.)

Network Installation

If you have a network and are installing a *Small Business License* version of AccuTerm, you can copy the “Atwin2K2” folder from your installation CD to a network share. Then you can install AccuTerm on any workstation that can access the network share by navigating to the shared Atwin2K2 folder and double-clicking on the Atw2k252.exe file name.

Even if you are installing AccuTerm on a network, you still *must install it on each workstation*. This is because some files are installed in non-shared directories such as WINDOWS and WINDOWS\SYSTEM.

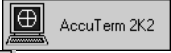

Some aspects of the installation process can be customized. Please see the “Custom Features” topic in the AccuTerm Programmers Guide for more details.

Activating an evaluation version

To activate an evaluation version of AccuTerm 2K2 after obtaining an authorization key (or CD key), you need to re-install the program. You do not need to un-install the program first. Simply re-install, and enter the key when prompted.


Running AccuTerm 2K2

AccuTerm 2K2 uses the Windows MDI (Multiple Document Interface) standard for handling more than one session. It works the same as other popular Windows applications like Microsoft Excel and Microsoft Access, except that instead of opening workbooks or tables, you open terminal session configuration files. Each configuration file that you open becomes one session. Normally, terminal session configuration files are saved with the *.atcf* extension.

To run AccuTerm 2K2, simply select  from the Start menu, or click the AccuTerm icon  on the desktop. AccuTerm's main window will be displayed. At the start, AccuTerm shows a blank workspace, menu and toolbar. Any terminal sessions you create or open are displayed in the workspace. Most menu and toolbar functions are disabled at this time because no terminal sessions are open yet.

The first time you run AccuTerm 2K2 you will be prompted to create a new terminal session using the **Connection Wizard**. To create a session, click the **Yes** button at this time. You can always create a session at later time by choosing **New** from the **File** menu.

Creating a New Session

After starting AccuTerm, you can use the **Connection Wizard** to guide you through the process of creating a new session. To start the **Connection Wizard**, select **New** from the **File** menu or click the  button on the toolbar. When the *New Connection* dialog is displayed, click the **Connection Wizard** button to start the wizard, then follow the step by step instructions for creating a new session. If you prefer to configure the terminal settings manually, click the **Custom Settings** button instead.

When a session has been opened, it occupies some (or all) of the workspace. Several sessions may be open at the same time, and they share the workspace. The session windows can be cascaded or tiled, or may occupy the entire workspace.

Shortcuts

You can also create a shortcut to any session configuration file (or layout file) by dragging the file from Windows Explorer and dropping it on the desktop while holding the CTRL + SHIFT keys. When you double-click the shortcut to an AccuTerm session or layout file, AccuTerm will automatically load that file when it starts.


Note: to load a layout and run a script, open the layout file, load the script, then save the layout. Create a shortcut to the layout file name as described above. When opening the layout file, first all session files contained in the layout will be opened, then the script's Main subroutine will be run.

AccuTerm Main Menu


File Menu

The AccuTerm **F**ile menu contains options for creating, opening, closing and saving a sessions, and printer setup and control. Common menu options may also be executed by clicking a button on the toolbar.

File New

To create a new terminal session, select the **N**ew option or click the  button on the toolbar. The *New Connection* dialog will be displayed. Select **C**onnection **W**izard to use the connection wizard to help you build a new session, or select **C**ustom **S**ettings to create a new session and enter the settings yourself.


File Open...

To open an existing session configuration file, select the **O**pen option or click the  button on the toolbar. This creates a new session with the settings saved in the selected configuration file.

File Close

To close the active session, select the **C**lose option. If you have made any changes to the session settings, you will have the opportunity to save them in a session configuration file before closing the session.

File Save and File Save As...

After adjusting session settings, save the new settings in a configuration file by selecting the **S**ave or **S**ave **A**s option, or by clicking the  button.


File Save Layout and File Save Layout As

If you have several sessions open, you can save them as a group, or *layout*, by selecting the **S**ave **L**ayout or **S**ave **L**ayout **A**s options.

File Printer On

Selecting this option toggles the slave printer on and off. When the slave printer is on, received data is printed on the selected printer and displayed on the terminal screen. You can also press ALT + P to toggle the slave printer state.

File Print Screen

Selecting this menu option or clicking the  button causes the current terminal screen to be printed on the selected printer. You can also press ALT + G to print the terminal screen.

File Print Setup...

Select this option to set up printer information. See the section on “Printer Selection” in the next chapter for details.

Recent files

Opens one of the most recently opened terminal session configuration or layout files. By default, the last four files are shown. The number of files to show is customizable (see “General Settings” in the next chapter).


File Exit

Select this option to terminate AccuTerm 2K2.


Edit Menu

The AccuTerm **Edit** menu contains commands to copy and paste from the Windows clipboard and select the screen.

Edit Copy

This command will copy a selected block of text from the terminal screen to the Windows clipboard. If there is no selection, the entire screen is copied. To select a block on the screen, position the mouse on the upper left corner of the desired block. Press and hold the left mouse button for about one half second, then drag the mouse to the lower right corner, and release the button. The selected area will be indicated by a dotted rectangle. To remove the selection, click the left mouse button anywhere on the screen. If the screen needs to be scrolled to select the desired data, move the mouse to the edge of the window and the window will automatically scroll in that direction. You can also click the  button to copy the screen or selection to the clipboard.

Edit Paste

This command will send the clipboard contents to the host computer. Each line is terminated as specified in the ASCII file transfer settings (see **Miscellaneous Settings**). Clicking the  button will also perform this function.

Edit Paste From...

This command will send the contents of a text file to the host computer. A file selection dialog box will be opened when you select this command.

Edit Select Screen

This command will select the entire screen. You will see a dotted rectangle around the selection.

Edit Select All

This command will select the entire screen and history. You will see a dotted rectangle around the selection.


Edit Select None

This command will remove any selection and erase the dotted rectangle.

View Menu

The AccuTerm **View** menu contains options to select screen size, display or hide the toolbar, status bar and session bar.

View Extended Screen Size

Toggles the screen size between Normal (usually 80 columns by 24 rows) or Extended (usually 132 columns by 24 rows) size. See “Screen Settings” for information on setting the number of columns and rows. The screen size may also be changed by clicking the  button.

View Toolbar

Check this option if you want the toolbar displayed in AccuTerm’s main window. Un-check this option if you want the toolbar hidden.

View Status Bar

The status bar displays information about the current session: keyboard state, cursor position, screen size, terminal type, printer status, capture status, connection type and connection status. Check this option to display the status bar at the bottom of AccuTerm's main window. Un-check this option if you do not want the status bar displayed.

View Session Bar

The session QuickBar is used to quickly navigate between multiple sessions. It is similar to the Windows taskbar. Every session has a button on this bar and clicking on the button activates that session. Check this option if you want the session bar displayed at the bottom of AccuTerm's main window. Un-check this option if you do not want the session bar displayed.


View Function Bar

The function bar is used to display a row of function key buttons at the bottom of the session window. These buttons perform the same action as the twelve function keys on the keyboard. The first button in the bar is the *bank selector*. Click this button select the active function key bank from a small popup menu: normal, shift, ctrl or shift+ctrl. The default function key button captions are simply F1 ... F12, however, the captions may be customized in the Keyboard tab of the Settings dialog. Un-check this option if you do not want the function bar displayed.

Tools Menu

The **Tools** menu contains options for modifying AccuTerm's settings, dialing a number, initiating file transfers and data capture, and opening the script window. Each of these options opens a dialog box where the desired function is performed. See the appropriate section in this manual for details on each function.


Tools Settings...

Select this option or click the  button to open the Settings dialog box. This dialog is used to modify all of AccuTerm's settings and preferences, such as communications device, terminal type, screen colors, etc.


Tools Customize Menu...

Select this option to open the *AccuTerm Menu Designer*, which is used to customize the menu, toolbar and status bar. For information on customizing the menu and toolbar, see the “Customizing the Menu and Toolbar” chapter in the *AccuTerm Programmers Guide*.


Tools Dialer...

Select the **Dialer** option to enter or choose a phone number to dial when using a Modem connection. Also choose this option to disconnect a Modem connection. Note: this option will be disabled unless the connection type is “Modem”. You can quickly call up the Dialer dialog by clicking the  button on the toolbar.


Tools Upload

Selecting this option displays the **File Upload** panel. Select **Upload Wizard** if you are connected to a MultiValue host system and want to use the *File Transfer Wizard* to guide you through the upload process. Select **Manual Upload** to open the **AccuTerm File Upload** dialog box, where you can select files to upload, select a transfer protocol, initiate an upload and specify other options. You can quickly call up the **File Upload** dialog by clicking the  button on the toolbar.


Tools Download

Selecting this option displays the **File Download** panel. Select **Download Wizard** if you are connected to a MultiValue host system and want to use the *File Transfer Wizard* to guide you through the download process. Select **Manual Download** to open the **AccuTerm File Download** dialog box, where you can select the destination download directory, select a transfer protocol, initiate a download and specify other options. You can quickly call up the **File Download** dialog by clicking the  button on the toolbar.


Tools Capture...

Selecting this option displays the **Begin Capture** or **End Capture** dialog box. Use the **Begin Capture** dialog to select the destination file and specify other options. Use the **End Capture** dialog to terminate the capture operation. You can quickly call up the Capture dialog by clicking the  button on the toolbar.

Tools wED Editor...

AccuTerm 2K2 includes a Windows based text and program editor designed specifically for MultiValue users. If you are connected to a MultiValue host, you can access the **wED** editor by selecting this menu option or clicking the  button on the toolbar.

Tools GUI Designer...

AccuTerm 2K2 includes a development tool to help programmers create GUI applications for MultiValue systems. If you are connected to a MultiValue host, you can access the **GUI Designer** by selecting this menu option or clicking the  button on the toolbar.

Tools MultiValue Options...

Selecting this menu item displays the **AccuTerm MultiValue TCL Rules** dialog box. Several of AccuTerm's MultiValue tools (Upload Wizard, Download Wizard, wED Editor and GUI Designer) require a special MultiValue server utility to function. The server utility is typically initiated from “TCL”, and settings in this dialog define how AccuTerm gains access to TCL.

Tools Macro Record New Macro

Select this menu item to begin recording a new macro. All menu and toolbar actions, including changing settings and preferences, are recorded in the macro. Also, keystrokes sent to the host and responses from the host are recorded in the macro. When a macro is being recorded, a small control window is shown in the lower-right corner of the screen. Use the control window to end, pause or resume macro recording.

Tools **Macro **R**un **M**acro**

This menu item opens a sub-menu which contains a list of recorded macros. Select the macro you want to run from this sub-menu. Note: a shortcut key can be assigned to a recorded macro to simplify running the macro.

Tools **Macro **E**dit **M**acros**

This option opens the **AccuTerm Script** window with the Macro tab (2) selected. Use this window to examine or modify the VBA code for your recorded macros.


Tools **Script...**

This option opens the **AccuTerm Script** window with the Main script tab (1) selected. Use this window to create, modify, run and debug VBA scripts.


Reset **Menu**

This menu has options to reset the terminal or the connection.

Reset **Terminal**

Resets the terminal (clears screen, restores default character set and emulation, etc.) You can quickly reset the terminal by clicking the  button on the toolbar.

Reset **Connection**

Resets the connection. If the session has been disconnected, this command will attempt to reconnect. You can quickly reset the connection by clicking the  button on the toolbar.

Window **Menu**

The Window menu contains options for re-arranging the open sessions within the main window, and for switching from one session to another.

Window **Cascade**

This option arranges all open session windows so that they overlap. The title bar of all session windows remains visible.


Window **Tile **H**orizontally and **W**indow **T**ile **V**ertically**

These options arrange all open session windows so that no windows overlap.

Windows

The open sessions are shown at the end of the **Window** menu. You can switch to any session by clicking on its entry in this menu.

Help Menu

You can get context sensitive help at any time by pulling down the **Help** menu and selecting the **I**ndex or **C**ontents option or by clicking the  button. To display information about AccuTerm, including version, release, serial number and registered user, select the **A**bout AccuTerm option.

Keyboard Commands

Print Screen - ALT + G

Prints the contents of the terminal screen to the printer using the currently selected printer.

Data Capture - ALT + C

This is a shortcut to open up the **Begin Capture** dialog box.

Toggle Slave Printer Mode - ALT + P

Toggle slave printer mode on and off.

Previous Page - CTRL + PGUP

Displays the previous terminal page. To use this command, the session must be setup with more than one video page.

Next Page - CTRL + PGDN

Displays the next terminal page.

Pause / Resume - SCROLL LOCK

This command pauses or resumes the processing of received data by the terminal. The keyboard “Scroll Lock” LED indicates the current status.

Scanning the History Buffer


Use CTRL + SHIFT + PGUP, CTRL + SHIFT + PGDN, CTRL + SHIFT + UP, CTRL + SHIFT + DOWN, CTRL + SHIFT + HOME, and CTRL + SHIFT + END to navigate the history buffer.

Besides using the keyboard to navigate the history buffer, you can also use the mouse wheel (if your mouse has a wheel). Just scroll the mouse wheel up or down to scroll the history.

*Note: you must specify a number of history rows to enable history scanning. To specify the number of history rows to utilize, choose **Settings** from the **Tools** menu, Click on the **Screen** tab. Enter the desired number of rows.*

CONFIGURING ACCUTERM

Before you can use AccuTerm, you must configure the program. The configuration process is used to tailor AccuTerm to your specific environment: workstation, printers, network and host computer. You can also choose certain preferences. This chapter describes the configuration process.

To modify AccuTerm's settings choose the **S**ettings item from the **T**ools menu or click the  button on the toolbar.

The **S**ettings dialog box is organized into ten categories, with each category on a separate index tab. Click on one of the index tabs to display the settings for that category. You can also press the number of the category while holding the ALT key (use ALT + 0 for **10** – **Misc**).

When you have completed your changes, simply press ENTER (or click the **OK** or **A**pply button) to save changes, or press ESC (or click the **C**ancel button) to discard changes and close the **S**ettings dialog box.

General Settings

The **General** tab is used to specify settings that affect the AccuTerm application overall, rather than a specific session.

Default phone book

This field contains the file name to be used as the default phone book for the dialer. If no directory is specified, the current directory is assumed. All dial-up sessions share this phone book.

The phone book file is a tab delimited ASCII file, with one line per entry; name and phone number are the two fields.

TCP/IP hosts file

The TCP/IP hosts file is an information file used to supply a list of host names to choose from when configuring a telnet or ssh connection. It is not necessary to define this entry, but if you know that your system has a hosts file, you can specify it here.

Default upload/download directory

This field contains the default directory for uploading and downloading files. Each session has its own setting (**File Transfer** tab) for this directory which will override this field if it is present.

Default capture directory

This field contains the default directory for storing captured data. Each session has its own setting (**File Transfer** tab) for this directory which will override this field if it is present.

Session title format

Each session window has a “title”, shown in the window’s title bar. The title consists of the session file name (or optional title specified in the **Screen** tab), and the session number (or ID). You can customize how the title and ID are displayed in the window title bar by choosing an alternate title format. Options include displaying the ID after (default) or before the title, and enclosing the ID in parentheses () or brackets [].

Recent file size size

Specify the number of files to be shown at the end of the **F**ile menu for quickly opening your most frequently used sessions. Normally, the last four files are shown.

Single instance of AccuTerm

If this option is checked, only one instance of the AccuTerm program is allowed to be running. If you try to start AccuTerm from the Start menu or desktop shortcut, and an instance of AccuTerm is already running, the currently running program will be activated. When this option is not checked, a new instance of the AccuTerm program will be started; that is you will have two or more AccuTerm applications running.

Close AccuTerm when all sessions closed

If this option is checked, when the last open session is closed, the AccuTerm program will automatically close. This option is useful for network users when opening a configuration or layout file from a shortcut so that when all network sessions have been disconnected, AccuTerm will close automatically, without user intervention.

Warn before disconnecting

If this option is checked, when you attempt to close a session which is currently connected to the host (modem, Telnet, SSH connections), you will receive a warning that the session is still connected. You can choose to cancel the close operation if you wish. When this option is not checked, you will not receive this warning and the connection will be closed immediately. This warning does not apply to serial port connections.

Show large buttons in toolbar

Check this option to use large buttons in the toolbar. If this option is not checked, small buttons are used.

Remember CapsLock and ScrlLock state when activating

When this option is checked, AccuTerm remembers and restores the state of the CapsLock and ScrollLock keys when the program is activated. Each session maintains its own independent state for these keys. *This option is only available for Windows NT, 2000 and XP.*

Connection Settings

Connection Method

The **Connection Method** is used to select what type of connection or communications device you use between your computer and the host system. You will always be able to select **Serial Port** as a connection type. Depending on the hardware and software you have installed in your computer, you may also be able to select **Modem, Telnet, Secure Shell** or **PicLan**.

After selecting or changing the connection type, other settings relating to the selected connection type are enabled. For example, if **Serial Port** is selected, various options for a serial port connection, such as the port number, baud rate, parity, etc. will be shown. The specific settings for each connection type will be described later in this section.

Duplex

There are three duplex options: **Full, Half** and **Local**. In **Full** duplex, all characters typed on your keyboard are sent to the host computer. They are not printed on the screen. The host usually sends (echoes) the same character back; this is what is displayed on the screen. This is by far the most common configuration. In **Half** duplex, the characters you type are sent to the host machine and displayed on the screen. If the host system is configured for **Full** duplex and you select **Half** duplex on your computer, you will see each character that you type two times! In **Local** mode, characters you type are displayed directly on the screen and are not sent to the host computer.

Strip Eighth Bit

Most connection types use eight bits to represent each character. When using eight bits, the computer can send up to 256 different character codes. Some terminal types have no way of handling characters above 127 (hex 7F). In this case, you can check this box and the eighth bit of each byte will be automatically stripped from all received characters. If you need to use any international characters or special symbols from the PC character set, you will need to clear this box to access them (the Wyse 60 and VTxxx emulations have commands to access these characters when using only 7 bits).

Close session on disconnect

This option is most useful when using Telnet or Secure Shell connections. If this option is checked, then when the connection is terminated by the host computer, the session will automatically close. This option may be used in conjunction with the general setting “Close AccuTerm when all sessions closed” option.

Display communication errors

This option determines if communications errors are displayed or ignored. When using a network connection (Telnet, Secure Shell, PicLan) it is best to enable this option. For Serial Port and Modem connections you may want to disable this option, since “UART Overrun” errors are common and usually do not indicate a real problem. If you suspect you are encountering errors, for example, if columns do not line up on a formatted screen, try setting this option, then reset the terminal (select the **Reset Connection** option from the main menu).

Connection Settings – Serial Port

Port

Select the serial port on your computer which is connected to your host system. If you select the wrong port, you may get an error such as “Communication Port Unavailable”, or your terminal session may act like it is not connected.

Note: although AccuTerm allows you to select from port number 1 to 127, most computers only have one or two ports installed. To use any port with AccuTerm, it must first be correctly installed with the correct device driver.

Baud Rate

The baud rate is the speed that the serial port communicates with the host computer. AccuTerm supports baud rates from 300 to 115,000 baud. This setting must match the setting of the host computer’s serial port to which your computer is connected. Baud rates of 9600 or 19,200 are most common.

Data Bits

Data Bits refers to the number of bits the serial port sends to represent each character. The options are 7 or 8 bits (the default is 8 bits). This setting must match your host system’s serial port setting.

Stop Bits

This is the number of bits that the serial port uses to separate each character. The options are 1 or 2 stop bits (default is 1). This setting must match your host system’s serial port setting.

Parity

Parity is an error checking mechanism performed by the serial port. The options are: None, Odd, Even, Mark and Space. Parity is rarely used, so selecting None (this is the default) is usually correct. This setting must match your host system’s serial port setting.

Handshake

Computers can send information very quickly. However, there are situations where one computer can send data faster than the other computer can process it. In these cases, the computer on the receiving end needs to inform the sending computer to suspend transmission until the slower computer is able to catch up. A technique called “handshaking” is used to accomplish this task.

AccuTerm supports three methods of handshaking. The first and most common is. Xon/Xoff (or *software handshake*). With this method, AccuTerm sends a special Xoff character (**DC3**) to the host system when it wants the host to stop sending characters. When the AccuTerm has caught up, it sends the Xon character (**DC1**). AccuTerm normally uses “inbound” Xon/Xoff handshake; that is, AccuTerm can control flow of data from the host, but the host cannot control the flow of data from AccuTerm. If you check the “bidirectional” option, then AccuTerm will use both “inbound” and “outbound” Xon/Xoff handshake allowing the host to control the flow of data from AccuTerm as well.

The second handshake method supported by AccuTerm is DTR/DSR. This method is referred to as *hardware handshake* because it physically changes the voltages on the serial port to indicate whether the receiving computer is ready.

The third handshake method, RTS/CTS, is similar to DTR/DSR handshake, except it uses a different pair of signals (pins) on the serial port.

For DTR/DSR or RTS/CTS handshake to work, the cable which connects your computer and the host computer must connect the appropriate handshake signals at both ends. Physical cable wiring is beyond the scope of this manual.

This setting must match your host system’s serial port setting.

Connection Settings - Modem

AccuTerm 2K2 supports dial-up connections using any modem you have installed on your computer. AccuTerm uses TAPI (a service built into Windows for supporting telephony) to communicate with your modem. By using TAPI, AccuTerm can share the modem with other TAPI enabled applications, like Windows fax applications.

Modem Name

To use a modem connection, select a modem from the Modem Name list.

Note: if you change the modem installed in your computer (or sometime just install an updated driver for your modem), the modem name saved in your terminal session configuration file may not match the new modem name. If this happens, open the Settings dialog and select the new modem name from the Modem Name list.

Auto Answer

If you want AccuTerm to answer incoming calls, enable this setting”, otherwise disable (default) this setting.

Override Port Settings

Normally, AccuTerm configures the modem based on settings that are set up in Control Panel (Phone and Modem Options). Selecting this option allows you to override those settings. When this option is checked, options for selecting the modem baud rate, data bits, stop bits, parity and handshake become available.

See the previous section (**Connection Settings - Serial Port**) for details about baud rate, data bits, stop bits, parity and handshake settings.

Note: most modern modems work best using RTS/CTS handshake.

Dialing Options

To modify the dialing properties for the selected modem, such as your current location, area code, dialing prefixes, etc., click the “Dialing Options” button.

Connect Only at This Speed

If the “Override port settings” option is selected, the “Connect only at this speed” option will be available. Normally, the baud rate of the modem’s serial port is set to the speed selected in the baud rate setting. However, the baud rate used to communicate between your modem and the host computer’s modem is negotiated by the two modems, and may not be the same as the baud rate setting. By selecting the “Connect only at this speed” option, AccuTerm will attempt to lock the modem-to-modem baud rate at the same speed as the baud rate setting.

This option is useful if you are able to dial and connect to the host computer modem, but the characters you receive are unintelligible garbage. This usually indicates a mismatch in the baud rate, usually between the host computer and its modem.

Note: this option does not work with all modems.

Connection Settings - Telnet

AccuTerm supports Telnet connections to host systems on a TCP/IP network. Any Telnet server (host) on the network, including hosts on the Internet, can be accessed.

Host Name

A valid Telnet host name or IP address must be entered in this field. If a HOSTS file is available, you can click on the down-arrow to display a list of available Telnet hosts.

Host Type

If your type of host you are connecting to is listed in the Host Type list, please select it, otherwise just use the default host type. By selecting a host type from this list, certain advanced options are set up to be compatible with the specified host type. To see the advanced options, click on the Advanced button.

Port

If the Port field is left blank, or set to “default”, AccuTerm will use TCP port 23 (the default for Telnet). If a different port is used for Telnet on your desired host machine, enter that port number in this field.

Certain host systems, such as Raining Data D3, allow a host process number (PIB) to be mapped to a specific TCP port number. You can use the Port setting to specify the port number mapped to your process number. Consult with your system administrator for this setting.

Connect Timeout

When establishing a connection to a host computer, AccuTerm will wait for a specified time for a response from the selected host system. You can specify the number of seconds AccuTerm should wait. If this field is left blank, or zero, the default timeout is 15 seconds.

Note: this timeout only affects the time AccuTerm waits for a response from the host when opening a connection to the host.

Advanced Options

By clicking on the **Advanced...** button, you can modify various Telnet options. These options are generally set by selecting a Host Type, but may be modified if necessary.

If you change any settings in the advanced Telnet options, the host type you have previously selected will be changed to “custom”.

Echo (advanced option)

Most systems require the host to echo characters received back from the client (terminal). That is, when you press a key, a character is sent to the host, and the host sends that same character back to the terminal, at which time it is displayed on the screen. If this behavior is desired, then select the echo option (default). If the echo option is not selected, then the **Duplex** setting should be changed to “half” to enable local echo of typed characters.

Binary (advanced option)

Normally, Telnet operates in Text mode, with special rules for handling **CR** and **LF** characters. When the Binary option is selected, Telnet sends **CR** and **LF** characters without any alteration. *Some hosts do not function correctly in Binary mode.*

Use alternate break signal (advanced option)

Normally, Telnet sends the *Interrupt Process* command when you press CTRL + BREAK key. When this option is selected, Telnet sends the Telnet *Break* command instead.

Bypass option negotiation (advanced option)

When this option is selected, Telnet option negotiation, which normally occurs when establishing a connection, is skipped. Certain Telnet servers, like Raining Data D3, do not support Telnet option negotiation, and require this option.

Send keepalives (advanced option)

When this option is selected, AccuTerm will send a dummy “keepalive” message to the host periodically (about every 2 minutes). This dummy message is discarded by the host and is transparent to the terminal session. This feature may be useful when the host system (or network equipment such as a router) disconnects an idle connection.

Note: certain Telnet servers, like Raining Data D3 running on Window NT or 2000, are not compatible with this option.

Disable outbound coalescing (advanced option)

Use this option to improve terminal response over the network, at the expense of increased network traffic.

Use U2 device licensing (advanced option)

By selecting this option, multiple connections (sessions) to Enterprise versions of UniData and UniVerse consume only a single user license. When the **Suppress LF** option is checked, the response sent to the host by AccuTerm is not terminated by an **LF** (line feed) character. Contact your IBM U2 dealer for information regarding device licensing.

Terminal Type (advanced option)

Many Telnet servers allow the client (terminal) to specify a terminal type when a connection is established. AccuTerm uses the default terminal types of *tty*, *viewpoint*, *viewpoint60*, *wyse50*, *wyse60*, *vt100*, *vt220*, *vt320*, *vt420*, *vt52*, *ansi*, *linux* and *pickmon*, depending upon the selected terminal emulation. If a different terminal type is required, you can enter it in this field.

Connection Settings – Secure Shell (ssh)

AccuTerm supports secure connections to host systems over a TCP/IP network using Secure Shell (ssh). Any ssh server on the network, including hosts on the Internet, can be accessed. AccuTerm implements both version 1 and version 2 of the Secure Shell protocol. Protocol selection is usually automatic and uses version 2 if it is supported by the host. Otherwise, it automatically falls back to version 1.

Secure Shell employs public key encryption technology to ensure that your connection to the host is secure, even over the Internet. When you set up a Secure Shell connection, all information, including your user ID, password and session data is encrypted before transmission over the network.

AccuTerm Secure Shell requires Windows 128 bit encryption. To verify that you have the 128 bit encryption installed, open Internet Explorer, and select **A**bout Internet Explorer from the **H**elp menu. If Cipher Strength is 128-bit, then you should be able to create a Secure Shell connection. If it is not, you may need to upgrade your version of Internet Explorer to version 6 or higher, or install the High Encryption Pack (search for “High Encryption” at www.microsoft.com).

Host Name

A valid SSH host name or IP address must be entered in this field. If a HOSTS file is available, you can click on the down-arrow to display a list of available hosts.

Port

If the Port field is left blank, or set to “default”, AccuTerm will use TCP port 22 (the default for ssh). If a different port is used for ssh on your desired host machine, enter that port number in this field.

Connect Timeout

When establishing a connection to a host computer, AccuTerm will wait for a specified time for a response from the selected host system. You can specify the number of seconds AccuTerm should wait. If this field is left blank, or zero, the default timeout is 15 seconds.

Note: this timeout only affects the time AccuTerm waits for a response from the host when opening a connection to the host.

SSH Version

Select the version of the SSH protocol that will be used by the connection. When you select “auto”, AccuTerm will automatically select the highest version supported by the host. If you select SSH1 or SSH2, AccuTerm will only connect using the selected protocol. If the host does not support the selected protocol, the connection will fail and an error message will be displayed.

Authentication

Select the authentication method which will be use to validate the user with the host. AccuTerm supports both password and public key authentication.

Key

If public key authentication has been selected, click the **Select...** button to open the **Key Management** dialog. Use the **Key Management** dialog to create new keys, load existing keys and import keys created on another system.

Advanced Options

By clicking on the **Advanced...** button, you can modify various Secure Shell options.

Break character (advanced option)

Specify the character used to indicate a Break in this field. The default is 3 (CTRL + C) but you can enter any ASCII code in this field if your host requires a different break character.

Terminal Type (advanced option)

Many hosts allow the client (terminal) to specify a terminal type when a connection is established. AccuTerm uses the default terminal types of *tty*, *viewpoint*, *viewpoint60*, *wyse50*, *wyse60*, *vt100*, *vt220*, *vt320*, *vt420*, *vt52*, *ansi*, *linux* and *pickmon*, depending upon the selected terminal emulation. If a different terminal type is required, you can enter it in this field.

Preferred Cipher (advanced option)

If you wish to select the cipher used to encrypt the SSH session, you can select it from this list. If “auto” is selected, the default cipher (triple DES) is used. Otherwise, you can choose triple DES, Blowfish, 128 bit AES or 256 bit AES. *Note: the AES cipher is only available when using the SSH2 protocol, and requires Windows XP.*

Must Use Preferred Cipher (advanced option)

When this option is set, the cipher selected above must be supported by the host. If the selected preferred cipher is not supported by the host, the connection will be terminated and an error message displayed. When this option is not set, if the preferred cipher is not supported by the host, a different, mutually supported, cipher (normally, triple DES) will be used.

Send keepalives (advanced option)

When this option is selected, AccuTerm will send a dummy “keepalive” message to the host periodically (about every 2 minutes). This dummy message is usually discarded by the host and is transparent to the terminal session. This feature may be useful when the host system (or network equipment such as routers) disconnects an idle connection.

Disable outbound coalescing (advanced option)

Use this option to improve terminal response over the network, at the expense of increased network traffic.

Connection Settings – SSH Key Management

When configuring a Secure Shell connection, AccuTerm supports both *password* and *public key* authentication. When *public key* authentication is selected, click the **Select...** button to open the **Key Management** dialog.

Use the Key Management dialog to create public/private keys for SSH, or to load or import private keys. AccuTerm supports RSA public keys for both SSH 1 and 2, and DSA public keys for SSH 2. AccuTerm can import SSH 2 private keys that were created by OpenSSH. The public key file format AccuTerm uses is also compatible with OpenSSH (www.openssh.org).

Creating a new key

Click the **Create New Key** button to create a new public/private key pair. After clicking the **Create New Key** button, select the key type (RSA or DSA), and key length. The default length of 1024 bits is recommended. Enter a descriptive comment describing the key being created, and *enter a passphrase to protect your private key*. Although the passphrase is optional, it is highly recommended since anyone that gains access to your private key file can impersonate your identity! Once the passphrase is confirmed, the icon to the right of the passphrase field changes from a red X to a green check-mark.

Click the **Generate New Key** button to generate the new key pair. This process may take some time to complete. When key generation is finished, the “fingerprint” for the public key will be displayed.

Click the **Save Key File** button to save the newly created key file. By default, AccuTerm will save the key in its standard key folder. You can select a different location, such as a removable USB drive, if desired.

Once your key pair is created, you need to place the public key on the server which you want to connect to. You can save the public key to a file by clicking the **Copy Public Key** button with the **to file** option selected. Once saved, you could attach the key to an email message and send it to the server’s administrator (it is a public key, so security is not a major

issue). You could also save the public key file to a removable drive or diskette and mail or take it to the server administrator.

If the server uses OpenSSH (or compatible) files, and if you currently have access to the server via *password* authentication, you can set up public key authentication using the following steps:

- 1) Open an AccuTerm session and connect to the server. Log in using your password.
- 2) Open the AccuTerm **Settings** dialog to create your new key pair. Click the **Connection** tab. Change the setting for **Authentication** from *password* to *public key*.
- 3) Click the **Select...** button to open the **Key Management** dialog.
- 4) Click the **Create New Key** button and follow the steps above for creating a new key.
- 5) Select the **to clipboard** option and click the **Copy Public Key** button to copy the public key to the clipboard.
- 6) Click **OK** two times to dismiss the dialogs. Ignore the warning about changes not being effective.
- 7) From a Unix/Linux prompt, change to your `~/.ssh` directory. Edit the `authorized_keys2` file using your favorite text editor. Start a new line in the `authorized_keys2` file.
- 8) From the AccuTerm **Edit** menu, choose **Paste** to paste the public key into the `authorized_keys2` file.
- 9) Save the modified `authorized_keys2` file.
- 10) Save the modified AccuTerm session file. Close AccuTerm. Open AccuTerm and choose the session file you just modified.
- 11) Enter your user ID.
- 12) If you entered a passphrase when you created your new key, you will be prompted to enter the password. Enter the passphrase (case sensitive).
- 13) If the server accepts your key, you will be logged in.

Loading an existing key

If your private key was saved to a different folder or to a removable drive or diskette, you can click the **Load Existing Key** button to load that key. Enter the passphrase and click the **Verify** button to check the passphrase. If the passphrase is correct, the public key fingerprint will be displayed. Click **OK** to use this key (in its current location). Otherwise, you can save the key in a different location by clicking the **Save Key File** button.

Importing a key

Importing a key is exactly like loading an existing key, except for the file locations. AccuTerm can import private keys created using the OpenSSH file format.

Key fingerprint

When you create a new key, or load or import an existing key, AccuTerm displays the “fingerprint” of the public key. You can use this fingerprint to ensure that your key is correct. Use a utility on the server to show the fingerprint of the public key and compare to the fingerprint shown in AccuTerm.

Connection Settings – PicLan

AccuTerm supports Modular Software's PicLan network for Pick hosts. Any PicLan enabled host (server) on the network can be accessed.

In order to use a PicLan connection, the PicLan client software must first be installed. Since PicLan utilizes the IPX network protocol, you must also install the IPX protocol in your network configuration.

AccuTerm supports up to ten PicLan connections allowing up to ten concurrent PicLan sessions.

Host Name

A PicLan host (server) name must be entered in this field. Click on the down-arrow to display a list of available PicLan hosts (AccuTerm queries the network to assemble this list, it may take several seconds for this to occur).

Port

Enter the port (host process, PIB or port number) to be used to connect to the PicLan host. This field may be left blank or may be set to “default” to indicate that any available port may be used.

Connect Timeout

When establishing a connection to a host computer, AccuTerm will wait for a specified time for a response from the selected host system. You can specify the number of seconds AccuTerm should wait. If this field is left blank, or zero, the default timeout is 15 seconds.

Terminal Type Settings

AccuTerm emulates a variety of terminals. In order to use AccuTerm with your host applications, you must select the correct terminal type for AccuTerm to emulate. The correct terminal type depends on the terminal type your host and/or application software requires. If you are unsure, you might type “TERM” at a MultiValue (D3, U2, jBase, etc.) command (TCL) prompt, or type “echo \$TERM” at a Unix/Linux command prompt. The response may help you “guess” the correct terminal type. If the application screens look correct, then you probably have the correct type; otherwise, try another terminal type.

Terminal Emulation

Wyse 50: emulates a Wyse 50 terminal with “Enhanced” enabled. Wyse 50 emulation may also be used for Wyse 30, 99, 125 and 350 terminals.

Wyse 60: emulates a Wyse 60 terminal with “Enhanced” enabled. Wyse 60 emulation is similar to Wyse 50, but with non-embedded visual attributes (the visual attribute codes do not take a position on the screen). Wyse 60 emulation may also be used for Wyse 150, 160 and 320 terminals.

ADDS Viewpoint A2: emulates an ADDS Viewpoint A2 terminal. This is the original A2 terminal, with no enhancements.

ADDS Viewpoint 60: emulates an ADDS Viewpoint 60 terminal. The Viewpoint 60 is similar to the A2, but uses embedded visual attributes (the visual attribute codes take a position on the screen).

Procomm VP60: emulates an ADDS Viewpoint 60 terminal, but with non-embedded visual attributes. This emulation is similar to the Viewpoint 60 emulation provided by Procomm.

Viewpoint A2 Enhanced: emulates a Wyse 50 terminal in ADDS Viewpoint mode with “Enhanced” enabled. This is basically a hybrid

of Wyse 50 and ADDS Viewpoint A2. Viewpoint A2 Enhanced may also be used for ADDS 2020 and 4000, and NCR 2900 terminals.

VT52: emulates the DEC VT52 terminal.

VT100: emulates the DEC VT100 terminal. VT100 is a 7-bit emulation, and can also be used for applications which require VT102 terminals.

VT220: emulates the DEC VT220 terminal. The VT220 emulation provides a super-set of the VT100 commands, and includes support for a host-writable status line, protected characters, multiple character sets and multiple pages.

VT320: emulates the DEC VT320 terminal. The VT320 emulation provides a super-set of the VT220 commands, and includes support for reporting and restoring various terminal states.

VT420: emulates the DEC VT420 terminal. The VT420 emulation provides a super-set of the VT320 commands, and includes support for rectangle operations, left & right margins, and horizontal split screen.

ANSI BBS: emulates the old MS-DOS ANSI.SYS device driver. This emulation may be useful when connecting to older bulletin board systems.

Linux Console: emulates the Linux console, including function keys and colors.

SCO Console: emulates the SCO Unix console.

Pick PC Monitor: emulates the original Pick PC Monitor (“mm-mon” or “P” terminal type), including color and function keys.

Tektronix 4014: emulates the Tektronix 4010/4014 terminals. Color enhancements as implemented in the CIT467 terminal (from CIE Electronics) are included.

Tektronix 4100: partially emulates the Tektronix 41xx terminals.

TTY Emulation: emulates basic TTY functions.

Status Lines

Some of the terminals that AccuTerm can emulate display status, function key labels or host messages on the top or bottom lines of the screen. If you select a terminal emulation that supports status lines, the supported status line options will be enabled for you to select.

For Wyse and ADDS emulations, up to 3 status lines are available: a host message line at the top of the screen, and a “shifted” label line and “unshifted” label line at the bottom of the screen. For VT emulations, only a single status line is available for displaying a message from the host at the bottom of the screen. For the console emulations, the status line is not supported.

No message or status line

Select **No message or status line** if you do not want any status or message lines.

Shared message & status line

Select this option to use a single, shared line at the bottom of the screen. If the native terminal supports more than one line (Wyse and ADDS Viewpoint), the bottom row of the screen displays the most recently used line. The line is shared between label line, shifted label line and host message line.

Split message & status lines

Select this option if you want two separate status lines. The host message line is the top row of the screen display, and the label line is displayed on the bottom row. If the shifted label line is programmed, pressing the SHIFT key displays the shifted label line. Releasing the SHIFT key displays the unshifted label line.

Answerback

The contents of the Answerback field are sent to the host when AccuTerm receives a request to transmit the answerback string under Wyse and VT emulations. When the answerback message is sent to the host under Wyse emulation, an **ACK** control character follows the message. Under VT emulation, no terminator is sent.

Control characters may be entered into the answerback field by prefixing the character with a caret (^).

ANSI Options

When any ANSI terminal type (VTxxx, Linux Console or SCO Console) is selected, several additional options may also be selected.

Send 8 bit controls

When this option is selected, AccuTerm will send control characters from the C0 and C1 sets. If the option is not set, C1 controls are sent using an equivalent 7-bit escape sequence.

Allow application mode

When this option is selected (default), commands that switch the numeric keypad keys and cursor keys into “application mode” are recognized. When the option is not selected, those commands are ignored, preventing the terminal from switching to “application mode”. This option is useful when the host or application erroneously sends the command to enter application mode.

Keypad sends application codes

When this option is selected, the numeric keypad sends application codes (similar to function keys). When not selected, the numeric keypad sends numbers.

Cursor keys send application codes

When this option is selected, the cursor (arrow) keys send special application codes instead of cursor movement codes.

Backspace key sends DEL

When this option is selected, the BKSP key sends the *DEL* control code. When not selected, the BKSP key sends the *BS* control code.

Auto-print works just like VT terminal

When this option is selected, the “auto print” slave printer function works the same as a real VT terminal. That is, when AccuTerm is in “auto print” mode, the entire screen line that the cursor is on is printed when AccuTerm receives a *CR*, *LF* or *FF* control code. If this option is not checked, then text is printed as it is received from the host (similar to Wyse auto-print mode).

Screen Settings

The **Screen** tab lets you set terminal screen options like the screen size, cursor type, and history rows. You can also change the session title or icon.

Session Title

This is the text that will be displayed on the session window title bar. If the title is blank, the name of the current session configuration file is displayed. When the session is maximized, the session title becomes part of the AccuTerm main window title.

Session Icon

Each session window has an icon displayed in the window title bar (or menu bar if the window is maximized). Click the **Change...** button to select a different icon.

Screen Sizes

There are two separate screen sizes that AccuTerm supports: normal and extended. These sizes are used to emulate the 80 and 132 column modes of the Wyse and VT terminals. AccuTerm has taken the extended and normal modes one step further. With AccuTerm you can define both the normal and extended modes to be any number of columns or rows up to a maximum of 160 columns by 60 rows.

You will probably leave these settings at their default settings of 80 columns by 24 rows for normal mode and 132 columns by 24 rows in extended mode. If you have software that supports other screen sizes, you can experiment with these settings until you find a size that you like.

The number of rows may change if you change terminal emulations. The console terminal emulations use 25 rows with no status line; others use 24 rows with one or more status lines.

When AccuTerm switches between the normal and extended modes, one of two things will happen: either the characters will change size to fit the visible screen, or scroll bars will be displayed if the full screen will not fit

within the current window at the selected character size. For more information on scaleable fonts, see the section on **Fonts**.

Video Pages

Many of the terminals AccuTerm emulates support multiple addressable pages. With AccuTerm, you can have up to 25 pages. Each page requires memory, so if you don't use them, it is better to leave this number set to the default value of 1.

History Rows

AccuTerm supports a "history buffer", which saves lines which have scrolled off of the terminal screen. To use this feature, specify how many rows (up to 2500) are to be saved. When the history buffer has been enabled (by setting the number of rows), use the vertical scroll bar, mouse wheel, or keyboard commands to scan history.

You can use CTRL + SHIFT + PGUP, CTRL + SHIFT + PGDN, CTRL + SHIFT + UP, CTRL + SHIFT + DOWN, CTRL + SHIFT + HOME, and CTRL + SHIFT + END to scan the history buffer.

History Scroll Bar

When a history buffer has been enabled, the vertical scroll bar may be used to scan through the history. AccuTerm supports three scroll-bar settings.

Auto: when "Auto" (the default mode) is selected, placing the mouse near the right edge of the screen will cause the scroll bar to "slide" into place. Moving the mouse away from this area causes the scroll bar to disappear.

On: when "On" is selected, the scroll bar will always be present.

Off: when "Off" is selected the scroll bar will only be present if the window height is not large enough to display the current screen height.

Note: when Auto or Off are selected, using the keyboard commands or mouse wheel to scan history causes the scroll bar to be displayed briefly. This is so that you can see the position of the scroll button after scrolling the window.

Enable Tektronix Graphics

Checking this box enables the Tektronix 4010/4014/4100 graphic terminal emulation. If the graphics mode is enabled, AccuTerm will automatically switch to the Tektronix graphic emulation when it receives the appropriate command from the host computer. AccuTerm will return to the previous emulation mode when graphics mode is terminated.

There may be times when you want to disable the graphic emulation. If you have a bad modem connection and are getting random garbage characters on the screen, AccuTerm may accidentally switch into graphics mode. Sometimes a software program may send the graphics mode control sequence at the wrong time. If this happens, disable the graphics mode until you need it.

Enable Mouse

This option determines whether host mouse support is enabled. Under normal operation, if you click on the terminal screen with the mouse, nothing happens. If a “mouse on” command is received from the host while this option is checked, AccuTerm sends a special code informing the host of the mouse location when the button was pressed, and which mouse button was pressed. The mouse cursor is also changed to a “pointing hand” to indicate that the mouse is active.

Block Cursor

Checking this option turns the cursor into a blinking block instead of an underline.

Extended Mode

Checking this option sets the screen to extended (132 column) mode. This can be used to manually switch between extended and normal (80 column) modes.

Disable Line Wrap

When this option is checked, automatic line-wrap is disabled. When the cursor reaches the end of a line, typing another character normally causes the cursor to move to the beginning of the next line. When this option is set, the cursor does not move.

Disable Blinking

Checking this option disables the “blinking” visual attribute. Characters tagged with the blink attribute will not blink.

Disable Underline

Checking this option disables the “underline” visual attribute. Characters tagged with the underline attribute will not be underlined.

Font Settings

AccuTerm displays text received from the host computer using a fixed-pitch font (all characters are the same size). Using a fixed-pitch font is necessary because applications written to display on real terminals expect each character to be the same size in order to align columns of data on the screen.

AccuTerm supplies a custom font which is used by default. You are free to choose another fixed-pitch font if you desire, however, AccuTerm's font has been designed to scale nicely to different screen sizes.

Font

The font list shows all of the available fixed-pitch fonts installed on your computer. The first font listed is the **AccuTerm** font. This font has been optimized to look good over a wide range of character sizes and screen resolutions. We recommend that you use this font, especially if you have a low resolution screen (640 x 480).

To choose a different font, simply click on the font you want to use.

Font Size

This box lists all font sizes available for the selected font. The **Font Size** list is disabled if the **Scale Font to Fit** option is checked.

Scale Font to Fit

When this option is checked, AccuTerm automatically re-sizes the selected font so that the entire terminal screen is visible at the current window size. This allows you to re-size the session window or change between normal and extended video mode without having to deal with scroll bars to see everything. However, if for some reason, you need lock the characters at a specific size, you can un-check this setting and then pick the size you want from the **Font Size** list.

Use Bold Font Style

If this option is checked, AccuTerm uses the **Bold** font style if it's available in the selected font.

Keep Font Legible

If this option is checked, and the **Scale Font to Fit** option is checked, AccuTerm will never scale a font smaller than 6 pixels wide by 9 pixels high.

Euro character

If your host application needs to display the Euro currency symbol, enter the ASCII value of the Euro symbol, as used on your system.

Note: there is no standard value for this symbol. Some possible values are 128 (Windows ANSI), 164 (Latin-1 currency) and 213 (IBM modified code page 850).

Color Settings

Windows is capable of displaying text in a wide variety of colors. The colors are separated into character color and the background color. Most of the terminals being emulated do not support color. Instead, they have visual attributes like normal, reverse, dim, blink, underline, etc. AccuTerm allows you to map the various terminal visual attributes into a combination of character and background colors.

AccuTerm uses a palette of 16 colors. Since most systems are capable of displaying more than 16 colors, AccuTerm allows you to customize its palette by selecting a **Color Scheme** or **Visual Style**, or by clicking the **Customize Palette...** button. The palette also includes 6 colors used to draw borders when using Visual Styles.

The mapping of visual attributes to colors is displayed as a table with an entry for each possible attribute. The **Color** column shows sample text displayed in the selected character and background color along with a button to change the colors. The **Border** column shows the selected border style for the attribute. Click the **Change** button to select different character or background colors. If borders are enabled (see **Border Style** below), choose the border effect for the attribute from the drop-down list.

Color Schemes

Default Colors: resets the palette to the 16 basic Windows colors, and resets the attribute color mapping. This is often a useful starting point when defining your own color mapping.

System Colors: sets several colors in the palette to “system colors” defined in the Windows Display Properties. The following standard colors are replaced by a system color:

- Black = Window Text Color
- White = Window Background Color
- Dark Blue = Highlight Background Color
- Brown = Highlight Text Color
- Light Gray = 3D Light
- Dark Gray = 3D Shadow

Other palette colors are set the same as the default colors. Attribute color mapping is set so that Normal, Dim, Reverse and Underline use system colors from the modified palette.

Monochrome Colors: resets the palette to the 16 basic Windows colors, then sets the attribute color mapping so that character and background colors are black, white or gray. Select either dark or light background for the Normal attribute. This setting often works well with Unix and Linux utilities where a combination of visual attributes and direct colors are used.

Visual Styles

Visual Styles can be used to modernize character-based applications by displaying screen elements in a style that resembles typical Windows screens. When you select a **Visual Style**, AccuTerm resets the palette to the system colors as described above. Next, typical Windows colors are assigned to the visual attribute mappings. Then the **Border Style** setting is changed to *Thin* and a border effect is assigned to specific attributes.

When using **Visual Styles**, use the following attributes to display screen elements:

- Screen background: normal
- Field labels, headings, etc: normal
- Disabled labels: dim
- Active entry field: reverse
- Inactive entry field: dim reverse
- Highlighted field: reverse underline
- Disabled field: dim reverse underline
- Command button: underline
- Inactive button: dim underline

Classic Windows: sets the palette to the system colors, and sets the attribute color mapping as described above. Uses the *inset* border style for text fields.

Windows XP: sets the palette to the system colors, and sets the attribute color mapping as described above. Uses the *flat* border style for text fields.

If your application uses different attributes for screen elements, feel free to modify the colors and border effects to work with the attributes used by the application.

Protected Attribute

The Wyse 50 and Wyse 60 emulations require a visual attribute to be assigned as the “Protected” attribute. To select the **Protected Attribute**, click on the drop-down arrow, then select which visual attribute should be used as the default protected attribute.

Border Style

If you are using **Visual Styles** (or the AccuTerm private programming command to draw borders), you must select a border style. Choose *thin* for a one-pixel border, or *thick* for a two-pixel border. Note that the vertical lines used to draw the border sometimes overlap the left or right edge of the character; thin borders work best with smaller font sizes, but are less dramatic than thick borders.

Line Drawing

AccuTerm supports the line and box drawing characters used by the native terminals. AccuTerm supports three line drawing styles: *normal*, *flat* and *beveled*. Choose *normal* to draw lines using the current character color. Choose *flat* to draw lines using the *outer flat border* color. Choose *beveled* to draw 3D lines using the *outer highlight* and *outer shadow* colors.

Keyboard Settings

AccuTerm supports a programmable keyboard. All of the function keys and most of the keypad editing keys can be programmed.

Each terminal type has default programming for all of the keys which are native to that terminal. You do not need to program the default key codes. The default codes are displayed in gray text.

If you wish to override the default programming, or to program keys that are not native to the currently selected terminal type, you can enter your own codes here. Any key can be programmed with a character sequence (which is transmitted to the host when the key is pressed), or a script command, which is executed when the key is pressed.

The programmable keys are divided into eight categories: **Normal**, **Shifted**, **Control**, **Shift+Control**, **Alt**, **Shift+Alt**, **Keypad** and **Shifted Keypad**. The **Normal** key sequence is sent when one of the function keys is pressed by itself. The **Control** sequence is sent when a function key is pressed while holding down the CTRL key. The **Alt** sequence is sent if the ALT key is held down while pressing a function key. The **Keypad** sequence is sent when one of the editing keys is pressed. The **Shifted**, **Shift+Control**, **Shift+Alt**, and **Shifted Keypad** sequences are sent when the SHIFT key is held down in combination with any of the previous keys.

The **Keypad** and **Shifted Keypad** tabs are used for programming the special editing keys: BKSP, TAB, INS, DEL, HOME, END, PGUP, PGDN, LEFT, RIGHT, UP, and DOWN.

To reset the selected group of keys to their default values, click the **Reset all to default** button.

Key Code

To manually program function and keypad keys, first select the **Key Type** from the tabs at the top of the panel. Next, enter the desired sequence into the **Key Code** field. next to the key name. To enter control characters, hold the CTRL key and press the letter corresponding to the control character you want to program. For **CR** (enter), **DEL** (delete) and **TAB** control codes, hold the CTRL key and press the ENTER, DELETE or TAB key. For the **ESC** control code, press CTRL + [, and for the **BS** (backspace) control code, press CTRL + H.

The carat (^) and backslash (\) characters are used as special prefixes in keyboard programming. If you need to enter either of these characters, just enter two of them (^ ^ or \ \). This applies to both codes to transmit to the host and script commands.

Alternatively, use the following table to enter control codes using special prefix characters:

Key sequence	Control code	AccuTerm notation	Key sequence	Control code	AccuTerm notation
CTRL + @	NUL	^@	CTRL + P	DLE	^P
CTRL + A	SOH	^A	CTRL + Q	DC1	^Q
CTRL + B	STX	^B	CTRL + R	DC2	^R
CTRL + C	ETX	^C	CTRL + S	DC3	^S
CTRL + D	EOT	^D	CTRL + T	DC4	^T
CTRL + E	ENQ	^E	CTRL + U	NAK	^U
CTRL + F	ACK	^F	CTRL + V	SYN	^V
CTRL + G	BEL	^G	CTRL + W	ETB	^W
CTRL + H	BS	^H	CTRL + X	CAN	^X
CTRL + I	HT	^I	CTRL + Y	EM	^Y
CTRL + J	LF	^J	CTRL + Z	SUB	^Z
CTRL + K	VT	^K	CTRL + [ESC	^[
CTRL + L	FF	^L	CTRL + \	FS	^\
CTRL + M	CR	^M	CTRL +]	GS	^]
CTRL + N	SO	^N	CTRL + ^	RS	^~
CTRL + O	SI	^O	CTRL + _	US	^_
^		^^	\		\\
DELETE	DEL	^?			

To program a key with a script command, enclose any valid VBA statement in square brackets ([]). See the **Scripting** section of the **Programmers Guide** for more information on scripts.

Key Caption and Tip

When the **Function Bar** is displayed, you can enter a caption for each function key. The caption will override the default button caption in the bar for that key. Enter the caption in the **Caption | Tip** field. Strive to keep the caption text short, as the key buttons are quite small. You can also enter an optional help tip in this field. Separate the caption and tip using a vertical bar (|). When the mouse hovers over the key button in the **Function Bar**, the tip will be displayed briefly.

You can enter a tip even if you do not enter a caption or display the **Function Bar**. Just begin the **Caption | Tip** field with a vertical bar and enter the tip. This is useful for documenting the purpose of the key programming

Locking Programmed Keys

Most terminal types provide commands for the host to program the function keys. If you would like the host to be able to reset and reprogram the keys, select the **Unlocked – host can reset or reprogram key** option. If you would like the host to be able reprogram keys, but not reset them to their default values, select the **Locked – host cannot reset keys to defaults** option. If you would like to prevent the host from resetting or reprogramming key, select the **Locked – host cannot reset or reprogram keys** option.

Mapping F11 through F16

Some terminals (like Wyse 50 and 60) have more than 12 function keys on their native keyboard. Since the PC keyboard only has 12 function keys, AccuTerm allows you to map the native F11 through F16 keys to PC keyboard CTRL + F1 through CTRL + F6 (and native SHIFT + F11 to SHIFT + F16 to PC CTRL + SHIFT + F1 through CTRL + SHIFT + F6).

Start with CapsLock On

Sometimes applications are designed for upper-case text. If you would like the CapsLock key state to be "on" when the session is opened, check this option.

Copy / Paste Shortcut On

AccuTerm supports standard Copy and Paste functions using the Edit menu or the context (right-click) popup menu. You can also choose shortcut keys for these functions: CTRL + INS / SHIFT + INS or CTRL + C / CTRL + V. However, if you select the shortcut you will no longer be able to use the normal function of the shortcut keys. For example, if you select CTRL + C / CTRL + V for your Copy / Paste shortcut, you will not be able to send the CTRL + C control character anymore.

Printer Settings

AccuTerm 2K2 uses the printer in two ways: First, AccuTerm can print the contents of the terminal screen by using **File Print Screen** menu command (or toolbar button), the ALT + G keyboard command, or by receipt of the appropriate command from the host computer.

The other way AccuTerm uses the printer is to emulate a “slave” printer attached to a terminal’s Aux (printer) port. This mode is enabled by using the **File Printer On** menu command, the ALT + P keyboard command, or by receipt of the *Printer On* command from the host. The state of the “slave printer” is indicated on the status bar (*Idle*, *Off* or *On*).

When AccuTerm receives a *Printer On* command from the host (or by using the **File Printer On** menu command or ALT + P keyboard command), the printer status shown in the status bar is changed to *On*. When the *Printer Off* command is received, the status changes to *Off*. If another *Printer On* command is not received before the number of seconds specified in **Printer Close Timeout**, the print job is closed, and the status changes to *Idle*.

AccuTerm can print in two modes: *text* and *graphics*. *Text* is the mode used by “real” terminals. This mode is different from normal Windows printing in that the Windows printer driver is not used. For screen printing, text mode sends the screen text to the printer. For slave printing, AccuTerm passes raw data, including control characters and escape sequences from the host directly to the printer (or spooler). In text mode, the host computer is responsible for setting printer font sizes and page orientation by sending the appropriate printer commands.

In *graphics* mode, AccuTerm prints an image of the screen on the printer, using the Windows printer driver. When the screen is printed in graphics mode, the printed image includes text, line drawing characters, and may optionally include the screen background and colors. For slave printing, AccuTerm understands **CR** (carriage return), **LF** (line feed) and **FF** (form feed) control characters, but other control characters and escape sequences are ignored. You can select the font, paper size and page orientation used

for graphics mode slave printing by clicking the **Page Setup** button in the printer settings tab.

Printer Selection

By default, AccuTerm uses the system default printer (the **Use Windows Default Printer** option selected). If you want to select a different printer, select the **Use Specific Printer** option, then select a printer from the drop-down list. If you want to disable printing from AccuTerm, select the **Disable printing** option.

Screen Print Settings

AccuTerm can print the screen in **Text** or **Graphics** modes. In **Text** mode, only the text characters currently displayed on the screen are printed. In **Text** mode, you can elect to **eject** the page from the printer before the printout, after the printout or both.

In **Graphics** mode, an “image” of the current screen is printed, including special symbols like line drawing characters. You can elect to print the **background** (shading and highlighting) or print the screen in **color** if you have a color printer.

Slave Printer Settings

AccuTerm can print to the slave printer in either **Text** or **Graphics** mode. In **Text** mode, you can **eject** the page from the printer before the printout, after the printout or both. In **Graphics** mode, you can select the font, page orientation, paper size and paper source by clicking the **Page Setup** button.

Printer Close Timeout

Enter the number of seconds to wait after receiving a *Printer Off* command before closing the print job. Usually, when the host computer needs to print a report, it usually sends a *Printer On* command, sends the printer data and then sends a *Printer Off* command. But some host programs send a *Printer On* command, send some data to the printer, send a *Printer Off* command, and send some other data to the screen, and then send another *Printer On* command, and send more data to the printer, etc. Because of this, AccuTerm has no way of knowing when the host is finished sending the print job. The only way it can determine this is to wait for a set amount of time after the *Printer Off* command before closing the job. If this field is

set to the default of 5 seconds, AccuTerm waits 5 seconds after the *Printer Off* command has been received before closing the print job.

This causes a delay when printing under AccuTerm. If all your host programs always turn the aux port on, send all the data and then turn it off, you can reduce this number to 1 or 0. If you have programs that are constantly turning the aux port on and off, you may need to adjust this number until things work correctly.

File Transfer Settings

AccuTerm supports several file transfer protocols. The **File Transfer** tab allows you to adjust some of the parameters used control the various protocols, select default operating modes and specify default directories. There are sections for ASCII options, X/Y/Zmodem options, Kermit options, as well as options for default modes and directories. The default values for most of these options should not be changed without an understanding of the protocol and the companion file transfer program on the host computer.

ASCII Settings

When transferring a file from your computer to the host computer (upload) using the ASCII protocol, the each line may be terminated with a **CR**, **LF** or **CR LF** combination. Select the appropriate end of line for the host computer by checking the appropriate button.

ASCII is a “blind” protocol. The receiving computer cannot inform the sending computer when it is safe to transmit data. In order to perform reliable ASCII uploads, you may need to specify an appropriate **Interline delay** time. After each line is sent to the receiving computer, AccuTerm will wait for the specified time before sending the next line. Specify this value in milliseconds.

*Note: the **Interline delay** setting also applies to the **Edit Paste** and **Edit Paste From** commands.*

Timeout Settings

When using any of the X/Y/Zmodem protocols, you can specify the number of seconds before a timeout occurs. If the other machine fails to respond within the number of seconds specified here, the protocol will attempt to resend the previously sent message.

Kermit Settings

The Kermit file transfer protocol is popular with minicomputer and mainframe systems. There have been many revisions of this protocol, and it may be necessary occasionally to modify some of these settings to communicate with another Kermit program.

Kermit settings: Defaults

These default options may be set (checked) or reset (un-checked) as desired. When AccuTerm Kermit is negotiating with the other Kermit program, any of the checked options will be requested, and if the other Kermit is capable, the option will be used.

Quote eighth bit: select this option when the communications path only supports 7 data bits, or when the other machine is not capable of processing eight bit data.

Compress data: selecting this option causes Kermit to perform rudimentary data compression. Not all Kermit programs perform data compression.

CRC block check: select this option to use CRC error detection instead of the standard simple checksum error check. This results in more reliable transfers, especially over noisy phone lines. Not all Kermit programs perform CRC error checking.

Default Mode

Select **Text** or **Binary** as the default transfer mode (used only for Kermit and Zmodem protocols). When you select Upload or Download from the main menu or toolbar, the default mode will be selected. Also, select whether to overwrite existing files when downloading. You also can change any of these options in the Upload or Download dialog before performing the transfer.

Default Upload/Download Directory

Enter the drive and directory where you want received files to be stored by default. You can change this directory in the Download dialog before performing the transfer. If you set the **Automatic Zmodem download** option, then this is the directory where the received files are stored.

Automatic Zmodem Download

If this option is set, then AccuTerm will automatically begin receiving files using the Zmodem protocol when the other machine begins sending files using the Zmodem protocol. The files are saved in the **Default Upload/Download directory**.

Miscellaneous Settings

The Miscellaneous Settings tab is used for setting various options, such as how paste operations are handled and the sound of the terminal bell.

Paste Options: line end

When the clipboard is “pasted” to an AccuTerm session, AccuTerm transmits the clipboard text to the host computer. The **line end** options specify what is transmitted at the end of a line of text. Options include **CR** (default), **LF**, **CF+LF**, **TAB**, none or a user-defined character. To specify a user-defined character, select the **User defined** option and enter the ASCII code of the character to be transmitted at the end of each line.

Paste Options: do not send line end after last line

If you want to suppress the final end-of-line (or only end-of-line if only a single line is in the clipboard), select this option.

Paste Options: paste end

After pasting the clipboard to an AccuTerm session, AccuTerm can transmit an optional **paste end** character. Normally, AccuTerm does not transmit any character at this time, but you can select **EOF** (which is the **SUB** or CTRL + Z control code), or a user-defined character. To specify a user-defined character, select the **User defined** option and enter the ASCII code of the character to be transmitted at the end of a paste operation.

Terminal Bell Sound

The sound generated by AccuTerm upon receipt of the ASCII **BEL** control code can be customized. The **default sound** depends upon whether a sound card is installed or not. If a sound card is not installed, a “beep” is produced; otherwise the sound defined by the Control Panel “Sounds” applet as the “Default Beep” is played.

Other options which may be selected are: **play wave file**, **system event**, **beep** or **silent**. To play a wave file, select this option and enter the full path for the wave file to be played. To use a sound associated with a system event, select the event from the dropdown list. System events are associated

with wave files in the Control Panel “Sounds” applet. To use a true beep, enter the frequency of the beep in Hz, and the duration in milliseconds. The default is 400Hz for 500ms. The frequency must be between 200Hz and 4000Hz. The duration must be between 100ms and 5000ms.

Advanced (Custom Features)

Click the **Advanced** button to show any custom features that can be selected. See the **Programmers Guide** for more information on the custom features of AccuTerm 2K2.

AUTO DIALER

The AccuTerm Auto Dialer gives you an easy way to store and dial phone numbers. The **Phone directory** list contains all the phone numbers in the current directory file. You can have as many phone numbers in a directory file as you want. You can also have any number of directory files. The default directory file name is set in the **General** tab of the **Settings** dialog box (**T**ools **S**ettings menu).

To access the Auto Dialer, select the **T**ools **D**ialer menu item or click the



button on the toolbar.

Note: the Auto Dialer is only available if the current session is configured to use a Modem for its connection.

Dialing

Using the Auto Dialer is very simple. To dial a number, double click an entry in the phone directory, or highlight the desired number in the phone directory list then click the **D**ial button.

If you want to dial a number which is not in the directory, simply enter the desired phone number in the **N**umber field, then click **D**ial.

Hanging Up

To terminate a connection, click the **H**ang **U**p button.

Adding a new entry

To add a new entry to the directory, click on the **N**ew button. Enter a phone number and optional description, then click the **A**dd button.

Deleting an entry

To delete the selected entry, click the **D**etele button.

Modifying an entry

To change an existing description or number, select the entry you want to change, modify the description or number and click the **Edit** button.

Creating a new directory file

To create a new phone directory file, click the **Change Directory** button. From the **Open Phone Directory File** dialog, select the drive and directory for the new phone directory file, and enter the new phone directory file name. Click **OK** to create the new phone directory file.

Changing directory files

To select a different phone directory file, click the **Change Directory** button, then select the new phone directory file. Click **OK**.



Changing dialing options



To change the dialing options such as your current location, area code, dialing prefix, credit card information, etc., click the **Dialing Options** button.

Directory file format

Phone directory entries are stored in a standard tab delimited ASCII text file with a file extension of *.dat*. The name is the first field and the phone number is the second field. Each entry has its own line. Many applications have the ability to export data to ASCII files so it may be possible to use your existing phone directories from other applications with the Auto Dialer.

FILE TRANSFER

AccuTerm has the ability to transfer files between your computer and a remote machine using one of the five built in file transfer protocols: ASCII, Kermit, Xmodem, Ymodem and Zmodem. The standard (non-MultiValue) file transfer functions are accessed from the **T**ools menu by selecting the **U**pload or **D**ownload items or by clicking on the  or  buttons on the toolbar, then selecting **Manual Download** from the selection panel.

For MultiValue users, AccuTerm 2K2 includes a **File Transfer Wizard** that simplifies the file transfer process by asking a series of simple questions and letting you click, enter or browse for the answers. To start the **File Transfer Wizard**, select **U**pload or **D**ownload from the **T**ools menu or by click on the  or  buttons on the toolbar, then select **Upload Wizard** (or **Download Wizard**) from the selection panel. In order to use the File Transfer Wizard, the AccuTerm 2K2 host programs must be installed on your MultiValue host system.

AccuTerm also includes command-line style file transfer utilities for MultiValue systems. These utilities are installed along with the host programs. For users of MultiValue based systems, using the **File Transfer Wizard** or the command-line utilities is the recommended method of exchanging data between your PC and the host computer.

Installing the MultiValue Host Programs

The AccuTerm host programs for MultiValue systems are written entirely in BASIC. AccuSoft recommends that the host programs be installed into a dedicated account (usually the ACCUTERM account) on your host system. Once installed, the programs can be shared with other accounts on the system. To install the host programs on your MultiValue system, perform the following steps:

- 1) Open a terminal session and connect to your MultiValue host system. Log on to the ACCUTERM account, or another account where you want to install the AccuTerm host programs..Check the following items before beginning the installation:
 - a) Make sure you are at a command prompt (TCL, ECL, etc.)
 - b) If your system has a “case inversion” feature, disable it. For uniVerse systems, type `PTERM CASE NOI NVERT` at the command prompt.
 - c) If your system blocks control characters, disable the blocking. For D3, R91 and Power 95 systems, type `CONTROL-CHARS ON` at the command prompt.
 - d) If your system is running on a Unix host, make sure that the `CTRL + A` control character can be input. Check by typing `stty -a` at a Unix prompt – look for `^A` - if you find it, either disable that function or map it to a different control character. For example if you see something like `susp = ^A` you can type `stty susp \^-` to disable the suspend function.
 - e) Enable type-ahead. Most systems have type-ahead enabled all the time, however you might need to enable type-ahead on a per-port basis on McDonnell Douglas systems (`TYPEAHEAD-ON` at TCL).
 - f) If you are installing on a jBase system, be sure you have an MD file, and that your terminal type is set correctly before installing the host programs.
 - g) Check the **Paste Options – Line End** setting in the **Settings** dialog, **Misc** tab and ensure that the “**CR**” option is selected.

- 2) Create the AccuTerm host program file:

For D3, R83, Advanced Pick, ADDS, G/A, mvBase, mvEnterprise, McDonnell Douglas, Ultimate, Altos and other native Pick platforms:

```
CREATE-FILE FTBP 1, 1 3, 1
```

For jBase platforms:

```
CREATE-FILE FTBP 1 3
```

For uniVerse platforms (IDEAL flavor accounts):

```
CREATE-FILE FTBP 1 3
```

For uniVerse platforms (non-IDEAL flavor accounts):

```
CREATE-FILE FTBP 1 1, 1, 1
```

For UniData platforms:

```
CREATE-FILE DIR FTBP 3
```

- 3) If you want to install AccuTerm **ObjectBridge**, create the **ObjectBridge** host program file. Use the syntax from step 2, but use OBJBP as the file name. **ObjectBridge** is a technology that extends Windows' OLE/Automation to MultiValue systems, allowing MultiValue developers to access many Windows applications.

- 4) If you want to install the **AccuTerm GUI** environment, create the GUI host program file. Use the syntax from step 2, but use GUI BP as the file name. **AccuTerm GUI** is a development and runtime environment which provides GUI front-end support for MultiValue applications.

AccuTerm GUI also includes some sample applications and data files. If you want to install these samples, please create the sample application file (we recommend GUI APPS as the file name) and sample data files (CUST. SAMPLE, PROD. SAMPLE and I NV. SAMPLE)

These files can be created with a modulo of 1 for all platforms:

```
CREATE-FILE filename 1 1
```

- 5) While at the command prompt (TCL, ECL, etc.), click on the **Edit** menu and select **Paste From**.
- 6) Browse to the **PickBP** folder.
- 7) Click on the install script for your platform (please see the *readme.txt* file in the PickBP folder for the latest platform list):

FTPINST.TXT	generic MultiValue system
FTPINSADDS.TXT	Mentor, Mentor Pro, MOE
FTPINSAP.TXT	Advanced Pick
FTPINSAP_AIX.TXT	Advanced Pick on AIX
FTPINSAP_PRO.TXT	Advanced Pick / Pro
FTPINS3.TXT	D3 (NT, Linux, Unix except AIX)
FTPINS3_AIX.TXT	D3 on AIX
FTPINSENH.TXT	Enhanced R83 (Altos, Fujitsu, R91, etc.)
FTPINSJB.TXT	jBase
FTPINSJB_AIX.TXT	jBase on AIX
FTPINSMD.TXT	McDonnell Douglas, RealityX
FTPINSMV.TXT	mvBase

FTPINSNR.TXT	Northgate Reality 9+
FTPINSPWR95.TXT	Power 95
FTPINSQM.TXT	QM MV Database
FTPINSR83.TXT	Pick R83
FTPINSSEQ.TXT	Sequoia, mvEnterprise (except Ultimate emulation)
FTPINSSEQ_AIX.TXT	Sequoia, mvEnterprise on AIX
FTPINSUD.TXT	UniData
FTPINSUD_AIX.TXT	UniData on AIX
FTPINSULT.TXT	Ultimate Plus (all except SCO Unix and AIX)
FTPINSULT_AIX.TXT	Ultimate Plus on AIX
FTPINSULT_SCO.TXT	Ultimate Plus on SCO Unix
FTPINSULTX.TXT	Early Ultimate (as implemented on mvEnterprise)
FTPINSULTX_AIX.TXT	Early Ultimate (as implemented on mvEnterprise) on AIX
FTPINSUV.TXT	UniVerse
FTPINSUV_AIX.TXT	UniVerse on AIX
FTPINSVIS.TXT	UniVision

- 8) Click the **Open** button. AccuTerm will install a small PROC and program which will be used to install the host programs.
- 9) You should again be at a command prompt. If you are not, press ENTER once or twice to get to a command prompt.
- 10) At the command prompt, type FTPINST and press ENTER. You will be prompted for the path of the host programs. Press ENTER.. The transfer of the host programs will commence.
- 11) When uploading of the host programs is complete, the programs will automatically be compiled and cataloged.
- 12) If you want to load ObjectBridge, answer Y to the ObjectBridge prompt. You will be prompted for several file names and paths.

The default value for these prompts is shown in parentheses. If the default value is correct (it should be), just press ENTER. When prompted to load the sample programs, answer Y if you would like the samples loaded.

- 13) If you want to install the GUI environment, answer Y to the GUI prompt. You will be prompted for several file names and paths. The default value for these prompts is shown in parentheses. If the default value is correct (it should be), just press ENTER. When prompted to load the sample applications and data, answer Y if you would like the samples loaded.
- 14) If you have previously installed the ViaDuct host programs, the ViaDuct FT proc conflicts with AccuTerm's FT program. If this conflict is detected, the AccuTerm installer will prompt if you want to rename the ViaDuct FT command as "FT.VIA". Answer "Y" to rename.

Activating Other Accounts to use the Host Programs

After installing the host programs on one account on your host system (usually the ACCUTERM account), you can easily activate these programs on other accounts. To activate the programs on another account, perform the following steps:

- 1) Log on to the ACCUTERM account (or other account where you have installed the host programs).
- 2) At TCL, type FTSETUP. The FTSETUP program will display a menu. Enter 1 (Account Setup) and press ENTER.
- 3) When prompted for the account name to activate, type the name and press ENTER.
- 4) Type X and press ENTER to quit the FTSETUP program.

MultiValue File Transfer



To make the most effective use of AccuTerm with your MultiValue host system, you should install the AccuTerm host programs. These programs implement the Kermit and ASCII file transfer protocols, coordinate the transfer of data between your computer and the host, import and export data in a variety of formats, provide a simple host-to-host transfer facility, and enable the use of the wED program and text editor.

In order to understand how to best use AccuTerm's MultiValue file transfer features, the differences between the PC and MultiValue file systems must be examined. Traditional PC files may be programs, documents or data files; in the typical MultiValue system, programs and documents are stored as individual items (records) in a file, whereas a data file is collection of related items (records) in a file, with an associated file dictionary.

When exchanging data between your computer and your MultiValue host, it is important to realize the difference between "document files" and "data files".

Although AccuTerm supports both Kermit and ASCII protocols, Kermit is the recommended file transfer protocol because of the automatic error detection and correction. Also, even with the increased overhead ensuing from Kermit, because the sender and receiver are synchronized and no time delays are required, the Kermit protocol usually performs better than the ASCII protocol when receiving a file.

File Transfer Wizard

After installing the AccuTerm host programs, you can use the **File Transfer Wizard** to exchange data between your MultiValue host and your PC. To start the **File Transfer Wizard**, select **Upload** or **Download** from the **Tools** menu or by click on the  or  buttons on the toolbar,

then select **Upload Wizard** (or **Download Wizard**) from the selection panel. You can also start the wizard by using the FTWIZ verb at TCL.

The **File Transfer Wizard** will guide you through the download or upload process by displaying a series of small panels, with simple questions on each. Simply fill in the answers or click on the desired options. When you get to the last step, you can click the Run Job button to execute the transfer. You can also save the job to a file on your host or to local file on your PC. This way, you can reuse the same job over and over, and can even automate a transfer by using the FTWIZ verb with a saved job:

```
FTWIZ filename jobname (R
```

While using the wizard, you can use the **Next** and **Back** buttons to move between steps. Online help is available for each step in the wizard; just click the **Help** button.

Command-Line File Transfer Utilities

When transferring “document files” between the PC and MultiValue host, use AccuTerm’s **FT** utility. This utility transfers MultiValue *items* to PC *files* and vice versa. The key concept is that each MultiValue *item* becomes a separate *file* on the PC.

When transferring “data files” between your PC and your MultiValue host, use the **FTD** utility. This utility transfers a set of MultiValue *items* to a single PC *file* and vice versa. The key concept is that a *set of items* on the host becomes a *single file* on the PC.

You can also use AccuTerm to transfer data between two MultiValue hosts. The **FTPICK** utility is used to transfer data from one MultiValue machine to another, either directly (using two concurrent AccuTerm sessions), or using an intermediate PC file.

Downloading Documents to Your PC

Use the **FT** utility to send items (documents) from your MultiValue host to your PC. **FT** downloads each item (document) into a separate PC file. Normally, **FT** uses *text* mode, converting attribute marks to **CRLF** during the download process.

To download using **FT**, enter FT at the command prompt. When prompted:

```
(S)end, (R)eceive, (C)onfigure, (O)ptions,  
(H)elp or (E)xit ?
```

Answer S to send, then select the file transfer protocol:

```
File transfer protocol: (A)SCII or (K)ermit ?
```

Kermit is recommended.

```
Enter source (Pick) file name:
```

Enter the name of the host file which contains the items to be sent.

Enter source (Pick) item list:

Enter the item-IDs to be sent. If you do not enter item-IDs, any previously selected (SELECT, GET-LIST, etc.) items will be transferred; if you enter an asterisk (*), all items in the file will be transferred. To specify a saved list, enter an open parenthesis followed by the list name. Separate item-IDs with blanks.

Enter target (DOS) directory name:

Enter the PC directory name including drive letter if desired. Separate directory names in a full path using back-slashes. UNC-style file names are acceptable.

Enter target (DOS) file name:

Enter the PC file name, including extension. If multiple items are being sent, multiple file names may be specified here. Each host item will be written to a separate PC file. If no file names are specified here, the item-ID will be used as the PC file name.

When the transfer is complete, you may see a message like:

Converting file to ANSI character set ...

This indicates that the raw data has been downloaded and is being converted from the OEM character set to the ANSI (Windows native) character set.

Uploading Documents From Your PC to the Host

Use the **FT** utility to send PC files to your MultiValue host. Each PC file uploaded is saved as an *item* in the host file you specify.

To upload using **FT**, enter FT at the command prompt and follow the prompts.

```
(S)end, (R)eceive, (C)onfigure, (O)ptions,  
(H)elp or (E)xit ?
```

Answer R to receive, then select the file transfer protocol:

```
File transfer protocol: (A)SCII or (K)ermit ?
```

Kermit is recommended.

```
Enter source (DOS) directory name:
```

Enter the name of the PC directory which contains the files to be uploaded.

```
Enter source (DOS) file name:
```

Enter the name(s) of the PC file(s) to be received. Separate multiple file names with blanks. Wildcard characters (? and *) are valid.

```
Enter target (Pick) file name:
```

Enter the host file name where the uploaded files are to be saved. Each uploaded file is stored as an *item* in this file.

```
Enter target (Pick) item list:
```

Enter the item-ID(s) for the uploaded file(s). If multiple files are being uploaded, multiple item-IDs may be specified here. If no item-IDs are specified here, the PC file name will be used as the item-ID.

Before the transfer begins, you may see a message like:

```
Converting file to OEM character set ...
```

This indicates that the PC file, which uses the ANSI (Windows native) character set is being translated into the OEM character set prior to transfer to your host computer.

FT Options and Settings

Several configuration (permanent) and option (temporary) settings are available for the **FT** utility. The permanent configuration settings are used as the default values for the temporary option settings.

FT Configuration Settings

To change configuration (permanent) settings, enter C in response to the first prompt. A list of configuration settings will be displayed:

```
Current parameter settings are:
  1. Transfer mode           Text
  2. Preserve file extension Yes
  3. Overwrite existing item Yes
  4. Large item treatment   Truncate
  5. Convert OEM char set to ANSI No
```

Enter parameter number (1-5) to modify:

The setting for any of these items may be changed by entering the item number and pressing ENTER..

Transfer Mode

Possible transfer modes are *text* and *binary*. Text causes attribute mark characters to be translated to carriage return / line feeds and vice versa.

Preserve File Extension

When the Preserve File Extension option is enabled, DOS files that are uploaded retain their extension. That is, if you upload a file called REPORT.TXT, the item ID used to store the uploaded file is REPORT.TXT. If this option is not enabled, the item ID used would simply be REPORT.

Overwrite Existing Item

When the Overwrite Existing Item option is enabled, any existing file (download) or item (upload) will be overwritten with the new data. If the option is disabled, existing items are not overwritten.

Large Item Treatment

Large Item Treatment may be set to truncate items at about 30000 bytes, split large items into multiple items of about 30000 bytes each, or no action (for those systems with no item size limitation). Split items use a special

item-id generated by concatenating the original item-id, an underscore (_), and a sequential number starting with 001.

Convert OEM Char Set

If you enable OEM/ANSI character set conversion, the file you upload or download is a temporary file. The actual file is converted before uploading and after downloading. You should not enable this option unless you use international characters on your MultiValue host, and those characters are stored using the OEM character set (the set used by ADDS Viewpoint, Wyse, ANSI BBS and PC Monitor emulations).

FT Option Settings

To change option settings, enter 0 in response to the first prompt. A list of option settings will be displayed. Note that the default value of the options is obtained from the configuration settings:

```
Current parameter settings are:
  1. Transfer mode           Text
  2. Preserve file extension Yes
  3. Overwrite existing item Yes
```

The setting for any of these items may be changed by entering the item number and pressing ENTER..

An alternate way to set the value of an option setting is to answer the prompt with the item number, an equal sign, and the first letter of the value to which the parameter is to be set. For example, to set the Transfer Mode to "binary", respond to "Enter parameter..." with 1=B. This alternate method is useful in cases where the FT utility is being "driven" by a PROC or by another program using the EXECUTE statement.

The meanings of these option settings are the same as the configuration settings described previously.

Downloading Data Files to Your PC (Export)

Use the **FTD** utility to download a set of specified (or selected) items from your host database to a PC file. You can specify which fields (attributes) to download. The target PC file format is determined by the file name you specify.

To export data from the host using **FTD**, enter FTD at the command prompt, then answer the prompts. On-line help is provided for each prompt, just enter a question mark and press ENTER.

```
(S)end, (R)eceive, (C)onfigure, (O)ptions,  
(H)elp or (E)xit ?
```

Answer S to send, then select the file transfer protocol:

```
File transfer protocol: (A)SCII or (K)ermit ?
```

Kermit is recommended.

```
Enter source (Pick) file name:
```

Enter the name of the host file which contains the data to be exported.

```
Enter source (Pick) item list:
```

Enter the item-IDs of the items (records) you want to export. If you do not enter any item-IDs, any previously selected (SELECT, GET-LIST, etc.) items will be exported; if you enter an asterisk (*), all items in the file will be exported. To specify a saved list, enter an open parenthesis followed by the list name. Separate item-IDs with blanks.

```
Enter target (DOS) file (path) name:
```

Enter the full PC file name including drive letter and directory, if desired. Separate directory names in the path using back-slashes. UNC-style file names are acceptable.

For certain file types (Excel, Access, etc.), you may need to append a modifier after the file name; see the discussion of file types at the end of this section for details.

```
Attributes to transfer:
```

Enter the list of fields, or attributes, to be exported. Enter either the attribute number or attribute name as defined in the file dictionary. An asterisk (*) may be entered here to export all attributes (including the Item-ID), from all selected items. A plus-sign (+) may be entered to export all attributes *except* the Item-ID.

Generate Header Record (<Y>/N):

Answer Y if you want the first record in the PC file to be a “header record”. The header record specifies the names of the fields of each data record in the file and may be used as column or field identifiers by certain Windows applications. If an asterisk was entered for the attribute list, the header record will contain only an asterisk.

If asterisk was not entered for the attribute list,

Explode MultiValue Fields (Y/<N>):

Answer Y to explode all multi-valued fields. When multi-valued fields are exploded, a separate data record will be created for each multi-value, with any single-valued fields repeated for each multi-value. When multi-valued fields are not exploded, the value-mark characters remain in the data and appear as an accented ý.

When the transfer is complete, you may see a message like:

Converting file to Excel file format ...

This indicates that the raw data has been downloaded and is being formatted in the native file format indicated by the file name you entered.

Uploading Data Files From Your PC to the Host (Import)

Use the **FTD** utility to import data from a file on your PC to your MultiValue database. The PC file being imported should be a “database” such as a spreadsheet, delimited text file, html table, Access database or other database format recognized by AccuTerm.

To import data using **FTD**, enter FTD at the command prompt and follow the prompts.

```
(S)end, (R)eceive, (C)onfigure, (O)ptions,  
(H)elp or (E)xit ?
```

Answer R to receive, then select the file transfer protocol:

```
File transfer protocol: (A)SCII or (K)ermit ?
```

Kermit is recommended.

```
Enter source (DOS) file (path) name:
```

Enter the full PC file name including drive letter and directory, if desired. Separate directory names in the path using back-slashes. UNC-style file names are acceptable.

For certain file types, you may need to append a modifier after the file name; see the discussion of file types at the end of this section for details.

```
Use Header Record (<Y>/N):
```

Answer Y if you want to use the first record in the PC file as a “header record”. The header record specifies the names (or numbers) of the attributes to be imported. If the header record consists of a single asterisk, all fields (attributes) in each record are imported. If you answer Y to this prompt, the next prompt will be “Enter target (Pick) file name”; other prompts will be bypassed.

```
Attributes to transfer:
```

Enter the list of attributes (fields) to be imported. Enter either the attribute number or attribute name as defined in the file dictionary. An asterisk may be entered here to import all attributes (entire record or item). The attributes must be listed in the order that the fields appear in the source database or file. If you do not want to import a particular field, you can

enter a dash (-) instead of an attribute name to skip that field. Attribute definitions containing A or F correlatives cannot be specified.

Number of header records to skip:

Enter the number of records at the beginning of the PC file which are to be considered "header records", which should to be ignored when importing the file.

Automatically generate target (Pick) IDs
(Y/<N>):

Answer Y to generate item-IDs for each record. If the item-ID is not specified in response to the "Attributes to transfer" prompt, you must generate item-IDs. The generated item-ID consists of a constant (possibly null) prefix, followed by a sequential number. If item-IDs are not generated, the next two prompts will be skipped.

Auto ID Prefix:

Enter the constant item-ID prefix. Null is acceptable if the generated item-ID is simply a sequential number.

Auto ID Starting Number:

Enter the starting value for automatically generated item-IDs.

Enter target (Pick) file name:

Enter the name of the host file where the imported data is to be stored.

Before the transfer begins, you may see a message like:

Converting file from Excel format for upload

This indicates that the PC file data is being converted into a delimited ASCII format which can be imported to your MultiValue database prior to transfer to your host computer.

File Types for Import and Export

The default file format used by the **FTD** utility is ASCII delimited text. In this format, records in the PC file are separated by a carriage return / line feed and fields are separated by tabs or commas. If the field delimiter is a comma, then each field is enclosed in quotation marks. Embedded quotation marks are duplicated. This file format is easily imported by many Windows database and spreadsheet programs.

Certain file extensions are recognized by AccuTerm and are assumed to be a particular format. These extensions are:

.db2	dBase II
.dbf	dBase III/IV
.htm, .html	HTML table
.mdb	Microsoft Access database
.sym	Lotus Symphony
.wb1	Quattro
.wk1	Lotus v1-v2
.wks	Lotus v3-v5
.xl, .xls	Microsoft Excel

Import and Export from Excel

When accessing Excel workbook files, the **FTD** utility has the ability to reference explicit worksheets and ranges of cells. To use this feature, specify the Excel file name as:

```
d:\path\file.xls!sheet!range
```

where `d:\path\file.xls` is the path of the Excel file, `sheet` is the worksheet name or tab number (`sheet` may be null to use the first worksheet in the workbook), `range` is the range of cells to access. Either a named range may be used or a cell location (e.g. A4) or cell range (e.g. B3:F42) may be specified.

When exporting data to Excel, the range identifies the upper-left cell of the target worksheet; the number of columns and rows is determined by the data being sent.

When importing data from Excel, the range specifies the entire block of data to be imported. To specify only the upper-left corner of the block (the

number of columns and rows determined by the extent of the worksheet), follow the cell with a trailing colon (e.g. B3:).

When downloading to an Excel worksheet, the setting of the Overwrite option changes how AccuTerm stores the data.

No Overwrite: if the Excel file exists, and no worksheet has been specified, the transfer is aborted with an error. If a worksheet has been specified, and the worksheet exists, the transfer aborts. If the file does not exist, or if it exists but a new worksheet is specified, the transfer proceeds.

Overwrite: if both a worksheet and range are specified, cells in specified range are overwritten with new data. If only a worksheet is specified, the entire worksheet is replaced with new data. If only a range is specified, the cells in the specified range in the first worksheet are overwritten with new data. Otherwise, a new file or worksheet is created.

Merge: if the Excel file exists, and no worksheet is specified, a new worksheet is created. If a worksheet is specified, but a range is not, new cells are added to the end of the specified worksheet. If both worksheet and range are specified, new data replaces the specified range.

Import and Export from Microsoft Access

When accessing Microsoft Access tables, you must specify the table name in addition to the database file name. You may also need to specify a connection string with your password to access the desired data source. To specify these items, enter the Access database file name as:

```
d:\path\file.mdb!table!connection
```

where `d:\path\file.mdb` is the path of the Access database file, `table` is the table name in the database, `connection` is an optional string that may be necessary to connect to some data sources.

When downloading to an Access database, the setting of the Overwrite option changes how AccuTerm stores the data.

No Overwrite: if the Access database file exists, and the specified table exists, the transfer is aborted with an error. Otherwise the table is created in the specified file.

Overwrite: if the specified table exists in the database file, the table is cleared and new records are added to the table. If the table does not exist, it is created.

Merge: if the specified table exists, new records are added to the table. Otherwise a new table is created.

FTD Options and Settings

Several configuration (permanent) and option (temporary) settings are available for the **FTD** utility. The permanent configuration settings are used as the default values for the temporary option settings.

FTD Configuration Settings

To change configuration (permanent) settings, enter C in response to the first prompt. A list of configuration settings will be displayed:

```
Current parameter settings are:
  1. Preserve file extension      Yes
  2. Overwrite existing item     No
  3. Large item treatment        No action
  4. Field delimiter             Tab
  5. Convert OEM char set to ANSI No
```

Enter parameter number (1-5) to modify:

The setting for any of these items may be changed by entering the item number and pressing ENTER..

Preserve File Extension

This item is not used by the FTD utility.

Overwrite Existing Item

This option can be used to protect existing files and items from being overwritten. Select "Yes" to allow existing DOS files to be overwritten during downloads (host to PC), or existing items to be overwritten during uploads (PC to host). Select "No" to protect existing files (downloads) or items (uploads). Set to "Merge" to append or merge data into existing files during downloads.

Large Item Treatment

This item is not used by the FTD utility.

Field Delimiter

The field delimiter (PC file) may be set to either “Tab” or “Comma”. When you select “Comma” as the delimiter, AccuTerm encloses each field in quotation marks.

Convert OEM Char Set

If you enable OEM/ANSI character set conversion, the data is converted to the OEM character set before upload, and to the ANSI set after download. You should not enable this option unless you use international characters on your MultiValue host, and those characters are stored using the OEM character set (the set used by ADDS Viewpoint, Wyse, ANSI BBS and PC Monitor emulations).

FTD Option Settings

To change option settings, enter 0 in response to the first prompt. A list of option settings will be displayed. Note that the default value of the options is obtained from the configuration settings:

```
Current parameter settings are:
    1. Preserve file extension      Yes
    2. Overwrite existing item     No
    3. Field delimiter             Tab
```

The setting for any of these items may be changed by entering the item number and pressing ENTER..

An alternate way to set the value of an option setting is to answer the prompt with the item number, an equal sign, and the first letter of the value to which the parameter is to be set. For example, to set the Field Delimiter to “Tab”, respond to “Enter parameter...” with 3=T. This alternate method is useful in cases where the **FTD** utility is being “driven” by a PROC or by another program using the EXECUTE statement.

The meanings of these option settings are the same as the configuration settings described previously.

Transferring Data Between MultiValue Hosts

The **FTPICK** utility will transfer specified (or selected) items from one MultiValue computer to another. This transfer can be done in one step if you have two AccuTerm sessions open, connected to each of the MultiValue host computers. AccuTerm will also let you transfer data from one host to another using an intermediate file stored on your PC. This transfer requires two steps: transfer from first host to intermediate PC file, then transfer from the intermediate file to the other host.

Direct Host-to-Host (One Step) Transfer

The direct transfer requires two sessions running on AccuTerm - one session connected to the source host (sending machine), and one session connected to the target host (receiving machine). If you cannot run two sessions, you must use an intermediate PC file to store the data temporarily using the two step method (see next section).

To use the **FTPICK** direct transfer method, activate the AccuTerm session connected to the target host, and start **FTPICK**. When prompted:

```
(S)end, (R)eceive, (C)onfigure, (O)ptions,  
(H)elp or (E)xit ?
```

Answer R to receive files, then select the direct mode:

```
Receive (D)irectly from PICK file or from  
(I)ntermediate DOS file ?
```

by answering D. A panel titled "AccuTerm Pick-to-Pick File Transfer" will be displayed on the target screen. You can cancel the Host-to-Host transfer at any time by pressing the ESC key while the target session is active.

Next, activate the AccuTerm session connected to the source host, or sending machine, and start **FTPICK**. When prompted:

```
(S)end, (R)eceive, (C)onfigure, (O)ptions,  
(H)elp or (E)xit ?
```

answer S to send files. Then enter the name of the source host file to be sent:

Enter PICK source file name:

Enter the name of the source host file which contains the items to be sent.

Enter source (Pick) item list:

Enter the item-IDs to be sent. If you do not enter item-IDs, any previously selected (SELECT, GET-LIST, etc.) items will be transferred; if you enter an asterisk (*), all items in the file will be transferred. To specify a saved list, enter an open parenthesis followed by the list name. Separate item-IDs with blanks.

Send (D)irectly to PICK file or to
(I)ntermediate DOS file ?

Answer D to send the file directly to the target machine.

Enter target PICK file name:

Enter the file name on the target machine into which the selected items will be written.

Once the target file name has been entered, the receiving session will be activated and the transfer progress will be displayed in the panel. When the transfer is complete, press the ESC key to terminate the receiving FTPICK program, or activate the sending session to send another file.

Host-to-Host transfer using Intermediate PC File (Two Step)

If you cannot open one session to each MultiValue host machine, or if you want to send the same file to several target machines, you can save the data in an intermediate PC file. The procedure is similar to the direct method described above, except that the send must be done first, and a PC file must be specified for both the send and receive steps.

Step 1: Transferring From the Source Host to an Intermediate File

Open an AccuTerm session connected to the source machine, and start **FTPICK**. When prompted:

(S)end, (R)eceive, (C)onfigure, (O)ptions,
(H)elp or (E)xit ?

answer S to send files. Then enter the name of the source file to be sent:

Enter PICK source file name:

Enter the name of the source file which contains the items to be sent.

Enter source (Pick) item list:

Enter the item-IDs to be sent. If you do not enter item-IDs, any previously selected (SELECT, GET-LIST, etc.) items will be transferred; if you enter an asterisk (*), all items in the file will be transferred. To specify a saved list, enter an open parenthesis followed by the list name. Separate item-IDs with blanks.

Send (D)irectly to PICK file or to
(I)ntermediate DOS file ?

Answer I to send the file to an intermediate PC file.

Enter intermediate DOS file name:

Enter the full PC file name of the intermediate file including drive letter and directory, if desired. Separate directory names in a full path using back-slashes.

Upon entering the PC file name, the selected items will be transferred to the specified PC file in a special format used by the **FTPICK** utility.

Step 2: Transferring From an Intermediate File to the Target Host

Open an AccuTerm session connected to the target machine, and start **FTPICK**. When prompted:

(S)end, (R)eceive, (C)onfigure, (O)ptions,
(H)elp or (E)xit ?

answer R to receive files. Then enter the name of the intermediate PC file which contains the desired data:

Receive (D)irectly from PICK file or from
(I)ntermediate DOS file ?

Answer I to retrieve data from an intermediate file.

Enter intermediate DOS file name:

Enter the full PC file name of the intermediate file including drive letter and directory, if desired. Separate directory names in a full path using back-slashes.

Enter target PICK file name:

Enter the file name on the target machine into which the retrieved items will be written.

If the intermediate file is in the correct format, the items contained in the intermediate file will be transferred and stored into the target host file.

FTPICK Options and Settings

One configuration setting (permanent) and option setting (temporary) is available for the FTPICK utility. To change configuration setting, enter C in response to the first prompt. A list of configuration settings will be displayed:

Current parameter settings are:
1. Overwrite existing item Yes

Enter parameter number (1-1) to modify:

The “overwrite existing file” setting may be changed by entering item number (1).

When using the direct mode, both the sender and receiver must have “Overwrite existing file” set to “Yes” in order for existing items to be overwritten. If either the sender or receiver has this settings set to “No”, existing items will not be overwritten.

If the receiver has “Overwrite” set to “No” and the sender has it set to “Yes”, the transfer will fail.

To change option setting, enter O in response to the first prompt. A list of option settings will be displayed. Note that the default value of the options is stored in the configuration settings:

Current parameter settings are:
1. Overwrite existing item Yes

Enter parameter number (1-1) to modify:

An alternate way to set the value of a configuration or option setting is to answer the prompt with the parameter number, an equal sign, and the first letter of the value to which the parameter is to be set. For example, to set the Overwrite option to “Yes”, respond to “Enter parameter...” with 1=Y. This alternate method is useful in cases where the **FTPICK** utility is being “driven” by a PROC or by another program using the EXECUTE statement.

Standard (non-MultiValue) File Upload

Upload transfers a file (or files) from your computer to a remote machine. Uploads may use any of the supported protocols. Usually, to perform a file upload, you would first start the receiving (download) program on the remote computer from normal terminal emulation mode. Then after the remote receiving program has been started, select **Tools Upload**, select the appropriate protocol, select the file(s) to upload, then click the **Upload** button.

File Selection

Click the **Browse** button to select the file(s) to upload. If the currently selected protocol is **Kermit**, **Ymodem**, or **Zmodem**, you can select multiple files, otherwise select only a single file.

Protocol

Select the protocol you want to use to upload the selected file(s) by clicking the appropriate option button: **ASCII**, **Kermit**, **Xmodem**, **Ymodem** or **Zmodem**.

The **ASCII** protocol by its nature has no error checking. This protocol should only be used when there is a local, error free connection, and when the remote system does not support any of the other protocols. The **ASCII** protocol only sends text files, and it is not a “batch” protocol - you can only send one file. You can adjust the line termination to **CR**, **LF** or **CRLF** by selecting the desired option in the **File Transfer** tab of the **Settings** dialog box (**Tools Settings** menu). You can also set the inter-line delay time in the same tab (this is the amount of time AccuTerm waits between lines when sending a file).

The **Kermit** protocol provides error detection and correction. **Kermit** is a “batch” protocol, so you can send multiple files. **Kermit** can send either text or binary files; text files are converted to the format required on the receiving machine. **Kermit** is slower than X/Y/Zmodem, but is the most portable protocol. It often succeeds when the other protocols fail. Several options may be set in the **File Transfer** tab of the **Settings** dialog box.

These include the retry limit, timeout period, end of line character, eighth bit quoting, data compression and block check type (checksum or CRC).

Xmodem is a binary protocol which includes error checking. **Xmodem** is not a “batch” protocol; you can only send one file using **Xmodem**, and you need to specify the file name to the receiving program. Files transferred using **Xmodem** “grow” to the next multiple of 128 bytes. The **Xmodem** protocol requires an 8-bit data path, and full 8-bit transparency (you cannot use Xon/Xoff handshaking when using **Xmodem**). You can set the **Xmodem** timeout period in the **File Transfer** tab of the **Settings** dialog box.

Ymodem is a binary protocol which includes checksum or CRC error checking. **Ymodem** is available in several “flavors”; the “flavor” used by AccuTerm is Ymodem-G (1K blocks, batch mode). The **Ymodem** protocol requires an 8-bit data path, and full 8-bit transparency (you cannot use Xon/Xoff handshaking when using **Ymodem**). You can set the **Ymodem** timeout period in the **File Transfer** tab of the **Settings** dialog box.

Zmodem is a sophisticated file transfer protocol which is popular on PCs and Unix based minicomputers. **Zmodem** provides robust CRC error checking, several options for dealing with existing files and text file conversion. If the receiving machine uses the “rz” program, AccuTerm will send the “rz” command before sending files, to automatically invoke the receiver’s **Zmodem** program. The **Zmodem** protocol requires an 8-bit data path, but full 8-bit transparency is not normally required (you can use Xon/Xoff handshaking when using **Zmodem**). You can set the **Zmodem** timeout period in the **File Transfer** tab of the **Settings** dialog box.

Mode

When the currently selected protocol is **Kermit** or **Zmodem**, you can select the transfer mode as **text** or **binary**. When **text** mode is selected the line termination is adjusted to match that of the receiving machine. When **binary** mode is selected, the files are transferred without alteration. The **ASCII** protocol always transfers text files, and **Xmodem** and **Ymodem** always transfer in binary mode.

Overwrite

When the **Zmodem** protocol is selected, the sender can select how to deal with existing files by selecting an **Overwrite** mode. Select **never** if you

want to preserve all existing files. Select **always** to overwrite existing files. **Append** will append onto existing files. The **newer** option replaces existing files only if the file being sent is newer than the existing file. The **update** option overwrites existing files; non-existing files are not transferred. Use the **resume** option for crash recovery after aborted transfers - if a file does not exist on the receiving machine, it is sent; if a file exists, but it is shorter than the file on the sending machine, the remainder of the file is sent; if a file exists, but it is the same length or longer, it is skipped. *Note: the **resume** option may only be used if the transfer mode is binary.*

Standard (non-MultiValue) File Download

Download transfers a file (or files) from a remote machine to your computer. Downloads may use any of the supported protocols. Usually, to perform a file download, you would start the sending program on the remote machine while in normal terminal emulation mode. Then after the remote sending program has been started, select **Tools Download**, select the appropriate protocol, select the destination directory (and file name if using **ASCII** or **Xmodem**), then click the **Download** button.

Directory and File Selection

Click the **Browse** button to select the destination directory. If the currently selected protocol is **ASCII** or **Xmodem**, then you also need to specify a file name for the downloaded file.

Protocol

Select the protocol you want to use to download the selected file by clicking the appropriate option button: **ASCII**, **Kermit**, **Xmodem**, **Ymodem** or **Zmodem**. For details about each of the protocols, see the discussion in the previous section.

Mode


When the protocol is set to **ASCII**, the mode is **text**; when it is set to **Xmodem** or **Ymodem**, the mode is **binary**. When using **Kermit**, you can select either **text** or **binary** mode. The mode for **Zmodem** transfers is determined by the sender.

When **text** mode is selected lines are terminated with **CR/LF**. When **binary** mode is selected, the files are transferred without alteration.

Overwrite

Check this box to allow existing files to be overwritten. *Note: Kermit and Ymodem always overwrite. When Zmodem is selected, the sender controls the action to take if a file exists.*

DATA CAPTURE

AccuTerm is capable of capturing to a file any data received by the your computer, or any data which would normally be printed to the “slave” printer. To start data capture, select **Tools** from the main menu, then select the **Capture** option or click the  button on the toolbar. Select the capture file and options in the **Begin Capture** dialog.

Capture to File

Enter the capture file name in this field, or click the **Browse** button to select the folder and file.

Mode

Select **New file only**, **Overwrite**, **Append**, or **Clipboard** by clicking the appropriate option button. If you select **Overwrite** or **Append** and the file does not exist, AccuTerm will create the file. If you select **New file only** and the file does exist, a warning will be displayed.


Source

Select the data source to be captured as **Received data** or **Printed data**. If **Received data** is selected, all data received by AccuTerm (except when a file transfer is occurring) will be captured to the specified file. This includes all control characters. If **Printed data** is selected, all data which would normally be printed to the slave printer port is captured to the selected file, and not printed.

Filter

Select the **Text only (strip control codes)** option if you want control characters filtered out of the captured data.




Terminating Data Capture

If data capture is already in effect (as indicated in the status bar), selecting **Tools Capture** or clicking the  button on the toolbar will display the **End Capture** dialog. Click the **End Capture** button to terminate the capture operation, or click the **Continue** button to resume capturing.

MACRO RECORDER

AccuTerm 2K2 includes a powerful **Macro Recorder** which can be used to record a sequence of actions as a VBA macro. AccuTerm's Macro Recorder records most menu or toolbar actions, changes to settings and preferences, and interaction with the host. The recorded macro can be edited, and you can attach a shortcut key to any recorded macro for instant execution of the recorded macro.

Recording a Macro

To start recording a new macro, select **Record New Macro** from the **Macro** sub-menu under the **Tools** menu. The **Macro Recorder** toolbar will be displayed near the lower-right corner of the AccuTerm window. When you are finished recording the macro, click the  button on the **Macro Recorder** toolbar. You can temporarily suspend recording by clicking the  button on the **Macro Recorder** toolbar. To resume recording, click the  button.

When you are finished recording a macro, the **Save Macro** dialog will be displayed. Here you can give your recorded macro a name (up to 32 characters: letters, numbers or underscore characters only, beginning with a letter), a short description (up to 32 characters) which is displayed in the **Tools Macro Run Macro** sub-menu, a detailed description and a shortcut key.

The recorded macro is saved in the **AccuTerm Macros** script file when you click the **Save** button. If you do not have a macro script file open yet, you will be prompted to select the file name for your macro file. When you start AccuTerm, the macro script file (if it exists) is automatically loaded.

Macros are recorded as a sequence of Visual Basic for Applications (VBA) statements.

Running a Macro

To run a macro, select the desired macro from the **Run Macro** sub-menu of the **Tools Macro** menu. Alternatively, if the macro has a shortcut key assigned to it, simply press the shortcut key combination to run the macro.

Editing a Macro

You can edit your recorded macros by selecting **Edit** from the **Tools Macro** menu. The macro script will be displayed in the Macros tab (2) of the AccuTerm Script window. Macros are written using the Visual Basic for Applications (VBA) language. See the **Scripting** section of the **Programmers Guide** for more information on VBA scripts.

WED EDITOR

AccuTerm 2K2 MultiValue Edition includes a handy Windows based program / data editor for use with your MultiValue host computer. wED is invoked just like the traditional ED verb, but opens the specified documents in a Windows full-screen editor. If you specify multiple item-IDs, each item is opened in its own window. The windows can be arranged, cascaded, or tiled. You can cut, copy and paste text between documents and other Windows applications.

When you edit BASIC programs using wED, wED highlights various BASIC syntax elements in different colors and text styles for easy recognition. You can even customize the color and text style used for highlighting, specify you own language keyword list and create a user-defined keyword list. wED understands GOTO, GOSUB, CALL and INCLUDE statements, and allows you to easily jump to the target of the statement.


Advanced editing features include block comment / uncomment, block indent / outdent, and a built-in BASIC code formatter. One-click compile is also included.


wED is installed when you install the MultiValue Host Programs (see **File Transfer** chapter).

To customize wED, open the **Tools** menu and select **General**, **Highlight** or **Tools**. Complete online help is included.


Using wED


The wED main window uses Windows “multiple document interface” to display one or more document windows. Each document can be accessed by clicking anywhere on the document window or by selecting the desired document from the **Window** menu. You can activate to the “next” document by pressing CTRL + TAB or CTRL + F6. The top area of the main window may contain a toolbar, and the bottom area may contain a status bar. These items may be selected from the **View** menu by checking **Toolbar** or **Status Bar** items.

To create a new document, choose **New** from the **File** menu or click the  button on the toolbar.

To open an existing document, choose **Open** from the **File** menu or click the  button on the toolbar. The **Open** dialog is customized for use with MultiValue systems. If you started wED from a TCL command prompt, or from the wED menu item or toolbar button in AccuTerm, you will be able to browse for the file and item you want to open. You can browse for files on either the host or local Windows file system.

When wED is open, you can use Windows drag-and-drop to open files from the local Windows file system. Just drag a text file from Windows Explorer and drop it on the wED menu bar. Similarly, you can create a shortcut to the main wED program (atwed32.exe) in your “Send To” folder to add wED as a “Send To” target in the Explorer context menu.

To save the current document, choose **Save** from the **File** menu or click the  button on the toolbar. The **Save** dialog is customized for MultiValue systems and has the same browsing features as the **Open** dialog.

To save all open documents, choose **Save All** from the **File** menu or click the  button on the toolbar.



To print the active document, choose **Print** from the **File** menu or click the  button on the toolbar.

Editing a Document using wED

The Document window contains the text of the document being edited. The text is displayed with a line number in the left margin, and may be highlighted by color and text style according to BASIC language syntax rules.

The document is edited using a free-form text editor, and fully supports standard Windows commands.

Typing Text

If any text is currently selected, typing text replaces the selection. If no text is selected, typing inserts at the current cursor position. Press ENTER to begin a new line. To insert a *system delimiter* (value-mark or sub-value-mark) into the document, press CTRL +] or click the  button for a value-mark; press CTRL + \ or click the  button for a sub-value-mark.



Cursor Movement

Move the cursor by pressing any cursor movement key (UP, DOWN, LEFT, RIGHT, HOME, END, PAGEUP, PAGEDOWN). Holding the CTRL key when pressing another cursor key modifies the cursor key action as follows: CTRL + RIGHT moves forward one word, CTRL + LEFT moves backward one word, CTRL + HOME moves to the beginning of the document, CTRL + END moves to the end of the document.




Selecting Text

You can select text either by using the mouse (click and drag), or from the keyboard. To select text from the keyboard, hold the SHIFT key while moving the cursor (UP, DOWN, LEFT, RIGHT, HOME, END, PAGEUP, PAGEDOWN). The SHIFT and CTRL keys can be used together; for example, CTRL + SHIFT + RIGHT selects the next word. Press CTRL + A to select the entire document.


Indenting Text

Press the TAB key to indent text, beginning at the current cursor position, to the next tab stop. If multiple lines are selected, pressing TAB or clicking the  button indents all selected lines (at the beginning of the line); pressing SHIFT + TAB or clicking the  button outdents all selected lines.



Clipboard

To copy text to the clipboard, select the desired text and press CTRL + C or click the  button. To copy to the clipboard and delete selected text (cut), press CTRL + X or click the  button. To paste text from the clipboard, press CTRL + V or click the  button.

Deleting Text

To delete text, select the desired text and press the DELETE key or click the  button on the toolbar. If no text is selected, pressing the DELETE key erases the character to the right of the cursor. Press the BACKSPACE key to erase the character to the left of the cursor. Press CTRL + Y to delete the entire line that the cursor is on.


Searching

To search for text in the document, press CTRL + F or click the  button on the toolbar. Enter the text you are looking for. Select the appropriate options (whole word, match case, direction) and click the **Find Next** button. To repeat the last search, press the F3 key or click the  toolbar button. If you pass the end of the document and begin searching from the top, you will hear a beep, and a message will be displayed in the status bar (Find Again only).


Replacing Text


To search and replace text, press CTRL + H. Enter the text to search for and the replacement text. Select the appropriate options (whole word, match case) and click **Find Next, Replace** or **Replace All**.

Changing Case


To change the case of the selected text, select **Toggle Case** from the **Tools** menu or click the  button on the toolbar. Each time the **Toggle Case** button is clicked, the case of the selected text is changed from its current form to Upper Case, Lower Case and Proper Case, in that order.

Commenting and Uncommenting Text


If you have a block of text selected, you can “comment out” the whole block by selecting **Comment** from the **Edit** menu or clicking the  button on the toolbar. An asterisk (*) will be inserted at the beginning of each line in the selection. To “un comment” a block, select **Uncomment**

from the **Edit** menu or click the  button. The leading asterisk (*) of each line in the block will be deleted.


Undoing Changes

Press CTRL + Z or click the  button to undo the last editing operation.

Redoing Changes

Select **Redo** from the **Edit** menu or click the  button to redo the last operation which was un-done.

Goto


Click the  button or select **Goto** from the **Edit** menu to open the **Goto** dialog box. Enter a line number or choose a statement label to jump to.

Context Menu


If you click the right mouse button anywhere in the document window, a context (pop-up) menu is displayed. From the context menu, you can select **Undo**, **Cut**, **Copy**, **Paste**, **Clear** (delete), **Select All**, **Find**, **Find Next**, **Replace**, **Open**, **Goto** and **Highlight**. Some context menu choices may not be available depending on the location clicked and the state of the clipboard. For example, the **Goto** option is only enabled if you right-click on a label following a GOTO or Gosub statement, and **Open** is only available if you right-click on a program name after an Include or Call statement.

Double-clicking on a statement label following a GOTO or Gosub statement works the same as selecting **Goto** from the context menu. Double-clicking on a program name following an Include or Call statement works the same as selecting **Open** from the context menu.

Formatting BASIC Source Code


Select the **Format** option from the **Tools** menu or click the  button on the toolbar to format the document as BASIC source code. The margin and indentation sizes are specified in the **Tools** tab of the wED settings, which can be selected by choosing **Tools** from the **Options** menu.

Compiling BASIC Code

Select the **Compile** option from the **Tools** menu or click the  button to compile the document (program). The results of the compile operation are displayed in the **Results** window. If a compilation error occurred, double-

click the error line in the **Results** window to position the cursor at the offending line in the source code. The compiler command and options are specified in the **Tools** tab of the wED settings, which can be selected by choosing **Tools** from the **Options** menu.

Syntax Highlighting

wED is able to parse BASIC language elements in the document and highlight various elements using a variety of colors and text styles. To enable or disable syntax highlighting, select **Highlight** from the **View** menu or from the context menu, or click the  toolbar button. To specify custom colors, styles, language and user keywords, select **Highlight** from the **Options** menu.

Results Window

You can open the **Results** window by selecting **Results** from the **View** menu. This window displays the results of the last compile operation. Double-clicking on an error line number will position the cursor on that line (in the current document).

APPENDIX A

ASCII Codes

<u>ASCII</u>	<u>Decimal</u>	<u>Hex</u>	<u>ASCII</u>	<u>Decimal</u>	<u>Hex</u>
<i>NUL</i>	0	00	<i>SPACE</i>	32	20
<i>SOH</i>	1	01	!	33	21
<i>STX</i>	2	02	"	34	22
<i>ETX</i>	3	03	#	35	23
<i>EOT</i>	4	04	\$	36	24
<i>ENQ</i>	5	05	%	37	25
<i>ACK</i>	6	06	&	38	26
<i>BEL</i>	7	07	'	39	27
<i>BS</i>	8	08	(40	28
<i>HT</i>	9	09)	41	29
<i>LF</i>	10	0A	*	42	2A
<i>VT</i>	11	0B	+	43	2B
<i>FF</i>	12	0C	,	44	2C
<i>CR</i>	13	0D	-	45	2D
<i>SO</i>	14	0E	.	46	2E
<i>SI</i>	15	0F	/	47	2F
<i>DLE</i>	16	10	0	48	30
<i>DC1</i>	17	11	1	49	31
<i>DC2</i>	18	12	2	50	32
<i>DC3</i>	19	13	3	51	33
<i>DC4</i>	20	14	4	52	34
<i>NAK</i>	21	15	5	53	35
<i>SYN</i>	22	16	6	54	36
<i>ETB</i>	23	17	7	55	37
<i>CAN</i>	24	18	8	56	38
<i>EM</i>	25	19	9	57	39
<i>SUB</i>	26	1A	:	58	3A
<i>ESC</i>	27	1B	;	59	3B
<i>FS</i>	28	1C	<	60	3C
<i>GS</i>	29	1D	=	61	3D
<i>RS</i>	30	1E	>	62	3E
<i>US</i>	31	1F	?	63	3F

ASCII Codes (continued)

@	64	40	`	96	60
A	65	41	a	97	61
B	66	42	b	98	62
C	67	43	c	99	63
D	68	44	d	100	64
E	69	45	e	101	65
F	70	46	f	102	66
G	71	47	g	103	67
H	72	48	h	104	68
I	73	49	i	105	69
J	74	4A	j	106	6A
K	75	4B	k	107	6B
L	76	4C	l	108	6C
M	77	4D	m	109	6D
N	78	4E	n	110	6E
O	79	4F	o	111	6F
P	80	50	p	112	70
Q	81	51	q	113	71
R	82	52	r	114	72
S	83	53	s	115	73
T	84	54	t	116	74
U	85	55	u	117	75
V	86	56	v	118	76
W	87	57	w	119	77
X	88	58	x	120	78
Y	89	59	y	121	79
Z	90	5A	z	122	7A
[91	5B	{	123	7B
\	92	5C		124	7C
]	93	5D	}	125	7D
^	94	5E	~	126	7E
_	95	5F	DEL	127	7F

ASCII Codes (continued)

	128	80		160	A0
	129	81	i	161	A1
	130	82	¢	162	A2
	131	83	£	163	A3
<i>IND</i>	132	84	¤	164	A4
<i>NEL</i>	133	85	¥	165	A5
<i>SSA</i>	134	86	¦	166	A6
<i>ESA</i>	135	87	§	167	A7
<i>HTS</i>	136	88	¨	168	A8
<i>HTJ</i>	137	89	©	169	A9
<i>VTS</i>	138	8A	ª	170	AA
<i>PLD</i>	139	8B	«	171	AB
<i>PLU</i>	140	8C	¬	172	AC
<i>RI</i>	141	8D	®	173	AD
<i>SS2</i>	142	8E	®	174	AE
<i>SS3</i>	143	8F	¯	175	AF
<i>DCS</i>	144	90	°	176	B0
<i>PU1</i>	145	91	±	177	B1
<i>PU2</i>	146	92	²	178	B2
<i>STS</i>	147	93	³	179	B3
<i>CCH</i>	148	94	´	180	B4
<i>MW</i>	149	95	µ	181	B5
<i>SPA</i>	150	96	¶	182	B6
<i>EPA</i>	151	97	·	183	B7
	152	98	¸	184	B8
	153	99	¹	185	B9
	154	9A	º	186	BA
<i>CSI</i>	155	9B	»	187	BB
<i>ST</i>	156	9C	¼	188	BC
<i>OSC</i>	157	9D	½	189	BD
<i>PM</i>	158	9E	¾	190	BE
<i>APC</i>	159	9F	¿	191	BF

ASCII Codes (continued)

À	192	C0	à	224	E0
Á	193	C1	á	225	E1
Â	194	C2	â	226	E2
Ã	195	C3	ã	227	E3
Ä	196	C4	ä	228	E4
Å	197	C5	å	229	E5
Æ	198	C6	æ	230	E6
Ç	199	C7	ç	231	E7
È	200	C8	è	232	E8
É	201	C9	é	233	E9
Ê	202	CA	ê	234	EA
Ë	203	CB	ë	235	EB
Ì	204	CC	ì	236	EC
Í	205	CD	í	237	ED
Î	206	CE	î	238	EE
Ï	207	CF	ï	239	EF
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Ñ	209	D1	ñ	241	F1
Ò	210	D2	ò	242	F2
Ó	211	D3	ó	243	F3
Ô	212	D4	ô	244	F4
Õ	213	D5	õ	245	F5
Ö	214	D6	ö	246	F6
×	215	D7	÷	247	F7
Ø	216	D8	ø	248	F8
Ù	217	D9	ù	249	F9
Ú	218	DA	ú	250	FA
Û	219	DB	û	251	FB
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