TeemTalk® 5.0 for Windows CE & XPe

User's Guide

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1

Introduction

This chapter introduces the contents of this User's Guide.

About This User's Guide

This User's Guide describes how to use TeemTalk version 5.0 for Windows CE and XPe. Most of the functionality is the same for both Windows CE and XPe versions, but where there are differences, the text will indicate them. Most of the dialog box illustrations show the Windows CE version of TeemTalk.

Note that your version of TeemTalk may not support every emulation or feature described in this User's Guide.

The User's Guide is divided into the following chapters and appendices:

Chapter 1: ***Introduction***
Introduces the contents of this User's Guide.

Chapter 2: ***Getting Started***
Describes how to configure a session and describes various display features.

Chapter 3: ***Keyboard Configuration***
Describes how to assign functions to keys and how to use the Compose Character function to generate special characters.

Chapter 4: ***Mouse Functions***
Describes the special functions assigned to the left mouse button and how to redefine them.

Chapter 5: ***The Toolbar***
Describes how to use the TeemTalk for Windows XPe toolbar and assign functions to the buttons.

Chapter 6: ***Setup Menus***
Describes all the commands and setup dialog boxes that can be accessed via drop-down menus in the command bar.

Chapter 7: ***DEC VT Emulations***
Describes features of the DEC VT emulations.

Chapter 8: ***BQ 3107 Emulation***
Describes features of the Bull BQ 3107 emulation.

Chapter 9: ***DG 410/412 Emulation***
Describes features of the Data General D410/412 emulation.

Chapter 10: ***HP700-92/96 Emulation***
Describes features of the Hewlett Packard HP700/92 emulation.

Chapter 11: ***IBM 3270 Emulation***
Describes features of the IBM 3270 emulation.

Chapter 12: ***IBM 5250 Emulation***
Describes features of the IBM 5250 emulation.

Chapter 13: ***IBM 3151 Emulation***
Describes features of the IBM 3151 emulation.

Chapter 14: ***MDIS Prism Emulations***
Describes features of the McDonnell Douglas Prism-8, Prism-9 and Prism-12 terminal emulations.

Chapter 15: ***PT250 Emulation***
Describes features of the Prime PT250 emulation.

Chapter 16: ***Siemens 97801 Emulation***
Describes features of the Siemens 97801 emulation.

Chapter 17: ***TA6530 Emulation***
Describes features of the Tandem 6530 emulation.

Chapter 18: ***Unisys T27 Emulation***
Describes features of the Unisys T27 emulation.

Chapter 19: ***Wyse Emulations***
Describes features of the Wyse WY-50, WY-50+ and WY-60 emulations.

Chapter 20: ***Initialization Commands***
Describes commands that can be included in the registry and on the command line to specify the emulator start-up configuration.

Appendix A: ***Virtual Key Names***
Lists all the virtual key names that enable you to include a specific key function in a user definition.

Appendix B: ***Character Sets***
Shows the supported character set code tables.

Appendix C: ***Host Command Summary***
Lists the host commands that are supported in each terminal emulation mode.

Appendix D: ***Product Specification***
Describes the level of support provided by each terminal emulation.

Terms & Conventions

This User's Guide uses the following terms and conventions.

1. When references to keys on the keyboard are shown linked by a + (plus sign), this means that two or more keys have to be pressed at the same time. For example, 'press **Alt + F**' means press and hold down the **Alt** key, press the **F** key then release both keys.

2. 'Click' means position the mouse pointer over an element on the display then quickly press and release the specified mouse button.

3. 'Double click' means position the mouse pointer over an element on the display then quickly press and release the specified mouse button twice in quick succession.

4. 'Drag the pointer' means hold down the left mouse button (or button assigned with the select function) and slide the mouse so that a selection box is displayed.

Notes

2

Getting Started

This chapter describes how to configure a session and describes various display features.

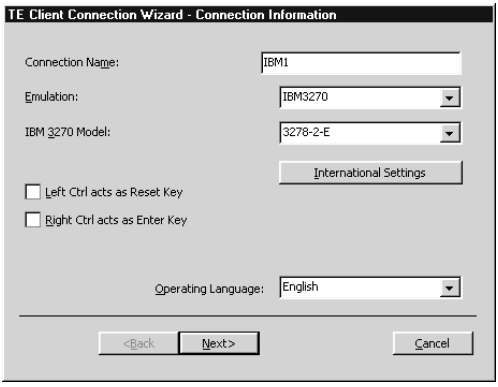
WBT Session Configuration

Using The Connection Wizard

This section describes the basic procedure for creating a session configuration in WBT mode. The options available are described in detail in the following sections.

1. Click the **Configure** tab in the **Terminal Connection Manager** then click the **Add** button to display the **New Connection** dialog box.

2. Select **Terminal Emulation Client** and click **OK**. The **Connection Information** dialog box will be displayed.



3. Specify the language to be used in all menus and dialog boxes by making a selection in the **Operating Language** list at the bottom of the dialog box.

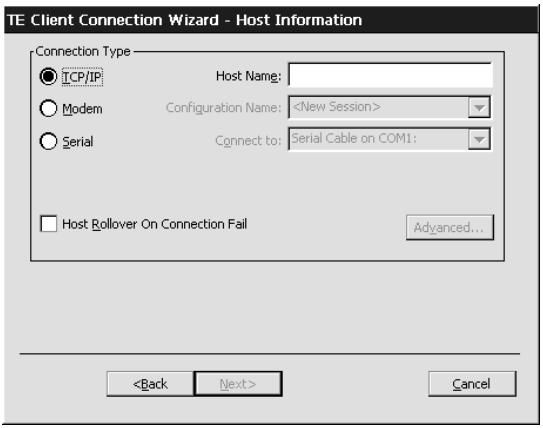
4. Enter a name which will identify this session configuration for future selection in the **Connection Name** box.

5. Select the terminal emulation required in the **Emulation** list box.

6. If additional configuration options are displayed, make the relevant selections. Refer to the *Terminal Emulation Configuration* section later in this chapter for details.

   Clicking the **International Settings** button will display keyboard language and character set options for the selected terminal emulation. Refer to the relevant emulation settings dialog box description in the *Setup Menus* chapter for details. (Note that the DEC VT options are located in the **Emulation** and **Terminal Settings** dialog boxes.)

7. Click **Next** to display the **Host Information** dialog box.



For a TCP/IP connection, click the **TCP/IP** button and enter the name or internet address of the host computer in the **Host Name** box. Selecting the **Host Rollover On Connection Fail** option will present four **Host Name** entry boxes. The emulator will attempt to connect to each specified host in turn until one is successful. Click **Advanced** for Telnet options. Refer to the *TCP/IP Connection Settings* section later in this chapter for details.

For a modem connection, click the **Modem** button then click **Advanced** to display configuration options. Refer to the *Modem Connection Settings* section later in this chapter for details.

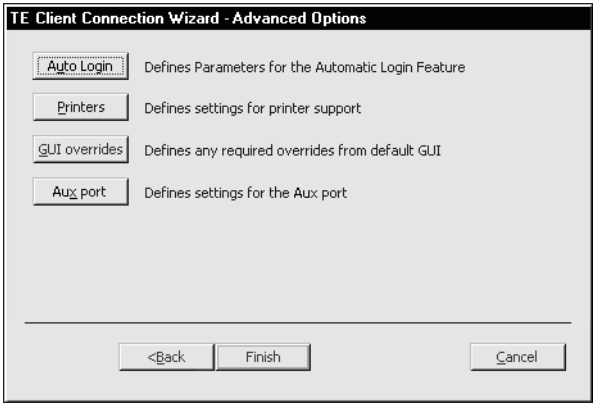
For a serial connection, click the **Serial** button, specify the communications port in the **Connect To** box, then click **Advanced** for additional serial options. Refer to the *Serial Connection Settings* section later in this chapter for details.

The optional **SSL** (Secure Sockets Layer) protocol enables authenticated and encrypted communication between clients and servers. Refer to the *SSL Connection* section later in this chapter for details.

The optional **SSH** (Secure Shell) client/server protocol is used to encrypt and transmit data securely over a network, with authentication (proof of client identity) provided by a password and/or key. To enable an SSH connection, this option must be selected and the Telnet **Port Number** option set to the host's SSH port (**22** is the default for SSH). When a Telnet connection is initiated, the **SSH Connection** dialog box will be displayed prompting the user for authentication. Refer to the *SSH Connection* section later in this chapter for details.

Make the relevant selections then click **OK** to return to the **Host Information** dialog box, then click **Next** to display the **Advanced Options** dialog box.

8. The **Advanced Options** dialog box provides access to additional settings which are described later in this chapter.



If you are running TeemTalk for Windows XPe and are logged on as system administrator, there will be two **Session stored...** options to enable a session to be created or modified either for yourself (current user) only, or for all users. Refer to the *Session Management* section later in this chapter for details.

9. When you have made your selections, click **Finish** to return to the **Terminal Connection Manager**.

10. In the **Terminal Connection Manager**, display the **Connections** list, select the session name you specified earlier in step 4, then click the **Connect** button.

Terminal Emulation Configuration

Emulation Options

The **Emulation** options in the Connection Wizard **Connection Information** dialog box are as follows:

The **ADDS A2** emulation provides compatibility with software designed to drive the ADDS Viewpoint A2 terminal, as emulated by the Wyse WY-50/50+/60 terminals. Refer to the *Wyse Emulations* chapter for details.

The **AIXTerm** emulation provides compatibility with software designed to drive an X terminal using X Windows.

The **ANSI BBS** emulation is a derivative of the ANSI device driver **ANSI.SYS** supplied with all DOS based PCs and which provides the screen management for the DOS console screen. PC based UNIX systems and Bulletin Board Systems (BBS) often rely on the ANSI emulation when being accessed by a PC.

The **AT 386** emulation provides compatibility with software designed to drive the AT&T AT 386 terminal.

The **ATT4410** emulation provides compatibility with software designed to drive the AT&T Dataspeed 4410 terminal. Refer to the *AT&T 4410 Emulation* section later in this chapter for details.

The **BQ 3107** emulation provides compatibility with software designed to drive the Bull BQ 3107 terminal. Refer to the *BQ 3107 Emulation* chapter for details.

The **DG 410/412** emulation provides compatibility with software designed to drive the Data General D410 and D412 terminals. Refer to the *DG 410/412 Emulation* chapter for details.

The **HP 700-92/96** emulation provides compatibility with software designed to drive the Hewlett Packard 700/92, 2392A, 2622A, 70094 and 70096 terminals. This emulation is described in detail in the *HP 700-92/96 Emulation* chapter.

The **HZ1500** emulation provides compatibility with software designed to drive the Hazeltine 1500 terminal, as emulated by the Wyse WY-50/50+/60 terminals. Refer to the *Wyse Emulations* chapter for details.

The **IBM 3151** emulation provides compatibility with software designed to drive the IBM 3151 terminal. Refer to the *IBM 3151 Emulation* chapter for information on this emulation.

The **IBM 3270** emulation provides compatibility with software designed to drive the IBM 3270 terminal. Note that the initial display will be an ASCII text screen known as Network Virtual Terminal mode (NVT mode for short). The setting of the **IBM 3270 Model** option determines the size of the display and whether or not extended attributes are supported. Refer to the *IBM 3270 Emulation* chapter for details.

The **IBM 5250** emulation provides compatibility with software designed to drive IBM 5250 type alphanumeric terminals. This emulation can be used for connection to an IBM AS/400, System/36 or System/38. Note that the initial display will be an ASCII text screen known as Network Virtual Terminal mode (NVT mode for short). Refer to the *IBM 5250 Emulation* chapter for details.

The **MDI P12\P8** emulation provides compatibility with software designed to drive the McDonnell Douglas Prism-12 and Prism-8 terminals. Refer to the *MDIS Prism Emulations* chapter for details.

The **MDI Prism-9** emulation provides compatibility with software designed to drive the McDonnell Douglas Prism-9 terminal. Refer to the *MDIS Prism Emulations* chapter for details.

The **PT250** emulation provides compatibility with software designed to drive the Prime PT250 terminal. Refer to the *PT250 Emulation* chapter for details.

Sco Console is an emulation of the SCO UNIX box.

The **Siemens 97801** emulation provides compatibility with software designed to drive the Siemens 97801 terminal. Refer to the *Siemens 97801 Emulation* chapter for details.

The **Stratus V102** emulation provides compatibility with software designed to drive the Stratus V102 terminal.

The **TA6530** emulation provides compatibility with software designed to drive the Tandem 6530 terminal. This emulation is described in the *TA6530 Emulation* chapter.

The **TVI 910**, **TVI 920** and **TVI 925** emulations provide compatibility with software designed to drive the TeleVideo 910+, 920 and 925 terminals, respectively, as emulated by the Wyse WY-50/50+/60 terminals. Refer to the *Wyse Emulations* chapter for details.

The **TVI 950** and **TVI 955** emulations provide compatibility with software designed to drive the TeleVideo 950 and 955 terminals, respectively.

The **Unisys T27** emulation provides compatibility with software designed to drive the Unisys T27 terminal. Refer to the *Unisys T27 Emulation* chapter for details.

The **Viewdata 40**, **Viewdata 80** and **Viewdata Split** modes enable access to a viewdata service using one of three display formats, as described in the *Viewdata Mode* section later in this chapter.

The **VT PCTerm** emulation provides compatibility with software designed for the PC Term mode supported by DEC. This is the same as the VT510 emulation except that keyboard scan codes are sent on key press/release instead of ASCII codes by default.

The **VT52** and **VT100** emulations enable you to run applications written for the DEC VT52 and VT100 terminals, respectively. Refer to the *DEC VT Emulations* chapter for details.

The **VT500 7-Bit** and **VT500 8-Bit** emulations enable you to run applications written for the DEC VT320 terminal, the difference is in their treatment of 8-bit control codes.

When **VT500 7-Bit** is selected, all 8-bit codes are converted to their 7-bit equivalents, whereas **VT500 8-Bit** leaves 8-bit codes unchanged. If you are using VT200 applications, select **VT500 7-Bit**. Refer to the *DEC VT Emulations* chapter for details.

The **VT+HP220** emulation is based on the VT500 terminal series and includes the HP function keys F1 - F8 (not user programmable). The terminal ID is set to VT220.

The **VT100+** emulation is an enhanced version of the VT100 emulation that provides additional functionality such as colours. It is the same as the VT-UTF8 emulation except that it only supports ASCII characters 0-127 (decimal).

The **VT-UTF8** emulation is an enhanced version of the VT100 emulation that supports non-English and drawing characters. It supports localization of the single-byte and double-byte character sets and all other languages supported by Windows. Additional functionality, such as colours, is also provided.

The **WY50**, **WY50+** and **WY60** emulations provide compatibility with software designed to drive the Wyse WY-50, WY-50+ and WY-60 terminals, respectively. Refer to the *Wyse Emulations* chapter for information on these emulations.

The **WYSE PCTerm** emulation provides compatibility with software designed for the PC Term personality supported by Wyse. Keyboard scan codes are sent on key press/release instead of ASCII codes by default.

Graphics Mode

The **Graphics Mode** option is only available if your version of TeemTalk supports graphics emulations and the **Emulation** option is set to one of the DEC VT, Ansi BBS, AIXTerm, AT 386 or Sco Console emulations. The setting determines the graphics mode that will be entered when the host sends graphics commands.

The **ReGIS** emulation enables you to run applications written for the DEC VT340 terminal in ReGIS mode.

The **Tek4014** emulation enables you to run applications written for the Tektronix 4010 and 4014 terminals.

The **VT640** emulation enables you to run applications written for the Retrographics VT640 terminal.

The **W2119** emulation enables you to run applications written for the Westward 2119 terminal.

DEC Suite Options

The **VT Terminal ID** option applies to the DEC VT emulations. It specifies what is reported back to the host in response to a terminal identification request. (Note that not all features of the specified terminal may be supported.)

The **Cursor Moves Right to Left** option applies to the DEC VT, Ansi BBS, AIXTerm, AT 386 and Sco Console emulations. It enables you change the direction in which the text cursor moves across the display.

The **High Function Terminal** option is displayed when the AIXTerm emulation is selected. This enables you to switch between HFT (High Function Terminal) mode (default) and VT100 mode.

BQ 3107 Option

The **VIP Mode** option enables you to set the VIP mode to 7700 or 7760.

HP 700-92/96 Option

The **HP Model** option specifies what is reported back to the host in response to a terminal identification request. This can be set to **70092** (default), **2392A**, **2622A**, **70094** or **70096**. (Not all features of the specified terminal may be supported.)

IBM 3151 Option

The setting of the **IBM 3151 Model** option identifies the terminal model being emulated in response to a terminal identification request from the host. Model 11 supports only one viewport containing 24 or 25 rows and 80 columns. Model 31 supports up to three viewports (80 or 132 columns wide) and pass-through printing.

IBM 3270 Options

The setting of the **IBM 3270 Model** option specifies what is reported back to the host in response to a terminal identification request. (Note that not all features of the specified terminal may be supported.) TN3287 printing is supported by selecting **3287-1**.

One of four display sizes can be selected:

3278/9-2	24 rows by 80 columns
3278/9-3	32 rows by 80 columns
3278/9-4	43 rows by 80 columns
3278/9-5	27 rows by 132 columns

3278 settings with the **E** extension provide support for the following extended attributes (these are supported by the **3279** as standard):

3270 Field Attributes
Extended Highlighting
Foreground Colour
Query Reply Inbound Structured Fields

The setting of the **Left Ctrl acts as Reset Key** option determines whether or not the left **Control** key performs the same function as the **Reset** key.

The setting of the **Right Ctrl acts as Enter Key** option determines whether or not the right **Control** key performs the same function as the keypad **Enter** key.

IBM 5250 Options

The **IBM 5250 Model** option specifies what is reported back to the host in response to a terminal identification request. (Note that not all features of the specified terminal may be supported.) The terminal models and their display characteristics are listed below:

Model	Display	Rows x Columns
5291_1	Monochrome	24 x 80
5292_2	Colour	24 x 80
5251_11	Monochrome	24 x 80
3179_2	Colour	24 x 80 (default)
3196_A1	Monochrome	24 x 80
3180_2	Monochrome	24 x 80 and 27 x 132
3477_FC	Colour	24 x 80 and 27 x 132
3477_FG	Monochrome	24 x 80 and 27 x 132
3486_BA	Monochrome	24 x 80
3487_HA	Monochrome	24 x 80
3487_HC	Colour	24 x 80
5555_B01	Monochrome	24 x 80
5555_C01	Colour	24 x 80

The printer models are listed below:

3812-1	Single byte printer
5553-B01	Double byte printer

If double byte character sets (e.g. Japanese) are supported and you wish to use them, then select either **5555_B01** (monochrome) or **5555_C01** (colour) for display, or **5553-B01** for printing.

The setting of the **IBM 5250 Monochrome** option will match the normal display characteristic of the selected IBM 5250 model by default. Note that the emulation of all IBM 5250 models supports both monochrome and colour display. When monochrome is selected, characters will be displayed in green and intense fields will be displayed in white. When monochrome is not selected, the settings specified in the **Attributes** dialog box (described in the *Setup Menus* chapter) will be used for the display.

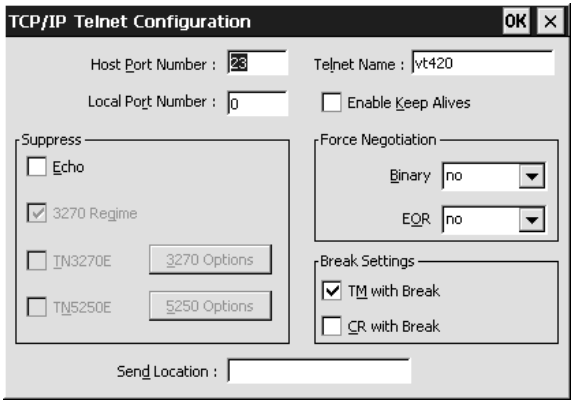
The setting of the **Left Ctrl acts as Reset Key** option determines whether or not the left **Control** key performs the same function as the **Reset** key.

The setting of the **Right Ctrl acts as Enter Key** option determines whether or not the right **Control** key performs the same function as the keypad **Enter** key.

The setting of the **Carriage Return acts as Enter Key** option determines whether or not the **Return** key performs the same function as the keypad **Enter** key.

TCP/IP Connection Settings

The **TCP/IP Telnet Configuration** dialog box can be displayed from the Connection Wizard **Host Information** dialog box by setting the **Connection Type** to **TCP/IP** then clicking the **Advanced** button, or the **New Connection** dialog box when in non-WBT mode by selecting **TCP/IP** in the **Type** list box then clicking the **Configure** button.



Note that the options available and the default settings depend on the current terminal emulation.

Host Port Number

This enables you to specify the Telnet port number. The default Telnet port number, **23**, can be substituted with any valid 16 bit port number. Specifying a number outside the valid range will cause the setting to default to 1.

If an SSH (Secure Shell) connection is to be made, set this to the host's SSH port number (**22** is the default for SSH).

Local Port Number

This enables you to specify the local Telnet port number if required. Setting this to **0** will cause the number to be allocated automatically.

Telnet Name

This enables you to override the name that will be reported for the terminal type over Telnet.

Enable Keep Alives

Selecting this option will prevent the session from being disconnected from the host by an inactivity timeout.

Connection Timeout (Secs:)

This enables you to specify how many seconds the emulator has to attempt to make a host connection before it either attempts to connect to the next host (if **Host Rollover** is specified in the **Host Connection** dialog box) or it issues a Connection Failed message. The default **0** setting will cause the emulator to use the stack default timeout.

Suppress Echo

When selected, this will will prevent the emulator from generating the Telnet echo option on connection.

Suppress 3270 Regime

When running the IBM 3270 emulation, the setting of this option determines whether or not support for the Telnet "3270 regime" option is suppressed.

Suppress TN3270E

When running the IBM 3270 emulation, the setting of this option determines whether or not support of TN3270E is suppressed. When this option is not selected (i.e. TN3270E is not suppressed), additional options are available by clicking the **3270 Options** button. These are described in the *TN3270 Options* section.

Suppress TN5250E

When running the IBM 5250 emulation, the setting of this option determines whether or not support of TN5250E is suppressed. When this option is not selected (i.e. TN5250E is not suppressed), additional options are available by clicking the **5250 Options** button. These are described in the *TN5250 Options* section.

Force Negotiation

These settings determine whether or not the Telnet Binary or EOR options are supported. Both are set to **no** by default.

No	Will not force any negotiations. It will leave it up to the host to decide what to do.
DO	Will force negotiation. The host will be informed that the option is supported.
DONT	Will force negotiation. A negotiation packet will be sent to the host telling it that the option is not supported.

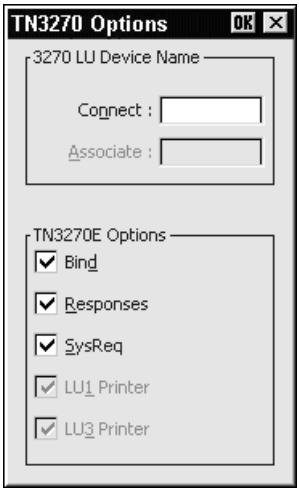
Break Settings

The setting of these options determine whether or not a timing mark (**TM**) and/or carriage return (**CR**) is sent with a Telnet break packet. A timing mark is sent by default.

Send Location

This enables you to enter the location of this terminal which may be used by the host to provide a list of users currently logged in giving their name and location.

TN3270 Options



This dialog box is displayed by clicking the **3270 Options** button in the **TCP/IP Telnet Configuration** dialog box when TN3270 is not suppressed.

Connect

This specifies the name of the device which the server will be requested to assign to the Telnet session; it may be used when requesting either a terminal or a printer session.

You can return the local host name by entering **%s** after the device name. To return the user name, enter **%u** after the device name. You can specify how many characters of the name is returned in each case. For example, **%.3s** will return the first three characters of the local host name, and **%-.3s** will return the last three characters.

To automatically assign a new device name for each successive connection, either enter **%dN%** after the name, where **N** is a decimal value, or **%xN%**, where **N** is a hexadecimal value. Each time the host requests the device name a counter will be substituted into the device name. If the host rejects the device name as in use the counter will be incremented modulus **N** and the name retried until all possibilities have been tried, at which point the emulation will report a device name rejected error.

For example, **TEST%d4%** will give **TEST1** on all connections until the host rejects the name as in use, in which case **TEST2** will be used. If this is already in use then **TEST3** is used, or if already in use then **TEST0**. These values are preserved over

power off, so the first connection of any given power on may not be **TEST1**. Assume that the start point is random.

> *Note: There are separate counters for the IBM 3270 and IBM 5250 emulations.*

When you achieve a TN3270E connection, the LU device name that you are connected as will be displayed on the status line. If the specified device is rejected by the server or host, then an error message box will be displayed indicating the reason.

Associate

This is available when the **IBM 3270 Model** option is set to **3287-1** (a printer). It is used to request that the device name of the printer associated with a particular terminal is assigned to this Telnet session. The name of the terminal is specified here. (This is implemented as described in RFC 1647.)

TN3270E Options

TN3270E in implemented as described in RFC 1647. These options should not be changed unless required by your System Administrator.

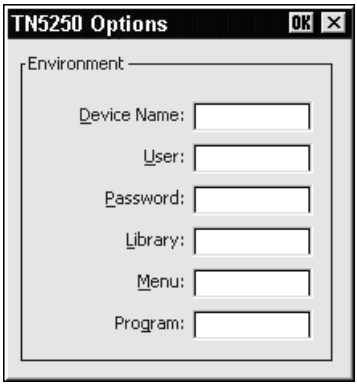
The **Bind** setting determines whether or not the server is allowed to send the SNA Bind image and Unbind notification to the emulator.

When **Responses** is selected, positive and negative response handling is supported. It allows the server to reflect to the emulator any and all definite, exception, and no response requests sent by the host application.

When **SysReq** is selected, some (or all, depending on the server) of the functions of the **SysReq** key will be emulated and the server in an SNA environment.

The **LU1** and **LU3 Printer** options are available when the **IBM 3270 Model** option is set to **3287-1** (a printer). They enable you to specify which printer type(s) to support.

TN5250 Options



This dialog box is displayed by clicking the **5250 Options** button in the **TCP/IP Telnet Configuration** dialog box when TN5250 is not suppressed and the **IBM 5250 Model** is not set to **3812-1** or **5553-B01** (printers). Refer to the next section for **5250 Printer Options**.

Device Name

This enables you to enter the name of the device which the server will be requested to assign to this Telnet session.

You can return the local host name by entering **%s** after the device name. To return the user name, enter **%u** after the device name. You can specify how many characters of the name is returned in each case. For example, **%.3s** will return the first three characters of the local host name, and **%-.3s** will return the last three characters.

To automatically assign a new device name for each successive connection, either enter **%dN%** after the name, where **N** is a decimal value, or **%xN%**, where **N** is a hexadecimal value. Each time the host requests the device name a counter will be incremented modulus **N** and substituted into the device name.

For example, **TEST%d4%** will give **TEST1** on first connect, **TEST2** on second, **TEST3** on third, **TEST0** on fourth, **TEST1** on fifth and so on.

TEST%d100% will give **TEST1** on first connect, **TEST2** on second, ... **TEST99** on 99th, **TEST0** on 100th, **TEST1** on 101st and so on.

These values are preserved over power off, so the first connection of any given power on may not be **TEST1**. Assume that the start point is random. In addition there is a single counter for the unit so concurrent sessions will start from subsequent values. For example, if session one uses **TEST1** then session two will use **TEST2**.

Where a device name collision occurs (i.e. the device name is already in use on the host) the host will ask again for the device name during the same connection. In this

case **TEST1**, **TEST2**, ... may all be tried in one connection until the host accepts one, or all possibilities have been tried. In the latter case the same name is sent twice in succession to indicate to the host all names have been tried.

If concurrent 5250 sessions are started before a previous session has negotiated an acceptable device name, it is possible that the two sessions will access the counter simultaneously and not all possible names will be tried by each session. This should not cause a problem unless the separate sessions use different modulo values (for example, session one device name **TEST%d4%** and session two device name **ANOTHER%d100%**) or are connecting to different hosts.

Note: There are separate counters for the IBM 3270 and IBM 5250 emulations.

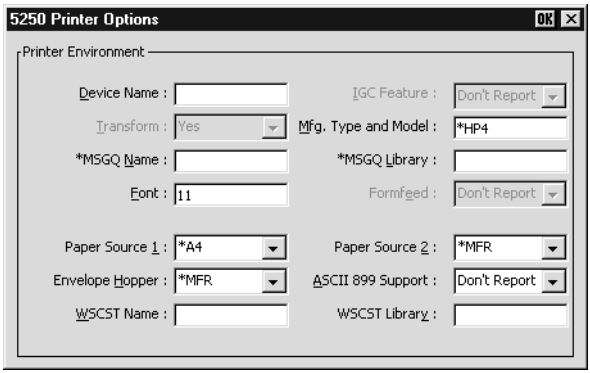
User, Password, Library, Menu

These options enable you to specify the initial entries required on the standard startup screen so that it can be bypassed. Each entry can be a maximum of ten characters.

Program

This enables you to specify the name of the initial program to run. The entry can be a maximum of ten characters.

5250 Printer Options



This dialog box is displayed by clicking the **5250 Options** button in the **TCP/IP Telnet Configuration** dialog box when TN5250 is not suppressed and the **IBM 5250 Model** is set to **3812-1** (a printer).

Device Name

Specifies the name of the printer device.

IGC Feature

This is always set to **Don't Report**.

Transform

Specifies whether the printer will use the host print transform function to generate ASCII printer data. This is always set to **Yes**. The **Mfg. Type and Model** option must specify the printer manufacturer, type and model.

Mfg. Type and Model

Specifies the manufacturer, type and model of the printer. The entry must exactly match an AS400 printer type string, including the * (asterisk) character. The following valid entries are for the IBM AS/400 V3R1. Note that the list can change according to AS/400 settings.

*IBM2380	*IBM2381	*IBM2390	*IBM2391	*IBM3812
*IBM3816	*IBM3912HP	*IBM3916HP	*IBM39302	*IBM39303
*IBM4019	*IBM4019HP	*IBM4029	*IBM4029HP	*IBM4037
*IBM4039HP	*IBM4070	*IBM4070EP	*IBM4072	*IBM4076
*IBM42011	*IBM42012	*IBM42013	*IBM42021	*IBM42022
*IBM42023	*IBM42071	*IBM42072	*IBM42081	*IBM42082
*IBM4212	*IBM4216	*IBM4226	*IBM4230	*IBM4232

*IBM47121	*IBM47122	*IBM47221	*IBM47222	*IBM4770
*IBM5152	*IBM5201	*IBM5202	*IBM5204	*IBM5216
*IBM6404	*IBM6404EP	*IBM6408	*IBM6408EP	*IBM6412
*IBM6412EP	*HPII	*HPIID	*HPIIP	*HPIII
*HPIIID	*HPIIIP	*HPIIISI	*HP4	*HP310
*HP500	*HP520	*HP550C	*HP560C	*HPPAINT
*CPQPM15	*CPQPM20	*EPAP2250	*EPAP3250	*EPAP5000
*EPAP5500	*EPDFX5000	*EPDFX8000	*EPFX850	*EPFX870
*EPFX1170	*EPLX810	*EPLQ510	*EPLQ570	*EPLQ860
*EPLQ870	*EPLQ1070	*EPLQ1170	*EPLQ2550	*EPSQ870
*EPSQ1170	*EPEPL7000	*EPEPL8000	*NECP2	*NECP2200
*NECP2200XE	*NECP5200	*NECP5300	*NECP6200	*NECP6300
*OKI184IBM	*OKI320IBM	*OKI321IBM	*OKI390IBM	*OKI391IBM
*OKI393IBM	*OKI590IBM	*OKI591IBM	*OKI400	*OKI800
*OKI810	*OKI820	*OKI3410	*PAN1123EP	*PAN1124EP
*PAN1124IEP	*PAN1180EP	*PAN1180IEP	*PAN1191EP	*PAN1624EP
*PAN1654EP	*PAN1695EP	*PAN2123EP	*PAN2124EP	*PAN2180EP
*PAN2624EP	*PAN4410HP	*PAN4420HP	*PAN4430HP	*PAN4450IHP
*PAN4451HP				

*MSGQ Name

Specifies the name of the message queue to which operational messages for the printer are to be sent.

*MSGQ Library

Specifies the message queue library.

Font

Specifies the font identifier and point size used by the single-byte printer (e.g. **11**).

Formfeed

This is always set to **Don't Report**. The **Paper Source 1** option is used to specify the paper format to be used.

Paper Source 1 & 2

These options specify the paper format to be used. The possible settings are:

Don't Report	No value returned.
***NONE**	No paper source is defined.
***MFR**	The system determines the paper type used based on the manufacturer, type and model of the printer.
***LET**	Letter-sized paper (8.5 x 11 inches).

***LEGL**	Legal-sized paper (8.5 x 14 inches).
***EXEC**	Executive-sized paper (7.25 x 10.5 inches).
***A4**	A4-sized paper (210 mm x 297 mm).
***A5**	A5-sized paper (148 mm x 210 mm).
***B5**	B5-sized paper (182 mm x 257 mm).
***C80**	Continuous-form paper, 8.0 inches wide (**Paper Source 1** only).
***C132**	Continuous-form paper, 13.2 inches wide (**Paper Source 1** only).
***A3**	A3-sized paper (297 mm x 420 mm).
***B4**	B4-sized paper (257 mm x 364 mm).
***LEDG**	Ledger-sized paper (11 inches x 17 inches).

Envelope Hopper

This specifies the envelope format to be used. The possible settings are:

Don't Report	No value returned.
***NONE**	No envelope source is defined.
***MFR**	The system determines the envelope type used based on the manufacturer, type and model of the printer.
***B5**	B5-sized envelopes (176mm x 250mm).
***MON**	Monarch-sized envelopes (3.875 x 7.5 inches).
***N9**	Number 9-sized envelopes (3.875 x 8.875 inches).
***N10**	Number 10-sized envelopes (4.125 x 9.5 inches).
***C5**	C5-sized envelopes (162mm x 229mm).
***DL**	DL-sized envelopes (110mm x 220mm).

ASCII 899 Support

Specifies whether the single-byte printer has ASCII code page 899 installed. Selecting **Don't Report** will cause no value to be returned.

WSCST Name

Specifies the name of the object containing pointers to the work station customizing tables.

WSCST Library

Specifies the library name of the object containing pointers to the work station customizing tables.

SSL Connection Settings

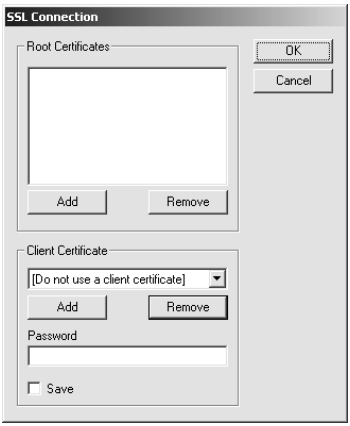
The optional SSL (Secure Sockets Layer) protocol enables authenticated and encrypted communication between clients and servers.

Before anyone can connect to a server the system administrator must make available a copy of the root certificate used to sign the server's identity certificate and the number of the telnet port the server is listening on (the default for secure telnet is **992**).

Additionally the system administrator may issue each user or terminal with their own password protected client certificate.

To make an SSL connection:

1. Select the **SSL** option in the Connection Wizard **Host Information** dialog box, or from the **New Connection** dialog **Type** list box when running TeemTalk.
2. Display the **Telnet Options** dialog box and change the port to the number specified by the system administrator then click **OK**.
3. Click the **Advanced** or **Configure** button to display the **SSL Connection** dialog box.



4. If you have not already installed the root certificate you will have been given to verify the server you are going to connect to, click **Add** under **Root Certificates** and choose the file containing the certificate. This will import the certificate and add its name to the list.
5. If the server you are going to connect to requires you to have a client certificate, choose the relevant certificate from the **Client Certificate** drop down list.
6. If you have not already installed your client certificate, click **Add** under **Client Certificate** and choose the file containing the certificate. This will import the certificate and add its name to the list.

7. You may optionally enter your **Password** for the client certificate here too. If you check **Save** this password will be stored, encrypted, along with the certificate itself. Please note this is a security risk as anyone who can acquire a copy of your registry will be able to use your certificate.

8. Once you have configured the certificates click **OK** and then **Connect** in the **New Connection** dialog box.

9. Login as usual when the telnet login prompt appears.

Error Messages

Could not connect TCP/IP socket.

The most likely causes of this error are that the service is not running on the server or the port number is incorrect.

Could not connect SSL socket. Please check that your client certificate is correct.

This message is returned if the server refuses the SSL connection. The most likely causes are that the server is expecting a client certificate but none has been specified or the client certificate specified is invalid for some reason. This error may also be seen if the server is running an incompatible version of SSL. TeemTalk currently supports SSL2, SSL3 and TLS.

The server's certificate cannot be verified.

The server's identity certificate was not signed by any of the root certificates installed in TeemTalk. TeemTalk will not connect to a host it cannot verify.

Common name does not match host name.

The common name is part of the server's certificate. SSL assumes this will match the host name given in the **Host Name** box in the Connection Wizard, or **Connect To** box in the **New Connection** dialog box. If they do not match TeemTalk will not connect to the host.

Notes About Certificates

The SSL Protocol uses three types of certificate:

1. Server certificates. These are always sent by the server to the client to validate the server's identity. SSL handles them internally and they are never saved on the client.

2. Client certificates. These are sent by the client, only if the server requests them, and validate the client's identity. The client will need to store these locally. Usually a client will only have one certificate to validate it on a particular server but different servers may require different client certificates.

3. CA (Certificate Authority) or root certificates. These are used to authenticate the other two types. The client will need to store these locally.

Storage of Certificates

TeemTalk stores its certificates in the Registry as binary values. The following keys are used:

HKEY_CURRENT_USER\Software\Neoware\Security\SSL\CA Certificates
HKEY_CURRENT_USER\Software\Neoware\Security\SSL\Client Certificates

CA (root) Certificates are stored unencrypted. The value name in the registry is in the form HHHHHHHH.UU where HHHHHHHH is the hash of the certificate's internal name and UU is a unique number. The UU section is to allow different certificates which happen to have the same hash value co-exist. This follows the convention used by openSSL file based system. TeemTalk will automatically discard any duplicate certificates.

Client Certificates are stored encrypted. The value name may be any valid string of characters.

Acquiring New Certificates

There are two ways a client may acquire new certificates. They may be added directly to the registry keys detailed above or they may be installed on the file system and imported manually by TeemTalk.

Adding to the Registry

New CA (root) Certificates should be added to the CA Certificates key with a value name in the form NEWXXXXXXXX where XXXXXXXX is a unique number. Whenever it uses its certificate's, TeemTalk first scans the registry for any value name NEW*. If it finds one it checks that it is not a duplicate and then renames it with the correct hash.unique name.

New Client certificates should be added to the Client Certificate key. They may be given any value name. Obviously if a value already exists with the same name it will be overwritten. TeemTalk uses this value name to identify the certificate to the user and to link particular certificates to particular sessions.

Importing from the File System

The **SSL Connection** dialog box allows users to add both CA and Client certificates by picking files from the file system. These files should be in PEM certificate format and the Client file should include both the certificate and the encrypted private key.

An imported client certificate’s registry name will be the original filename minus any path or extension.

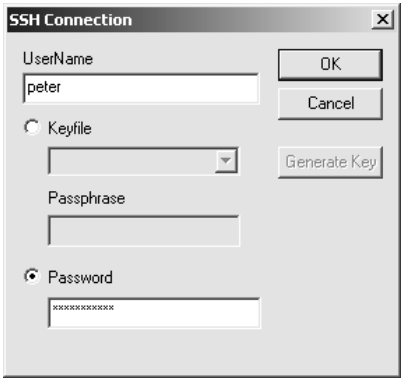
SSH Connection Settings

The optional SSH (Secure Shell) client/server protocol is used to encrypt and transmit data securely over a network, with authentication (proof of client identity) provided by a password and/or key.

To enable an SSH connection, select the **SSH** option in the Connection Wizard **Host Information** dialog box or, when running TeemTalk, in the **New Connection** dialog box **Type** list box. The Telnet **Port Number** option must be set to the host's SSH port (**22** is the default for SSH).

SSH Connection using Username and Password

1. Select the **SSH** option in the Connection Wizard **Host Information** dialog box, or from the **New Connection** dialog **Type** list box when running TeemTalk.
2. Display the **Telnet Options** dialog box and change the **Port Number** to the host's SSH port (**22** is the default for SSH) then click **OK**.
3. Click the **Advanced** or **Configure** button to display the **SSH Connection** dialog box.



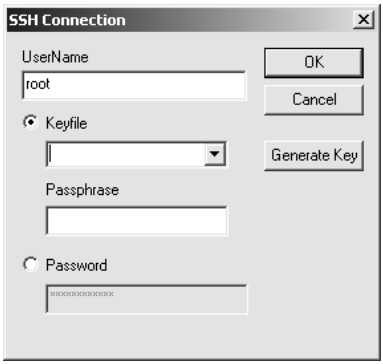
4. Enter your username and password, ensuring that **Password** is selected. Then click **OK**.
5. Click the **Connect** button. TeemTalk will attempt to make the connection.

   If the username and/or password are invalid, TeemTalk will prompt you to re-enter them. (Note that some servers will not allow you to change the username at this point.) To work round this, if you see your username is incorrect, click **Cancel** to abort the connection and then restart as step 1.

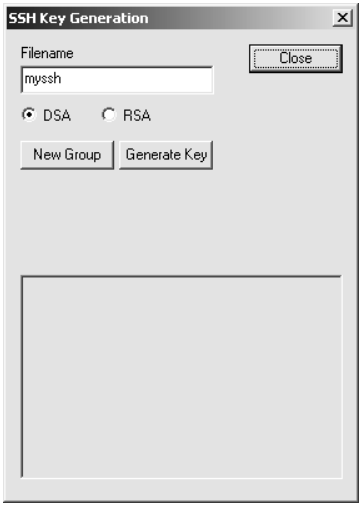
   If your password has expired, TeemTalk will prompt you to enter a new one.

SSH Connection to an openSSH Server using a Key File

1. Select the **SSH** option in the Connection Wizard **Host Information** dialog box, or from the **New Connection** dialog **Type** list box when running TeemTalk.
2. Display the **Telnet Options** dialog box and change the **Port Number** to the host's SSH port (**22** is the default for SSH) then click **OK**.
3. Click the **Advanced** or **Configure** button to display the **SSH Connection** dialog box.



4. If you have already created a keyfile, go to step 19.
5. To create a new key file, click **Generate Key** to display the **SSH Key Generation** dialog box.

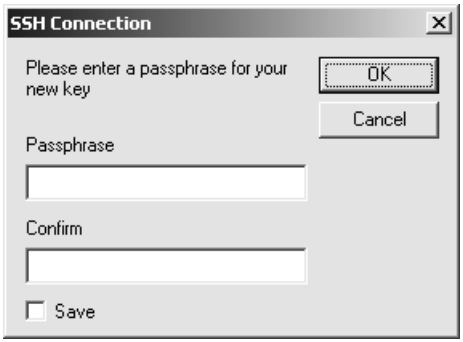


6. Enter a **Filename**. This is the name the key will be stored under in the registry and the name displayed in the **Keyfile** drop down list in the previous dialog box.

7. Select the type of key you wish to create. openSSH servers support both **DSA** and **RSA** keys. Other servers may only support one or the other.

8. Both key generation algorithms require a group of large prime numbers to generate the key. Generating these primes can take a several minutes. As the same primes can be used for generating different keys we have split generating primes and generating keys into two separate options. Clicking **New Group** will generate a new set of primes for the selected algorithm. Clicking **New Key** will create a new key of the algorithm type specified using the existing group of primes. If no group of primes already exists for that algorithm the **New Key** option will generate them automatically. The two algorithms do not share the same prime number group because they require their primes to be generated in different ways.

9. Click **Generate Key** to create a new key. You will be prompted for a passphrase to encrypt your private key.



10. Enter the **Passphrase** and **Confirm** it.

    If you check the **Save** box your password will be stored, encrypted, in the registry along with your key. Please bear in mind that this is a security risk. Although no-one will be able to read your password in the registry, anyone who can get a copy of your registry settings can use them to logon as you.

11. The Key generated is actually a private/public key pair. The private key, and optionally the password to decrypt it, will be stored in your registry. The public key will be displayed in the **SSH Key Generation** dialog box.

12. To make use of your key you need to copy it on to the server.
13. Select all in the text box and then copy to put the key into the Windows clipboard.
14. Logon to your server using username and password.
15. In your home directory you need to have a sub-directory called **.ssh**. You may have to create this directory yourself. Within the **.ssh** directory you need a file called **authorized_keys**. Again if it is not there you will have to create it.
16. Using whatever editor is available on your server you need to paste the key into the file and save it.
17. If the **authorized_keys** file does not exist you can just do the following:

    cat > authorized_keys
    Edit | Paste from the TeemTalk menu.
    Control C

18. Finally logon and restart from step 1.
19. Select your key file from the drop down list.
20. Enter your passphrase (if it has not been saved) and click **OK**.
21. Click the **Connect** button. TeemTalk will attempt to connect to the host.

SSH Connection to an SSH Communications Security Tectia Server using a Key File

1. Follow the instructions in the previous section for using a keyfile with openSSH up to and including step 12.
2. If they do not already exist you need to create a directory **~/.ssh2** and a text file within it called **authorization**.
3. Create another text file and paste your key into it. For example:

   cat > mykey.pub
   Control V
   Control C

4. Add the following line to the **authorization** file :

   key mykey.pub

5. You then have to edit your key file as follows:

   Remove **ssh-dsa** or **ssh-rsa** from the start of the key.

   Remove **Comment** from the end of the key.

   Insert the following lines before the key:

   —— BEGIN SSH2 PUBLIC KEY ——
   Subject: Your name
   Comment:

   And add the following line after the key:

   —— END SSH2 PUBLIC KEY ——

6. You should then be able to connect to the server using your keyfile.

SSH Key File Permissions

If you find that public key authentication does not work when you have copied your public key to **authorized_keys**, it is probably because the file permissions on **$HOME**, **$HOME/.ssh** or **$HOME/.ssh/authorized_keys** are more permissive than SSH allows by default. This may be resolved by executing the following on the server:

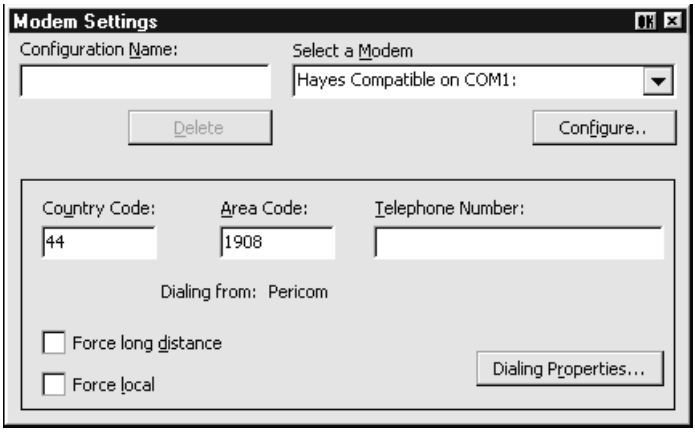
$ chmod go-w $HOME $HOME/.ssh
$ chmod 600 $HOME/.ssh/authorized_keys

If this is not possible for some reason, an alternative is to set **StrictModes no** in **sshd_config**, however this is not recommended.

More information can be found at **http://www.openssh.com/faq.html**.

Modem Connection Settings

The **Modem Settings** dialog box can be displayed from the Connection Wizard **Host Information** dialog box by setting the **Connection Type** to **Modem** then clicking the **Advanced** button, or the **New Connection** dialog box when in non-WBT mode by selecting **Modem** in the **Type** list box then clicking the **Configure** button.

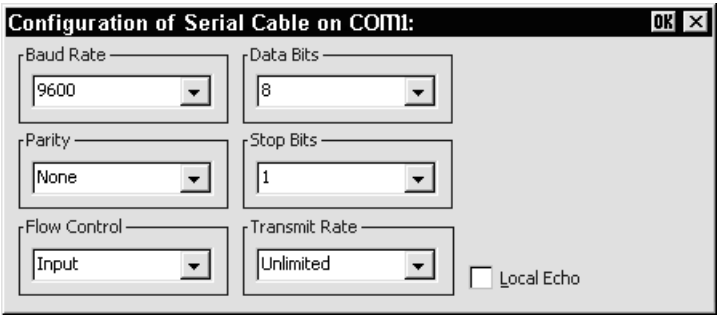


This enables you to define a particular modem configuration which can be saved under a specific name for future selection in the **Host Information** dialog box.

1. If this is a new configuration, enter a name to identify it in the **Configuration Name** box.
2. **Select a Modem** from the list box below. The **Configure** button provides access to the standard Microsoft dialog boxes for specifying port settings and call options.
3. Enter the **Country Code**, **Area Code** and **Telephone Number**.
4. Click the **Dialing Properties** button to display the standard Microsoft dialog boxes for specifying a variety of dialing formats.
5. If you want the country and area codes to be ignored when dialing, select **Force Local**. If you want the area code dialed even if you are in that area, select **Force long distance**.
6. Click **OK** to save the settings and the name you assigned to this configuration will appear in the Modem configuration selection box in the main **Host Information** dialog box.

Serial Connection Settings

The **Serial Configuration** dialog box can be displayed from the Connection Wizard **Host Information** dialog box by setting the **Connection Type** to **Serial** then clicking the **Advanced** button, or the **New Connection** dialog box when in non-WBT mode by selecting **Serial** in the **Type** list box then clicking the **Configure** button.



Baud Rate

Factory default: 9600

This specifies the transmit and receive baud rates for the port selected for host communications.

Parity

Factory default: None

This option specifies the parity mode for each transmitted character. If the number of **Data Bits** is **8**, set this option to **None**.

Selecting **Odd** will cause an eighth bit to be added with a value of 1 if the previous 7 bits add up to an even number, and 0 if the previous 7 bits add up to an odd number. Selecting **Even** will cause an eighth bit to be added with a value of 1 if the previous 7 bits add up to an odd number, and 0 if the previous 7 bits add up to an even number. **Mark** parity will set every eighth bit to 1 and **Space** parity every bit to 0.

Flow Control

Factory default: Input

This option specifies the type of flow control used by the line port to communicate readiness to transmit or receive data from the host.

None - No flow control
Input - XON/XOFF on received data
Output - XON/XOFF on transmitted data
In/Out - XON/XOFF on transmitted & received data
Hardware - DTR/CTS hardware flow control.

Data Bits

Factory default: 8

This option specifies the number of data bits sent for each transmitted character.

Stop Bits

Factory default: 1

This specifies the number of stop bits sent for each transmitted character.

Transmit Rate

Factory default: Unlimited

The setting of this option determines the maximum effective baud rate that the emulatortransmits terminal reports and data sent as a result of pasting data to the host.

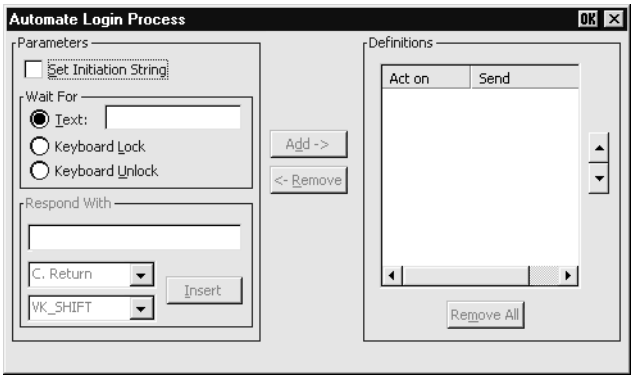
Local Echo

Factory default: Unselected

The setting of this option determines whether keyboard entered characters are displayed on the screen as well as sent to the host. When unselected, characters are not displayed when they are transmitted unless the host 'echoes' them back.

Automate Login Process

The **Automate Login Process** dialog box enables you to automate part or all of the host login procedure.



The settings in this dialog box enable you to specify what is sent to the host in response to prompts displayed on the screen.

1. If an initiation string is required by the host when you first make a connection, select the **Set Initiation String** option, enter the required characters in the **Initiate with** box (the **Respond With** box in the illustration above), then click the **Add** button. The initiation string will be added to the **Script** window on the right.

2. The **Wait For** options enable you to specify the prompt or keyboard locked or unlocked command that the automatic login process is to wait for before proceeding. Some systems are case sensitive, so make sure your **Text** entries follow the correct conventions for your system.

   *Note: When running the IBM 3270 or IBM 5250 emulation, **Text** entries are only applicable in NVT mode.*

3. Enter the response required in the **Respond With** box. In order for a text entry to be sent to the host it must be followed by a carriage return command. This is specified by selecting **C. Return** in the list of predefined commands in the list box below then clicking the **Insert** button. A **<CR>** will appear in the **Respond With** box.

   You can also enter a predefined key function in the **Respond With** box by selecting **Key Definition** in the list of predefined commands in the list box below, selecting one of the virtual key names listed in the box below that, then clicking the **Insert** button. The *Virtual Key Names* appendix lists the predefined key functions available for each emulation.

The list of predefined commands that can be inserted include **UserName** (indicated by **<UN>**) and **Password** (indicated by **<PW>**). Selecting either of these will cause a dialog box to pop-up when logging on to the host prompting the user to enter a name or password, respectively. You can also delay the script response by 2 seconds by inserting **Delay (2s)** (indicated by **<D>**) or 0.255 seconds by inserting **Pause (0.255)** (indicated by **<P>**).

4. When you have finished specifying the response to a particular prompt, click the **Add** button to add the definition to the **Script** window on the right.

   The script will perform the actions in the order displayed in the **Script** window. To change the order of the script lines, use the up and down arrow buttons to the right of the **Script** window.

5. Repeat this procedure for each prompt as required.

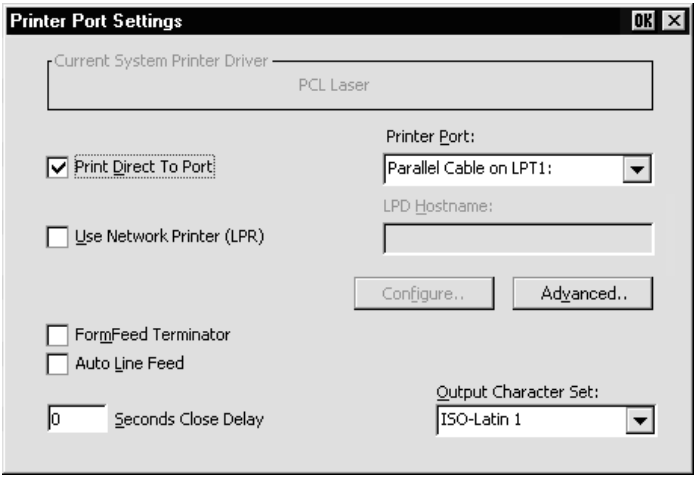
   If you want to edit one of the script lines, select the line in the **Script** window then click **Remove** to send it to the edit boxes on the left. Make the change(s) then click **Add** to send it back to the script. Note that this will now be the last line of the script.

6. When the **Script** window contains all the required responses to the relevant prompts in the correct order, click **Finish**.

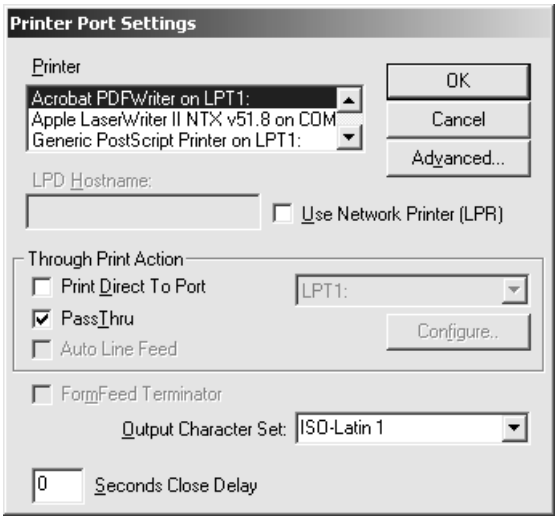
Printer Port Settings

The **Printer Port Settings** dialog box provides several print options. The options available depend on whether you are running TeemTalk for Windows CE or XPe.

TeemTalk for Windows CE



TeemTalk for Windows XPe



CE - Direct Print Data To The Print Manager

The **Current System Printer Driver** box displays the name of the currently selected system printer when both the **Use Network Printer (LPR)** and **Print Direct To Port** options are not selected.

Clicking the **Configure** button will display a Print Manager dialog box which enables you to specify printer settings.

If you find a through print results in data being split into lines, each treated as a separate print job, specify a time in the **Seconds Close Delay** box (e.g. **5** seconds). This will enable the next line of data to be sent before the print job is assumed to have finished and therefore prevents the print job from being closed prematurely. When set to **0**, printing will not start until a 'print end of job' command is received from the host. Entering any other number will cause printing to start after the specified number of seconds have elapsed, regardless of whether the 'print end of job' command has been received from the host. If you require the port to be kept open all the time (to stop the printer resetting) enter **-1** (minus one).

XPe - Direct Print Data To The Print Manager

The **Printer** list box lists the printers handled by the Print Manager. You can select from this list when the **Use Network Printer (LPR)** option is not selected.

Clicking the **Advanced** button will display the standard **Print Manager** dialog box which enables you to specify printer settings.

The Microsoft Windows Print Manager normally controls all print formatting, translates host characters to supported printer characters, and also provides a spooling facility. A disadvantage of using the Print Manager is that any print formatting escape sequences received from the host are stripped. If you want to use the Print Manager but disable its print formatting process so that the original escape sequences from the host are retained, select the **PassThru** option. (Note that the **PassThru** option will be unselectable if the printer driver currently selected does not support this facility.)

If you find a through print results in data being split into lines, each treated as a separate print job, specify a time in the **Seconds Close Delay** box (e.g. **5** seconds). This will enable the next line of data to be sent before the print job is assumed to have finished and therefore prevents the print job from being closed prematurely. When set to **0**, TeemTalk will not start printing until it receives a 'print end of job' command from the host. Entering any other number will cause TeemTalk to print after the specified number of seconds have elapsed, regardless of whether the 'print end of job' command has been received from the host. If you require the port to be kept open all the time (to stop the printer resetting) enter **-1** (minus one).

Direct Print Data To A Specific Port

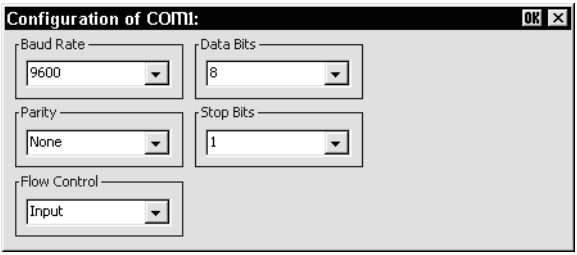
To direct print data to a specific port, select **Print Direct To Port** and specify the **Printer Port**.

Selecting the **FormFeed Terminator** option will cause the printer to advance the paper to the top of the form when it has finished printing.

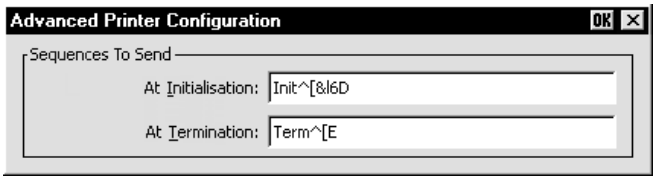
The **Output Character Set** option enables you to specify the character set used for printing when **Print Direct To Port** is selected. This allows non-ISO Latin-1 printers to be used.

Selecting **Auto Line Feed** will cause the printer to print at the beginning of the next line when a carriage return command is received.

When a serial port is selected, clicking the **Configure** button will display a dialog box in which you can specify the baud rate, parity, flow control, data bits and stop bits settings. These options are described in the *Serial Settings* section.

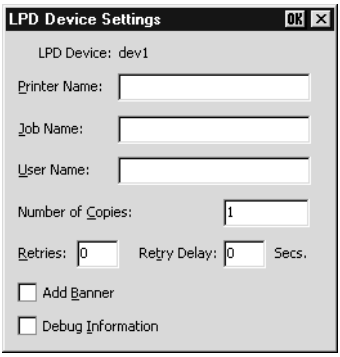


If supported, clicking the **Advanced** button will display a dialog box that enables you to send printer-specific commands to specify, for example, font size, colour, or page header and footer.



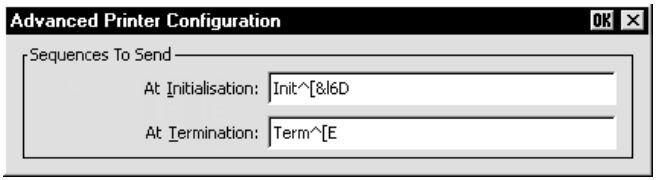
CE - Direct Print Data To A Network Printer

To direct print data to a printer on the network when running Windows CE, select **Use Network Printer (LPR)** and enter the **LPD Hostname**. Clicking the **Configure** button will display a dialog box which enables you to specify various print settings.



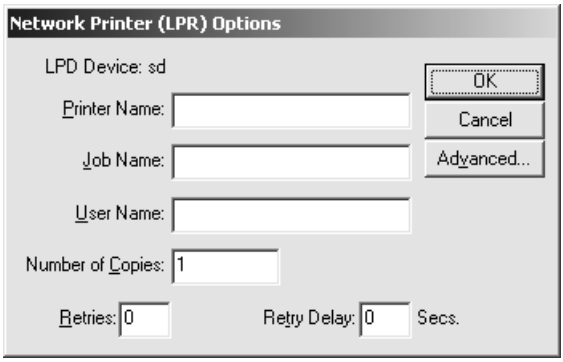
You must specify the **Printer Name**. The **Job Name** and **User Name** entries are optional (the **User Name** will default to **root** if none is specified). The **Number of Copies** to print is set to **1** by default. You can specify how many times the LPR protocol will attempt to execute the print job before cancelling by setting the number of **Retries** and the number of seconds delay between each attempt. When **Add Banner** is selected, information about this print job will be printed with it. You can display a message box which will indicate the progress of the print job by selecting **Debug Information**.

If supported, clicking the **Advanced** button will display a dialog box that enables you to send printer-specific commands to specify, for example, font size, colour, or page header and footer.



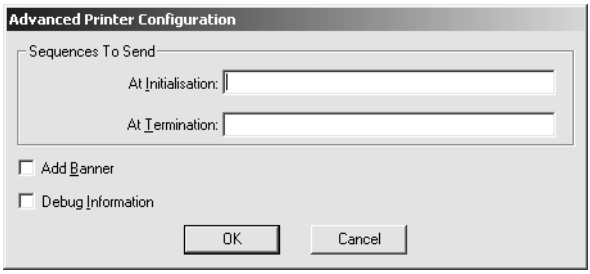
XPe - Direct Print Data To A Network Printer

To direct print data to a printer on the network when running Windows XPe, select **Use Network Printer (LPR)** and enter the **LPD Hostname**. Clicking the **Configure** button will display a dialog box which enables you to specify various print settings.



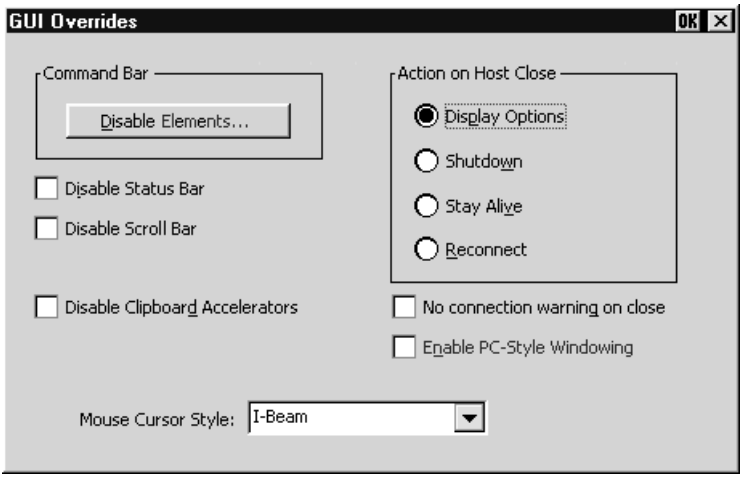
You must specify the **Printer Name**. The **Job Name** and **User Name** entries are optional (the **User Name** will default to **root** if none is specified). You can specify how many times the LPR protocol will attempt to execute the print job before cancelling by setting the number of **Retries** and the number of seconds delay between each attempt.

Clicking the **Advanced** button will display a dialog box that enables you to send printer-specific commands to specify, for example, font size, colour, or page header and footer. When **Add Banner** is selected, information about this print job will be printed with it. You can display a message box which will indicate the progress of the print job by selecting **Debug Information**.

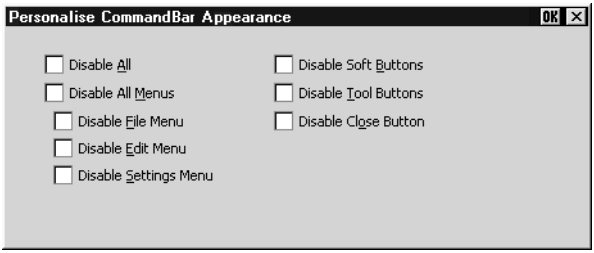


GUI Overrides

The **GUI Overrides** dialog box enables you to disable various GUI items and also enables you to specify how the emulator responds when the host closes the connection.



Clicking the **Disable Elements** button will display another dialog box enabling you to disable any of the command bar elements.



The **Disable Status Bar** and **Disable Scroll Bar** options allow you to disable the status bar and scroll bar, respectively.

The **Disable Clipboard Accelerators** option will disable the **Ctrl + C** (copy) and **Ctrl + V** (paste) keyboard commands.

The **Action on Host Close** options enable you to specify how the emulator responds when the host closes the connection. Selecting **Display Options** will cause a dialog box to be displayed with the following three options. Selecting **Shutdown** will cause the emulator to shutdown. Selecting **Stay Alive** will keep the emulator running.

Selecting **Reconnect** will cause the emulator to attempt to reconnect to the host.

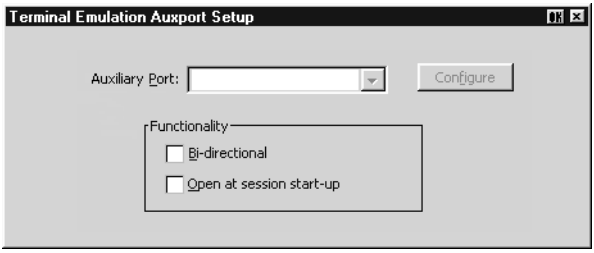
By default, a warning message will be displayed if you attempt to exit the emulator while a host connection is still active. You can disable this message by selecting the **No connection warning on close** option.

If supported, the optional **Enable PC-Style Windowing** option enables multiple windows to be displayed when running CE version 4.2 and above.

The **Mouse Cursor Style** option enables you to choose from a range of cursor styles.

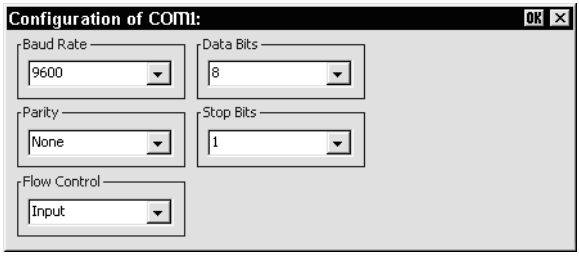
Aux Port Settings

The **Aux Port Settings** dialog box enables you to specify a COM or LPT port for bidirectional output when in any DEC VT mode, ANSI BBS, Sco Console, HP 700-92/96 or IBM 3151 mode.



The **Functionality** options enable you to set the auxiliary port as bidirectional and specify that it is to be opened at start-up.

Clicking the **Configure** button will display a dialog box in which you can specify settings for the COM port. The options in it are described in the *Serial Settings* section earlier in this chapter.



Session Management (Windows XPe)

The way that TeemTalk for Windows XPe sessions are created or modified depends on whether you are logged on as a system administrator, or as a user without administrative privileges.

Logged On As System Administrator

If you are logged on as a system administrator, you can either create a unique session only for your own use, or you can create session templates that are available to all users of the system. The session templates can only be modified by the system administrator. However, a user can load a session template, change the setup settings then save the session to create their own local copy based on the template. This copy will have the same name as the session template.

In order to create a new session, TeemTalk must be started without a session (i.e. not started by clicking on a desktop icon or by selecting a session from the **Start** menu).

To create a session only for your own use, select the **Session stored for current user only** option in the **Save Session As** dialog box before saving the session.

To create a session template for all users, select the **Session stored for all users of system** option in the **Save Session As** dialog box before saving the session.

When TeemTalk is started without a session (i.e. not started by clicking on a desktop icon or by selecting a session from the **Start** menu), the name of each available session template will be listed in the **Open Session** dialog box together with the letter **T** to indicate that they are templates.

When a user loads a template, modifies the settings then saves the session, a local copy of the template will be made *with the same name*, but with the changed settings. This copy will replace the template in the list of session configurations displayed in the **Open Session** dialog box. Note that the **T** template indicator will no longer be displayed. If the user deletes this session, the original template will be listed instead. The user cannot delete session templates.

Logged On As A User

If you are logged on as a user without administrative privileges, you can load a session template created by the system administrator, modify the setup to suit your requirements, then save a local copy of it.

When TeemTalk is started without a session (i.e. not started by clicking on a desktop icon or by selecting a session from the **Start** menu), the name of each available session template will be listed in the **Open Session** dialog box together with the letter **T** to indicate that they are templates.

When you load a template, modify the settings then save the session, a local copy of the template will be made *with the same name*, but with the changed settings. This copy will replace the template in the list of session configurations displayed in the **Open Session** dialog box. Note that the **T** template indicator will no longer be displayed. If you delete this session, the original template will be listed instead. As a user you cannot delete session templates.

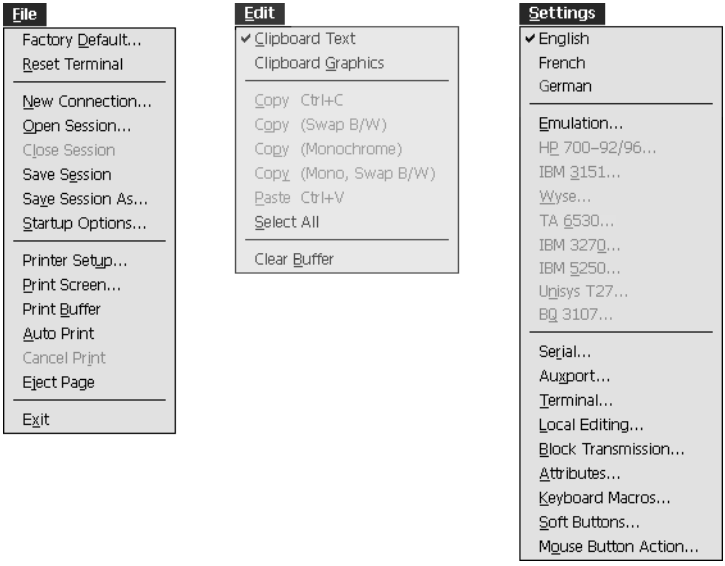
TeemTalk for Windows CE Display

The TeemTalk for Windows CE command bar provides access to a series of menus and buttons that enable you to configure the terminal emulator and perform various functions.

Note: The buttons available depend on whether or not you are in WBT mode.

Setup Menus (Windows CE)

Three menus can be displayed from the command bar. These are headed **File**, **Edit** and **Settings**.



Note: The options available in the menus depend on whether or not you are in WBT mode.

Refer to the *Setup Menus* chapter for a complete discussion on selecting and using the options in these menus.

The Button Tools (Windows CE)

The TeemTalk for Windows CE button tools provide a quick way of actioning commands or displaying setup dialog boxes by just clicking a button.

Displays the **New Connection** dialog box for making a serial or network host connection.

Closes the current host connection.

Displays the **Open Session** dialog box. This enables you to load a particular setup configuration.

Saves the current session configuration.

Displays the **Printer Setup** dialog box.

Displays the **Print Screen** dialog box for producing a hardcopy of screen data in a particular format.

Copies selected data to the clipboard.

Pastes clipboard data at the current cursor position.

Displays help information.

Toggles display of the soft buttons on and off and selects the level.

Toggles display of the soft buttons on and off and selects the level.

The Soft Buttons (Windows CE)

A set of soft buttons are provided which can be programmed so that they perform various functions when clicked. You can toggle between command bar and soft button display either by clicking the following buttons:

or by pressing the keys **Ctrl + Alt + Left Cursor** or **Ctrl + Alt + Right Cursor**. (Note that you can assign these functions to any other keys using the virtual key names CB_NEXT and CB_PREV.)

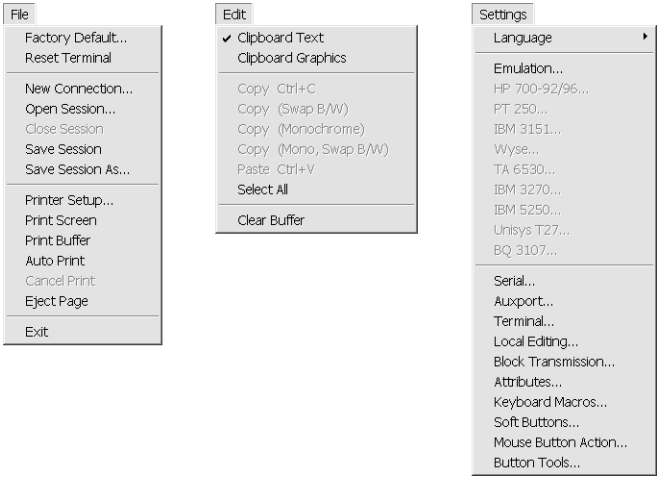
You can define up to four soft button levels. Level 1 is displayed by default. Each level consists of twelve programmable buttons, providing a combined total of 48 programmable buttons. Levels stored off-screen can be 'scrolled' into view by clicking one of the arrow buttons.

The soft buttons are programmed using the **Soft Buttons** dialog box, which is displayed by selecting **Settings** in the menu bar then **Soft Buttons...** Refer to the *Setup Menus* chapter for information on programming the buttons.

TeemTalk for Windows XPe Display

The Menu Bar (Windows XPe)

The TeemTalk for Windows XPe menu bar provides access to three menus that enable you to perform various functions and configure TeemTalk for compatibility with the application.



Note: The options available in the menus depend on your version of TeemTalk.

To display a menu:

Mouse: Click the title of the menu required.

Keyboard: Hold down the **Alt** key and press the key bearing the underlined character in the menu title. For example, pressing **Alt + F** will display the **File** menu.

Refer to the *Setup Menus* chapter for a complete description of all the menu options.

The Toolbar (Windows XPe)

A toolbar is displayed below the TeemTalk for Windows XPe menu bar. This displays a series of buttons which provide a quick way of actioning commands or displaying setup dialog boxes when clicked.

You can redefine all the buttons and add or remove buttons from the toolbar using the **Button Tools** dialog box. Refer to the chapter entitled *The Toolbar* for a complete description of all the default buttons and how to redefine the toolbar.

The Soft Buttons (Windows XPe)

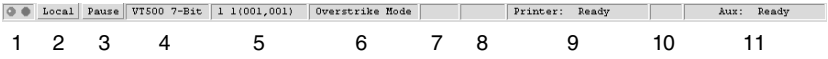
A set of soft buttons can be displayed along the bottom of the TeemTalk for Windows XPe window. These can be programmed so that they perform various functions when clicked.

There are four soft button levels. Each level consists of twelve programmable buttons, providing a combined total of 48 programmable buttons. You can display all four levels at the same time if required. All levels are accessible even if not all are displayed, levels stored off-screen can be 'scrolled' into view by clicking the **Level** button.

The soft buttons are programmed using the **Soft Buttons** dialog box, which is displayed by selecting **Settings** in the menu bar then **Soft Buttons...** The setting of the **Visible Levels** option determines how many soft button levels are displayed. Refer to the *Setup Menus* chapter for information on programming the buttons.

The Status Bar

Along the bottom of the display is a status bar which shows the status of various operations and enables you to switch between modes. The information displayed in the status bar depends on the current terminal emulation. The following description applies when running any of the DEC VT terminal emulations, though some of the fields and buttons will be applicable to other emulations as well.



Item **1**: This displays two LEDs. The first LED indicates whether or not you are connected to the host. It will show red when not connected and green when you are connected. The second LED indicates whether or not data is being sent to or from the host. It will show dull green when there is no activity, red when data is being sent to the host, and bright green when data is being received from the host.

Item **2**: This button enables you to switch between **Local** and **Online** mode. The label indicates the mode you will switch to if the button is clicked.

Item **3**: This button enables you to **Pause** or **Resume** scrolling data in the window. The label indicates the action that will be taken if the button is clicked.

Item **4**: Indicates the current terminal emulation.

Item **5**: This displays the active session (always 1), the current page number (always 1), and the **line,column** location of the text cursor.

Item **6**: This indicates whether **Overstrike Mode** or **Insert Mode** is currently selected. In **Overstrike Mode** (default), new characters will replace already existing characters at the cursor position. When **Insert Mode** is selected, new characters will be inserted at the cursor position without deleting existing characters, which will move to the right.

Item **7**: This will display **Edit** when the terminal emulation is in Edit mode.

Item **8**: This will display the time in 24 hour format when in DEC VT500 mode if the VT525 set time command has been received from the host.

Item **9**: Indicates the status of the printer as follows:

None signifies that the printer is not turned on or not connected, or not installed in Microsoft Windows.

Not Ready signifies that the printer is not ready to receive data for printing.

Ready signifies that the printer is ready to receive data for printing.

Auto signifies that the emulation is in Auto Print mode in which the current cursor line is sent to the printer when a command for the cursor to move to the next line is issued.

Controller signifies that the emulation is in Printer Controller mode in which the host has direct control over the printer. Print screen commands issued from the keyboard or mouse will be ignored.

ErrGen indicates that an error has occurred and a message box will be displayed indicating the error.

Item **10**: This indicates the keyboard mode. It will be blank when the keyboard is in normal mode and will display **DEC** when in DEC mode. You can toggle between normal and DEC mode by pressing the keys **Alt + Num Lock** together.

Item **11**: Indicates the status of the aux port as follows:

Ready indicates that the aux port is ready for bidirectional output.

In Use indicates that the aux port is currently busy.

Hotspots

A hotspot facility is provided which enables you to invoke a function by clicking on a keyword displayed on the screen. For example, an application may display information relating to keys you can press to perform a particular function. Instead of pressing the key on the keyboard, you could invoke the function by holding down the **Control** key and clicking the mouse pointer on the key name on the display (assuming default mouse configuration).

Hotspots are supported in ALL terminal emulation modes. A set of default keywords is provided for each mode. These keywords relate to key functions specific to the emulation. For example, in VT500 mode you can tap on the word **Help** displayed on the screen and the emulator will execute the function associated with the **Help** key.

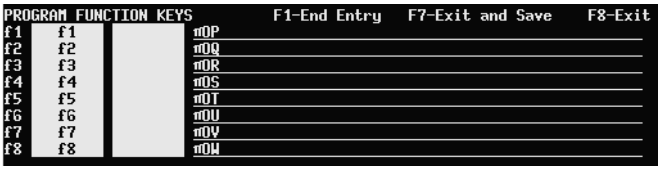
You can identify hotspots that are currently present in display memory by assigning the **Show Hotspots** function to a key + mouse button combination using the **Mouse Button Actions** dialog box (refer to the *Mouse Functions* chapter for details). Holding down the relevant key and left mouse button will cause all colour attributes to be temporarily removed from the display and the hotspots will be highlighted with a red background. Releasing the key and left mouse button will return the display to its original state.

AT&T 4410 Emulation

When running the AT&T 4410 emulation the display size is 80 (or 132) columns by 25 lines with a scroll region of 24 lines. A row of function buttons is displayed along the bottom of the window. These correspond to the function keys **F1** through **F8** on the keyboard.

You can action a programmed function either by pressing the function key or click-ing the equivalent button displayed on the screen. The middle button has no function when clicked.

To program the function keys, press any **F1** - **F8** key shifted. The Program Function Keys menu will be displayed.



Each line relates to one particular function key and its button. The two fields following the f-key number allow you to enter a two line label of up to sixteen characters for the equivalent button on the screen. These are followed by the definition line which contains an escape sequence by default. Each definition can contain up to 50 ASCII characters.

To program an f-key, press the **F1** key to move the cursor to the relevant line and use the cursor keys to move from one section of the line to another. You must press the **F1** key to end each definition line entry so that extra space characters are not sent to the host. Note that using the cursor keys to move to the next line will cause the remainder of the definition line to be sent as spaces.

When you have finished defining the f-keys, press **F7** to save the definitions and exit from the menu. If you want to exit without saving the settings, press **F8**.

Viewdata Mode

You can select one of three display formats for viewdata mode: 40 column, 80 column, or Split Screen. Selecting **Viewdata 40** or **80** mode will enable a single viewdata page of 40 or 80 columns wide by 24 lines deep to be displayed. **Viewdata Split** enables simultaneous display of two pages side by side, each page consisting of 24 lines and 40 columns. Receipt of a clear screen command will move the cursor to the home position of the opposite page and its contents will be erased ready for the next page.

The keys mapped as **PF1** through **PF4** have the following functions in viewdata mode:

PF1:	*	**PF3:**	Reveal
PF2:	#	**PF4:**	Exit to ANSI mode

Notes

3

Keyboard Configuration

This chapter describes how to configure the keyboard, define key functions and compose special characters.

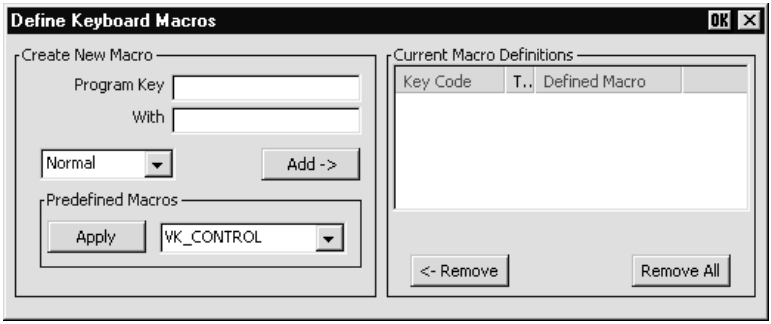
Keyboard Mapping

The keyboard is mapped as close as possible to the terminal being emulated. An llustration showing the mapping of key functions on the 101/102 key Enhanced AT style keyboard layout is shown in each terminal emulation chapter.

Special key functions supported by each terminal emulation can be mapped to keys using the predefined macros listed in the **Define Key Macros** dialog box as described in the next section.

Defining Key Functions

You can redefine the function of keys on the keyboard using the **Define Keyboard Macros** dialog box which is displayed by selecting **Keyboard Macros** in the **Settings** menu.



This enables you to redefine the function of most of the keys on your keyboard, including the key combinations listed below:

Key	**Alt + Key**
Shift + Key	**Alt + Shift + Key**
Control + Key	**Alt + Control + Key**
Control + Shift + Key	**Alt + Control + Shift + Key**

Each definition may contain a string of up to 127 characters. The combined total of all the characters that may be programmed into keys is determined by the 127 character limit per definition and the amount of memory available in your PC.

The **Predefined Macros** box enables you to select from a list of standard functions associated with the current terminal emulation. Clicking the arrow button will display a list box in which the names of valid key functions (called *virtual key names*) are shown. The *Virtual Key Names* appendix lists all the functions and associated virtual key names for each terminal emulation.

A key macro may be actioned automatically on start-up, or transmitted to the host or actioned locally when the key or key combination is pressed. This is determined by selecting **Normal**, **Remote**, **Local** or **Startup** in the list box when defining the key. Selecting **Normal** will cause the macro to be processed according to the current operating mode when the key or key combination is pressed.

The **Current Macro Definitions** box displays the key and key combinations that are currently defined. The **Type** column indicates whether the macro is processed as normal (blank), remote (**R**), local (**L**) or on start-up (**S**).

You can remove the selected definition or delete all the definitions by clicking the relevant **Remove** button.

Defining A Key Or Key Combination

1. Click in the **Program Key** box then press the key or key combination to define. The current definition will be displayed.
2. Click in the **With** box then enter the new definition, or make a selection from the list of **Predefined Macros** then click **Apply**.
3. Specify how the macro is to be processed by selecting either **Normal**, **Remote**, **Local** or **Startup** in the list box.
4. Click the **Add** button to accept the definition. The new definition will be added to the **Current Macro Definitions** list.
5. To save the definitions, click **OK** to exit, then select **Save Session As** in the **File** menu, make sure the **Keyboard Macros** box is checked, then click **OK**.

Key Combinations & Sequences

You can program a key to perform the function of a combination or sequence of keys. For example, you can cause the **F1** key to perform the same function as pressing the keys **Alt** + **F4** together, or pressing the keys **F2** then **F3** then **F4**.

Keys are identified by their virtual key names as listed in the *Virtual Key Names* appendix. The virtual key name has to be enclosed by the **<** and **>** characters in the key definition box. You may omit the **VK_** and **VT_** (etc.) parts of the virtual key name.

To program a key so that it performs the same function as pressing two or more other keys together, type the **<** character followed by the virtual key names linked together with + (plus sign) characters and ending with the **>** character.

For example, to program the **F1** key so that when it is pressed it performs the same function as pressing the keys **Alt** + **F4** together, enter the following characters in the key definition box: **<ALT+F4>**

To program a key so that it performs the same function as pressing a sequence of keys one after the other, enter each virtual key name in the order required, enclosing each virtual key name with the **<** and **>** characters. Each enclosed virtual key name must immediately follow the previous enclosed virtual key name with no spaces. For example, to program the **A** key so that when it is pressed it performs the same function as pressing the keys **F2** then **F3** then **F4** enter the following characters in the key definition box: **<F2><F3><F4>**

Specifying Characters

There are various ways in which you can specify a particular character. For example, the **ESC** character can be specified using any one of the following five entries:

_027	Decimal value (underscore character followed by a 3-digit number).
\033	Octal value (backslash character followed by a 3-digit number).
\u001B	Unicode value (backslash and **u** characters then unicode value).
^[	Control key value (**^** represents the control key on the keyboard).
\e	Additional value for **ESC**.

The following 'backslash' values can be used:

\u	Unicode introducer	**\r**	Carriage return
\n	Line feed	**\e**	Escape

Note that as the **** and **^** characters are used as value introducers, to enter these as character values you need to precede them with a backslash character, i.e. enter **** as **** and **^** as **\^**.

The Euro character can be specified by entering the unicode value **\u20ac**.

Compose Character Sequences

Compose character sequences can be used to generate codes for characters not shown on your keyboard. The characters that can be composed depend on the setting of the **Character Set Mode** option in the **Emulation Settings** dialog box and the **Preferred Char. Set** option in the **Terminal Settings** dialog box.

When **Character Set Mode** is is set to **National**, only characters found in the character set that corresponds to the selected keyboard nationality can be composed. When **Multinational** is selected, the emulator is in Multinational mode and characters from all national keyboard layouts may be composed.

The tables of characters that are used in Multinational mode depend on the setting of the **Preferred Char. Set** option. When this is set to **DEC-MCS**, the ASCII (7-bit) and DEC Additional (8-bit) character sets are used. When this option is set to **ISO Latin-1**, the ASCII (7-bit) and ISO Latin-1 Additional (8-bit) character sets are used. The *Character Sets* appendix shows all the tables of characters that may be selected.

If a character is a diacritical symbol (e.g. ´ or ¨) and this symbol does not appear on the keyboard, an equivalent character can be used in some cases. The diacritical symbols and the possible substitutes are shown below. There are no equivalents for the circumflex accent and tilde mark.

Diacritical Mark		Equivalent Character	
´	Acute accent	'	Apostrophe
¨	Umlaut	"	Double quote
`	Grave accent	'	Single quote
°	Ring mark	*	Asterisk or degree sign

To compose a character, first find the character you wish to compose in the left hand column of the following tables. The two characters shown in the right hand column are the keys that are used to create it. Several alternatives may be given for generating the same character. A compose sequence is initiated by pressing the keys **Alt + C** together, followed by the key bearing the first character then the key bearing the second character.

> *Note: The compose character sequence can also be initiated by pressing a key defined with the COMPOSE virtual key name.*

A compose character sequence may be abandoned before completion by pressing the **Delete** key. Pressing **Alt + C** (or the key defined with the COMPOSE virtual key name) again before completing a compose character sequence will cause it to be abandoned and a second sequence to be started. An invalid compose character sequence will cause the bell to sound.

The following tables use several conventions:

The keys bearing the characters used to compose a special character may be pressed in any order unless **(in order)** is specified.

(DEC Multinat.) indicates that the character can only be composed if the **Character Set Mode** option in the **Emulation Settings** dialog box is set to **Multinational**, and the **Preferred Char. Set** option in the **Terminal Settings** dialog box is set to **DEC-MCS**.

(Latin-1) indicates that the character can only be composed if the **Character Set Mode** option in the **Emulation Settings** dialog box is set to **Multinational** and the **Preferred Char. Set** option in the **Terminal Settings** dialog box is set to **ISO Latin-1**.

If a nationality is specified with the character description, for example **(Dutch)**, then the character can only be composed when the **Character Set Mode** option in the **Emulation Settings** dialog box is set to **National** and the system is configured for the relevant language.

COMPOSE CHARACTER SEQUENCES

"	quotation mark	¨ **space**
#	number sign	**+ +**
'	apostrophe	' **space**
@	commercial at	**a a** or **A A** (Multinational) **a a** or **A A** or **a A** (National)
[	opening bracket	**((**
\	back slash	**/ /** or **/ <**
]	closing bracket	**))**
^	circumflex accent	**^ space**
`	grave accent	` **space**
{	opening brace	**(-**
|	vertical line	**/ ^**
}	closing brace	**) -**
~	tilde	~ **space**
¡	inverted !	**! !**
¢	cent sign	**c /** or **C /** **c |** or **C |**
£	pound sign	**l -** or **L -** **l =** or **L =**
¥	yen sign	**y -** or **Y -** **y =** or **Y =**
§	section sign	**s o** or **S O** or **s !** **S !** or **s 0** or **S 0** (National & Multinational) National includes **s O** or **S o**
¤	currency sign	**x o** or **X O** **x 0** or **X 0**
©	copyright sign	**c o** or **C O** **c 0** or **C 0**

ª	feminine ordinal indicator	**a -** or **A _**
«	double open angle brackets	**< <**
°	degree sign	**0 ^** (Multinational) **° space** (National)
±	plus or minus sign	**+ -**
²	superscript 2	**2 ^**
³	superscript 3	**3 ^**
µ	micro sign	**/ u** or **/ U** (in order)
¶	paragraph sign	**p !** or **P !**
·	centred period	**. ^**
¹	superscript 1	**1 ^**
º	masculine ordinal indicator	**o _** or **O _**
»	double closed angle brackets	**> >**
1/4	fraction one quarter	**1 4** (in order)
1/2	fraction one half	**1 2** (in order)
3/4	fraction three-quarters (Dutch)	**3 4** (in order)
fl	Florin (Dutch)	**f l** (in order)
ij	i j sign (Dutch)	**i j** (in order)
¿	inverted ?	**? ?**
À	A grave	**A `**
Á	A acute	**A '**
Â	A circumflex	**A ^**
Ã	A tilde	**A ~**

COMPOSE CHARACTER SEQUENCES (continued)

Ä	A umlaut	**A "** or **¨ A**
Å	A ring	**A *** or **A °** (degree sign)
Æ	A E diphthong	**A E** (in order)
Ç	C cedilla	**/ u** or **/ U** (in order)
È	E grave	**E `**
É	E acute	**E '**
Ê	E circumflex	**E ^**
Ë	E umlaut	**E "** or **¨ E**
Ì	I grave	**I `**
Í	I acute	**I '**
Î	I circumflex	**I ^**
Ï	I umlaut	**I "** or **¨ I**
Ñ	N tilde	**N ~**
Ò	O grave	**O `**
Ó	O acute	**O '**
Ô	O circumflex	**O ^**
Õ	O tilde	**O ~**
Ö	O umlaut	**O "** or **¨ O**
Œ	O E diphthong (DEC Multinat.)	**O E** (in order)
Ø	O slash	**O /**
Ù	U grave	**U `**
Ú	U acute	**U '**

Û	U circumflex	**U ^**
Ü	U umlaut	**U "** or **¨ U**
Ÿ	Y umlaut (DEC Multinat.)	**Y "** or **¨ Y**
ß	German small sharp s	**s s**
à	a grave	**a `**
á	a acute	**a '**
â	a circumflex	**a ^**
ã	a tilde	**a ~**
ä	a umlaut	**a "** or **¨ a**
å	a ring	**a *** or **a °** (degree sign)
æ	a e diphthong	**a e** (in order)
ç	c cedilla	**c ,** (comma)
è	e grave	**e `**
é	e acute	**e '**
ê	e circumflex	**e ^**
ë	e umlaut	**e "** or **¨ e**
ì	i grave	**i `**
í	i acute	**i '**
î	i circumflex	**i ^**
ï	i umlaut	**i "** or **¨ i**
ñ	n tilde	**n ~**
ò	o grave	**o `**

COMPOSE CHARACTER SEQUENCES (continued)

ó	o acute	**o '**
ô	o circumflex	**o ^**
õ	o tilde	**o ~**
ö	o umlaut	**o "** or **¨ o**
œ	o e diphthong (DEC Multinat.)	**o e** (in order)
ø	o slash	**o /**
ù	u grave	**u `**
ú	u acute	**u '**
û	u circumflex	**u ^**
ü	u umlaut	**u "** or **¨ u**
ÿ	y umlaut	**y "** or **¨ y**
$^{N}_{S_P}$	no break space (Latin-1)	**space space**
¦	broken vertical bar (Latin-1)	**| |** or **! ^**
¬	logical not (Latin-1)	**- ,** (in order)
—	soft (syllable) hyphen (Latin-1)	**- -**
®	registered trade-mark (Latin-1)	**R O**
¯	macron (Latin-1)	**- ^** or **_ ^**
$^{3}/_{4}$	three quarters (Latin-1)	**3 4** (in order)
÷	division sign (Latin-1)	**- :**
×	multiplication sign (Latin-1)	**x x**
´	acute accent (Latin-1)	**' '**
¨	dieresis (umlaut) (Latin-1)	**" "** or **" space**
Ý	Y acute (Latin-1)	**Y '**
ý	y acute (Latin-1)	**y '**
Þ	capital Icelandic thorn (Latin-1)	**T H** (in order)
þ	small Icelandic thorn (Latin-1)	**t h** (in order)
Ð	capital Icelandic Eth (Latin-1)	**- D**
ð	small Icelandic Eth (Latin-1)	**- d**

4

Mouse Functions

This chapter describes the special functions assigned to the mouse and how to redefine them.

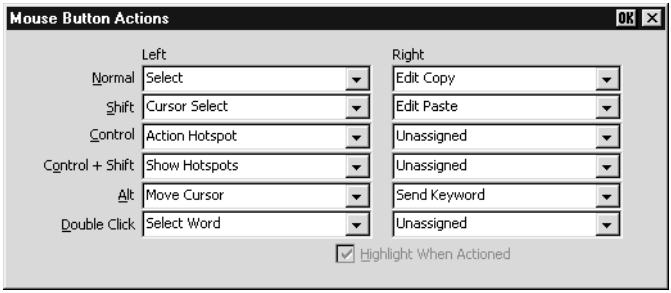
Introduction

You can assign up to six special functions to the left and right mouse buttons when used in conjunction with modifier keys. The following functions are defined by default:

	Left Button	Right Button
Normal:	Select	Edit Copy
Shift:	Extend Selection	Edit Paste
Control:	Action Hotspot	Unassigned
Control + Shift:	Select Rectangle	Unassigned
Alt:	Move Cursor	Send Keyword
Double Click:	Select Word	Unassigned

Redefining Mouse Functions

You can redefine the functions assigned to the mouse buttons using the **Mouse Button Actions** dialog box, which is displayed from the **Settings** menu.



This enables you to specify the functions of the left and right mouse buttons when clicked on their own or in conjunction with modifier keys. You can assign up to six functions to each button, either entering your own definition in the same format as described for keyboard macros and soft buttons, or selecting from a list of standard built-in functions. Clicking one of the arrow buttons will display a drop-down list box which lists all the standard functions that can be assigned:

Unassigned	Send CR
Select	Send Keyword
Extend Selection	Middle Button
Edit Copy	Select Rectangle
Edit Paste	Select Word
Show Hotspots	Select and Copy
Action Hotspot	Cursor Select
Move Cursor	Rectangular Select and Copy

The setting of the **Highlight When Actioned** option determines whether or not a visual indication is given that a function has been actioned when a hotspot is clicked.

Selecting & Copying Text

You can use the mouse buttons to copy and paste text. The region of the display that will be selected for copying depends on whether you use the **Select**, **Select and Copy**, **Select Rectangle**, **Rectangular Select and Copy** or **Select Word** function.

The **Select** function will select all text from the start position to the finish position, working left to right across the entire width of the display, whereas the **Select Rectangle** function will only select text contained within the rectangular area defined by the start position (top left corner) and the finish position (bottom right corner). The **Select Word** function will cause the word under the mouse cursor to be selected.

The **Select and Copy** function is the same as **Select** but will also copy the selected data to the Clipboard automatically. The **Rectangular Select and Copy** function is the same as **Select Rectangle** but will also copy the selected data to the Clipboard automatically.

Moving The Cursor In Block Mode

When the emulator is in any of the local block modes you can use the mouse instead of the cursor keys to position the text cursor using the **Move Cursor** function. To position the text cursor, move the mouse pointer to the position required, hold down the **Alt** key then click the left mouse button.

The **Cursor Select** function does the same as **Move Cursor**, but when running the IBM 3270 or IBM 5250 emulation it also performs a cursor select.

Send Keyword

The **Send Keyword** function enables you to click on any delimited word displayed on the screen and it will be sent to the host, as long as the word is not already defined as a hotspot. Keyword delimiters are **space**, **NULL**, **/ , : =** **( )** **[** and **]**.

Show & Action Hotspots

A hotspot facility is provided which enables you to invoke a function by clicking the mouse pointer on a keyword displayed on the screen. For example, an application may display information relating to keys you can press to perform a particular function. Instead of pressing the key on the keyboard, you could invoke the function by holding down the **Alt** key and clicking the mouse pointer on the displayed key name (assuming default mouse configuration).

Hotspots are supported in ALL terminal emulation modes. A set of default hotspot keywords is provided for each mode. These relate to key functions specific to the emulation. For example, in VT500 mode you can click on the word **Help** displayed on the screen and the emulator will execute the function associated with the **Help** key.

You can identify hotspots that are currently present in display memory by using the **Show Hotspots** function. All colour attributes will be temporarily removed from the display and the hotspots will be highlighted with a red background.

Emulating Middle Mouse Button

You can assign the function of the middle button found on a three button mouse to any button or button and key combination by using the **Middle Button** option.

Notes

5

The Toolbar

This chapter describes how to use and redefine the TeemTalk for Windows XPe toolbar.

Using The Toolbar

The TeemTalk for Windows XPe toolbar provides a quick way of actioning commands or displaying setup dialog boxes by just clicking a button.

You can customize the toolbar by adding or removing buttons to suit your requirements using the **Button Tools** dialog box, which is displayed from the **Settings** menu.

The Predefined Button Tools

The toolbar displayed by default contains a series of buttons defined with functions found in the setup menus. These functions are listed below and described in the *Setup Menus* chapter.

Displays the **New Connection** dialog box for making a serial or network host connection.

Displays the **Open Session** dialog box. This enables you to load a particular setup configuration.

Displays the **Save Session As** dialog box. This enables you to specify how the current session configuration is to be saved.

Copies selected data to the clipboard.

Pastes clipboard data at the current cursor position.

Displays the **Printer Setup** dialog box. This enables you to select any printer that is configured in Microsoft Windows.

Will produce a hardcopy of screen data.

Displays the **Attributes** dialog box. This enables you to specify the colours used in the emulation workspace and how text with attributes is displayed.

Displays the **Keyboard Macros** dialog box. This shows the mapping of your keyboard and enables you to redefine the function of keys.

Displays the **Soft Buttons** dialog box for defining the function of soft buttons.

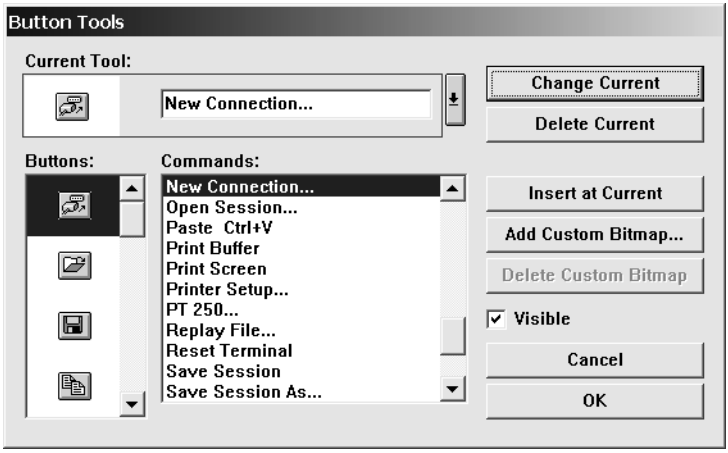
Displays the **Mouse Button Actions** dialog box for assigning up to six functions to the left mouse button.

Displays the **Button Tools** dialog box for redefining the toolbar.

Displays information about your version of TeemTalk.

Redefining The Toolbar

Selecting **Button Tools** from the **Settings** menu will display a dialog box that enables you to redefine the toolbar.



The **Current Tool** box displays the toolbar button and its function that is currently selected for editing, or located where a new button is to be inserted to its left in the toolbar. Clicking the down-arrow button to the right will display all the current toolbar buttons in order in a box below. This enables you to select a new button position for display in the **Current Tool** box. Click the down-arrow button again to return to the **Button** and **Command** selection display.

The **Visible** option enables you to specify whether or not the toolbar is displayed.

Adding Buttons

1. Click the down-arrow button to the right of the **Current Tool** box to display the buttons currently in the toolbar.
2. Click on the button which will be to the right of the new button to be added so that it is displayed in the **Current Tool** box.
3. Click the down-arrow button again to display the **Command** options.
4. Select a button bitmap from the **Buttons** list.

   You can add your own bitmaps to the standard bitmap list by clicking the **Add Custom Bitmap** button and selecting the bitmap files to load. Buttons will be automatically generated using the bitmaps in these files.

5. Specify the command to be performed when this button is clicked either by selecting from the **Commands** list or by typing your own definition in the **Current Tool** text box.
6. Click the **Insert at Current** button.
7. Click **OK** when you have finished. The toolbar will immediately be updated.

Adding A Space Between Buttons

1. Click the down-arrow button to the right of the **Current Tool** box to display the buttons currently in the toolbar.
2. Click on the button which will be to the right of the space to be added so that it is displayed in the **Current Tool** box.
3. Click the down-arrow button again to display the **Command** options.
4. Select the **[Space]** option at the top of the **Commands** list box.
5. Click the **Insert at Current** button.
6. Click **OK** when you have finished. The toolbar will immediately be updated.

Removing A Button Or Space

1. Click the down-arrow button to the right of the **Current Tool** box to display the buttons currently in the toolbar.
2. Click on the button or space to be deleted so that it is displayed in the **Current Tool** box.
3. Click the down-arrow button again to display the **Command** options.
4. Click the **Delete Current** button to remove the button or space from the toolbar.
5. Click **OK** when you have finished.

Saving The Button Tools

When you have finished defining button tools you can save them so that they will be reasserted when the emulator is loaded or reset by selecting **Save Session** in the **File** menu.

Assigning User-Defined Functions

You can enter a definition of your own in the **Current Tool** text box. The definition can contain key functions and control characters to be actioned as well as normal text.

Specifying Key Functions

You can cause a key function to be actioned by including the virtual key name of the key enclosed by the **<** and **>** characters. You may omit the **VK_** and **VT_** parts (etc.) of the virtual key name. For example, the **Enter** key would be specified as **<ENTER>**.

To send the function of a key combination, type the **<** character followed by the virtual key names linked together with **+** characters and ending with the **>** character. For example, **Alt F4** would be specified as **<ALT+F4>**.

To send the function of a sequence of keys one after the other, enter each virtual key name in the order required, enclosing each virtual key name with the **<** and **>** characters. Each enclosed virtual key name must immediately follow the previous enclosed virtual key name with no spaces. For example, **F2** then **F3** then **F4** would be specified as **<F2><F3><F4>**.

Specifying Characters

There are various ways in which you can specify a particular character. For example, the **ESC** character can be specified using any one of the following five entries:

_027	Decimal value (underscore character followed by a 3-digit number).
\033	Octal value (backslash character followed by a 3-digit number).
\u001B	Unicode value (backslash and **u** characters then unicode value).
^[	Control key value (**^** represents the control key on the keyboard).
\e	Additional value for **ESC**.

The following 'backslash' values can be used:

\u	Unicode introducer	**\r**	Carriage return
\n	Line feed	**\e**	Escape

Note that as the **** and **^** characters are used as value introducers, to enter these as character values you need to precede them with a backslash character, i.e. enter **** as **** and **^** as **\^**.

The Euro character can be specified by entering the unicode value **\u20ac**.

Notes

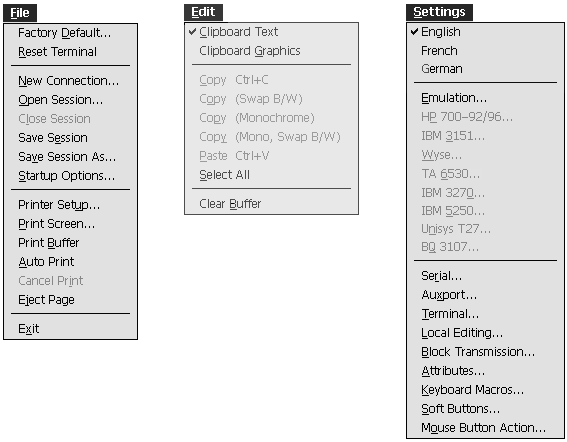
6

Setup Menus

This chapter describes the options available in the setup menus and dialog boxes.

Displaying & Closing Menus

The following menus can be displayed from the command bar:



Note: The options available in the menus depend on whether or not you are in WBT mode.

To display a menu:

Mouse: Click on the title of the menu required.

Keyboard: Hold down the **Alt** key and press the key bearing the underlined character in the menu title. For example, pressing **Alt + F** will display the **File** menu.

To close a menu:

Mouse: Click anywhere outside the menu.

Keyboard: Press the **Alt** key.

Using The Menus

The menu options follow several conventions:

Options that are displayed dimmed are not applicable to the current mode of operation and cannot be selected. An example of this is the **IBM 5250** option in the **Settings** menu. This can only be selected when the IBM 5250 emulation is running.

Options that include an underlined character may be actioned by pressing the key bearing that character. For example, pressing the **X** key while the **File** menu is displayed will cause the emulator to shut down.

Options that are *not* followed by an ellipsis (...) perform a particular function when selected. For example, selecting **Reset Terminal** in the **File** menu will perform a terminal reset.

Options that are followed by an ellipsis indicate that a dialog box will be displayed with all the selections applicable to that option. For example, selecting **Emulation...** in the **Settings** menu will display a dialog box in which you can specify various emulation settings.

To select a menu option:

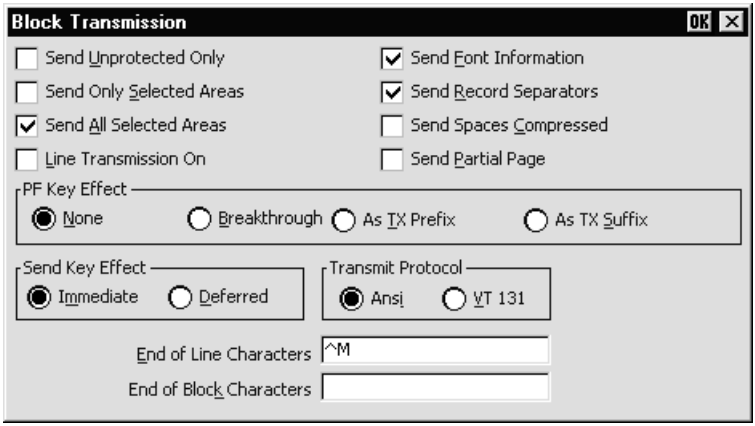
Mouse: Click the menu option.

Keyboard: Method 1: If the option includes an underlined character, press the key bearing that character. For example, pressing **X** while the **File** menu is displayed will cause the emulator to shut down.

Method 2: Use the up or down arrow keys to highlight the option required then hit **Return**.

Dialog Boxes

Selecting an option which is followed by an ellipsis (**...**) will cause a dialog box to be displayed. The example shown below is displayed by selecting the **Block Transmission...** option in the **Settings** menu.



There are four basic methods for changing settings within the dialog boxes.

Options preceded by a check box, such as **Send Unprotected Only** in the example above, are true or selected when the box contains a ✔, and false or unselected when the box is empty. Click the pointer in the box to toggle the setting on or off, or press the spacebar on the keyboard.

When a group of options preceded by round buttons are enclosed in a box, such as the **PF Key Effect** options in the example above, only one of these options is selected or true at any one time. The currently selected option is indicated by a button with a dark centre. These buttons behave just like radio buttons in that clicking one will cause the previously selected button to be deselected.

Some options require you to type information in a text box, such as the **End of Line Characters** option.

When an option has many possible settings, these will be shown in a list box. The **Alpha Emulation** option in the **Emulation Settings** dialog box is an example of this. To make a selection using the mouse, click the arrow button to display a drop-down list box then click on the setting required. If the list is long a scroll bar may be displayed. To make a selection using the keyboard, press the up or down cursor keys to cycle through the available settings until the one required is highlighted in the box.

To select a dialog box option:

Mouse: Click the check box, button or list box. The current setting is highlighted or surrounded by a dotted rectangle, or both.

Keyboard: Move to the option to be changed either by holding down the **Alt** key and pressing the key bearing the character underlined in the option, if one is displayed, or press the **Tab** key to move forward through the options (left to right, top to bottom), or **Shift + Tab** to move backwards, until the required option is highlighted. Press the **Spacebar** to toggle check boxes or buttons on or off.

To close a dialog box without actioning changes:

Mouse: Click the **Cancel** button.

Keyboard: Press the **Tab** or **Shift + Tab** keys to move the cursor until it rests over the **Cancel** button and press **Return** or the **Spacebar**.

To close a dialog box and action changes:

Mouse: Click the **OK** button.

Keyboard: Press **Return**.

Default Settings

You can restore the factory default settings of all the setup options by selecting the **Factory Default** option in the **File** menu.

Some dialog boxes include a **Default** button to enable the default settings of options contained in the dialog box to be reasserted.

Specifying Characters In Setup Entries

There are various ways in which you can specify a particular character in a setup entry. For example, the **ESC** character can be specified using any one of the following five entries:

_027	Decimal value (underscore character followed by a 3-digit number).
\033	Octal value (backslash character followed by a 3-digit number).
\u001B	Unicode value (backslash and **u** characters then unicode value).
^[	Control key value (**^** represents the control key on the keyboard).
\e	Additional value for **ESC**.

The following 'backslash' values can be used:

\u	Unicode introducer	**\r**	Carriage return
\n	Line feed	**\e**	Escape

Note that as the **** and **^** characters are used as value introducers, to enter these as character values you need to precede them with a backslash character, i.e. enter **** as **** and **^** as **\^**.

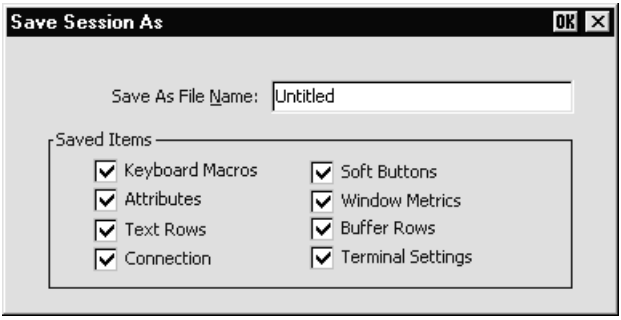
The Euro character can be specified by entering the unicode value **\u20ac**.

Creating A Connection Template (CE)

When running TeemTalk for Windows CE, you can save the current session configuration as a connection template. To make the emulator automatically attempt to make a host connection using the same settings the next time it is loaded, display the **File** menu and select the **Save Session** option.

You can create multiple connection templates when the terminal is not in WBT mode, any one of which can be selected for use. The procedure is as follows:

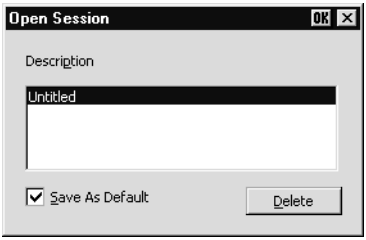
1. In the **File** menu, select the **Save Session As...** option to display the following dialog box.



2. In the **Saved Items** box, indicate which settings are to be saved by checking the boxes next to the relevant options.
3. In the **Save As File Name** text box, enter a descriptive name to enable it to be identified for future selection. This description will be listed in the **Open Session** dialog box.
4. Click the **OK** button to save the template settings. If you specified a descriptive name that already exists, a message box will ask you to confirm whether or not you want to overwrite the existing name with the new settings.

Selecting A Connection Template (CE)

The **Open Session** dialog box enables you to select a connection template to use when the terminal is not in WBT mode. This is displayed by selecting **Open Session...** in the **File** menu.



The **Description** list box displays the names of connection templates that were created using the **Save Session As** dialog box. The descriptive name of the connection template currently in use is highlighted. The factory default connection template is **Untitled**. Clicking one of the descriptions then the **OK** button will cause the dialog box to close and the connection template associated with the chosen description will be actioned.

You can specify a particular connection template to use by default by clicking the required description, checking the **Save As Default** check box, then clicking the **OK** button. To delete a connection template, select the description then click the **Delete** button.

Saving The Session Configuration (XPe)

When running TeemTalk for Windows XPe, you can either save the session configuration using the current session name, or you can save it under a new session name if TeemTalk was started without a session (i.e. not started by clicking on a desktop icon or by selecting a session from the **Start** menu).

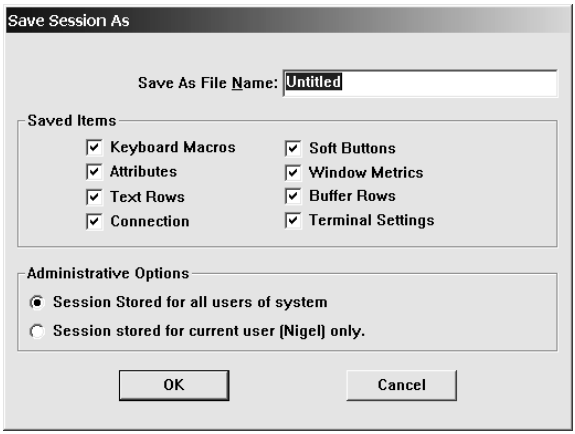
Save Using Current Session Name

To save the session configuration using the current session name, select **Save Session** in the **File** menu. If you were using a session template and modified the settings, a local copy of the template will be made *with the same name*, but with the changed settings. This copy will replace the template in the list of session configurations displayed in the Open Session dialog box. Note that the **T** template indicator will no longer be displayed.

Save Using New Session Name

If TeemTalk for Windows XPe was started without a session (i.e. not started by clicking on a desktop icon or by selecting a session from the **Start** menu), you can save the session configuration under a new name:

1. In the **File** menu, select **Save Session As...** option to display the following dialog box.



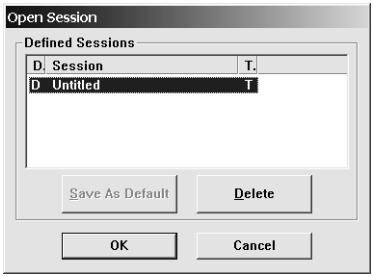
2. In the **Saved Items** box, indicate which settings are to be saved by checking the boxes next to the relevant options.

3. In the **Save As File Name** text box, enter a descriptive name (up to 132 characters long) to enable it to be identified for future selection. This description will be listed in the Open Session dialog box.

4. Click the **OK** button to save the session. If you specified a session name that already exists, a message box will ask you to confirm whether you want to overwrite the existing session name with the new settings.

Selecting A Session Configuration (XPe)

If TeemTalk for Windows XPe was started without a session (i.e. not started by clicking on a desktop icon or by selecting a session from the **Start** menu), you can use the **Open Session** dialog box to select a session configuration for TeemTalk to load. This is displayed by selecting **Open Session...** in the **File** menu.



The **Defined Sessions** list box displays one-line descriptions of session configurations that were created using the TeemTalk **Connection Wizard** or the **Save Session As** dialog box when running TeemTalk. The session configuration currently loaded is highlighted. Clicking on a defined session then the **OK** button will cause TeemTalk to load that session configuration.

The session configuration that TeemTalk will load by default on startup is indicated by a letter **D** next to its name. You can change the default selection by selecting the required session description then clicking the **Save As Default** button.

Session templates created by the system administrator are indicated by the letter **T** after the session name. Refer to the *Session Management* section in the *Getting Started* chapter for details.

You can delete any session configurations except templates by selecting the description then clicking the **Delete** button. Note that if the session deleted was a copy of a template (which will have the same name), the template version will reappear in the **Defined Sessions** list, as indicated by the letter **T**.

Menu Descriptions

The following pages describe the options available in all the menus and associated dialog boxes. The descriptions begin by showing the menu or dialog box as it is displayed on the screen. The factory default setting is shown below each option title where applicable.

File Menu

Factory Default...

This will restore the factory default settings of all the setup options. A message box will be displayed asking you to confirm whether or not you want to assert the factory default settings. Click the **OK** button to assert the factory defaults.

Reset Terminal

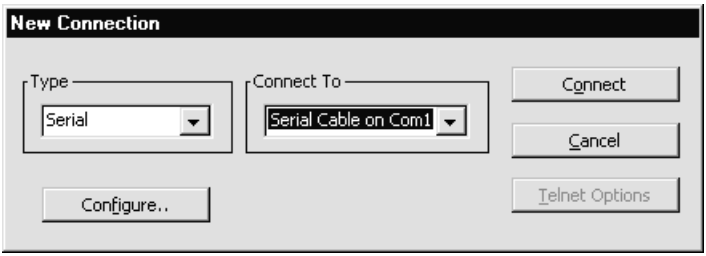
This will reset the current terminal emulation mode.

New Connection...

(Not available in WBT mode)

Factory default: Serial, Com 1

This will display a dialog box that enables you to make a host connection.



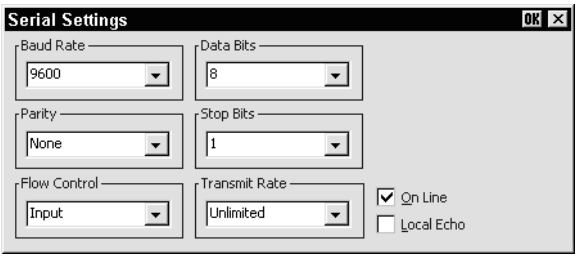
The **Type** list box specifies the type of host connection that is to be made.

The **Connect To** box specifies the port or host to communicate with. You can either make a selection from the list or enter a valid host name or internet address.

The host connection will be closed if you change the settings in the **New Connection** dialog box and attempt to connect, if you log out of the host, or the host closes the connection. Warning messages will be displayed if the host closes the connection, or you attempt to open a new session or exit the emulator while a session is open.

Making A Serial Host Connection

To connect to a serial host, select **Serial** in the **Type** list box (default), then select the **Com** port required in the **Connect To** list box. Click the **Configure...** button to display the **Serial Settings** dialog box and make sure the settings match that of the host. Click **OK** then **Connect**.

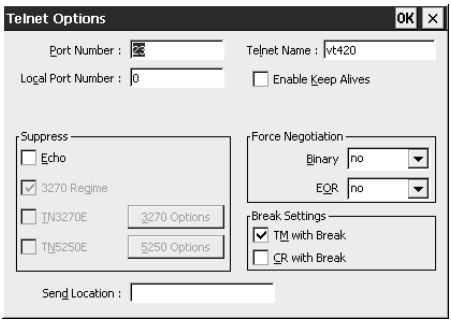


*Note: These options are described in the Serial Settings section later in this chapter and only apply when the connection type is set to **Serial**.*

Making A Network Host Connection

To connect to a network host node, select **TCP/IP** in the **Type** list box. The **Connect To** box will display the available devices on the network. Select the name of the device required or enter the host name or IP address. If the session was created using the Connection Wizard and the **Host Rollover On Connection Fail** option was selected, you can specify up to three more hosts in the boxes below. The emulator will attempt to connect to each specified host in turn until one is successful.

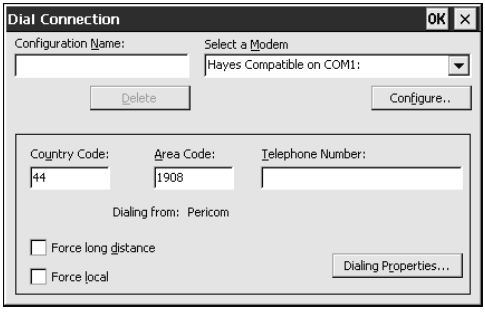
Clicking the **Telnet Options** button will display a dialog box with additional options. These are described in the *Getting Started* chapter.



Clicking the **Connect** button or the name of the host in the **Connect To** list box twice will cause the emulator to attempt to connect to the specified host. If a connection cannot be made because the network driver is not installed or the host node name is invalid, an error message will indicate this. Failure to connect for any other reason will result in a **Connection Failed** message.

Making A Modem Host Connection

For a modem connection, click the **Modem** button then click **Advanced** to display configuration options. Refer to the *Modem Connection Settings* section in chapter 2 for details. When you have made the relevant selections, click **OK** then **Connect**.



Making An SSL Or SSH Host Connection (if supported)

The optional **SSL** (Secure Sockets Layer) protocol enables authenticated and encrypted communication between clients and servers. Refer to the *SSL Connection* section in the *Getting Started* chapter for details.

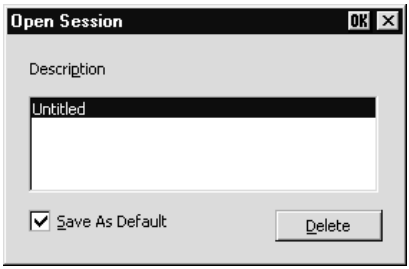
The optional **SSH** (Secure Shell) client/server protocol is used to encrypt and transmit data securely over a network, with authentication (proof of client identity) provided by a password and/or key. To enable an SSH connection, this option must be selected and the Telnet **Port Number** option set to the host's SSH port (**22** is the default for SSH). When a Telnet connection is initiated, the **SSH Connection** dialog box will be displayed prompting the user for authentication. Refer to the *SSH Connection* section in the *Getting Started* chapter for details.

Open Session...

(Not available in WBT mode)

TeemTalk for Windows CE

This enables you to select a connection template. The following dialog box will be displayed.

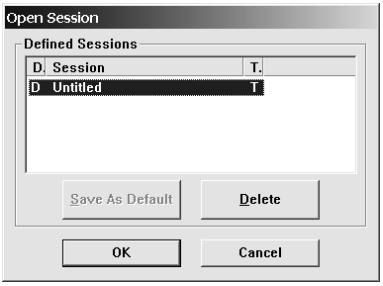


The **Description** list box displays the names of connection templates that were created using the **Save Session As** dialog box. The name of the connection template currently in use is highlighted. The factory default connection template is **Untitled**. Selecting one of the descriptions then clicking the **OK** button will cause the dialog box to close and the connection template associated with the chosen description to be actioned.

You can specify a particular connection template to use by default by clicking the required description, checking the **Save As Default** check box, then clicking the **OK** button. To delete a connection template, select the description then click the **Delete** button.

TeemTalk for Windows XPe

This option is only available if TeemTalk for Windows XPe was started without a session (i.e. not started by clicking on a desktop icon or by selecting a session from the **Start** menu). It enables you to select a session configuration for TeemTalk to load. The following dialog box will be displayed.



The **Defined Sessions** list box displays one-line descriptions of session configurations that were created using the TeemTalk **Connection Wizard** or the **Save Session As** dialog box when running TeemTalk. The session configuration currently loaded is highlighted. Clicking on a defined session then the **OK** button will cause TeemTalk to load that session configuration.

The session configuration that TeemTalk will load by default on startup is indicated by a letter **D** next to its name. You can change the default selection by selecting the required session description then clicking the **Save As Default** button.

Session templates created by the system administrator are indicated by the letter **T** after the session name. Refer to the *Session Management* section in the *Getting Started* chapter for details.

You can delete any session configurations except templates by selecting the description then clicking the **Delete** button. Note that if the session deleted was a copy of a template (which will have the same name), the template version will reappear in the **Defined Sessions** list, as indicated by the letter **T**.

Close Session

(Not available in WBT mode)

This will close the current session.

Save Session

Selecting this option will save the current session configuration.

TeemTalk for Windows XPe

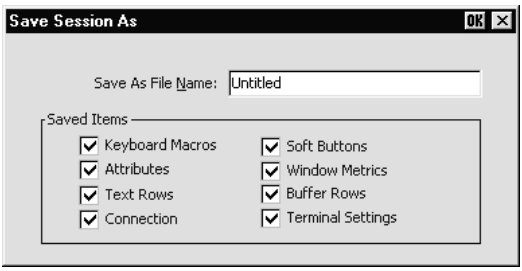
If you were using a session template and modified the settings, a local copy of the template will be made *with the same name*, but with the changed settings. This copy will replace the template in the list of session configurations displayed in the **Open Session** dialog box. Note that the **T** template indicator will no longer be displayed.

Save Session As...

(Not available in WBT mode)

TeemTalk for Windows CE

This will display a dialog box that enables you to save the current session configuration as a connection template.



You can create multiple connection templates, any one of which can be selected for use. The procedure is as follows:

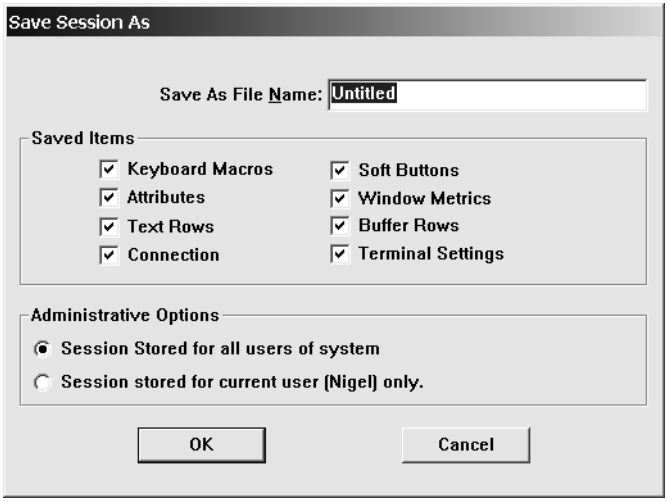
1. In the **Saved Items** box, indicate which settings are to be saved by checking the boxes next to the relevant options.
2. In the **Save As File Name** text box, enter a descriptive name to enable it to be identified for future selection. This description will be listed in the **Open Session** dialog box.
3. Click the **OK** button to save the template settings. If you specified a descriptive name that already exists, a message box will ask you to confirm whether or not you want to overwrite the existing name with the new settings.

TeemTalk for Windows XPe

This option is only available if TeemTalk for Windows XPe was started without a session (i.e. not started by clicking on a desktop icon or by selecting a session from the **Start** menu). It will display a dialog box that enables you to save the current session configuration under a new name.

The procedure is as follows:

1. In the **Saved Items** box, indicate which settings are to be saved by checking the boxes next to the relevant options.
2. In the **Save As File Name** text box, enter a descriptive name (up to 132 characters long) to enable it to be identified for future selection. This description will be listed in the Open Session dialog box.

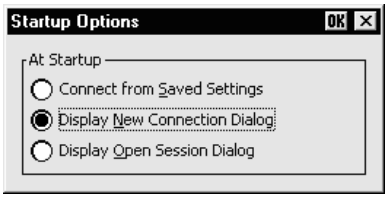


3. Click the **OK** button to save the session. If you specified a session name that already exists, a message box will ask you to confirm whether you want to overwrite the existing session name with the new settings.

Startup Options...

(Not available in WBT mode)

The following dialog box will be displayed when this option is selected.

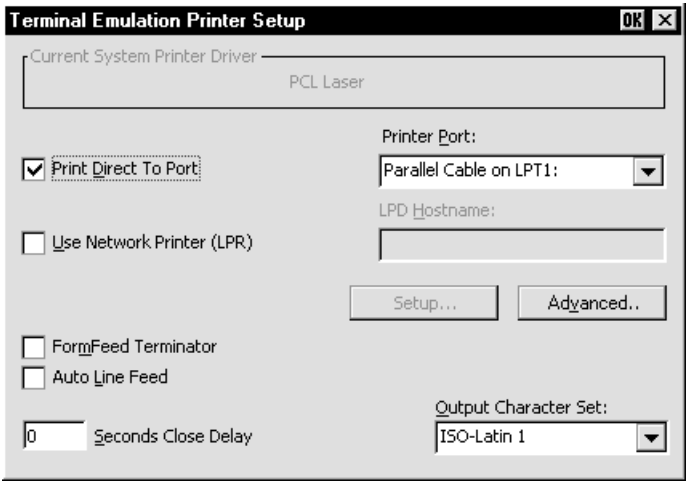


This enables you specify whether the emulator is to make a host connection using the default connection template, display the **New Connection** dialog box, or display the **Open Session** dialog box when it is loaded (but not when it is reset). Refer to the relevant descriptions earlier in this section for information on these dialog boxes.

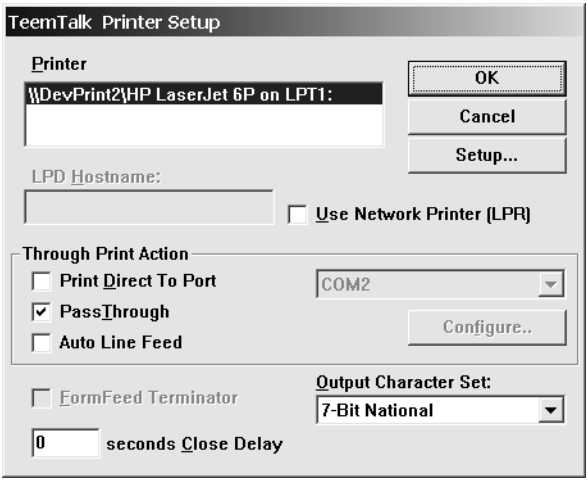
Printer Setup...

This will display a dialog box that enables you to specify print settings. The options available depend on whether you are running TeemTalk for Windows CE or XPe.

TeemTalk for Windows CE



TeemTalk for Windows XPe



You can direct print data to a printer handled by the Print Manager, a specific port, or a network printer.

CE - Direct Print Data To The Print Manager

When running TeemTalk for Windows CE, the **Current System Printer Driver** box displays the name of the currently selected system printer when both the **Use Network Printer (LPR)** and **Print Direct To Port** options are not selected.

Clicking the **Setup** button will display a Print Manager dialog box that enables you to specify printer settings.

If you find a through print results in data being split into lines, each treated as a separate print job, specify a time in the **Seconds Close Delay** box (e.g. **5** seconds). This will enable the next line of data to be sent before the print job is assumed to have finished and therefore prevents the print job from being closed prematurely. When set to **0**, printing will not start until a 'print end of job' command is received from the host. Entering any other number will cause printing to start after the specified number of seconds have elapsed, regardless of whether the 'print end of job' command has been received from the host. If you require the port to be kept open all the time (to stop the printer resetting) enter **-1** (minus one).

XPe - Direct Print Data To The Print Manager

When running TeemTalk for Windows XPe, the **Printer** list box lists the printers handled by the Print Manager. You can select from this list when the **Use Network Printer (LPR)** option is not selected.

Clicking the **Setup** button will display a Print Manager dialog box that enables you to specify printer settings.

The Microsoft Windows Print Manager normally controls all print formatting, translates host characters to supported printer characters, and also provides a spooling facility. A disadvantage of using the Print Manager is that any print formatting escape sequences received from the host are stripped. If you want to use the Print Manager but disable its print formatting process so that the original escape sequences from the host are retained, select the **PassThrough** option. (Note that the **PassThruogh** option will be unselectable if the printer driver currently selected does not support this facility.)

If you find a through print results in data being split into lines, each treated as a separate print job, specify a time in the **seconds Close Delay** box (e.g. **5** seconds). This will enable the next line of data to be sent before the print job is assumed to have finished and therefore prevents the print job from being closed prematurely. When set to **0**, TeemTalk will not start printing until it receives a 'print end of job' command from the host. Entering any other number will cause TeemTalk to print after the specified number of seconds have elapsed, regardless of whether the 'print end of job' command has been received from the host. If you require the port to be kept open all the time (to stop the printer resetting) enter **-1** (minus one).

Direct Print Data To A Specific Port

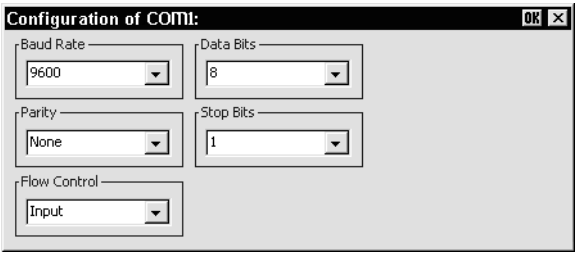
To direct print data to a specific port, select **Print Direct To Port** and specify the **Printer Port**.

Selecting the **FormFeed Terminator** option will cause the printer to advance the paper to the top of the form when it has finished printing.

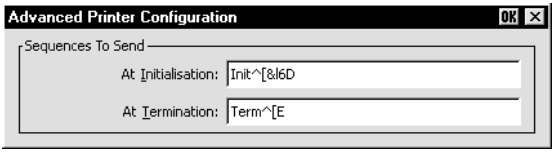
The **Output Character Set** option enables you to specify the character set used for printing when **Print Direct To Port** is selected. This allows non-ISO Latin-1 printers to be used.

Selecting **Auto Line Feed** will cause the printer to print at the beginning of the next line when a carriage return command is received.

When a serial port is selected, clicking the **Setup** button will display a dialog box in which you can specify the baud rate, parity, flow control, data bits and stop bits settings. These options are described in the *Serial Settings* section.

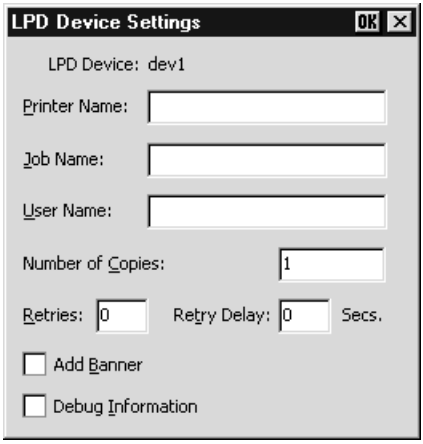


If supported, clicking the **Advanced** button will display a dialog box that enables you to send printer-specific commands to specify, for example, font size, colour, or page header and footer.



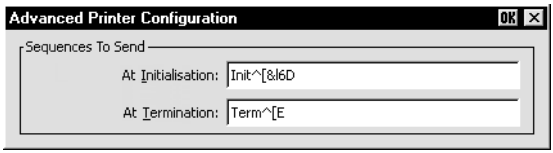
CE - Direct Print Data To A Network Printer

To direct print data to a printer on the network when running TeemTalk for Windows CE, select **Use Network Printer (LPR)** and enter the **LPD Hostname**. Clicking the **Setup** button will display a dialog box that enables you to specify various print settings.



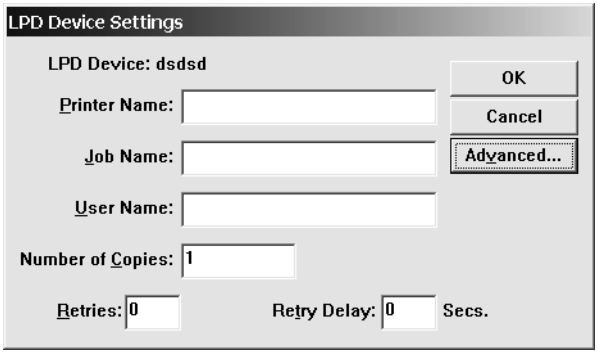
You must specify the **Printer Name**. The **Job Name** and **User Name** entries are optional (the **User Name** will default to **root** if none is specified). The **Number of Copies** to print is set to **1** by default. You can specify how many times the LPR protocol will attempt to execute the print job before cancelling by setting the number of **Retries** and the number of seconds delay between each attempt. When **Add Banner** is selected, information about this print job will be printed with it. You can display a message box which will indicate the progress of the print job by selecting **Debug Information**.

If supported, clicking the **Advanced** button will display a dialog box that enables you to send printer-specific commands to specify, for example, font size, colour, or page header and footer.



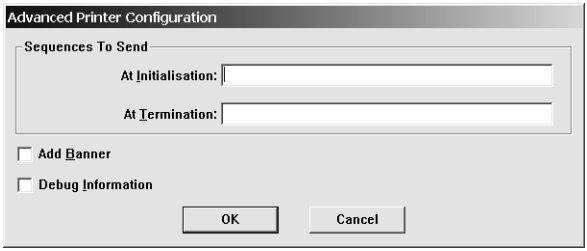
XPe - Direct Print Data To A Network Printer

To direct print data to a printer on the network when running TeemTalk for Windows XPe, select **Use Network Printer (LPR)** and enter the **LPD Hostname**. Clicking the **Setup** button will display an **LPD Device Settings** dialog box that enables you to specify various print settings.



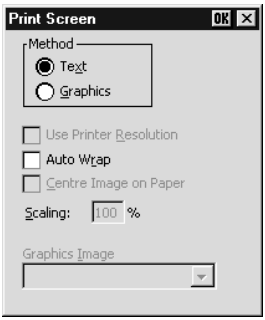
You must specify the **Printer Name**. The **Job Name** and **User Name** entries are optional (the **User Name** will default to **root** if none is specified). You can specify how many times the LPR protocol will attempt to execute the print job before cancelling by setting the number of **Retries** and the number of seconds delay between each attempt.

Clicking the **Advanced** button will display a dialog box that enables you to send printer-specific commands to specify, for example, font size, colour, or page header and footer. When **Add Banner** is selected, information about this print job will be printed with it. You can display a message box which will indicate the progress of the print job by selecting **Debug Information**.



Print Screen

This enables you to produce a hardcopy of data displayed on the screen. The **Print Screen** dialog box will be displayed when a printer handled by the Print Manager is selected in the **Printer Setup** dialog box.



The **Text** option is selected by default and the printer resolution and scaling options are not accessible. Clicking the **OK** button with **Text** selected will cause a fast print of the screen using Unicode.

Selecting **Graphics** will print all the data in the emulation workspace, both graphics and text, when the **OK** button is clicked. The hardcopy output will be an almost exact representation of the emulation workspace. Note that a graphics print will take a lot longer than a text print.

The **Use Printer Resolution** option is available when **Graphics** print is selected. This will force a dot for dot print of the screen on the printer and generally produces a small print, depending on the printer resolution. When this option is not selected (unchecked), the emulator will try and print as large an image as possible on the printer's paper. Both methods can print in landscape or portrait format, depending on the current setup of the printer.

Selecting the **Auto Wrap** option will cause the printer to automatically move to the beginning of the next line when the right margin is reached.

The **Centre Image on Paper** option is available when **Graphics** print is selected. This will ensure that the graphics image is printed centrally on the paper.

The **Scaling** option is available when **Graphics** print is selected. This enables the image to be scaled to suit your preference. When the **Use Printer Resolution** option is selected, you can scale the image up, and when unselected you can scale the image down. (Scaling up when **Use Printer Resolution** is *not* selected may result in loss of some of the image.)

The **Graphics Image** option is available when **Graphics** print is selected. This enables you to specify how the graphics image is to be printed. Clicking the arrow button next to the text box will cause four print options to be displayed. These options allow you to print the graphics image as displayed (**Normal** by default), with black and white

reversed, with colour converted to monochrome, or colour converted to monochrome with black and white reversed.

Once a screen print is initiated by clicking **OK**, another dialog box will be displayed while the screen data is being spooled out to the print manager. This enables you to terminate the print process before data is actually printed.

Print Buffer

This will send a copy of all the data contained in the window buffer to the currently selected printer.

Auto Print

This toggles auto print mode on and off, as indicated by a tick when auto print mode is on. Auto print mode causes each line of data to be transmitted to the printer when the cursor moves to a new line as a result of a carriage return, line feed, vertical tab, or form feed.

Cancel Print

This will cancel the current **Print Screen** or **Print Buffer** function.

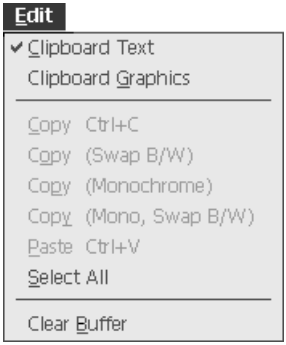
Eject Page

This option enables data that has been spooled to the printer to be printed.

Exit

This option will cause the emulator to shut down.

Edit Menu



Clipboard Text
Clipboard Graphics

Selecting one of these options will enable selected text or graphics to be copied to the clipboard when the **Copy** command is used. The **Paste** and **Select All** commands will also be enabled. A tick will be displayed next to the option when it is selected.

Copy

The **Copy** commands become available when data has been selected. They will cause the currently selected text or graphics to be copied to the clipboard. The data can then be inserted in a different position or another file using the **Paste** command. The next block of data that is copied will delete the previous block on the clipboard.

The first **Copy** option enables you to perform a standard copy. The last three options are only available when **Clipboard Graphics** is selected. They enable you to copy the graphics image with black and white reversed, with colour converted to monochrome, or both.

Paste

This will cause data that has been copied to the clipboard to be pasted at the current cursor position. The same block of data may be pasted repeatedly as the clipboard stores it until the **Copy** command is used again.

Select All

This will cause the window contents (not the entire buffer) to be selected.

Clear Buffer

This will erase the contents of the window and the scroll buffer.

Settings Menu

The **English**, **French** and **German** options enable you to select the language that will be used in all menus and dialog boxes.

The following dialog boxes can be displayed from this menu. Note that the dialog boxes used to configure specific emulations can only be displayed when the relevant emulation is running.

Emulation Settings - for specifying the terminal emulation, keyboard nationality and the answerback string.

HP 700-92/96 Settings - for configuring the HP 700-92/96 emulation.

PT 250 Settings - for configuring the Prime PT250 emulation.

IBM 3151 Settings - for configuring the IBM 3151 emulation.

Wyse Settings - for configuring the Wyse 50/50+/60, TVI 910+/920/925, ADDS A2 and HZ 1500 emulations.

TA 6530 Settings - for configuring the Tandem 6530 emulation.

IBM 3270 Settings - for configuring the IBM 3270 emulation.

IBM 5250 Settings - for configuring the IBM 5250 emulation.

Unisys T27 Settings - for configuring the Unisys T27 emulation.

BQ 3107 Settings - for configuring the Bull BQ 3107 emulation.

Serial Settings - for specifying serial communication settings.

Auxport Settings - for specifying auxilliary port settings.

Terminal Settings - for specifying terminal and display settings.

Local Editing - for specifying DEC VT Block (Edit) mode local editing functions.

Block Transmission - for specifying DEC VT Block (Edit) mode text formatting and transmission.

Tek 4014 Settings - for specifying graphics text settings, screen mapping resolution and GIN termination characters. (Graphics versions of TeemTalk only.)

GIN Mouse Definitions - for defining GIN mouse button codes. (Graphics versions of TeemTalk only.)

Attributes - for assigning colours and specifying how characters with attributes are displayed.

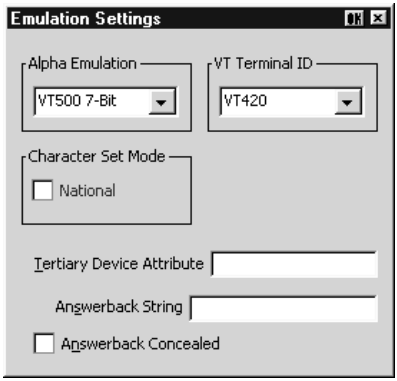
Keyboard Macros - for redefining the function of keys.

Soft Buttons - for defining soft button functions.

Mouse Button Actions - for defining mouse functions.

Button Tools - *TeemTalk for Windows XPe only* - for defining the toolbat/floating button palette.

Emulation Settings



This dialog box is displayed by selecting **Emulation** in the **Settings** menu.

Alpha Emulation

(Not available in WBT mode)

The setting of this option determines the current alpha emulation mode.

The **ADDS A2** emulation provides compatibility with software designed to drive the ADDS Viewpoint A2 terminal, as emulated by the Wyse WY-50/50+/60 terminals. Refer to the *Wyse Emulations* chapter for details.

The **AIXTerm** emulation provides compatibility with software designed to drive an X terminal using X Windows.

The **ANSI BBS** emulation is a derivative of the ANSI device driver **ANSI.SYS** supplied with all DOS based PCs and which provides the screen management for the DOS console screen. PC based UNIX systems and Bulletin Board Systems (BBS) often rely on the ANSI emulation when being accessed by a PC. In ANSI BBS mode the screen size is adjusted to 25 lines and the **Preferred Char. Set** option in the **Terminal Settings** dialog box is automatically set to **Ansi**. The setting of the **Ansi Code Page** option in this dialog box determines the characters available in the ANSI BBS set.

The **AT 386** emulation provides compatibility with software designed to drive the AT&T AT 386 terminal.

The **ATT4410** emulation provides compatibility with software designed to drive the AT&T Dataspeed 4410 terminal. Refer to the *AT&T 4410 Emulation* section in the *Getting Started* chapter for details.

The **BQ 3107** emulation provides compatibility with software designed to drive the Bull BQ 3107 terminal. Refer to the *BQ 3107 Emulation* chapter for details.

The **DG 410/412** emulation provides compatibility with software designed to drive the Data General D410 and D412 terminals. Refer to the *DG 410/412 Emulation* chapter for details.

The **HP 700-92/96** emulation provides compatibility with software designed to drive the Hewlett Packard 700/92, 2392A, 2622A, 70094 and 70096 terminals. This emulation is described in detail in the *HP 700-92/96 Emulation* chapter.

The **HZ1500** emulation provides compatibility with software designed to drive the Hazeltine 1500 terminal, as emulated by the Wyse WY-50/50+/60 terminals. Refer to the *Wyse Emulations* chapter for details.

The **IBM 3151** emulation provides compatibility with software designed to drive the IBM 3151 terminal. Refer to the *IBM 3151 Emulation* chapter for details.

The **IBM 3270** emulation provides compatibility with software designed to drive the IBM 3270 terminal. Note that the initial display will be an ASCII text screen known as Network Virtual Terminal mode (NVT mode for short). The setting of the **IBM 3270 Model** option in the **IBM 3270 Settings** dialog box determines the size of the display and whether or not extended attributes are supported. Refer to the *IBM 3270 Emulation* chapter for details.

The **IBM 5250** emulation provides compatibility with software designed to drive IBM 5250 type alphanumeric terminals. This emulation can be used for connection to an IBM AS/400, System/36 or System/38. Note that the initial display will be an ASCII text screen known as Network Virtual Terminal mode (NVT mode for short). Refer to the *IBM 5250 Emulation* chapter for details.

The **MDI P12\P8** emulation provides compatibility with software designed to drive the McDonnell Douglas Prism-12 and Prism-8 terminals. Refer to the *MDIS Prism Emulations* chapter for details.

The **MDI Prism-9** emulation provides compatibility with software designed to drive the McDonnell Douglas Prism-9 terminal. Refer to the *MDIS Prism Emulations* chapter for details.

The **PT250** emulation provides compatibility with software designed to drive the Prime PT250 terminal. Refer to the *PT250 Emulation* chapter for details.

Sco Console is an emulation of the SCO UNIX box.

The **Siemens 97801** emulation provides compatibility with software designed to drive the Siemens 97801 terminal. Refer to the *Siemens 97801 Emulation* chapter for details.

The **Stratus V102** emulation provides compatibility with software designed to drive the Stratus V102 terminal.

The **TA6530** emulation provides compatibility with software designed to drive the Tandem 6530 terminal. This emulation is described in the *TA6530 Emulation* chapter.

The **TVI 910**, **TVI 920** and **TVI 925** emulations provide compatibility with software designed to drive the TeleVideo 910+, 920 and 925 terminals, respectively, as

emulated by the Wyse WY-50/50+/60 terminals. Refer to the *Wyse Emulations* chapter for details.

The **TVI 950** and **TVI 955** emulations provide compatibility with software designed to drive the TeleVideo 950 and 955 terminals, respectively.

The **Unisys T27** emulation provides compatibility with software designed to drive the Unisys T27 terminal. Refer to the *Unisys T27 Emulation* chapter for details.

The **Viewdata 40**, **Viewdata 80** and **Viewdata Split** modes enable access to a viewdata service using one of three display formats, as described in the *Viewdata Mode* section in the *Getting Started* chapter.

The **VT PCTerm** emulation provides compatibility with software designed for the PC Term mode supported by DEC. This is the same as the VT510 emulation except that keyboard scan codes are sent on key press/release instead of ASCII codes by default.

The **VT52** and **VT100** emulations enable you to run applications written for the DEC VT52 and VT100 terminals, respectively. Refer to the *DEC VT Emulations* chapter for details.

The **VT500 7-Bit** and **VT500 8-Bit** emulations enable you to run applications written for the DEC VT320 terminal, the difference is in their treatment of 8-bit control codes. When **VT500 7-Bit** is selected, all 8-bit codes are converted to their 7-bit equivalents, whereas **VT500 8-Bit** leaves 8-bit codes unchanged. If you are using VT200 applications, select **VT500 7-Bit**. Refer to the *DEC VT Emulations* chapter for details.

The **VT+HP220** emulation is based on the VT500 terminal series and includes the HP function keys F1 - F8 (not user programmable). The terminal ID is set to VT220.

The **VT100+** emulation is an enhanced version of the VT100 emulation that provides additional functionality such as colours. It is the same as the VT-UTF8 emulation except that it only supports ASCII characters 0-127 (decimal).

The **VT-UTF8** emulation is an enhanced version of the VT100 emulation that supports non-English and drawing characters. It supports localization of the single-byte and double-byte character sets and all other languages supported by Windows. Additional functionality, such as colours, is also provided.

The **WY50**, **WY50+** and **WY60** emulations provide compatibility with software designed to drive the Wyse WY-50, WY-50+ and WY-60 terminals, respectively. Refer to the *Wyse Emulations* chapter for information on these emulations.

The **WYSE PCTerm** emulation provides compatibility with software designed for the PC Term personality supported by Wyse. Keyboard scan codes are sent on key press/release instead of ASCII codes by default.

Graphics Emulation

Factory default: ReGIS

This option is only available if this version of TeemTalk supports graphics emulations and the **Alpha Emulation** option is set to one of the DEC VT, Ansi BBS, AIXTerm,

AT 386 or Sco Console emulations. The setting determines the graphics mode that will be entered when the host sends graphics commands.

The **ReGIS** emulation enables you to run applications written for the DEC VT340 terminal in ReGIS mode.

The **Tek4014** emulation enables you to run applications written for the Tektronix 4010 and 4014 terminals.

The **VT640** emulation enables you to run applications written for the Retrographics VT640 terminal.

The **W2119** emulation enables you to run applications written for the Westward 2119 terminal.

VT Terminal ID

Factory default: VT420

This specifies what is reported back to the host in response to a terminal identification request. Either select from the list of IDs or edit the text box and enter a different terminal identity. (Not all features of the specified terminal may be supported.)

National

Factory default: Unselected

This will only be available if the system is configured for a language that supports national replacement character sets.

The setting of this option determines the type of character set used to generate characters. When selected, a character set specific to the selected keyboard nationality is used. When unselected (default) the emulator is in **Multinational** mode, a character set consisting of two tables of characters is used. This enables characters from any keyboard nationality to be generated.

Tertiary Device Attribute

When the emulator is in VT420 mode (**Emulation** set to **VT500** and **Terminal ID** set to **VT420**), this option enables you to specify the tertiary device attribute report that is sent in response to a request from the host.

Answerback String

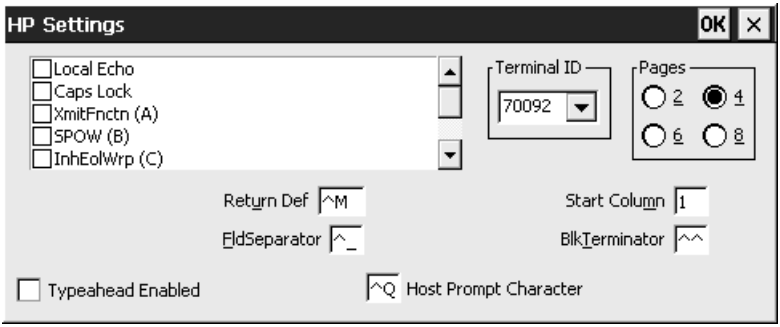
This option enables you to specify the Answerback string that is sent to the host in response to an ANSI mode enquiry command. The string may be up to 30 characters long.

Answerback Concealed

Factory default: Unselected

Selecting this option will cause the Answerback string specified in the text box above to be locked from change and displayed as asterisks. Note that deselecting this option will cause the Answerback string to be deleted.

HP 700-92/96 Settings



This dialog box is displayed by selecting **HP 700-92/96** in the **Settings** menu.

Local Echo

Factory default: Unselected

The setting of this option determines whether keyboard entered characters are displayed on the screen as well as sent to the host. When unselected, characters are not displayed when they are transmitted to the host unless the host 'echoes' them back.

Caps Lock

Factory default: Unselected

This determines whether the full 128-character ASCII range can be generated, or only Teletype-compatible codes.

When this option is unselected, all 128 ASCII characters can be generated. When selected, unshifted alphabetic keys will generate their shifted equivalents. For example, the **A** key unshifted will generate an uppercase **A**, and the **{**, **|** and **}** keys will generate **[**, \, and **]**, respectively. The key for generating **~** and **`** is disabled.

XmitFnctn (A)

Factory default: Unselected

This option determines whether escape sequences generated by control and function keys are sent to the host or only to the terminal emulation.

When unselected, escape sequences are only sent to the terminal emulation. When selected, escape sequences are sent to the host. If the **Local Echo** option is selected, the sequences will also be sent to the terminal emulation.

SPOW (B)

Factory default: Unselected

The setting of the **SP**ace **O**ver**W**rite option determines whether or not keyboard entered spaces overwrite existing characters. When unselected, keyboard entered spaces will overwrite existing characters.

Selecting this option will cause the SPOW latch to be enabled. The latch can then be activated by a carriage return. When activated, keyboard entered spaces will cause the cursor to move forward without deleting characters that already exist. The latch can be deactivated by a tab, line feed or home-up command. This will cause spaces to overwrite existing characters as normal.

InhEolWrp (C)

Factory default: Unselected

The **Inh**ibit **E**nd **o**f **l**ine **Wra**p option determines whether characters wrap to the next line when the right margin is reached. When selected (i.e. inhibited), on reaching the right margin, the last character position will be overwritten with every new character received until a carriage return or other cursor movement command is issued.

LineTx (D)

Factory default: Unselected

The setting of this option determines whether data is sent a line or a page at a time when in Edit mode.

When this option is selected, data will be transmitted a line at a time. When unselected, data will be transmitted a page at a time. Page data will either be from the beginning of display memory or from the current cursor position.

InhHndShk (G)
InhDC2 (H)

Factory default: Unselected

The combined setting of these two options determine the type of handshaking used when blocks of data are transmitted to the host.

One of three types of handshake may be used:

1. No handshake. Blocks of data are sent immediately when the relevant transmit key is pressed.
2. DC1 handshake. Data is only sent to the host when the host sends an ASCII **DC1** control code to request it.
3. DC1/DC2/DC1 handshake. The host sends an ASCII **DC1** control code, to which the emulator replies by sending a **DC2** code if ready to transmit. The host sends the **DC1** code again to cause the data block to be transmitted.

The type of handshake used for block transfers is determined by the type of block transfer to be performed, the mode that the HP70092 emulation currently operating in (character, block line, block page, or modify mode), and the setting of these two options.

The setting of these two options will have the following general effect:

InhHndShk only selected:

The DC1/DC2/DC1 handshake or no handshake will be used.

InhDC2 only selected:

The DC1 handshake or no handshake will be used.

InhHndShk and **InhDC2** selected:

No handshake will be used.

Enq/Ack Pacing

Factory default: Selected

The setting of this option determines whether the Hewlett Packard **ENQ ACK** handshake is used or not. When selected, the host can send an ASCII **ENQ** (enquiry) control code at the end of transmission asking if the data has been processed, to which the emulator will reply by sending an **ACK** (acknowledge) code when it has. Note that this form of handshaking has the lowest priority after hardware and **XON/XOFF** handshaking.

EscXfer

Factory default: Unselected

This option determines whether escape sequences relating to the display are sent when the display memory is transferred to the printer.

When unselected, escape sequences relating to the display are not sent to the printer. When selected, each line transferred to the printer will begin with an escape sequence to select the primary character set and stop any character enhancements. When escape sequences relating to the display are encountered within the data (for example, to change the character set), they will be sent to the printer.

Destructive Backspace

Factory default: Unselected

The setting of this option determines whether or not pressing the **Backspace** key will cause characters to be deleted.

CR = CR/NULL

Factory default: Unselected

This option must only be selected if you are going to use the **QEDIT** application. It overcomes a bug within **QEDIT** that ignores the **LF** character if the terminal transmits **CR/LF**. Inserting a **NULL** after the **CR** character cures the problem.

Display Form Feeds

Factory default: Selected

When selected, this will cause form feeds to be represented on the display as $^{F}_{F}$ characters.

Ignore Form Feeds

Factory default: Unselected

When the emulator receives a form feed command from the host it normally results in a line feed on the display in HP 700/92 mode. Selecting this option will cause the emulator to ignore all form feed commands received from the host.

Return Def

Factory default: ^M (i.e. CR)

This enables you to define the function of the **Return** key. Up to two characters may be used to define the key. If a second character is a space, it will be ignored.

To change the current definition, delete the definition displayed in the text box and type in the new one, either as the control key character equivalent or the decimal value of the ASCII character.

For example, the default code for the **Return** key function, **CR** (carriage return), can be entered by typing the characters **^** and **M**, representing the keys **Ctrl + M** which, when pressed together would generate the **CR** code.

Decimal values are entered as three-digit numbers immediately preceded by an underscore character. Values with only two digits must be preceded by a zero. For example, the decimal value of **CR** is 13, so this would be entered as **_013**. Refer to the ASCII character table in the *Character Sets* appendix for code and decimal references.

Start Column

Factory default: 1

This text box is used to specify the start column for transmitted data when no logical start-of-text pointer is present and the **Return** or **Enter** keys are pressed in **Modify Line** or **Modify All** mode.

Usually a start-of-text pointer is automatically generated to designate the leftmost character in the current line if it is the last line of data in display memory. This pointer will remain in display memory until the line is deleted. If the line has no start-of-text pointer, data transmission will begin at the start column specified by this option. The column range is from 1 to 80 inclusive.

> *Note: The setting of this option may be temporarily redefined using one of the **Margin/Tab/Col** function keys. See the HP700/92 Emulation chapter for details.*

FldSeparator

Factory default: ^_ (i.e. US)

This text box is used to specify the ASCII character used to indicate the end of each protected field (except the last) that is sent in Edit Mode.

To change the current definition, delete the definition displayed in the text box and type in the new one, either as the control key character equivalent or the decimal value of the ASCII character. For example, the default ASCII character **US** can be entered by typing the characters **^** and _, representing the keys **Ctrl** + _ which, when pressed together would generate the **US** code.

Decimal values are entered as three-digit numbers immediately preceded by an underscore character. Values with only two digits must be preceded by a zero. For example, the decimal value of **US** is 31, so this would be entered as **_031**. Refer to the ASCII character table in the *Character Sets* appendix for code and decimal references.

BlkTerminator

Factory default: ^^ (i.e. RS)

This text box is used to specify the ASCII character sent to the host to indicate the end of a data block transmission.

To change the current definition, delete the definition displayed in the text box and type in the new one, either as the control key character equivalent or the decimal value of the ASCII character. For example, the default ASCII character **RS** can be entered by typing the character **^** twice, representing the keys **Ctrl** + **^** which, when pressed together would generate the **RS** code.

Decimal values are entered as three-digit numbers immediately preceded by an underscore character. Values with only two digits must be preceded by a zero. For example, the decimal value of **RS** is 30, so this would be entered as **_030**. Refer to the ASCII character table in the *Character Sets* appendix for code and decimal references.

Terminal ID

Factory default: 70092

This specifies what is reported back to the host in response to a terminal identification request. (Note that not all features of the specified terminal may be supported.)

Clicking the arrow button will display a drop-down list box showing the available settings, **70092**, **2392A**, **2622A**, **70094** or **70096**. If you are using the keyboard, press the up or down arrow keys until the setting required is displayed. You can either select from this list or enter a different terminal identity in the text box.

Pages

Factory default: 4

In HP 700-92/96 mode the display area is 80 or 132 columns by 24 lines with 168 lines stored off-screen, giving a total display memory of 192 lines. This option enables you to specify whether display memory is divided into 2, 4, 6 or 8 pages.

Typeahead Enabled

Factory default: Unselected

When the emulator is connected to an HP 3000, you normally have to wait for the host to send a prompt before you can enter new data at the keyboard, otherwise the data is ignored. Selecting this option will enable you to type continuously without waiting for the prompt. Data is stored in the keyboard buffer and each time the emulator receives a prompt it will send a line of data to the host. Block mode also supports typeahead.

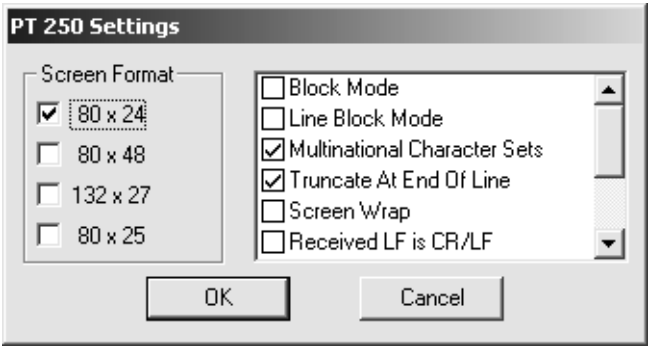
Host Prompt Character

Factory default: ^Q (i.e. DC1)

Some hosts send a prompt character to the terminal to indicate that they are ready to receive the next line or block of data. This option enables you to specify the prompt character for your particular host. Most hosts either use the DC1 (**^Q**) character (e.g. HP 3000) or no prompt (**^@**) character.

When **Typeahead Enabled** is selected, the emulator will wait for the specified prompt character from the host before transmitting the next line from the keyboard buffer.

PT250 Settings



This dialog box is displayed by selecting **PT 250** in the **Settings** menu.

Screen Format

Factory default: 80 x 24

The setting of this option determines the display memory format, the number of lines and columns that are displayed, and the amount of data transmitted to the host when the emulation is in Block mode (as determined by the setting of the **Block Mode** option in this dialog box).

Selecting **80 x 24** will enable 24 rows of 80 columns to be displayed at the same time. In Block mode, this specifies 1-page mode transmission.

Selecting **80 x 48** will enable 80 columns by 24 rows to be displayed, while another 24 rows are stored off-screen in the display buffer. These may be scrolled into view using the scroll bar. In Block mode, this specifies 2-page mode transmission.

Selecting **132 x 27** will enable 27 rows of 132 columns to be displayed at the same time, useful for spreadsheets. In Block mode, this specifies 1-page mode transmission.

Selecting **80 x 25** will enable 25 rows of 80 columns to be displayed at the same time. In Block mode, this specifies 1-page mode transmission.

Block Mode

Factory default: Unselected

The setting of this option determines how data is transmitted to the host.

When unselected, each character entered from the keyboard is immediately sent to the host which processes it then echoes it back to the display.

When Block mode is selected, characters are displayed but not sent to the host until the **Enter** key is pressed. The size of the block of characters is determined by the **Line Block Mode** option.

Line Block Mode

Factory default: Unselected

The setting of this option determines how much data is transmitted when the emulation is in Block mode and the **Enter** key is pressed.

When unselected, the contents of the screen (page) will be sent to the host. When selected, the contents of the current cursor line will be sent.

Multinational Character Sets

Factory default: Selected

The setting of this option determines which characters may be generated from the keyboard.

When unselected, the character set for the keyboard nationality specified in the **Emulation Settings** dialog box is mapped to G0, the default character set mode (as indicated on the status line). In effect, national characters from the Additional character set are swapped with Standard (ASCII) characters to form the National set mapped to G0, so the Additional set contains the missing ASCII characters. This means that you can still generate the full range of ASCII and Additional characters by using the **Char Set** function (refer to the *PT250 Emulation* chapter for details).

When this option is selected, both ASCII and Additional characters are available, enabling characters from any keyboard nationality to be generated.

Truncate At End Of Line

Factory default: Selected

This option determines what happens to received characters when the rightmost column of the display is reached.

When unselected, on reaching the end of the line, the next character will be placed in the first column of the following line. When this option is selected, following characters will not be displayed.

Screen Wrap

Factory default: Unselected

When screen wrap is selected, display memory is treated in a circular fashion. When the cursor reaches the last line it will automatically wrap to the first line again, and vice versa.

When screen wrap is unselected, the cursor will not move above the first line or below the last line.

Received LF is CR/LF

Factory default: Unselected

The setting of this option determines how the emulation interprets received line feed characters. Selecting it will cause a carriage return command to be appended to every line feed command received.

Received CR is CR/LF

Factory default: Unselected

The setting of this option determines how the emulation interprets received carriage return characters. Selecting it will cause a line feed command to be appended to every carriage return command received.

Margin Bell Enabled

Factory default: Unselected

This option enables or disables an audible warning when the cursor approaches the right margin (column 71 or 123).

8-Bit Mode

Factory default: Unselected

This option determines whether characters are transmitted to the host in 7-bit or 8-bit format.

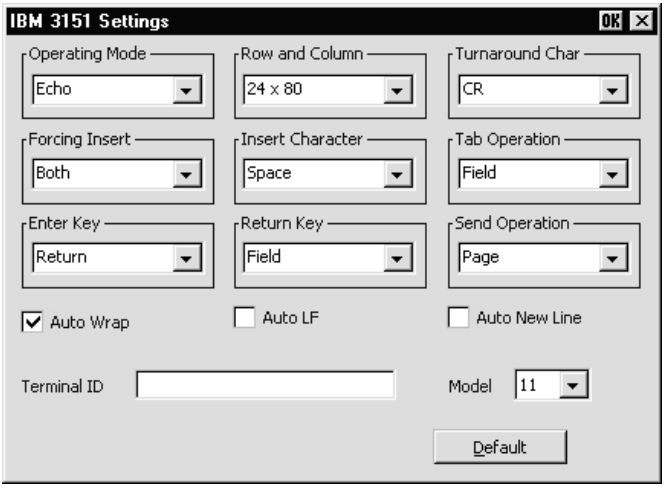
When unselected, 8-bit characters are converted into 7-bit equivalents, so shift-in, shift-out characters are generated. When this option is selected, all characters are transmitted unchanged.

Swap Fnn/PFnn Keys

Factory default: Unselected

This option enables you to swap the functions of the keys mapped as **PF1** through **PF12** on your keyboard with the functions they have when used with the **Alt** key. For example, when this option is selected, **PF11** will function as **Help** when pressed on its own, and as **PF11** when used in conjunction with **Alt**.

IBM 3151 Settings



This dialog box is displayed by selecting **IBM 3151** in the **Settings** menu.

Operating Mode

Factory default: Echo

The setting of this option determines how keyboard entered data is sent to the host and displayed on the screen.

In **Echo** mode, keyboard entered data is sent only to the host. The host is then responsible for returning the data to the display.

In **Character** mode, keyboard entered data is sent simultaneously to the host and the display.

In **Block** mode, keyboard entered data is displayed and processed locally, allowing you to edit it before a block of data is sent to the host.

Row and Column

Factory default: 24 x 80

This option enables you to select one of several display formats:

24 rows x 80 columns
25 rows x 80 columns
24 rows x 132 columns
25 rows x 132 columns
28 rows x 80 columns
28 rows x 132 columns

Note that the contents of the display will be cleared when you change the display format.

Turnaround Char

Factory default: CR

This option specifies the line turnaround character (LTC) that is generated when a Read command is received or one of the block data transmission keys is pressed. Note that selecting **DC3** will disable the XON/XOFF inbound and outbound pacing characters.

Forcing Insert

Factory default: Both

This option specifies how an insert command affects displayed data when the screen is full.

When set to **Off**, you will not be able to perform an insert operation.

When set to **Line**, you will be able to insert one or more lines, using the **Ins Ln** key for example. The contents of the current and all following lines will move down the number of lines inserted, causing the lines originally at the bottom of the display to be discarded.

When set to **Character**, you will be able to insert one or more characters in the current line. Characters to the right of the cursor position will move along. If the **Auto Wrap** option is set to **No**, then characters originally at the end of the current line will be discarded. If set to **Yes**, characters on all following lines will move along, forcing characters at the end of the last line to be discarded.

When set to **Both**, the function of the **Line** and **Character** settings will be enabled.

Insert Character

Factory default: Space

The setting of this option determines the effect of pressing the **Insert** key.

When set to **Space**, a space character will be inserted after the current cursor position.

When set to **Mode**, the emulation will enter Insert mode when the **Insert** key is pressed.

Tab Operation

Factory default: Field

The setting of this option determines whether tab stops are according to field attribute characters or column-tab definitions.

When set to **Field**, tab stops in a formatted page are provided by field attribute characters. Column-tab definitions are ignored.

When set to **Column**, tab stops are provided by column-tab definitions. Field attribute characters are ignored.

Enter Key

Factory default: Return

This option enables you to specify whether the **Enter** key performs the same function as the **Return** key or the **Send** key.

Return Key

Factory default: Field

This option specifies whether or not the cursor can enter a line within a protected field when the **Return** key is pressed.

When set to **Field**, the result of pressing the **Return** key is determined by the setting of the **Auto New Line** option and the cursor will move to the next unprotected line.

When set to **New Line**, the result of pressing the **Return** key is determined by the setting of the **Auto New Line** option.

Send Operation

Factory default: Page

The setting of this option determines the effect of pressing the **Send** and **Send Line** keys.

When set to **Page**, the contents of the current page will be sent to the host when **Send** is pressed, or the current line if **Send Line** is pressed.

When set to **Line**, the contents of the current line will be sent to the host when **Send** is pressed, or the current page if **Send Line** is pressed.

Auto Wrap

Factory default: Selected

The setting of this option determines what happens to the cursor and data sent to the display when the end of the current line is reached.

When selected, the cursor will automatically move to the beginning of the next line. Note that this will always be the case in block mode or in a formatted page regardless of the setting of this option.

When unselected, the cursor will remain at the end of the current line and each new character sent to the display will overwrite the character already occupying the cursor position.

Auto LF

Factory default: Unselected

The setting of this option in conjunction with that of the **Auto New Line** option determines the destination of the cursor when the **Return** key is pressed or the **CR** character is received.

When both this and the **Auto New Line** options are unselected, the cursor will move to the first position of the current line when the **Return** key is pressed or the **CR** character is received.

When this is unselected and **Auto New Line** is selected, the cursor will move to the first position of the next line when the **Return** key is pressed.

When this is selected and **Auto New Line** is unselected, the cursor will move to the first position of the next line when the **Return** key is pressed or the **CR** character is received.

When both this and the **Auto New Line** options are selected, the cursor will move to the first position of the line after the next line when the **Return** key is pressed.

Auto New Line

Factory default: Unselected

The setting of this option determines the effect of pressing the **Return** key.

When unselected, the **Return** key will generate a **CR** (carriage return) character.

When selected, the **Return** key will generate a **CR** and an **LF** (line feed) character.

Terminal ID

Factory default: Unspecified

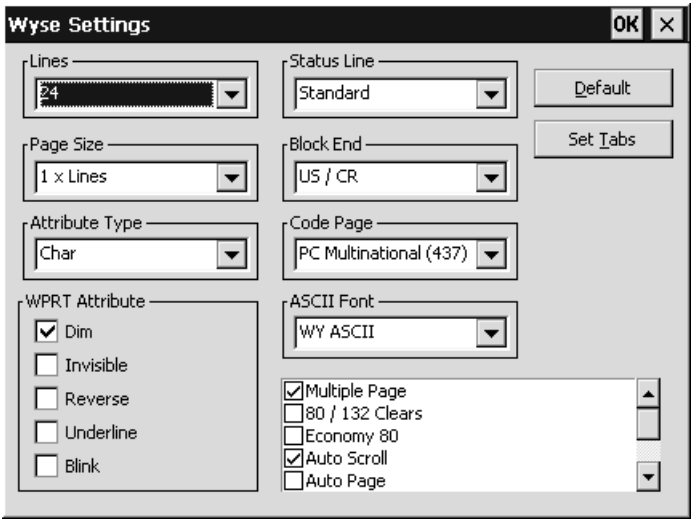
This specifies what is reported back to the host in response to a terminal identification request. The terminal ID can be up to 20 characters long. (Note that not all features of the specified terminal may be supported.)

Model

Factory default: 11

This option identifies the terminal model being emulated in response to a terminal identification request from the host. Model 11 supports only one viewport containing 24 or 25 rows and 80 columns. Model 31 supports up to three viewports (80 or 132 columns wide) and pass-through printing.

Wyse Settings



This dialog box is displayed by selecting **Wyse** in the **Settings** menu. Note that some of the settings apply to the TVI 910+, TVI 920, TVI 925, ADDS A2 and HZ 1500 emulations in addition to the Wyse emulations. Also, some settings may not apply to the particular Wyse emulation currently running. Selecting a setting that is not applicable to the current emulation will cause the emulator to use the default setting for that emulation when the dialog box is exited.

*Note: The **Tab Stops** dialog box displayed by clicking the **Set Tabs** button is described later in this chapter, after the **Terminal Settings** description.*

Lines

Factory default: 24

This option applies to the WY-50+ and WY-60 emulations and specifies the number of data lines displayed on the screen below the status line. Note that the other emulations only support 24 lines and a label line.

24	24 data lines and a label line at the bottom.
25	25 data lines but no label line.
42	42 data lines and a label line at the bottom.
43	43 data lines but no label line.

Page Size

Factory default: 1 x Lines

This option applies to the WY-50+ and WY-60 emulations and specifies the size of a page in display memory in multiples of the **Lines** setting. Note that the other emulations only support **1 x Lines**.

The **1 + Rest** setting will divide the display memory into two pages, the first containing the number of lines specified by the **Lines** option, the second containing all the remaining lines.

Note that changing the page format will cause the entire display memory to be cleared, the cursor will move to the home position and the scroll margin will be reset.

Status Line

Factory default: Standard

This option applies to all emulations and enables you to specify the type of status line displayed at the top of the screen, or remove it from the display.

Both the **Standard** and **Extended** status lines display messages about the state of the emulation or application. The **Extended** status line displays additional editing status messages. Refer to the *Wyse Emulations* chapter for details.

Block End

Factory default: US / CR

This option applies to all emulations and specifies the ASCII characters used to indicate the end of a line and a block when a block of data is sent to the host.

When set to **US / CR**, the line terminator is a **US** character and the block terminator is a **CR** character. When set to **CRLF / ETX**, the line terminators are the **CR** and **LF** characters, and the block terminator is an **ETX** character.

Attribute Type

Factory default: Page

The setting of this option determines whether display attributes are active to the end of the line or the end of the page. The **Character** setting only applies to the WY-60 emulation and causes attributes to only apply to characters written to the screen. The WY-50, ADDS A2 and HZ 1500 emulations only support the **Page** setting.

Code Page

Factory default: PC Multinational 437

This option determines the set of characters that form the second half of the multinational character set when in multinational mode (as set by the **Character Set Mode** option in the **Emulation Settings** dialog box).

ASCII Font

Factory default: WY ASCII

This option determines whether the Wyse ASCII or PC standard character set is used as the first half of the multinational character set when in multinational mode (as set by the **Character Set Mode** option in the **Emulation Settings** dialog box).

WPRT Attribute

Factory default: Dim

This option applies to all emulations and enables you to specify the appearance of write-protected characters on the display. They can be displayed in reverse video, dimmed or blinking. The WY-50+ and WY-60 emulations also support the underline and invisible attributes.

Multiple Page

Factory default: Unselected

This option applies to the WY-50+, WY-60 and all the TVI emulations. It determines whether or not more than one page of display memory can be accessed. When selected, all pages will be accessible. See also the **Auto Page** option.

Note that the TVI emulations support two pages of 24 lines each when this and the **Auto Page** options are selected, regardless of the **Lines** and **Page Size** settings.

80 / 132 Clears

Factory default: Unselected

This option applies to the WY-50+ and WY-60 emulations and determines whether or not data is cleared from the display when the number of columns is changed. The screen is always cleared when the number of columns is changed in the other emulations.

Economy 80

Factory default: Unselected

This option applies to the WY-50+ and WY-60 emulations and enables 80 column display with more lines of display memory.

Auto Scroll

Factory default: Selected

This option applies to all emulations and determines what happens when the cursor is moved beyond the last line of the current page. When selected, the displayed data scrolls up and the cursor remains on the last line. When unselected, the cursor moves to the top of the same page.

Auto Page

Factory default: Unselected

This option applies to the WY-50+, WY-60 and all the TVI emulations. It determines what happens when the cursor reaches the top or bottom of the page.

When unselected, the cursor either moves to the top of the same page or data scrolls up from the bottom, as determined by the setting of the **Auto Scroll** option. When selected, a new page of memory will be displayed.

Note: The other emulations will always display a new page of memory.

Auto Wrap

Factory default: Selected

The setting of this option determines whether characters wrap to the next line when the right margin is reached. When unselected, on reaching the right margin, the last character position will be overwritten by every new character received.

DEL = DestBS

Factory default: Unselected

This option applies to the WY-50+ and WY-60 emulations and determines what effect an ASCII **DEL** character has on displayed characters. The other emulations ignore the **DEL** character.

When unselected, the **DEL** character is ignored. When selected, the **DEL** character is interpreted as a destructive backspace, causing the character to the left of the cursor to be deleted and the cursor to move into that position.

Margin Bell

Factory default: Unselected

This option applies to all emulations and specifies whether or not an audible warning sounds when the cursor reaches a specified column. The default bell column number is 72 in 80 column mode and 124 in 132 column mode.

Enhance

Factory default: Selected

When this option is selected, the emulator will recognize an additional set of Wyse codes which are not normally supported by specific non-Wyse terminals.

Answerback Mode

Factory default: Unselected

This option applies to all emulations and specifies whether or not an answerback message is automatically sent to the host in response to an ASCII **ENQ** character.

Send ACK

Factory default: Selected

This option applies to all emulations and specifies whether or not an ASCII **ACK** character is sent to the host port after certain commands have been executed.

Block Mode

Factory default: Unselected

This option applies to all emulations. In Block mode, keyboard entered data is displayed and processed locally, allowing you to edit it before a block of data is sent to the host. When Block mode is disabled, data is sent to the host as it is entered at the keyboard.

Colour Support

Factory default: Unselected

When this option is selected, an additional set of host commands will be recognized to determine the colours used for the display. Wyse 350 colour commands will be recognized in all modes except Wyse 60, which will use Wyse 60 colour commands.

Application Key Mode

Factory default: Unselected

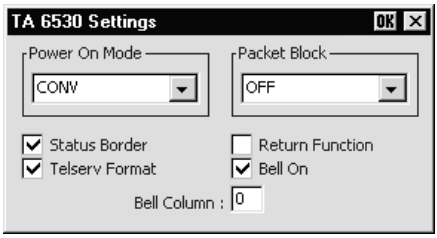
When application key mode is selected, the function keys and certain editing keys will send application codes when pressed, regardless of whether or not the keys have been redefined. When this option is not selected, the keys will send their programmed definitions.

CR=CR/NULL

Factory default: Selected

This option allows you to disable the **NULL** being automatically sent on **CR**.

TA6530 Settings



This dialog box is displayed by selecting **TA 6530** in the **Settings** menu.

Power On Mode

Factory default: Conversational

This option determines the operating mode that is in effect when the TA6530 emulation is entered.

> *Note: Changing the current setting will not take effect until you re-load the emulation, so you will need to save the new setting before exiting the emulation.*

Conversational and **Block** modes are normally used for applications running on a NonStop host system, and **ANSI** mode for applications running on an LXN host system. Save the new setting before exiting the emulation by selecting **Save Session** in the **File** menu.

Packet Block

Factory default: OFF

This option specifies whether you want to use packet blocking for X.25 communications line support, and if so, the size of the packet block. The size may be set to any of the listed 128-byte increments, or, by setting this option to **OFF**, the default size of 260 bytes.

Status Border

Factory default: Selected

This option enables you to display a thin border which separates the status line from the rest of the lines on the display.

Telserv Format

Factory default: Selected

The setting of this option determines how network data is treated. When selected, data will be treated in Tandem network server (Telserv) format. When unselected, data will be treated in serial format.

Return Function

Factory default: Unselected

This option specifies whether or not the function of the **Enter** key is defined by the application when in Block mode. When selected, the key is regarded as an application specific function key. Normally this should be unselected.

Bell On

Factory default: Selected

This option enables or disables an audible tone which is heard when the emulation warns you about something. This needs to be selected when you want to use the **Bell Column** feature.

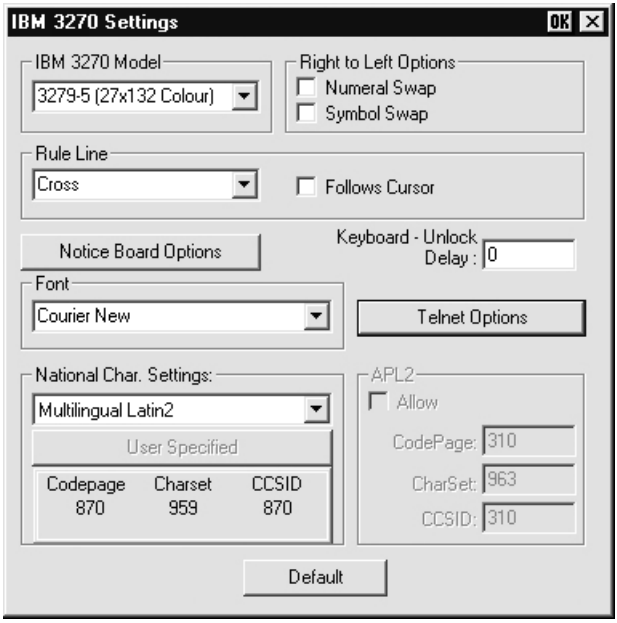
Bell Column

Factory default: 0

This option enables you to specify a particular column on the display which will cause an audible warning to sound when the cursor passes through it.

The valid range of column numbers is **1** to **80**. Setting this option to **0** will disable the feature. The **Bell On** option must be selected for this feature to work.

IBM 3270 Settings



This dialog box is displayed by selecting **IBM 3270** in the **Settings** menu.

IBM 3270 Model

Factory default: 3278-2-E

This specifies what is reported back to the host in response to a terminal identification request. (Note that not all features of the specified terminal may be supported.) TN3287 printing is supported by selecting **3287-1**.

One of four display sizes can be selected:

3278/9-2 24 rows by 80 columns
3278/9-3 32 rows by 80 columns
3278/9-4 43 rows by 80 columns
3278/9-5 27 rows by 132 columns

3278 settings with the **E** extension provide support for the following extended attributes (these are supported by the **3279** as standard):

3270 Field Attributes
Extended Highlighting
Foreground Colour
Query Reply Inbound Structured Fields

Numeral Swap

Factory default: Unselected

When using a code page that supports a bilingual keyboard, this will cause all numbers to be displayed using the National character set when in Latin mode.

Symbol Swap

Factory default: Unselected

Selecting this option will cause symbols such as brackets to be displayed the correct way round when typing in right-to-left mode.

Rule Line

Factory default: Cross

A rule can be displayed across the emulation workspace at the cursor position by pressing the keys **Alt + Page Down**, which toggles it on and off. The setting of this option determines whether it is displayed as a horizontal rule, vertical rule or both.

Follows Cursor

Factory default: Unselected

When the rule is displayed in the emulation workspace, the setting of this option determines whether or not the rule follows the cursor when it moves.

Notice Board Options

This will display the **Notice Board Setup** dialog box as described in the next section.

Keyboard Unlock Delay

Factory default: 0

This option is available when the **IBM 3270 Model** is not set to a printer. When the keyboard is unlocked by the host, this specifies a delay in milliseconds before characters are sent.

Print Bypass Character

This option is available when the **IBM 3270 Model** option is set to a printer. The **Start Seq** box enables you to enter the character or sequence of characters that initiate a print bypass.

The end sequence that terminates the print bypass can be specified either by entering the actual characters in the **End Seq** box when **Specify End Sequence** is selected, or by specifying the number of characters that make up the end sequence in the **End Length** box when **End on Non-Hex** is selected.

If no **End Seq** is entered, the bypass is assumed to be for a single pair of characters only. If an **End Seq** is specified, characters in the data stream between the start and end are interpreted as encoded ASCII. For example, “1B0A” becomes ASCII 27 10 (ESC LF).

Selecting **End on Non-Hex** enables you to specify the number of characters that make up the end sequence in the **End Length** box. The bypass will then terminate as soon as a non-hexadecimal character is received (any character except in the range 0 through 9 and A through F) followed by the end sequence.

Characters can be entered in several ways. For example, to specify the ASCII escape character, you can enter either **_027**, **\u001B**, **\e**, **\033**, or even **^[**.

Font

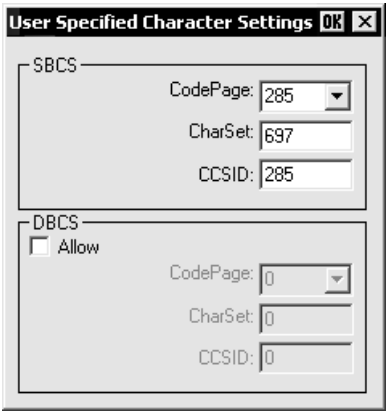
This enables you to specify the font to be used for displaying characters. The available settings depend on the fonts installed.

Telnet Options

Clicking the **Telnet Options** button will display a dialog box with additional options. These are described in the *Getting Started* chapter.

National Character Settings & APL2

This enables you to select the character set to be used. The IDs of the code page, character set and CCSID used for the currently selected language are displayed under the **User Specified** button. Clicking **User Specified** will display a dialog box that enables you to change these settings.

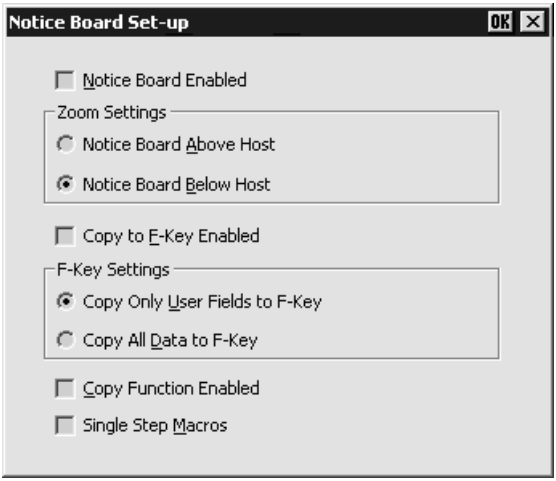


There are separate **Code Page**, **Character Set** and **CCSID** entries for the Single Byte Character Set (**SBCS**) and, if supported, Double Byte Character Set (**DBCS**). These should only be changed by the System Administrator. If they have been changed and you wish to restore the default settings, click the **Default** button in the **IBM 3270 Settings** dialog box. The following table shows the default settings.

Default Language, Codepage & Character Set Settings

Language	Type	Codepage	Char Set	CCSID
English (US)	SBCS	37	697	37
English (UK)	SBCS	285	697	285
Belgian	SBCS	500	697	500
Canadian French	SBCS	37	697	37
Danish	SBCS	277	697	277
Finnish	SBCS	278	697	278
German	SBCS	273	697	273
Dutch	SBCS	37	697	37
Italian	SBCS	280	697	280
Swiss French	SBCS	500	697	500
Swiss German	SBCS	500	697	500
Swedish	SBCS	278	697	278
Norwegian	SBCS	277	697	277
French	SBCS	297	697	297
Spanish	SBCS	284	697	284
Portuguese	SBCS	37	697	37
Japanese Kanji + Katakana	SBCS	290	1172	290
	DBCS	300	1001	930
Korean	SBCS	833	1173	833
	DBCS	834	934	933
Simplified Chinese	SBCS	836	1174	836
	DBCS	837	937	937
Traditional Chinese	SBCS	37	1175	37
	DBCS	835	935	935
Hebrew New Code	SBCS	424	941	424
Hebrew Old Code	SBCS	803	941	424
Thai	SBCS	838	1176	838
Greek	SBCS	875	925	875
Cyrillic	SBCS	880	960	880
Turkish	SBCS	1026	1152	1026
Russian	SBCS	1025	1150	1025
Czech	SBCS	870	959	870
Slovak	SBCS	870	959	870
Polish	SBCS	870	959	870
Icelandic	SBCS	871	697	871
Arabic	SBCS	420	697	285

Notice Board Setup



This dialog box is displayed by clicking the **Notice Board Setup** button in the **IBM 3270 Settings** dialog box, or by pressing the keys **Alt + F2**. Refer to the *Notice Board Facility* section in the *IBM 3270 Emulation* chapter for information on how to use the Notice Board.

Notice Board Enabled

Factory default: Unselected

When this option is selected, pressing the **Zoom** key will toggle the display between full screen (i.e. the screen currently containing the cursor) and split screen (host screen and Notice Board) mode. The following **Zoom Settings** options determine which is displayed above the other. Note that the host screen contains the same number of rows and columns whether displayed full screen or in split screen.

Zoom Settings

Factory default: Below Host

These toggle settings determine whether the Notice Board is displayed above or below the host screen. When viewing the display, pointers at each end of the dividing line between the two screens indicate which is the host screen.

Copy to F-Key Enabled

Factory default: Unselected

This enables the facility for copying screen data to a function key. Refer to the *Copying Screen Data To A Function Key* section in the *IBM 3270 Emulation* chapter for details.

Copy Only User Fields to F-Key

Factory default: Selected

This will enable only data contained in user entry fields in the selected area to be copied to a function key. Refer to the *Copying Screen Data To A Function Key* section in the *IBM 3270 Emulation* chapter for details.

Copy All Data to F-Key

Factory default: Unselected

This will enable all screen data (protected and unprotected) in the selected area to be copied. Refer to the *Copying Screen Data To A Function Key* section in the *IBM 3270 Emulation* chapter for details.

Copy Function Enabled

Factory default: Unselected

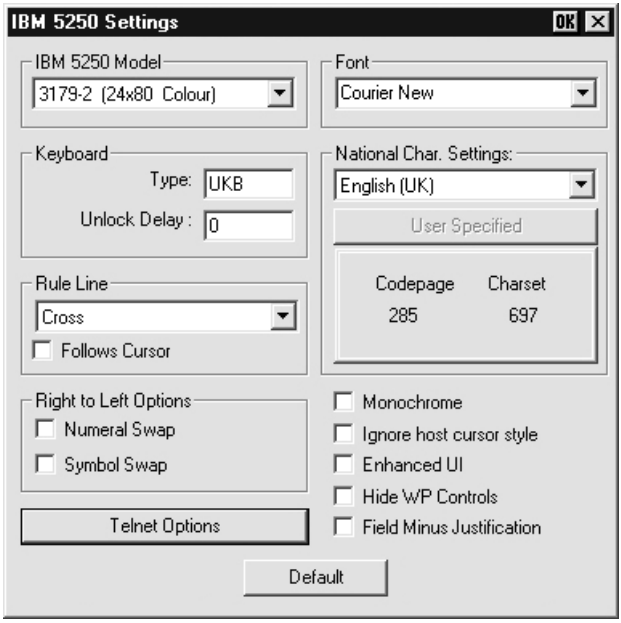
This determines whether the copy functions are available for copying selected data to another area of the display or to a function key.

Single Step Macros

Factory default: Unselected

Selecting this option will enable an **Fn** key macro to be played one keystroke at a time by pressing the spacebar for each keystroke after issuing a play **Fn** key command. The status line will display the contents of the macro and the cursor position in the status line indicates the point that has been reached in the macro play back. Refer to the *Play Back Keystrokes* section in the *IBM 3270 Emulation* chapter for details.

IBM 5250 Settings



This dialog box is displayed by selecting **IBM 5250** in the **Settings** menu.

IBM 5250 Model

Factory default: 3179_2

This specifies what is reported back to the host in response to a terminal identification request. (Note that not all features of the specified terminal may be supported.) The terminal models and their display characteristics are listed below:

Model	Display	Rows x Columns
5291_1	Monochrome	24 x 80
5292_2	Colour	24 x 80
5251_11	Monochrome	24 x 80
3179_2	Colour	24 x 80 (default)
3196_A1	Monochrome	24 x 80
3180_2	Monochrome	24 x 80 and 27 x 132
3477_FC	Colour	24 x 80 and 27 x 132
3477_FG	Monochrome	24 x 80 and 27 x 132
3486_BA	Monochrome	24 x 80
3487_HA	Monochrome	24 x 80
3487_HC	Colour	24 x 80

5555_B01	Monochrome	24 x 80
5555_C01	Colour	24 x 80

The printer models are listed below:

3812-1	Single byte printer
5553-B01	Double byte printer

If double byte character sets are supported, then select either **5555_B01** (monochrome) or **5555_C01** (colour) for display, or **5553-B01** for printing.

Keyboard Type

The settings of the **Keyboard Type** and **National Character Settings** options below will reflect the default settings for the chosen language and should only be changed by the System Administrator. If they have been changed and you wish to restore the default settings in this dialog box, click the **Default** button.

Unlock Delay

Factory default: 0

When the keyboard is unlocked by the host, this specifies a delay in milliseconds before characters are sent.

Rule Line

Factory default: Cross

A rule can be displayed across the emulation workspace at the cursor position by pressing the keys **Alt + Page Down**, which toggles it on and off. The setting of this option determines whether it is displayed as a horizontal rule, vertical rule or both (cross).

Follows Cursor

Factory default: Unselected

When the rule is displayed in the emulation workspace, the setting of this option determines whether or not the rule follows the cursor when it moves.

Numeral Swap

Factory default: Unselected

When using a code page that supports a bilingual keyboard, this will cause all numbers to be displayed using the National character set when in Latin mode.

Symbol Swap

Factory default: Unselected

Selecting this option will cause symbols such as brackets to be displayed the correct way round when typing in right-to-left mode.

Telnet Options

Clicking the **Telnet Options** button will display a dialog box with additional options. These are described in the *Getting Started* chapter.

Monochrome

Factory default: Depends on terminal type

By default the setting of this option will match the normal display characteristic of the **IBM 5250 Model** selected, as shown in the list above. In the emulator, all terminal types support both monochrome and colour display.

When monochrome is selected, characters will be displayed in green and intense fields will be displayed in white. When monochrome is not selected, the settings specified in the **Attributes** dialog box will be used for the display.

Ignore Host Cursor Style

Factory default: Unselected

Selecting this option will cause the emulator to ignore any commands from the host to change the cursor style.

Enhanced UI

Factory default: Unselected

Selecting this option will enable support of the IBM 5250 Extended User Interface for generating windows on the screen. (Note that menus and scroll bars are not supported.)

Hide WP Controls

Factory default: Unselected

This enables you to toggle the display of word processing characters on and off.

Field Minus Justification

Factory default: Unselected

The setting of this option determines whether pressing the **Field Minus** key affects the last digit (unselected) or the space following the last digit (selected).

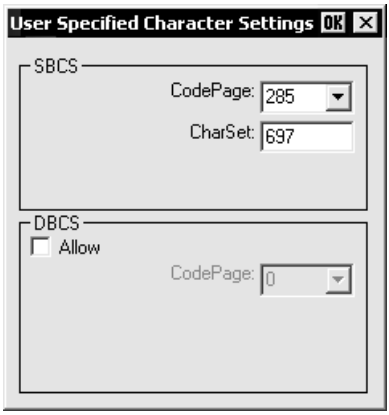
Font

This enables you to specify the font to be used for displaying characters. The available settings depend on the fonts installed.

National Character Settings

This enables you to select the character set to be used. The IDs of the code page and character set used for the currently selected language are displayed under the **User Specified** button. Clicking **User Specified** will display a dialog box that enables you to change these settings.

There are separate entries for the Single Byte Character Set (**SBCS**) and, if supported, Double Byte Character Set (**DBCS**). These should only be changed by the System Administrator. If they have been changed and you wish to restore the default settings, click the **Default** button in the **IBM 5250 Settings** dialog box. The following table shows the default settings.

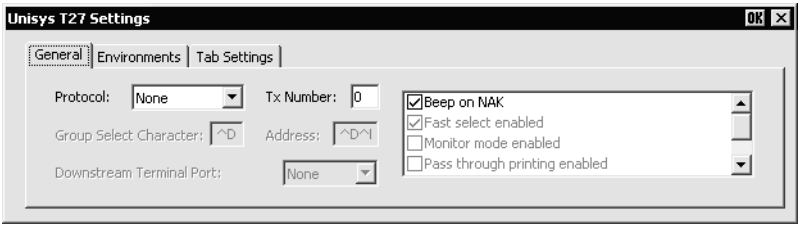


If double byte character sets (e.g. Japanese) are supported and you wish to use them, then set the **IBM 5250 Model** to either **5555_B01** (monochrome) or **5555_C01** (colour) for display, or **5553-B01** for printing.

Default Language, Character Set & Codepage Settings

Language	KBDTYPE	CHARSET	SBCS CODEPAGE	DBCS CODEPAGE
English (US)	USB	697	37	
English (UK)	UKB	697	285	
Belgian	BLI	697	500	
Canadian French	CAI	697	500	
Danish	DMB	697	277	
Finnish	FNB	697	278	
German	AGB	697	273	
Dutch	NEB	697	37	
Italian	ITB	697	280	
Swiss French	SFI	697	500	
Swiss German	SGI	697	500	
Swedish	SWB	697	278	
Norwegian	NWB	697	277	
French	FAB	697	297	
Spanish	SPB	697	284	
Portuguese	PRB	697	37	
Japanese Kanji + Katakana	JKB	1172	290	300
Korean	KOB	1173	833	834
Simplified Chinese	RCB	1174	836	837
Traditional Chinese	TAB	1175	37	835
Hebrew New Code	NCB	941	424	
Hebrew Old Code		941	803	
Thai	THB	1176	838	
Greek	GNB	925	875	
Cyrillic	CYB	960	880	
Turkish	TRB	1152	1026	
Russian	RUB	1150	1025	
Czech	CSB	959	870	
Slovak	SKB	959	870	
Polish	POB	959	870	
Icelandic	ICB	697	871	
Arabic		697	420	

Unisys T27 Settings



This dialog box is displayed by selecting **Unisys T27** in the **Settings** menu.

General Settings

Protocol

Factory default: None

This can be set to **None**, **Poll/Select** or **Point to Point**.

Selecting **Poll/Select** will enable up to three environments. Only one environment can be enabled when **Point to Point** is selected.

Tx Number

Factory default: 0

This specifies a sequence of numbers to ensure correct sequencing of messages sent between the Unisys T27 emulation and the host. The valid numbers are as follows:

00	None
01	0/1 no checking
02	@/A no checking
03	0/1 checking
04	@/A checking
05	0/1, with * reset
06	@/A with * reset
07	0-9
08	0-99
09	0-999
10	0-9 with * reset
11	0-99 with * reset
12	0-999 with * reset

The * reset option enables the host or the Unisys T27 emulation to resequence by sending an asterisk, for example, after a system failure, to ensure synchronization.

Group Select Character

Factory default: ^D

This specifies a single character address so that the host can simultaneously transmit to all terminals with that address.

Address

Factory default: ^D'

This enables you to specify a two-character group poll address that enables the host to simultaneously poll all terminals with that address.

Downstream Terminal Port

Factory default: None

This specifies the port used to send transmissions to other terminals.

Beep on NAK

Factory default: Selected

Specifies whether an audible warning is emitted when the Unisys T27 emulation sends a negative acknowledgement of a select received from the host.

Fast Select enabled

Factory default: Selected

Selecting this option will cause the Unisys T27 emulation to accept fast select, group select, and broadcast select messages while not in receive ready mode.

Monitor mode enabled

Factory default: Unselected

When enabled, line activity is monitored and messages being transmitted to and from stations on the data communications line to which you are connected are displayed.

Pass through printing enabled

Factory default: Unselected

Enables or disables pass through printing.

Return key in forms exits field

Factory default: Unselected

This determines the effect of the **Return** key in forms mode. When unselected, it moves to the next line.

Use optional poll/select characters

Factory default: Unselected

Specifies whether the optional poll select sequence, 7B 7C hex, is to be used instead of the standard sequence 70 71 hex (default).

Environments Settings

Lines per page

Factory default: 24

This specifies the number of lines allocated to each logical page of data in the range 1 to 256.

Chars per line

Factory default: 80

This specifies the width of the page as 40, 80 or 132 characters.

Lines per Screen

Factory default: 24

This specifies the number of text lines to be displayed per full screen in the rage 0 to 24. Note that lines can be displayed as single-height or double-height as determined by the setting of the **Lines are double height** option.

Alt US Char

Factory default: ^_

This specifies the character to be used as the unit separator. This will be converted into a US character when you invoke forms mode.

Alt RS Char

Factory default: ^^

This specifies the character to be used as the record separator. This will be converted into an RS character when you invoke forms mode.

Pages

Factory default: 2

This determines the number of pages in each environment, in the range 1 to 24.

Env

Factory default: 1

An environment is an area of memory reserved for exclusive use by applications. Up to three environments can be defined (depending on the **Protocol** setting) and this option specifies the number of the current environment definition.

Address

Factory default: ^D'

The address can be any two characters, except NUL and SYNC, that uniquely identify a T27 environment in a host network.

ID

Factory default: ENVMNT 1

This enables you to specify a name, up to eight characters long, which will be displayed on the screen to identify the current environment.

Append CR to LF

Factory default: Unselected

When selected, all line feed characters received from the host will be appended with carriage return characters.

Append LF to CR

Factory default: Selected

When selected, all carriage return characters received from the host will be appended with line feed characters.

Append LF to Return key

Factory default: Unselected

This determines the result of pressing the **Return** key. When unselected, only a carriage return is performed. When selected, a carriage return and line feed is performed.

Auto form field advance

Factory default: Selected

The setting of this option determines whether the text cursor moves to the next unprotected field when the current unprotected US field is filled.

CLR clears unprotected only

Factory default: Unselected

This specifies whether the page-clearing function clears all characters (default) or only unprotected characters.

Cursor is a block (else underline)

Factory default: Selected

The cursor can be displayed as a block or underline character, depending on the setting of this option.

Cursor is hidden

Factory default: Unselected

The cursor can be displayed or hidden, depending on the setting of this option.

Cursor is static

Factory default: Selected

The cursor can be displayed as static or blinking, depending on the setting of this option.

Cursor wrap around

Factory default: Selected

When selected, when the cursor reaches the last data position on the screen it will automatically move to the home position.

DC1 clears line

Factory default: Unselected

The setting of this option determines whether the line is cleared or the emulator stays in receive mode when a DC1 character is received.

DC2 advances dcp

Factory default: Unselected

The setting of this option determines whether the DCP (data comm pointer) is advanced or forms are toggled when a DC2 character is received.

Display CR from host

Factory default: Unselected

When this option is selected, carriage return characters received from the host are displayed.

Display CR from keyboard

Factory default: Unselected

When this option is selected, carriage return characters entered using the keyboard are displayed.

Display ETX from host

Factory default: Unselected

When this option is selected, an ETX character received from the host will be stored at the DCP (data comm pointer) location when the emulation is in nonforms mode.

Display HT when tabbing from host

Factory default: Unselected

When this option is selected, an HT character is displayed when a tab character is received in a message from the host.

Display HT when tabbing from keyboard

Factory default: Unselected

When this option is selected, an HT character is displayed when the **Tab** key is pressed.

ETX advance

Factory default: Unselected

This determines the response of the Unisys T27 emulation when an ETX character is received.

FF clears tabs

Factory default: Unselected

This determines whether the tabs are cleared when a form feed character is received.

Form delimiters visible

Factory default: Selected

This determines whether form delimiter characters are displayed as a graphic (default) or as a blank.

Form xmit to cursor

Factory default: Selected

This determines how the **XMIT** key works in forms mode.

Insert key inserts space

Factory default: Selected

The setting of this option determines whether the **Insert** key inserts a space when pressed.

Line at a time xmit

Factory default: Unselected

This determines how much data can be transmitted to the host at a time.

When this option is not selected, a message as large as one full page of data can be transmitted. When selected, only the line containing the text cursor can be transmitted.

Lines are double height

Factory default: Unselected

This determines whether each line is single-height (normal) or double-height.

Lower case lockout

Factory default: Unselected

When selected, this will cause the **LOCK** key to be *on* so that only UPPERCASE characters can be generated.

SOH clears screen

Factory default: Unselected

When selected, this will cause the Unisys T27 emulation to automatically clear the screen whenever it receives an SOH character.

SOH exits forms

Factory default: Selected

When selected, this will cause the Unisys T27 emulation to automatically exit forms mode whenever it receives an SOH character.

SO/SI XTN
SO/SI XLT

Factory default: Unselected

The setting of these options determine the effect of the **ESC SO** and **ESC SI** sequences when receiving or transmitting data.

When receiving from the host, the setting of the **SO/SI XTN** option determines whether the sequences are used to switch between standard and extended character sets (selected), or reverse highlight and underline (unselected).

When transmitting to the host, the setting of both options determine the sequences used for switching between standard and extended character sets, and reverse highlight and underline as follows:

XTN	**XLT**	**SO Reverse Video**	**SI Underline**	**Extended**	**Characters**
		Sent as	Sent as	Begin	End
OFF	OFF	SO	SI	ESC SO	ESC SI
ON	OFF	ESC'.	ESC'/	SO	SI
OFF	ON	ESC'.	ESC'/	ESC SO	ESC SI
ON	ON	ESC'.	ESC'/	SO	SI

The **SO** (shift out) and **SI** (shift in) sequences allow switching between two sets of characters: the standard character set and the extended character set. Each set consists of 128 characters. When an **ESC SO** sequence is received from the host, the emulation

displays all subsequent characters from the extended character set until an **ESC SI** sequence is received to switch back to the normal character set.

The Unisys T27 emulation transmits an **ESC SO** sequence when it encounters extended characters in its display buffer and an **ESC SI** when standard characters are to be sent. There is no automatic shift in (**ESC SI**) at the end of a data transmission block.

SPCFY key sends hex values

Factory default: Unselected

This determines whether the **SPCFY** key transmits in hexadecimal or ASCII (default).

SPCFY key sends page number

Factory default: Unselected

This determines whether the **SPCFY** key transmits the page number in addition to the column and row information it usually sends.

VT page advance

Factory default: Unselected

If the emulation is configured for 32 lines per page, vertical tabs are set on lines 1, 9, 17 and 25 when this option is selected.

Xmit printer status

Factory default: Unselected

The setting of this option determines whether the Unisys T27 emulation informs the host of the current printer status.

Tab Settings

This enables you to set tab stops for each environment.

Tab stops are set every eight columns by default when the **Type** option is set to **Fixed**, as indicated by the **T** character above the relevant column numbers.

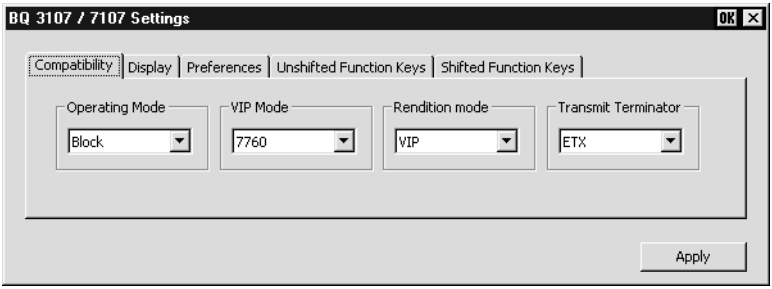
Individual tab stops can be toggled on or off by setting the **Type** option to **Variable** then clicking the mouse pointer on or above the relevant column number.

To save the tab stops, click the **Apply** button.

To remove all the tab stops when in **Variable** mode, click the **Clear** button. Note that switching from **Fixed** to **Variable** mode will clear all the default tabs. To restore the default tabs, click the **Default** button.

The **Show Ruler** option enables a tab ruler to be displayed on the 25th line of the screen.

BQ 3107 Settings



This dialog box is displayed by selecting **BQ 3107** in the **Settings** menu.

Operating Mode

Factory default: Block

In Block mode, keyboard entered data is displayed and processed locally, allowing you to edit it before a block of data is sent to the host. In Character mode, keyboard entered data is sent simultaneously to the host and the display.

VIP Mode

Factory default: 7760

The VIP mode can be set to 7700 or 7760.

Rendition Mode

Factory default: VIP

The setting of this option determines whether VIP or SDP display attributes are used.

Transmit Terminator

Factory default: ETX

This specifies the last character that is sent to indicate the end of a block transmission. The character can be **ETX**, **EOT** or **CR**.

Partition 0

Factory default: Message Row

The display is divided into two partitions numbered 0 and 1. Partition 0 is a single line that can be used to display status reports and messages either at the bottom or top of the display, as determined by the setting of the Message Row option. Partition 1 is a page of 24 lines. The setting of this option determines whether Partition 0 is Blank or used as a Message Row.

Message Row

Factory default: At Row 25

The setting of this option determines whether the message row (Partition 0) is at the top or bottom of the display.

Blink Displayed As

Factory default: Caret

In VIP mode the start of a flashing field can be indicated by a caret or space character.

Blank Displayed As

Factory default: Tilde

In VIP mode the start of a blank field can be indicated by a tilde or space character.

Fill Character

Factory default: Asterix

When inserting or deleting characters, the setting of this option determines whether a Space or Asterisk character is displayed.

At Page Overflow

Factory default: Stop

The setting of this option determines what happens when the cursor reaches the bottom of the screen. Selecting **Stop** will cause the cursor to stop at the last position. **Scroll** will cause the display to shift up one line and move the cursor to the new last line, while **Wrap** will move the cursor to the top of the screen.

Auto Tabbing

Factory default: Selected

When an unprotected field is filled, the setting of this option determines whether or not the cursor automatically moves to the next field.

Auto Wrap Tabbing

Factory default: Unselected

When the last unprotected field on the screen is filled, the setting of this option determines whether or not the cursor automatically moves back to the first field on the screen.

Function Keys

The keys mapped as FKC1 to FKC12 on your keyboard can be programmed to send control sequences or messages when pressed. The button underneath the FKC text entry boxes enables you to toggle the display of shifted and unshifted functions.

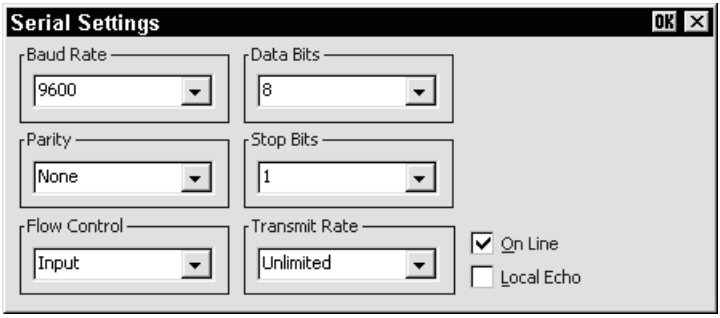
The T (Type) box entry determines what happens to the programmed contents of an FKC key when pressed. This can have the value 0, 1 or 2. When set to 0, the contents of the Message box will be sent to the host. When set to 1, the contents of the Message box together with text that can be transmitted from the screen will be sent to the host. When set to 2, the contents of the Message box will not be sent to the host but will will appear on the screen to the right of the cursor position.

The FC box has no function.

The Message box entry can consist of any alphanumeric characters. Control characters can also be entered either as the control key character equivalent or the decimal value of the ASCII character. For example, the ASCII character **ESC** can be entered by typing the characters **^[**, where **^** represents the **Ctrl** key.

Decimal values are entered as three-digit numbers immediately preceded by an underscore character. Values with only two digits must be preceded by a zero. For example, the decimal value of **ESC** is 27, so this would be entered as **_027**. Refer to the ASCII character table in the *Character Sets* appendix for code and decimal references.

Serial Settings



When the terminal is not in WBT mode, this dialog box is displayed by selecting **Serial** in the **Settings** menu, or by clicking the **Configure...** button in the **New Connection** dialog box when the connection type is set to **Serial**. Note that the port for serial communications is selected via the **New Connection** dialog box which is displayed from the **File** menu.

Baud Rate

Factory default: 9600

This specifies the transmit and receive baud rates for the port selected for host communications.

Parity

Factory default: None

This option specifies the parity mode for each transmitted character. If the number of **Data Bits** is **8**, set this option to **None**.

Selecting **Odd** will cause an eighth bit to be added with a value of 1 if the previous 7 bits add up to an even number, and 0 if the previous 7 bits add up to an odd number. Selecting **Even** will cause an eighth bit to be added with a value of 1 if the previous 7 bits add up to an odd number, and 0 if the previous 7 bits add up to an even number. **Mark** parity will set every eighth bit to 1 and **Space** parity every bit to 0.

Flow Control

Factory default: Input

This option specifies the type of flow control used by the line port to communicate readiness to transmit or receive data from the host.

None - No flow control
Input - XON/XOFF on received data
Output - XON/XOFF on transmitted data

In/Out - XON/XOFF on transmitted & received data
Hardware - DTR/CTS hardware flow control.

Data Bits

Factory default: 8

This option specifies the number of data bits sent for each transmitted character.

Stop Bits

Factory default: 1

This specifies the number of stop bits sent for each transmitted character.

Transmit Rate

Factory default: Unlimited

The setting of this option determines the maximum effective baud rate that the emulator transmits terminal reports and data sent as a result of pasting data to the host.

On Line

Factory default: Selected

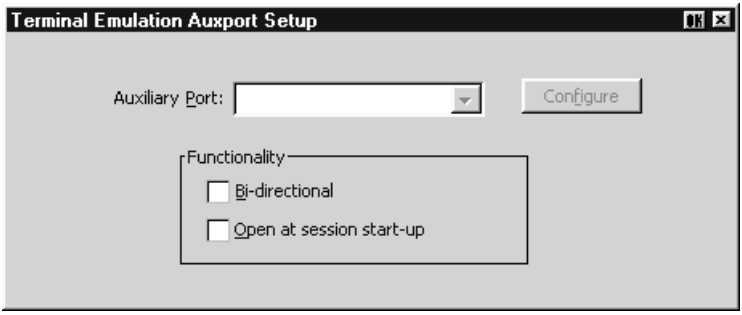
When this option is selected, normal two-way communication between the emulator and the host is enabled. When unselected, the emulator is in Local mode and data will not be sent to, or received from the host. Data typed on the keyboard will be displayed on the screen or actioned if a control command is typed.

Local Echo

Factory default: Unselected

The setting of this option determines whether keyboard entered characters are displayed on the screen as well as sent to the host. When unselected, characters are not displayed when they are transmitted unless the host 'echoes' them back.

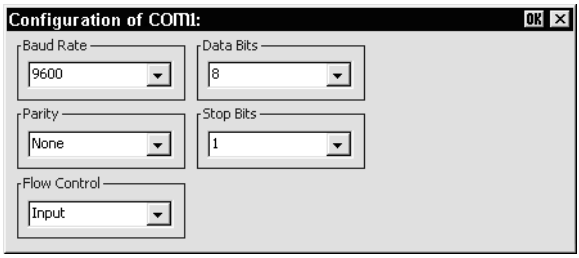
Auxport Setup



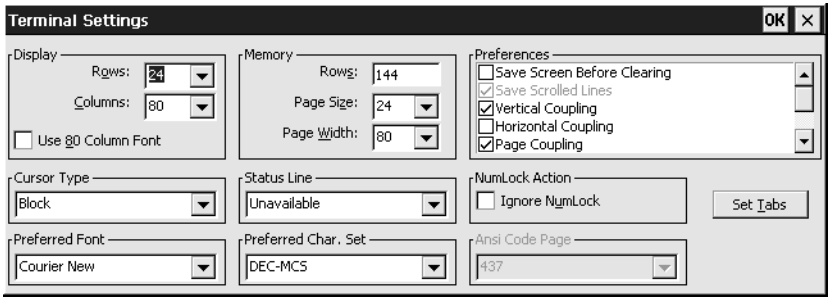
This dialog box is displayed by selecting **Auxport** in the **Settings** menu. It enables you to specify a COM or LPT port for bidirectional output when in any DEC VT mode, ANSI BBS, Sco Console, HP 700/92 or IBM 3151 mode.

The **Functionality** options enable you to set the auxiliary port as bidirectional and specify that it is to be opened at start-up.

Clicking the **Configure** button will display a dialog box in which you can specify settings for the COM port. The options in it are described in the *Serial Settings* section earlier in this chapter.



Terminal Settings



This dialog box is displayed by selecting **Terminal** in the **Settings** menu.

*Note: The **Tab Stops** dialog box displayed by clicking the **Set Tabs** button is described in the next section.*

Display Rows

Factory default: 24

This specifies the number of text rows that can be viewed in the workspace at any one time out of the total number stored in memory. This can be set to a maximum of 64. Note that the number of rows stored in memory is specified by the **Memory Rows** option.

Display Columns

Factory default: 80

This option enables you to specify a width of 80 or 132 columns for the workspace. When set to **132**, the setting of the **Use 80 Column Font** option determines whether all 132 columns are displayed using a narrow font, or only 80 columns at a time using the normal (80 column) font, with the ability to scroll horizontally to view the remaining columns.

Use 80 Column Font

Factory default: Unselected

This option specifies which font to use when the **Display Columns** option is set to **132**. When unselected, a narrow font will be used so that all 132 columns are visible in the window. When selected, only 80 columns will be visible using the normal font, with the remaining columns stored off-screen. You can scroll horizontally to view the hidden columns by holding down the **Ctrl** key and pressing the **Left** or **Right Cursor** keys.

Memory Rows

Factory default: 144

This option determines the number of text rows that are stored in memory. This can be set from 0 to 528 rows by default. The **Display Rows** option specifies the number of memory rows that can be viewed in the workspace at any one time.

Memory Page Size

Factory default: 24

When the emulator is in VT420 mode, the display memory of 144 lines can be divided into several pages, up to a maximum of six pages of 24 lines each. The setting of this option determines the number of lines on a page and therefore how many pages are available. Note that the page size can be larger than the **Display Rows** setting, in which case you can scroll the page up or down in the window by holding down the **Ctrl** key and pressing the **Up** or **Down Cursor** keys. When the emulator is in any mode other than VT420, the page size is the same as the **Display Rows** setting.

Memory Page Width

Factory default: 80

This option specifies the width of display memory for DEC VT modes, in the range 80 to 132 columns. When the number of **Display Columns** is less than the page width specified here, you can scroll horizontally to view the hidden columns by holding down the **Ctrl** key and pressing the **Left** or **Right Cursor** keys.

Cursor Type

Factory default: Block

This enables you to specify how the text cursor is displayed. Select from the following:

Underline	Static Underline	Hidden
Block	Static Block	

Status Line

Factory default: Unavailable

This option determines whether or not the 25th screen line is used as a status line when the emulator is in any DEC VT terminal emulation mode. When **Unavailable** or **Host Writable** is selected, the host can write application-specific messages to the 25th line. Selecting **None** will prevent this.

Ignore Numlock

Factory default: Unselected

The setting of this option determines whether or not the **Num Lock** key toggles Num Lock mode on and off when pressed. When selected, the Num Lock key will perform the function defined by the terminal emulation.

Keyboard Type

Factory default: 101\102

(Windows XPe only)

This TeemTalk for Windows XPe option enables driver-less support for a 122 or 108-key keyboard instead of the standard 101\102-key keyboard.

Preferred Font

This enables you to specify the font to be used for displaying characters. The available settings depend on the fonts installed.

Preferred Char. Set

Factory default: DEC-MCS

This enables you to specify the character set to be used for displaying characters.

The **DEC-MCS**, **ISO Latin-1** and **ISO Latin-2** settings enable you to specify the 8-bit character set that is used within VT320 mode when the **Character Set Mode** option in the **Emulation Settings** dialog box is set to **Multinational**. The DEC MCS and both ISO Latin character sets consist of two tables of characters. The first table, ASCII 7-bit, is common to all three sets and provides standard alphabetic, numeric and symbolic characters, and control codes. The second (8-bit) table differs between the three sets and provides various special and multinational characters and additional control codes, as shown in the *Character Sets* appendix.

The **Ansi** setting will use the PC (ANSI) character set specified by the **Ansi Code Page** option. The ANSI BBS emulation will use this character set by default.

When **ISO Hebrew** is selected, the following key functions will be enabled:

Ctrl + Alt + F1 Select Multinational 8-bit mode and left-to-right typing.

Ctrl + Alt + F2 Select National 7-bit mode (lowercase English characters will be displayed as Hebrew) and right-to-left typing.

Ctrl + Alt + F3 Toggle between left-to-right and right-to-left typing.

Ansi Code Page

Factory default: 437

This option specifies the character set used for display when the **Preferred Char. Set** option is set to **Ansi**. Note that selecting the ANSI BBS emulation will automatically set the preferred font to **Ansi**.

The character set mappings (code pages) supported are **437** for normal usage (default) and **850**, **858** or **1250** for multinational usage. Each set consists of two tables of characters. The first table is the standard ASCII character set. The second table contains special characters which differ between the sets. Refer to the *Character Sets* appendix for details.

When **PC Hebrew 862** is selected, the following key functions will be enabled:

Ctrl + Alt + F1 Select Multinational 8-bit mode and left-to-right typing.

Ctrl + Alt + F2 Select National 7-bit mode (lowercase English characters will be displayed as Hebrew) and right-to-left typing.

Ctrl + Alt + F3 Toggle between left-to-right and right-to-left typing.

Save Screen Before Clearing

Factory default: Unselected

This applies to all DEC 'VT' emulations except VT340 and VT420. It determines the effect of a clear screen command received from the host. When unselected, the contents of the current page will be cleared. When selected, the contents of the current page will be saved and the display will scroll to the next page.

Save Scrolled Lines

Factory default: Unselected

If a scroll region is set, selecting this option will cause data scrolled out of the region to be stored in a history buffer.

Vertical Coupling

Factory default: Selected

The setting of this VT420 mode option determines what happens when the application moves the cursor to a line not currently displayed in the window when the number of displayed lines is less than the page size. When selected, the display will automatically scroll vertically to keep the cursor in view. When unselected, the display will remain static and the cursor will move off-screen to the relevant line stored in memory. You can scroll the display to view the lines stored off-screen by holding down the **Ctrl** key and pressing the **Up** or **Down Cursor** keys.

Horizontal Coupling

Factory default: Unselected

The setting of this DEC VT mode option determines what happens when the cursor moves beyond the last column displayed in the window when there are more columns stored off-screen. When selected, the display will automatically scroll horizontally to keep the cursor in view. When unselected, the display will remain static and the cursor will move off-screen. To scroll horizontally to view the hidden columns, hold down the **Ctrl** key and press the **Left** or **Right Cursor** keys.

Page Coupling

Factory default: Selected

The setting of this VT420 mode option determines the effect of a remote command to move the cursor to another page. When selected, the page to which the cursor is moved

is automatically displayed. When unselected, the display remains unchanged and the cursor moves off-screen to the relevant page stored in memory.

Auto Wrap

Factory default: Unselected

The setting of this option determines whether characters wrap to the next line when the right margin is reached. When unselected, on reaching the right margin, the last character position will be overwritten by every new character received.

Auto New Line

Factory default: Unselected

When selected, this will cause a carriage return command to be appended to every line feed command received.

Auto Line Feed

Factory default: Unselected

When selected, this will cause a line feed command to be appended to every carriage return command received.

Application Keypad

Factory default: Unselected

The setting of this option determines the effect of pressing keys in the keypad on the right side of the keyboard.

When unselected, the keypad is in numeric mode and keys will generate the characters shown on the key caps. When selected, the keypad is in application mode and keys will generate control functions when pressed. The top row of four keys act as the equivalent DEC function keys PF1 through PF4.

Application Cursor Keys

Factory default: Unselected

When this option is selected the cursor keys will generate application program codes when pressed. Unselected, the keys will generate normal cursor movement commands.

Display Controls

Factory default: Unselected

The setting of this option determines whether received control codes are actioned or displayed. When selected, a representation of most control codes will be displayed on the screen.

Display Error Codes

Factory default: Selected

This option determines whether or not a chequerboard symbol is displayed when the delete code is received.

Jump Scroll

Factory default: Unselected

The setting of this option determines whether data is scrolled one or several lines at a time when the window becomes full. Data will scroll up several lines at a time when this is selected.

80 / 132 Clears Screen

Factory default: Selected

This option determines whether or not data is cleared from the display when the number of columns is changed.

Backspace = DEL

Factory default: Unselected

The setting of this option determines whether or not a backspace command performs a delete.

Ignore Nulls

Factory default: Unselected

The setting of this option determines whether Null characters received from the host are actioned or ignored.

High Function Terminal

Factory default: Selected

This applies to the AIXTerm emulation. It enables you to switch between HFT (High Function Terminal) mode (default) and VT100 mode.

Cursor Moves Right to Left

Factory default: Unselected

This applies to the DEC VT, AIXTerm, Ansi BBS, AT 386 and Sco Console emulations. It enables you change the direction in which the text cursor moves across the display.

Copy Right to Left

Factory default: Unselected

This applies to the DEC VT, AIXTerm, Ansi BBS, AT 386 and Sco Console emulations. It enables the copy commands to function in right to left display mode.

Keyboard Sends Scan Codes

Factory default: Unselected

This applies to the DEC VT520, VT PC-Term and Wyse PC-Term emulations. It determines whether keyboard scan codes or ASCII codes are sent to the host on key press/release. Note that this cannot be selected at the same time as the **Keyboard Sends Position Codes** option.

Keyboard Sends Position Codes

Factory default: Unselected

This applies to the DEC VT520, VT PC-Term and Wyse PC-Term emulations. It determines whether keyboard position codes or ASCII codes are sent to the host on key press/release. Note that this cannot be selected at the same time as the **Keyboard Sends Scan Codes** option.

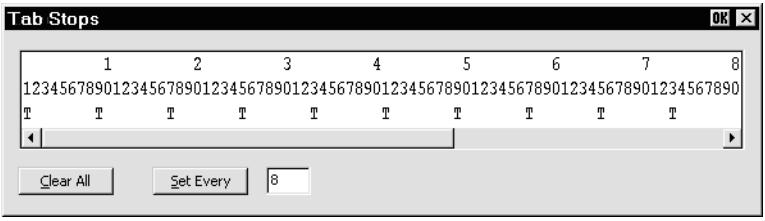
Auto Resize

Factory default: Unselected

This applies to the DEC VT520 emulation only. When this option is selected, the window size will automatically be adjusted each time the buffer size is changed either by the host or through setup. The following table indicates the window size (lines per screen) that is used for the specified number of lines per page.

Lines per Page:	24	25	36	42	43	48	52	72
Lines per Screen:	26	26	43	43	43	52	52	52

Tab Stops

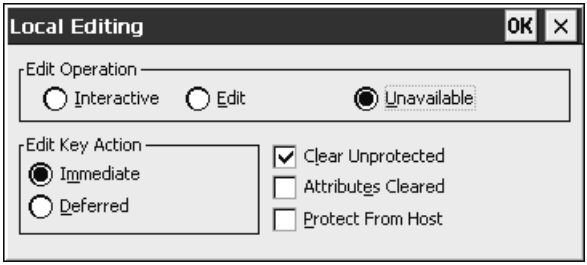


This dialog box is displayed by clicking the **Set Tabs** button in the **Terminal Settings** or **Wyse Settings** dialog box.

Tab stops can be set for the DEC VT, ANSI and SCO Console emulations using the **Tab Stops** dialog box displayed from the **Terminal Settings** dialog box, and for the Wyse emulations by using the **Tab Stops** dialog box displayed from the **Wyse Settings** dialog box.

Tab stops are set every eight columns by default, as indicated by the **T** character below the relevant column numbers. If you want tab stops to be set at regular intervals other than every 8th column, enter the number of columns required between each tab stop next to the **Set Every** button, then click the button. Individual tab stops can be toggled on or off by clicking the mouse pointer above or below the relevant column number. To remove all the tab stops, click the **Clear All** button. To save the current tab stops, select **Save Session** in the **File** menu.

Local Editing



This dialog box is displayed by selecting **Local Editing** in the **Settings** menu.

Edit Operation

Factory default: Unavailable

The setting of this option determines whether Local Editing mode can be selected and how editing is performed.

Selecting **Unavailable** will prevent you or the host from entering Edit mode.

Selecting **Edit** will cause text to be stored in page memory so that it can be edited locally. This enables the host to get on with other tasks. A block of data will be transmitted to the host when the **Enter** key is pressed.

Selecting **Interactive** will cause characters to be sent to the host as soon as they are typed at the keyboard. The host will perform editing functions.

Edit Key Action

Factory default: Immediate

When this option is set to **Immediate**, Edit mode will be entered immediately when the **Shift** + **Delete** key combination is pressed without waiting for the host to send the command to enter.

When set to **Deferred**, pressing **Shift** + **Delete** will cause a code to be sent to the host asking permission to enter Edit mode. The host will reply by sending the 'Enter Edit Mode' command.

Clear Unprotected

Factory default: Selected

The setting of this option determines which characters can be erased by the host or user. When selected, only unprotected characters can be erased, protected characters will be left untouched. When unselected, both protected and unprotected characters can be erased.

Attributes Cleared

Factory default: Unselected

The setting of this option determines the effect of an erase command on character attributes.

When selected, both attributes and characters will be cleared from display memory when an erase command is issued.

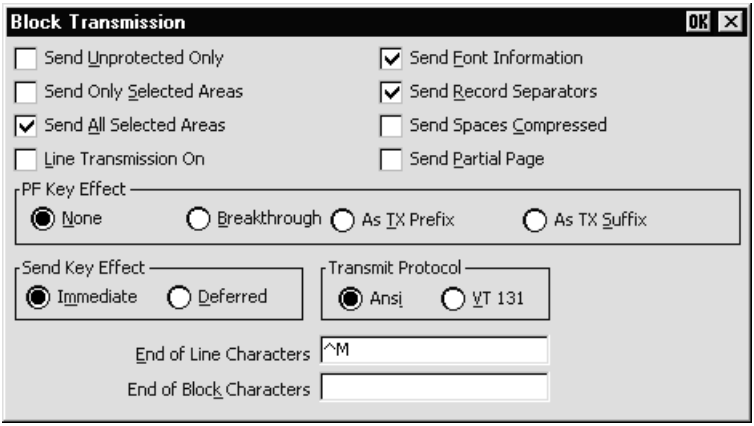
When this option is unselected, all video attributes currently used will remain in display memory when an erase command is issued. This will result in new characters being displayed with the video attributes associated with their positions on the display.

Protect From Host

Factory default: Unselected

The setting of this option determines whether or not the host can overwrite protected characters.

Block Transmission



This dialog box is displayed by selecting **Block Transmission** in the **Settings** menu. The options in this dialog box only apply to the block mode functionality supported by the DEC 'VT' terminal emulations. The block mode settings that are supported by other terminal emulations are specified in their respective dialog boxes.

Send Unprotected Only

Factory default: Unselected

The setting of this option determines whether protected characters can be sent to the host or not.

When unselected, both protected and unprotected characters will be sent to the host when the **Enter** key is pressed. When selected, only unprotected characters will be sent to the host when the **Enter** key is pressed.

Send Only Selected Areas

Factory default: Unselected

The setting of this option determines whether all characters or only those in selected areas on the current page are sent to the host when the **Enter** key is pressed.

When unselected, all characters on the current page will be sent when the **Enter** key is pressed. When selected, this option will enable only the characters in selected areas to be sent to the host when the **Enter** key is pressed. The setting of the **Send All Selected Areas** option determines which selected areas are sent.

Send All Selected Areas

Factory default: Selected

When the **Send Only Selected Characters** option is selected, the setting of this option determines whether all selected areas on a page are sent to the host when the **Enter** key is pressed, or only the area containing the cursor.

When selected, this option will enable all selected areas to be sent to the host. When unselected, only the selected area containing the cursor will be sent to the host.

Line Transmission On

Factory default: Unselected

The setting of this option determines whether data is sent to the host a single line at a time or a full or partial page at a time when the **Enter** key is pressed.

When selected, a single line of valid characters will be sent to the host. In this mode the **Return** key has the same function as **Enter**. When unselected, a full or partial page will be sent to the host when the **Enter** key is pressed. The size of the page is determined by the setting of the **Send Partial Page** and **Transmit Protocol** options.

Send Font Information

Factory default: Selected

The setting of this option determines whether character set selection sequences for all character sets represented in the data block are transmitted to the host, or whether spaces are substituted for characters not contained in the current character set.

When selected, the character set selection sequences for all character sets represented in the data block will be sent. When unselected, characters which are not contained in the currently selected National or Multinational character set will be substituted with spaces.

Send Record Separators

Factory default: Selected

The setting of this option determines whether or not a record separator (**RS**) code is appended to each field of data when a block is transmitted to the host. Record separator codes are used as markers between each field when this option is selected.

Send Spaces Compressed

Factory default: Unselected

This option determines how spaces and empty character fields within a block of data are sent to the host.

When unselected, a space character will be sent for each empty character position. When selected, a record separator code (**RS**) will be sent in place of empty character positions. The last field on a line will contain end of line characters as specified by the **End of Line Characters** option.

Send Partial Page

Factory default: Unselected

The setting of this option determines whether a partial page or data in the scrolling region is sent to the host when the **Enter** key is pressed and the **Line Transmission On** option is unselected.

When selected, this option will enable a partial page to be sent to the host. The format of the partial page is determined by the setting of the **Transmit Protocol** option. When unselected, the contents of the scrolling region will be sent to the host when the **Enter** key is pressed.

PF Key Effect

Factory default: None

This option determines how unshifted PF keys work in Local Editing mode.

When set to **None**, the unshifted function of PF keys will be disabled.

When set to **Breakthrough**, unshifted PF keys will function immediately when pressed if they have been assigned functions by application software.

When set to **As TX Prefix**, the function of unshifted PF keys will be sent to the host before a block of data is transmitted.

When set to **As TX Suffix**, the function of unshifted PF keys will be sent to the host after a block of data is transmitted.

Send Key Effect

Factory default: Immediate

The setting of this option determines the effect of pressing the **Enter** key when sending data to the host.

When **Immediate** is selected, data will be sent to the host immediately without waiting for permission to transmit.

When **Deferred** is selected, a code will be sent to the host notifying it that data is ready for transmission. The keyboard will be locked until the host requests that the data is transmitted.

Transmit Protocol

Factory default: ANSI

The setting of this option determines whether a partial page of data is transmitted in ANSI or VT131 format when the **Send Partial Page** option is selected.

When **ANSI** is selected, Local Editing mode will function according to ANSI (American National Standards Institute) rules.

When **VT131** is selected, Local Editing mode will function in the same way as a VT131 terminal. Select this option when running software written for the VT131.

End of Line Characters

Factory default: ^M (i.e. CR)

This text box is used to specify the characters that are to indicate the end of a line in a data block.

To change the current definition, delete the definition displayed in the text box and type in the new one, either as the control key character equivalent or the decimal value of the ASCII character.

For example, the default ASCII character **CR** can be entered by typing the characters **^** and **M**, representing the keys **Ctrl + M** which, when pressed together would generate the **CR** code.

Decimal values are entered as three-digit numbers immediately preceded by an underscore character. Values with only two digits must be preceded by a zero. For example, the decimal value of **CR** is 13, so this would be entered as **_013**.

Refer to the ASCII character table in the *Character Sets* appendix for code and decimal references.

End of Block Characters

Factory default: None

This specifies the characters that are to indicate the end of a block of data.

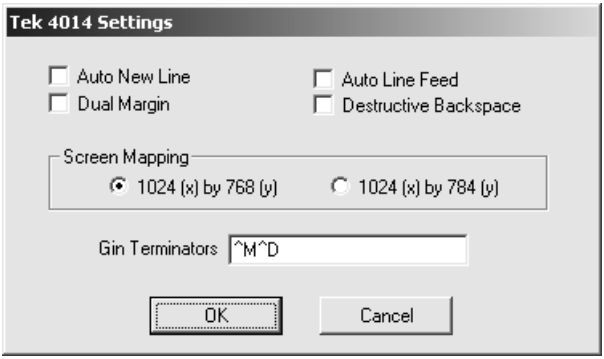
To change the current definition, delete the definition displayed in the text box and type in the new one, either as the control key character equivalent or the decimal value of the ASCII character.

For example, the ASCII character **CR** can be entered by typing the characters **^** and **M**, representing the keys **Ctrl + M** which, when pressed together would generate the **CR** code.

Decimal values are entered as three-digit numbers immediately preceded by an underscore character. Values with only two digits must be preceded by a zero. For example, the decimal value of **CR** is 13, so this would be entered as **_013**.

Refer to the ASCII character table in the *Character Sets* appendix for code and decimal references.

Tek 4014 Settings



This dialog box is only available if your version of TeemTalk supports graphics emulations. It is displayed when running the Tek 4014 emulation by selecting **Tek Graphics** in the **Settings** menu.

Auto New Line

Factory default: Unselected

When selected, this will cause a carriage return command to be appended to every line feed command received.

Auto Line Feed

Factory default: Unselected

When selected, this will cause a line feed command to be appended to every carriage return command received.

Dual Margin

Factory default: Unselected

This option enables a second margin for graphics text. When selected, the window will be divided vertically into two halves. The cursor will move to the top of the second margin after it has reached the last column of the bottom line of the first margin. Text will then fill the right half of the window.

Destructive Backspace

Factory default: Unselected

The setting of this option determines whether the graphics text character preceding the current cursor position will be deleted or not when the **Backspace** key is pressed.

Screen Mapping

Factory default: 1024 (x) by 768 (y)

This option enables you to select the correct resolution for screen addressing when in Tek 4014 or Westward 2119 graphics modes.

For **Tek 4014** mode select **1024 (x) by 768 (y)** resolution (default).

For **Westward 2119** mode select **1024 (x) by 784 (y)** resolution.

Gin Terminators

Factory default: ^M^D (i.e. CR EOT)

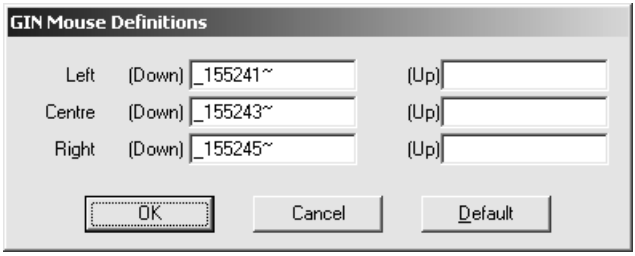
This option enables you to specify the termination character(s) that follow a GIN address transmission. A maximum of 6 characters can be entered.

To change the current definition, delete the definition displayed in the text box and type in the new one, either as the control key character equivalent or the decimal value of the ASCII character(s).

For example, the ASCII character **CR** can be entered by typing the characters **^** and **M**, representing the keys **Ctrl + M** which, when pressed together would generate the **CR** code.

Decimal values are entered as three-digit numbers immediately preceded by an underscore character. Values with only two digits must be preceded by a zero. For example, the decimal value of **CR** is 13, so this would be entered as **_013**.

GIN Mouse Definitions



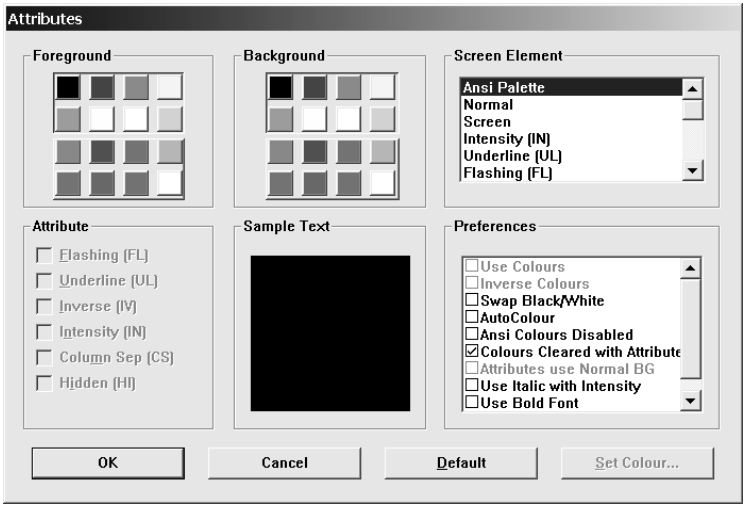
This dialog box is only available if your version of TeemTalk supports graphics emulations. It is displayed by selecting **GIN Mouse** in the **Settings** menu.

This enables you to specify the code which each mouse button sends when it is pressed and released. Each definition can consist of a maximum of 10 characters.
The default settings are shown in the dialog box above and can be reasserted once changed by clicking the **Default** button.

Control characters are entered either as the control key character equivalent or the decimal value of the ASCII character. For example, the **ESC** (escape) character can be entered by typing the characters **^** and **[**, representing the keys **Ctrl + [** which, when pressed together would generate the **ESC** character.

Decimal values are entered as three-digit numbers immediately preceded by an underscore character. Values with only two digits must be preceded by a zero. For example, the decimal value of **ESC** is 27, so this would be entered as **_027**.

Attributes



This dialog box is displayed by selecting **Attributes** in the **Settings** menu. It enables you to specify the colours used in the emulation workspace and how text with attributes is displayed.

To change the way a screen element is displayed, select the relevant item from the **Screen Element** list box, for example, **Bold (BD)** for characters with the bold attribute. The settings of the other options in the dialog box will change to reflect the settings currently assigned to the screen element, and the **Sample Text** window will show how the screen element is actually displayed with these settings.

Text with attributes can be displayed in various ways. For example, characters with the underline attribute can be displayed as standard (e.g. underlined only), as a particular colour only (e.g. green without the underline), or with both attribute and a specific colour (e.g. underlined and green). The **Attribute** options allow you to enable or disable any of the attributes normally associated with the currently selected screen element. Note that the **Column Sep (CS)** option is only applicable to the IBM 5250 emulation, and the **Hidden** option is only applicable to the Wyse 60 emulation.

The setting of the **Use Colours** option in the **Preferences** box determines whether or not a specific colour is assigned to the text attribute. When the **Use Colours** option is selected, the colour of the screen element can be changed by tapping on the required colour block in the palette of **Foreground** and/or **Background** colours. The two palettes enable you to specify a different colour for text (foreground) and text cell (background).

Screen Element

This list box enables you to select the screen element for definition.

The **Ansi Palette** option allows you to specify which set of eight **Foreground** and **Background** colour indices are used when ANSI colour escape sequences are received. Either the upper or lower eight colours in the Foreground and Background palettes can be selected. The current eight colours are enclosed within a box. To change the current set of eight, just tap on any colour in the set required.

The list box also enables you to select various display options, depending on the current terminal emulation mode:

Normal	UL+BD	FL+BD+UL
Screen	FL+BD	IV+UL+BD
Bold (BD)	FL+UL	IV+FL+BD
Underline (UL)	IV+FL	IV+FL+UL
Flashing (FL)	IV+BD	IV+FL+BD+UL
Inverse (IV)	IV+UL	

When running the IBM 5250 emulation, the list of character attributes is extended to include the column separator (CS) attribute.

When running the IBM 3270 emulation, the list box will allow selection of the following items:

Unprotected Normal
Unprotected Bold
Protected Normal
Protected Bold
Status BG

Attribute

The list of attribute options allow you to enable or disable the actual display of attributes associated with the selected screen element. Note that the **Column Sep (CS)** option is only applicable to the IBM 5250 emulation, and the **Hidden** option is only applicable to the Wyse 60 emulation.

Use Colours

When selected, the currently selected screen element will be displayed in the colours highlighted in the **Foreground** and **Background** colour palettes. For default display, deselect this option.

Inverse Colours

Factory default: Unselected

When this option is selected, characters with the inverse attribute will have the text (foreground) colour swapped with that of the text cell (background).

Swap Black/White

Factory default: Unselected

When selected, anything that has the white attribute will be displayed as black, and vice versa.

AutoColour

Factory default: Unselected

This option is only applicable to the DEC VT terminal emulations. When selected, displayed characters are colour coded according to type. For example, all numeric characters are displayed in one colour while all alphabetic characters are displayed in another. Deselecting this option will display characters according to the settings in this dialog box.

Ansi Colours Disabled

Factory default: Unselected

Selecting this option will cause ANSI colour commands to be ignored.

Colours Cleared With Attributes

Factory default: Selected

The setting of this option determines whether or not the foreground and background colours are cleared to the default colours when an ANSI clear attributes command is received.

Attributes Use Normal BG

Factory default: Unselected

This option only applies to the IBM 3270 emulation. If attribute indicators take up character positions on the screen, you can force those positions to display the normal background colour instead of the attributes by selecting this option.

Use Italic with Intensity

Factory default: Unselected

Selecting this option will cause any characters that have the intensity (bold) attribute to be italicized.

Use Bold Font

Factory default: Unselected

Selecting this option will cause all characters to be displayed using a bold font.

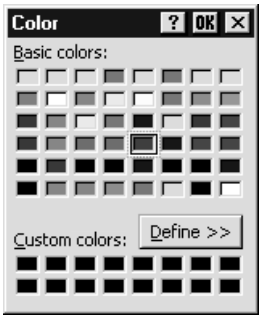
Non Anti-alias Font

Factory default: Unselected

Selecting this option will prevent characters from overlapping when using a low display resolution in Microsoft Windows ClearType display mode.

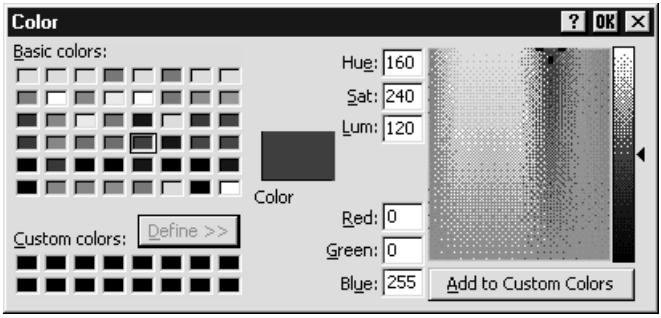
Customizing The Colour Selection

You can change any of the 16 colours displayed in the **Foreground** and **Background** colour palettes. To do this, select the colour you wish to change in one of the palettes then click the **Set Colour...** button to display the **Colour** dialog box.



This shows the basic and custom colours currently available for selection. If you want to use one of these, click on the colour required then tap **OK**.

If you want to define a different custom colour, click the **Define** button to display the colour definition facilities.



This provides two methods for specifying a different colour, one visual and the other numeric. All the settings initially displayed relate to the colour selected in the **Attributes** dialog box and shown in the large **Colour** box. When you start changing any of the settings, the **Colour** box will display the new colour.

Visual Method

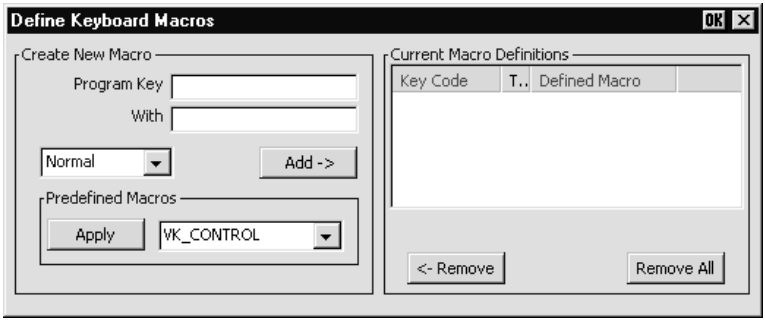
The full range of colours available is displayed in the large colour selection box. A target cursor is positioned over the currently selected colour. To select a new colour you can either click on the colour required or drag the target cursor over it. The colour displayed in the **Colour** box will change accordingly. The lightness of the selected colour can be altered by dragging the triangular pointer up or down the vertical bar to

the right. When you have the required colour, click the **Add to Custom Colours** button to apply the change to the set of custom colours.

Numeric Value Method

The numeric value of **Hue**, **Lightness** and **Saturation**, or the **Red**, **Green** and **Blue** percentage values can be entered directly in the text boxes. The colour displayed in the **Colour** box will change accordingly. When you have the required colour, click the **Add to Custom Colours** button to apply the change to the set of custom colours.

Define Keyboard Macros



This dialog box is displayed by selecting **Keyboard Macros** in the **Settings** menu.

The **Define Keyboard Macros** dialog box enables you to redefine the function of most of the keys on your keyboard, including the key combinations listed below:

Key
Shift + Key
Control + Key
Control + Shift + Key
Alt + Key
Alt + Shift + Key
Alt + Control + Key
Alt + Control + Shift + Key

Each definition may contain a string of up to 127 characters. The combined total of all the characters that may be programmed into keys is determined by the 127 character limit per definition and the amount of memory available in your PC.

The **Predefined Macros** box enables you to select from a list of standard functions associated with the current terminal emulation. Clicking the arrow button will display a list box in which the names of valid key functions (called *virtual key names*) are shown. The *Virtual Key Names* appendix lists all the functions and associated virtual key names for each terminal emulation.

A key macro may be actioned automatically on start-up, or transmitted to the host or actioned locally when the key or key combination is pressed. This is determined by selecting **Normal**, **Remote**, **Local** or **Startup** in the list box when defining the key. Selecting **Normal** will cause the macro to be processed according to the current operating mode when the key or key combination is pressed.

The **Current Macro Definitions** box displays the key and key combinations that are currently defined. The **Type** column indicates whether the macro is processed as normal (blank), remote (**R**), local (**L**) or on start-up (**S**).

You can remove the selected definition or delete all the definitions by clicking the relevant **Remove** button.

Defining A Key Or Key Combination

1. Click in the **Program Key** box then press the key or key combination to define. The current definition will be displayed.
2. Click in the **With** box then enter the new definition, or make a selection from the list of **Predefined Macros** then click **Apply**.
3. Specify how the macro is to be processed by selecting either **Normal**, **Remote**, **Local** or **Startup** in the list box.
4. Click the **Add** button to accept the definition. The new definition will be added to the **Current Macro Definitions** list.
5. To save the definitions, click **OK** to exit, then select **Save Session As** in the **File** menu, make sure the **Keyboard Macros** box is checked, then click **OK**.

Key Combinations & Sequences

You can program a key to perform the function of a combination or sequence of keys. For example, you can cause the **F1** key to perform the same function as pressing the keys **Alt** + **F4** together, or pressing the keys **F2** then **F3** then **F4**.

Keys are identified by their virtual key names as listed in the *Virtual Key Names* appendix. The virtual key name has to be enclosed by the **<** and **>** characters in the key definition box. You may omit the **VK_** and **VT_** (etc.) parts of the virtual key name.

To program a key so that it performs the same function as pressing two or more other keys together, type the **<** character followed by the virtual key names linked together with + (plus sign) characters and ending with the **>** character.

For example, to program the **F1** key so that when it is pressed it performs the same function as pressing the keys **Alt** + **F4** together, enter the following characters in the key definition box:

<ALT+F4>

To program a key so that it performs the same function as pressing a sequence of keys one after the other, enter each virtual key name in the order required, enclosing each virtual key name with the **<** and **>** characters. Each enclosed virtual key name must immediately follow the previous enclosed virtual key name with no spaces. For example, to program the **A** key so that when it is pressed it performs the same function as pressing the keys **F2** then **F3** then **F4** enter the following characters in the key definition box:

<F2><F3><F4>

Specifying Characters

There are various ways in which you can specify a particular character. For example, the **ESC** character can be specified using any one of the following five entries:

_027	Decimal value (underscore character followed by a 3-digit number).
\033	Octal value (backslash character followed by a 3-digit number).
\u001B	Unicode value (backslash and **u** characters then unicode value).
^[	Control key value (**^** represents the control key on the keyboard).
\e	Additional value for **ESC**.

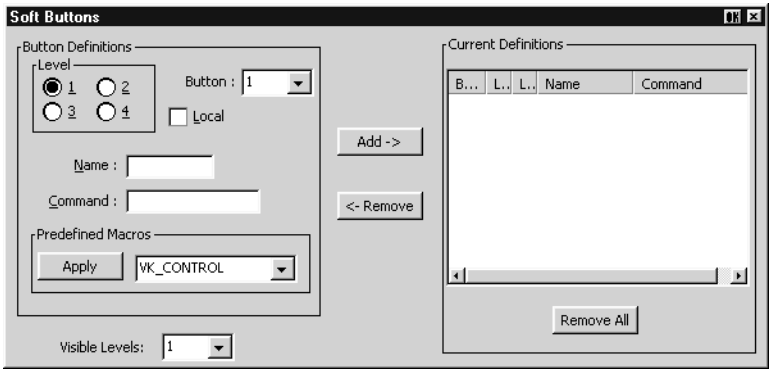
The following 'backslash' values can be used:

\u	Unicode introducer	**\r**	Carriage return
\n	Line feed	**\e**	Escape

Note that as the **** and **^** characters are used as value introducers, to enter these as character values you need to precede them with a backslash character, i.e. enter **** as **** and **^** as **\^**.

The Euro character can be specified by entering the unicode value **\u20ac**.

Soft Buttons



This dialog box is displayed by selecting **Soft Buttons** in the **Settings** menu.

TeemTalk for Windows CE

A set of soft buttons can be displayed in the command bar either by clicking one of the two arrow buttons, or by pressing the keys **Ctrl + Alt + Left Cursor** or **Ctrl + Alt + Right Cursor**. These soft buttons can be programmed so that they perform various functions when clicked.

You can define up to four soft button levels. Level 1 is displayed by default. Each level consists of twelve programmable buttons, providing a combined total of 48 programmable buttons. Levels stored off-screen can be 'scrolled' into view by clicking the arrow buttons.

TeemTalk for Windows XPe

A set of soft buttons can be displayed along the bottom of the window. These can be programmed so that they perform various functions when clicked.

There are four soft button levels. Each level consists of twelve programmable buttons, providing a combined total of 48 programmable buttons. The **Visible Levels** setting determines the number of levels displayed. All levels are accessible even if they are not displayed, levels stored off-screen can be ‘scrolled’ into view by clicking the **Level**

button. Each level can be assigned a title which will be displayed under the **Level** button by entering up to eight characters in the **Title** box.

The soft buttons can be removed from the display by setting the **Visible Levels** option to **0**.

You can display the soft buttons in a separate window by deselecting the **Attached** option. If you close the **Soft Buttons** window, you can display it again by setting the **Visible Levels** option to anything other than **0**, then clicking **OK**. The current position and size of the **Soft Buttons** window can be saved so that it is displayed the same way the next time TeemTalk is loaded. To do this, select the **Save Session As** option in the **File** menu, make sure the **Soft Buttons** option is checked, then click **OK**.

Programming A Soft Button

1. Select the **Level** number.
2. Select the **Button** number.
3. Check the **Local** check box to make the button definition action locally, or uncheck it to transmit the definition to the host when the button is pressed.
4. Enter a **Name** to be displayed on the button, up to ten characters long.
5. Enter the button definition in the **Command** box, or make a selection from the list of **Predefined Macros** then click **Apply**.
6. Click the **Add** button to accept the definition. The new definition will be added to the **Current Definitions** list.
7. To save the definitions, click **OK** to exit, then select **Save Session As** in the **File** menu, make sure the **Soft Buttons** box is checked, then click **OK**.

Key Combinations & Sequences

You can program a soft button to perform the function of a combination or sequence of keys. For example, you can cause a button to perform the same function as pressing the keys **Alt** + **F4** together, or pressing the keys **F2** then **F3** then **F4**.

Keys are identified by their virtual key names as listed in the *Virtual Key Names* appendix. The virtual key name has to be enclosed by the **<** and **>** characters in the key definition text box. You may omit the **VK_** and **VT_** (etc.) parts of the virtual key name.

To program a soft button so that it performs the same function as pressing two or more other keys together, type the **<** character followed by the virtual key names linked together with **+** (plus sign) characters and ending with the **>** character.

For example, to program a button so that when it is pressed it performs the same function as pressing the keys **Alt + F4** together, enter the following characters in the **Command** box:

<ALT+F4>

To program a button so that it performs the same function as pressing a sequence of keys one after the other, enter each virtual key name in the order required, enclosing each virtual key name with the **<** and **>** characters. Each enclosed virtual key name must immediately follow the previous enclosed virtual key name with no spaces. For example, to program the **A** key so that when it is pressed it performs the same function as pressing the keys **F2** then **F3** then **F4** enter the following characters in the **Command** box:

<F2><F3><F4>

Specifying Characters

There are various ways in which you can specify a particular character. For example, the **ESC** character can be specified using any one of the following five entries:

_027	Decimal value (underscore character followed by a 3-digit number).
\033	Octal value (backslash character followed by a 3-digit number).
\u001B	Unicode value (backslash and **u** characters then unicode value).
^[	Control key value (**^** represents the control key on the keyboard).
\e	Additional value for **ESC**.

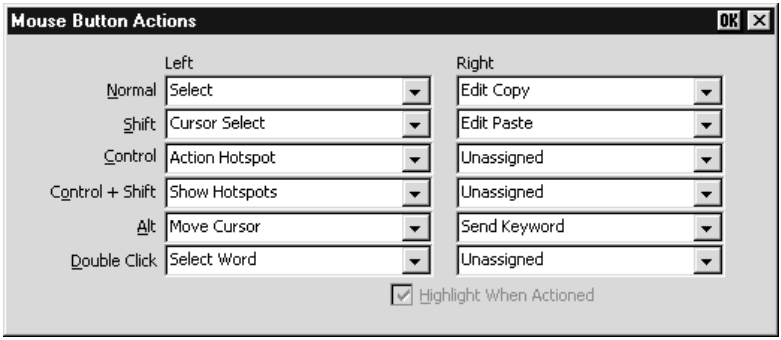
The following 'backslash' values can be used:

\u	Unicode introducer	**\r**	Carriage return
\n	Line feed	**\e**	Escape

Note that as the **** and **^** characters are used as value introducers, to enter these as character values you need to precede them with a backslash character, i.e. enter **** as **** and **^** as **\^**.

The Euro character can be specified by entering the unicode value **\u20ac**.

Mouse Button Actions



This dialog box is displayed by selecting **Mouse Button Actions** in the **Settings** menu.

This enables you to specify the function of the left and right mouse buttons when they are clicked on their own or in conjunction with modifier keys. You can assign up to six functions to each button, either entering your own definition in the same format as described for keyboard macros and soft buttons, or selecting from a list of standard built-in functions. Clicking one of the arrow buttons will display a drop-down list box which lists all the standard functions that can be assigned:

Unassigned	Send CR
Select	Send Keyword
Extend Selection	Middle Button
Edit Copy	Select Rectangle
Edit Paste	Select Word
Show Hotspots	Select and Copy
Action Hotspot	Cursor Select
Move Cursor	Rectangular Select and Copy

The **Select** function will select all text from the start position to the finish position, working left to right across the entire width of the display, whereas the **Select Rectangle** function will only select text contained within the rectangular area defined by the start position (top left corner) and the finish position (bottom right corner). The **Select Word** function will cause the word under the mouse cursor to be selected.

The **Select and Copy** function is the same as **Select** but will also copy the selected data to the Clipboard automatically. The **Rectangular Select and Copy** function is the same as **Select Rectangle** but will also copy the selected data to the Clipboard automatically.

The **Show Hotspots** and **Action Hotspots** functions are described in the *Hotspots* section of the *Getting Started* chapter. The **Send Keyword** function is very similar to

the hotspot feature. It enables you to send delimited text displayed on the screen to the host just by clicking on it. Delimiters are the same as for hotspots.

The **Move Cursor** function can be used in any of the local block modes as a quick way of positioning the text cursor within a block of text. To position the text cursor, move the mouse pointer to the position required, hold down the modifier key(s) assigned with the function then click the left mouse button.

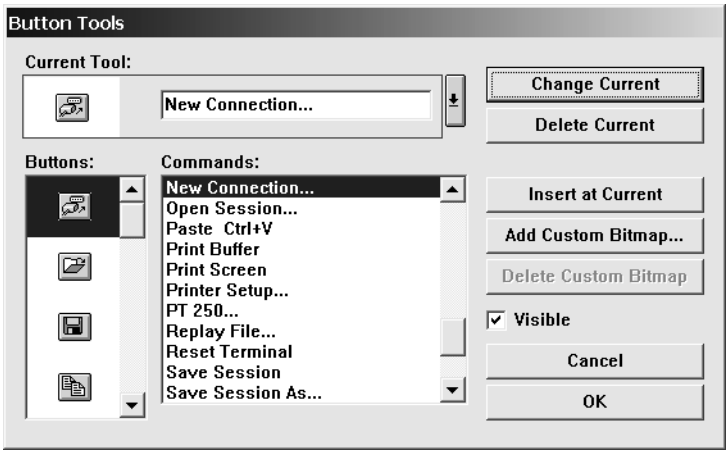
The **Cursor Select** function does the same as **Move Cursor**, but when running the IBM 3270 or IBM 5250 emulation it also performs a cursor select.

The **Middle Button** setting enables you to make the left or right button (and key combination) of a two button mouse emulate the middle button of a three button mouse.

The setting of the **Highlight When Actioned** option determines whether or not a visual indication is given that a function has been actioned when a hotspot is clicked.

Button Tools

(TeemTalk for Windows XPe only)



This TeemTalk for Windows XPe dialog box is displayed by selecting **Button Tools** in the **Settings** menu. It enables you to redefine the button tools displayed in the toolbar.

The **Current Tool** box displays the toolbar button and its function that is currently selected for editing, or located where a new button is to be inserted to its left in the toolbar. Clicking the down-arrow button to the right will display all the current toolbar buttons in order in a box below. This enables you to select a new button position for display in the **Current Tool** box. Click the down-arrow button again to return to the **Button** and **Command** selection display.

The **Visible** option enables you to specify whether or not the toolbar is displayed.

Adding Buttons

1. Click the down-arrow button to the right of the **Current Tool** box to display the buttons currently in the toolbar.
2. Click on the button which will be to the right of the new button to be added so that it is displayed in the **Current Tool** box.
3. Click the down-arrow button again to display the **Command** options.
4. Select a button bitmap from the **Buttons** list.

   You can add your own bitmaps to the standard bitmap list by clicking the **Add Custom Bitmap** button and selecting the bitmap files to load. Buttons will be automatically generated using the bitmaps in these files.

5. Specify the command to be performed when this button is clicked either by selecting from the **Commands** list or by typing your own definition in the **Current Tool** text box.
6. Click the **Insert at Current** button.
7. Click **OK** when you have finished. The toolbar will immediately be updated.

Adding A Space Between Buttons

1. Click the down-arrow button to the right of the **Current Tool** box to display the buttons currently in the toolbar.
2. Click on the button which will be to the right of the space to be added so that it is displayed in the **Current Tool** box.
3. Click the down-arrow button again to display the **Command** options.
4. Select the **[Space]** option at the top of the **Commands** list box.
5. Click the **Insert at Current** button.
6. Click **OK** when you have finished. The toolbar will immediately be updated.

Removing A Button Or Space

1. Click the down-arrow button to the right of the **Current Tool** box to display the buttons currently in the toolbar.
2. Click on the button or space to be deleted so that it is displayed in the **Current Tool** box.
3. Click the down-arrow button again to display the **Command** options.
4. Click the **Delete Current** button to remove the button or space from the toolbar.
5. Click **OK** when you have finished.

Saving The Button Tools

When you have finished defining button tools you can save them so that they will be reasserted when the emulator is loaded or reset by selecting **Save Session** in the **File** menu.

Assigning User-Defined Functions

You can enter a definition of your own in the **Current Tool** text box. The definition can contain key functions and control characters to be actioned as well as normal text.

Specifying Key Functions

You can cause a key function to be actioned by including the virtual key name of the key enclosed by the **<** and **>** characters. You may omit the **VK_** and **VT_** parts (etc.) of the virtual key name. For example, the **Enter** key would be specified as **<ENTER>**.

To send the function of a key combination, type the **<** character followed by the virtual key names linked together with **+** characters and ending with the **>** character. For example, **Alt F4** would be specified as **<ALT+F4>**.

To send the function of a sequence of keys one after the other, enter each virtual key name in the order required, enclosing each virtual key name with the **<** and **>** characters. Each enclosed virtual key name must immediately follow the previous enclosed virtual key name with no spaces. For example, **F2** then **F3** then **F4** would be specified as **<F2><F3><F4>**.

Specifying Characters

There are various ways in which you can specify a particular character. For example, the **ESC** character can be specified using any one of the following five entries:

_027	Decimal value (underscore character followed by a 3-digit number).
\033	Octal value (backslash character followed by a 3-digit number).
\u001B	Unicode value (backslash and **u** characters then unicode value).
^[	Control key value (**^** represents the control key on the keyboard).
\e	Additional value for **ESC**.

The following 'backslash' values can be used:

\u	Unicode introducer	**\r**	Carriage return
\n	Line feed	**\e**	Escape

Note that as the **** and **^** characters are used as value introducers, to enter these as character values you need to precede them with a backslash character, i.e. enter **** as **** and **^** as **\^**.

The Euro character can be specified by entering the unicode value **\u20ac**.

Notes

7

DEC VT Emulations

This chapter describes features of the DEC VT terminal emulations.

Session Configuration

WBT Mode

This section describes the basic procedure for creating a session configuration when the terminal is in WBT mode. The options available are described in detail in chapter 2.

1. Click the **Configure** tab in the **Terminal Connection Manager** then click the **Add** button to display the **New Connection** dialog box.
2. Select **Terminal Emulation Client** and click **OK**. The **Terminal Emulation Client Connection Wizard - Connection Information** dialog box will be displayed.
3. Enter a name which will identify this session configuration for future selection in the **Connection Name** box.
4. Select the DEC VT terminal emulation required in the **Emulation** list box.

   The **VT52** and **VT100** emulations enable you to run applications written for the DEC VT52 and VT100 terminals, respectively.

   The **VT500 7-Bit** and **VT500 8-Bit** emulations enable you to run applications written for the DEC VT320 terminal, the difference is in their treatment of 8-bit control codes. When **VT500 7-Bit** is selected, all 8-bit codes are converted to their 7-bit equivalents, whereas **VT500 8-Bit** leaves 8-bit codes unchanged. If you are using VT200 applications, select **VT500 7-Bit**.
5. Specify the required **VT Terminal ID** setting.
6. Click **Next** to display the **Host Information** dialog box.

   For a TCP/IP connection, click the **TCP/IP** button, enter the name or internet address of the host computer in the **Host Name** box, then click **Advanced** for

additional Telnet options. Refer to the *TCP/IP Connection Settings* section in chapter 2 for details.

For a modem connection, click the **Modem** button then click **Advanced** to display configuration options. Refer to the *Modem Connection Settings* section in chapter 2 for details.

For a serial connection, click the **Serial** button, specify the communications port in the **Connect To** box, then click **Advanced** for additional serial options. Refer to the *Serial Connection Settings* section in chapter 2 for details.

Make the relevant selections then click **OK** to return to the **Host Information** dialog box, then click **Next** to display the **Advanced Options** dialog box.

7. Click **Finish** to return to the **Terminal Connection Manager**.
8. In the **Terminal Connection Manager**, display the **Connections** list, select the session name you specified earlier in step 3, then click the **Connect** button.

Non-WBT Mode

This section describes the basic procedure for creating a session configuration when the terminal is not in WBT mode. The options available are described in detail in the *Setup Menus* chapter.

1. Display the **Settings** menu from the command bar and select **Emulation...** to display the **Emulation Settings** dialog box.
2. Select the DEC VT terminal emulation required in the **Alpha Emulation** list box.

   The **VT52** and **VT100** emulations enable you to run applications written for the DEC VT52 and VT100 terminals, respectively.

   The **VT500 7-Bit** and **VT500 8-Bit** emulations enable you to run applications written for the DEC VT320 terminal, the difference is in their treatment of 8-bit control codes. When **VT500 7-Bit** is selected, all 8-bit codes are converted to their 7-bit equivalents, whereas **VT500 8-Bit** leaves 8-bit codes unchanged. If you are using VT200 applications, select **VT500 7-Bit**.
3. Specify the required **VT Terminal ID** setting then click **OK** to close the dialog box.
4. Display the **File** menu from the command bar and select **New Connection** to display the **New Connection** dialog box.
5. Select the type of host connection required in the **Type** list box.

   For a TCP/IP connection, select **TCP/IP**, enter the name or internet address of the host computer in the **Connect To** box, then click **Configure** for additional Telnet options. Refer to the *TCP/IP Connection Settings* section in chapter 2 for details.

For a modem connection, select **Modem**, specify the communications port in the **Connect To** box, then click **Configure** to display configuration options. Refer to the *Modem Connection Settings* section in chapter 2 for details.

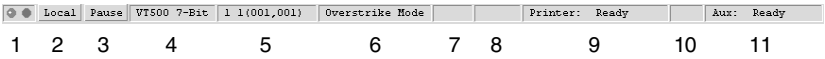
For a serial connection, select **Serial**, specify the communications port in the **Connect To** box, then click **Configure** for additional serial options. Refer to the *Serial Connection Settings* section in chapter 2 for details.

6. When you have specified the required settings in the **New Connection** dialog box, click the **Connect** button to make the connection.

   *Note: You can save these settings as a connection template using the **Save Session As** dialog box. Refer to the Setup Menus chapter for details.*

The Status Bar

The status bar along the bottom of the display enables you to switch between modes and show the status of various operations.



Item **1**: This displays two LEDs. The first LED indicates whether or not you are connected to the host. It will show red when not connected and green when you are connected. The second LED indicates whether or not data is being sent to or from the host. It will show dull green when there is no activity, red when data is being sent to the host, and bright green when data is being received from the host.

Item **2**: This button enables you to switch between **Local** and **Online** mode. The label indicates the mode you will switch to if the button is clicked.

Item **3**: This button enables you to **Pause** or **Resume** scrolling data in the window. The label indicates the action that will be taken if the button is clicked.

Item **4**: Indicates the current terminal emulation.

Item **5**: This displays the active session (always 1), the current page number (always 1), and the **line,column** location of the text cursor.

Item **6**: This indicates whether **Overstrike Mode** or **Insert Mode** is currently selected. In **Overstrike Mode** (default), new characters will replace already existing characters at the cursor position. When **Insert Mode** is selected, new characters will be inserted at the cursor position without deleting existing characters, which will move to the right.

Item **7**: This will display **Lock** when the keyboard is locked, or **Edit** when the terminal emulation is in Edit mode.

Item **8**: This will display the time in 24 hour format when in DEC VT500 mode if the VT525 set time command has been received from the host.

Item **9**: Indicates the status of the printer as follows:

None signifies that the printer is not turned on or not connected, or not installed in Microsoft Windows.

Not Ready signifies that the printer is not ready to receive data for printing.

Ready signifies that the printer is ready to receive data for printing.

Auto signifies that the emulation is in Auto Print mode in which the current cursor line is sent to the printer when a command for the cursor to move to the next line is issued.

Controller signifies that the emulation is in Printer Controller mode in which the host has direct control over the printer. Print screen commands issued from the keyboard or mouse will be ignored.

ErrGen indicates that an error has occurred and a message box will be displayed indicating the error.

Item **10**: This indicates the keyboard mode. It will be blank when the keyboard is in normal mode and will display **DEC** when in DEC mode. You can toggle between normal and DEC mode by pressing the keys **Alt + Num Lock** together. Refer to the illustrations in the *Keyboard Mapping* section for the key functions available in each mode.

Item **11**: Indicates the status of the aux port as follows:

Ready indicates that the aux port is ready for bidirectional output.

In Use indicates that the aux port is currently busy.

Horizontal Scrolling

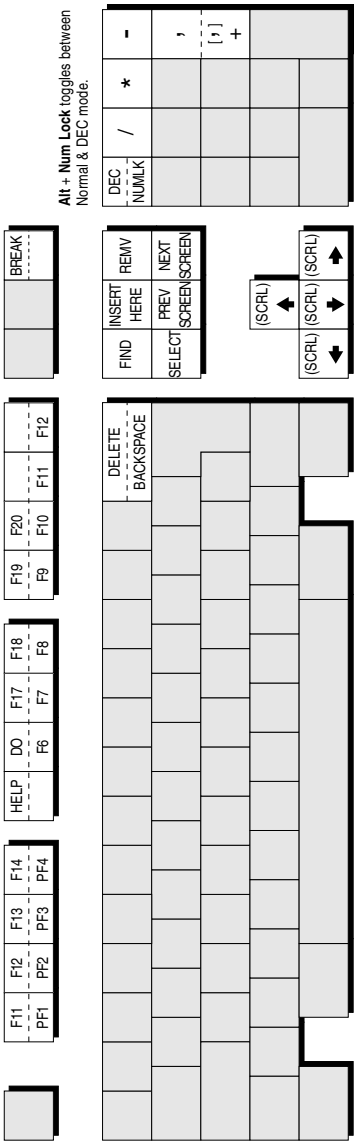
It is possible to make the width of display memory larger than the width of the window by using the **Memory Page Width** option in the **Terminal Settings** dialog box. When you want to view columns stored off-screen, you can scroll horizontally by holding down the **Ctrl** key and pressing the **Left** or **Right Cursor** keys.

Keyboard Mapping

The illustrations on the following pages show where DEC VT500 keyboard functions are mapped to keys on the 101/102 key Enhanced AT keyboard layout. Special key functions that are provided on the DEC VT keyboard can be mapped to any key on your keyboard by using the VT virtual key names listed in the **Define Keyboard Macros** dialog box.

The keyboard can be used in two modes, Normal and DEC. You can toggle between the two modes by pressing the keys **Alt + Num Lock** together. The 10th item on the status bar will display **DEC** when the keyboard is in DEC mode. The field will be blank when in normal mode.

Enhanced AT Keyboard Layout
Normal Mode

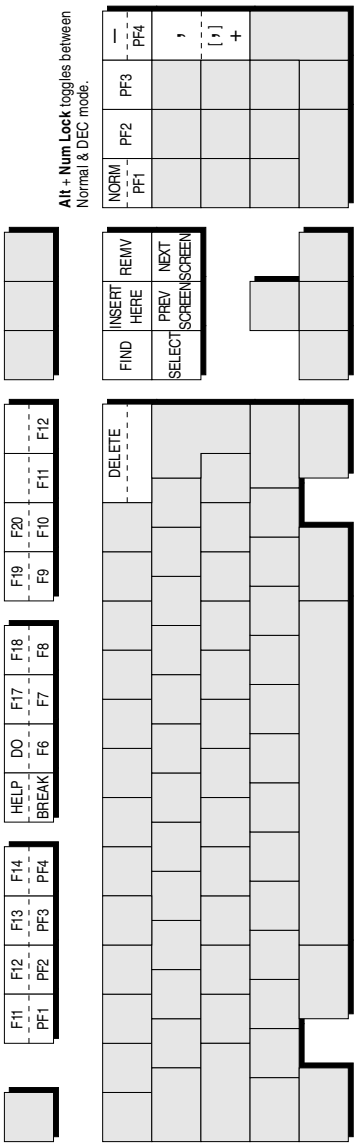


Alt key usage: F13 PF3

Normal key usage:

All unmarked keys function as indicated by the legends on the keycaps.
Functions in round brackets are generated when used in conjunction with **Control**.
Functions in square brackets are generated in application keypad mode.

Enhanced AT Keyboard Layout
DEC Mode



Alt key usage: All unmarked keys function as indicated by the legends on the keycaps.
Normal key usage: Functions in square brackets are generated in application keypad mode.

Typing Direction For Hebrew Language

When **ISO Hebrew** or **Ansi PC Hebrew 862** is selected as the **Preferred Character Set** in the **Terminal Settings** dialog box, the following key functions will be enabled:

Ctrl + Alt + F1	Select Multinational 8-bit mode and left-to-right typing.
Ctrl + Alt + F2	Select National 7-bit mode (lowercase English characters will be displayed as Hebrew) and right-to-left typing.
Ctrl + Alt + F3	Toggle between left-to-right and right-to-left typing.

8

BQ 3107 Emulation

This chapter describes the Bull BQ 3107 terminal emulation.

Session Configuration

WBT Mode

This section describes the basic procedure for creating a session configuration when the terminal is in WBT mode. The options available are described in detail in chapter 2.

1. Click the **Configure** tab in the **Terminal Connection Manager** then click the **Add** button to display the **New Connection** dialog box.
2. Select **Terminal Emulation Client** and click **OK**. The **Terminal Emulation Client Connection Wizard - Connection Information** dialog box will be displayed.
3. Enter a name which will identify this session configuration for future selection in the **Connection Name** box.
4. Select the **BQ3107** terminal emulation in the **Emulation** list box.
5. Click **Next** to display the **Host Information** dialog box.

   For a TCP/IP connection, click the **TCP/IP** button, enter the name or internet address of the host computer in the **Host Name** box, then click **Advanced** for additional Telnet options. Refer to the *TCP/IP Connection Settings* section in chapter 2 for details.

   For a modem connection, click the **Modem** button then click **Advanced** to display configuration options. Refer to the *Modem Connection Settings* section in chapter 2 for details.

   For a serial connection, click the **Serial** button, specify the communications port in the **Connect To** box, then click **Advanced** for additional serial options. Refer to the *Serial Connection Settings* section in chapter 2 for details.

Make the relevant selections then click **OK** to return to the **Host Information** dialog box, then click **Next** to display the **Advanced Options** dialog box.

6. Click **Finish** to return to the **Terminal Connection Manager**.
7. In the **Terminal Connection Manager**, display the **Connections** list, select the session name you specified earlier in step 3, then click the **Connect** button.

Non-WBT Mode

This section describes the basic procedure for creating a session configuration when the terminal is not in WBT mode. The options available are described in detail in the *Setup Menus* chapter.

1. Display the **Settings** menu from the command bar and select **Emulation...** to display the **Emulation Settings** dialog box.
2. Select the **BQ3107** terminal emulation required in the **Alpha Emulation** list box.
3. Display the **File** menu from the command bar and select **New Connection** to display the **New Connection** dialog box.
4. Select the type of host connection required in the **Type** list box.

   For a TCP/IP connection, select **TCP/IP**, enter the name or internet address of the host computer in the **Connect To** box, then click **Configure** for additional Telnet options. Refer to the *TCP/IP Connection Settings* section in chapter 2 for details.

   For a modem connection, select **Modem**, specify the communications port in the **Connect To** box, then click **Configure** to display configuration options. Refer to the *Modem Connection Settings* section in chapter 2 for details.

   For a serial connection, select **Serial**, specify the communications port in the **Connect To** box, then click **Configure** for additional serial options. Refer to the *Serial Connection Settings* section in chapter 2 for details.
5. When you have specified the required settings in the **New Connection** dialog box, click the **Connect** button to make the connection.

   *Note: You can save these settings as a connection template using the **Save Session As** dialog box. Refer to the Setup Menus chapter for details.*

The Status Bar

The status bar displayed along the bottom of the window will show the status of various operations.

F1 F2 F3 F4 F5 F6 F7 F8 F9 F10 F11 F12 F13 F14 F15

Field **1**: This will always display **RUN**, indiocating that the line shown corresponds to normal operation.

Field **2**: Indicates whether you are in **Block** or **Character** mode. In Block mode, keyboard entered data is displayed and processed locally, allowing you to edit it before a block of data is sent to the host. In Character mode, keyboard entered data is sent simultaneously to the host and the display. You can change the mode using the **Operating Mode** option in the **BQ 3107 Settings** dialog box.

Field **3**: This will display a bell symbol when the terminal emulation receives a BEL command from the host or when the user has pressed the wrong key.

Field **4**: Not used.

Field **5**: Displays **ERR** when an error is detected.

Field **6**: Displays **BSY** when the host is busy processing data. The keyboard will be locked when this is displayed.

Field **7**: This is used to display warning messages.

Field **8**: Not used.

Field **9**: Not used.

Field **10**: This will display **P.DISCT** when the printer is disconnected.

Field **11**: This will display **OVERFLOW** when there is a data overflow.

Field **12**: Indicates the current **line** and **column** position of the cursor relative to the top left corner of the display, which is **L01:C01**.

Field **13**: This will display the current terminal emulation mode, **3107**.

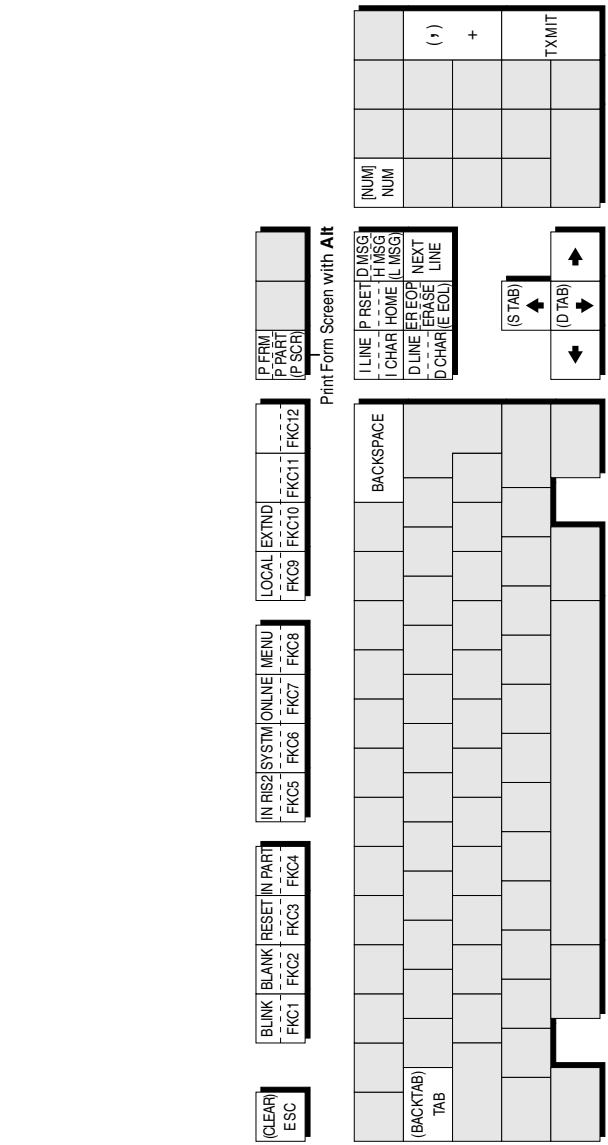
Field **14**: This will display **MESS** when a message is waiting to be displayed on the status line.

Field **15**: This will display **LINE** when the emulation is online to the host, or **LOCAL** when in local mode.

Keyboard Mapping

The illustration on the following page shows where BQ 3107 keyboard functions are mapped to keys on the 101/102 key Enhanced AT keyboard layout. Special key functions that are provided on the BQ 3107 keyboard can be mapped to any key on your keyboard by using the BQ virtual key names listed in the **Define Keyboard Macros** dialog box.

Enhanced AT Keyboard Layout



Notes

9

DG 410/412 Emulation

This chapter describes the Data General D410/412 terminal emulation.

Session Configuration

WBT Mode

This section describes the basic procedure for creating a session configuration when the terminal is in WBT mode. The options available are described in detail in chapter 2.

1. Click the **Configure** tab in the **Terminal Connection Manager** then click the **Add** button to display the **New Connection** dialog box.
2. Select **Terminal Emulation Client** and click **OK**. The **Terminal Emulation Client Connection Wizard - Connection Information** dialog box will be displayed.
3. Enter a name which will identify this session configuration for future selection in the **Connection Name** box.
4. Select the **DG 410/412** terminal emulation in the **Emulation** list box. This emulation provides compatibility with software designed to drive the Data General D410/412 terminal.
5. Click **Next** to display the **Host Information** dialog box.

   For a TCP/IP connection, click the **TCP/IP** button, enter the name or internet address of the host computer in the **Host Name** box, then click **Advanced** for additional Telnet options. Refer to the *TCP/IP Connection Settings* section in chapter 2 for details.

   For a modem connection, click the **Modem** button then click **Advanced** to display configuration options. Refer to the *Modem Connection Settings* section in chapter 2 for details.

For a serial connection, click the **Serial** button, specify the communications port in the **Connect To** box, then click **Advanced** for additional serial options. Refer to the *Serial Connection Settings* section in chapter 2 for details.

Make the relevant selections then click **OK** to return to the **Host Information** dialog box, then click **Next** to display the **Advanced Options** dialog box.

6. Click **Finish** to return to the **Terminal Connection Manager**.
7. In the **Terminal Connection Manager**, display the **Connections** list, select the session name you specified earlier in step 3, then click the **Connect** button.

Non-WBT Mode

This section describes the basic procedure for creating a session configuration when the terminal is not in WBT mode. The options available are described in detail in the *Setup Menus* chapter.

1. Display the **Settings** menu from the command bar and select **Emulation...** to display the **Emulation Settings** dialog box.
2. Select the **DG 410/412** terminal emulation in the **Alpha Emulation** list box. This emulation provides compatibility with software designed to drive the Data General D410/412 terminal. Click **OK** to close the dialog box.
3. Display the **File** menu from the command bar and select **New Connection** to display the **New Connection** dialog box.
4. Select the type of host connection required in the **Type** list box.

   For a TCP/IP connection, select **TCP/IP**, enter the name or internet address of the host computer in the **Connect To** box, then click **Configure** for additional Telnet options. Refer to the *TCP/IP Connection Settings* section in chapter 2 for details.

   For a modem connection, select **Modem**, specify the communications port in the **Connect To** box, then click **Configure** to display configuration options. Refer to the *Modem Connection Settings* section in chapter 2 for details.

   For a serial connection, select **Serial**, specify the communications port in the **Connect To** box, then click **Configure** for additional serial options. Refer to the *Serial Connection Settings* section in chapter 2 for details.
5. When you have specified the required settings in the **New Connection** dialog box, click the **Connect** button to make the connection.

   *Note: You can save these settings as a connection template using the **Save Session As** dialog box. Refer to the Setup Menus chapter for details.*

Keyboard Mapping

The illustration on the following page shows where DG 410/412 keyboard functions are mapped to keys on the 101/102 key Enhanced AT keyboard layout. Special key functions that are provided on the DG 410/412 keyboard can be mapped to any key on your keyboard by using the DG virtual key names listed in the **Define Keyboard Macros** dialog box.

Key Functions

Local Print

The **Local Print** key is used to print the current window or initiate the Print Form operation. You can print the contents of the current window starting with the row containing the cursor by pressing the **Local Print** key on its own. Keyboard entered data will be ignored while the print is in progress. You can abort the print operation by pressing the **Local Print** key again.

You can initiate the Print Form operation by holding down the **Shift** key then pressing **Local Print**. This performs the same function as **Local Print** pressed on its own, except that only data appearing at full intensity will be printed when protected text is disabled. When protected text is enabled, only unprotected text will be printed.

Cursor Type

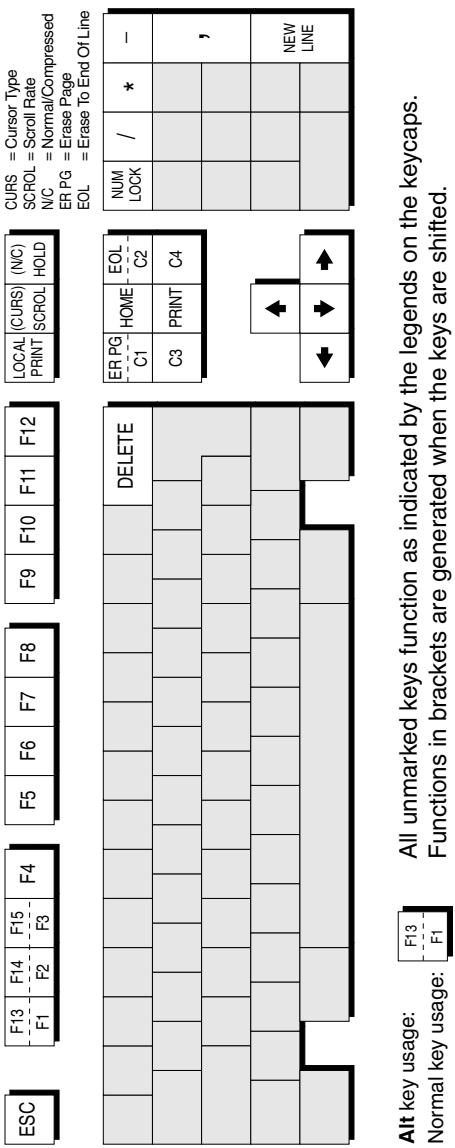
This key enables you to change the appearance of the cursor. By default the cursor is displayed as a reverse video block. Pressing and releasing the **Cursor Type** key one or more times will cause the cursor display to change in the following order:

Blinking underline
Invisible cursor
Blinking reverse video block
Non-blinking reverse video block (default)

N/C

Pressing this key will cause the display of the current text region to toggle between normal and compressed character spacing mode. In normal mode the display is 81 columns wide. Pressing the **N/C** key once will change the display width to 135 columns. Note that the margins will not be affected by this key.

Enhanced AT Keyboard Layout



Composing Characters

The Data General D410 keyboard has a **SPCL** key which enables you to generate characters from the DG International character set. You can generate the same characters by using the method described for the DEC emulation. Refer to the *Compose Character Sequences* section in the *Keyboard Configuration* chapter for details.

Key Codes

The following table lists the decimal value of codes generated when keys that emulate those found on the Data General keyboard are pressed alone or in conjunction with the **Shift** and/or **Ctrl** keys.

Note that each code shown is the second code generated when the key or key combination is pressed, the first always being the code **RS** (Hex 1E).

	Key	**Shift + Key**	**Ctrl + Key**	**Ctrl + Shift + Key**
F1	113	97	49	33
F2	114	98	50	34
F3	115	99	51	35
F4	116	100	52	36
F5	117	101	53	37
F6	118	102	54	38
F7	119	103	55	39
F8	120	104	56	40
F9	121	105	57	41
F10	122	106	58	42
F11	123	107	59	43
F12	124	108	60	44
F13	125	109	61	45
F14	126	110	62	46
F15	112	96	48	32
C1	92	88	-	-
C2	93	89	-	-
C3	94	90	-	-
C4	95	91	-	-
UP	-	23	-	-
DOWN	-	26	-	-
LEFT	-	25	-	-
RIGHT	-	24	-	-
HOME	-	8	-	-
PRINT	17	1	-	-

Notes

10

HP 700-92/96 Emulation

This chapter describes features of the Hewlett Packard 700-92/96 terminal emulation.

Session Configuration

WBT Mode

This section describes the basic procedure for creating a session configuration when the terminal is in WBT mode. The options available are described in detail in chapter 2.

1. Click the **Configure** tab in the **Terminal Connection Manager** then click the **Add** button to display the **New Connection** dialog box.
2. Select **Terminal Emulation Client** and click **OK**. The **Terminal Emulation Client Connection Wizard - Connection Information** dialog box will be displayed.
3. Enter a name which will identify this session configuration for future selection in the **Connection Name** box.
4. Select the **HP 700-92/96** terminal emulation in the **Emulation** list box. This emulation provides compatibility with software designed to drive the Hewlett Packard 700/92, 2392A, 2622A, 70094 and 70096 terminals.
5. Specify the required **HP Model** setting: **70092** (default), **2392A**, **2622A**, **70094** or **70096**. This identifies the particular terminal model being emulated in response to a terminal identification request from the host.
6. Click **Next** to display the **Host Information** dialog box.

   For a TCP/IP connection, click the **TCP/IP** button, enter the name or internet address of the host computer in the **Host Name** box, then click **Advanced** for additional Telnet options. Refer to the *TCP/IP Connection Settings* section in chapter 2 for details.

For a modem connection, click the **Modem** button then click **Advanced** to display configuration options. Refer to the *Modem Connection Settings* section in chapter 2 for details.

For a serial connection, click the **Serial** button, specify the communications port in the **Connect To** box, then click **Advanced** for additional serial options. Refer to the *Serial Connection Settings* section in chapter 2 for details.

Make the relevant selections then click **OK** to return to the **Host Information** dialog box, then click **Next** to display the **Advanced Options** dialog box.

7. Click **Finish** to return to the **Terminal Connection Manager**.
8. In the **Terminal Connection Manager**, display the **Connections** list, select the session name you specified earlier in step 3, then click the **Connect** button.

Non-WBT Mode

This section describes the basic procedure for creating a session configuration when the terminal is not in WBT mode. The options available are described in detail in the *Setup Menus* chapter.

1. Display the **Settings** menu from the command bar and select **Emulation...** to display the **Emulation Settings** dialog box.
2. Select the **HP 700-92/96** terminal emulation in the **Alpha Emulation** list box. This emulation provides compatibility with software designed to drive the Hewlett Packard 700/92, 2392A, 2622A, 70094 and 70096 terminals. Click **OK** to close the dialog box.
3. Display the **HP Settings** dialog box from the **Settings** menu and specify the required **Terminal ID** setting: **70092** (default), **2392A**, **2622A**, **70094** or **70096**, then click **OK** to close the dialog box.
4. Display the **File** menu from the command bar and select **New Connection** to display the **New Connection** dialog box.
5. Select the type of host connection required in the **Type** list box.

   For a TCP/IP connection, select **TCP/IP**, enter the name or internet address of the host computer in the **Connect To** box, then click **Configure** for additional Telnet options. Refer to the *TCP/IP Connection Settings* section in chapter 2 for details.

   For a modem connection, select **Modem**, specify the communications port in the **Connect To** box, then click **Configure** to display configuration options. Refer to the *Modem Connection Settings* section in chapter 2 for details.

   For a serial connection, select **Serial**, specify the communications port in the **Connect To** box, then click **Configure** for additional serial options. Refer to the *Serial Connection Settings* section in chapter 2 for details.

6. When you have specified the required settings in the **New Connection** dialog box, click the **Connect** button to make the connection.

   *Note: You can save these settings as a connection template using the **Save Session As** dialog box. Refer to the Setup Menus chapter for details.*

Display Configuration

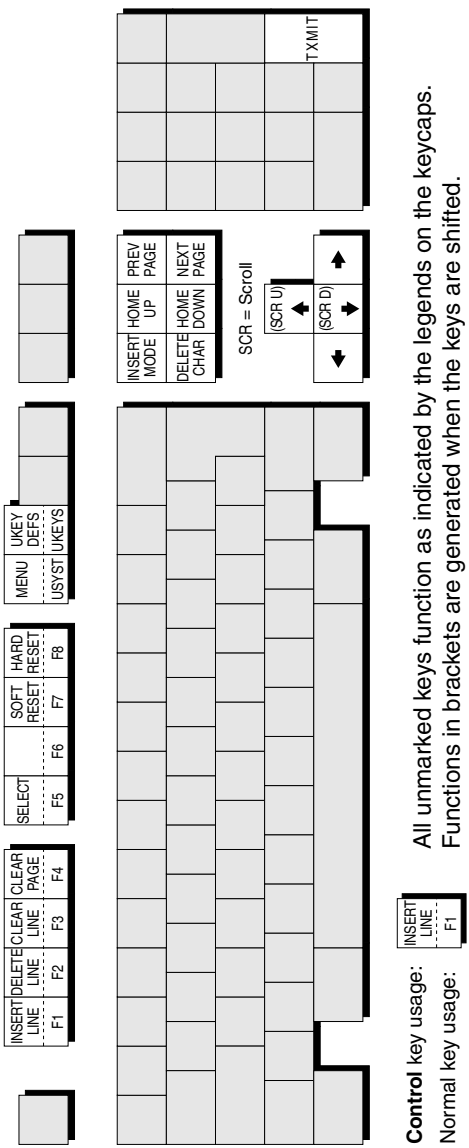
When you run the HP 700-92/96 emulation the following buttons will appear along the bottom of the display.

These buttons indicate the current function of keys **F1** through **F8** on the keyboard and are described later in this chapter. The two numbers in the middle button indicate the current line and column position of the cursor. The display area is 80 columns wide by 24 lines deep by default, and 168 lines are stored off-screen. You can toggle between 80 and 132 column display by pressing the function key **F12**, and you can divide the display memory into 2, 4, 6 or 8 pages from the **HP Settings** dialog box, as described in the *Setup Menus* chapter.

Keyboard Mapping

The following illustration shows where HP 700-92/96 keyboard functions are mapped to keys on the 101/102 key Enhanced AT keyboard layout. Special key functions that are provided on the HP 700-92/96 keyboard can be mapped to any key on your keyboard by using the HP virtual key names listed in the **Define Keyboard Macros** dialog box.

Enhanced AT Keyboard Layout



Buttons & Function Keys

The buttons along the bottom of the HP 700-92/96 window indicate the current function of keys **F1** through **F8** on the keyboard, each key and equivalent button having several functions within the emulation. The buttons and equivalent function keys enable selection of various operating modes and display configurations. Clicking a button has the same effect as pressing the equivalent **F#** key. When a key or button is attributed an on/off toggle action, the button will display an asterisk when the function is selected.

The middle button displays the row and column position of the cursor. It has no other function.

On entering HP 700-92/96 mode, the buttons and function keys enable various operating modes to be selected. The buttons will show the **Mode Selection** configuration.

Mode Selection

The **Mode Selection** functions are displayed when the HP 700-92/96 emulation is first entered. If the functions are changed while using the emulation, you can redisplay the Modes menu by pressing the **F9** key (the equivalent of the HP 700-92/96 **User System** key), then **F4**.

Line Modify - F1

This function enables you to edit and retransmit an incorrectly entered command string when the emulation is in Remote mode and Character mode and you are communicating interactively with the host. This saves you having to retype the entire string again.

> *Note: This will not function when the emulation is in Block or Format mode.*

When the host causes an error message to be displayed indicating that the string has been incorrectly entered, press the **F1** key or click the equivalent button. An asterisk will appear on the button indicating that the function is selected. Move the cursor to the line containing the error, edit the line then press **Return** or **Enter**. This will cause the edited string to be transmitted and Line Modify mode to be exited.

If after activating Line Modify mode you wish to cancel it, just press **F1** or click the button again.

Modify All - F2

This is similar to the Line Modify **F1** function described previously, the only difference being that the editing mode is not exited when **Return** or **Enter** is pressed. **F2** and its equivalent button acts as a toggle key, switching the mode on or off. The setting may be saved by selecting **Save Session** in the **File** menu.

The **F2** Modify All key and button enables you to edit and retransmit an incorrectly entered command string when the emulation is in Character mode. This saves you having to retype the entire string again.

Note: This will not function when the emulation is in Block or Format mode.

When the host causes an error message to be displayed indicating that the string has been incorrectly entered, press the **F2** key. An asterisk will appear on the button indicating that the function is selected. Move the cursor to the line containing the error, edit the line then press **Return** or **Enter**. This will cause the edited string to be transmitted. To exit Modify All mode, press **F2** or click the button again.

Note: Even though this function is a special form of Block mode it is completely separate from it and you do not need to enable Block mode before using the Modify All function.

Block Mode - F3

Data may be transmitted to the host a character at a time or as a block of characters. The **F3** key and equivalent button toggles the form of data transmission between Character mode and Block mode. The setting may be saved by selecting **Save Session** in the **File** menu.

The emulation is in Character mode when the button does not display an asterisk. Each character will be sent to the host as it is entered at the keyboard.

When Block mode is activated (as indicated by an asterisk), data entered at the keyboard will not be sent to the host until the **Enter** key is pressed. In this mode, displayed text may be edited locally before it is transmitted to the host. Control codes such as **CR** (carriage return) and **LF** (line feed) are acted upon locally and are not transmitted to the host when **Enter** is pressed.

Remote Mode - F4

The current setting of this button determines whether pressing an alphanumeric key causes a character to be sent to the host (remote) or only to the display (local). The button and **F4** key toggles between Remote mode and Local mode. The setting may be saved by selecting **Save Session** in the **File** menu.

The emulation is in Local mode when the button does not display an asterisk. Pressing alphanumeric keys will cause characters to be sent to the display only.

When Remote mode is activated (as indicated by an asterisk), pressing alphanumeric keys will cause characters to be sent to the host.

Terminal Test - F5

When this button or **F5** key is pressed, the HP 700-92/96 emulation will perform a self-test and display a test screen showing all the displayable characters.

Memory Lock - F6

This enables data to be locked on the display so that it is not scrolled off the top of the window when display memory is full. Once enabled, it can only be disabled if this button or **F6** key is pressed again, a reset is performed, or the emulation is exited.

Placing the cursor on the first line and enabling Memory Lock will prevent data from automatically scrolling off the top of the display when display memory is full. Instead, the message 'MEMORY FULL Press RETURN to clear' will be displayed. You may use the cursor keys to edit data already displayed. To disable the Memory Lock and continue entering new data, press **F6** or click the button again and position the cursor immediately below the last line.

The Memory Lock function may also be used to lock a specific number of lines from the top of the display, leaving the remaining lines to scroll past them. This is useful when you want column headings or instructions to remain on the display. To lock a specific number of lines, place the cursor on the last line to be locked and press **F6** or click the button. The lines from the top of the display down to the cursor line will now be locked.

> *Note: You can edit data contained in locked lines but if new data is inserted it may cause data on the last line of the locked region to be pushed down into the scrolling region.*

Display Functions - F7

This button and the **F7** key toggles the Display Functions mode on or off. The effect of activating Display Functions mode depends on whether the emulation is in Local or Remote mode. In Local mode, activating Display Functions mode will cause subsequently received control codes and escape sequences to be displayed on the screen but not actioned. Exceptions to this rule are the commands issued when the button or **F7** key is pressed and the carriage return and line feed commands, which will be executed.

In Remote mode, activating Display Functions mode will cause subsequently received control codes and escape sequences to be transmitted to the host but not actioned locally. Exceptions to this rule are the commands issued when the button or **F7** key is pressed and the carriage return and line feed commands, which will be executed. If the **Local Echo** option is enabled in the **HP Settings** dialog box (see the *Setup Menus* chapter), commands will be displayed on the screen as well as transmitted to the host.

> *Note: If the **XmitFnctn (A)** option is selected in the **HP Settings** dialog box, the button and **F7** key will not deactivate Display Functions mode.*

Auto LF - F8

This button and the **F8** key enables or disables Auto Line Feed mode. When enabled, a line feed command is automatically appended to every carriage return command generated from the keyboard. The setting may be saved by selecting **Save Session** in the **File** menu.

Configuration Selection

This set of function buttons is displayed by pressing the **F9** key (which is equivalent to the HP 700-92/96 **User System** key). These functions enable you to access three other sets of function labels.

Device Control - F1

Clicking this button or pressing **F1** will cause the **Device Control** function labels to be displayed. The buttons and keys **F1** through **F8** will function as described in the following section entitled *Device Control*.

Margins/Tabs/Col - F2

Clicking this button or pressing **F2** will cause the **Margins/Tabs/Col** function labels to be displayed. The buttons and keys **F1** through **F8** will function as described in the section entitled *Margins, Tabs & Start Column*.

Modes - F4

Clicking this button or pressing **F4** will cause the **Mode Selection** function labels to be displayed. The buttons and keys **F1** through **F8** will function as described in the previous section entitled *Mode Selection*.

Device Control

This set of function buttons is displayed by pressing the **F9** key (which is equivalent to the HP 700-92/96 **User System** key) then **F1**. These functions enable you to select the device(s) to which data is sent and also to copy portions of data from display memory to the printer.

Device Modes - F1

Clicking this button or pressing **F1** will cause the **Device Modes** function labels to be displayed. The keys **F1** through **F8** will function as described in the following section entitled *Device Modes*.

To Ext Dev - F2

This toggle function determines whether data is sent to the printer or not. Data will be sent to the printer when an asterisk is displayed on this button.

To Display - F3

This toggle function determines whether data is sent to the display or not. Data will be sent to the display when an asterisk is displayed on this button.

Advance Page - F4

When a printer is connected and enabled by the **To Ext Dev** function, clicking this button or pressing **F4** will cause paper in the printer to be advanced to the top of the next page.

Advance Line - F5

When a printer is connected and enabled by the **To Ext Dev** function, clicking this button or pressing **F5** will cause paper in the printer to be advanced by one line.

Copy All - F6

When a printer is connected and enabled by the **To Ext Dev** function, clicking this button or pressing **F6** will cause a copy of all lines from and including the cursor line to the last line in display memory to be sent to the printer.

The cursor will move to the leftmost column on the next line when the current line has been printed. You can cancel printing at the end of the current line by pressing **Return**.

> *Note: If the cursor is positioned on a line below the last displayable line of data, nothing will be sent to the printer.*

Copy Page - F7

When a printer is connected and enabled by the **To Ext Dev** function, clicking this button or pressing **F7** will cause a copy of all lines from and including the cursor line to the last line displayed on the screen to be sent to the printer.

The cursor will move to the leftmost column on the next line when the current line has been printed. You can cancel printing at the end of the current line by pressing **Return**.

> *Note: If the cursor is positioned on a line below the last displayable line of data, nothing will be sent to the printer.*

Copy Line - F8

When a printer is connected and enabled by the **To Ext Dev** function, clicking this button or pressing **F8** will cause a copy of the line containing the cursor to be sent to the printer. The cursor will move to the leftmost column on the next line when the line has been printed.

Note: If the cursor is positioned on a line below the last displayable line of data, nothing will be sent to the printer. If the cursor is positioned on an empty line between two blocks of data, the printer will perform a carriage return and line feed.

Device Modes

Device Control - F1

Clicking this button or pressing **F1** will cause the **Device Control** function labels to be displayed, enabling you to select the device(s) to which data is sent and also to copy portions of data from display memory to the printer. The buttons and keys **F1** through **F8** will function as described in the previous section entitled *Device Control.*

Record Mode - F2

This is used to copy data received from the host to the printer and/or display, depending on the setting of the **To Ext Dev** and **To Display** labels in the **Device Control** menu.

Note: This function does not take effect when the emulation is in Local mode. In Remote mode, received data is sent directly to the selected device(s).

The keyboard will be disabled when Record mode is activated except for the **F2** key which is used to exit the mode.

Log Bottom - F3

When the cursor moves to the next line as a result of an explicit line feed or end-of-line wraparound, the line of data which the cursor has just moved from will be sent to the printer when this function is activated. This enables you to create a hardcopy of all the lines in the order in which they were entered via the keyboard or received from the host.

Note: Both the emulation and the host must be using the ENQ/ACK or Xon/Xoff handshakes or a baud rate that is no higher than the rate supported by the printer.

Log Bottom remains activated until either this button or **F3** is pressed again, **Log Top** is activated, a reset is performed, or the emulation is exited.

Log Top - F4

When the display memory becomes full and more data is received from the host or keyboard, lines of data from the top of the display are deleted to make way for the new data. The **Log Top** function enables the data that is removed from the top of the display to be sent to the printer when the **To Ext Dev** function is activated in the **Device Control** menu.

> *Note: Both the emulation and the host must be using the ENQ/ACK or Xon/Xoff handshakes or a baud rate that is no higher than the rate supported by the printer.*

Log Top remains activated until either this button or **F4** is pressed again, **Log Bottom** is activated, a reset is performed, or the emulation is exited.

> *Note: This function does not take effect when **Memory Lock** is activated.*

Margins, Tabs & Start Column

This set of function buttons is displayed by pressing the **F9** key (which is equivalent to the HP 700-92/96 **User System** key) then **F2**. These functions enable you to redefine the start column, set tabs, and specify the left and right margins.

Start Column - F1

This function is used to temporarily redefine the start column for transmitted data when no logical start-of-text pointer is present and the **Return** or **Enter** keys are pressed in **Modify Line** or **Modify All** mode.

> *Note: The default start column is specified in the **HP Settings** dialog box. Refer to the Setup Menus chapter for details.*

Usually a start-of-text pointer is automatically generated to designate the leftmost character in the current line if it is the last line of data in display memory. The pointer will remain in display memory until the line is deleted. If the line has no start-of-text pointer, data transmission will begin at the start column specified by this option. The column range that can be specified is from 1 to 80, inclusive.

To change the current start column, move the cursor to the new starting point and click this button or press the **F1** key. The start column will revert to that specified within setup when the emulation is reset or re-entered.

Set Tab - F2

This function enables tab stops to be defined. To define a tab stop, move the cursor to the column to contain the tab and click this button or press **F2**.

> *Note: Tab stops that do not lie within the left and right margins will be ignored when the **Tab** key is pressed. All tab stops will be ignored when the emulation is in Format mode.*

Clear Tab - F3

This function enables an individual tab stop to be cleared. To clear a tab stop, move the cursor to the column containing it and click this button or press **F3**.

Clr All Tabs - F4

Clicking this button or pressing **F4** will cause all defined tab stops to be cleared (except the left margin which is an implicit tab stop).

Left Margin - F5

This function enables you to define the left margin. Margins determine the boundary for certain cursor movement commands (such as carriage return and cursor home), and insert character and delete character functions. Data to the left of this margin will still be accessible. The left margin is an implicit tab stop.

When data received from the host or entered through the keyboard reaches the right margin, the cursor will move to the specified left margin on the next line down (as long as **InhEolWrp** is not selected in the **HP Settings** dialog box and, in the case of keyboard-entered data, auto line feed mode is enabled).

To specify the left margin, place the cursor in the column for the margin location and click this button or press **F5**. The left margin can be reset to column 1 by pressing **F7** (this will also reset the right margin to column 80).

> *Note: Margins are disregarded when data is transferred from display memory to the host. The margins will be cleared when Format mode is enabled.*

Right Margin - F6

This function enables you to define the right margin. Margins determine the boundary for certain cursor movement commands (such as carriage return and cursor home), and insert character and delete character functions. Data to the right of this margin will still be accessible.

When data received from the host or entered through the keyboard reaches the specified right margin, the cursor will move to the left margin on the next line down (as long as **InhEolWrp** is not selected in the **HP Settings** dialog box and, in the case of keyboard-entered data, auto line feed mode is enabled).

To specify the right margin, place the cursor in the column for the margin location and click this button or press **F6**. The right margin can be reset to column 80 by pressing **F7** (this will also reset the left margin to column 1).

Note: Margins are disregarded when data is transferred from display memory to the host. The margins will be cleared when Format mode is enabled.

Clr All Margins - F7

This function will reset both left and right margin settings so that the left margin is in column 1 and the right margin in column 80.

Key Programming

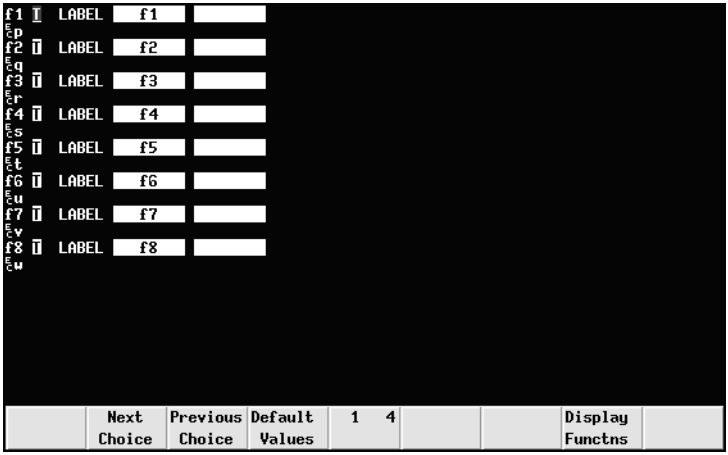
The keys **F1** through **F8** and their equivalent buttons can be programmed by the host or user to perform additional functions to those described in the previous section. The keys may be assigned a string of alphanumeric characters and/or control codes, and you can define whether the key string is executed locally or transmitted to the host, or both. The buttons can also be programmed to display the new functions when in User Keys mode.

User Keys mode is entered by pressing the **F10** key. The f-key buttons displayed on the screen will change to display the current User Key definitions. If no definitions have been assigned, either by you or the host, the buttons will just display the legends of each f-key as shown below.

To define the function of an f-key or equivalent button locally, press the keys **Shift** + **F10** to display the User Key Definition menu as shown overleaf. The menu can be exited by pressing **F9**.

Default Definitions

While this menu is displayed the f-keys and equivalent buttons have the functions shown by the buttons at the bottom of the window, so pressing **F4** or the **Default Values** button will cause the default key and button definitions to be asserted. The default definitions will take effect once the User Key Definition menu is exited.



Key String Treatment

Each f-key and button definition displayed in the menu consists of two lines. The first line begins with the f-key number followed by space then a one-character attribute field. This field will contain either an uppercase **L**, **T** or **N**. These characters indicate the following:

L : The key string is executed locally.
T : The key string is transmitted to the host only.
N : The key string is treated as keyboard-entered data.

The default selection is **T** for all f-keys. To change this setting, use the **Tab** or **Shift + Tab** keys to move the cursor over the field then press **F2** (**Next Choice** button) or **F3** (**Previous Choice** button) to cycle through the options until the one required is displayed.

Function Indicator

The remainder of the first line is used to specify what is displayed on the screen button to indicate its function. The default display shows the numbers of the f-keys.

The two fields following LABEL represent the upper and lower lines that can be displayed on the button. To change the current definition, use the **Tab** or **Shift + Tab** keys to move the cursor into the relevant field and type in the new definition which can consist of a maximum of 16 characters, eight characters per field.

Key String Definition

The second line of each f-key definition contains the character string that is to be displayed, executed, and/or transmitted to the host when the key or button is pressed. The string may contain alphanumeric characters, control characters, and explicit escape sequence characters entered when Display Functions mode is enabled by pressing **F7** or the **Display Functns** button.

The default f-key string begins with the characters **EC** which represent the escape code that is used to begin each escape sequence. The **EC** characters are displayed in the key definition line by pressing the **Esc** key or the keys **Ctrl + [** together when Display Functions mode is enabled. Note that you must enter the entire escape sequence before disabling Display Functions mode (by pressing **F7** again).

When Display Functions is enabled, the **Return** key may be used to insert carriage return codes (**CR**) in the string. If **Auto LF** mode is selected in the **Mode Selection** function menu, **Return** will generate a line feed (**LF**) code as well as carriage return.

To change an f-key/button string definition, use the **Tab** or **Shift + Tab** keys to move the cursor onto the second line (the line following LABEL definition for that key/button) and type in the new definition which can consist of a maximum of 80 characters.

When you have finished defining f-key/button strings, press the **F9** key to exit the menu. To enable the new definitions and display the relevant functions on the buttons, press the **F10** key.

Note: The host may reset the f-key definitions to their default values if required by the application.

Character Display Attributes

The HP 700-92/96 emulation incorporates various display attributes which can be enabled by host commands or from the keyboard by the user. These attributes are listed in the table below.

When an attribute or set of attributes are enabled, they affect all subsequently displayed characters until an end attribute command or another attribute command is received, or the end of the line is reached. Attributes remain at the display location where they were enabled and will not move when characters are inserted or deleted.

You can configure the f-keys and buttons so that they will enable these attributes when pressed. To do this, display the User Key Definition menu by pressing the keys **Shift + F10** together. Use the **Tab** or **Shift + Tab** keys to position the cursor in the first field next to the number of the f-key to be defined and press **F2** until the letter **L** for **L**ocal is displayed. Press **Tab** and type in the text that will appear in the display label for the key, for example, **Under** in the first field and **Line** in the second for **Under Line**. Press **Tab** to move down to the next line. Press **F7** to enable Display Functions mode then press **Ctrl + [** together or the **Esc** key, followed by the characters **&d** and the attribute character, which for underline is **D**.

The key definition should look like this if the **F1** key was defined to enable the underline attribute:

For any other attribute or combination of attributes, substitute the last character in the second line (**D** in the example above) with the relevant character from the following table.

	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	S
Half-Brightness									●	●	●	●	●	●	●	●	
Underline					●	●	●	●					●	●	●	●	
Inverse Video			●	●			●	●			●	●			●	●	
Flashing		●		●		●		●		●		●		●		●	
Invisible																	●
End Attribute	●																

When you have finished assigning character attribute commands to f-keys, press **F9** to exit from the User Key Definition menu then **F10** to enable the User Keys and display the defined attribute labels.

11

IBM 3270 Emulation

This chapter describes features of the IBM 3270 terminal emulation.

Introduction

The IBM 3270 emulator provides emulation of all four models of the IBM 3278 alphanumeric terminal and also supports the IBM 3287-1 printer. The terminal emulation supports Extended Attribute mode which allows different representation of highlighted fields and permits host definition of text colours. (Note that you can modify colours using the **Attribute Settings** dialog box but they cannot be saved as colours are mapped differently in this mode.) The emulation also includes typeahead capability so that you can continue to enter data without waiting for a prompt from the host.

Session Configuration

WBT Mode

This section describes the basic procedure for creating a session configuration when the terminal is in WBT mode. The options available are described in detail in chapter 2.

1. Click the **Configure** tab in the **Terminal Connection Manager** then click the **Add** button to display the **New Connection** dialog box.
2. Select **Terminal Emulation Client** and click **OK**. The **Terminal Emulation Client Connection Wizard - Connection Information** dialog box will be displayed.
3. Enter a name which will identify this session configuration for future selection in the **Connection Name** box.
4. Select the **IBM 3270** terminal emulation in the **Emulation** list box.

5. Select the **IBM 3270 Model** which determines the size of the display and whether or not extended attributes are supported. One of four display sizes can be selected:

   3278/9-2 24 rows by 80 columns
   3278/9-3 32 rows by 80 columns
   3278/9-4 43 rows by 80 columns
   3278/9-5 27 rows by 132 columns

   Settings with the **E** extension provide support for the following extended attributes: 3270 field attributes, extended highlighting (blink, flash and underscore, but not in combination), foreground colour, and query reply inbound structured fields. These attributes are also supported by the 3279.

6. Specify if you want the right or left **Control** keys to perform the same function as the keypad **Enter** or **Reset** keys, respectively.

7. Click **Next** to display the **Host Information** dialog box.

   For a TCP/IP connection, click the **TCP/IP** button, enter the name or internet address of the host computer in the **Host Name** box, then click **Advanced** for additional Telnet options. Refer to the *TCP/IP Connection Settings* section in chapter 2 for details.

   For a modem connection, click the **Modem** button then click **Advanced** to display configuration options. Refer to the *Modem Connection Settings* section in chapter 2 for details.

   For a serial connection, click the **Serial** button, specify the communications port in the **Connect To** box, then click **Advanced** for additional serial options. Refer to the *Serial Connection Settings* section in chapter 2 for details.

   Make the relevant selections then click **OK** to return to the **Host Information** dialog box, then click **Next** to display the **Advanced Options** dialog box.

8. Click **Finish** to return to the **Terminal Connection Manager**.

9. In the **Terminal Connection Manager**, display the **Connections** list, select the session name you specified earlier in step 3, then click the **Connect** button.

Non-WBT Mode

This section describes the basic procedure for creating a session configuration when the terminal is not in WBT mode. The options available are described in detail in the *Setup Menus* chapter.

1. Display the **Settings** menu from the command bar and select **Emulation...** to display the **Emulation Settings** dialog box.

2. Set the **Alpha Emulation** option to **IBM3270**, then click **OK**. The terminal will now be in Network Virtual Terminal mode.

3. Display the **IBM 3270 Settings** dialog box if you wish to change the setting of the **IBM 3270 Model** option which determines the size of the display and whether or not extended attributes are supported. One of four display sizes can be selected:

3278/9-2	24 rows by 80 columns
3278/9-3	32 rows by 80 columns
3278/9-4	43 rows by 80 columns
3278/9-5	27 rows by 132 columns

   Settings with the **E** extension provide support for the following extended attributes: 3270 field attributes, extended highlighting (blink, flash and underscore, but not in combination), foreground colour, and query reply inbound structured fields. These attributes are also supported by the 3279. Click **OK** to close the dialog box.

4. Select **Save Session** in the **File** menu.

5. Select **New Connection** in the **File** menu to display the **New Connection** dialog box.

6. Select the type of host connection required in the **Type** list box.

   For a TCP/IP connection, select **TCP/IP**, enter the name or internet address of the host computer in the **Connect To** box, then click **Configure** for additional Telnet options. Refer to the *TCP/IP Connection Settings* section in chapter 2 for details.

   For a modem connection, select **Modem**, specify the communications port in the **Connect To** box, then click **Configure** to display configuration options. Refer to the *Modem Connection Settings* section in chapter 2 for details.

   For a serial connection, select **Serial**, specify the communications port in the **Connect To** box, then click **Configure** for additional serial options. Refer to the *Serial Connection Settings* section in chapter 2 for details.

7. When you have specified the required settings in the **New Connection** dialog box, click the **Connect** button to make the connection.

8. If necessary, enter the appropriate information to establish an IBM host session in the Network Virtual Terminal mode screen.

9. When an IBM host session has been established, the screen will switch out of Network Virtual Terminal mode and display the IBM 3270 emulation screen.

   Note: You will be returned to the Network Virtual Terminal screen when the connection to the IBM host has been closed.

Network Virtual Terminal Mode

Network Virtual Terminal (NVT) mode allows the operator to communicate with a network gateway (in ASCII) for routing, logon etc, before the full IBM terminal emulation protocol is established. NVT mode is indicated by the ? symbol in the status line along the bottom of the display.

NVT mode displays an unformatted screen for data entry, allowing most of the keyboard functionality for local editing. However, when the **Enter** key is pressed, the line that the cursor is positioned on will be sent over Telnet as an ASCII string with CR/LF terminators. The cursor will then be positioned at the start of the next line. ASCII data received over Telnet will also be displayed at the current cursor position. A **CR** character will be actioned as a 'new line' character, causing the cursor to move to the start of the next line, scrolling the display if necessary. Once the appropriate details have been entered to establish an IBM host session (which may be automatic), the screen is cleared and switched into full IBM 3270 terminal emulation mode, as indicated by the ▮ symbol in the status line.

IBM 3287-1 Printer Support

TN3287 printing is supported by setting the **IBM 3270 Model** option in the **IBM 3270 Settings** dialog box to **3287-1**. When a new Telnet connection is made, the display will change to show a message box which will indicate the current printer status.

When printing commences a Print Abort box will be displayed enabling you to cancel the print job. Note that this will stop print data being sent but will not disconnect you from the host.

SysReq Key Support

When the **SysReq** option in the **Telnet Options** dialog box is selected, the key mapped with the **SysReq** function enables you to toggle the display and keyboard entries between the host operating system and the application. This enables you to switch to the operating system and issue a LOGOFF command. When communicating with the operating system the status line will display the 🖳 symbol.

*Note: Not all TN3270E servers provide full support of the **SysReq** key.*

The Status Line

The last line in the window is used to display status information in the form of symbols and alphanumeric characters. A coloured line separates status information from the rest of the display. Information is displayed in any of nine regions within the status line as listed below.

1: Readiness & System Connection

Symbol	Colour	Column	Meaning
T	Blue	1	Telnet session running
A	Blue	2	Online (non-SNA)
?	Blue	3	Network Virtual Terminal mode
■	Blue	3	My job (IBM emulation screen)
囚	Blue	3	Host operating system mode

2: Do Not Enter

Symbol	Colour	Column	Meaning
X **PROGnnn**	Yellow	10-18	Program check (nnn = error code)
X ◌	White	10-13	Terminal wait
X**NUM**	Red	10-15	Numeric data only
X←→	Red	10-14	Go elsewhere
X **SYSTEM**	White	10-17	System lock
X>	Red	10-13	Too much

3: Typing Direction

Symbol	Colour	Column	Meaning
=>	Blue	19	Typing direction left-to-right
<=	Blue	19	Typing direction right-to-left

4: Bilingual Keyboard Mode

Symbol	Colour	Column	Meaning
N	Blue	20	National character set mode
L	Blue	20	Latin character set mode

5: TN3270E Device Name

Symbol	Colour	Column	Meaning
ddddddd	White	22-29	TN3270E actual device name connected as

6: Shift

Symbol	Colour	Column	Meaning
NUM	Blue	43-45	Numeric lock on

7: Mode Symbol

Symbol	Colour	Column	Meaning
^	Blue	53	Insert mode on

8: Display Direction

Symbol	Colour	Column	Meaning
→	Blue	73	Normal display
←	Blue	73	Right-to-left mirror display

9: Cursor Position

Symbol	Colour	Column	Meaning
rr/cc or **rr/ccc**	White	75-80	Row/column cursor position

Readiness & System Connection

T	This indicates that a Telnet session is running.
A	This indicates that the protocol for communication between an application program and the IBM 3270 emulation is not system network architecture (SNA).
?	This indicates that the current screen is a Network Virtual Terminal screen. This screen is displayed when IBM 3270 mode is entered before a telnet session has been initiated with the remote host. This enables you to enter login text. Note that you will be returned to this screen when you log off.
■	This indicates that the current screen is an IBM 3270 screen. This screen will be displayed when you have initiated a Telnet session with the host.
	This indicates that you are currently communicating with the host operating system, not the application.

Do Not Enter

The Do Not Enter (✘) symbol will appear when input from the keyboard or mouse will not be accepted by the host (except **Reset** and **SysReq**). Symbols to the right of this will indicate the reason. Pressing the **Reset** key will remove some of these symbols from the status line. Note that the emulation includes typeahead capability so that in most cases you can continue to enter data without waiting for the Do Not Enter message to clear as the data will be stored until the host is ready.

✘ **PROGnnn**	Indicates that a programming error in the data from the host has been detected, possibly due to incompatible application software. Press the **Reset** or **SysReq** key to remove this indicator and unlock the keyboard.
✘	Indicates that you must wait while the requested function is performed.
✘**NUM**	Indicates that you tried to enter an invalid character into a numeric field when the numeric-lock feature was active. The keyboard numeric-lock feature can be overridden by using a **Shift** key. The keyboard can be unlocked and the indicator removed by pressing the **Reset** key.
✘←→	Indicates that you tried to enter data in the wrong location. This will occur when you attempt to do any of the following: Enter, insert, erase, or delete a character when the cursor is in a protected field or at a field attribute location. Perform a cursor-select operation when the cursor is not in a valid cursor-select field. The keyboard can be unlocked and the indicator removed by pressing the **Reset** key.
✘ **SYSTEM**	Indicates that you cannot enter any data because the application program has disabled the keyboard following an entry.
✘**>**	Indicates that you attempted to insert characters into an unprotected field when the cursor was at the end of the field, or you attempted to word wrap to the next line when there were not enough spaces to enable a word wrap. The keyboard can be unlocked and the indicator removed by pressing the **Reset** key.

Typing Direction

=> or **<=** This indicates the direction in which characters are displayed on the screen when typed. The direction is toggled between left-to-right (normal) and right-to-left by pressing the keys **Shift** + **/** on the keypad.

Bilingual Keyboard Mode

N or **L** This indicates whether the National (**N**) or Latin (**L**) character set is active when a code page that supports a bilingual keyboard is selected. Pressing the keys **Shift** + **-** on the keypad will toggle between the two character sets.

Shift

NUM This indicates that the numeric lock function is enabled and the current cursor is in a numeric field. When the numeric lock function is on, the current cursor is in an unprotected field and the keyboard is in lowercase shift, you can only use the **0** to **9**, decimal sign (**.**), minus (**-**), and **Dup** keys.

Mode Symbol

^ This symbol indicates that the keyboard is in Insert mode. Already existing characters to the right of the cursor will move to make room for new characters that are entered. Insert mode can be disabled by pressing the **Reset** or **SysReq** key, or by performing any action that sends data to the host, such as pressing the **Enter**, **Clear**, **PA**, or **PF** keys.

Display Direction

→ or ← This indicates the orientation of the screen display. A right arrow indicates normal left-to-right display, a left arrow indicates a right-to-left mirror image display. The display can be toggled between the two directions by pressing the keys **Shift** + **Backspace**.

Text Display Options

Display Right-to-Left

The contents of the screen can be displayed in reverse, i.e. as a right-to-left mirror image, by pressing the keys **Shift** + **Backspace**. This is a toggle function, so pressing the keys again will revert to normal left-to-right display. An arrow will be displayed on the status line to indicate normal (right arrow) or mirror (left arrow) display.

Typing Direction

The direction in which characters are displayed on the screen when typed can be toggled between normal left-to-right and right-to-left by pressing the keys **Shift** + **/** on the keypad. The characters **=>** or **<=** will be displayed on the status line to indicate the current typing direction.

Selecting the **Symbol Swap** option in the **IBM 3270 Settings** dialog box will cause symbols such as round or angle brackets to be displayed the correct way round when typing right-to-left.

Close Key

If text has been typed using both typing direction modes in the same line or field, you can force the right-hand text to join the left-hand text by pressing the keys **Shift** + ***** on the keypad.

Push Mode

Push mode allows you to edit text whose direction is opposite the screen orientation. In this mode the cursor orientation is reversed and a Push segment is created. Push mode is toggled on/off by pressing the keys **Ctrl** + **Shift** + **-** (keypad minus).

Push mode has two secondary modes, Boundary mode and Edit mode.

Boundary mode is activated when Push mode is entered. The cursor will remain at its current position while you type additional characters, and text will be pushed in the opposite direction of the screen orientation.

Edit mode is activated when the cursor is moved from its Boundary position into the Push segment area. In this mode, text can be edited within the Push segment while typing in the field's natural direction.

Bilingual Keyboard Support

When a code page that supports a bilingual keyboard is selected, you can toggle between the National and Latin character set by pressing the keys **Shift** + **-** on the

keypad. The character **N** or **L** will be displayed on the status line to indicate which character set is currently active.

Selecting the **Numeral Swap** option in the **IBM 3270 Settings** dialog box will cause all numbers to be displayed using the National character set when in Latin character set mode.

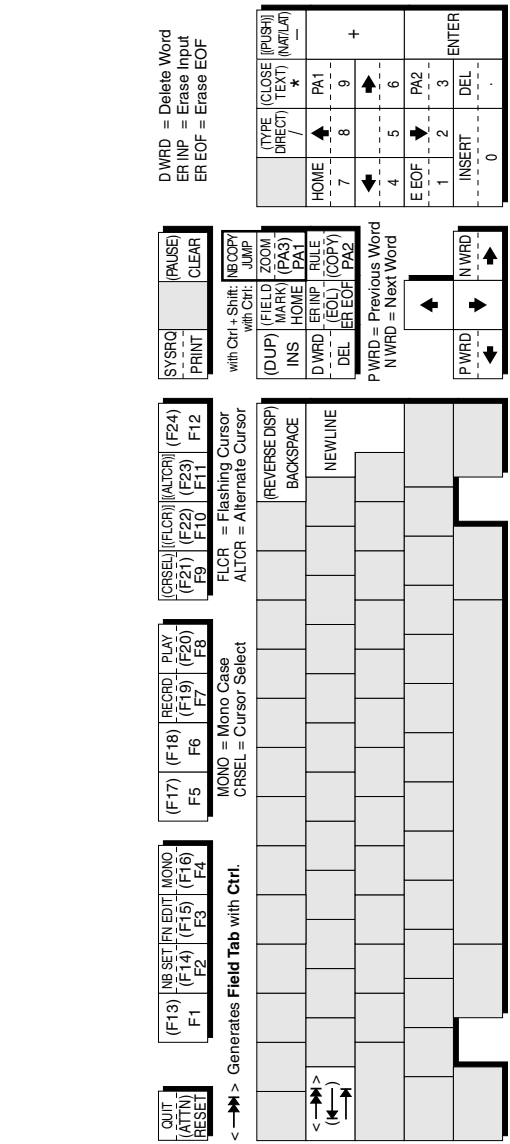
Alternate Code Page

If a language supports two code pages (e.g. Hebrew New Code and Hebrew Old Code), you can switch between the two by pressing the keys **Ctrl + Shift + Alt + -** on the numeric keypad. This function can be assigned to a different key or key combination by using the **IB_ALTCP** virtual key name.

Keyboard Mapping

The illustration on the following page shows where IBM 3270 keyboard functions are mapped to keys on the 101/102 key Enhanced AT keyboard layout. Special key functions that are provided on the IBM 3270 keyboard can be mapped to any key on your keyboard by using the IB virtual key names listed in the **Define Keyboard Macros** dialog box.

Enhanced AT Keyboard Layout



Record & Playback Keystrokes Facility

The record/playback keystrokes facility enables you to eliminate repetitive operations by using the **Fn** keys to store, retrieve and display data. The **Fn** keys can store a total of 1500 keystrokes. A sequence of recorded keystrokes may be interrupted so that keystrokes can be entered manually before continuing with the recording or playback. Note that local **Fn** key functions cannot be recorded.

The keys used to initiate recording and playback are shown below together with the equivalent virtual key names which can be used to assign the functions to any key on the keyboard:

	101/102 Key Keyboard	Virtual Key Names
Record:	**Alt + F7**	**IB_RECORD**
Pause:	**Shift + Pause**	**IB_PAUSE**
Quit:	**Alt + Escape**	**IB_QUIT**
Play:	**Alt + F8**	**IB_PLAY**
Edit:	**Alt + F3**	**IB_FEDIT**

Recording Keystrokes

1. Press **Record** to enter Record mode.

   The status line will display **RECRD** and a number from **0**-**1500** indicating the number of new keystrokes that may be stored. A series of boxes displayed to the right represent the **Fn** keys. A solid box indicates that the **Fn** key in that position is currently storing recorded keystrokes.

2. Press the **Fn** key which will store the keystrokes. (On 101/102 keyboards you can also use **Shift** + **Fn**.)

   The status line will display **R****** **F*** where **R** indicates you are in Record mode, **** is the number of keystrokes that may be stored, and **F*** is the number of the **Fn** key pressed.

   *Note: If you press a pre-recorded **Fn** key, its contents will be replaced with the following keystrokes. You can also remove the contents of the **Fn** key before recording by pressing the **Delete** key.*

3. Enter the keystrokes to be recorded. You may pause recording at any time to allow keystrokes to be entered manually when played back by pressing **Pause**. To continue recording, press **Pause** again.

   *Note: You can cancel the newly recorded keystrokes by pressing the **Quit** key. This cancellation does not affect the previously recorded keystrokes.*

4. To finish and save the recording, press the **Record** key.

Playback Keystrokes

You can play back the contents of an **Fn** key as normal or one keystroke at a time. The following procedure describes normal play back. For one keystroke play back, select **Single Step Macros** in the **Notice Board Setup** dialog box.

1. Position the text cursor where the playback is to start.
2. Press the **Play** key to enter Play mode.

   The status line will display **PLAY** and a series of boxes representing the **Fn** keys. A solid box indicates that the **Fn** key in that position is currently storing recorded keystrokes.
3. Press the **Fn** key storing the recorded data to play back.

   Playback will begin immediately, as indicated by a **P** on the status line. All the recorded keystrokes will be played back automatically. When playback is completed the **P** will disappear.

   If the recorded keystrokes included **Pause**, then playback will halt at that point to allow you to enter keystrokes manually. Press **Play** to resume playback from where you stopped typing.

   If you want to cancel during the playback operation, press the **Quit** key.

Editing Macros

1. Press **Alt** + **F3**.
2. Press the **Fn** key containing the macro to be edited.

   The status line will display information about the **Fn** key macro as follows:

   Item **1**: Displays **EDIT** or **INSERT** depending on the current mode.

   Item **2**: Indicates the number of new keystrokes that may be stored.

   Item **3**: Displays the current **Fn** key number.

   Item **4**: Displays the cursor position within the macro (i.e. the number of keystrokes from the start of the macro).

   Item **5**: Displays the contents of the macro.

3. Use the **Left** or **Right** cursor keys to move the cursor one character position at a time through the macro, or the **Up** or **Down** cursor keys to move 20 character positions at a time.
4. If required, press the **Insert** key to toggle between Insert and Edit mode, as indicated in the status line.
5. Make the required changes to the macro.
6. To save the edit, press **Alt + F3**.
7. Press **Quit** to exit.

Error Codes

The following error codes may appear on the status line if an error occurs during recording or playback.

9001 *Exceeded the maximum number of allowed keystrokes.*

Remedy: Press the **Record** key to exit Record mode. To record a new keystroke sequence, either:

a) Press the **Record** key and the target **Fn** key that has erasable data, then enter the new data.

b) Press the **Record** key and the target **Fn** key that has erasable data, then press the **Delete** key to erase the recorded data for that key.

9003 *You pressed an invalid **Fn** key while performing the Record or Play function.*

Remedy: Press the **Reset** key.

9007 *You pressed an invalid sequence key (e.g. **Play**) while performing the Record function.*

Remedy: Press the **Reset** key.

9010 *While performing the Play function, you pressed an **Fn** key that does not have a keystroke assigned to it.*

Remedy: Press the **Reset** key.

9015 *In communication mode, you pressed either the **Quit** or **Pause** key.*

Remedy: Press the **Reset** key.

9019 *In Record or Play mode. While the Record/play pause indicator was displayed on the status line you pressed an invalid key (e.g.* ***Play*** *key in Record mode, or* ***Record*** *key in Play mode).*

Remedy: Press the **Reset** key.

Notice Board Facility

Introduction

The Notice Board is an area of the display in which copied data can be stored and manipulated.

When the Notice Board is enabled (see **Notice Board Setup** dialog box), pressing the **Zoom** key will toggle the display between full screen (i.e. the screen currently containing the cursor) and split screen (host screen and Notice Board) mode. The **Zoom Settings** options in the **Notice Board Setup** dialog box determine which screen is displayed above the other. When viewing the display, pointers at each end of the dividing line between the two screens indicate which is the host screen.

Key Functions

The keys used by default for Notice Board functions are shown below together with the equivalent virtual key names which can be used to assign the functions to any key on the keyboard.

	101/102 Key Keyboard	Virtual Key Names
NB Setup:	**Alt + F2**	**IB_NB_SETUP**
Zoom:	**Alt + Page Up**	**IB_NB_ZOOM**
Jump:	**Ctrl + Page Up**	**IB_NB_JUMP**
NB Copy:	**Ctrl + Shift + Page Up**	**IB_NB_COPY**
Copy:	**Shift + Page Down**	**IB_COPY**

Copying Screen Data To The Display

1. Position the text cursor at the start of the area to be copied.
2. Press the **Copy** key to start the Copy function. Note that the status line will display the key functions available.
3. Use the cursor keys to move the text cursor to the diagonally-opposite corner of the display area to be copied. The currently selected area will be highlighted in green. Note that you can toggle the position of the text cursor between the two diagonally-opposite corners of the selected area by pressing the **Return** key.

4. Press **F13** to copy the selected area. The copied area (i.e. the target) will be highlighted in red.
5. Use the cursor keys to move the red target area to the required position on the display. You can also use the **Jump** key to move the target area to the host screen or Notice Board.
6. Press **Enter** on the numeric keypad to save the copied area at the current position on the display.

Copying Screen Data To A Function Key

Note that the **Notice Board Setup** dialog box has several options which determine whether this facility is enabled and whether all screen data in the selected area is copied, or only data in user entry fields.

1. Position the text cursor at the start of the area to be copied.
2. Press the **Copy** key to start the Copy function. Note that the status line will display the key functions available.
3. Use the cursor keys to move the text cursor to the diagonally-opposite corner of the display area to be copied. The currently selected area will be highlighted in green. Note that you can toggle the position of the text cursor between the two diagonally-opposite corners of the selected area by pressing the **Return** key.
4. Press **F14** to copy the selected area.
5. Press the function key required to store the copied data.
6. Press **Enter** on the numeric keypad to store the copied data in the chosen function key.

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IBM 5250 Emulation

This chapter describes features of the IBM 5250 terminal emulation.

Introduction

The IBM 5250 emulator provides emulation of 5250 type alphanumeric terminals, both monochrome (green/white plus attributes) and colour. Colours may be modified using the **Attribute Settings** dialog box. This emulation can be used for connection to an IBM AS/400, System/36 or System/38. A typeahead capability is provided so that you can continue to enter data without waiting for a prompt from the host.

Session Configuration

WBT Mode

This section describes the basic procedure for creating a session configuration when the terminal is in WBT mode. The options available are described in detail in chapter 2.

1. Click the **Configure** tab in the **Terminal Connection Manager** then click the **Add** button to display the **New Connection** dialog box.
2. Select **Terminal Emulation Client** and click **OK**. The **Terminal Emulation Client Connection Wizard - Connection Information** dialog box will be displayed.
3. Enter a name which will identify this session configuration for future selection in the **Connection Name** box.
4. Select the **IBM 5250** terminal emulation in the **Emulation** list box.
5. Select the **IBM 5250 Model**. This is reported back to the host in response to a terminal identification request. (Note that not all features of the terminal model may be supported.) This also allows you to specify whether the display is treated

as monochrome (green for normal characters, white for intense attribute) or colour for attributes. The terminal models currently supported and their display characteristics are listed below.

Type	Display	Rows x Columns
5291_1	Monochrome	24 x 80
5292_2	Colour	24 x 80
5251_11	Monochrome	24 x 80
3179_2	Colour	24 x 80 (default)
3196_A1	Monochrome	24 x 80
3180_2	Monochrome	24 x 80 and 27 x 132
3477_FC	Colour	24 x 80 and 27 x 132
3477_FG	Monochrome	24 x 80 and 27 x 132
3486_BA	Monochrome	24 x 80
3487_HA	Monochrome	24 x 80
3487_HC	Colour	24 x 80
5555_B01	Monochrome	24 x 80
5555_C01	Colour	24 x 80

The printer models supported are listed below:

3812-1	Single byte printer
5553-B01	Double byte printer

If double byte character sets (e.g. Japanese) are supported and you wish to use them, then select either **5555_B01** (monochrome) or **5555_C01** (colour) for display, or **5553-B01** for printing.

6. Specify if you want the right or left **Control** keys to perform the same function as the keypad **Enter** or **Reset** keys, respectively.

7. Specify the **IBM5250 Monochrome** setting. Note that all IBM 5250 models support both monochrome and colour display. When monochrome is selected, characters will be displayed in green and intense fields will be displayed in white. When monochrome is not selected, the settings specified in the **Attributes** dialog box (described in the *Setup Menus* chapter) will be used for the display.

8. Click **Next** to display the **Host Information** dialog box.

   For a TCP/IP connection, click the **TCP/IP** button, enter the name or internet address of the host computer in the **Host Name** box, then click **Advanced** for additional Telnet options. Refer to the *TCP/IP Connection Settings* section in chapter 2 for details.

   For a modem connection, click the **Modem** button then click **Advanced** to display configuration options. Refer to the *Modem Connection Settings* section in chapter 2 for details.

   For a serial connection, click the **Serial** button, specify the communications port in the **Connect To** box, then click **Advanced** for additional serial options. Refer to the *Serial Connection Settings* section in chapter 2 for details.

Make the relevant selections then click **OK** to return to the **Host Information** dialog box, then click **Next**.

9. The following four dialog boxes provide further configuration options which are described in chapter 2. Click **Next** to advance through the dialog boxes.

   Automate Login Process
   Printer Port Settings
   GUI Overrides
   Aux Port Settings

10. When you have made your selections, click **Finish** to return to the **Terminal Connection Manager**.

11. In the **Terminal Connection Manager**, display the **Connections** list, select the session name you specified earlier in step 3, then click the **Connect** button.

Non-WBT Mode

This section describes the basic procedure for creating a session configuration when the terminal is not in WBT mode. The options available are described in detail in the *Setup Menus* chapter.

1. Display the **Settings** menu from the command bar and select **Emulation...** to display the **Emulation Settings** dialog box.

2. Set the **Alpha Emulation** option to **IBM5250** then click **OK**. The terminal will now be in Network Virtual Terminal mode.

3. Display the **Settings** menu and select **IBM 5250...** to display the **IBM 5250 Settings** dialog box.

4. Specify the **IBM 5250 Model**. This is reported back to the host in response to a terminal identification request. (Note that not all features of the terminal model may be supported.) This also allows you to specify whether the display is treated as monochrome (green for normal characters, white for intense attribute) or colour for attributes. The terminal models currently supported and their display characteristics are listed below.

Model	Display	Rows x Columns
5291_1	Monochrome	24 x 80
5292_2	Colour	24 x 80
5251_11	Monochrome	24 x 80
3179_2	Colour	24 x 80 (default)
3196_A1	Monochrome	24 x 80
3180_2	Monochrome	24 x 80 and 27 x 132
3477_FC	Colour	24 x 80 and 27 x 132
3477_FG	Monochrome	24 x 80 and 27 x 132
3486_BA	Monochrome	24 x 80
3487_HA	Monochrome	24 x 80

3487_HC	Colour	24 x 80
5555_B01	Monochrome	24 x 80
5555_C01	Colour	24 x 80

The printer models supported are listed below:

3812-1	Single byte printer
5553-B01	Double byte printer

If double byte character sets (e.g. Japanese) are supported and you wish to use them, then select either **5555_B01** (monochrome) or **5555_C01** (colour) for display, or **5553-B01** for printing.

5. Specify the **Monochrome** setting. Note that all IBM 5250 models support both monochrome and colour display. When monochrome is selected, characters will be displayed in green and intense fields will be displayed in white. When monochrome is not selected, the settings specified in the **Attributes** dialog box (described in the *Setup Menus* chapter) will be used for the display.

   Click **OK** to close the dialog box.

6. Select **Save Session** in the **File** menu.

7. Select **New Connection** in the **File** menu to display the **New Connection** dialog box.

8. Select the type of host connection required in the **Type** list box.

   For a TCP/IP connection, select **TCP/IP**, enter the name or internet address of the host computer in the **Connect To** box, then click **Configure** for additional Telnet options. Refer to the *TCP/IP Connection Settings* section in chapter 2 for details.

   For a modem connection, select **Modem**, specify the communications port in the **Connect To** box, then click **Configure** to display configuration options. Refer to the *Modem Connection Settings* section in chapter 2 for details.

   For a serial connection, select **Serial**, specify the communications port in the **Connect To** box, then click **Configure** for additional serial options. Refer to the *Serial Connection Settings* section in chapter 2 for details.

9. When you have specified the required settings in the **New Connection** dialog box, click the **Connect** button to make the connection.

10. If necessary, enter the appropriate information to establish an IBM host session in the Network Virtual Terminal mode screen.

11. When an IBM host session has been established, the screen will switch out of Network Virtual Terminal mode and display the IBM 5250 emulation screen.

    Note: You will be returned to the Network Virtual Terminal screen when the connection to the IBM host has been closed.

Network Virtual Terminal Mode

Network Virtual Terminal (NVT) mode allows the operator to communicate with a network gateway (in ASCII) for routing, logon etc, before the full IBM terminal emulation protocol is established. NVT mode is indicated by the absence of the ▮ symbol in the status line along the bottom of the window. NVT mode displays an unformatted screen for data entry, allowing basic keyboard functionality as a simple ASCII terminal. In addition to data keys, other recognized keys are:

Clear	clears the screen
Enter	sends a CR to the host
Newline	sends a CR to the host
Backspace	sends a BS to the host
Tab	sends an HT to the host

Once the appropriate details have been entered to establish an IBM host session (which may be automatic), the screen is cleared and switched into full IBM 5250 terminal emulation mode, as indicated by the ▮ symbol in the status line.

The Status Line

The last line in the window is used to display status information in the form of symbols and alphanumeric characters. A coloured line separates status information from the rest of the display. Information is displayed in any of six regions within the status line as listed below.

Region	Symbol	Colour	Column	Meaning
1	**T**	Blue	1	Telnet session running
2	▮	Blue	18	On line (IBM 5250 mode)
3	**M**	Blue	28	Message waiting
4	**^**	Blue	48	Insert mode on
5	**✖**	Red	57	Input inhibited
6	**rr/cc** or **rr/ccc**	White	75-80	Row/column cursor position

The meaning of the symbols is as follows:

T Indicates that a Telnet session is running.

▮ Indicates that the current screen is an IBM 5250 screen. This screen will be displayed when you have initiated a Telnet session with the host.

M Indicates that the system has one or more messages waiting for you.

^ Indicates that the keyboard is in Insert mode. Already existing characters to the right of the cursor will move to make room for new characters that are entered.

Insert mode can be disabled by pressing the **Insert** key again, pressing the **Reset** key, or by performing any action that sends data to the host, such as pressing the **Enter**, **Clear**, or **PF** keys.

- Indicates when input from the keyboard or mouse will not be accepted by the host. When this is because an error has occured, as shown in the error line, pressing the **Reset** key will remove the error. Alternatively, more information can be obtained by pressing the **Help** key. The only other keys available are **Attn**, **SysReq** and **Print**. Note that the emulation includes typeahead capability so that in most cases you can continue to enter data without waiting for the Do Not Enter message to clear as the data will be stored until the host is ready.

Keyboard Mapping

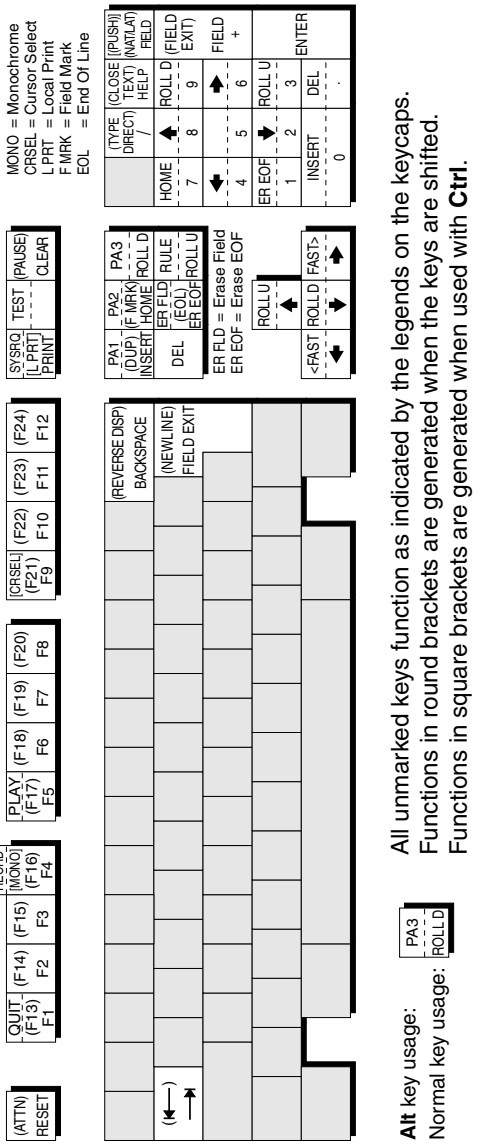
The following illustration shows where IBM 5250 keyboard functions are mapped to keys on the 101/102 key Enhanced AT keyboard layout. Special key functions that are provided on the IBM 5250 keyboard can be mapped to any key on your keyboard by using the AS virtual key names listed in the **Define Keyboard Macros** dialog box.

Word Processing Mode

The following keyboard functions are available when the IBM 5250 emulation is in Word Processing mode:

Symbols Command	**Alt + A**
Begin Bold	**Alt + B**
Centre Text	**Alt + C**
Next Text Column	**Alt + D**
Half-Index Down	**Alt + H**
End Attribute	**Alt + J**
Find Stop Code	**Alt + N**
Start New Page	**Alt + P**
Required Page End	**Alt + R**
Insert Stop Code	**Alt + S**
Begin Underline	**Alt + U**
Word Underline	**Alt + W**
Half-Index Up	**Alt + Y**
Beginning of Line	**Alt + Cursor Left**
End of Line	**Alt + Cursor Right**
Top of Page	**Alt + Cursor Up**
End of Page	**Alt + Cursor Down**
Insert Carrier Return	**Alt + Field Exit**
Required Space	**Alt + Space**
Required Tab	**Alt + Tab**

Enhanced AT Keyboard Layout



All unmarked keys function as indicated by the legends on the keycaps.
Functions in round brackets are generated when the keys are shifted.
Functions in square brackets are generated when used with **Ctrl**.

Text Display Options

Display Right-to-Left

The contents of the screen can be displayed in reverse, i.e. as a right-to-left mirror image, by pressing the keys **Shift + Backspace**. This is a toggle function, so pressing the keys again will revert to normal left-to-right display. An arrow will be displayed on the status line to indicate normal (right arrow) or mirror (left arrow) display.

Typing Direction

The direction in which characters are displayed on the screen when typed can be toggled between normal left-to-right and right-to-left by pressing the keys **Shift + /** on the keypad. The characters **=>** or **<=** will be displayed on the status line to indicate the current typing direction.

Selecting the **Symbol Swap** option in the **IBM 5250 Settings** dialog box will cause symbols such as round or angle brackets to be displayed the correct way round when typing right-to-left.

Close Key

If text has been typed using both typing direction modes in the same line or field, you can force the right-hand text to join the left-hand text by pressing the keys **Shift + *** on the keypad.

Push Mode

Push mode allows you to edit text whose direction is opposite the screen orientation. In this mode the cursor orientation is reversed and a Push segment is created. Push mode is toggled on/off by pressing the keys **Ctrl + Shift + -** (keypad minus).

Push mode has two secondary modes, Boundary mode and Edit mode.

Boundary mode is activated when Push mode is entered. The cursor will remain at its current position while you type additional characters, and text will be pushed in the opposite direction of the screen orientation.

Edit mode is activated when the cursor is moved from its Boundary position into the Push segment area. In this mode, text can be edited within the Push segment while typing in the field's natural direction.

Bilingual Keyboard Support

When a code page that supports a bilingual keyboard is selected, you can toggle between the National and Latin character set by pressing the keys **Shift + -** on the

keypad. The character **N** or **L** will be displayed on the status line to indicate which character set is currently active.

Selecting the **Numeral Swap** option in the **IBM 5250 Settings** dialog box will cause all numbers to be displayed using the National character set when in Latin character set mode.

Alternate Code Page

If a language supports two code pages (e.g. Hebrew New Code and Hebrew Old Code), you can switch between the two by pressing the keys **Ctrl + Shift + Alt + -** on the numeric keypad. This function can be assigned to a different key or key combination by using the **AS_ALTCP** virtual key name.

Record & Playback Keystrokes Facility

The record/playback keystrokes facility enables you to eliminate repetitive operations by using the **Fn** keys to store, retrieve and display data. The **Fn** keys can store a total of 1500 keystrokes. A sequence of recorded keystrokes may be interrupted so that keystrokes can be entered manually before continuing with the recording or playback. Note that local **Fn** key functions cannot be recorded.

The keys used to initiate recording and playback are shown below together with the equivalent virtual key names which can be used to assign the functions to any key on the keyboard:

	101/102 Key Keyboard	Virtual Key Names
Record:	**Alt + F4**	**AS_RECORD**
Pause:	**Shift + Pause**	**AS_PAUSE**
Quit:	**Alt + LControl** *(see note)*	**AS_QUIT**
Play:	**Alt + F5**	**AS_PLAY**

Note: ***Quit*** *is* ***Alt + Left Control*** *if* ***Left Control*** *is defined as the* ***Reset*** *key.*

Recording Keystrokes

1. Press **Record** to enter Record mode.

   The status line will display **RECRD** and a number from **0**-**1500** indicating the number of new keystrokes that may be stored. A series of boxes displayed to the right represent the **Fn** keys. A solid box indicates that the **Fn** key in that position is currently storing recorded keystrokes.

2. Press the **Fn** key which will store the keystrokes. (On 101/102 keyboards you can also use **Shift + Fn**.)

   The status line will display **R**** F*** where **R** indicates you are in Record mode, **** is the number of keystrokes that may be stored, and **F*** is the number of the **Fn** key pressed.

   *Note: If you press a pre-recorded **Fn** key, its contents will be replaced with the following keystrokes. You can also remove the contents of the **Fn** key before recording by pressing the **Delete** key.*

3. Enter the keystrokes to be recorded. You may pause recording at any time to allow keystrokes to be entered manually when played back by pressing **Pause**. Pause mode is indicated by **R**人^. To continue recording, press **Pause** again.

   *Note: You can cancel the newly recorded keystrokes by pressing the **Quit** key. This cancellation does not affect the previously recorded keystrokes.*

4. To finish and save the recording, press the **Record** key.

Playback Keystrokes

1. Position the text cursor where the playback is to start.

2. Press the **Play** key to enter Play mode.

   The status line will display **PLAY** and a series of boxes representing the **Fn** keys. A solid box indicates that the **Fn** key in that position is currently storing recorded keystrokes.

3. Press the **Fn** key storing the recorded data to play back.

   Playback will begin immediately, as indicated by a **P** on the status line. All the recorded keystrokes will be played back automatically. When playback is completed the **P** will disappear.

   If the recorded keystrokes included **Pause**, then playback will halt at that point to allow you to enter keystrokes manually. Press **Play** to resume playback from where you stopped typing.

   If you want to cancel during the playback operation, press the **Quit** key.

Error Codes

The following error codes may appear on the status line if an error occurs during recording or playback.

9001 *Exceeded the maximum number of allowed keystrokes.*

Remedy: Press the **Record** key to exit Record mode. To record a new keystroke sequence, either:

a) Press the **Record** key and the target **Fn** key that has erasable data, then enter the new data.

b) Press the **Record** key and the target **Fn** key that has erasable data, then press the **Delete** key to erase the recorded data for that key.

9003 *You pressed an invalid **Fn** key while performing the Record or Play function.*

Remedy: Press the **Reset** key.

9007 *You pressed an invalid sequence key (e.g. **Play**) while performing the Record function.*

Remedy: Press the **Reset** key.

9010 *While performing the Play function, you pressed an **Fn** key that does not have a keystroke assigned to it.*

Remedy: Press the **Reset** key.

9015 *In communication mode, you pressed either the **Quit** or **Pause** key.*

Remedy: Press the **Reset** key.

9019 *In Record or Play mode. While the Record/play pause indicator was displayed on the status line you pressed an invalid key (e.g. **Play** key in Record mode, or **Record** key in Play mode).*

Remedy: Press the **Reset** key.

Fax Image Support

Fax images in Tiff, PCX and G3 format are supported. The following display facilities are supported if the host provides them:

Scrollbars These are displayed if the image is larger than the screen area allocated to it.

EasyScroll IBM term for scrolling by dragging the image with the mouse.

Zoom Enables you to highlight an area of the image to magnify it so that it fills the allocated space (the aspect ratio is preserved).

Additional functions such as rotation and colouring are controlled by the host.

Notes

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IBM 3151 Emulation

This chapter describes features of the IBM 3151 terminal emulation.

Introduction

The IBM 3151 emulation is based on the native mode of the IBM 3151 Model 11 terminal. The emulation is configured using the **IBM 3151 Settings** dialog box which is described in the *Setup Menus* chapter. The display is set to 24 rows by 80 columns by default, but you can select one of four display formats from the **IBM 3151 Settings** dialog box:

24 rows x 80 columns
25 rows x 80 columns
24 rows x 132 columns
25 rows x 132 columns

Session Configuration

WBT Mode

This section describes the basic procedure for creating a session configuration when the terminal is in WBT mode. The options available are described in detail in chapter 2.

1. Click the **Configure** tab in the **Terminal Connection Manager** then click the **Add** button to display the **New Connection** dialog box.
2. Select **Terminal Emulation Client** and click **OK**. The **Terminal Emulation Client Connection Wizard - Connection Information** dialog box will be displayed.
3. Enter a name which will identify this session configuration for future selection in the **Connection Name** box.

4. Select the **IBM 3151** terminal emulation in the **Emulation** list box.
5. Click **Next** to display the **Host Information** dialog box.

   For a TCP/IP connection, click the **TCP/IP** button, enter the name or internet address of the host computer in the **Host Name** box, then click **Advanced** for additional Telnet options. Refer to the *TCP/IP Connection Settings* section in chapter 2 for details.

   For a modem connection, click the **Modem** button then click **Advanced** to display configuration options. Refer to the *Modem Connection Settings* section in chapter 2 for details.

   For a serial connection, click the **Serial** button, specify the communications port in the **Connect To** box, then click **Advanced** for additional serial options. Refer to the *Serial Connection Settings* section in chapter 2 for details.

   Make the relevant selections then click **OK** to return to the **Host Information** dialog box, then click **Next** to display the **Advanced Options** dialog box.
6. Click **Finish** to return to the **Terminal Connection Manager**.
7. In the **Terminal Connection Manager**, display the **Connections** list, select the session name you specified earlier in step 3, then click the **Connect** button.

Non-WBT Mode

This section describes the basic procedure for creating a session configuration when the terminal is not in WBT mode. The options available are described in detail in the *Setup Menus* chapter.

1. Display the **Settings** menu from the command bar and select **Emulation...** to display the **Emulation Settings** dialog box.
2. Select the **IBM 3151** terminal emulation in the **Alpha Emulation** list box.
3. Display the **File** menu from the command bar and select **New Connection** to display the **New Connection** dialog box.
4. Select the type of host connection required in the **Type** list box.

   For a TCP/IP connection, select **TCP/IP**, enter the name or internet address of the host computer in the **Connect To** box, then click **Configure** for additional Telnet options. Refer to the *TCP/IP Connection Settings* section in chapter 2 for details.

   For a modem connection, select **Modem**, specify the communications port in the **Connect To** box, then click **Configure** to display configuration options. Refer to the *Modem Connection Settings* section in chapter 2 for details.

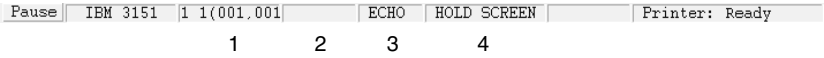
   For a serial connection, select **Serial**, specify the communications port in the **Connect To** box, then click **Configure** for additional serial options. Refer to the *Serial Connection Settings* section in chapter 2 for details.

5. When you have specified the required settings in the **New Connection** dialog box, click the **Connect** button to make the connection.

   *Note: You can save these settings as a connection template using the **Save Session As** dialog box. Refer to the Setup Menus chapter for details.*

The Status Bar

The status bar along the bottom of the display shows the status of various operations.



Field **1**: **(rrr,ccc)** indicates the current row and column position of the cursor.

Field **2**: **INSERT** indicates that Insert mode is active when the **Insert** key is pressed or when the Insert Character command is received. Note that the message will not be displayed if the **Insert Character** option is not set to **Mode**. Insert mode is exited by pressing the **Insert** or **Reset** key.

Field **3**: Indicates the current operating mode.

In **BLOCK** mode, keyboard entered data is displayed and processed locally, allowing you to edit it before a block of data is sent to the host.

In **CHAR** mode, keyboard entered data is sent simultaneously to the host and the display.

In **ECHO** mode, keyboard entered data is sent only to the host. The host is then responsible for returning the data to the display.

Field **4**: **HOLD SCREEN** indicates that the **Hold Screen** key has been pressed to suspend screen update. Press **Hold Screen** again to enable screen update.

INVALID KEY appears when you press an invalid key.

KEYS LOCKED appears when the keyboard is locked. The keys will be unlocked when the Keyboard Unlock command is received or when the **Cancel** key is pressed.

NUMERIC indicates the cursor is located in an unprotected numeric field.

PRINTING indicates that data is being sent to the printer.

SENDING indicates that data is being sent to the host.

WRONG PLACE appears when you press an invalid key in a protected field or field attribute character position. It is also displayed when you

try to insert a character or line in a screen already full when the **Forcing Insert** option is set to **Off**.

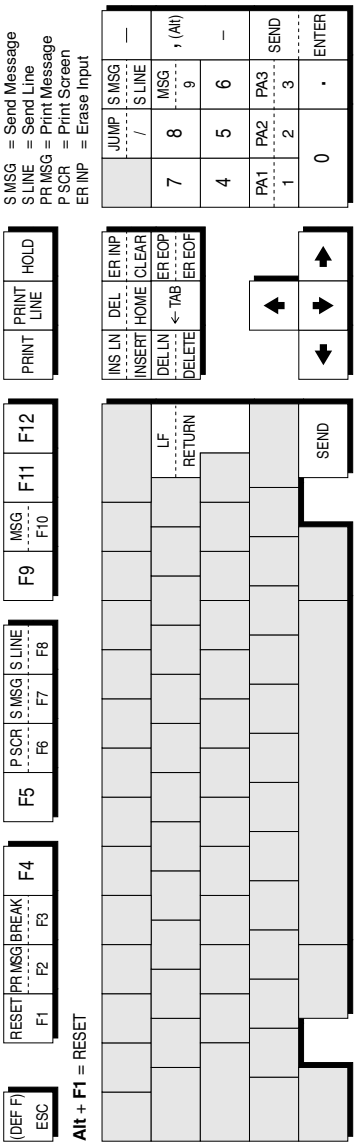
If two or more messages are sent to a particular field, then the message with the highest priority will be displayed. Messages in field **4** are displayed in the following order:

HOLD SCREEN
SENDING
PRINTING
KEYS LOCKED
INVALID KEY
WRONG PLACE
NUMERIC

Keyboard Mapping

The following illustration shows where IBM 3151 keyboard functions are mapped to keys on the 101/102 key Enhanced AT keyboard layout. Special key functions can be mapped to any key on your keyboard by using the virtual key names listed in the **Define Keyboard Macros** dialog box.

Enhanced AT Keyboard Layout



Control key usage: S MSG / S LINE

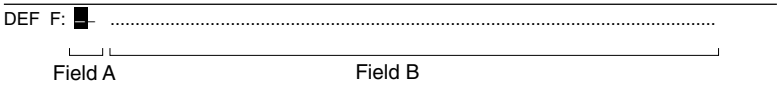
Normal key usage:

All unmarked keys function as indicated by the legends on the keycaps.
Functions in brackets are generated when the keys are shifted.

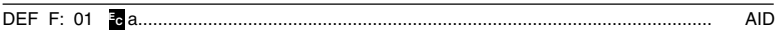
Defining Function Keys

The keys mapped as **F1** through **F12** can be redefined from the keyboard or by the host. The function keys can store up to 128 characters between them and can include escape sequences and ASCII control characters in addition to character strings. Here we describe how to define a function key from the keyboard.

1. Display the function key menu by pressing the keys **Shift** + **Esc**.



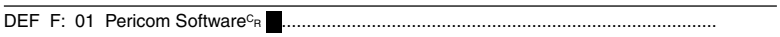
2. Specify the function key to be defined by entering a two-digit number in field **A**, for example, **01** for **F1**, **12** for **F12**, then press **Enter**. Field **B** will display the current definition of the function key.



3. In field **B**, enter the new definition for the function key. This can include a character string, escape sequence or control characters.

   A control character is entered by typing the keyboard equivalent. For example, the **CR** (carriage return) character is entered by pressing **Ctrl** + **M**. Refer to the *Character Sets* appendix to find the keyboard equivalents of other control characters.

   The following example shows the definition entry for the **F1** key so that it displays **New definition** then performs a carriage return when pressed:



   You can erase the character at the current cursor position by pressing the keys **Ctrl** + **2**. If you want to restore the default definition, press the **Clear** key while the cursor is in field **B**.

4. Press the **Send** key to store the key definition. The function key menu will be cleared to allow you to enter the next key definition. If you do not wish to save the definition, press **Ctrl** + **Shift** + **Esc** instead of **Enter**.

   Note that the function keys can store a maximum of 128 characters between them. When this number is reached or exceeded, field **A** will start blinking and any characters following the 128th character will be discarded.

5. Repeat steps **2** to **4** until you have finished defining function keys.

6. To exit from the function key menu, press **Ctrl** + **Shift** + **Esc**.

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MDIS Prism Emulations

This chapter describes the MDIS Prism terminal emulations.

Session Configuration

WBT Mode

This section describes the basic procedure for creating a session configuration when the terminal is in WBT mode. The options available are described in detail in chapter 2.

1. Click the **Configure** tab in the **Terminal Connection Manager** then click the **Add** button to display the **New Connection** dialog box.
2. Select **Terminal Emulation Client** and click **OK**. The **Terminal Emulation Client Connection Wizard - Connection Information** dialog box will be displayed.
3. Enter a name which will identify this session configuration for future selection in the **Connection Name** box.
4. Select the **MDI P12\P8** or **MDI Prism-9** terminal emulation in the **Emulation** list box.
5. Click **Next** to display the **Host Information** dialog box.

   For a TCP/IP connection, click the **TCP/IP** button, enter the name or internet address of the host computer in the **Host Name** box, then click **Advanced** for additional Telnet options. Refer to the *TCP/IP Connection Settings* section in chapter 2 for details.

   For a modem connection, click the **Modem** button then click **Advanced** to display configuration options. Refer to the *Modem Connection Settings* section in chapter 2 for details.

For a serial connection, click the **Serial** button, specify the communications port in the **Connect To** box, then click **Advanced** for additional serial options. Refer to the *Serial Connection Settings* section in chapter 2 for details.

Make the relevant selections then click **OK** to return to the **Host Information** dialog box, then click **Next** to display the **Advanced Options** dialog box.

6. Click **Finish** to return to the **Terminal Connection Manager**.
7. In the **Terminal Connection Manager**, display the **Connections** list, select the session name you specified earlier in step 3, then click the **Connect** button.

Non-WBT Mode

This section describes the basic procedure for creating a session configuration when the terminal is not in WBT mode. The options available are described in detail in the *Setup Menus* chapter.

1. Display the **Settings** menu from the command bar and select **Emulation...** to display the **Emulation Settings** dialog box.
2. Select the **MDI P12\P8** or **MDI Prism-9** terminal emulation in the **Alpha Emulation** list box.
3. Display the **File** menu from the command bar and select **New Connection** to display the **New Connection** dialog box.
4. Select the type of host connection required in the **Type** list box.

   For a TCP/IP connection, select **TCP/IP**, enter the name or internet address of the host computer in the **Connect To** box, then click **Configure** for additional Telnet options. Refer to the *TCP/IP Connection Settings* section in chapter 2 for details.

   For a modem connection, select **Modem**, specify the communications port in the **Connect To** box, then click **Configure** to display configuration options. Refer to the *Modem Connection Settings* section in chapter 2 for details.

   For a serial connection, select **Serial**, specify the communications port in the **Connect To** box, then click **Configure** for additional serial options. Refer to the *Serial Connection Settings* section in chapter 2 for details.

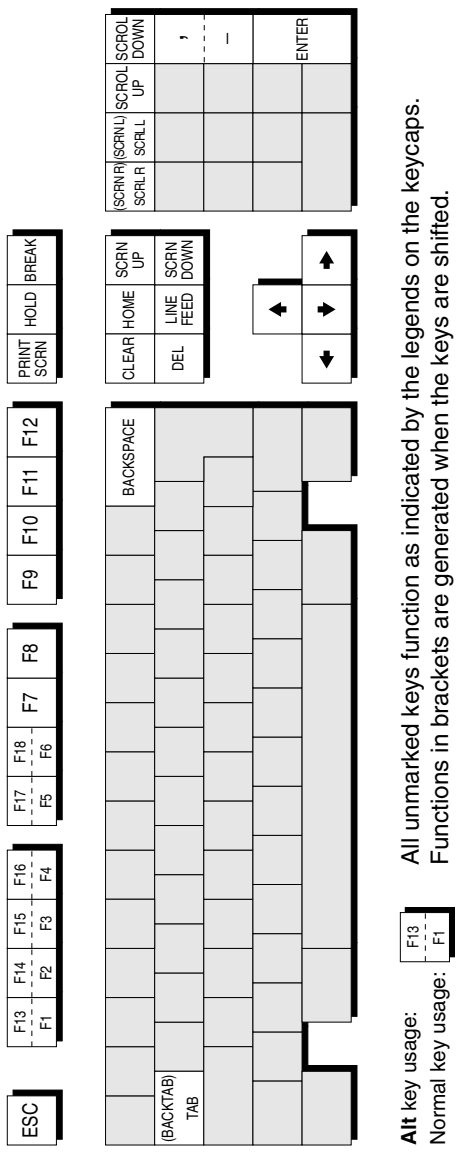
5. When you have specified the required settings in the **New Connection** dialog box, click the **Connect** button to make the connection.

   *Note: You can save these settings as a connection template using the **Save Session As** dialog box. Refer to the Setup Menus chapter for details.*

Keyboard Mapping

The following illustration shows where MDIS Prism keyboard functions are mapped to keys on the 101/102 key Enhanced AT keyboard layout. Special key functions that are provided on the MDIS Prism keyboard can be mapped to any key on your keyboard by using the MD virtual key names listed in the **Define Keyboard Macros** dialog box.

Enhanced AT Keyboard Layout



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PT250 Emulation

This chapter describes the Prime PT250 terminal emulation.

Session Configuration

WBT Mode

This section describes the basic procedure for creating a session configuration when the terminal is in WBT mode. The options available are described in detail in chapter 2.

1. Click the **Configure** tab in the **Terminal Connection Manager** then click the **Add** button to display the **New Connection** dialog box.
2. Select **Terminal Emulation Client** and click **OK**. The **Terminal Emulation Client Connection Wizard - Connection Information** dialog box will be displayed.
3. Enter a name which will identify this session configuration for future selection in the **Connection Name** box.
4. Select the **PT250** terminal emulation in the **Emulation** list box.
5. Click **Next** to display the **Host Information** dialog box.

   For a TCP/IP connection, click the **TCP/IP** button, enter the name or internet address of the host computer in the **Host Name** box, then click **Advanced** for additional Telnet options. Refer to the *TCP/IP Connection Settings* section in chapter 2 for details.

   For a modem connection, click the **Modem** button then click **Advanced** to display configuration options. Refer to the *Modem Connection Settings* section in chapter 2 for details.

   For a serial connection, click the **Serial** button, specify the communications port in the **Connect To** box, then click **Advanced** for additional serial options. Refer to the *Serial Connection Settings* section in chapter 2 for details.

Make the relevant selections then click **OK** to return to the **Host Information** dialog box, then click **Next** to display the **Advanced Options** dialog box.

6. Click **Finish** to return to the **Terminal Connection Manager**.
7. In the **Terminal Connection Manager**, display the **Connections** list, select the session name you specified earlier in step 3, then click the **Connect** button.

The PT250 emulation is configured using the **PT250 Settings** dialog box which is described in the *Setup Menus* chapter.

Non-WBT Mode

This section describes the basic procedure for creating a session configuration when the terminal is not in WBT mode. The options available are described in detail in the *Setup Menus* chapter.

1. Display the **Settings** menu from the command bar and select **Emulation...** to display the **Emulation Settings** dialog box.
2. Select the **PT250** terminal emulation in the **Alpha Emulation** list box.
3. Display the **File** menu from the command bar and select **New Connection** to display the **New Connection** dialog box.
4. Select the type of host connection required in the **Type** list box.

   For a TCP/IP connection, select **TCP/IP**, enter the name or internet address of the host computer in the **Connect To** box, then click **Configure** for additional Telnet options. Refer to the *TCP/IP Connection Settings* section in chapter 2 for details.

   For a modem connection, select **Modem**, specify the communications port in the **Connect To** box, then click **Configure** to display configuration options. Refer to the *Modem Connection Settings* section in chapter 2 for details.

   For a serial connection, select **Serial**, specify the communications port in the **Connect To** box, then click **Configure** for additional serial options. Refer to the *Serial Connection Settings* section in chapter 2 for details.

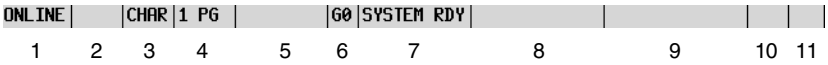
5. When you have specified the required settings in the **New Connection** dialog box, click the **Connect** button to make the connection.

   *Note: You can save these settings as a connection template using the **Save Session As** dialog box. Refer to the Setup Menus chapter for details.*

The PT250 emulation is configured using the **PT250 Settings** dialog box which is described in the *Setup Menus* chapter.

The Status Line

The last line in the window is used to display a status line consisting of eleven fields which show the status of various operations. The following illustration shows the information that is displayed by default.



Field **1**: Will display either **ONLINE** or **LOCAL**, depending on whether the emulation is online to the host or in local mode.

Field **2**: Indicates whether the input line from the main port is connected.

DSR will be displayed when the Data Set Ready (DSR) connection is active.

Pressing the **Stop** key to stop the host from transmitting data will cause this field to display **XOFF**.

When this field is blank, the connection is inactive.

Field **3**: Indicates the mode of data transmission as follows:

CHAR indicates that the emulation is in Character mode in which each character is sent to the host when it is typed at the keyboard.

CNTRL indicates that the emulation is in Control Representation mode in which all received data and commands from the host or keyboard are displayed but not acted upon.

LINE or **PAGE** indicates that the emulation transmits data a line or a page at a time when the **Enter** key is pressed in Block mode.

Field **4**: Indicates how many pages are in the display memory, 1 or 2.

Field **5**: Indicates when in Block mode the type of data that is to be transmitted, as determined by the application.

ALL indicates that all fields are transmitted to the host.

MODIFIED indicates that only fields that have changed are transmitted to the host.

SELECTED indicates that only fields specified by the program are transmitted to the host

UNPROTCT indicates that only unprotected fields are transmitted to the host.

Field **6**: Indicates the currently selected character set or graphics mode as follows:

8B indicates the 8-bit ASCII character set.

G0 indicates the 7-bit ASCII character set (default).

G1 indicates a second 7-bit ASCII character set.

GR indicates the Block Graphics character set.

LD indicates the Line Drawing character set.

Field **7**: Indicates the current transmission status as follows:

AUX SEND is displayed when data is being sent to an auxiliary device.

KEYBD LOCK is displayed when the keyboard is locked to prevent data entry, usually set by the application.

MAIN SEND is displayed when a block of data is sent to the host.

SOFT LOCK is displayed when errors are detected. Pressing the **Clear** key will correct this condition.

SYSTEM RDY is the default message that is displayed indicating that everything is functioning correctly and that no block of data is being sent to the host.

Field **8**: Displays terminal operation status messages. These are generally error messages which can be cleared by pressing the **Clear** key for each message displayed.

ALL GRAPHICS indicates that you have attempted to enter data in a field reserved for graphics characters when in Block mode.

ALPHA ONLY indicates that you have attempted to enter non-alphabetic data in a field reserved for alphabetic characters when in Block mode.

ALPHANUMERIC indicates that you have attempted to enter non-alphanumeric data in a field reserved for alphanumeric characters when in Block mode.

FILL WHOLE indicates that every position in the field must be filled with data before you can continue when in Block mode.

HOST RX OVFW indicates that at least one character of data has been lost during a transmission from the host. This occurs when the host sends data faster than the emulation can process it.

INVALID CMD indicates that an invalid control character or escape sequence was received, or an invalid key was pressed.

KYBD OVFW indicates that at least one character of data has been lost during a transmission from the keyboard to the host. This occurs when the keyboard sends data faster than the host can process it.

MUST ENTER indicates that you must enter data in a specific field before you can continue when in Block mode.

NUMERIC ONLY indicates that you have attempted to enter non-numeric data in a field reserved for numeric characters when in Block mode.

RX ERROR indicates that the emulation received incorrect data as a result of a parity or framing error.

SCREEN FULL indicates that the emulation cannot display any more characters that it may receive when in Block mode.

Field **9**: Displays messages defined by the program or user.

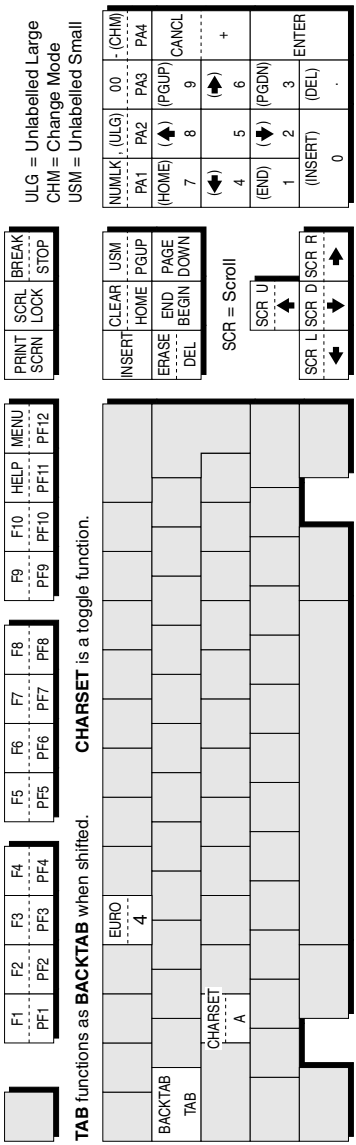
Field **10**: Displays **NUM** when Num Lock is activated, otherwise this field is blank.

Field **11**: Displays **INS** when Insert mode is activated. In Replace mode (default), this field is blank.

Keyboard Mapping

The following illustration shows where PT250 keyboard functions are mapped to keys on the 101/102 key Enhanced AT keyboard layout. Special key functions that are provided on the PT250 keyboard can be mapped to any key on your keyboard by using the PT virtual key names listed in the **Define Keyboard Macros** dialog box.

Enhanced AT Keyboard Layout



Displaying Alternate Characters

PT250 mode uses two character sets called **Standard** and **Alternate** to display characters. Both sets incorporate all the characters contained in the ASCII (7-bit or lower half) and PT250 Additional (8-bit or upper half) character set tables shown in the *Character Sets* appendix.

When the emulation is in 7-bit mode, only the lower half (i.e 7-bit part) of the Standard and Alternate character sets can be used, so the ASCII characters in the Alternate character set are replaced by the PT250 Additional characters, which are then treated as 7-bit characters.

You can toggle between Standard and Alternate character set mode by pressing the keys **Alt + A**. This emulates the function of the **Char Set** key found on the PT250 keyboard, enabling you to display characters from the Additional character set which are not available for the keyboard nationality you have selected in setup.

The following table lists the Standard ASCII characters in the left column with their equivalent Additional characters in the right column of each block. Press the key bearing the ASCII character to generate the Additional character when you are in Alternate character set mode.

Alternate Equivalents Of Standard Characters

SP	
!	¡
"	¶
#	£
$	¤
%	¥
&	¦
´	§
(	¨
)	©
*	ª
+	«
,	¬
-	–
.	®
/	—

0	°
1	±
2	²
3	³
4	´
5	µ
6	¢
7	·
8	¸
9	¹
:	º
;	»
<	Û
=	Ý
>	¾
?	¿

@	À
A	Á
B	Â
C	Ã
D	Ä
E	Å
F	Æ
G	Ç
H	È
I	É
J	Ê
K	Ë
L	Ì
M	Í
N	Î
O	Ï

P	Ð
Q	Ñ
R	Ò
S	Ó
T	Ô
U	Õ
V	Ö
W	×
X	Ø
Y	Ù
Z	Ú
[	¼
\	Ü
]	½
^	Þ
_	ß

`	à
a	á
b	â
c	ã
d	ä
e	å
f	æ
g	ç
h	è
i	é
j	ê
k	ë
l	ì
m	í
n	î
o	ï

p	ð
q	ñ
r	ò
s	ó
t	ô
u	õ
v	ö
w	÷
x	ø
y	ù
z	ú
{	û
|	ü
}	ý
~	þ
DEL	ÿ

Notes

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Siemens 97801 Emulation

This chapter describes the Siemens 97801 terminal emulation.

Session Configuration

WBT Mode

This section describes the basic procedure for creating a session configuration when the terminal is in WBT mode. The options available are described in detail in chapter 2.

1. Click the **Configure** tab in the **Terminal Connection Manager** then click the **Add** button to display the **New Connection** dialog box.
2. Select **Terminal Emulation Client** and click **OK**. The **Terminal Emulation Client Connection Wizard - Connection Information** dialog box will be displayed.
3. Enter a name which will identify this session configuration for future selection in the **Connection Name** box.
4. Select the **Siemens 97801** terminal emulation in the **Emulation** list box.
5. Click **Next** to display the **Host Information** dialog box.

   For a TCP/IP connection, click the **TCP/IP** button, enter the name or internet address of the host computer in the **Host Name** box, then click **Advanced** for additional Telnet options. Refer to the *TCP/IP Connection Settings* section in chapter 2 for details.

   For a modem connection, click the **Modem** button then click **Advanced** to display configuration options. Refer to the *Modem Connection Settings* section in chapter 2 for details.

   For a serial connection, click the **Serial** button, specify the communications port in the **Connect To** box, then click **Advanced** for additional serial options. Refer to the *Serial Connection Settings* section in chapter 2 for details.

Make the relevant selections then click **OK** to return to the **Host Information** dialog box, then click **Next** to display the **Advanced Options** dialog box.

6. Click **Finish** to return to the **Terminal Connection Manager**.
7. In the **Terminal Connection Manager**, display the **Connections** list, select the session name you specified earlier in step 3, then click the **Connect** button.

Non-WBT Mode

This section describes the basic procedure for creating a session configuration when the terminal is not in WBT mode. The options available are described in detail in the *Setup Menus* chapter.

1. Display the **Settings** menu from the command bar and select **Emulation...** to display the **Emulation Settings** dialog box.
2. Select the **Siemens 97801** terminal emulation in the **Alpha Emulation** list box.
3. Display the **File** menu from the command bar and select **New Connection** to display the **New Connection** dialog box.
4. Select the type of host connection required in the **Type** list box.

   For a TCP/IP connection, select **TCP/IP**, enter the name or internet address of the host computer in the **Connect To** box, then click **Configure** for additional Telnet options. Refer to the *TCP/IP Connection Settings* section in chapter 2 for details.

   For a modem connection, select **Modem**, specify the communications port in the **Connect To** box, then click **Configure** to display configuration options. Refer to the *Modem Connection Settings* section in chapter 2 for details.

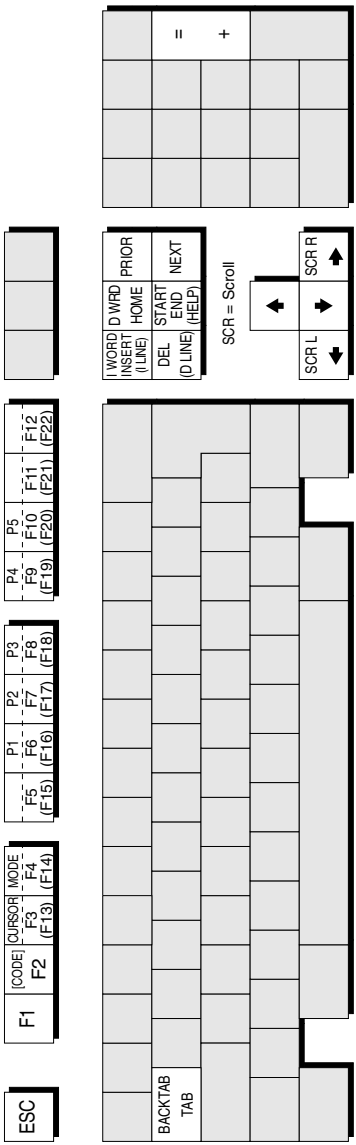
   For a serial connection, select **Serial**, specify the communications port in the **Connect To** box, then click **Configure** for additional serial options. Refer to the *Serial Connection Settings* section in chapter 2 for details.
5. When you have specified the required settings in the **New Connection** dialog box, click the **Connect** button to make the connection.

   *Note: You can save these settings as a connection template using the **Save Session As** dialog box. Refer to the Setup Menus chapter for details.*

Keyboard Mapping

The following illustration shows where Siemens 97801 keyboard functions are mapped to keys on the 101/102 key Enhanced AT keyboard layout. Special key functions that are provided on the Siemens 97801 keyboard can be mapped to any key on your keyboard by using the SI virtual key names listed in the **Define Keyboard Macros** dialog box.

Enhanced AT Keyboard Layout



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TA6530 Emulation

This chapter describes features of the Tandem 6530 terminal emulation.

Session Configuration

WBT Mode

This section describes the basic procedure for creating a session configuration when the terminal is in WBT mode. The options available are described in detail in chapter 2.

1. Click the **Configure** tab in the **Terminal Connection Manager** then click the **Add** button to display the **New Connection** dialog box.
2. Select **Terminal Emulation Client** and click **OK**. The **Terminal Emulation Client Connection Wizard - Connection Information** dialog box will be displayed.
3. Enter a name which will identify this session configuration for future selection in the **Connection Name** box.
4. Select the **TA6530** terminal emulation in the **Emulation** list box.
5. Click **Next** to display the **Host Information** dialog box.

   For a TCP/IP connection, click the **TCP/IP** button, enter the name or internet address of the host computer in the **Host Name** box, then click **Advanced** for additional Telnet options. Refer to the *TCP/IP Connection Settings* section in chapter 2 for details.

   For a modem connection, click the **Modem** button then click **Advanced** to display configuration options. Refer to the *Modem Connection Settings* section in chapter 2 for details.

   For a serial connection, click the **Serial** button, specify the communications port in the **Connect To** box, then click **Advanced** for additional serial options. Refer to the *Serial Connection Settings* section in chapter 2 for details.

Make the relevant selections then click **OK** to return to the **Host Information** dialog box, then click **Next** to display the **Advanced Options** dialog box.

6. Click **Finish** to return to the **Terminal Connection Manager**.
7. In the **Terminal Connection Manager**, display the **Connections** list, select the session name you specified earlier in step 3, then click the **Connect** button.

The Tandem 6530 emulation is configured using the **TA6530 Settings** dialog box which is described in the *Setup Menus* chapter.

Non-WBT Mode

This section describes the basic procedure for creating a session configuration when the terminal is not in WBT mode. The options available are described in detail in the *Setup Menus* chapter.

1. Display the **Settings** menu from the command bar and select **Emulation...** to display the **Emulation Settings** dialog box.
2. Select the **TA6530** terminal emulation in the **Alpha Emulation** list box.
3. Display the **File** menu from the command bar and select **New Connection** to display the **New Connection** dialog box.
4. Select the type of host connection required in the **Type** list box.

   For a TCP/IP connection, select **TCP/IP**, enter the name or internet address of the host computer in the **Connect To** box, then click **Configure** for additional Telnet options. Refer to the *TCP/IP Connection Settings* section in chapter 2 for details.

   For a modem connection, select **Modem**, specify the communications port in the **Connect To** box, then click **Configure** to display configuration options. Refer to the *Modem Connection Settings* section in chapter 2 for details.

   For a serial connection, select **Serial**, specify the communications port in the **Connect To** box, then click **Configure** for additional serial options. Refer to the *Serial Connection Settings* section in chapter 2 for details.

5. When you have specified the required settings in the **New Connection** dialog box, click the **Connect** button to make the connection.

   *Note: You can save these settings as a connection template using the **Save Session As** dialog box. Refer to the Setup Menus chapter for details.*

The Tandem 6530 emulation is configured using the **TA6530 Settings** dialog box which is described in the *Setup Menus* chapter.

The Status Line

The last (25th) line in the window is used to display messages and status information. You can enable or disable display of a border which separates this line from the rest of the lines above it by setting the **Status Border** option in the **TA6530 Settings** dialog box accordingly.

The status line is divided into two fields. The first and leftmost field is used to display messages of up to 64 characters in length. The second field displays the current operating status and will usually display at least one of the following status indicators:

ANSI The emulation is operating in ANSI mode.

BLOCK The emulation is operating in Block mode.

CNTRL Display controls mode activated. In this mode, received control codes will be displayed but not actioned.

CONV The emulation is operating in Conversational mode.

HOLD Hold screen is activated. The emulation stops processing incoming data when the **Ctrl + S** keys are pressed in ANSI mode. To release the hold state and continue normal processing, press **Ctrl + Q**.

INS Insert mode is activated. In Block mode, keyboard entered characters are inserted at the cursor position without overwriting already existing characters.

LOCKED The keyboard has been temporarily locked by the application.

NUM Num lock is activated. Num lock is toggled on and off by pressing the keys **Alt + Num Lock**.

PROT Block Protect mode enabled. Refer to the **Block Mode** section for details.

When the emulation detects an error, the status line will be temporarily replaced by an error line which will display one of the following messages:

INVALID LANGUAGE SET REQUESTED

You tried to use an invalid national character set.

INVALID DATA

You tried to enter an invalid character in the current field when in Block protect mode.

Operating Modes

The Tandem 6530 emulation operates in one of three main modes, Conversational, Block, or ANSI. Conversational and Block modes are normally used for applications running on a NonStop host system, and ANSI mode for applications running on the LXN host system.

Conversational Mode

In Conversational mode, characters are sent to the host as you type them. This is useful when applications need to interact with you on a character, word or line-by-line basis.

Display memory is treated as one long page consisting of 400 lines, of which 24 lines may be viewed at any one time. Lines above or below those currently displayed may be scrolled into view using cursor or display control keys. Once all the display memory has been used, new data will force all previous lines of data up one line so that the first line is erased, ensuring that the oldest data is erased first.

The status line will display **CONV** when you are in Conversational mode.

Block Mode

In Block mode, characters are stored in a communications buffer and are not transmitted to the host until the application requests them. The characters are then sent as a block. This enables you to enter a large amount of data and edit it locally before it is transmitted.

Block mode has two sub-modes: Block Nonprotect and Block Protect. In Block Nonprotect mode you can enter any type of character at any position on the screen (except on the 25th line). In Block Protect mode the application divides the screen into protected and nonprotected areas called fields. The cursor cannot be moved into protected fields, which may contain prompts or information or be empty. The cursor can only be moved into unprotected fields, which may also define the type of characters that can be entered.

In Block mode, display memory is divided into pages, the number of pages being determined by the application.

The status line will display **BLOCK** when you are in Block mode, and **PROT** when in Block Protect mode.

ANSI Mode

In ANSI mode, characters are sent to the host as you type them, and standard ANSI (American National Standard Institute) functions are executed. Applications that run on the LXN host system generally recognize and use these functions.

The status line will display **ANSI** when you are in ANSI mode.

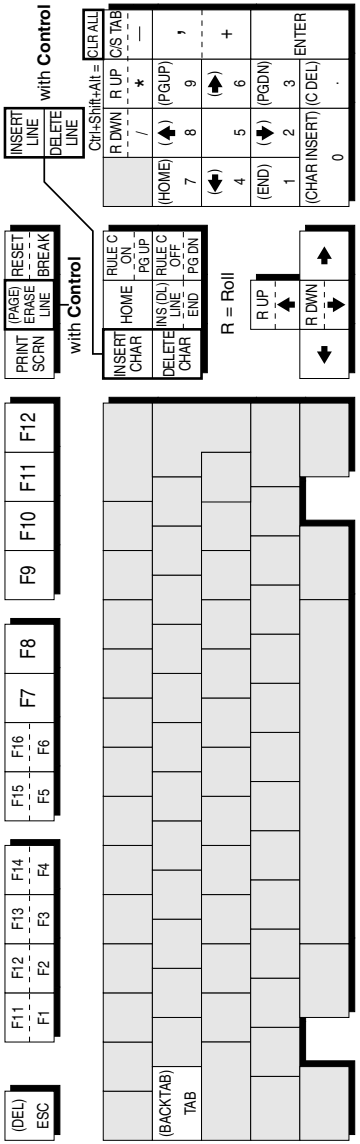
The Rule Cursor

A cross-hair rule cursor can be displayed by pressing the keys **Alt + Page Up**. To return to the normal cursor, press **Alt + Page Down**.

Keyboard Mapping

The following illustration shows where TA6530 keyboard functions are mapped to keys on the 101/102 key Enhanced AT keyboard layout. Special key functions that are provided on the TA6530 keyboard can be mapped to any key on your keyboard by using the TA virtual key names listed in the **Define Keyboard Macros** dialog box.

Enhanced AT Keyboard Layout



All unmarked keys function as indicated by the legends on the keycaps.
Numeric keypad bracketed functions are generated when Num Lock is OFF.
Bracketed functions not on the Numeric keypad are generated when shifted.

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Unisys T27 Emulation

This chapter describes features of the Unisys T27 terminal emulation.

Session Configuration

WBT Mode

This section describes the basic procedure for creating a session configuration when the terminal is in WBT mode. The options available are described in detail in chapter 2.

1. Click the **Configure** tab in the **Terminal Connection Manager** then click the **Add** button to display the **New Connection** dialog box.
2. Select **Terminal Emulation Client** and click **OK**. The **Terminal Emulation Client Connection Wizard - Connection Information** dialog box will be displayed.
3. Enter a name which will identify this session configuration for future selection in the **Connection Name** box.
4. Select the **Unisys T27** terminal emulation in the **Emulation** list box.
5. Click **Next** to display the **Host Information** dialog box.

   For a TCP/IP connection, click the **TCP/IP** button, enter the name or internet address of the host computer in the **Host Name** box, then click **Advanced** for additional Telnet options. Refer to the *TCP/IP Connection Settings* section in chapter 2 for details.

   For a modem connection, click the **Modem** button then click **Advanced** to display configuration options. Refer to the *Modem Connection Settings* section in chapter 2 for details.

   For a serial connection, click the **Serial** button, specify the communications port in the **Connect To** box, then click **Advanced** for additional serial options. Refer to the *Serial Connection Settings* section in chapter 2 for details.

Make the relevant selections then click **OK** to return to the **Host Information** dialog box, then click **Next** to display the **Advanced Options** dialog box.

6. Click **Finish** to return to the **Terminal Connection Manager**.
7. In the **Terminal Connection Manager**, display the **Connections** list, select the session name you specified earlier in step 3, then click the **Connect** button.

The Unisys T27 emulation is configured using the **Unisys T27 Settings** dialog box which is described in the *Setup Menus* chapter.

Non-WBT Mode

This section describes the basic procedure for creating a session configuration when the terminal is not in WBT mode. The options available are described in detail in the *Setup Menus* chapter.

1. Display the **Settings** menu from the command bar and select **Emulation...** to display the **Emulation Settings** dialog box.
2. Select the **Unisys T27** terminal emulation in the **Alpha Emulation** list box.
3. Display the **File** menu from the command bar and select **New Connection** to display the **New Connection** dialog box.
4. Select the type of host connection required in the **Type** list box.

   For a TCP/IP connection, select **TCP/IP**, enter the name or internet address of the host computer in the **Connect To** box, then click **Configure** for additional Telnet options. Refer to the *TCP/IP Connection Settings* section in chapter 2 for details.

   For a modem connection, select **Modem**, specify the communications port in the **Connect To** box, then click **Configure** to display configuration options. Refer to the *Modem Connection Settings* section in chapter 2 for details.

   For a serial connection, select **Serial**, specify the communications port in the **Connect To** box, then click **Configure** for additional serial options. Refer to the *Serial Connection Settings* section in chapter 2 for details.
5. When you have specified the required settings in the **New Connection** dialog box, click the **Connect** button to make the connection.

   *Note: You can save these settings as a connection template using the **Save Session As** dialog box. Refer to the Setup Menus chapter for details.*

The Unisys T27 emulation is configured using the **Unisys T27 Settings** dialog box which is described in the *Setup Menus* chapter.

The Status Bar

LTIA

On: The host connection is active, but the Unisys T27 emulation does not have an active address.

Off: No line activity; *or* the Unisys T27 emulation transmitted a character to the host, *or* the user pressed **LOCAL**.

Blink: The host connection is active and the Unisys T27 emulation has an active address.

ENQUIRY

On: The host is unable to send a message to the keyboard environment, press **RCV** to enable the keyboard environment to receive data.

Off: The DCP (data comm pointer) page went into receive mode; *or* the user pressed **LOCAL**.

LOCAL

On: The user pressed **LOCAL**; *or* the user pressed a key when the cursor and the DCP (data comm pointer) were in the same page.

Off: The Unisys T27 emulation is switched to transmit or receive mode.

RCV

On: The keyboard environment is in receive mode (ready to receive data) or is receiving data from the host; *or* FSL, GSL, BSL was received while the T27 was in transmit or local mode and the **Fast Select enabled** option is selected in the **Unisys T27 Settings** dialog box.

Off: Data has been received successfully; *or* the T27 went into transmit mode by use of **XMIT** or **SPCFY**; *or* the cursor and DCP are in the same page upon data entry.

XMIT

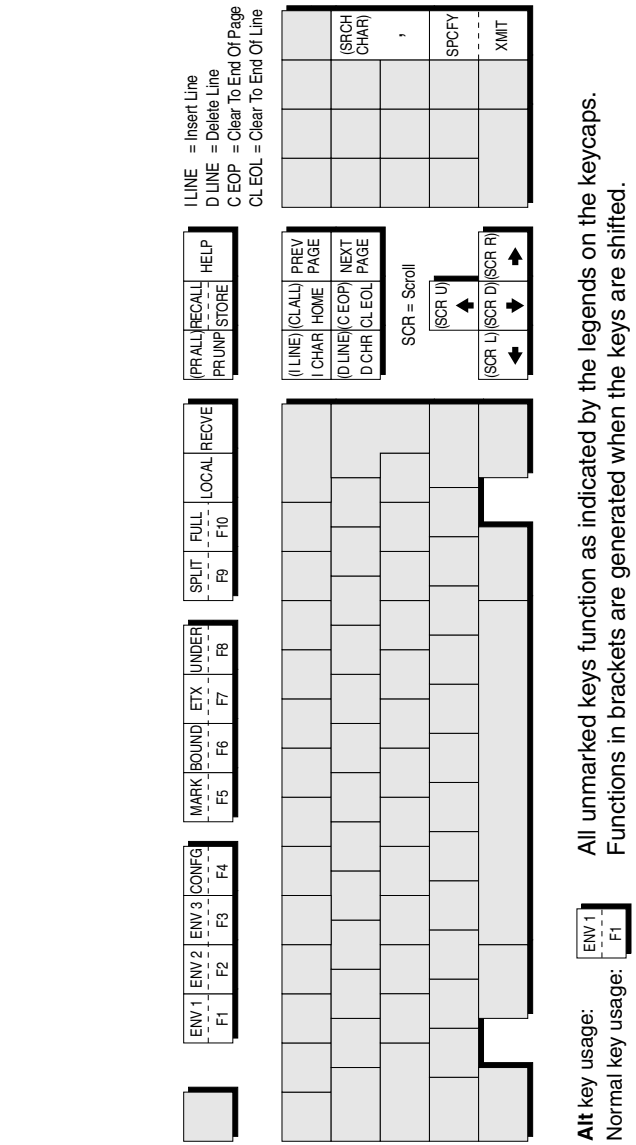
On: The keyboard environment is transmitting data to the host or is ready to transmit data.

Off: Transmission has been successfully completed or the T27 is switched to local mode.

Keyboard Mapping

The following illustration shows where Unisys T27 keyboard functions are mapped to keys on the 101/102 key Enhanced AT keyboard layout. Special key functions that are provided on the Unisys T27 keyboard can be mapped to any key on your keyboard by using the UT virtual key names listed in the **Define Keyboard Macros** dialog box.

Enhanced AT Keyboard Layout



Notes

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Wyse Emulations

This chapter describes features of the Wyse WY-50, WY-50+ and WY-60 terminal emulations.

Session Configuration

WBT Mode

This section describes the basic procedure for creating a session configuration when the terminal is in WBT mode. The options available are described in detail in chapter 2.

1. Click the **Configure** tab in the **Terminal Connection Manager** then click the **Add** button to display the **New Connection** dialog box.
2. Select **Terminal Emulation Client** and click **OK**. The **Terminal Emulation Client Connection Wizard - Connection Information** dialog box will be displayed.
3. Enter a name which will identify this session configuration for future selection in the **Connection Name** box.
4. Select the Wyse terminal emulation required in the **Emulation** list box.

   The **WY50**, **WY50+** and **WY60** emulations provide compatibility with software designed to drive the Wyse WY-50, WY-50+ and WY-60 terminals, respectively.

   The **ADDS A2** emulation provides compatibility with software designed to drive the ADDS Viewpoint A2 terminal, as emulated by the Wyse WY-50/50+/60 terminals.

   The **HZ 1500** emulation provides compatibility with software designed to drive the Hazeltine 1500 terminal, as emulated by the Wyse WY-50/50+/60 terminals.

   The **TVI 910+**, **TVI 920** and **TVI 925** emulations provide compatibility with software designed to drive the TeleVideo 910+, 920 and 925 terminals, respectively, as emulated by the Wyse WY-50/50+/60 terminals.

5. Click **Next** to display the **Host Information** dialog box.

   For a TCP/IP connection, click the **TCP/IP** button, enter the name or internet address of the host computer in the **Host Name** box, then click **Advanced** for additional Telnet options. Refer to the *TCP/IP Connection Settings* section in chapter 2 for details.

   For a modem connection, click the **Modem** button then click **Advanced** to display configuration options. Refer to the *Modem Connection Settings* section in chapter 2 for details.

   For a serial connection, click the **Serial** button, specify the communications port in the **Connect To** box, then click **Advanced** for additional serial options. Refer to the *Serial Connection Settings* section in chapter 2 for details.

   Make the relevant selections then click **OK** to return to the **Host Information** dialog box, then click **Next** to display the **Advanced Options** dialog box.

6. Click **Finish** to return to the **Terminal Connection Manager**.

7. In the **Terminal Connection Manager**, display the **Connections** list, select the session name you specified earlier in step 3, then click the **Connect** button.

All the Wyse associated emulations are configured via the **Wyse Settings** dialog box which is described in the *Setup Menus* chapter. Note that some settings may not apply to the particular emulation currently running. Selecting a setting that is not applicable to the current emulation will cause the emulator to use the default setting for that emulation when the dialog box is exited.

Non-WBT Mode

This section describes the basic procedure for creating a session configuration when the terminal is not in WBT mode. The options available are described in detail in the *Setup Menus* chapter.

1. Display the **Settings** menu from the command bar and select **Emulation...** to display the **Emulation Settings** dialog box.

2. Select the Wyse terminal emulation required in the **Alpha Emulation** list box.

   The **WY50**, **WY50+** and **WY60** emulations provide compatibility with software designed to drive the Wyse WY-50, WY-50+ and WY-60 terminals, respectively.

   The **ADDS A2** emulation provides compatibility with software designed to drive the ADDS Viewpoint A2 terminal, as emulated by the Wyse WY-50/50+/60 terminals.

   The **HZ 1500** emulation provides compatibility with software designed to drive the Hazeltine 1500 terminal, as emulated by the Wyse WY-50/50+/60 terminals.

The **TVI 910+**, **TVI 920** and **TVI 925** emulations provide compatibility with software designed to drive the TeleVideo 910+, 920 and 925 terminals, respectively, as emulated by the Wyse WY-50/50+/60 terminals.

3. Display the **File** menu from the command bar and select **New Connection** to display the **New Connection** dialog box.
4. Select the type of host connection required in the **Type** list box.

   For a TCP/IP connection, select **TCP/IP**, enter the name or internet address of the host computer in the **Connect To** box, then click **Configure** for additional Telnet options. Refer to the *TCP/IP Connection Settings* section in chapter 2 for details.

   For a modem connection, select **Modem**, specify the communications port in the **Connect To** box, then click **Configure** to display configuration options. Refer to the *Modem Connection Settings* section in chapter 2 for details.

   For a serial connection, select **Serial**, specify the communications port in the **Connect To** box, then click **Configure** for additional serial options. Refer to the *Serial Connection Settings* section in chapter 2 for details.
5. When you have specified the required settings in the **New Connection** dialog box, click the **Connect** button to make the connection.

   *Note: You can save these settings as a connection template using the **Save Session As** dialog box. Refer to the Setup Menus chapter for details.*

All the Wyse associated emulations are configured via the **Wyse Settings** dialog box which is described in the *Setup Menus* chapter. Note that some settings may not apply to the particular emulation currently running. Selecting a setting that is not applicable to the current emulation will cause the emulator to use the default setting for that emulation when the dialog box is exited.

Display Format

Below the command bar (described in chapter 2) the display is divided into three areas by default: the status line, the data area, and the label line.

The status line which is used to display information relating to the emulation and messages from the application. The following section describes the status messages that can be displayed by the emulation.

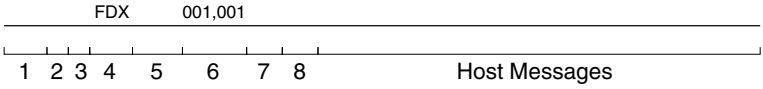
The data area is where data entered from the keyboard or the application is displayed. The data area is set to 24 lines by 80 columns by default.

The label line is displayed at the bottom of the screen when the data area is set to 24 or 42 lines. This is can be used to display messages or function key labels defined by the host.

Status Line Messages

The status line is divided into two sections. The left section displays messages relating to the emulation and the right section is used to display messages from the host. The type of status line displayed is determined by the setting of the **Status Line** option in the **Wyse Settings** dialog box. The **Extended** status line provides similar information to the **Standard** status line but with additional fields for displaying information on local editing mode.

The emulation status messages are displayed in one of six or eight fields along the first section of the status line, depending on whether the Standard or Extended status line is displayed. The messages and their meanings are listed below.



Standard & Extended Status Line

Field **1**: Indicates the current keyboard mode.

CAPS indicates that Caps Lock is on. Press the **Caps Lock** key to toggle the mode on and off.

LOCK indicates that the keyboard is locked. This takes precedence over the **CAPS** and **NUM** messages.

NUM indicates that Num Lock is on. Press the **Num Lock** key to toggle the mode on and off.

Field **2**: Indicates the number of the page that is currently displayed. No message is displayed when the current page is 0.

Field **3**: ***** indicates that Monitor mode is on. In this mode, received codes are not actioned but displayed as symbolic representations.

Field **4**: Indicates the current operating mode.

FDX indicates full-duplex mode.

HDX indicates half-duplex mode.

LCL indicates local mode.

BLK indicates block mode.

HBLK indicates half-duplex block mode.

HLD indicates that display update has been suspended. Pressing the **Hold** key will toggle display update on and off.

Field **5**: **>AUX** indicates that the emulation is in auxiliary print or transparent print mode.

<AUX indicates that the emulation is in auxiliary receive mode.

=AUX indicates that the emulation is in auxiliary receive mode and auxiliary print mode.

%AUX indicates that a print screen operation is in progress.

Standard Status Line

Field **6**: **rrr-ccc** indicates the current row and column position of the cursor.

Extended Status Line

Field **6**: **PROT** indicates that Protect mode is on.

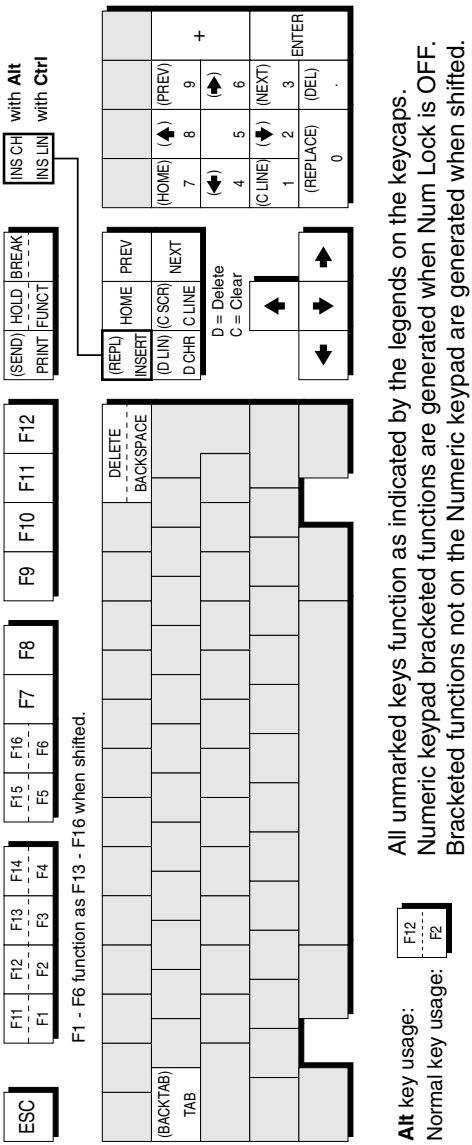
Field **7**: **WPRT** indicates that Write-protect mode is on when in Protect mode.

Field **8**: **INS** indicates that Insert mode is on.

Keyboard Mapping

The following illustration shows where Wyse keyboard functions are mapped to keys on the 101/102 key Enhanced AT keyboard layout. Special key functions that are provided on the Wyse keyboard can be mapped to any key on your keyboard by using the WY virtual key names listed in the **Define Keyboard Macros** dialog box.

Enhanced AT Keyboard Layout



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Initialization Commands

This chapter describes all the initialization commands that can be included in the registry or on the command line to run the emulator.

Introduction

This chapter describes the registry entries and command line options that can be used to specify how the emulator is initially run.

Registry entries for the emulator are read from a registry key under **HKLM\Software\Pericom\<product name>** using **Startup,Default** or **Startup,NAME** (where **NAME** is specified using the **-N** command line option).

Command line options are used to modify the configuration of the emulator on start-up. They are entered after the name of the emulator and each option must be preceded by a space. An option is immediately followed by its setting if one is required, without a space in between.

The following section provides a summary of all the registry entries and command line options supported by the emulator. This is followed by sections describing the commands in detail, grouped according to their function.

Command Summary

Note that ◆ indicates the command is only available for NT or XP embedded versions of the emulator.

■ indicates the command is only available if your version of TeemTalk supports graphics emulations.

Host Connection

Command Function	*Registry Entry*	*Command Line*
Load Winsock on start-up	*none*	**-LW**
Exit on connection close/fail	**ExitOnClose = "on"**	**-E**
No exit on connection close/fail	**ExitOnClose = "off"**	**-E1**
Reconnect on close/fail	**ExitOnClose = "Connect"**	**-E2**
New session warning message	**SessionWarning = "off"**	**-OS**
Close connection on exit	**WarnExit = "off"**	**-J**

Session Configuration

Command Function	*Registry Entry*	*Command Line*
Start-up command group to action	*none*	**-N***groupname*
Session configuration to use	*none*	**-SE***"description"*
Disable bell	**Bell = "off"**	**-BE**
◆ Enable debug (Capture/Replay)	*none*	**-Debug**
◆ Enable debug, log send/receive	*none*	**-Debug2Way**

Display

Command Function	*Registry Entry*	*Command Line*
◆ Window minimized on start-up	**WindowSize = "minimized"**	**-MI**
◆ Window maximized on start-up	**WindowSize = "maximized"**	**-MZ**
◆ Window full screen on start-up	**WindowSize = "FullScreen"**	**-F**
◆ Disable window frame resize	*none*	**-WF**
Title to display in title bar	*none*	**-T***"title"*
Subtitle to display in title bar	*none*	**-ST***"subtitle"*
◆ Disable title bar	*none*	**-TB**
Disable Min/Max & Close buttons	*none*	**-SY**
◆ Disable Minimize button	**MinimizeBox = "off"**	**-MN**
◆ Disable Maximize button	**MaximizeBox = "off"**	**-MX**
Disable Close button	**MenuCloseItem = "off"**	**-MT**
◆ Disable System menu	**SystemMenu = "off"**	*none*
◆ Disable System & Min/Max	**SystemMenu = "none"**	*none*
Disable Command bar	**CommandBar = "off"**	**-CB**
Disable Command bar	**CmdBarTools = 0**	**-MA**
Disable tool buttons on cmd bar	**CmdBarTools = 1**	**-TB**

Disable toolbar	*none*	**-L**
Disable menu bar/pop-ups, toolbar	*none*	**-CB1**
◆ Disable menu bar	*none*	**-MB**
◆ Disable menu bar & pop-ups	*none*	**-MB1**
Disable File menu	**FileMenu = "off"**	**-MF**
Disable Factory item	**Factory = "off"**	*none*
Disable Reset item	**Reset = "off"**	*none*
Disable New Connection item	**NewConnection = "off"**	*none*
Disable OpenSession item	**OpenSession = "off"**	*none*
Disable CloseSession item	**CloseSession = "off"**	*none*
Disable Save Session item	**SaveSession = "off"**	*none*
Disable Save Session As item	**SaveSessionAs = "off"**	*none*
Disable Start-up Options item	**StartupOptions = "off"**	*none*
Disable File Transfer item	**FileTransfer = "off"**	*none*
Disable FTP item	**FTP = "off"**	*none*
Disable Print Setup item	**PrintSetup = "off"**	*none*
Disable Print Screen item	**PrintScreen = "off"**	*none*
Disable Print Buffer item	**Print Buffer = "off"**	*none*
Disable Auto Print item	**AutoPrint = "off"**	*none*
Disable Cancel Print item	**CancelPrint = "off"**	*none*
Disable Eject Page item	**EjectPage = "off"**	*none*
Disable Exit item	**Exit = "off"**	*none*
Disable Edit menu	**EditMenu = "off"**	**-MD**
Disable Clipboard Text item	**ClipboardText = "off"**	*none*
Disable Clipboard Graphics item	**ClipboardGraphics = "off"**	*none*
Disable Copy item	**Copy = "off"**	*none*
Disable Paste item	**Paste = "off"**	*none*
Disable Select All item	**SelectAll = "off"**	*none*
Disable Clear Buffer item	**ClearBuffer = "off"**	*none*
Disable Settings menu	**SettingsMenu = "off"**	**-MS**
Disable Attributes item	**Attributes = "off"**	*none*
Disable Block Transmission item	**BlockTransmission = "off"**	*none*
Disable BQ3107 item	**BQ3107 = "off"**	*none*
Disable Emulation item	**Emulation = "off"**	*none*
■ Disable Graphics item	**Graphics = "off"**	*none*
Disable HP2392A item	**hp2392a = "off"**	*none*
Disable IBM 3151 item	**Ibm3151 = "off"**	*none*
Disable IBM 3270 item	**Ibm3270 = "off"**	*none*
Disable IBM5250 item	**Ibm5250 = "off"**	*none*
Disable Keyboard Macros item	**KeyboardMacros = "off"**	*none*
Disable Local Editing item	**LocalEditing = "off"**	*none*
Disable Mouse Buttons item	**MouseButtons = "off"**	*none*
Disable Serial item	**Serial = "off"**	*none*
Disable Soft Buttons item	**SoftButtons = "off"**	*none*
Disable TA6526 item	**ta6526 = "off"**	*none*
Disable Terminal item	**Terminal = "off"**	*none*

Disable Unisys T27 item	**UnisysT27 = "off"**	*none*
Disable Wyse item	**Wyse = "off"**	*none*
◆ Disable Tools menu	**ToolsMenu = "off"**	**-MO**
Disable scroll bar	**ScrollBar = "off"**	**-SB**
◆ Soft button levels displayed	**ButtonLevels =** *0-4*	**-BL***0-4*
Disable status bar & DEC status	**StatusLine = "off"**	**-V**
Disable colour palette	**UsePalette = "off"**	**-SP**
Flashing characters in all sessions	*none*	**-FB**
Reflection 4 colour support	**iR4Colours = 1**	**-R4**
■ Graphics redraw on resize	**GraphicsRedraw =** *mode*	**-G***0-4*
■ Crosshaie cursor size	**CrosshairSize =** *0-1024*	**-X***0-1024*
■ Save 4014 graphics display	**SaveTekImage = "on"**	**-P**
■ Tek graphics area height	**GraphicsHeight =** *integer*	**-GH***integer*
■ Tek graphics area width	**GraphicsWidth =** *integer*	**-GW***integer*
■ Disable backing store	**BackingStore = "off"**	**-B**
■ Enable plane masking	**PlaneMasking = "on"**	**-PM**
■ Disable sixel graphics scaling	**ScaleSixels = "off"**	**-Y**

Keyboard & Mouse

Command Function	*Registry Entry*	*Command Line*
MDIS P9 emulation: convert £ to $	**MDCUK = "Yes"**	*none*
◆ Disable all mouse edit functions	**MouseEdit = "off"**	**-ME1**
◆ Enable all mouse edit functions	**MouseEdit = "on"**	**-ME2**
◆ Enable mouse highlighting only	**MouseEdit = "disabled"**	**-ME0**

Auxiliary Port

Command Function	*Registry Entry*	*Command Line*
Set auxiliary port as bidirectional	*none*	**-BA1**
Auxiliary port opened at start-up	*none*	**-BA2**
Aux port opened & bidirectional	*none*	**-BA3**

Host Connection

Load Winsock On Start-up

Registry Entry: None
Command Line: **-LW**
Default Setting: Off

This will initialize the Winsock stack immediately when the emulator is started, enabling dialup over PPP or SLIP to gain a connection to a service provider.

Action On Host Connection Close

Registry Entry:

ExitOnClose = "on"	emulator exits immediately
ExitOnClose = "off"	emulator does not exit
ExitOnClose = "connect"	emulator attempts to reconnect

Command Line:

-E	emulator exits immediately
-E1	emulator does not exit
-E2	emulator attempts to reconnect

Default Setting: Message box displayed

When the host closes the connection or the connection fails, the emulator normally displays a message box giving you the option to reconnect, cancel or exit. These commands will disable the message box and cause the emulator to immediately perform the required option.

Disable New Session Warning Message Box

Registry Entry: **SessionWarning = "off"**
Command Line: **-OS**
Default Setting: Enabled

A warning message is displayed by default when you attempt to open a new session while a session is currently open. These commands enable you to disable the message box so that the emulator automatically closes the current session and opens the new session.

Disable 'Exit' Message Box

Registry Entry: **WarnExit = "off"**
Command Line: **-J**

Default Setting: Enabled

A message box will be displayed if you attempt to exit the emulator while a network session is still active. These commands will disable the message box so that the emulator automatically closes the network connection when it is exited.

Session Configuration

Start-up Command Group To Action

Registry Entry: None
Command Line: **-N***name*
Default Setting: **Default**

You can specify more than one set of start-up commands in the registry. This enables you to configure each instance of the emulator differently.

Each set of commands other than the default set must have the following heading in the registry under **HKLM\Software\Pericom\<product name>**:

Startup,*name*

where ***name*** can be any unique identifying name. You can specify which set of start-up commands the emulator is to use by including the following on the command line for loading the emulator, where *name* is substituted with the actual name of the start-up group required:

-N*name*

If this command is not present then the emulator will use the start-up commands under the **Startup,Default** heading.

Connection Template To Use

Registry Entry: None
Command Line: **-SE"***description***"**
Default Setting: **Untitled**

This command enables you to override the default connection template used when the emulator is loaded, as specified in the **Open Session** dialog box. The *description* must exactly match the description assigned to a connection template already saved using the **Save Session As** dialog box and must be enclosed by double-quotes.

Disable Bell

Registry Entry: **Bell = "off"**
Command Line: **-BE**
Default Setting: Enabled

These commands enable you to turn off the terminal bell.

Enable Debug (File Capture/Replay)

Registry Entry: None
Command Line: **-Debug**
Default Setting: Disabled

This command is only available for NT or XP embedded versions of the emulator. It enables the **File Capture** and **File Replay** options in the **File** menu which allow received host data to be logged in a file then replayed.

Enable Debug Log Send & Receive

Registry Entry: None
Command Line: **-Debug2Way**
Default Setting: Disabled

This command is only available for NT or XP embedded versions of the emulator. It enables the **File Capture** and **File Replay** options in the **File** menu which allow received host data and data sent to the host to be logged in a file then replayed.

Display

Window Minimized On Start-Up

Registry Entry: **WindowSize = "minimized"**
Command Line: **-MI**

Default Setting: Not applicable

These commands are only available for NT or XP embedded versions of the emulator. They will cause the window to be displayed as an icon when the emulator is loaded.

Window Maximized On Start-Up

Registry Entry: **WindowSize = "maximized"**
Command Line: **-MA**

Default Setting: Not applicable

These commands are only available for NT or XP embedded versions of the emulator. They will cause the window to be displayed at the maximum size possible when the emulator is loaded, while retaining the default number of lines and columns and including all window elements if enabled (title bar, soft buttons etc.).

Workspace Fills Screen On Start-Up

Registry Entry: **WindowSize = "FullScreen"**
Command Line: **-F**

Default Setting: Not applicable

These commands are only available for NT or XP embedded versions of the emulator. They will cause the emulation workspace to fill the entire display when the emulator is loaded, while retaining the default number of lines and columns.

Disable Window Frame Resize

Registry Entry: None
Command Line: **-WF**

Default Setting: Enabled

This command is only available for NT or XP embedded versions of the emulator. It prevents the mouse from resizing the window by dragging the edge.

Window Title

Registry Entry: None
Command Line: **-T***"title"*
Default Setting: Emulator name

This enables you to specify the title that is to be displayed in the title bar. This is useful when you are running more than one instance of the emulator. If no title is specified then the name of your version of the emulator will be displayed.

Window Subtitle

Registry Entry: None
Command Line: **-ST***"subtitle"*
Default Setting: **Untitled**

This enables you to specify a subtitle for display in the title bar of a specific emulator window. By default the subtitle is the name of the session.

Disable Title Bar

Registry Entry: None
Command Line: **-TB**
Default Setting: **on**

This command is only available for NT or XP embedded versions of the emulator. It will remove the title bar from the window.

Disable Min/Maximize & Close Buttons

Registry Entry: None
Command Line: **-SY**
Default Setting: **on**

This will remove the Control (System) menu icon and the minimize and maximize buttons from the emulator window.

Disable Minimize Button

Registry Entry: **MinimizeBox = "off"**
Command Line: **-MN**

Default Setting: **on**

These commands will remove the minimize button from the emulator window.

Disable Maximize Button

Registry Entry: **MaximizeBox = "off"**
Command Line: **-MX**

Default Setting: **on**

These commands will remove the maximize button from the emulator window.

Disable Close Window Items

Registry Entry: **MenuCloseItem = "off"**
Command Line: **-MT**

Default Setting: **on**

These commands will remove the **Close** window option from the Control (System) menu and disable the close window (**X**) button at the top right corner of the emulator window.

Disable System Menu

Registry Entry: **SystemMenu = "off"**
Command Line: None

Default Setting: **on**

This command is only available for NT or XP embedded versions of the emulator. It will remove the System (Control) menu icon from the emulator window.

Disable System Menu & Min/Maximize Buttons

Registry Entry: **SystemMenu = "none"**
Command Line: None

Default Setting: **on**

This command is only available for NT or XP embedded versions of the emulator. It will remove the System (Control) menu icon and the Minimize and Maximize buttons from the emulator window.

Disable Command Bar

Registry Entry: **CmdBarTools = 0**
Command Line: **-MA**

Default Setting: **on**

This will disable the command bar.

Disable Command Bar

Registry Entry: **CommandBar = "off"**
Command Line: **-CB**

Default Setting: **on**

This will remove the Command bar (menus, tool buttons and soft buttons) from the emulator window. Note that the menus can still be displayed by pressing the **Alt** key in conjunction with the relevant keyboard accelerator. For example, pressing the keys **Alt + F** will display the **File** menu.

Disable Tool Buttons On Command Bar

Registry Entry: **CmdBarTools = 1**
Command Line: **-TB**

Default Setting: **on**

This will disable the tool buttons on the command bar.

Disable Toolbar

Registry Entry: None
Command Line: **-L**

Default Setting: **on**

This command will remove the toolbar from the window.

Disable Menu Bar, Pop-Up Menus & Toolbar

Registry Entry: None
Command Line: **-CB1**

Default Setting: **on**

This will remove the menu bar and toolbar from the emulator window and prevent access to pop-up menus using keyboard commands.

Disable Menu Bar

Registry Entry: None
Command Line: **-MB**

Default Setting: **on**

This command is only available for NT or XP embedded versions of the emulator. It will remove the menu bar from the emulator window.

Disable Menu Bar & Pop-Up Menus

Registry Entry: None
Command Line: **-MB1**

Default Setting: **on**

This command is only available for NT or XP embedded versions of the emulator. It will remove the menu bar from the emulator window and prevent access to pop-up menus using keyboard commands.

Disable File Menu

Registry Entry: **FileMenu = "off"**
Command Line: **-MF**

Default Setting: **on**

These commands will disable the **File** menu. Individual items in the **File** menu can be disabled by using the following registry entries:

Disable Factory item	**Factory = "off"**
Disable Reset item	**Reset = "off"**
Disable New Connection item	**NewConnection = "off"**
Disable OpenSession item	**OpenSession = "off"**
Disable CloseSession item	**CloseSession = "off"**
Disable Save Session item	**SaveSession = "off"**
Disable Save Session As item	**SaveSessionAs = "off"**
Disable Startup Options item	**StartupOptions = "off"**
Disable File Transfer item	**FileTransfer = "off"**
Disable FTP item	**FTP = "off"**
Disable Print Setup item	**PrintSetup = "off"**
Disable Print Screen item	**PrintScreen = "off"**
Disable Print Buffer item	**Print Buffer = "off"**
Disable Auto Print item	**AutoPrint = "off"**
Disable Cancel Print item	**CancelPrint = "off"**
Disable Eject Page item	**EjectPage = "off"**
Disable Exit item	**Exit = "off"**

Disable Edit Menu

Registry Entry: **EditMenu = "off"**
Command Line: **-MD**

Default Setting: **on**

These commands will disable the **Edit** menu. Individual items in the **Edit** menu can be disabled by using the following registry entries:

Disable Clipboard Text item	**ClipboardText = "off"**
Disable Clipboard Graphics item	**ClipboardGraphics = "off"**
Disable Copy item	**Copy = "off"**
Disable Paste item	**Paste = "off"**
Disable Select All item	**SelectAll = "off"**
Disable Clear Buffer item	**ClearBuffer = "off"**

Disable Settings Menu

Registry Entry: **SettingsMenu = "off"**
Command Line: **-MS**

Default Setting: **on**

These commands will disable the **Settings** menu. Individual items in the **Settings** menu can be disabled by using the following registry entries:

Disable Attributes item	**Attributes = "off"**
Disable Block Transmission item	**BlockTransmission = "off"**
Disable BQ3107 item	**BQ3107 = "off"**
Disable Emulation item	**Emulation = "off"**
Disable Graphics item (option)	**Graphics = "off"**
Disable HP2392A item	**hp2392a = "off"**
Disable IBM 3151 item	**Ibm3151 = "off"**
Disable IBM 3270 item	**Ibm3270 = "off"**
Disable IBM5250 item	**Ibm5250 = "off"**
Disable Keyboard Macros item	**KeyboardMacros = "off"**
Disable Local Editing item	**LocalEditing = "off"**
Disable Mouse Buttons item	**MouseButtons = "off"**
Disable Serial item	**Serial = "off"**
Disable Soft Buttons item	**SoftButtons = "off"**
Disable TA6526 item	**ta6526 = "off"**
Disable Terminal item	**Terminal = "off"**
Disable Unisys T27 item	**UnisysT27 = "off"**
Disable Wyse item	**Wyse = "off"**

Disable Tools Menu

Registry Entry: **ToolsMenu = "off"**
Command Line: **-MO**

Default Setting: **on**

These commands are only available for NT or XP embedded versions of the emulator. They will disable the **Tools** menu.

Disable Scroll Bar

Registry Entry: **ScrollBar = "off"**
Command Line: **-SB**

Default Setting: **on**

These commands will remove the scroll bar from the window.

Soft Buttons Displayed

Registry Entry: **ButtonLevels =** *0-4*
Command Line: **-BL***0-4*

Default Setting: **1**

These commands are only available for NT or XP embedded versions of the emulator.

A set of soft buttons is displayed at the bottom of the emulatoor window by default. There are four soft button levels. Level 1 is displayed by default. Each level consists of twelve programmable buttons, providing a combined total of 48 buttons. You can display all four levels (48 buttons) at the same time if required. All levels are accessible even if not all are displayed, levels stored off-screen can be 'scrolled' into view by clicking the **Level** button.

You can specify how many soft button levels are actually displayed by using this registry entry or command line option. All four levels can be displayed by specifying **4**. Specifying **0** will cause no soft buttons to be displayed.

Disable Status Bar & DEC Status Line

Registry Entry: **StatusLine = "off"**
Command Line: **-V**

Default Setting: **on**

These commands will remove the status bar and DEC VT Status line at the bottom of the window.

Disable Colour Palette

Registry Entry: **UsePalette = "off"**
Command Line: **-SP**

Default Setting: **on**

The colour palette used by the emulator can be disabled if it interferes with colours used by other applications running at the same time.

Flashing Characters Enabled In All Sessions

Registry Entry: None
Command Line: **-FB**

Default Setting: **off**

This enables characters with the flashing attribute to be displayed as such in all session windows in addition to the currently focused window.

Reflection 4 Colour Support

Registry Entry: **iR4colours = "on"**
Command Line: **-R4**

Default Setting: **off**

These commands will cause the colours displayed by the emulator to be compatible with Reflection 4 software.

Graphics Redraw On Resize

Registry Entry: **GraphicsRedraw =** *"off" / "all" / "on"*
Command Line: **-G***0-2*

Default Setting: on

Only applicable to versions of TeemTalk that support graphics emulations. TeemTalk logs ReGIS or Tek graphics data in local memory by default so that if the window is resized the graphics can be quickly redrawn. This command enables you to prevent logging of data, log graphics data only (default), or log both text and graphics (from which TeemTalk will use just the graphics data when the window is resized). Note that specifying redraw text and graphics may cause TeemTalk to run out of memory. The valid settings are as follows:

-G	**"off"**	No redraw
-G0	**"off"**	No redraw
-G1	**"on"**	Redraw graphics
-G2	**"all"**	Redraw text & graphics

Crosshair Cursor Size

Registry Entry: **CrosshairSize =** *1-1024*
Command Line: **-X***1-1024*

Default Setting: **1024**

Only applicable to versions of TeemTalk that support graphics emulations. This command specifies the size of the graphics cursor, where size is a numeric value in the range **1** to **1024**, i.e. world coordinates.

Save 4014 Graphics Display

Registry Entry: **SaveTekImage = "on"**
Command Line: **-P**

Default Setting: off

Only applicable to versions of TeemTalk that support graphics emulations. This specifies that the 4014 graphics display is saved when you switch to alpha mode so that it is restored when you switch back to graphics mode.

Set Tek Graphics Height

Registry Entry: **GraphicsHeight =** <*integer*>
Command Line: **-GH**<*integer*>

Default Setting: Not applicable

Only applicable to versions of TeemTalk that support graphics emulations. This specifies the height of the Tek graphics area in pixels.

Set Tek Graphics Width

Registry Entry: **GraphicsWidth =** <*integer*>
Command Line: **-GW**<*integer*>

Default Setting: Not applicable

Only applicable to versions of TeemTalk that support graphics emulations. This specifies the width of the Tek graphics area in pixels.

Disable Backing Store

Registry Entry: **BackingStore = "off"**
Command Line: **-B**

Default Setting: on

Only applicable to versions of TeemTalk that support graphics emulations.When TeemTalk is in ReGIS mode it automatically stores a copy of graphics data in memory when graphics are initially drawn by the host in the window, a feature known as 'backing store'. This enables graphics to be redrawn quickly from local memory when the TeemTalk window is uncovered after being obscured by other windows, or when the window is restored or maximized from an iconized state. The backing store feature can be disabled so that graphics data sent from the host can be drawn up to 50% faster.

Enable Plane Masking

Registry Entry: **PlaneMasking = "on"**
Command Line: **-PM**

Default Setting: off

Only applicable to versions of TeemTalk that support ReGIS mode. When TeemTalk is in ReGIS mode and you are using an application that uses multiple surfaces, you can use this command to enable TeemTalk to support them. Note that your PC must have a display adaptor that supports 256 colour mode and your system must be running in this mode in order for multiple surfaces to be supported.

Disable Sixel Graphics Scaling

Registry Entry: **ScaleSixels = "off"**
Command Line: **-Y**

Default Setting: on

Only applicable to versions of TeemTalk that support graphics emulations. By default the ReGIS sixel graphics display of 800x400 (world coordinates) is automatically scaled to fit the current size of the TeemTalk window. This command will prevent scaling of the image and cause the right and bottom edges of the image to be clipped to fit the window if it is too big.

Keyboard & Mouse

Convert £ To $ (MDIS P9)

Registry Entry: **MDCUK = "Yes"**
Command Line: None
Default Setting: **no**

This command is only applicable to the MDIS P9 emulation. It will convert the £ character to $ and vice versa on the UK keyboard.

Disable Editing Functions

Registry Entry: **MouseEdit = "disabled"** allows highlighting but no copy/paste
MouseEdit = "off" all editing functions disabled
MouseEdit = "on" all editing functions enabled

Command Line: **-ME0** allows highlighting but no copy/paste
-ME1 all editing functions disabled
-ME2 all editing functions enabled

Default Setting: All functions enabled

In some cases it may be necessary to disable the copy and paste function of the mouse buttons to prevent accidental editing. This can be achieved by using one of these commands.

When the editing functions are disabled, use the **Edit** menu options or the numeric keypad keys **Shift + .** (i.e. **Del**) to copy and **Shift + 0** (i.e. **Ins**) to paste instead.

Auxiliary Port

Set Aux Port As Bidirectional

Registry Entry: None
Command Line: **-BA1**
Default Setting: Disabled

This causes the auxiliary port to be set as bidirectional.

Aux Port Opened At Start-Up

Registry Entry: None
Command Line: **-BA2**
Default Setting: Disabled

This causes the auxiliary port to be opened on start-up.

Aux Port Opened & Bidirectional

Registry Entry: None
Command Line: **-BA3**
Default Setting: Both functions disabled

This causes the auxiliary port to be opened on start-up and set as bidirectional.

Notes

A

Virtual Key Names

This appendix lists all the supported virtual key names which enable you to include a specific key function in a user definition.

Standard Virtual Key Names

Key Function	Virtual Key Name	Key Function	Virtual Key Name
0 - 9	VK_0 - VK_9	Keypad 0 - 9	VK_NUMPAD0 - 9
A - Z	VK_A - VK_Z	Keypad Add (+)	VK_ADD
Alt (right)	VK_RALT	Keypad Divide (/)	VK_DIVIDE
Apps	VK_APPS	Keypad Decimal (.)	VK_DECIMAL
Apostrophe	VK_APOSTROPHE	Keypad Multiply (*)	VK_MULTIPLY
Backspace	VK_BACK	Keypad Subtract (-)	VK_SUBTRACT
Break	VK_BREAK	Num Lock	VK_NUMLOCK
Clear	VK_CLEAR	Off (` ¬ |) *102 key kbd*	VK_OFF
Comma	VK_COMMA	Page Down	VK_NEXT
Compose Character	VK_COMPOSE	Page Up	VK_PRIOR
Control (left)	VK_CONTROL	Paste	VK_PASTE
Control (right)	VK_RCONTROL	Pause	VK_PAUSE
Copy	VK_COPY	Period	VK_PERIOD
Cursor Down	VK_DOWN	Print	VK_PRINT
Cursor Left	VK_LEFT	Print Screen	VK_SNAPSHOT
Cursor Right	VK_RIGHT	Quote (back)	VK_BACKQUOTE
Cursor Up	VK_UP	Return	VK_RETURN
Data Talk	VK_DATATALK	Scroll Lock	VK_SCROLL
Delete	VK_DELETE	Select	VK_SELECT
End	VK_END	Semicolon (; :)	VK_SEMICOLON
Equal	VK_EQUAL	Separator	VK_SEPARATOR
Escape	VK_ESCAPE	Setup	VK_SETUP
Euro Sign	VK_EUROSIGN	Shift (right)	VK_RSHIFT
Execute	VK_EXECUTE	Slash (backward)	VK_BACKSLASH
Exit Emulator	VK_EXIT	Slash (forward)	VK_SLASH
F1 - F12	VK_F1 - VK_F12	Spacebar	VK_SPACE
Help	VK_HELP	Square Bracket (left)	VK_LBRACKET
Hold Screen	VK_HOLDSCREEN	Square Bracket (right)	VK_RBRACKET
Home	VK_HOME	Tab	VK_TAB
Hyphen	VK_HYPHEN	Windows (left)	VK_LWIN
Insert	VK_INSERT	Windows (right)	VK_RWIN

AT&T 4410 Virtual Key Names

Key Function	Virtual Key Name	Key Function	Virtual Key Name
Backspace	AT_BACKSPACE	F1 - F8	AT_F1 - AT_F8
Break	AT_BREAK	Home Down	AT_HOMEDOWN
Clear	AT_CLEAR	Home Up	AT_HOMEUP
Cursor Down	AT_DOWN	Line Feed	AT_LINEFEED
Cursor Left	AT_LEFT	Num Lock	AT_NUMLOCK
Cursor Right	AT_RIGHT	Return	AT_RETURN
Cursor Up	AT_UP	Setup	AT_SETUP
Delete	AT_DELETE	Tab	AT_TAB
Escape	AT_ESCAPE		

BQ 3107 Virtual Key Names

Key Function	Virtual Key Name	Key Function	Virtual Key Name
Backspace	BQ_BACKSPACE	Insert Line	BQ_INSERTLINE
Back Tab	BQ_BACKTAB	Keypad 0-9	BQ_PAD0 - PAD9
Blank	BQ_BLANK	Keypad Comma	BQ_PADCOMMA
Blink	BQ_BLINK	Keypad Decimal	BQ_PADDECIMAL
Clear	BQ_CLEAR	Keypad Divide	BQ_PADDIVIDE
Cursor Down	BQ_DOWN	Keypad Minus	BQ_PADMINUS
Cursor Left	BQ_LEFT	Keypad Multiply	BQ_PADMULTIPLY
Cursor Right	BQ_RIGHT	Keypad Plus	BQ_PADPLUS
Cursor Up	BQ_UP	Local	BQ_LOCAL
Delete Character	BQ_DELETECHAR	Local Message	BQ_LOCALMSG
Delete Line	BQ_DELETELINE	Menu	BQ_MENU
Delete Message	BQ_DELMSG	Next Line	BQ_NEXTLINE
Delete Tab	BQ_DELTAB	Num Lock	BQ_NUMLOCK
Erase	BQ_ERASE	Online	BQ_ONLINE
Erase End Of Line	BQ_ERASEEOL	Print Form	BQ_PRTFORM
Erase End Of Page	BQ_ERASEEOP	Print Form Screen	BQ_PRTFORMSCREEN
Escape	BQ_ESCAPE	Print Partition	BQ_PRTPART
Extend	BQ_EXTEND	Print Screen	BQ_PRTSCREEN
FKC1 - FKC12	BQ_FKC1 - BQ_FKC12	Reset	BQ_RESET
Shift FKC1 - FKC12	BQ_S_FKC1 - FKC12	Reset Partition	BQ_PARTRESET
Home	BQ_HOME	Return	BQ_RETURN
Host Message	BQ_HOSTMSG	Set Tab	BQ_SETTAB
Initialize Partition	BQ_INITPART	System	BQ_SYSTEM
Init. Both Partitions	BQ_INITRIS2	Tab	BQ_TAB
Insert Character	BQ_INSERTCHAR	Transmit	BQ_TRANSMIT

DEC VT500 Virtual Key Names

Key Function	Virtual Key Name	Key Function	Virtual Key Name
Back Tab	VT_CSIZ	Insert	VT_INSERT
Break	VT_BREAK	Keypad 0 - 9	VT_PAD0 - 9
Backspace	VT_BACKSPACE	Keypad Comma	VT_COMMA
Compose Character	VT_COMPOSE	Keypad Decimal	VT_PADDECIMAL
Cursor Down	VT_DOWN	Keypad Minus	VT_MINUS
Cursor Left	VT_LEFT	Next Page	VT_NEXT
Cursor Right	VT_RIGHT	PF1 - PF4	VT_PF1 - VT_PF4
Cursor Up	VT_UP	Previous Page	VT_PREV
Datatalk	VT_DATATALK	Print	VT_PRINT
Delete	VT_DELETE	Remove	VT_REMOVE
Do (F16)	VT_DO	Return	VT_RETURN
Enter	VT_ENTER	Scroll Down	VT_PANDOWN
Escape	VT_ESCAPE	Scroll Left	VT_PANLEFT
F6 - F14	VT_F6 - VT_F14	Scroll Right	VT_PANRIGHT
F17 - F20	VT_F17 - VT_F20	Scroll Up	VT_PANUP
Find	VT_FIND	Select	VT_SELECT
Help (F15)	VT_HELP	Setup	VT_SETUP
Hold Screen	VT_HOLD	Tab	VT_TAB

DG 410/412 Virtual Key Names

Key Function	Virtual Key Name	Key Function	Virtual Key Name
C1 - C4	DG_C1 - DG_C4	Home	DG_HOME
Cursor Type	DG_CURSOR	Keypad Comma	DG_COMMA
Cursor Down	DG_DOWN	Keypad Enter	DG_ENTER
Cursor Left	DG_LEFT	Keypad Minus	DG_MINUS
Cursor Right	DG_RIGHT	Local Print	DG_LOCALPRINT
Cursor Up	DG_UP	New Line	DG_NEWLINE
Erase Line	DG_ERASELINE	Normal/Compressed	DG_SPACING
Erase Page	DG_ERASEPAGE	Print	DG_PRINT
F1 - F15	DG_F1 - DG_F15	Scroll Rate	DG_SCROLLRATE
Hold	DG_HOLD		

HP 700-92/96 Virtual Key Names

Key Function	Virtual Key Name	Key Function	Virtual Key Name
Backspace	HP_BACKSPACE	Insert Wrap	HP_INSERTWRAP
Clear Display	HP_CLEARMEM	Menu	HP_MENU
Clear Line	HP_CLEARLINE	Next Page	HP_NEXTPAGE
Cursor Down	HP_DOWN	Previous Page	HP_PREVPAGE
Cursor Left	HP_LEFT	Print	HP_PRINT
Cursor Right	HP_RIGHT	Return	HP_RETURN
Cursor Up	HP_UP	Scroll Down	HP_ROLLDOWN
Delete	HP_DELETE	Scroll Up	HP_ROLLUP
Delete Character	HP_DELETECHAR	Select	HP_SELECT
Delete Line	HP_DELETELINE	Tab	HP_TAB
Delete Wrap	HP_DELETEWRAP	Tab Shifted	HP_BACKTAB
Enter	HP_SEND	User System	HP_SYSTEM
Escape	HP_ESCAPE		
F1 - F8	HP_F1 - HP_F8	Mode Sel. Keys	HP_MODES
Home Cursor	HP_HOMEUP	User Keys Mode	HP_USER
Home Cursor Shift	HP_HOMEDOWN	User Key Def. Menu	HP_FKEYDEFS
Insert Character	HP_INSERTMODE	Soft Reset	HP_SOFTRESET
Insert Line	HP_INSERTLINE	Hard Reset	HP_HARDRESET

IBM 3270 Virtual Key Names

Key Function	Virtual Key Name	Key Function	Virtual Key Name
Alternate Code Page	IB_ALTCP	Local National Map	IB_LCLMAP
Attention	IB_ATTN	M. Slot Reader Start	IB_MSRATTRIB
Back Tab	IB_BACKTAB	M. Slot Reader Send	IB_OPIDRDR
Backspace	IB_BACKSPACE	Mono Case	IB_MONO
Clear	IB_CLEAR	New Line	IB_NEWLINE
Close (Delete Space)	IB_REV_CL	Next Word	IB_NEXTWORD
Copy	IB_COPY	Notice Board Copy	IB_NB_COPY
Cursor Down	IB_DOWN	Notice Board Jump	IB_NB_JUMP
Cursor Left	IB_LEFT	Notice Board Setup	IB_NB_SETUP
Cursor Right	IB_RIGHT	Notice Board Zoom	IB_NB_ZOOM
Cursor Select	IB_CURSORSEL	Num Lock	IB_NUMLOCK
Cursor Up	IB_UP	PA1 - PA3	IB_PA1 - IB_PA3
Cursor Flash On/Off	IB_FLCR	Pause	IB_PAUSE
Cursor Line/Block	IB_ALTCR	Play Keystrokes	IB_PLAY
Delay 1 Second	IB_DELAY	Previous Word	IB_PREVWORD
Delete Character	IB_DELCHAR	Print Screen	IB_PRINT
Delete Word	IB_DELWORD	Push Mode On/Off	IB_PUSH
Duplicate	IB_DUP	Quit	IB_QUIT
Enter	IB_ENTER	Record Keystrokes	IB_RECORD
Erase End Of Field	IB_ERASEEOF	Reset	IB_RESET
Erase Input	IB_ERASEINPUT	Return	IB_RETURN
F1 - F24	IB_F1 - IB_F24	Rev. Input Direction	IB_REV_IP

Field Mark	IB_FIELDMARK	Reverse Screen	IB_REV_SC
Fn Edit	IB_FEDIT	Rule Display	IB_RULE
Go To End Of Line	IB_GO_EOL	Selectable Field Tab	IB_FIELDTAB
Home	IB_HOME	System Request	IB_SYSREQ
Insert Mode	IB_INSERT	Tab	IB_TAB

IBM 5250 Virtual Key Names

Key Function	Virtual Key Name	Key Function	Virtual Key Name
Alternate Code Page	AS_ALTCP	Field Plus	AS_FIELDPLUS
Attention	AS_ATTN	Go To End Of Line	AS_GO_EOL
Back Tab	AS_BACKTAB	Help	AS_HELP
Backspace	AS_BACKSPACE	Home	AS_HOME
Backspace (non-dest)	AS_NONDESTBS	Insert Mode	AS_INSERT
Clear	AS_CLEAR	Monochrome	AS_MONO
Cursor Down	AS_DOWN	New Line	AS_NEWLINE
Cursor Left	AS_LEFT	PA1 - PA3	AS_PA1 - AS_PA3
Cursor Right	AS_RIGHT	Pause	AS_PAUSE
Cursor Fast Left	AS_FASTLEFT	Play Keystrokes	AS_PLAY
Cursor Fast Right	AS_FASTRIGHT	Print Local	AS_PRINTLOCAL
Cursor Select	AS_CURSORSEL	Print	AS_PRINT
Cursor Up	AS_UP	Push Mode On/Off	AS_PUSH
Delay 1 Second	AS_DELAY	Quit	AS_QUIT
Delete Character	AS_DELCHAR	Record Keystrokes	AS_RECORD
Duplicate	AS_DUP	Reset	AS_RESET
Enter	AS_ENTER	Roll Down	AS_ROLLDOWN
Erase End Of Field	AS_ERASEEOF	Roll Up	AS_ROLLUP
Erase Input	AS_ERASEINPUT	Rule Display	AS_RULE
F1 - F24	AS_F1 - AS_F24	System Request	AS_SYSREQ
Field Exit	AS_FIELDEXIT	Tab	AS_TAB
Field Mark	AS_FIELDMARK	Test	AS_TEST
Field Minus	AS_FIELDMINUS		

IBM 5250 Word Processing Mode

Key Function	Virtual Key Name	Key Function	Virtual Key Name
Begin Bold	AS_WP_BOLD	Top of Page	AS_WP_TOP_PAGE
Begin Underline	AS_WP_UNDERLINE	End of Page	AS_WP_END_PAGE
Word Underline	AS_WP_WORD_UNDER	Start New Page	AS_WP_NEW_PAGE
End Attribute	AS_WP_END_ATTR	Insert Carrier Return	AS_WP_RETURN
Centre Text	AS_WP_CENTRE	Insert Stop Code	AS_WP_STOP_CODE
Half-Index Up	AS_WP_HI_UP	Find Stop Code	AS_WP_FIND_STOP
Half-Index Down	AS_WP_HI_DOWN	Required Page End	AS_WP_REQD_PAGE
Next Text Column	AS_WP_NEXT_COL	Required Space	AS_WP_REQD_SPACE
Beginning of Line	AS_WP_BEG_LINE	Required Tab	AS_WP_REQD_TAB
End of Line	AS_WP_END_LINE	Symbols Command	AS_WP_SYMBOLS

MDIS Prism Virtual Key Names

Key Function	Virtual Key Name	Key Function	Virtual Key Name
Back Tab	MD_BACKTAB	Keypad Comma	MD_PADCOMMA
Backspace	MD_BACKSPACE	Keypad Decimal	MD_PADDECIMAL
Break	MD_BREAK	Keypad Minus	MD_PADMINUS
Clear	MD_CLEAR	Line Feed	MD_LINEFEED
Cursor Down	MD_DOWN	Print Screen	MD_PRINT
Cursor Left	MD_LEFT	Return	MD_RETURN
Cursor Right	MD_RIGHT	Screen Down	MD_SCREENDOWN
Cursor Up	MD_UP	Screen Left	MD_SCREENLEFT
Delete	MD_DELETE	Screen Right	MD_SCREENRIGHT
Enter	MD_ENTER	Screen Up	MD_SCREENUP
Escape	MD_ESCAPE	Scroll Down	MD_SCROLLDOWN
F1 - F18	MD_F1 - MD_F18	Scroll Left	MD_SCROLLLEFT
Hold Screen	MD_HOLD	Scroll Right	MD_SCROLLRIGHT
Home	MD_HOME	Scroll Up	MD_SCROLLUP
Keypad 0 - 9	MD_PAD0 - 9	Tab	MD_TAB

PT250 Virtual Key Names

Key Function	Virtual Key Name	Key Function	Virtual Key Name
Back Tab	PT_BACKTAB	Keypad 0 - 9	PT_PAD0 - 9
Backspace	PT_BACKSPACE	Keypad Decimal	PT_PADDECIMAL
Break	PT_BREAK	Keypad Minus	PT_PADMINUS
Cancel	PT_CANCEL	Keypad Plus	PT_PADPLUS
Change Mode	PT_CHNGMODE	Menu	PT_MENU
Character Set	PT_CHARSET	Next	PT_NEXT
Clear	PT_CLEAR	Num Lock	PT_NUMLOCK
Cursor Down	PT_DOWN	PA1 - PA4	PT_PA1 - PT_PA4
Cursor Left	PT_LEFT	PF1 - PF12	PT_PF1 - PT_PF12
Cursor Right	PT_RIGHT	Previous	PT_PREV
Cursor Up	PT_UP	Print Screen	PT_PRTSCN
Delete	PT_DELETE	Return	PT_RETURN
End/Begin	PT_ENDBEGIN	Scroll Down	PT_SCROLLDOWN
Enter	PT_ENTER	Scroll Left	PT_SCROLLLEFT
Erase	PT_ERASE	Scroll Lock	PT_SCROLLLOCK
Escape	PT_ESC	Scroll Right	PT_SCROLLRIGHT
F1 - F10	PT_F1 - PT_F10	Scroll Up	PT_SCROLLUP
Help	PT_HELP	Stop	PT_STOP
Home	PT_HOME	Tab	PT_TAB
Insert	PT_INSERT	Unlabelled Large	PT_UNLLARGE
Keypad 00	PT_PAD00	Unlabelled Small	PT_UNLSMALL

SCO Console Virtual Key Names

Key Function	Virtual Key Name	Key Function	Virtual Key Name
Backspace	SC_BACKSPACE	F1 - F12	SC_F1 - SC_F21
Cursor Down	SC_DOWN	F1 - F12 + Shift	SC_S_F1 - SC_S_F12
Cursor Left	SC_LEFT	F1 - F12 + Ctrl	SC_C_F1 - SC_C_F12
Cursor Right	SC_RIGHT	F1 - F12 + Ctrl + Shift	SC_CS_F1 - SC_CS_F12
Cursor Up	SC_UP	Home	SC_HOME
Delete	SC_DELETE	Insert	SC_INSERT
Delete + Shift	SC_S_DELETE	Page Down	SC_PAGEDOWN
Delete + Ctrl + Shift	SC_CS_DELETE	Page Down + Shift	SC_S_PAGEDOWN
End	SC_END	Page Up	SC_PAGEUP
End + Shift	SC_S_END	Return	SC_RETURN
Enter	SC_ENTER	Tab	SC_TAB
Escape	SC_ESCAPE	Tab + Shift	SC_S_TAB

TA6530 Virtual Key Names

Key Function	Virtual Key Name	Key Function	Virtual Key Name
Backspace	TA_BACKSPACE	Keypad Comma	TA_PADCOMMA
Back Tab	TA_BACKTAB	Keypad Decimal	TA_PADDECIMAL
Break	TA_BREAK	Keypad Enter	TA_ENTER
Character Delete	TA_CHARDEL	Keypad Minus	TA_PADMINUS
Character Insert	TA_CHARINS	Line Delete	TA_LINEDEL
Cursor Down	TA_DOWN	Line Insert	TA_LINEINS
Cursor Left	TA_LEFT	Num Lock	TA_NUMLOCK
Cursor Right	TA_RIGHT	Page Down	TA_PAGEDOWN
Cursor Up	TA_UP	Page Up	TA_PAGEUP
Delete	TA_DEL	Print Screen	TA_PRTSCR
End	TA_END	Return	TA_RETURN
Erase Line	TA_ERASELINE	Roll Down	TA_ROLLDOWN
Erase Page	TA_ERASEPAGE	Roll Up	TA_ROLLUP
Escape	TA_ESC	Tab	TA_TAB
F1 - F16	TA_F1 - TA_F16	Tab Clear	TA_TABCLEAR
Home	TA_HOME	Tab Clear All	TA_TABCLRALL
Keypad 0 - 9	TA_PAD0 - TA_PAD9	Tab Set	TA_TABSET

TVI 955 Virtual Key Names

Key Function	Virtual Key Name	Key Function	Virtual Key Name
Back Tab	TV_BACKTAB	F0 - F22	TV_F0 - TV_F22
Backspace	TV_BACKSP	Go To	TV_GOTO
Break	TV_BREAK	Keypad 00	TV_PAD00
Clear Entry	TV_CLRENTRY	Line Feed	TV_LINEFEED
Clear Space	TV_CLRSPACE	Misc. Functions	TV_M0 - TV_M9
Cursor Down	TV_DOWN	No Scroll	TV_NOSCROLL
Cursor Left	TV_LEFT	Print	TV_PRINT
Cursor Right	TV_RIGHT	Reset	TV_RESET
Cursor Up	TV_UP	Return	TV_RETURN
Delete	TV_DELETE	Status	TV_STATUS
Enter	TV_ENTER	Tab	TV_TAB
Escape	TV_ESCAPE		

Unisys T27 Virtual Key Names

Key Function	Virtual Key Name	Key Function	Virtual Key Name
Alt	UT_ALT	Insert Line	UT_INSERTLINE
Alt Lock	UT_ALTLOCK	Keypad 00	UT_NUMPAD00
Back	UT_BACK	Keypad 0 - 9	UT_NUMPAD0 - 9
Backspace	UT_BACKSPACE	Keypad Comma	UT_NUMPADCOMMA
Block	UT_BLOCK	Keypad Decimal	UT_NUMPADDECIMAL
Bound	UT_BOUND	Local	UT_LOCAL
Clear	UT_CLEAR	Lock	UT_LOCK
Clear EOL	UT_CLEAREOL	Lock Shift	UT_LOCKSHIFT
Clear EOP	UT_CLEAREOP	Mark	UT_MARK
Config	UT_CONFIG	Next	UT_NEXT
Ctrl	UT_CTRL	Print Unprotected	UT_PRINTUNP
Ctrl Lock	UT_CTRLLOCK	Print All	UT_PRINTALL
Cursor Down	UT_DOWN	RCV	UT_RCV
Cursor Left	UT_LEFT	Recall	UT_RECALL
Cursor Right	UT_RIGHT	Return	UT_RETURN
Cursor Up	UT_UP	Reverse Tab	UT_REVERSETAB
Delete Character	UT_DELETECHAR	Search Character	UT_SEARCHCHAR
Delete Line	UT_DELETELINE	Scroll Down	UT_SCROLLDOWN
ENV1 - ENV3	UT_ENV1 - UT_ENV3	Scroll Left	UT_SCROLLLEFT
Escape	UT_ESCAPE	Scroll Right	UT_SCROLLRIGHT
ETX	UT_ETX	Scroll Up	UT_SCROLLUP
F1 - F10	UT_F1 - UT_F10	Specify	UT_SPCFY
Full	UT_FULL	Split	UT_SPLIT
GS	UT_GS	Store	UT_STORE
Help	UT_HELP	Tab	UT_TAB
Home	UT_HOME	Underscore	UT_UNDERSCORE
Insert Character	UT_INSERTCHAR	XMIT	UT_XMIT

Viewdata Virtual Key Names

Key Function	Virtual Key Name	Key Function	Virtual Key Name
* (Star)	PR_STAR	Cursor Right	PR_RIGHT
# (Hash)	PR_HASH	Cursor Up	PR_UP
Cancel Print	PR_CANCEL	Exit to ANSI mode	PR_EXIT
Cursor Down	PR_DOWN	Reveal	PR_REVEAL
Cursor Left	PR_LEFT		

Wyse Virtual Key Names

Key Function	Virtual Key Name	Key Function	Virtual Key Name
Backspace	WY_BACKSPACE	Delete	WY_DELCHAR
Cursor Down	WY_DOWN	Delete shifted	WY_DELLINE
Cursor Left	WY_LEFT	End	WY_CLRLINE
Cursor Right	WY_RIGHT	End shifted	WY_CLRSCRN
Cursor Up	WY_UP	Insert	WY_INSCHAR
Delete	WY_DELETE	Insert shifted	WY_INSLINE
Del Key	WY_DELKEY	Insert shifted	WY_REPLACE
End	WY_END	Print shifted	WY_SEND
Enter	WY_ENTER	Alt + A	WY_CHARSET
Escape	WY_ESC		
F1 - F16	WY_F1 - WY_F16		
Function	WY_FUNCT		
Home	WY_HOME		
Insert	WY_INSERT		
Keypad 5	WY_KP5		
Page Down	WY_PAGEDOWN		
Page Up	WY_PAGEUP		
Print	WY_PRINT		
Return	WY_RETURN		
Tab	WY_TAB		

Notes:

To obtain the virtual key names for shifted functions of the keys listed at left, substitute WY_ with WY_S_.

The virtual key names listed above are alternative names that can be used.

TeemTalk Virtual Key Name Functions

TeemTalk provides additional virtual key name functions for special tasks such as sending text to a file or the serial port, and reading text from a file to place in the keyboard buffer as if typed.

Key Function	Virtual Key Name
Start Send Text sequence	VK_FILE_O
Start Read Text sequence	VK_FILE_I
End Send/Read Text sequence	VK_FEND
Delay (*nnn* = tenths of a second)	VK_SLEEP*nnn*

The following sections describe how to use these virtual key names.

Sending Text To A File

```
<VK_FILE_O><filename>data string<VK_FEND>
```

will write the `data string` to `filename`. If the file already exists it is replaced.

For example,

```
<VK_FILE_O><c:\file.txt>text to enter to file_013_010next
line of file<VK_FEND>
```

will create a file called **file.txt** containing the following two lines of text:

```
text to enter to file
next line of file
```

Sending Text To The Serial Port

The following command will send text to the serial port:

```
<VK_FILE_O><com1:>text to send to serial port_013_010next
line<VK_FEND>
```

which will result in the following being sent:

```
text to send to serial port<CR><LF>
next line
```

Reading Text From A File

The following command format is used to read a string from a file and push it into the keyboard buffer as if typed:

<VK_FILE_I><filename>max length,retries,termination character <VK_FEND>

The string is terminated when the maximum length is read, or the maximum number of retries is reached, or the termination character is read. Each can be defaulted by entering 0, so entering 0,0,0 will result in a maximum length of 1024, a single retry, and a termination character of 26 (EOF). If the file does not exist an error will be displayed.

For example, the following command will read up to 20 characters, retry 5 times and end at the first <CR>:

<VK_FILE_I><c:\file.txt>20,5,13<VK_FEND>

There is normally a 100 millisecond delay between retries, however many Unix systems will round this up to one second.

Insert Delay

The following command can be used to insert a delay of *nnn* tenths of a second:

<VK_SLEEP*nnn*>

For example, to insert a delay of 10 seconds you would enter:

<VK_SLEEP100>

The delay can be interrupted by pressing any key.

Note that if you want characters to be processed before the delay, insert any other VK virtual key name immediately before <VK_SLEEP*nnn*>. For example:

123<VK_TAB><VK_SLEEP100>456

If you do not include the additional virtual key name, the <VK_SLEEP*nnn*> delay will be executed before any preceding characters are processed.

Notes

B

Character Sets

This appendix shows the supported character sets.

Introduction

Each character set consists of a series of control characters and displayable characters. Displayable characters are alphanumeric, symbolic or graphic characters that can be displayed on the screen or printed by a hardcopy device. Control characters enable the terminal emulation or the printer to perform specific tasks, such as a line feed or carriage return. These will be actioned when received from the host or when the emulator is in local mode and they are entered from the keyboard.

> *Note: When the **Display Controls** option in the **Terminal Settings** dialog box is selected, a representation of most control characters received will be displayed on the screen instead of actioned.*

To enter a control character from the keyboard, first find the displayable character equivalent by adding 64 to the decimal value of the control character in the relevant character set table. For example, the control character **CR** (carriage return) has a decimal value of 13. Adding 64 makes 77 which is the decimal value of the displayable character **M**. When the **Ctrl** (control) key is held down and **Shift** + **M** is pressed, this will generate a **CR** code in local mode.

Some setup options require you to specify one or more control characters. A control character can be specified by typing **^** to represent the **Ctrl** key, immediately followed by the displayable character equivalent of the control character as described in the previous paragraph. For example, **^M**, represents **Ctrl** + **M**, which generates the control character **CR**.

Another way of specifying control characters is by entering the decimal value of the ASCII character. Decimal values are entered as three-digit numbers immediately preceded by an underscore character. Values with only two digits must be preceded by a zero. For example, the decimal value of **CR** is 13, so this would be entered as **_013**.

ASCII CHARACTER SET
(Multinational 7 Bit)

COLUMN		0		1		2		3		4		5		6		7	
ROW	8 7 6 5 BITS 4 3 2 1	$0_0 0_0 0_0$		$0_0 0_0 1_1$		$0_0 1_0 0_0$		$0_0 1_1 1_1$		$0_1 0_0 0_0$		$0_1 0_1 1_1$		$0_1 1_0 0_0$		$0_1 1_1 1_1$	
0	0000	NUL	0 0 0	DLE	20 16 10	SP	40 32 20	0	60 48 30	@	100 64 40	P	120 80 50	`	140 96 60	p	160 112 70
1	0001	SOH	1 1 1	DC1 XON	21 17 11	!	41 33 21	1	61 49 31	A	101 65 41	Q	121 81 51	a	141 97 61	q	161 113 71
2	0010	STX	2 2 2	DC2	22 18 12	"	42 34 22	2	62 50 32	B	102 66 42	R	122 82 52	b	142 98 62	r	162 114 72
3	0011	ETX	3 3 3	DC3 XOFF	23 19 13	#	43 35 23	3	63 51 33	C	103 67 43	S	123 83 53	c	143 99 63	s	163 115 73
4	0100	EOT	4 4 4	DC4	24 20 14	$	44 36 24	4	64 52 34	D	104 68 44	T	124 84 54	d	144 100 64	t	164 116 74
5	0101	ENQ	5 5 5	NAK	25 21 15	%	45 37 25	5	65 53 35	E	105 69 45	U	125 85 55	e	145 101 65	u	165 117 75
6	0110	ACK	6 6 6	SYN	26 22 16	&	46 38 26	6	66 54 36	F	106 70 46	V	126 86 56	f	146 102 66	v	166 118 76
7	0111	BEL	7 7 7	ETB	27 23 17	´	47 39 27	7	67 55 37	G	107 71 47	W	127 87 57	g	147 103 67	w	167 119 77
8	1000	BS	10 8 8	CAN	30 24 18	(	50 40 28	8	70 56 38	H	110 72 48	X	130 88 58	h	150 104 68	x	170 120 78
9	1001	HT	11 9 9	EM	31 25 19	)	51 41 29	9	71 57 39	I	111 73 49	Y	131 89 59	i	151 105 69	y	171 121 79
10	1010	LF	12 10 A	SUB	32 26 1A	*	52 42 2A	:	72 58 3A	J	112 74 4A	Z	132 90 5A	j	152 106 6A	z	172 122 7A
11	1011	VT	13 11 B	ESC	33 27 1B	+	53 43 2B	;	73 59 3B	K	113 75 4B	[	133 91 5B	k	153 107 6B	{	173 123 7B
12	1100	FF	14 12 C	FS	34 28 1C	,	54 44 2C	<	74 60 3C	L	114 76 4C	\	134 92 5C	l	154 108 6C	|	174 124 7C
13	1101	CR	15 13 D	GS	35 29 1D	-	55 45 2D	=	75 61 3D	M	115 77 4D	]	135 93 5D	m	155 109 6D	}	175 125 7D
14	1110	SO	16 14 E	RS	36 30 1E	.	56 46 2E	>	76 62 3E	N	116 78 4E	^	136 94 5E	n	156 110 6E	~	176 126 7E
15	1111	SI	17 15 F	US	37 31 1F	/	57 47 2F	?	77 63 3F	O	117 79 4F	_	137 95 5F	o	157 111 6F	DEL	177 127 7F

KEY: ESC | 33 27 1B | OCTAL DECIMAL HEXADECIMAL

The ASCII (American Standard Code for Information Interchange) character set will be selected when the language is set to North American, or the **Character Set Mode** option in the **Emulation Settings** dialog box is set to **Multinational**. This table forms the first half of the Multinational character set, the second half of which may be the **DEC Additional** or one of the **ISO Latin Additional** sets (as determined by the **Preferred Char. Set** option in the **Terminal Settings** dialog box).

NATIONAL REPLACEMENT CHARACTERS

BINARY BIT 8	0	0	0	0	0	0	0	0	0	0	0	0
7	0	1	1	1	1	1	1	1	1	1	1	1
6	1	0	0	0	1	1	1	1	1	1	1	1
5	0	0	1	1	0	0	1	1	1	1	1	1
4	0	0	1	1	1	1	0	0	1	1	1	1
3	0	0	0	1	1	1	1	1	0	0	0	0
2	1	0	1	0	1	1	1	1	1	0	0	1
1	1	0	1	0	1	0	1	0	1	0	1	0
OCTAL	43	100	133	134	135	136	137	140	173	174	175	176
DECIMAL	35	64	91	92	93	94	95	96	123	124	125	126
HEXADECIMAL	23	40	5B	5C	5D	5E	5F	60	7B	7C	7D	7E
ASCII	#	@	[	\	]	^	_	`	{	|	}	~
British	£	@	[	\	]	^	_	`	{	|	}	~
Canadian	#	à	â	ç	ê	î	_	ô	é	ù	è	û
Danish Norwegian	#	Ä	Æ	Ø	Å	Ü	_	ä	æ	ø	å	ü
Dutch	£	¾	ij	½	|	^	_	`	¨	fl	¼	´
Finnish	#	@	Ä	Ö	Å	Ü	_	é	ä	ö	å	ü
French Belgian	£	à	°	ç	§	^	_	`	é	ù	è	¨
German	#	§	Ä	Ö	Ü	^	_	`	ä	ö	ü	ß
Italian	£	§	°	ç	é	^	_	ù	à	ò	è	ì
Portuguese	#	@	Ã	Ç	Õ	^	_	`	ã	ç	õ	~
Spanish	£	§	¡	Ñ	¿	^	_	`	°	ñ	ç	~
Swedish	#	É	Ä	Ö	Å	Ü	_	é	ä	ö	å	ü
Swiss French Swiss German	ù	à	é	ç	ê	î	è	ô	ä	ö	ü	û

This table shows the characters that replace certain ASCII characters when the **Character Set Mode** option in the **Emulation Settings** dialog box is set to **National**. The national character set consists of the ASCII set with the changed characters listed on the line for the selected keyboard nationality.

DEC ADDITIONAL CHARACTER SET
(Multinational 8 Bit)

8		9		10		11		12		13		14		15		COLUMN	
$1\,0\,0_0$		$1\,0\,0_1$		$1\,0\,1_0$		$1\,0\,1_1$		$1\,1\,0_0$		$1\,1\,0_1$		$1\,1\,1_0$		$1\,1\,1_1$		8 7 BITS 6 5 4 3 2 1	ROW
	200 128 80	DCS	220 144 90		240 160 A0	°	260 176 B0	À	300 192 C0		320 208 D0	à	340 224 E0		360 240 F0	0000	0
	201 129 81	PU1	221 145 91	¡	241 161 A1	±	261 177 B1	Á	301 193 C1	Ñ	321 209 D1	á	341 225 E1	ñ	361 241 F1	0001	1
	202 130 82	PU2	222 146 92	¢	242 162 A2	²	262 178 B2	Â	302 194 C2	Ò	322 210 D2	â	342 226 E2	ò	362 242 F2	0010	2
	203 131 83	STS	223 147 93	£	243 163 A3	³	263 179 B3	Ã	303 195 C3	Ó	323 211 D3	ã	343 227 E3	ó	363 243 F3	0011	3
IND	204 132 84	CCH	224 148 94	¤	244 164 A4		264 180 B4	Ä	304 196 C4	Ô	324 212 D4	ä	344 228 E4	ô	364 244 F4	0100	4
NEL	205 133 85	MW	225 149 95	¥	245 165 A5	µ	265 181 B5	Å	305 197 C5	Õ	325 213 D5	å	345 229 E5	õ	365 245 F5	0101	5
SSA	206 134 86	SPA	226 150 96	¦	246 166 A6	¶	266 182 B6	Æ	306 198 C6	Ö	326 214 D6	æ	346 230 E6	ö	366 246 F6	0110	6
ESA	207 135 87	EPA	227 151 97	§	247 167 A7	·	267 183 B7	Ç	307 199 C7	Œ	327 215 D7	ç	347 231 E7	œ	367 247 F7	0111	7
HTS	210 136 88		230 152 98	¤	250 168 A8		270 184 B8	È	310 200 C8	Ø	330 216 D8	è	350 232 E8	ø	370 248 F8	1000	8
HTJ	211 137 89		231 153 99	©	251 169 A9	¹	271 185 B9	É	311 201 C9	Ù	331 217 D9	é	351 233 E9	ù	371 249 F9	1001	9
VTS	212 138 8A		232 154 9A	ª	252 170 AA	º	272 186 BA	Ê	312 202 CA	Ú	332 218 DA	ê	352 234 EA	ú	372 250 FA	1010	10
PLD	213 139 8B	CSI	233 155 9B	«	253 171 AB	»	273 187 BB	Ë	313 203 CB	Û	333 219 DB	ë	353 235 EB	û	373 251 FB	1011	11
PLU	214 140 8C	ST	234 156 9C		254 172 AC	¼	274 188 BC	Ì	314 204 CC	Ü	334 220 DC	ì	354 236 EC	ü	374 252 FC	1100	12
RI	215 141 8D	OSC	235 157 9D		255 173 AD	½	275 189 BD	Í	315 205 CD	Ÿ	335 221 DD	í	355 237 ED	ÿ	375 253 FD	1101	13
SS2	216 142 8E	PM	236 158 9E		256 174 AE		276 190 BE	Î	316 206 CE		336 222 DE	î	356 238 EE		376 254 FE	1110	14
SS3	217 143 8F	APC	237 159 9F		257 175 AF	¿	277 191 BF	Ï	317 207 CF	ß	337 223 DF	ï	357 239 EF		377 255 FF	1111	15

KEY: ESC 33 27 1B — OCTAL, DECIMAL, HEXADECIMAL

This is one of three possible second halves of the Multinational character set (the first half is the ASCII character set and the other possible second halves are the ISO Latin-1 and ISO Latin-2 Additional character sets). These characters may be generated when the terminal is in **VT500 7** or **8** bit mode, the **Character Set Mode** option in the **Emulation Settings** dialog box is set to **Multinational**, and the **Preferred Char. Set** option in the **Terminal Settings** dialog box is set to **DEC-MCS**.

DEC LINE DRAWING CHARACTER SET

COLUMN		0			1			2			3			4			5			6			7		
ROW	8 7 BITS 6 5 4 3 2 1	$0_0 0_0 0_0$			$0_0 0_0 1_1$			$0_0 1_1 0_0$			$0_0 1_1 1_1$			$0_1 0_0 0_0$			$0_1 0_0 1_1$			$0_1 1_0 0_0$			$0_1 1_1 1_1$		
0	0000	NUL	0 0 0		DLE	20 16 10		SP	40 32 20		0	60 48 30		@	100 64 40		P	120 80 50		◆	140 96 60		⎺	160 112 70
1	0001	SOH	1 1 1		DC1 XON	21 17 11		!	41 33 21		1	61 49 31		A	101 65 41		Q	121 81 51		▮	141 97 61		⎻	161 113 71
2	0010	STX	2 2 2		DC2	22 18 12		"	42 34 22		2	62 50 32		B	102 66 42		R	122 82 52		H_T	142 98 62		⎼	162 114 72
3	0011	ETX	3 3 3		DC3 XOFF	23 19 13		#	43 35 23		3	63 51 33		C	103 67 43		S	123 83 53		F_F	143 99 63		⎽	163 115 73
4	0100	EOT	4 4 4		DC4	24 20 14		$	44 36 24		4	64 52 34		D	104 68 44		T	124 84 54		C_R	144 100 64		├	164 116 74
5	0101	ENQ	5 5 5		NAK	25 21 15		%	45 37 25		5	65 53 35		E	105 69 45		U	125 85 55		L_F	145 101 65		┤	165 117 75
6	0110	ACK	6 6 6		SYN	26 22 16		&	46 38 26		6	66 54 36		F	106 70 46		V	126 86 56		°	146 102 66		┴	166 118 76
7	0111	BEL	7 7 7		ETB	27 23 17		´	47 39 27		7	67 55 37		G	107 71 47		W	127 87 57		±	147 103 67		┬	167 119 77
8	1000	BS	10 8 8		CAN	30 24 18		(	50 40 28		8	70 56 38		H	110 72 48		X	130 88 58		N_L	150 104 68		│	170 120 78
9	1001	HT	11 9 9		EM	31 25 19		)	51 41 29		9	71 57 39		I	111 73 49		Y	131 89 59		V_T	151 105 69		≤	171 121 79
10	1010	LF	12 10 A		SUB	32 26 1A		*	52 42 2A		:	72 58 3A		J	112 74 4A		Z	132 90 5A		┘	152 106 6A		≥	172 122 7A
11	1011	VT	13 11 B		ESC	33 27 1B		+	53 43 2B		;	73 59 3B		K	113 75 4B		[	133 91 5B		┐	153 107 6B		π	173 123 7B
12	1100	FF	14 12 C		FS	34 28 1C		,	54 44 2C		<	74 60 3C		L	114 76 4C		\	134 92 5C		┌	154 108 6C		≠	174 124 7C
13	1101	CR	15 13 D		GS	35 29 1D		-	55 45 2D		=	75 61 3D		M	115 77 4D		]	135 93 5D		└	155 109 6D		£	175 125 7D
14	1110	SO	16 14 E		RS	36 30 1E		.	56 46 2E		>	76 62 3E		N	116 78 4E		^	136 94 5E		┼	156 110 6E		·	176 126 7E
15	1111	SI	17 15 F		US	37 31 1F		/	57 47 2F		?	77 63 3F		O	117 79 4F			137 95 5F		⎺	157 111 6F		DEL	177 127 7F

KEY: ESC 33 27 1B — OCTAL, DECIMAL, HEXADECIMAL

This is a special DEC character set which is used by some applications.

ISO LATIN-1 ADDITIONAL CHARACTER SET
(Multinational 8 Bit)

8		9		10		11		12		13		14		15		COLUMN	
$1\,0\,0_0$		$1\,0\,0_1$		$1\,0\,1_0$		$1\,0\,1_1$		$1\,1\,0_0$		$1\,1\,0_1$		$1\,1\,1_0$		$1\,1\,1_1$		8 7 BITS 6 5 4 3 2 1	ROW
	200 128 80	DCS	220 144 90	NBSP	240 160 A0	°	260 176 B0	À	300 192 C0	Ð	320 208 D0	à	340 224 E0	ð	360 240 F0	0000	0
	201 129 81	PU1	221 145 91	¡	241 161 A1	±	261 177 B1	Á	301 193 C1	Ñ	321 209 D1	á	341 225 E1	ñ	361 241 F1	0001	1
	202 130 82	PU2	222 146 92	¢	242 162 A2	²	262 178 B2	Â	302 194 C2	Ò	322 210 D2	â	342 226 E2	ò	362 242 F2	0010	2
	203 131 83	STS	223 147 93	£	243 163 A3	³	263 179 B3	Ã	303 195 C3	Ó	323 211 D3	ã	343 227 E3	ó	363 243 F3	0011	3
IND	204 132 84	CCH	224 148 94	¤	244 164 A4	´	264 180 B4	Ä	304 196 C4	Ô	324 212 D4	ä	344 228 E4	ô	364 244 F4	0100	4
NEL	205 133 85	MW	225 149 95	¥	245 165 A5	µ	265 181 B5	Å	305 197 C5	Õ	325 213 D5	å	345 229 E5	õ	365 245 F5	0101	5
SSA	206 134 86	SPA	226 150 96	¦	246 166 A6	¶	266 182 B6	Æ	306 198 C6	Ö	326 214 D6	æ	346 230 E6	ö	366 246 F6	0110	6
ESA	207 135 87	EPA	227 151 97	§	247 167 A7	·	267 183 B7	Ç	307 199 C7	×	327 215 D7	ç	347 231 E7	÷	367 247 F7	0111	7
HTS	210 136 88		230 152 98	¨	250 168 A8	¸	270 184 B8	È	310 200 C8	Ø	330 216 D8	è	350 232 E8	ø	370 248 F8	1000	8
HTJ	211 137 89		231 153 99	©	251 169 A9	¹	271 185 B9	É	311 201 C9	Ù	331 217 D9	é	351 233 E9	ù	371 249 F9	1001	9
VTS	212 138 8A		232 154 9A	ª	252 170 AA	º	272 186 BA	Ê	312 202 CA	Ú	332 218 DA	ê	352 234 EA	ú	372 250 FA	1010	10
PLD	213 139 8B	CSI	233 155 9B	«	253 171 AB	»	273 187 BB	Ë	313 203 CB	Û	333 219 DB	ë	353 235 EB	û	373 251 FB	1011	11
PLU	214 140 8C	ST	234 156 9C	¬	254 172 AC	¼	274 188 BC	Ì	314 204 CC	Ü	334 220 DC	ì	354 236 EC	ü	374 252 FC	1100	12
RI	215 141 8D	OSC	235 157 9D	—	255 173 AD	½	275 189 BD	Í	315 205 CD	Ý	335 221 DD	í	355 237 ED	ý	375 253 FD	1101	13
SS2	216 142 8E	PM	236 158 9E	®	256 174 AE	¾	276 190 BE	Î	316 206 CE	Þ	336 222 DE	î	356 238 EE	þ	376 254 FE	1110	14
SS3	217 143 8F	APC	237 159 9F	¯	257 175 AF	¿	277 191 BF	Ï	317 207 CF	ß	337 223 DF	ï	357 239 EF	ÿ	377 255 FF	1111	15

KEY: ESC 33 27 1B — OCTAL, DECIMAL, HEXADECIMAL

This is one of three possible second halves of the Multinational character set (the first half is the ASCII character set and the other possible second halves are the DEC Additional and ISO Latin-2 character sets). These characters may be generated when the terminal is in **VT500 7** or **8** bit mode, the **Character Set Mode** option in the **Emulation Settings** dialog box is set to **Multinational**, and the **Preferred Char. Set** option in the **Terminal Settings** dialog box is set to **ISO Latin-1**.

ISO LATIN-2 ADDITIONAL CHARACTER SET
(Multinational 8 Bit)

8		9		10		11		12		13		14		15		COLUMN	
$1\,0\,0\,0$		$1\,0\,0\,1$		$1\,0\,1\,0$		$1\,0\,1\,1$		$1\,1\,0\,0$		$1\,1\,0\,1$		$1\,1\,1\,0$		$1\,1\,1\,1$		8 7 BITS 6 5 4 3 2 1	ROW
	200 128 80	DCS	220 144 90	NBSP	240 160 A0	°	260 176 B0	Ŕ	300 192 C0	Đ	320 208 D0	ŕ	340 224 E0	ð	360 240 F0	0000	0
	201 129 81	PU1	221 145 91	Ą	241 161 A1	ą	261 177 B1	Á	301 193 C1	Ń	321 209 D1	á	341 225 E1	ń	361 241 F1	0001	1
	202 130 82	PU2	222 146 92	˘	242 162 A2	˛	262 178 B2	Â	302 194 C2	Ň	322 210 D2	â	342 226 E2	ň	362 242 F2	0010	2
	203 131 83	STS	223 147 93	Ł	243 163 A3	ł	263 179 B3	Ă	303 195 C3	Ó	323 211 D3	ă	343 227 E3	ó	363 243 F3	0011	3
IND	204 132 84	CCH	224 148 94	¤	244 164 A4	˝	264 180 B4	Ä	304 196 C4	Ô	324 212 D4	ä	344 228 E4	ô	364 244 F4	0100	4
NEL	205 133 85	MW	225 149 95	Ľ	245 165 A5	ľ	265 181 B5	Ĺ	305 197 C5	Ő	325 213 D5	ĺ	345 229 E5	ő	365 245 F5	0101	5
SSA	206 134 86	SPA	226 150 96	Ś	246 166 A6	ś	266 182 B6	Ć	306 198 C6	Ö	326 214 D6	ć	346 230 E6	ö	366 246 F6	0110	6
ESA	207 135 87	EPA	227 151 97	§	247 167 A7	ˇ	267 183 B7	Ç	307 199 C7	×	327 215 D7	ç	347 231 E7	÷	367 247 F7	0111	7
HTS	210 136 88		230 152 98	¨	250 168 A8	¸	270 184 B8	Č	310 200 C8	Ř	330 216 D8	č	350 232 E8	ř	370 248 F8	1000	8
HTJ	211 137 89		231 153 99	Š	251 169 A9	š	271 185 B9	É	311 201 C9	Ů	331 217 D9	é	351 233 E9	ů	371 249 F9	1001	9
VTS	212 138 8A		232 154 9A	Ş	252 170 AA	ş	272 186 BA	Ę	312 202 CA	Ú	332 218 DA	ę	352 234 EA	ú	372 250 FA	1010	10
PLD	213 139 8B	CSI	233 155 9B	Ť	253 171 AB	ť	273 187 BB	Ë	313 203 CB	Ű	333 219 DB	ë	353 235 EB	ű	373 251 FB	1011	11
PLU	214 140 8C	ST	234 156 9C	Ź	254 172 AC	ź	274 188 BC	E	314 204 CC	Ü	334 220 DC	ě	354 236 EC	ü	374 252 FC	1100	12
RI	215 141 8D	OSC	235 157 9D	SHY	255 173 AD	´´	275 189 BD	Í	315 205 CD	Ý	335 221 DD	í	355 237 ED	ý	375 253 FD	1101	13
SS2	216 142 8E	PM	236 158 9E	Ž	256 174 AE	ž	276 190 BE	Î	316 206 CE	Ţ	336 222 DE	î	356 238 EE	ţ	376 254 FE	1110	14
SS3	217 143 8F	APC	237 159 9F	Ż	257 175 AF	ż	277 191 BF	Ď	317 207 CF	ß	337 223 DF	ď	357 239 EF	˙	377 255 FF	1111	15

KEY: ESC | 33 27 1B | OCTAL DECIMAL HEXADECIMAL

This is one of three possible second halves of the Multinational character set (the first half is the ASCII character set and the other possible second halves are the DEC Additional and ISO Latin-1 character sets). These characters may be generated when the terminal is in **VT500 7** or **8** bit mode, the **Character Set Mode** option in the **Emulation Settings** dialog box is set to **Multinational**, and the **Preferred Char. Set** option in the **Terminal Settings** dialog box is set to **ISO Latin-2**.

ANSI 437 CHARACTER SET

8	9	10	11	12	13	14	15	COLUMN
$1\,0\,0\,0$	$1\,0\,0\,1$	$1\,0\,1\,0$	$1\,0\,1\,1$	$1\,1\,0\,0$	$1\,1\,0\,1$	$1\,1\,1\,0$	$1\,1\,1\,1$	8 7 BITS 6 5 4 3 2 1 / ROW
Ç 200 128 80	É 220 144 90	á 240 160 A0	260 176 B0	300 192 C0	320 208 D0	α 340 224 E0	≡ 360 240 F0	0000 / 0
ü 201 129 81	æ 221 145 91	í 241 161 A1	261 177 B1	301 193 C1	321 209 D1	ß 341 225 E1	± 361 241 F1	0001 / 1
é 202 130 82	Æ 222 146 92	ó 242 162 A2	262 178 B2	302 194 C2	322 210 D2	Γ 342 226 E2	≥ 362 242 F2	0010 / 2
â 203 131 83	ô 223 147 93	ú 243 163 A3	263 179 B3	303 195 C3	323 211 D3	π 343 227 E3	≤ 363 243 F3	0011 / 3
ä 204 132 84	ö 224 148 94	ñ 244 164 A4	264 180 B4	304 196 C4	324 212 D4	Σ 344 228 E4	⌠ 364 244 F4	0100 / 4
à 205 133 85	ò 225 149 95	Ñ 245 165 A5	265 181 B5	305 197 C5	325 213 D5	σ 345 229 E5	⌡ 365 245 F5	0101 / 5
å 206 134 86	û 226 150 96	ª 246 166 A6	266 182 B6	306 198 C6	326 214 D6	µ 346 230 E6	÷ 366 246 F6	0110 / 6
ç 207 135 87	ù 227 151 97	º 247 167 A7	267 183 B7	307 199 C7	327 215 D7	τ 347 231 E7	≈ 367 247 F7	0111 / 7
ê 210 136 88	ÿ 230 152 98	¿ 250 168 A8	270 184 B8	310 200 C8	330 216 D8	Φ 350 232 E8	° 370 248 F8	1000 / 8
ë 211 137 89	Ö 231 153 99	⌐ 251 169 A9	271 185 B9	311 201 C9	331 217 D9	Θ 351 233 E9	∙ 371 249 F9	1001 / 9
è 212 138 8A	Ü 232 154 9A	¬ 252 170 AA	272 186 BA	312 202 CA	332 218 DA	Ω 352 234 EA	· 372 250 FA	1010 / 10
ï 213 139 8B	¢ 233 155 9B	½ 253 171 AB	273 187 BB	313 203 CB	333 219 DB	δ 353 235 EB	√ 373 251 FB	1011 / 11
î 214 140 8C	£ 234 156 9C	¼ 254 172 AC	274 188 BC	314 204 CC	334 220 DC	∞ 354 236 EC	n 374 252 FC	1100 / 12
ì 215 141 8D	¥ 235 157 9D	¡ 255 173 AD	275 189 BD	315 205 CD	335 221 DD	φ 355 237 ED	2 375 253 FD	1101 / 13
Ä 216 142 8E	₧ 236 158 9E	« 256 174 AE	276 190 BE	316 206 CE	336 222 DE	∈ 356 238 EE	■ 376 254 FE	1110 / 14
Å 217 143 8F	ƒ 237 159 9F	» 257 175 AF	277 191 BF	317 207 CF	337 223 DF	∩ 357 239 EF	BLANK FF 377 255 FF	1111 / 15

KEY: Ñ 245 165 A5 — OCTAL, DECIMAL, HEXADECIMAL

This table forms the second half of the ANSI 437 character set, the first half being the ASCII character set.

The ANSI 437 character set is used when the **Preferred Char. Set** option in the **Terminal Settings** dialog box is set to **Ansi** and the **Ansi Code Page** option is set to **437**.

ANSI 850 CHARACTER SET

8		9		10		11		12		13		14		15		COLUMN	
$1\,0\,0\,0$		$1\,0\,0\,1$		$1\,0\,1\,0$		$1\,0\,1\,1$		$1\,1\,0\,0$		$1\,1\,0\,1$		$1\,1\,1\,0$		$1\,1\,1\,1$		8 7 BITS 6 5 4 3 2 1	ROW
Ç	200 128 80	É	220 144 90	á	240 160 A0	▒	260 176 B0	└	300 192 C0	ð	320 208 D0	Ó	340 224 E0	—	360 240 F0	0000	0
ü	201 129 81	æ	221 145 91	í	241 161 A1	▒	261 177 B1	┴	301 193 C1	Ð	321 209 D1	ß	341 225 E1	±	361 241 F1	0001	1
é	202 130 82	Æ	222 146 92	ó	242 162 A2	▓	262 178 B2	┬	302 194 C2	Ê	322 210 D2	Ô	342 226 E2	‗	362 242 F2	0010	2
â	203 131 83	ô	223 147 93	ú	243 163 A3	│	263 179 B3	├	303 195 C3	Ë	323 211 D3	Ò	343 227 E3	¾	363 243 F3	0011	3
ä	204 132 84	ö	224 148 94	ñ	244 164 A4	┤	264 180 B4	─	304 196 C4	È	324 212 D4	õ	344 228 E4	¶	364 244 F4	0100	4
à	205 133 85	ò	225 149 95	Ñ	245 165 A5	Á	265 181 B5	┼	305 197 C5	ı	325 213 D5	Õ	345 229 E5	§	365 245 F5	0101	5
å	206 134 86	û	226 150 96	ª	246 166 A6	Â	266 182 B6	ã	306 198 C6	Í	326 214 D6	µ	346 230 E6	÷	366 246 F6	0110	6
ç	207 135 87	ù	227 151 97	º	247 167 A7	À	267 183 B7	Ã	307 199 C7	Î	327 215 D7	Þ	347 231 E7	¸	367 247 F7	0111	7
ê	210 136 88	ÿ	230 152 98	¿	250 168 A8	©	270 184 B8	╚	310 200 C8	Ï	330 216 D8	Þ	350 232 E8	°	370 248 F8	1000	8
ë	211 137 89	Ö	231 153 99	®	251 169 A9	╣	271 185 B9	╔	311 201 C9	┘	331 217 D9	Ú	351 233 E9	¨	371 249 F9	1001	9
è	212 138 8A	Ü	232 154 9A	¬	252 170 AA	║	272 186 BA	╩	312 202 CA	┌	332 218 DA	Û	352 234 EA	•	372 250 FA	1010	10
ï	213 139 8B	ø	233 155 9B	½	253 171 AB	╗	273 187 BB	╦	313 203 CB	▉	333 219 DB	Ù	353 235 EB	1	373 251 FB	1011	11
î	214 140 8C	£	234 156 9C	¼	254 172 AC	╝	274 188 BC	╠	314 204 CC	▀	334 220 DC	ý	354 236 EC	3	374 252 FC	1100	12
ì	215 141 8D	Ø	235 157 9D	¡	255 173 AD	¢	275 189 BD	═	315 205 CD	¦	335 221 DD	Ý	355 237 ED	2	375 253 FD	1101	13
Ä	216 142 8E	×	236 158 9E	«	256 174 AE	¥	276 190 BE	╬	316 206 CE	Ì	336 222 DE	¯	356 238 EE	▌	376 254 FE	1110	14
Å	217 143 8F	ƒ	237 159 9F	»	257 175 AF	┐	277 191 BF	¤	317 207 CF	▄	337 223 DF	´	357 239 EF	BLANK FF	377 255 FF	1111	15

KEY: Ñ 245 / 165 / A5 — OCTAL / DECIMAL / HEXADECIMAL

This table forms the second half of the ANSI 850 character set, the first half being the ASCII character set.

The ANSI 850 character set is used when the **Preferred Char. Set** option in the **Terminal Settings** dialog box is set to **Ansi** and the **Ansi Code Page** option is set to **850**.

ANSI 858 CHARACTER SET

8		9		10		11		12		13		14		15		COLUMN	
$1_0 0_0$		$1_0 0_1$		$1_0 1_0$		$1_0 1_1$		$1_1 0_0$		$1_1 0_1$		$1_1 1_0$		$1_1 1_1$		8 7 BITS 6 5 4 3 2 1	ROW
Ç	200 128 80	É	220 144 90	á	240 160 A0	▒	260 176 B0	└	300 192 C0	ð	320 208 D0	Ó	340 224 E0	—	360 240 F0	0000	0
ü	201 129 81	æ	221 145 91	í	241 161 A1	▒	261 177 B1	┴	301 193 C1	Ð	321 209 D1	ß	341 225 E1	±	361 241 F1	0001	1
é	202 130 82	Æ	222 146 92	ó	242 162 A2	▓	262 178 B2	┬	302 194 C2	Ê	322 210 D2	Ô	342 226 E2	‗	362 242 F2	0010	2
â	203 131 83	ô	223 147 93	ú	243 163 A3	│	263 179 B3	├	303 195 C3	Ë	323 211 D3	Ò	343 227 E3	¾	363 243 F3	0011	3
ä	204 132 84	ö	224 148 94	ñ	244 164 A4	┤	264 180 B4	─	304 196 C4	È	324 212 D4	õ	344 228 E4	¶	364 244 F4	0100	4
à	205 133 85	ò	225 149 95	Ñ	245 165 A5	Á	265 181 B5	┼	305 197 C5	€	325 213 D5	Õ	345 229 E5	§	365 245 F5	0101	5
å	206 134 86	û	226 150 96	ª	246 166 A6	Â	266 182 B6	ã	306 198 C6	Í	326 214 D6	µ	346 230 E6	÷	366 246 F6	0110	6
ç	207 135 87	ù	227 151 97	º	247 167 A7	À	267 183 B7	Ã	307 199 C7	Î	327 215 D7	Þ	347 231 E7	¸	367 247 F7	0111	7
ê	210 136 88	ÿ	230 152 98	¿	250 168 A8	©	270 184 B8	╚	310 200 C8	Ï	330 216 D8	Þ	350 232 E8	°	370 248 F8	1000	8
ë	211 137 89	Ö	231 153 99	®	251 169 A9	╣	271 185 B9	╔	311 201 C9	┘	331 217 D9	Ú	351 233 E9	¨	371 249 F9	1001	9
è	212 138 8A	Ü	232 154 9A	¬	252 170 AA	║	272 186 BA	╩	312 202 CA	┌	332 218 DA	Û	352 234 EA	•	372 250 FA	1010	10
ï	213 139 8B	ø	233 155 9B	½	253 171 AB	╗	273 187 BB	╦	313 203 CB	▮	333 219 DB	Ù	353 235 EB	1	373 251 FB	1011	11
î	214 140 8C	£	234 156 9C	¼	254 172 AC	╝	274 188 BC	╠	314 204 CC	▪	334 220 DC	ý	354 236 EC	3	374 252 FC	1100	12
ì	215 141 8D	Ø	235 157 9D	¡	255 173 AD	¢	275 189 BD	═	315 205 CD	¦	335 221 DD	Ý	355 237 ED	2	375 253 FD	1101	13
Ä	216 142 8E	×	236 158 9E	«	256 174 AE	¥	276 190 BE	╬	316 206 CE	Ì	336 222 DE	¯	356 238 EE	▮	376 254 FE	1110	14
Å	217 143 8F	ƒ	237 159 9F	»	257 175 AF	┐	277 191 BF	¤	317 207 CF	▮	337 223 DF	´	357 239 EF	BLANK FF	377 255 FF	1111	15

KEY: Ñ | 245 165 A5 | OCTAL / DECIMAL / HEXADECIMAL

This table forms the second half of the ANSI 858 character set, the first half being the ASCII character set.

The ANSI 858 character set is used when the **Preferred Char. Set** option in the **Terminal Settings** dialog box is set to **Ansi** and the **Ansi Code Page** option is set to **858**.

ANSI 1250 CHARACTER SET

8		9		10		11		12		13		14		15		COLUMN	
$1\,0\,0\,0$		$1\,0\,0\,1$		$1\,0\,1\,0$		$1\,0\,1\,1$		$1\,1\,0\,0$		$1\,1\,0\,1$		$1\,1\,1\,0$		$1\,1\,1\,1$		8 7 BITS 6 5 4 3 2 1	ROW
	200 128 80	DCS	220 144 90	NBSP	240 160 A0	°	260 176 B0	Ŕ	300 192 C0	Đ	320 208 D0	ŕ	340 224 E0	ð	360 240 F0	0000	0
	201 129 81	PU1	221 145 91	Ą	241 161 A1	ą	261 177 B1	Á	301 193 C1	Ń	321 209 D1	á	341 225 E1	ń	361 241 F1	0001	1
	202 130 82	PU2	222 146 92	˘	242 162 A2	˛	262 178 B2	Â	302 194 C2	Ň	322 210 D2	â	342 226 E2	ň	362 242 F2	0010	2
	203 131 83	STS	223 147 93	Ł	243 163 A3	ł	263 179 B3	Ă	303 195 C3	Ő	323 211 D3	ă	343 227 E3	ő	363 243 F3	0011	3
IND	204 132 84	CCH	224 148 94	¤	244 164 A4	´	264 180 B4	Ä	304 196 C4	Ô	324 212 D4	ä	344 228 E4	ô	364 244 F4	0100	4
NEL	205 133 85	MW	225 149 95	Ľ	245 165 A5	ľ	265 181 B5	Ĺ	305 197 C5	ő	325 213 D5	ĺ	345 229 E5	ő	365 245 F5	0101	5
SSA	206 134 86	SPA	226 150 96	Ś	246 166 A6	ś	266 182 B6	Ć	306 198 C6	Ö	326 214 D6	ć	346 230 E6	ö	366 246 F6	0110	6
ESA	207 135 87	EPA	227 151 97	§	247 167 A7	ˇ	267 183 B7	Ç	307 199 C7	×	327 215 D7	ç	347 231 E7	÷	367 247 F7	0111	7
HTS	210 136 88		230 152 98	¨	250 168 A8	¸	270 184 B8	Č	310 200 C8	Ř	330 216 D8	č	350 232 E8	ř	370 248 F8	1000	8
HTJ	211 137 89		231 153 99	Š	251 169 A9	š	271 185 B9	É	311 201 C9	Ů	331 217 D9	é	351 233 E9	ů	371 249 F9	1001	9
VTS	212 138 8A		232 154 9A	Ş	252 170 AA	ş	272 186 BA	Ę	312 202 CA	Ú	332 218 DA	ę	352 234 EA	ú	372 250 FA	1010	10
PLD	213 139 8B	CSI	233 155 9B	Ť	253 171 AB	t’	273 187 BB	Ë	313 203 CB	Ű	333 219 DB	ë	353 235 EB	ű	373 251 FB	1011	11
PLU	214 140 8C	ST	234 156 9C	Ź	254 172 AC	ź	274 188 BC	Ě	314 204 CC	Ü	334 220 DC	ě	354 236 EC	ü	374 252 FC	1100	12
RI	215 141 8D	OSC	235 157 9D	SHY	255 173 AD	˝	275 189 BD	Í	315 205 CD	Ý	335 221 DD	í	355 237 ED	ý	375 253 FD	1101	13
SS2	216 142 8E	PM	236 158 9E	Ž	256 174 AE	ž	276 190 BE	Î	316 206 CE	Ţ	336 222 DE	î	356 238 EE	ţ	376 254 FE	1110	14
SS3	217 143 8F	APC	237 159 9F	Ż	257 175 AF	ż	277 191 BF	Ď	317 207 CF	ß	337 223 DF	d’	357 239 EF	·	377 255 FF	1111	15

KEY: ESC | 33 27 1B | OCTAL DECIMAL HEXADECIMAL

This table forms the second half of the ANSI 1250 character set, the first half being the ASCII character set.

The ANSI 1250 character set is used when the **Preferred Char. Set** option in the **Terminal Settings** dialog box is set to **Ansi** and the **Ansi Code Page** option is set to **1250**.

DG 410/412 WORD PROCESSING, MATH & GREEK ALPHABET CHARACTER SET

COLUMN		0		1		2		3		4		5		6		7	
ROW	8 7 6 5 BITS 4 3 2 1	$0_0 0_0 0_0$		$0_0 0_0 1_1$		$0_0 1_0 0_0$		$0_0 1_1 1_1$		$0_1 0_0 0_0$		$0_1 0_1 0_1$		$0_1 1_0 0_0$		$0_1 1_1 1_1$	
0	0000	**NUL**	0 0 0	**DLE**	20 16 10	**SP**	40 32 20	**0**	60 48 30	**!!**	100 64 40	π	120 80 50	⊢	140 96 60	**0**	160 112 70
1	0001	**SOH**	1 1 1	**DC1** **XON**	21 17 11	⌜	41 33 21	**1**	61 49 31	∝	101 65 41	ρ	121 81 51	◆	141 97 61	**1**	161 113 71
2	0010	**STX**	2 2 2	**DC2**	22 18 12	⌊	42 34 22	**2**	62 50 32	ß	102 66 42	σ	122 82 52	▶	142 98 62	**2**	162 114 72
3	0011	**ETX**	3 3 3	**DC3** **XOFF**	23 19 13	⌝	43 35 23	**3**	63 51 33	γ	103 67 43	τ	123 83 53	▷	143 99 63	**3**	163 115 73
4	0100	**EOT**	4 4 4	**DC4**	24 20 14	⌟	44 36 24	**4**	64 52 34	δ	104 68 44	υ	124 84 54	◀	144 100 64	**4**	164 116 74
5	0101	**ENQ**	5 5 5	**NAK**	25 21 15	ƒ	45 37 25	**5**	65 53 35	ε	105 69 45	φ	125 85 55	▲	145 101 65	**5**	165 117 75
6	0110	**ACK**	6 6 6	**SYN**	26 22 16	∽	46 38 26	**6**	66 54 36	ζ	106 70 46	χ	126 86 56	▼	146 102 66	**6**	166 118 76
7	0111	**BEL**	7 7 7	**ETB**	27 23 17	∂	47 39 27	**7**	67 55 37	η	107 71 47	ψ	127 87 57	☒	147 103 67	**7**	167 119 77
8	1000	**BS**	10 8 8	**CAN**	30 24 18	⌃	50 40 28	**8**	70 56 38	θ	110 72 48	ω	130 88 58	⧗	150 104 68	**8**	170 120 78
9	1001	**HT**	11 9 9	**EM**	31 25 19	∠	51 41 29	**9**	71 57 39	ι	111 73 49	Ω	131 89 59	⧗	151 105 69	**9**	171 121 79
10	1010	**LF**	12 10 A	**SUB**	32 26 1A	⌠	52 42 2A	≠	72 58 3A	κ	112 74 4A	Δ	132 90 5A	⧖	152 106 6A	H_F	172 122 7A
11	1011	**VT**	13 11 B	**ESC**	33 27 1B	⌡	53 43 2B	⌜	73 59 3B	λ	113 75 4B	¶	133 91 5B	⧖	153 107 6B	↑	173 123 7B
12	1100	**FF**	14 12 C	**FS**	34 28 1C	⌿	54 44 2C	⇤	74 60 3C	μ	114 76 4C	B_P	134 92 5C	◺	154 108 6C	→	174 124 7C
13	1101	**CR**	15 13 D	**GS**	35 29 1D	⌿	55 45 2D	⇤	75 61 3D	ν	115 77 4D	B_E	135 93 5D	◿	155 109 6D	←	175 125 7D
14	1110	**SO**	16 14 E	**RS**	36 30 1E	∞	56 46 2E	⇥	76 62 3E	ξ	116 78 4E	F_N	136 94 5E	◣	156 110 6E	↓	176 126 7E
15	1111	**SI**	17 15 F	**US**	37 31 1F	∝	57 47 2F	•	77 63 3F	◇	117 79 4F	F_E	137 95 5F	◢	157 111 6F	**DEL**	177 127 7F

KEY: **ESC** 33 27 1B — OCTAL, DECIMAL, HEXADECIMAL

DG 410/412 LINE DRAWING CHARACTER SET

COLUMN		0	1	2	3	4	5	6	7
ROW	8 7 6 5 BITS 4 3 2 1	0 0 0 0	0 0 0 1	0 0 1 0	0 0 1 1	0 1 0 0	0 1 0 1	0 1 1 0	0 1 1 1
0	0000	0 0 0	20 16 10	40 32 20	60 48 30	100 64 40	120 80 50	140 96 60	160 112 70
1	0001	1 1 1	21 17 11	41 33 21	61 49 31	101 65 41	121 81 51	141 97 61	161 113 71
2	0010	2 2 2	22 18 12	42 34 22	62 50 32	102 66 42	122 82 52	142 98 62	162 114 72
3	0011	3 3 3	23 19 13	43 35 23	63 51 33	103 67 43	123 83 53	143 99 63	163 115 73
4	0100	4 4 4	24 20 14	44 36 24	64 52 34	104 68 44	124 84 54	144 100 64	164 116 74
5	0101	5 5 5	25 21 15	45 37 25	65 53 35	105 69 45	125 85 55	145 101 65	165 117 75
6	0110	6 6 6	26 22 16	46 38 26	66 54 36	106 70 46	126 86 56	146 102 66	166 118 76
7	0111	7 7 7	27 23 17	47 39 27	67 55 37	107 71 47	127 87 57	147 103 67	167 119 77
8	1000	10 8 8	30 24 18	50 40 28	70 56 38	110 72 48	130 88 58	150 104 68	170 120 78
9	1001	11 9 9	31 25 19	51 41 29	71 57 39	111 73 49	131 89 59	151 105 69	171 121 79
10	1010	12 10 A	32 26 1A	52 42 2A	72 58 3A	112 74 4A	132 90 5A	152 106 6A	172 122 7A
11	1011	13 11 B	33 27 1B	53 43 2B	73 59 3B	113 75 4B	133 91 5B	153 107 6B	173 123 7B
12	1100	14 12 C	34 28 1C	54 44 2C	74 60 3C	114 76 4C	134 92 5C	154 108 6C	174 124 7C
13	1101	15 13 D	35 29 1D	55 45 2D	75 61 3D	115 77 4D	135 93 5D	155 109 6D	175 125 7D
14	1110	16 14 E	36 30 1E	56 46 2E	76 62 3E	116 78 4E	136 94 5E	156 110 6E	176 126 7E
15	1111	17 15 F	37 31 1F	57 47 2F	77 63 3F	117 79 4F	137 95 5F	157 111 6F	177 127 7F

KEY: ÷ | 75 OCTAL | 61 DECIMAL | 3D HEXADECIMAL

WYSE NATIVE MODE CHARACTER SET

COLUMN		0		1		2		3		4		5		6		7	
ROW	8 7 BITS 6 5 4 3 2 1	$0\,0\,0\,0$		$0\,0\,0\,1$		$0\,0\,1\,0$		$0\,0\,1\,1$		$0\,1\,0\,0$		$0\,1\,0\,1$		$0\,1\,1\,0$		$0\,1\,1\,1$	
0	0000		0 0 0	┬	20 16 10		40 32 20	**0**	60 48 30	**@**	100 64 40	**P**	120 80 50	`	140 96 60	**p**	160 112 70
1	0001	SH	1 1 1	└	21 17 11	**!**	41 33 21	**1**	61 49 31	**A**	101 65 41	**Q**	121 81 51	**a**	141 97 61	**q**	161 113 71
2	0010	SX	2 2 2	┌	22 18 12	**"**	42 34 22	**2**	62 50 32	**B**	102 66 42	**R**	122 82 52	**b**	142 98 62	**r**	162 114 72
3	0011	EX	3 3 3	┐	23 19 13	**#**	43 35 23	**3**	63 51 33	**C**	103 67 43	**S**	123 83 53	**c**	143 99 63	**s**	163 115 73
4	0100	ET	4 4 4	├	24 20 14	**$**	44 36 24	**4**	64 52 34	**D**	104 68 44	**T**	124 84 54	**d**	144 100 64	**t**	164 116 74
5	0101	EQ	5 5 5	┘	25 21 15	**%**	45 37 25	**5**	65 53 35	**E**	105 69 45	**U**	125 85 55	**e**	145 101 65	**u**	165 117 75
6	0110	AK	6 6 6	│	26 22 16	**&**	46 38 26	**6**	66 54 36	**F**	106 70 46	**V**	126 86 56	**f**	146 102 66	**v**	166 118 76
7	0111	BL	7 7 7	■	27 23 17	**´**	47 39 27	**7**	67 55 37	**G**	107 71 47	**W**	127 87 57	**g**	147 103 67	**w**	167 119 77
8	1000	BS	10 8 8	┼	30 24 18	**(**	50 40 28	**8**	70 56 38	**H**	110 72 48	**X**	130 88 58	**h**	150 104 68	**x**	170 120 78
9	1001	HT	11 9 9	┤	31 25 19	**)**	51 41 29	**9**	71 57 39	**I**	111 73 49	**Y**	131 89 59	**i**	151 105 69	**y**	171 121 79
10	1010	LF	12 10 A	─	32 26 1A	*****	52 42 2A	**:**	72 58 3A	**J**	112 74 4A	**Z**	132 90 5A	**j**	152 106 6A	**z**	172 122 7A
11	1011	VT	13 11 B	▒	33 27 1B	**+**	53 43 2B	**;**	73 59 3B	**K**	113 75 4B	**[**	133 91 5B	**k**	153 107 6B	**{**	173 123 7B
12	1100	FF	14 12 C	═	34 28 1C	**,**	54 44 2C	**<**	74 60 3C	**L**	114 76 4C	****	134 92 5C	**l**	154 108 6C	**|**	174 124 7C
13	1101	CR	15 13 D	┴	35 29 1D	**-**	55 45 2D	**=**	75 61 3D	**M**	115 77 4D	**]**	135 93 5D	**m**	155 109 6D	**}**	175 125 7D
14	1110	SO	16 14 E	╫	36 30 1E	**.**	56 46 2E	**>**	76 62 3E	**N**	116 78 4E	**^**	136 94 5E	**n**	156 110 6E	**~**	176 126 7E
15	1111	SI	17 15 F	▒	37 31 1F	**/**	57 47 2F	**?**	77 63 3F	**O**	117 79 4F	_	137 95 5F	**o**	157 111 6F	▒	177 127 7F

KEY: ┴ 35 (OCTAL) 29 (DECIMAL) 1D (HEXADECIMAL)

This character set is used by all Wyse emulations and associated emulations. In WY-60 mode this is the default primary character set.

WY-60 MULTINATIONAL (CODE PAGE 437) CHARACTER SET

8	9	10	11	12	13	14	15	COLUMN
$1\,0\,0\,0$	$1\,0\,0\,1$	$1\,0\,1\,0$	$1\,0\,1\,1$	$1\,1\,0\,0$	$1\,1\,0\,1$	$1\,1\,1\,0$	$1\,1\,1\,1$	8 7 BITS 6 5 4 3 2 1 / ROW
Ç 200 128 80	É 220 144 90	á 240 160 A0	260 176 B0	└ 300 192 C0	╙ 320 208 D0	α 340 224 E0	≡ 360 240 F0	0000 0
ü 201 129 81	æ 221 145 91	í 241 161 A1	261 177 B1	┴ 301 193 C1	╤ 321 209 D1	ß 341 225 E1	± 361 241 F1	0001 1
é 202 130 82	Æ 222 146 92	ó 242 162 A2	262 178 B2	┬ 302 194 C2	╥ 322 210 D2	Γ 342 226 E2	≥ 362 242 F2	0010 2
â 203 131 83	ô 223 147 93	ú 243 163 A3	263 179 B3	├ 303 195 C3	╙ 323 211 D3	π 343 227 E3	≤ 363 243 F3	0011 3
ä 204 132 84	ö 224 148 94	ñ 244 164 A4	264 180 B4	─ 304 196 C4	╘ 324 212 D4	Σ 344 228 E4	⌠ 364 244 F4	0100 4
à 205 133 85	ò 225 149 95	Ñ 245 165 A5	265 181 B5	┼ 305 197 C5	╒ 325 213 D5	σ 345 229 E5	⌡ 365 245 F5	0101 5
å 206 134 86	û 226 150 96	ª 246 166 A6	266 182 B6	╞ 306 198 C6	╓ 326 214 D6	µ 346 230 E6	÷ 366 246 F6	0110 6
ç 207 135 87	ù 227 151 97	º 247 167 A7	267 183 B7	╟ 307 199 C7	╫ 327 215 D7	τ 347 231 E7	≈ 367 247 F7	0111 7
ê 210 136 88	ÿ 230 152 98	¿ 250 168 A8	270 184 B8	╚ 310 200 C8	╪ 330 216 D8	Φ 350 232 E8	○ 370 248 F8	1000 8
ë 211 137 89	Ö 231 153 99	⌐ 251 169 A9	271 185 B9	╔ 311 201 C9	┘ 331 217 D9	Θ 351 233 E9	● 371 249 F9	1001 9
è 212 138 8A	Ü 232 154 9A	¬ 252 170 AA	272 186 BA	╩ 312 202 CA	┌ 332 218 DA	Ω 352 234 EA	• 372 250 FA	1010 10
ï 213 139 8B	¢ 233 155 9B	½ 253 171 AB	273 187 BB	╦ 313 203 CB	■ 333 219 DB	δ 353 235 EB	√ 373 251 FB	1011 11
î 214 140 8C	£ 234 156 9C	¼ 254 172 AC	274 188 BC	╠ 314 204 CC	▄ 334 220 DC	∞ 354 236 EC	n 374 252 FC	1100 12
ì 215 141 8D	¥ 235 157 9D	¡ 255 173 AD	275 189 BD	═ 315 205 CD	▌ 335 221 DD	φ 355 237 ED	2 375 253 FD	1101 13
Ä 216 142 8E	₧ 236 158 9E	« 256 174 AE	276 190 BE	╬ 316 206 CE	▐ 336 222 DE	∈ 356 238 EE	■ 376 254 FE	1110 14
Å 217 143 8F	ƒ 237 159 9F	» 257 175 AF	277 191 BF	╧ 317 207 CF	▀ 337 223 DF	∩ 357 239 EF	BLANK FF 377 255 FF	1111 15

KEY: Ñ 245 165 A5 — OCTAL, DECIMAL, HEXADECIMAL

This Wyse character set is only available in WY-60 mode and is the secondary character set when the **Code Page** option in the **Wyse Settings** dialog box is set to **437**.

WY-60 MULTINATIONAL (CODE PAGE 850) CHARACTER SET

8	9	10	11	12	13	14	15	COLUMN
$1\,0\,0_0$	$1\,0\,0_1$	$1\,0\,1_0$	$1\,0\,1_1$	$1\,1\,0_0$	$1\,1\,0_1$	$1\,1\,1_0$	$1\,1\,1_1$	8 7 BITS 6 5 4 3 2 1 / ROW
Ç 200 128 80	É 220 144 90	á 240 160 A0	260 176 B0	└ 300 192 C0	ð 320 208 D0	Ó 340 224 E0	— 360 240 F0	0000 0
ü 201 129 81	æ 221 145 91	í 241 161 A1	261 177 B1	┴ 301 193 C1	Ð 321 209 D1	ß 341 225 E1	± 361 241 F1	0001 1
é 202 130 82	Æ 222 146 92	ó 242 162 A2	262 178 B2	┬ 302 194 C2	Ê 322 210 D2	Ô 342 226 E2	‗ 362 242 F2	0010 2
â 203 131 83	ô 223 147 93	ú 243 163 A3	263 179 B3	├ 303 195 C3	Ë 323 211 D3	Ò 343 227 E3	¾ 363 243 F3	0011 3
ä 204 132 84	ö 224 148 94	ñ 244 164 A4	264 180 B4	─ 304 196 C4	È 324 212 D4	õ 344 228 E4	¶ 364 244 F4	0100 4
à 205 133 85	ò 225 149 95	Ñ 245 165 A5	Á 265 181 B5	┼ 305 197 C5	ı 325 213 D5	Õ 345 229 E5	§ 365 245 F5	0101 5
å 206 134 86	û 226 150 96	ª 246 166 A6	Â 266 182 B6	ã 306 198 C6	Í 326 214 D6	µ 346 230 E6	÷ 366 246 F6	0110 6
ç 207 135 87	ù 227 151 97	º 247 167 A7	À 267 183 B7	Ã 307 199 C7	Î 327 215 D7	Þ 347 231 E7	؎ 367 247 F7	0111 7
ê 210 136 88	ÿ 230 152 98	¿ 250 168 A8	© 270 184 B8	╚ 310 200 C8	Ï 330 216 D8	Þ 350 232 E8	° 370 248 F8	1000 8
ë 211 137 89	Ö 231 153 99	® 251 169 A9	╣ 271 185 B9	╔ 311 201 C9	┘ 331 217 D9	Ú 351 233 E9	·· 371 249 F9	1001 9
è 212 138 8A	Ü 232 154 9A	¬ 252 170 AA	║ 272 186 BA	╩ 312 202 CA	┌ 332 218 DA	Û 352 234 EA	• 372 250 FA	1010 10
ï 213 139 8B	ø 233 155 9B	½ 253 171 AB	╗ 273 187 BB	╦ 313 203 CB	■ 333 219 DB	Ù 353 235 EB	1 373 251 FB	1011 11
î 214 140 8C	£ 234 156 9C	¼ 254 172 AC	╝ 274 188 BC	╠ 314 204 CC	▄ 334 220 DC	ý 354 236 EC	3 374 252 FC	1100 12
ì 215 141 8D	Ø 235 157 9D	¡ 255 173 AD	¢ 275 189 BD	═ 315 205 CD	¦ 335 221 DD	Ý 355 237 ED	2 375 253 FD	1101 13
Ä 216 142 8E	× 236 158 9E	« 256 174 AE	¥ 276 190 BE	╬ 316 206 CE	Ì 336 222 DE	¯ 356 238 EE	▌ 376 254 FE	1110 14
Å 217 143 8F	ƒ 237 159 9F	» 257 175 AF	┐ 277 191 BF	¤ 317 207 CF	▀ 337 223 DF	´ 357 239 EF	BLANK FF 377 255 FF	1111 15

KEY: Ñ 245 165 A5 — OCTAL / DECIMAL / HEXADECIMAL

This Wyse character set is only available in WY-60 mode and is the secondary character set when the **Code Page** option in the **Wyse Settings** dialog box is set to **850**.

WY-60 PC EQUIVALENT CHARACTER SET

COLUMN		0		1		2		3		4		5		6		7	
ROW	8 7 BITS 6 5 4 3 2 1	$0\,0\,0\,0$		$0\,0\,0\,1$		$0\,0\,1\,0$		$0\,0\,1\,1$		$0\,1\,0\,0$		$0\,1\,0\,1$		$0\,1\,1\,0$		$0\,1\,1\,1$	
0	0000		0 0 0	▶	20 16 10		40 32 20	**0**	60 48 30	**@**	100 64 40	**P**	120 80 50	`	140 96 60	**p**	160 112 70
1	0001	☺	1 1 1	◀	21 17 11	**!**	41 33 21	**1**	61 49 31	**A**	101 65 41	**Q**	121 81 51	**a**	141 97 61	**q**	161 113 71
2	0010	☻	2 2 2	↕	22 18 12	**"**	42 34 22	**2**	62 50 32	**B**	102 66 42	**R**	122 82 52	**b**	142 98 62	**r**	162 114 72
3	0011	♥	3 3 3	**!!**	23 19 13	**#**	43 35 23	**3**	63 51 33	**C**	103 67 43	**S**	123 83 53	**c**	143 99 63	**s**	163 115 73
4	0100	♦	4 4 4	¶	24 20 14	**$**	44 36 24	**4**	64 52 34	**D**	104 68 44	**T**	124 84 54	**d**	144 100 64	**t**	164 116 74
5	0101	♣	5 5 5	**§**	25 21 15	**%**	45 37 25	**5**	65 53 35	**E**	105 69 45	**U**	125 85 55	**e**	145 101 65	**u**	165 117 75
6	0110	♠	6 6 6	▬	26 22 16	**&**	46 38 26	**6**	66 54 36	**F**	106 70 46	**V**	126 86 56	**f**	146 102 66	**v**	166 118 76
7	0111	•	7 7 7	↨	27 23 17	**´**	47 39 27	**7**	67 55 37	**G**	107 71 47	**W**	127 87 57	**g**	147 103 67	**w**	167 119 77
8	1000	◘	10 8 8	↑	30 24 18	**(**	50 40 28	**8**	70 56 38	**H**	110 72 48	**X**	130 88 58	**h**	150 104 68	**x**	170 120 78
9	1001	○	11 9 9	↓	31 25 19	**)**	51 41 29	**9**	71 57 39	**I**	111 73 49	**Y**	131 89 59	**i**	151 105 69	**y**	171 121 79
10	1010	◙	12 10 A	→	32 26 1A	*****	52 42 2A	**:**	72 58 3A	**J**	112 74 4A	**Z**	132 90 5A	**j**	152 106 6A	**z**	172 122 7A
11	1011	♂	13 11 B	←	33 27 1B	**+**	53 43 2B	**;**	73 59 3B	**K**	113 75 4B	**[**	133 91 5B	**k**	153 107 6B	**{**	173 123 7B
12	1100	♀	14 12 C	∟	34 28 1C	**,**	54 44 2C	**<**	74 60 3C	**L**	114 76 4C	****	134 92 5C	**l**	154 108 6C	**|**	174 124 7C
13	1101	♪	15 13 D	↔	35 29 1D	**-**	55 45 2D	**=**	75 61 3D	**M**	115 77 4D	**]**	135 93 5D	**m**	155 109 6D	**}**	175 125 7D
14	1110	♫	16 14 E	▲	36 30 1E	**.**	56 46 2E	**>**	76 62 3E	**N**	116 78 4E	**^**	136 94 5E	**n**	156 110 6E	**~**	176 126 7E
15	1111	☼	17 15 F	▼	37 31 1F	**/**	57 47 2F	**?**	77 63 3F	**O**	117 79 4F	_	137 95 5F	**o**	157 111 6F	▒	177 127 7F

KEY: ← 33 / 27 / 1B — OCTAL / DECIMAL / HEXADECIMAL

This Wyse character set is only available in WY-60 mode.

WY-60 STANDARD ASCII CHARACTER SET

COLUMN		0		1		2		3		4		5		6		7	
ROW	8 7 BITS 6 5 4 3 2 1	0 0 0 0		0 0 0 1		0 0 1 0		0 0 1 1		0 1 0 0		0 1 0 1		0 1 1 0		0 1 1 1	
0	0000		0 0 0	DL	20 16 10		40 32 20	0	60 48 30	@	100 64 40	P	120 80 50	`	140 96 60	p	160 112 70
1	0001	SH	1 1 1	D1	21 17 11	!	41 33 21	1	61 49 31	A	101 65 41	Q	121 81 51	a	141 97 61	q	161 113 71
2	0010	SX	2 2 2	D2	22 18 12	"	42 34 22	2	62 50 32	B	102 66 42	R	122 82 52	b	142 98 62	r	162 114 72
3	0011	EX	3 3 3	D3	23 19 13	#	43 35 23	3	63 51 33	C	103 67 43	S	123 83 53	c	143 99 63	s	163 115 73
4	0100	ET	4 4 4	D4	24 20 14	$	44 36 24	4	64 52 34	D	104 68 44	T	124 84 54	d	144 100 64	t	164 116 74
5	0101	EQ	5 5 5	NK	25 21 15	%	45 37 25	5	65 53 35	E	105 69 45	U	125 85 55	e	145 101 65	u	165 117 75
6	0110	AK	6 6 6	SY	26 22 16	&	46 38 26	6	66 54 36	F	106 70 46	V	126 86 56	f	146 102 66	v	166 118 76
7	0111	BL	7 7 7	EB	27 23 17	´	47 39 27	7	67 55 37	G	107 71 47	W	127 87 57	g	147 103 67	w	167 119 77
8	1000	BS	10 8 8	CN	30 24 18	(	50 40 28	8	70 56 38	H	110 72 48	X	130 88 58	h	150 104 68	x	170 120 78
9	1001	HT	11 9 9	EM	31 25 19	)	51 41 29	9	71 57 39	I	111 73 49	Y	131 89 59	i	151 105 69	y	171 121 79
10	1010	LF	12 10 A	SB	32 26 1A	*	52 42 2A	:	72 58 3A	J	112 74 4A	Z	132 90 5A	j	152 106 6A	z	172 122 7A
11	1011	VT	13 11 B	EC	33 27 1B	+	53 43 2B	;	73 59 3B	K	113 75 4B	[	133 91 5B	k	153 107 6B	{	173 123 7B
12	1100	FF	14 12 C	FS	34 28 1C	,	54 44 2C	<	74 60 3C	L	114 76 4C	\	134 92 5C	l	154 108 6C	|	174 124 7C
13	1101	CR	15 13 D	GS	35 29 1D	-	55 45 2D	=	75 61 3D	M	115 77 4D	]	135 93 5D	m	155 109 6D	}	175 125 7D
14	1110	SO	16 14 E	RS	36 30 1E	.	56 46 2E	>	76 62 3E	N	116 78 4E	^	136 94 5E	n	156 110 6E	~	176 126 7E
15	1111	SI	17 15 F	US	37 31 1F	/	57 47 2F	?	77 63 3F	O	117 79 4F	_	137 95 5F	o	157 111 6F		177 127 7F

KEY: EC | 33 27 1B — OCTAL, DECIMAL, HEXADECIMAL

This Wyse character set is only available in WY-60 mode.

WY-60 STANDARD ANSI CHARACTER SET

COLUMN		0		1		2		3		4		5		6		7	
ROW	8 7 BITS 6 5 4 3 2 1	$0_0 0_0 0_0$		$0_0 0_0 1$		$0_0 1_0$		$0_0 1_1$		$0_1 0_0$		$0_1 0_1$		$0_1 1_0$		$0_1 1_1$	
0	0000		0 0 0	─	20 16 10		40 32 20	0	60 48 30	@	100 64 40	P	120 80 50	`	140 96 60	p	160 112 70
1	0001	◆	1 1 1	─	21 17 11	!	41 33 21	1	61 49 31	A	101 65 41	Q	121 81 51	a	141 97 61	q	161 113 71
2	0010	▒	2 2 2	─	22 18 12	"	42 34 22	2	62 50 32	B	102 66 42	R	122 82 52	b	142 98 62	r	162 114 72
3	0011	$^{H}_{T}$	3 3 3	─	23 19 13	#	43 35 23	3	63 51 33	C	103 67 43	S	123 83 53	c	143 99 63	s	163 115 73
4	0100	$^{F}_{F}$	4 4 4	─	24 20 14	$	44 36 24	4	64 52 34	D	104 68 44	T	124 84 54	d	144 100 64	t	164 116 74
5	0101	$^{C}_{R}$	5 5 5	├	25 21 15	%	45 37 25	5	65 53 35	E	105 69 45	U	125 85 55	e	145 101 65	u	165 117 75
6	0110	$^{L}_{F}$	6 6 6	┤	26 22 16	&	46 38 26	6	66 54 36	F	106 70 46	V	126 86 56	f	146 102 66	v	166 118 76
7	0111	°	7 7 7	┴	27 23 17	´	47 39 27	7	67 55 37	G	107 71 47	W	127 87 57	g	147 103 67	w	167 119 77
8	1000	±	10 8 8	┬	30 24 18	(	50 40 28	8	70 56 38	H	110 72 48	X	130 88 58	h	150 104 68	x	170 120 78
9	1001	$^{N}_{L}$	11 9 9	│	31 25 19	)	51 41 29	9	71 57 39	I	111 73 49	Y	131 89 59	i	151 105 69	y	171 121 79
10	1010	$^{V}_{T}$	12 10 A	≤	32 26 1A	*	52 42 2A	:	72 58 3A	J	112 74 4A	Z	132 90 5A	j	152 106 6A	z	172 122 7A
11	1011	┘	13 11 B	≥	33 27 1B	+	53 43 2B	;	73 59 3B	K	113 75 4B	[	133 91 5B	k	153 107 6B	{	173 123 7B
12	1100	┐	14 12 C	π	34 28 1C	,	54 44 2C	<	74 60 3C	L	114 76 4C	\	134 92 5C	l	154 108 6C	|	174 124 7C
13	1101	┌	15 13 D	≠	35 29 1D	-	55 45 2D	=	75 61 3D	M	115 77 4D	]	135 93 5D	m	155 109 6D	}	175 125 7D
14	1110	└	16 14 E	£	36 30 1E	.	56 46 2E	>	76 62 3E	N	116 78 4E	^	136 94 5E	n	156 110 6E	~	176 126 7E
15	1111	┼	17 15 F	·	37 31 1F	/	57 47 2F	?	77 63 3F	O	117 79 4F	_	137 95 5F	o	157 111 6F	▒	177 127 7F

KEY: ≥ | 33 27 1B | OCTAL DECIMAL HEXADECIMAL

This Wyse character set is only available in WY-60 mode.

WY-60 GRAPHICS 1
CHARACTER SET

COLUMN		0	1	2	3	4	5	6	7
ROW	8 7 BITS 6 5 4 3 2 1	$0\,0\,0\,0$	$0\,0\,0\,1$	$0\,0\,1\,0$	$0\,0\,1\,1$	$0\,1\,0\,0$	$0\,1\,0\,1$	$0\,1\,1\,0$	$0\,1\,1\,1$
0	0000	0 0 0	20 16 10	40 32 20	0 60 48 30	100 64 40	120 80 50	0 140 96 60	160 112 70
1	0001	1 1 1	21 17 11	41 33 21	1 61 49 31	101 65 41	121 81 51	1 141 97 61	161 113 71
2	0010	2 2 2	22 18 12	42 34 22	2 62 50 32	102 66 42	122 82 52	2 142 98 62	162 114 72
3	0011	3 3 3	23 19 13	43 35 23	3 63 51 33	103 67 43	123 83 53	3 143 99 63	163 115 73
4	0100	4 4 4	24 20 14	44 36 24	4 64 52 34	104 68 44	124 84 54	4 144 100 64	164 116 74
5	0101	5 5 5	25 21 15	45 37 25	5 65 53 35	105 69 45	125 85 55	5 145 101 65	165 117 75
6	0110	6 6 6	26 22 16	46 38 26	6 66 54 36	106 70 46	126 86 56	6 146 102 66	166 118 76
7	0111	7 7 7	27 23 17	47 39 27	7 67 55 37	107 71 47	127 87 57	7 147 103 67	167 119 77
8	1000	10 8 8	30 24 18	50 40 28	8 70 56 38	110 72 48	130 88 58	8 150 104 68	170 120 78
9	1001	11 9 9	31 25 19	51 41 29	9 71 57 39	111 73 49	131 89 59	9 151 105 69	171 121 79
10	1010	12 10 A	32 26 1A	52 42 2A	72 58 3A	112 74 4A	132 90 5A	152 106 6A	172 122 7A
11	1011	13 11 B	33 27 1B	53 43 2B	73 59 3B	113 75 4B	133 91 5B	153 107 6B	173 123 7B
12	1100	14 12 C	34 28 1C	54 44 2C	74 60 3C	114 76 4C	134 92 5C	154 108 6C	174 124 7C
13	1101	15 13 D	35 29 1D	55 45 2D	75 61 3D	115 77 4D	135 93 5D	155 109 6D	175 125 7D
14	1110	16 14 E	36 30 1E	56 46 2E	76 62 3E	116 78 4E	136 94 5E	156 110 6E	176 126 7E
15	1111	17 15 F	37 31 1F	57 47 2F	77 63 3F	117 79 4F	137 95 5F	157 111 6F	177 127 7F

KEY:  156 OCTAL, 110 DECIMAL, 6E HEXADECIMAL

This Wyse character set is only available in WY-60 mode.

WY-60 GRAPHICS 2
CHARACTER SET

COLUMN		0	1	2	3	4	5	6	7
ROW	8 7 BITS 6 5 4 3 2 1	$0\,0\,0\,0$	$0\,0\,0\,1$	$0\,0\,1\,0$	$0\,0\,1\,1$	$0\,1\,0\,0$	$0\,1\,0\,1$	$0\,1\,1\,0$	$0\,1\,1\,1$
0	0000	0 0 0	20 16 10	40 32 20	60 48 30	100 64 40	120 80 50	140 96 60	160 112 70
1	0001	1 1 1	21 17 11	41 33 21	61 49 31	101 65 41	121 81 51	141 97 61	161 113 71
2	0010	2 2 2	22 18 12	42 34 22	62 50 32	102 66 42	122 82 52	142 98 62	162 114 72
3	0011	3 3 3	23 19 13	43 35 23	63 51 33	103 67 43	123 83 53	143 99 63	163 115 73
4	0100	4 4 4	24 20 14	44 36 24	64 52 34	104 68 44	124 84 54	144 100 64	164 116 74
5	0101	5 5 5	25 21 15	45 37 25	65 53 35	105 69 45	125 85 55	145 101 65	165 117 75
6	0110	6 6 6	26 22 16	46 38 26	66 54 36	106 70 46	126 86 56	146 102 66	166 118 76
7	0111	7 7 7	27 23 17	47 39 27	67 55 37	107 71 47	127 87 57	147 103 67	167 119 77
8	1000	10 8 8	30 24 18	50 40 28	70 56 38	110 72 48	130 88 58	150 104 68	170 120 78
9	1001	11 9 9	31 25 19	51 41 29	71 57 39	111 73 49	131 89 59	151 105 69	171 121 79
10	1010	12 10 A	32 26 1A	52 42 2A	72 58 3A	112 74 4A	132 90 5A	152 106 6A	172 122 7A
11	1011	13 11 B	33 27 1B	53 43 2B	73 59 3B	113 75 4B	133 91 5B	153 107 6B	173 123 7B
12	1100	14 12 C	34 28 1C	54 44 2C	74 60 3C	114 76 4C	134 92 5C	154 108 6C	174 124 7C
13	1101	15 13 D	35 29 1D	55 45 2D	75 61 3D	115 77 4D	135 93 5D	155 109 6D	175 125 7D
14	1110	16 14 E	36 30 1E	56 46 2E	76 62 3E	116 78 4E	136 94 5E	156 110 6E	176 126 7E
15	1111	17 15 F	37 31 1F	57 47 2F	77 63 3F	117 79 4F	137 95 5F	157 111 6F	177 127 7F

KEY: 

OCTAL
DECIMAL
HEXADECIMAL

This Wyse character set is only available in WY-60 mode.

WY-60 GRAPHICS 3
CHARACTER SET

COLUMN		0	1	2	3	4	5	6	7
ROW	8 7 BITS 6 5 4 3 2 1	$0\,0\,0_0$	$0\,0\,0_1$	$0\,0_1\,0$	$0\,0_1\,1$	$0_1\,0\,0$	$0_1\,0_1$	$0_1\,1_0$	$0_1\,1_1$
0	0000	0 0 0	20 16 10	40 32 20	60 48 30	100 64 40	120 80 50	140 96 60	160 112 70
1	0001	1 1 1	21 17 11	41 33 21	61 49 31	101 65 41	121 81 51	141 97 61	161 113 71
2	0010	2 2 2	22 18 12	42 34 22	62 50 32	102 66 42	122 82 52	142 98 62	162 114 72
3	0011	3 3 3	23 19 13	43 35 23	63 51 33	103 67 43	123 83 53	143 99 63	163 115 73
4	0100	4 4 4	24 20 14	44 36 24	64 52 34	104 68 44	124 84 54	144 100 64	164 116 74
5	0101	5 5 5	25 21 15	45 37 25	65 53 35	105 69 45	125 85 55	145 101 65	165 117 75
6	0110	6 6 6	26 22 16	46 38 26	66 54 36	106 70 46	126 86 56	146 102 66	166 118 76
7	0111	7 7 7	27 23 17	47 39 27	67 55 37	107 71 47	127 87 57	147 103 67	167 119 77
8	1000	10 8 8	30 24 18	50 40 28	70 56 38	110 72 48	130 88 58	150 104 68	170 120 78
9	1001	11 9 9	31 25 19	51 41 29	71 57 39	111 73 49	131 89 59	151 105 69	171 121 79
10	1010	12 10 A	32 26 1A	52 42 2A	72 58 3A	112 74 4A	132 90 5A	152 106 6A	172 122 7A
11	1011	13 11 B	33 27 1B	53 43 2B	73 59 3B	113 75 4B	133 91 5B	153 107 6B	173 123 7B
12	1100	14 12 C	34 28 1C	54 44 2C	74 60 3C	114 76 4C	134 92 5C	154 108 6C	174 124 7C
13	1101	15 13 D	35 29 1D	55 45 2D	75 61 3D	115 77 4D	135 93 5D	155 109 6D	175 125 7D
14	1110	16 14 E	36 30 1E	56 46 2E	76 62 3E	116 78 4E	136 94 5E	156 110 6E	176 126 7E
15	1111	17 15 F	37 31 1F	57 47 2F	77 63 3F	117 79 4F	137 95 5F	157 111 6F	177 127 7F

KEY: 

OCTAL
DECIMAL
HEXADECIMAL

This Wyse character set is only available in WY-60 mode.

PT250 ADDITIONAL CHARACTER SET

8	9	10	11	12	13	14	15	COLUMN	
$1\,0\,0\,0$	$1\,0\,0\,1$	$1\,0\,1\,0$	$1\,0\,1\,1$	$1\,1\,0\,0$	$1\,1\,0\,1$	$1\,1\,1\,0$	$1\,1\,1\,1$	8 7 BITS 6 5 4 3 2 1	ROW
200 128 80	220 144 90	240 160 A0	260 176 B0	300 192 C0	320 208 D0	340 224 E0	360 240 F0	0000	0
201 129 81	221 145 91	¡ 241 161 A1	± 261 177 B1	Á 301 193 C1	Ñ 321 209 D1	á 341 225 E1	ñ 361 241 F1	0001	1
202 130 82	222 146 92	¢ 242 162 A2	² 262 178 B2	Â 302 194 C2	Ò 322 210 D2	â 342 226 E2	ò 362 242 F2	0010	2
203 131 83	223 147 93	£ 243 163 A3	³ 263 179 B3	Ã 303 195 C3	Ó 323 211 D3	ã 343 227 E3	ó 363 243 F3	0011	3
204 132 84	224 148 94	¤ 244 164 A4	´ 264 180 B4	Ä 304 196 C4	Ô 324 212 D4	ä 344 228 E4	ô 364 244 F4	0100	4
205 133 85	225 149 95	¥ 245 165 A5	µ 265 181 B5	Å 305 197 C5	Õ 325 213 D5	å 345 229 E5	õ 365 245 F5	0101	5
206 134 86	226 150 96	¦ 246 166 A6	¶ 266 182 B6	Æ 306 198 C6	Ö 326 214 D6	æ 346 230 E6	ö 366 246 F6	0110	6
207 135 87	227 151 97	§ 247 167 A7	· 267 183 B7	Ç 307 199 C7	× 327 215 D7	ç 347 231 E7	÷ 367 247 F7	0111	7
210 136 88	230 152 98	¨ 250 168 A8	¸ 270 184 B8	È 310 200 C8	Ø 330 216 D8	è 350 232 E8	ø 370 248 F8	1000	8
211 137 89	231 153 99	© 251 169 A9	¹ 271 185 B9	É 311 201 C9	Ù 331 217 D9	é 351 233 E9	ù 371 249 F9	1001	9
212 138 8A	232 154 9A	ª 252 170 AA	º 272 186 BA	Ê 312 202 CA	Ú 332 218 DA	ê 352 234 EA	ú 372 250 FA	1010	10
213 139 8B	233 155 9B	« 253 171 AB	» 273 187 BB	Ë 313 203 CB	Û 333 219 DB	ë 353 235 EB	û 373 251 FB	1011	11
214 140 8C	234 156 9C	¬ 254 172 AC	$^1/_4$ 274 188 BC	Ì 314 204 CC	Ü 334 220 DC	ì 354 236 EC	ü 374 252 FC	1100	12
215 141 8D	235 157 9D	– 255 173 AD	$^1/_2$ 275 189 BD	Í 315 205 CD	Ý 335 221 DD	í 355 237 ED	ý 375 253 FD	1101	13
216 142 8E	236 158 9E	® 256 174 AE	$^3/_4$ 276 190 BE	Î 316 206 CE	Þ 336 222 DE	î 356 238 EE	þ 376 254 FE	1110	14
217 143 8F	237 159 9F	— 257 175 AF	¿ 277 191 BF	Ï 317 207 CF	ß 337 223 DF	ï 357 239 EF	ÿ 377 255 FF	1111	15

KEY: ESC 33 27 1B — OCTAL, DECIMAL, HEXADECIMAL

These characters can normally be displayed in PT250 mode by holding down the **Alt** + **E** keys and pressing the equivalent standard (ASCII) character key.

The equivalent standard character key is generally found by subtracting 128 from the decimal value of the Additional character, then looking up the character with the resulting decimal number in the ASCII character set. Exceptions to this rule are the standard characters **''**, **6**, **<**, **=**, [and]. **6** should be swapped with ", **[** and **]** should be swapped with **<** and **=**, and vice versa.

PT250 LINE DRAWING CHARACTER SET

COLUMN		0	1	2	3	4	5	6	7
ROW	BITS 8 7 6 5 4 3 2 1	$0\,0\,0\,0$	$0\,0\,0\,1$	$0\,0\,1\,0$	$0\,0\,1\,1$	$0\,1\,0\,0$	$0\,1\,0\,1$	$0\,1\,1\,0$	$0\,1\,1\,1$
0	0000	0 0 0	20 16 10	40 32 20	60 48 30	100 64 40	120 80 50	140 96 60	160 112 70
1	0001	1 1 1	21 17 11	41 33 21	61 49 31	101 65 41	121 81 51	141 97 61	161 113 71
2	0010	2 2 2	22 18 12	42 34 22	62 50 32	102 66 42	122 82 52	142 98 62	162 114 72
3	0011	3 3 3	23 19 13	43 35 23	63 51 33	103 67 43	123 83 53	143 99 63	163 115 73
4	0100	4 4 4	24 20 14	44 36 24	64 52 34	104 68 44	124 84 54	144 100 64	164 116 74
5	0101	5 5 5	25 21 15	45 37 25	65 53 35	105 69 45	125 85 55	145 101 65	165 117 75
6	0110	6 6 6	26 22 16	46 38 26	66 54 36	106 70 46	126 86 56	146 102 66	166 118 76
7	0111	7 7 7	27 23 17	47 39 27	67 55 37	107 71 47	127 87 57	147 103 67	167 119 77
8	1000	10 8 8	30 24 18	50 40 28	70 56 38	110 72 48	130 88 58	150 104 68	170 120 78
9	1001	11 9 9	31 25 19	51 41 29	71 57 39	111 73 49	131 89 59	151 105 69	171 121 79
10	1010	12 10 A	32 26 1A	52 42 2A	72 58 3A	112 74 4A	132 90 5A	152 106 6A	172 122 7A
11	1011	13 11 B	33 27 1B	53 43 2B	73 59 3B	113 75 4B	133 91 5B	153 107 6B	173 123 7B
12	1100	14 12 C	34 28 1C	54 44 2C	74 60 3C	114 76 4C	134 92 5C	154 108 6C	174 124 7C
13	1101	15 13 D	35 29 1D	55 45 2D	75 61 3D	115 77 4D	135 93 5D	155 109 6D	175 125 7D
14	1110	16 14 E	36 30 1E	56 46 2E	76 62 3E	116 78 4E	136 94 5E	156 110 6E	176 126 7E
15	1111	17 15 F	37 31 1F	57 47 2F	77 63 3F	117 79 4F	137 95 5F	157 111 6F	177 127 7F

KEY:  57 OCTAL, 47 DECIMAL, 2F HEXADECIMAL

This is a special PT250 character set which is used by some applications.

PT250 BLOCK GRAPHICS CHARACTER SET

COLUMN		0	1	2	3	4	5	6	7
ROW	8 7 BITS 6 5 4 3 2 1	$0\,0\,0\,0$	$0\,0\,0\,1$	$0\,0\,1\,0$	$0\,0\,1\,1$	$0\,1\,0\,0$	$0\,1\,0\,1$	$0\,1\,1\,0$	$0\,1\,1\,1$
0	0000	0 0 0	20 16 10	40 32 20	60 48 30	100 64 40	120 80 50	140 96 60	160 112 70
1	0001	1 1 1	21 17 11	41 33 21	61 49 31	101 65 41	121 81 51	141 97 61	161 113 71
2	0010	2 2 2	22 18 12	42 34 22	62 50 32	102 66 42	122 82 52	142 98 62	162 114 72
3	0011	3 3 3	23 19 13	43 35 23	63 51 33	103 67 43	123 83 53	143 99 63	163 115 73
4	0100	4 4 4	24 20 14	44 36 24	64 52 34	104 68 44	124 84 54	144 100 64	164 116 74
5	0101	5 5 5	25 21 15	45 37 25	65 53 35	105 69 45	125 85 55	145 101 65	165 117 75
6	0110	6 6 6	26 22 16	46 38 26	66 54 36	106 70 46	126 86 56	146 102 66	166 118 76
7	0111	7 7 7	27 23 17	47 39 27	67 55 37	107 71 47	127 87 57	147 103 67	167 119 77
8	1000	10 8 8	30 24 18	50 40 28	70 56 38	110 72 48	130 88 58	150 104 68	170 120 78
9	1001	11 9 9	31 25 19	51 41 29	71 57 39	111 73 49	131 89 59	151 105 69	171 121 79
10	1010	12 10 A	32 26 1A	52 42 2A	72 58 3A	112 74 4A	132 90 5A	152 106 6A	172 122 7A
11	1011	13 11 B	33 27 1B	53 43 2B	73 59 3B	113 75 4B	133 91 5B	153 107 6B	173 123 7B
12	1100	14 12 C	34 28 1C	54 44 2C	74 60 3C	114 76 4C	134 92 5C	154 108 6C	174 124 7C
13	1101	15 13 D	35 29 1D	55 45 2D	75 61 3D	115 77 4D	135 93 5D	155 109 6D	175 125 7D
14	1110	16 14 E	36 30 1E	56 46 2E	76 62 3E	116 78 4E	136 94 5E	156 110 6E	176 126 7E
15	1111	17 15 F	37 31 1F	57 47 2F	77 63 3F	117 79 4F	137 95 5F	157 111 6F	177 127 7F

KEY: 
57 OCTAL
47 DECIMAL
2F HEXADECIMAL

This is a special PT250 character set which is used by some applications.

SIEMENS 97801 INTERNATIONAL A CHARACTER SET

COLUMN		0		1		2		3		4		5		6		7	
ROW	8 7 BITS 6 5 4 3 2 1	$0\,0\,0\,0$		$0\,0\,0\,1$		$0\,0\,1\,0$		$0\,0\,1\,1$		$0\,1\,0\,0$		$0\,1\,0\,1$		$0\,1\,1\,0$		$0\,1\,1\,1$	
0	0000	**NUL**	0 0 0	**DLE**	20 16 10	**SP**	40 32 20	**0**	60 48 30	**@**	100 64 40	**P**	120 80 50	**`**	140 96 60	**p**	160 112 70
1	0001	**SOH**	1 1 1	**DC1** **XON**	21 17 11	**!**	41 33 21	**1**	61 49 31	**A**	101 65 41	**Q**	121 81 51	**a**	141 97 61	**q**	161 113 71
2	0010	**STX**	2 2 2	**DC2**	22 18 12	**"**	42 34 22	**2**	62 50 32	**B**	102 66 42	**R**	122 82 52	**b**	142 98 62	**r**	162 114 72
3	0011	**ETX**	3 3 3	**DC3** **XOFF**	23 19 13	**#**	43 35 23	**3**	63 51 33	**C**	103 67 43	**S**	123 83 53	**c**	143 99 63	**s**	163 115 73
4	0100	**EOT**	4 4 4	**DC4**	24 20 14	**$**	44 36 24	**4**	64 52 34	**D**	104 68 44	**T**	124 84 54	**d**	144 100 64	**t**	164 116 74
5	0101	**ENQ**	5 5 5	**NAK**	25 21 15	**%**	45 37 25	**5**	65 53 35	**E**	105 69 45	**U**	125 85 55	**e**	145 101 65	**u**	165 117 75
6	0110	**ACK**	6 6 6	**SYN**	26 22 16	**&**	46 38 26	**6**	66 54 36	**F**	106 70 46	**V**	126 86 56	**f**	146 102 66	**v**	166 118 76
7	0111	**BEL**	7 7 7	**ETB**	27 23 17	**´**	47 39 27	**7**	67 55 37	**G**	107 71 47	**W**	127 87 57	**g**	147 103 67	**w**	167 119 77
8	1000	**BS**	10 8 8	**CAN**	30 24 18	**(**	50 40 28	**8**	70 56 38	**H**	110 72 48	**X**	130 88 58	**h**	150 104 68	**x**	170 120 78
9	1001	**HT**	11 9 9	**EM**	31 25 19	**)**	51 41 29	**9**	71 57 39	**I**	111 73 49	**Y**	131 89 59	**i**	151 105 69	**y**	171 121 79
10	1010	**LF**	12 10 A	**SUB**	32 26 1A	*****	52 42 2A	**:**	72 58 3A	**J**	112 74 4A	**Z**	132 90 5A	**j**	152 106 6A	**z**	172 122 7A
11	1011	**VT**	13 11 B	**ESC**	33 27 1B	**+**	53 43 2B	**;**	73 59 3B	**K**	113 75 4B	**[**	133 91 5B	**k**	153 107 6B	**{**	173 123 7B
12	1100	**FF**	14 12 C	**FS**	34 28 1C	**,**	54 44 2C	**<**	74 60 3C	**L**	114 76 4C	****	134 92 5C	**l**	154 108 6C	**|**	174 124 7C
13	1101	**CR**	15 13 D	**GS**	35 29 1D	**-**	55 45 2D	**=**	75 61 3D	**M**	115 77 4D	**]**	135 93 5D	**m**	155 109 6D	**}**	175 125 7D
14	1110	**SO**	16 14 E	**RS**	36 30 1E	**.**	56 46 2E	**>**	76 62 3E	**N**	116 78 4E	**^**	136 94 5E	**n**	156 110 6E	**~**	176 126 7E
15	1111	**SI**	17 15 F	**US**	37 31 1F	**/**	57 47 2F	**?**	77 63 3F	**O**	117 79 4F	**_**	137 95 5F	**o**	157 111 6F	**DEL**	177 127 7F

KEY: **ESC** 33 27 1B — OCTAL, DECIMAL, HEXADECIMAL

SIEMENS 97801 INTERNATIONAL CHARACTER SET

COLUMN		0		1		2		3		4		5		6		7	
ROW	8 7 BITS 6 5 4 3 2 1	$0\,0\,0\,0$		$0\,0\,0\,1$		$0\,0\,1\,0$		$0\,0\,1\,1$		$0\,1\,0\,0$		$0\,1\,0\,1$		$0\,1\,1\,0$		$0\,1\,1\,1$	
0	0000	NUL	0 0 0	DLE	20 16 10	SP	40 32 20	0	60 48 30	@	100 64 40	P	120 80 50	`	140 96 60	p	160 112 70
1	0001	SOH	1 1 1	DC1 XON	21 17 11	!	41 33 21	1	61 49 31	A	101 65 41	Q	121 81 51	a	141 97 61	q	161 113 71
2	0010	STX	2 2 2	DC2	22 18 12	"	42 34 22	2	62 50 32	B	102 66 42	R	122 82 52	b	142 98 62	r	162 114 72
3	0011	ETX	3 3 3	DC3 XOFF	23 19 13	#	43 35 23	3	63 51 33	C	103 67 43	S	123 83 53	c	143 99 63	s	163 115 73
4	0100	EOT	4 4 4	DC4	24 20 14	¤	44 36 24	4	64 52 34	D	104 68 44	T	124 84 54	d	144 100 64	t	164 116 74
5	0101	ENQ	5 5 5	NAK	25 21 15	%	45 37 25	5	65 53 35	E	105 69 45	U	125 85 55	e	145 101 65	u	165 117 75
6	0110	ACK	6 6 6	SYN	26 22 16	&	46 38 26	6	66 54 36	F	106 70 46	V	126 86 56	f	146 102 66	v	166 118 76
7	0111	BEL	7 7 7	ETB	27 23 17	´	47 39 27	7	67 55 37	G	107 71 47	W	127 87 57	g	147 103 67	w	167 119 77
8	1000	BS	10 8 8	CAN	30 24 18	(	50 40 28	8	70 56 38	H	110 72 48	X	130 88 58	h	150 104 68	x	170 120 78
9	1001	HT	11 9 9	EM	31 25 19	)	51 41 29	9	71 57 39	I	111 73 49	Y	131 89 59	i	151 105 69	y	171 121 79
10	1010	LF	12 10 A	SUB	32 26 1A	*	52 42 2A	:	72 58 3A	J	112 74 4A	Z	132 90 5A	j	152 106 6A	z	172 122 7A
11	1011	VT	13 11 B	ESC	33 27 1B	+	53 43 2B	;	73 59 3B	K	113 75 4B	[	133 91 5B	k	153 107 6B	{	173 123 7B
12	1100	FF	14 12 C	FS	34 28 1C	,	54 44 2C	<	74 60 3C	L	114 76 4C	\	134 92 5C	l	154 108 6C	|	174 124 7C
13	1101	CR	15 13 D	GS	35 29 1D	-	55 45 2D	=	75 61 3D	M	115 77 4D	]	135 93 5D	m	155 109 6D	}	175 125 7D
14	1110	SO	16 14 E	RS	36 30 1E	.	56 46 2E	>	76 62 3E	N	116 78 4E	^	136 94 5E	n	156 110 6E	~	176 126 7E
15	1111	SI	17 15 F	US	37 31 1F	/	57 47 2F	?	77 63 3F	O	117 79 4F	_	137 95 5F	o	157 111 6F	DEL	177 127 7F

KEY: ESC (33 / 27 / 1B) — OCTAL / DECIMAL / HEXADECIMAL

SIEMENS 97801 GERMAN CHARACTER SET

COLUMN		0		1		2		3		4		5		6		7	
ROW	8 7 6 5 BITS 4 3 2 1	$0_0 0_0 0_0$		$0_0 0_0 1_1$		$0_0 1_0 0_0$		$0_0 1_1 1_1$		$0_1 0_0 0_0$		$0_1 0_1 1_1$		$0_1 1_0 0_0$		$0_1 1_1 1_1$	
0	0000	NUL	0 0 0	DLE	20 16 10	SP	40 32 20	0	60 48 30	§	100 64 40	P	120 80 50	`	140 96 60	p	160 112 70
1	0001	SOH	1 1 1	DC1 XON	21 17 11	!	41 33 21	1	61 49 31	A	101 65 41	Q	121 81 51	a	141 97 61	q	161 113 71
2	0010	STX	2 2 2	DC2	22 18 12	"	42 34 22	2	62 50 32	B	102 66 42	R	122 82 52	b	142 98 62	r	162 114 72
3	0011	ETX	3 3 3	DC3 XOFF	23 19 13	#	43 35 23	3	63 51 33	C	103 67 43	S	123 83 53	c	143 99 63	s	163 115 73
4	0100	EOT	4 4 4	DC4	24 20 14	$	44 36 24	4	64 52 34	D	104 68 44	T	124 84 54	d	144 100 64	t	164 116 74
5	0101	ENQ	5 5 5	NAK	25 21 15	%	45 37 25	5	65 53 35	E	105 69 45	U	125 85 55	e	145 101 65	u	165 117 75
6	0110	ACK	6 6 6	SYN	26 22 16	&	46 38 26	6	66 54 36	F	106 70 46	V	126 86 56	f	146 102 66	v	166 118 76
7	0111	BEL	7 7 7	ETB	27 23 17	´	47 39 27	7	67 55 37	G	107 71 47	W	127 87 57	g	147 103 67	w	167 119 77
8	1000	BS	10 8 8	CAN	30 24 18	(	50 40 28	8	70 56 38	H	110 72 48	X	130 88 58	h	150 104 68	x	170 120 78
9	1001	HT	11 9 9	EM	31 25 19	)	51 41 29	9	71 57 39	I	111 73 49	Y	131 89 59	i	151 105 69	y	171 121 79
10	1010	LF	12 10 A	SUB	32 26 1A	*	52 42 2A	:	72 58 3A	J	112 74 4A	Z	132 90 5A	j	152 106 6A	z	172 122 7A
11	1011	VT	13 11 B	ESC	33 27 1B	+	53 43 2B	;	73 59 3B	K	113 75 4B	Ä	133 91 5B	k	153 107 6B	ä	173 123 7B
12	1100	FF	14 12 C	FS	34 28 1C	,	54 44 2C	<	74 60 3C	L	114 76 4C	Ö	134 92 5C	l	154 108 6C	ö	174 124 7C
13	1101	CR	15 13 D	GS	35 29 1D	-	55 45 2D	=	75 61 3D	M	115 77 4D	Ü	135 93 5D	m	155 109 6D	ü	175 125 7D
14	1110	SO	16 14 E	RS	36 30 1E	.	56 46 2E	>	76 62 3E	N	116 78 4E	^	136 94 5E	n	156 110 6E	ß	176 126 7E
15	1111	SI	17 15 F	US	37 31 1F	/	57 47 2F	?	77 63 3F	O	117 79 4F	_	137 95 5F	o	157 111 6F	DEL	177 127 7F

KEY: ESC 33 27 1B — OCTAL, DECIMAL, HEXADECIMAL

SIEMENS 97801 EURO CHARACTER SET

COLUMN		0		1		2		3		4		5		6		7	
ROW	8 7 6 5 BITS 4 3 2 1	0 0 0 0		0 0 0 1		0 0 1 0		0 0 1 1		0 1 0 0		0 1 0 1		0 1 1 0		0 1 1 1	
0	0000	NUL	0 0 0	DLE	20 16 10	SP	40 32 20	è	60 48 30	ň	100 64 40	ş	120 80 50	Å	140 96 60	©	160 112 70
1	0001	SOH	1 1 1	DC1 XON	21 17 11	à	41 33 21	é	61 49 31	ń	101 65 41	ß	121 81 51	Æ	141 97 61	Ω	161 113 71
2	0010	STX	2 2 2	DC2	22 18 12	á	42 34 22	ê	62 50 32	ñ	102 66 42	ţ	122 82 52	Đ	142 98 62	µ	162 114 72
3	0011	ETX	3 3 3	DC3 XOFF	23 19 13	â	43 35 23	ë	63 51 33	ò	103 67 43	ť	123 83 53	İ	143 99 63	º	163 115 73
4	0100	EOT	4 4 4	DC4	24 20 14	ä	44 36 24	ě	64 52 34	ó	104 68 44	ù	124 84 54	IJ	144 100 64	Ç	164 116 74
5	0101	ENQ	5 5 5	NAK	25 21 15	å	45 37 25	ę	65 53 35	ô	105 69 45	ú	125 85 55	ŧ	145 101 65	P_t	165 117 75
6	0110	ACK	6 6 6	SYN	26 22 16	ą	46 38 26	ğ	66 54 36	ö	106 70 46	û	126 86 56	Ø	146 102 66	π	166 118 76
7	0111	BEL	7 7 7	ETB	27 23 17	ã	47 39 27	ı	67 55 37	õ	107 71 47	ü	127 87 57	Œ	147 103 67	˘	167 119 77
8	1000	BS	10 8 8	CAN	30 24 18	ă	50 40 28	î	70 56 38	ø	110 72 48	ů	130 88 58	Þ	150 104 68	´	170 120 78
9	1001	HT	11 9 9	EM	31 25 19	æ	51 41 29	ì	71 57 39	ő	111 73 49	ű	131 89 59	Ä	151 105 69	˝	171 121 79
10	1010	LF	12 10 A	SUB	32 26 1A	ç	52 42 2A	ĭ	72 58 3A	œ	112 74 4A	ý	132 90 5A	Ö	152 106 6A	Ñ	172 122 7A
11	1011	VT	13 11 B	ESC	33 27 1B	č	53 43 2B	ï	73 59 3B	þ	113 75 4B	ÿ	133 91 5B	Ü	153 107 6B	∟	173 123 7B
12	1100	FF	14 12 C	FS	34 28 1C	ć	54 44 2C	ıj	74 60 3C	ř	114 76 4C	ž	134 92 5C	§	154 108 6C	⌟	174 124 7C
13	1101	CR	15 13 D	GS	35 29 1D	đ	55 45 2D	ľ	75 61 3D	ŕ	115 77 4D	ź	135 93 5D	$	155 109 6D	~	175 125 7D
14	1110	SO	16 14 E	RS	36 30 1E	ď	56 46 2E	ł	76 62 3E	š	116 78 4E	ż	136 94 5E	£	156 110 6E	ˇ	176 126 7E
15	1111	SI	17 15 F	US	37 31 1F	ď	57 47 2F	ľ	77 63 3F	ś	117 79 4F	É	137 95 5F	®	157 111 6F	DEL	177 127 7F

KEY: ESC | 33 27 1B | OCTAL DECIMAL HEXADECIMAL

SIEMENS 97801 BRACKETS CHARACTER SET

COLUMN		0		1		2		3		4		5		6		7	
ROW	8 7 6 5 BITS 4 3 2 1	$0_0 0_0 0_0$		$0_0 0_0 1_1$		$0_0 1_0 0_0$		$0_0 1_1 0_0$		$0_1 0_0 0_0$		$0_1 0_1 0_1$		$0_1 1_0 0_0$		$0_1 1_1 1_1$	
0	0000	NUL	0 0 0	DLE	20 16 10	SP	40 32 20		60 48 30		100 64 40		120 80 50		140 96 60		160 112 70
1	0001	SOH	1 1 1	DC1 XON	21 17 11		41 33 21		61 49 31		101 65 41		121 81 51		141 97 61		161 113 71
2	0010	STX	2 2 2	DC2	22 18 12		42 34 22		62 50 32		102 66 42		122 82 52		142 98 62		162 114 72
3	0011	ETX	3 3 3	DC3 XOFF	23 19 13		43 35 23		63 51 33		103 67 43		123 83 53		143 99 63		163 115 73
4	0100	EOT	4 4 4	DC4	24 20 14		44 36 24		64 52 34		104 68 44		124 84 54		144 100 64		164 116 74
5	0101	ENQ	5 5 5	NAK	25 21 15		45 37 25		65 53 35		105 69 45		125 85 55		145 101 65		165 117 75
6	0110	ACK	6 6 6	SYN	26 22 16		46 38 26		66 54 36		106 70 46		126 86 56		146 102 66		166 118 76
7	0111	BEL	7 7 7	ETB	27 23 17		47 39 27		67 55 37		107 71 47		127 87 57		147 103 67		167 119 77
8	1000	BS	10 8 8	CAN	30 24 18		50 40 28		70 56 38		110 72 48		130 88 58		150 104 68		170 120 78
9	1001	HT	11 9 9	EM	31 25 19		51 41 29		71 57 39		111 73 49		131 89 59		151 105 69		171 121 79
10	1010	LF	12 10 A	SUB	32 26 1A		52 42 2A		72 58 3A		112 74 4A		132 90 5A		152 106 6A		172 122 7A
11	1011	VT	13 11 B	ESC	33 27 1B		53 43 2B		73 59 3B		113 75 4B		133 91 5B		153 107 6B		173 123 7B
12	1100	FF	14 12 C	FS	34 28 1C		54 44 2C		74 60 3C		114 76 4C		134 92 5C		154 108 6C		174 124 7C
13	1101	CR	15 13 D	GS	35 29 1D		55 45 2D		75 61 3D		115 77 4D		135 93 5D		155 109 6D		175 125 7D
14	1110	SO	16 14 E	RS	36 30 1E		56 46 2E		76 62 3E		116 78 4E		136 94 5E		156 110 6E		176 126 7E
15	1111	SI	17 15 F	US	37 31 1F		57 47 2F		77 63 3F		117 79 4F		137 95 5F		157 111 6F	DEL	177 127 7F

KEY: ESC 33 / 27 / 1B — OCTAL / DECIMAL / HEXADECIMAL

IBM 3270 & IBM 5250 ENGLISH (U.S.), CANADIAN BILINGUAL & NETHERLANDS CHARACTER SET

HEX	4-	5-	6-	7-	8-	9-	A-	B-	C-	D-	E-	F-
-0	**SP**	**&**	**-**	**ø**	**Ø**	°	**µ**	**^**	**{**	**}**	****	**0**
-1	**RSP**	**é**	**/**	**É**	**a**	**j**	**~**	**£**	**A**	**J**	**÷**	**1**
-2	**â**	**ê**	**Â**	**Ê**	**b**	**k**	**s**	**¥**	**B**	**K**	**S**	**2**
-3	**ä**	**ë**	**Ä**	**Ë**	**c**	**l**	**t**	**·**	**C**	**L**	**T**	**3**
-4	**à**	**è**	**À**	**È**	**d**	**m**	**u**	**©**	**D**	**M**	**U**	**4**
-5	**á**	**í**	**Á**	**Í**	**e**	**n**	**v**	**§**	**E**	**N**	**V**	**5**
-6	**ã**	**î**	**Ã**	**Î**	**f**	**o**	**w**	**¶**	**F**	**O**	**W**	**6**
-7	**å**	**ï**	**Å**	**Ï**	**g**	**p**	**x**	¼	**G**	**P**	**X**	**7**
-8	**ç**	**ì**	**Ç**	**Ì**	**h**	**q**	**y**	½	**H**	**Q**	**Y**	**8**
-9	**ñ**	**ß**	**Ñ**	**`**	**i**	**r**	**z**	¾	**I**	**R**	**Z**	**9**
-A	**¢**	**!**	¦	**:**	«	ª	**¡**	**[**	**SHY**	¹	²	³
-B	**.**	**$**	**,**	**#**	»	º	**¿**	**]**	**ô**	**û**	**Ô**	**Û**
-C	**<**	*****	**%**	**@**	ð	**æ**	**Ð**	¯	**ö**	**ü**	**Ö**	**Ü**
-D	**(**	**)**	**_**	´	**ý**	¸	**Ý**	¨	**ò**	**ù**	**Ò**	**Ù**
-E	**+**	**;**	**>**	**=**	þ	**Æ**	þ	´	**ó**	**ú**	**Ó**	**Ú**
-F	**|**	¬	**?**	**"**	±	¤	®	×	**õ**	**ÿ**	**Õ**	

Legend: **RSP** required space, **SHY** syllable hyphen, **SP** space.

IBM 3270 & IBM 5250
ENGLISH (U.K.) CHARACTER SET

HEX	4-	5-	6-	7-	8-	9-	A-	B-	C-	D-	E-	F-
-0	SP	&	-	ø	Ø	°	µ	¢	{	}	\	0
-1	RSP	é	/	É	a	j	-	[	A	J	÷	1
-2	â	ê	Â	Ê	b	k	s	¥	B	K	S	2
-3	ä	ë	Ä	Ë	c	l	t	·	C	L	T	3
-4	à	è	À	È	d	m	u	©	D	M	U	4
-5	á	í	Á	Í	e	n	v	§	E	N	V	5
-6	ã	î	Ã	Î	f	o	w	¶	F	O	W	6
-7	å	ï	Å	Ï	g	p	x	¼	G	P	X	7
-8	ç	ì	Ç	Ì	h	q	y	½	H	Q	Y	8
-9	ñ	ß	Ñ	`	i	r	z	¾	I	R	Z	9
-A	$	!	¦	:	«	ª	¡	^	SHY	¹	²	³
-B	.	£	,	#	»	º	¿	]	ô	û	Ô	Û
-C	<	*	%	@	ð	æ	Ð	~	ö	ü	Ö	Ü
-D	(	)	_	´	ý	¸	Ý	¨	ò	ù	Ò	Ù
-E	+	;	>	=	þ	Æ	Þ	´	ó	ú	Ó	Ú
-F			¬	?	"	±	¤	®	×	õ	ÿ	Õ	

Legend: **RSP** required space, **SHY** syllable hyphen, **SP** space.

IBM 3270 & IBM 5250
DANISH & NORWEGIAN CHARACTER SET

HEX	4-	5-	6-	7-	8-	9-	A-	B-	C-	D-	E-	F-
-0	**SP**	**&**	**-**	**¦**	**@**	**°**	**µ**	**¢**	**æ**	**å**	****	**0**
-1	**RSP**	**é**	**/**	**É**	**a**	**j**	**ü**	**£**	**A**	**J**	**÷**	**1**
-2	**â**	**ê**	**Â**	**Ê**	**b**	**k**	**s**	**¥**	**B**	**K**	**S**	**2**
-3	**ä**	**ë**	**Ä**	**Ë**	**c**	**l**	**t**	**·**	**C**	**L**	**T**	**3**
-4	**à**	**è**	**À**	**È**	**d**	**m**	**u**	**©**	**D**	**M**	**U**	**4**
-5	**á**	**í**	**Á**	**Í**	**e**	**n**	**v**	**§**	**E**	**N**	**V**	**5**
-6	**ã**	**î**	**Ã**	**Î**	**f**	**o**	**w**	**¶**	**F**	**O**	**W**	**6**
-7	**}**	**ï**	**$**	**Ï**	**g**	**p**	**x**	**¼**	**G**	**P**	**X**	**7**
-8	**ç**	**ì**	**Ç**	**Ì**	**h**	**q**	**y**	**½**	**H**	**Q**	**Y**	**8**
-9	**ñ**	**ß**	**Ñ**	**`**	**i**	**r**	**z**	**¾**	**I**	**R**	**Z**	**9**
-A	**#**	**¤**	**ø**	**:**	**«**	**ª**	**¡**	**¬**	**SHY**	**¹**	**²**	**³**
-B	**.**	**Å**	**,**	**Æ**	**»**	**º**	**¿**	**¦**	**ô**	**û**	**Ô**	**Û**
-C	**<**	*****	**%**	**Ø**	**ð**	**{**	**Ð**	**¯**	**ö**	**ü**	**Ö**	**Ü**
-D	**(**	**)**	**_**	**´**	**ý**	**¸**	**Ý**	**¨**	**ò**	**ù**	**Ò**	**Ù**
-E	**+**	**;**	**>**	**=**	**þ**	**[**	**Þ**	**´**	**ó**	**ú**	**Ó**	**Ú**
-F	**!**	**^**	**?**	**"**	**±**	**]**	**®**	**×**	**õ**	**ÿ**	**Õ**	

Legend: **RSP** required space, **SHY** syllable hyphen, **SP** space.

IBM 3270 & IBM 5250
FRENCH CHARACTER SET

HEX	4-	5-	6-	7-	8-	9-	A-	B-	C-	D-	E-	F-
-0	SP	&	-	ø	Ø	[	`	¢	é	è	ç	0
-1	RSP	{	/	É	a	j	¨	#	A	J	÷	1
-2	â	ê	Â	Ê	b	k	s	¥	B	K	S	2
-3	ä	ë	Ä	Ë	c	l	t	·	C	L	T	3
-4	@	}	À	È	d	m	u	©	D	M	U	4
-5	á	í	Á	Í	e	n	v	]	E	N	V	5
-6	ã	î	Ã	Î	f	o	w	¶	F	O	W	6
-7	å	ï	Å	Ï	g	p	x	1/4	G	P	X	7
-8	\	ì	Ç	Ì	h	q	y	1/2	H	Q	Y	8
-9	ñ	ß	Ñ	µ	i	r	z	3/4	I	R	Z	9
-A	°	§	ù	:	«	ª	¡	¬	SHY	¹	²	³
-B	.	$	,	£	»	º	¿	l	ô	û	Ô	Û
-C	<	*	%	à	ð	æ	Ð	¯	ö	ü	Ö	Ü
-D	(	)	_	´	ý	¸	Ý	~	ò	¦	Ò	Ù
-E	+	;	>	=	þ	Æ	Þ	´	ó	ú	Ó	Ú
-F	!	^	?	"	±	¤	®	×	õ	ÿ	Õ	

Legend: **RSP** required space, **SHY** syllable hyphen, **SP** space.

IBM 3270 & IBM 5250
GERMAN & AUSTRIAN CHARACTER SET

HEX	4-	5-	6-	7-	8-	9-	A-	B-	C-	D-	E-	F-
-0	**SP**	**&**	**-**	**ø**	**Ø**	°	**µ**	**¢**	**ä**	**ü**	**Ö**	**0**
-1	**RSP**	**é**	**/**	**É**	**a**	**j**	**ß**	**£**	**A**	**J**	**÷**	**1**
-2	**â**	**ê**	**Â**	**Ê**	**b**	**k**	**s**	**¥**	**B**	**K**	**S**	**2**
-3	**{**	**ë**	**[**	**Ë**	**c**	**l**	**t**	**·**	**C**	**L**	**T**	**3**
-4	**à**	**è**	**À**	**È**	**d**	**m**	**u**	**©**	**D**	**M**	**U**	**4**
-5	**á**	**í**	**Á**	**Í**	**e**	**n**	**v**	**@**	**E**	**N**	**V**	**5**
-6	**ã**	**î**	**Ã**	**Î**	**f**	**o**	**w**	**¶**	**F**	**O**	**W**	**6**
-7	**å**	**ï**	**Å**	**Ï**	**g**	**p**	**x**	¼	**G**	**P**	**X**	**7**
-8	**ç**	**ì**	**Ç**	**Ì**	**h**	**q**	**y**	½	**H**	**Q**	**Y**	**8**
-9	**ñ**	**~**	**Ñ**	**`**	**i**	**r**	**z**	¾	**I**	**R**	**Z**	**9**
-A	**Ä**	**Ü**	**ö**	**:**	«	ª	¡	¬	**SHY**	¹	²	³
-B	**.**	**$**	**,**	**#**	»	º	¿	**l**	**ô**	**û**	**Ô**	**Û**
-C	**<**	*****	**%**	**§**	ð	**æ**	**Ð**	¯	¦	**}**	****	**]**
-D	**(**	**)**	**_**	´	**ý**	¸	**Ý**	¨	**ò**	**ù**	**Ò**	**Ù**
-E	**+**	**;**	**>**	**=**	þ	**Æ**	þ	´	**ó**	**ú**	**Ó**	**Ú**
-F	**!**	**^**	**?**	**"**	±	¤	®	×	**õ**	**ÿ**	**Õ**	

Legend: **RSP** required space, **SHY** syllable hyphen, **SP** space.

IBM 3270 & IBM 5250
ITALIAN CHARACTER SET

HEX	4-	5-	6-	7-	8-	9-	A-	B-	C-	D-	E-	F-
-0	SP	&	-	ø	Ø	[	µ	¢	à	è	ç	0
-1	RSP	]	/	É	a	j	ì	#	A	J	÷	1
-2	â	ê	Â	Ê	b	k	s	¥	B	K	S	2
-3	ä	ë	Ä	Ë	c	l	t	·	C	L	T	3
-4	{	}	À	È	d	m	u	©	D	M	U	4
-5	á	í	Á	Í	e	n	v	@	E	N	V	5
-6	ã	î	Ã	Î	f	o	w	¶	F	O	W	6
-7	å	ï	Å	Ï	g	p	x	1/4	G	P	X	7
-8	\	~	Ç	Ì	h	q	y	1/2	H	Q	Y	8
-9	ñ	ß	Ñ	ù	i	r	z	3/4	I	R	Z	9
-A	°	é	ò	:	«	ª	¡	¬	SHY	¹	²	³
-B	.	$	,	£	»	º	¿	ǀ	ô	û	Ô	Û
-C	<	*	%	§	ð	æ	Ð	¯	ö	ü	Ö	Ü
-D	(	)	_	´	ý	¸	Ý	¨	¦	`	Ò	Ù
-E	+	;	>	=	þ	Æ	Þ	´	ó	ú	Ó	Ú
-F	!	^	?	"	±	¤	®	×	õ	ÿ	Õ	

Legend: **RSP** required space, **SHY** syllable hyphen, **SP** space.

IBM 3270 & IBM 5250
SPANISH CHARACTER SET

HEX	4-	5-	6-	7-	8-	9-	A-	B-	C-	D-	E-	F-
-0	SP	&	-	ø	Ø	°	µ	¢	{	}	\	0
-1	RSP	é	/	É	a	j	¨	£	A	J	÷	1
-2	â	ê	Â	Ê	b	k	s	¥	B	K	S	2
-3	ä	ë	Ä	Ë	c	l	t	·	C	L	T	3
-4	à	è	À	È	d	m	u	©	D	M	U	4
-5	á	í	Á	Í	e	n	v	§	E	N	V	5
-6	ã	î	Ã	Î	f	o	w	¶	F	O	W	6
-7	å	ï	Å	Ï	g	p	x	¼	G	P	X	7
-8	ç	ì	Ç	Ì	h	q	y	½	H	Q	Y	8
-9	¦	ß	#	`	i	r	z	¾	I	R	Z	9
-A	[	]	ñ	:	«	ª	¡	^	SHY	¹	²	³
-B	.	$	,	Ñ	»	º	¿	!	ô	û	Ô	Û
-C	<	*	%	@	ð	æ	Ð	¯	ö	ü	Ö	Ü
-D	(	)	_	´	ý	¸	Ý	~	ò	ù	Ò	Ù
-E	+	;	>	=	þ	Æ	þ	´	ó	ú	Ó	Ú
-F			¬	?	"	±	¤	®	×	õ	ÿ	Õ	

Legend: **RSP** required space, **SHY** syllable hyphen, **SP** space.

IBM 3270 & IBM 5250
SWEDISH & FINNISH CHARACTER SET

HEX	4-	5-	6-	7-	8-	9-	A-	B-	C-	D-	E-	F-
-0	SP	&	-	ø	Ø	°	µ	¢	ä	å	É	0
-1	RSP	`	/	\	a	j	ü	£	A	J	÷	1
-2	â	ê	Â	Ê	b	k	s	¥	B	K	S	2
-3	{	ë	#	Ë	c	l	t	·	C	L	T	3
-4	à	è	À	È	d	m	u	©	D	M	U	4
-5	á	í	Á	Í	e	n	v	[	E	N	V	5
-6	ã	î	Ã	Î	f	o	w	¶	F	O	W	6
-7	}	ï	$	Ï	g	p	x	1/4	G	P	X	7
-8	ç	ì	Ç	Ì	h	q	y	1/2	H	Q	Y	8
-9	ñ	ß	Ñ	é	i	r	z	3/4	I	R	Z	9
-A	§	¤	ö	:	«	ª	¡	¬	SHY	1	2	3
-B	.	Å	,	Ä	»	º	¿	l	ô	û	Ô	Û
-C	<	*	%	Ö	ð	æ	Ð	¯	¦	~	@	Ü
-D	(	)	_	´	ý	¸	Ý	¨	ò	ù	Ò	Ù
-E	+	;	>	=	þ	Æ	Þ	´	ó	ú	Ó	Ú
-F	!	^	?	"	±	]	®	×	õ	ÿ	Õ	

Legend: **RSP** required space, **SHY** syllable hyphen, **SP** space.

IBM 3270 & IBM 5250 BELGIAN & SWISS-FRENCH/GERMAN CHARACTER SET

HEX	4-	5-	6-	7-	8-	9-	A-	B-	C-	D-	E-	F-
-0	SP	&	-	ø	Ø	°	µ	¢	{	}	\	0
-1	RSP	é	/	É	a	j	~	£	A	J	÷	1
-2	â	ê	Â	Ê	b	k	s	¥	B	K	S	2
-3	ä	ë	Ä	Ë	c	l	t	·	C	L	T	3
-4	à	è	À	È	d	m	u	©	D	M	U	4
-5	á	í	Á	Í	e	n	v	§	E	N	V	5
-6	ã	î	Ã	Î	f	o	w	¶	F	O	W	6
-7	å	ï	Å	Ï	g	p	x	¼	G	P	X	7
-8	ç	ì	Ç	Ì	h	q	y	½	H	Q	Y	8
-9	ñ	ß	Ñ	`	i	r	z	¾	I	R	Z	9
-A	[	]	¦	:	«	ª	¡	¬	SHY	¹	²	³
-B	.	$	,	#	»	º	¿	ǀ	ô	û	Ô	Û
-C	<	*	%	@	ð	æ	Ð	¯	ö	ü	Ö	Ü
-D	(	)	_	´	ý	¸	Ý	¨	ò	ù	Ò	Ù
-E	+	;	>	=	þ	Æ	Þ	´	ó	ú	Ó	Ú
-F	!	^	?	"	±	¤	®	×	õ	ÿ	Õ	

Legend: **RSP** required space, **SHY** syllable hyphen, **SP** space.

IBM EBCDIC CODEPAGES SUPPLIED

Codepage	Type	Countries
37	SBCS	USA, Canada, Netherlands, Portugal, Brazil
273	SBCS	Austria, Germany
274	SBCS	Belgium (old)
277	SBCS	Denmark, Norway
278	SBCS	Finland, Sweden
280	SBCS	Italy
284	SBCS	Spain, Latin America (Spanish)
285	SBCS	UK
290	SBCS	Japanese - Katakana
297	SBCS	France
300	DBCS	Japanese - Kanji
420	SBCS	Arabic
424	SBCS	Hebrew New Code
500	SBCS	(Latin 1) Belgium, Canada, Switzerland
803	SBCS	Hebrew Old Code
833	SBCS	Korean
834	DBCS	Korean
835	DBCS	Traditional Chinese
836	SBCS	Simplified Chinese
837	DBCS	Simplified Chinese
838	SBCS	Thai
870	SBCS	(Latin 2) Czech, Slovak, Polish
871	SBCS	Icelandic
875	SBCS	Greek
880	SBCS	Cyrillic
905	SBCS	(Latin 3) Turkish (old)
1025	SBCS	Russian Cyrillic
1026	SBCS	(Latin 5) Turkish
1027	SBCS	Japanese - Latin extended
1140	SBCS	[EURO] USA, Canada, Netherlands, Portugal, Brazil
1141	SBCS	[EURO] Austria, Germany
1142	SBCS	[EURO] Denmark, Norway
1143	SBCS	[EURO] Finland, Sweden
1144	SBCS	[EURO] Italy
1145	SBCS	[EURO] Spain, Latin America
1146	SBCS	[EURO] UK
1147	SBCS	[EURO] France
1148	SBCS	[EURO] Belgium, Canada, Switzerland
1149	SBCS	[EURO] Icelandic

C

Host Command Summary

This appendix lists the host commands that are valid in each terminal emulation mode. Additional special commands are listed at the back.

The following conventions are used in this command list. Spaces in a command are for clarity only and are not to be entered as part of the command. A space character that is part of the command will be shown as SP. An asterisk (*) in a command indicates the location of one or more parameters except otherwise indicated next to the command.

Note that IBM 3270 and IBM 5250 emulation commands are not included because of their complexity. Refer to the manuals supplied with these terminals for the host commands that are supported.

VT52 Emulation

CHARACTER SET SELECTION

Invoke G0 character set	SI
Invoke G1 character set	SO
Select G0 character set	ESC G
Select Line Drawing character set	ESC F

CURSOR

Direct cursor addressing (1 to 96 = SP to DEL)	ESC Y *line *column
Insert FF character & advance cursor	FF
Line feed	LF
Move cursor down one line	ESC B
Move cursor down one line	VT
Move cursor home	ESC H
Move cursor one column left	BS
Move cursor one column left	ESC D
Move cursor one column right	ESC C
Move cursor to left margin of current line	CR
Move cursor to next tab stop	HT
Move cursor up one line	ESC A
Reverse line feed	ESC I

TEXT ERASURE

Erase text to end of line	ESC K
Erase text to end of screen	ESC J

GENERAL

Cancel current ESC sequence & display error	CAN
Sound audible tone	BEL

MODE SELECTION

Select numeric keypad application mode	ESC =
Select numeric keypad normal mode	ESC >
Select VT100 mode	ESC <

PRINTING

Auto print off	ESC _
Auto print on	ESC ^
Print controller off	ESC X
Print controller on	ESC W

REPORTS

Request mode identification report	ESC Z
Send terminal emulation mode report	ESC # ! 0

ANSI VT100 Emulation

CHARACTER ATTRIBUTES

Assign * attribute(s) to following characters — ESC [* m

Default attributes	0	Blue foreground	34	White background	50
Bold on	1	Magenta foreground	35	Red background	51
Dim White	2	Cyan foreground	36	Red background	52
Underline on	4	White foreground	37	Yellow background	53
Flashing on	5	'Normal' foreground	39	Blue background	54
Inverse video on	7	White background	40	Magenta background	55
Half intensity off	22	Red background	41	Cyan background	56
Underline off	24	Red background	42	White background	57
Flashing off	25	Yellow background	43	'Normal' background	59
Inverse video off	27	Blue background	44		
Black foreground	30	Magenta background	45		
Red foreground	31	Cyan background	46		
Green foreground	32	White background	47		
Yellow foreground	33	'Normal' background	49		

Deselect underline character mode	ESC [< 1 h
Double width & height (top half) characters	ESC # 3
Double width & height (bottom half) characters	ESC # 4
Double width single height characters	ESC # 6
Select underline character mode	ESC [< 1 l
Single width & height (normal) characters	ESC # 5

CHARACTER SET SELECTION

Assign G0 label to * character set	ESC (*
Assign G1 label to * character set	ESC) *

ASCII / N.American	B	Italian	Y
British	A	Danish / Norwegian	' *or* E *or* 6
Dutch	4	Portuguese	%6
Finnish	5 *or* C	Spanish	Z
French	R	Swedish	7 *or* H
French Canadian	9 *or* Q	Swiss	=
German	K	Line Drawing	0

Assign G0 labelled set to 7 bit codes	SI
Assign G1 labelled set to 7 bit codes	SO

CURSOR

Cursor on	ESC [? 25 h
Cursor off	ESC [? 25 l
Clear tab stops (0 = cursor position, 2 or 3 = all)	ESC [* g
Deselect auto carriage return	ESC [20 l
Disable cursor	ESC [? 50 l
Disable cursor autowrap	ESC [? 7 l
Enable cursor	ESC [? 50 h
Enable cursor autowrap	ESC [? 7 h
Index cursor (move down one line)	ESC D
Insert FF character & advance cursor	FF
Line feed	LF
Move cursor down * lines	ESC [* B
Move cursor down one line	VT
Move cursor left * columns	ESC [* D
Move cursor one column left	BS
Move cursor right * columns	ESC [* C
Move cursor to beginning of next line	ESC E
Move cursor to left margin of current line	CR
Move cursor to line (*l) column (*c)	ESC [*l ; *c H
Move cursor to line (*l) column (*c)	ESC [*l ; *c f
Move cursor to next tab stop	HT
Move cursor up * lines	ESC [* A
Reverse index cursor (move up one line)	ESC M
Select absolute origin mode	ESC [? 6 l
Select auto carriage return	ESC [20 h
Select relative origin mode	ESC [? 6 h
Set tab stop at current cursor position	ESC H
Tab cursor backward * tabs	ESC [* Z
Tab cursor forward * tabs	ESC [* I

DISPLAY

Scroll display down * lines	ESC [* T
Scroll display up * lines	ESC [* S
Select 80 column display mode	ESC [? 3 l
Select 132 column display mode	ESC [? 3 h
Select invisible display	ESC [? 75 l
Select normal colour display mode	ESC [? 5 l
Select reverse colour display mode	ESC [? 5 h
Select thin-line graphics in ANSI BBS mode	ESC 10 m
Select visible display	ESC [? 75 h
Set top (*t) and bottom (*b) margin positions	ESC [*t ; *b r

EDITING

Delete * characters from cursor position right	ESC [* P
Delete * lines from cursor position down	ESC [* M
Enable all characters to be erased	ESC [6 h
Enable erasure of unprotected characters only	ESC [6 l
End protected area	ESC W
Erase * characters & attributes from cursor right	ESC [* X
Erase line portion (0 = from, 1 = to, 2 = all)	ESC [* K
Erase screen portion (0 = from, 1 = to, 2 = all)	ESC [* J
Insert * blank lines	ESC [* L
Insert * space characters	ESC [* @
Protect characters with * attribute(s)	ESC [* }
Select insert mode	ESC [4 h
Select replace mode	ESC [4 l
Start protected area	ESC V

GENERAL OPERATION

Cancel current ESC sequence & display error	CAN
Local echo mode on	ESC [12 l
Local echo mode off	ESC [12 h
Reset features (* = * in ESC [* h commands)	ESC [* l
Reset terminal emulation	ESC c
Restore saved features	ESC 8
Save features (char. set, attrib's, cursor, origin)	ESC 7
Select VT52 mode	ESC [? 2 l
Select VT100 mode from VT320 mode	ESC [61 " p
Select VT400 7 bit mode	ESC [62 ; 1 " p
Select VT400 8 bit mode	ESC [62 " p
Select VT400 8 bit mode (* can be 0 or 2)	ESC [62 ; * " p
Select Wyse 60 mode	ESC [42 h
Set features (* = * in ESC [* h commands)	ESC [* h
Soft reset	ESC [! p
Sound audible tone	BEL
Transmit rate limited to 150-180 cps	ESC [? 73 h
Transmit rate unlimited	ESC [? 73 l

KEYBOARD

Backspace key performs backspace only	ESC [? 67 h
Backspace key performs delete	ESC [? 67 l
Data processing keys mode	ESC [? 68 h
Disable key autorepeat	ESC [? 8 l
Disable keyboard	ESC `
Disable keyboard input	ESC [2 h
Enable key autorepeat	ESC [? 8 h
Enable keyboard	ESC b
Enable keyboard input	ESC [2 l
Select cursor key application mode	ESC [? 1 h
Select cursor key normal mode	ESC [? 1 l
Select keypad application mode	ESC =
Select keypad numeric mode	ESC >
Typewriter keys mode	ESC [? 68 l

LOCAL EDITING

Data block for transmission is cursor line	ESC [? 11 h
Data block for transmission is page	ESC [? 11 l
Disable transmission of protected areas	ESC [1 l
Edit key changes mode immediately	ESC [? 16 h
Edit key waits for host to enable mode change	ESC [? 16 l
Enable all selected areas to be transmitted	ESC [15 h
Enable only cursor area to be transmitted	ESC [15 l
Enable transmission of all characters	ESC [17 h
Enable transmission of protected areas	ESC [1 h
Enable transmission of selected characters only	ESC [17 l
End of block indicator character(s)	ESC [* |
(0 = no, 1 = FF, 2 = ETX, 3 = EOT, 4 = CR, 5 = DC3)	
End selected area	ESC G
Enter edit mode	ESC [? 10 h
Enter interactive mode	ESC [? 10 l
Function according to ANSI rules	ESC [? 53 l
Function as VT131 terminal	ESC [? 53 h
Line termination characters (ASCII decimal)	ESC [? * ' s
Space compression mode off	ESC [? 13 l
Space compression mode on	ESC [? 13 h
Start selected area	ESC F
Transmission occurs immediately	ESC [? 14 h
Transmission waits for host	ESC [? 14 l
Transmit block of data	ESC 5
Transmit scrolling region	ESC [16 h
Transmit VT131 or ANSI partial page	ESC [16 l

PRINTING

Auto print off	ESC [? 4 i
Auto print on	ESC [? 5 i
Form feed at end of print	ESC [? 18 h
No form feed at end of print	ESC [? 18 l
Print controller on	ESC [5 i
Print controller off	ESC [4 i

Print cursor line	ESC [? 1 i
Print page	ESC [i
Print page prints complete page	ESC [? 19 h
Print page prints scrolling region only	ESC [? 19 l

REPORTS

Report compatibility level	ESC [> c
Report current colour	ESC [= M
Report cursor position	ESC [6 n
Report keyboard nationality	ESC [? 26 n
Report operating status	ESC [5 n
Report terminal emulation mode	ESC # ! 0
Report VT terminal identity	ESC [0 c
Report VT terminal identity	ESC [c
Report VT terminal identity	ESC Z

ANSI VT500 Emulation

When running the VT500 7 or 8 bit emulation, the following commands will be executed in addition those listed previously for ANSI VT100.

CHARACTER ATTRIBUTES

Assign * attribute(s) to following characters				ESC [* m
Attributes:	Invisible	8	Flashing off	25
	Bold off	22	Reverse video off	27
	Underline off	24	Invisible off	28

Non-erase attribute on	ESC [1 " q
Non-erase attribute off (* = 0 or 2)	ESC [* " q

CHARACTER SET SELECTION

Assign G2 label to * character set		ESC * * (second * is parameter)
Assign G3 label to * character set		ESC + *
Extra character sets:	DEC Additional	%5
	ISO Latin-1 Additional	A

Assign G1 labelled set to 8 bit codes	ESC ~
Assign G2 labelled set to 7 bit codes	ESC n
Assign G2 labelled set to 7 bit codes for 1 character	ESC N
Assign G2 labelled set to 8 bit codes	ESC }
Assign G3 labelled set to 7 bit codes	ESC o
Assign G3 labelled set to 7 bit codes for 1 character	ESC O
Assign G3 labelled set to 8 bit codes	ESC |
Clear redefinable character set	ESC P 1 ; 1 ; 2 { SP @ ESC \
Load redefinable character set	ESC P * { * ESC \
Preferred Additional set is DEC	ESC P 0 ! u %5 ESC \
Preferred Additional set is ISO Latin-1	ESC P 1 ! u A ESC \
Select Multinational character set mode	ESC [? 42 l
Select National character set mode	ESC [? 42 h

DISPLAY

Display host-writable status line	ESC [2 $ ~
Display indicator status line	ESC [1 $ ~
Display no status line	ESC [0 $ ~
Send data to main display	ESC [0 $ }
Send data to status line	ESC [1 $ }
Display time on status line (*h = hour (24) *m = minutes)	ESC [*h ; *m , p
Display controls on	ESC [3 h
Display controls off	ESC [3 l
Rectangular fill (*c = fill character, *sr = start row *sc = start column, *er = end row, *ec = end column	ESC [*c ; *sr ; *sc ; *er ; *ec $ z

EDITING

Selective erase line (0 = from, 1 = to, 2 = all)	ESC [? * K
Selective erase screen (0 = from, 1 = to, 2 = all)	ESC [? * J

GENERAL OPERATION

Enter HP 700-92/96 mode (0 = zero)	ESC & k 0 \
Select C1 7 bit control mode	ESC SP F
Select C1 8 bit control mode	ESC SP G

KEYBOARD

Set national keyboard — ESC [2 ; * space }

* =				
	1	American	14	French
	2	British	15	Spanish
	3	Belgian	16	Portuguese
	4	Canadian	19	Hebrew
	5	Danish	22	Greek
	6	Finnish	29	Turkish
	7	German	31	Hungarian
	8	Dutch	33	Slovak
	9	Italian	34	Czech
	10	Swiss French	35	Polish
	11	Swiss German	36	Romanian
	12	Swedish	38	Serbian
	13	Norwegian	39	Russian

Select application keypad mode	ESC [? 66 h
Select numeric keypad mode	ESC [? 66 l
Set DEC keyboard mode	ESC [? 99 h
Reset DEC keyboard mode	ESC [? 99 l

PF KEYS

Clear all PF keys	ESC P 0 ; 1 | ESC \
Lock PF keys	ESC P 1 ; 0 | ESC \
Program a PF key	ESC P * ; * | * / * ESC \

PRINTING

Enable bidirectional printing	ESC [7 i
Disable bidirectional printing	ESC [6 i
Enable printer/tablet to talk directly to host (one way)	ESC [? 9 i
Disable printer/tablet from talking directly to host	ESC [? 8 i
Destination port (only first * is parameter: 0 = None, 1 = LPT 1/2, 2 = COM 1, 3 = COM 2, etc.)	ESC [* * u

REPORTS

Request colour table report	ESC [2 $ u
Request control function settings	ESC P $ q
Request cursor information report	ESC [1 $ w
Request emulation state report	ESC [1 $ u
Request locator device port status	ESC [? 55 n
Request locator device type	ESC [? 56 n
Request mode settings	ESC [* $ p
Request tab stop report	ESC [2 $ w
Request user-preferred Additional set	ESC [& u
Restore colour table	ESC P 2 $ p
Restore cursor information	ESC P 1 $ t
Restore emulation state	ESC P 1 $ p
Restore tab stops	ESC P 2 $ t

ANSI VT420 Emulation

When running the VT420 emulation, the following commands will be executed in addition those listed for ANSI VT100 and VT500.

CURSOR MOVEMENT & PANNING

Back index	ESC 6
Forward index	ESC 9
Pan down (*l = number of lines)	ESC [*l S
Pan up (*l = number of lines)	ESC [*l T
Vertical cursor coupled mode	ESC [? 61 h
Vertical cursor uncoupled mode	ESC [? 61 l
Page cursor coupled mode	ESC [? 64 h
Page cursor uncoupled mode	ESC [? 64 l

EDITING

Delete column(s) (*c = number of columns to delete)	ESC [*c ' ~
Insert column(s) (*c = number of columns to insert)	ESC [*c ' }

GENERAL OPERATION

Secure reset (*n = any number in range 0 - 16383)	ESC [*n + p
Secure reset confirmation (*n = number in range 0 - 16383)	ESC [*n * q

MACROS

Define macro	ESC P *n ; *d ; *e ! z D...D ESC \
*n = Macro ID number	0-63
*d = Delete all macros	0
Delete current macro	1
*e = Encoding format for macro text:	
Standard ASCII characters	0
Hex pairs for each ASCII character	1
Control data string	D...D
Repeat sequence introducer	!
Invoke macro (*n = macro ID number)	ESC [*n * z

KEYBOARD

Enable local functions — ESC [*n ; *c ; ... *n ; *c + q

*n = Function number:		*c = Control performed:	
All local functions	0	Factory default	0
Local copy & paste	1	Enable local function	1
Local panning	2	Disable local function	2
Local window resize	3		

Local function key control — ESC [*k ; *f ; ... *k ; *f * }

*k = Function key number:

All local function keys	0
F1 or Hold	1
F2 or Print	2
F3 or Set-Up	3
F4 or Session	4

*f = Function performed:

Factory default	0
Local function	1
Send key sequence	2
Disable key	3

Select modifier key reporting — ESC [*k ; *c ... *k ; *c + r

*k = Key number:

All keys	0
Left Shift	1
Right Shift	2
Lock key	3
Ctrl key	4
Left Alt Function	5
Right Alt Function	6
Left Compose Char	7
Right Compose Char	8

*c = Control performed:

Factory default	0
Modifier function	1
Extended keyboard report	2
Key disabled	3

PAGE MEMORY

Set lines per page — ESC [*l t

Session:	Dual	Single	
*l =	3 pages	6 pages	24
	2 pages	5 pages	25
	2 pages	4 pages	36
	1 page	3 pages	48
	1 page	2 pages	72
	-	1 page	144

Set left & right margins (*l = left column, *r = right) — ESC [*l ; *r s
Vertical split screen mode - L&R margins can be changed — ESC [? 69 h
Vertical split screen mode - L&R margins cannot be changed — ESC [? 69 l
Move cursor to page *n at same position — ESC [*n SP P

RECTANGULAR AREA OPERATIONS

Copy rectangular area — ESC [*t ; *l ; *b ; *r ; *s ; *dt ; *dl ; *dp $ v

*t	Top-line border	*s	Source page number
*l	Left-column border	*dt	Destination top-line border
*b	Bottom-line border	*dl	Destination left-column border
*r	Right-column border	*dp	Destination page number

Erase rectangular area — ESC [*t ; *l ; *b ; *r $ z

*t	Top-line border	*b	Bottom-line border
*l	Left-column border	*r	Right-column border

Fill rectangular area — ESC [*f ; *t ; *l ; *b ; *r $ x

*f Decimal code of fill character
*t Top-line border
*l Left-column border
*b Bottom-line border
*r Right-column border

Selective erase rectangular area — ESC [*t ; *l ; *b ; *r $ {

*t Top-line border
*l Left-column border
*b Bottom-line border
*r Right-column border

Select attribute change extent — ESC [*c * x

*c = character positions affected:
Stream of character positions — 0 or 1
Rectangular area of character positions — 2

Change attributes in rectangular area — ESC [*t ; *l ; *b ; *r *a $ r

*t Top-line border
*l Left-column border
*b Bottom-line border
*r Right-column border
*a Visual character attributes

Reverse attributes in rectangular area — ESC [*t ; *l ; *b ; *r *a $ t

*t Top-line border
*l Left-column border
*b Bottom-line border
*r Right-column border
*a Visual character attributes

VT420 REPORTS

Tertiary device attribute request — ESC [= c *or* ESC [= 0 c
Request extended cursor position report — ESC [? 6 n
Request checksum of rectangular area — ESC [*id ; *p ; *t ; *l ; *b ; *r * y

*id Request label
*p Page number
*t Top-line border
*l Left-column border
*b Bottom-line border
*r Right-column border

Request macro space report — ESC [? 62 n
Request memory checksum report (*l = request label) — ESC [? 63 ; *l n
Request multiple session status report — ESC [? 85 n
Request window report — ESC [" v

ANSI VT510 Emulation

When running the VT510 emulation, the following commands will be executed in addition those listed for ANSI VT100 and VT500.

USER-DEFINED KEYS

Download definitions for user-defined keys DCS *c ; *l ; *m | D...D ST

*c	0 *or* none	Clear all keys before loading new values (0 is default).
	1	Load new UDK values; clear old values only when redefined.
*l	0 *or* none	Lock the keys.
	1	Do not lock the keys against future redefinition.
*m	0, 2 *or* none	Defines the shifted function key.
	1	Defines the unshifted function key.
	3	Defines the alternate unshifted function key.
	4	Defines the alternate shifted function key.
|	(vertical bar)	The final character. Key definition strings follow and these are terminated by ST.

D...D are the key definition strings in the following format:

Key1/UDS/UDS Direction;Key2/UDS/UDS Direction;.....;

Key# Is the key selection number of the key to be defined as listed below:

F1	11	F5	15	F9	20
F2	12	F6	17	F10	21
F3	13	F7	18	F11	23
F4	14	F8	19	F12	24

/ Is a delimiter.

UDS Is the user-defined string consisting of hex pairs in the following ranges:

3/0 through 3/9 (0 through 9)
4/1 through 4/6 (A through F)
6/1 through 6/6 (a through f)

For example, the hex encoding for "PRINT" would be as follows: 5 0 5 2 4 9 4 E 5 4

This enables you to use any of the 256 character codes in the key string. You can enter key definition strings in any order.

UDS Direction Specifies the transmission direction:

0 *or* none	Normal (Host and/or terminal) default
1	Local (Terminal only)
2	Remote (Host only)

PROGRAMMING ALPHANUMERIC KEYS

Program Alphanumeric Key(s) DCS " y D...D ST

where the data string D...D format is as follows:

Key1/Hex Code String/Function #/UDS/UDS Direction;Key2/...;

Key# Is the key station number of the key to be programmed as listed below:

Esc	110	F10	121	Page Up	85
F1	112	F11	122	Page Down	86
F2	113	F12	123	Cursor Left	79
F3	114	Print Screen	124	Cursor Right	89
F4	115	Scroll Lock	125	Cursor Up	83
F5	116	Pause	126	Cursor Down	84
F6	117	Insert	75	Keypad Enter	108
F7	118	Delete	76	Return	43
F8	119	Home	80	Backspace	15
F9	120	End	81	Tab	16

/ Is a delimiter.

Hex Code String Specifies the hex code of the character to be transmitted with each of the four modifier states in the following order: Unshifted, Shifted, Alternate Shifted (Shift 2), and Control (if omitted, use default). Use a period "." as a place holder for an undefined modifier combination.

The hex code represents a valid code in the current 7-bit or 8-bit character set.

Use a minus "-" preceding the hex representation of a diacritical sign if a diacritical mark is to be defined.

Function # Is a number associated with a local function as listed below. For example, function number "0" makes the key or key/modifier inoperative. Function number "100" indicates a user-defined sequence (UDS), and a UDS direction is defined following the slash "/" delimiter.

0	No Function	91	Backspace	93	Escape
100	UDS	92	Cancel	94	Delete

UDS Is the user-defined sequence specified in Hex format. Each hex code in this string represents a value transmitted by the defined key combined with the modifiers.

UDS Direction Specifies the transmission direction:

0 *or* none	Normal (Host and/or terminal) default
1	Local (Terminal only)
2	Remote (Host only)

PROGRAMMING FUNCTION KEYS

Program Function Key(s) DCS " x D...D ST

where the data string D...D format is as follows:

Key1/Mod1/Function #/UDS/UDS Direction;
Key2/Mod2/Function #/UDS/UDS Direction;.....;

Key# Is the key station number of the key to be programmed as listed below:

Esc	110	F10	121	Page Up	85
F1	112	F11	122	Page Down	86
F2	113	F12	123	Cursor Left	79
F3	114	Print Screen	124	Cursor Right	89
F4	115	Scroll Lock	125	Cursor Up	83
F5	116	Pause	126	Cursor Down	84
F6	117	Insert	75	Keypad Enter	108
F7	118	Delete	76	Return	43
F8	119	Home	80	Backspace	15
F9	120	End	81	Tab	16

/ Is a delimiter.

Mod# Is an integer that specifies the modifier key that is to be pressed at the same time as the defined key:

0 *or* none	Normal	5	Control
1	Normal	6	Shift+Control
2	Shift	7	Alt+Control
3	Alt	8	Alt+Control+Shift
4	Alt+Shift		

Function # Is a number associated with a local function as listed below. For example, function number "0" makes the key or key/modifier inoperative. Function number "100" indicates a user-defined sequence (UDS), and a UDS direction is defined following the slash "/" delimiter.

0	No Function	91	Backspace	93	Escape
100	UDS	92	Cancel	94	Delete

UDS Is the user-defined sequence specified in Hex format. Each hex code in this string represents a value transmitted by the defined key combined with the modifiers.

UDS Direction Specifies the transmission direction:

0 *or* none	Normal (Host and/or terminal) default
1	Local (Terminal only)
2	Remote (Host only)

ANSI VT520 Emulation

When running the VT520 emulation, the following commands will be executed in addition to those listed for ANSI VT100 and VT500. Note that an * (asterisk) before a command description indicates the command is accepted but not actioned.

Sessions

* Enable session	CSI & x
* Session page memory (*ps# = pages per session 1-4)	CSI *ps1 ; *ps2 ; *ps3 ; *ps4 ; , x
* Update session	CSI * , y
* = Only when active	1
When available	2
At regular intervals	3

Window Management

Auto reset mode enabled	CSI ? 98 h
Auto reset mode disabled	CSI ? 98 l
Framed windows mode enabled	CSI ? 111 h
Framed windows mode disabled	CSI ? 111 l
* Set icon name (12 characters max.)	OSC 2 L ; *name* ST
Set window title (30 characters max.)	OSC 2 1 ; *name* ST

Audible Attributes

* Margin bell volume	CSI * SP u
* = Off	none, 0, 1
Low	2, 3, 4
High	5, 6, 7, 8
* Warning bell volume	CSI * SP t
* = Off	1
Low	2, 3, 4
High	none, 0, 5, 6, 7, 8
* Play sound	CSI *v , *d ; *n , ~
*v = Volume	0 - 7 (0 = silent)
*d = Duration	0 - 255 (1/32nd of a sec)

*n = Note	0	Silent	9	G#5	18	F6
	1	C5	10	A5	19	F#6
	2	C#5	11	A#5	20	G6
	3	D5	12	B5	21	G#6
	4	D#5(Eb)	13	C6	22	A6
	5	E5	14	C#6	23	A#6
	6	F5	15	D6	24	B6
	7	F#5	16	D#6	25	C7
	8	G5	17	E6		

Colour Selection

Assign colour — CSI *i *f *b , |

*i = Item	Normal text	1
	Window frame	2 (not actioned)
*f = Foreground colour index		0 - 15
*b = Background colour index		0 - 15

Alternate text colour — CSI *a *f *b , }

*a = Attribute	0	Normal text	8	Reverse underline
	1	Bold	9	Reverse blink
	2	Reverse	10	Underline blink
	3	Underline	11	Bold reverse underline
	4	Blink	12	Bold reverse blink
	5	Bold reverse	13	Bold underline blink
	6	Bold underline	14	Reverse underline blink
	7	Bold blink	15	Bold reverse underline blink

*f = Foreground colour index	0 - 15
*b = Background colour index	0 - 15

Alternate text colour blink enabled	CSI ? 115 h
Alternate text colour blink disabled	CSI ? 115 l
Alternate text colour underline enabled	CSI ? 114 h
Alternate text colour underline disabled	CSI ? 114 l
Bold and blink foreground & background enabled	CSI ? 116 h
Bold and blink foreground only enabled	CSI ? 116 l
Colour table request (* value: 1 = HLS, 2 = RGB)	CSI 2 ; * $ u
Colour table reply to host (*...* = parameter group)	DCS 2 $ s *...* ST
Colour table restore format (*...* = parameter group)	DCS 2 $ p *...* ST

... = group of 5 parameters: *n ; *s ; *1 ; *2 ; *3 /

*n = Colour number: 0 - 255
*s = Colour coordinate system: 0 = illegal, 1 = HLS, 2 = RGB

*1 = HLS hue: 0 - 360	or	RGB red: 0 - 100
*2 = HLS lightness: 0 - 100	or	RGB green: 0 - 100
*3 = HLS saturation: 0 - 100	or	RGB blue: 0 - 100

Select colour look-up table — CSI *) {

* = 0	Mono
1	Alternate colour (use text attributes)
2	Alternate colour
3	ANSI SGR colour

Text Processing

Cursor backward tabulation (* = no. of active tab positions)	CSI * Z
Cursor horizontal absolute (* = no. of active char. positions)	CSI * G
Cursor horizontal forward tab (* = no. of active tab positions)	CSI * I
Cursor next line (* = number of active position)	CSI * E
Cursor previous line (* = number of active position)	CSI * F
Save cursor position (SCO)	CSI s

Restore saved cursor (SCO)		CSI u
Set cursor style		CSI * SP q
	* = Blinking block	none, 0, 1
	Steady block	2
	Blinking underline	3
	Steady underline	4
Right-to-left copy enabled		CSI ? 96 h
Right-to-left copy disabled		CSI ? 96 l
Right-to-left mode enabled		CSI ? 34 h
Right-to-left mode disabled		CSI ? 34 l
Vertical line position absolute		CSI * d
Vertical line position relative		CSI * e
Set tab every 8 columns		CSI ? 5 W
* Set scroll speed		CSI * SP p
	* = Smooth 2	none, 0, 1, 2, 3
	Smooth 4	4, 5, 6, 7, 8
	Jump	9
Clear screen on column change		CSI ? 95 l
Do not clear screen on column change		CSI ? 95 h

Character Sets

Assign user-preferred supplemental character set — DCS *s ! u *c ST

*s = 94-character set 0
96-character set 1

*c = character set as follows:

Default 94-Character Set		Default 96-Character Set	
% 5	DEC Supplemental	A	ISO Latin-1 Supplemental
" ?	DEC Greek	B	ISO Latin-2 Supplemental
" 4	DEC Hebrew	F	ISO Greek Supplemental
% 0	DEC Turkish	H	ISO Hebrew Supplemental
& 4	DEC Cyrillic	L	ISO Latin-Cyrillic
<	User-pref. Supplemental	M	ISO Latin-5 Supplemental
		<	User-pref. Supplemental

* Down-line load allocation — CSI * , z

* = One each 1
Two each S1 & S2 2

Select character set — ESC *g *c

*g = G-set as follows:

94-Character Set		96-Character Set	
(	G0	-	G1
)	G1	.	G2
*	G2	/	G3
+	G3		

*c = character set as follows:

Default 94-Character Set		Default 96-Character Set	
% 4	Cyrillic (DEC)	A	ISO Latin-1 Supplemental
" ?	Greek (DEC)	B	ISO Latin-2 Supplemental
" >	Greek NRCS	F	ISO Greek Supplemental
" 4	Hebrew (DEC)	H	ISO Hebrew Supplemental
% =	Hebrew NRCS	M	ISO Latin-5 Supplemental
% 6	Portuguese NRCS	L	ISO Latin-Cyrillic
& 5	Russian NRCS		
% 3	SCS NRCS		
% 0	Turkish (DEC)		
% 2	Turkish NRCS		

Select zero symbol		CSI * , {
	* = Oval zero	1
	Zero with slash	2
	Zero with dot	3
Request user-preferred supplemental set		CSI & u

Keyboard

Auto repeat rate		CSI * - p
	* = Off	0 - 5
	Slow (10 cps)	6 - 15
	Fast (30 cps)	16 - 30
Copy key default (*...* = Key-source/Key-dest;K-s/K-d...;)		DCS " z *...* ST
Define function key (SCO)		ESC Q *Fn string*
Extended keyboard report		APC : *ppp mm* ST
Hebrew encoding mode set (8-bit char.)		CSI ? 36 h
Hebrew encoding mode reset (7-bit char.)		CSI ? 36 l
Keyboard language selection		CSI *t ; *l SP }
	*t = keyboard type:	
	DEC keyboard layout	0, 1
	Enhanced PC layout	2

*l = keyboard language as follows:

Keyboard language (VT/PC)		Keyboard language (VT/PC)	
none, 0 or 1	North American	15	Spanish
		16	Portuguese
2	British	19	Hebrew
3	Belgian	22	Greek
4	French Canadian	28	Canadian English
5	Danish	29	Turkish Q/Turkish
6	Finnish	30	Turkish F/Turkish
7	German	31	Hungarian
8	Dutch	33	Slovak
9	Italian	34	Czech
10	Swiss-French	35	Polish
11	Swiss-German	36	Romanian

12	Swedish	38	SCS
13	Norwegian	39	Russian
14	French	40	Latin-American

Key position mode set (key position)	CSI ? 81 h
Key position mode reset (char. codes)	CSI ? 81 l
North American/Greek selection set (North American)	CSI ? 57 h
North American/Greek selection reset (Greek keyboard)	CSI ? 57 l
Program alphanumeric key (for *...* see below)	DCS " y *...* ST
Program function key (for *...* see below)	DCS " x *...* ST

... = *Key# / Mod# / Func# / UDS / Dir ; Key# / Mod# / Func# / UDS / Dir ;*

Key#	VT	PC Keyboard
11	F1	F1
12	F2	F2
13	F3	F3
14	F4	F4
15	F5	F5
17	F6	F6
18	F7	F7
19	F8	F8
20	F9	F9
21	F10	F10
23	F11	F11
24	F12	F12
25	F13	
26	F14	
28	F15	
29	F16	
31	F17	
32	F18	
33	F19	
34	F20	

Mod#	Modifier Key
0, none	Normal
1	Normal
2	Shift
3	Alt
4	Alt + Shift
5	Control
6	Shift + Ctrl
7	Alt + Ctrl
8	Alt + Ctrl + Shift

Func# = Local function number

UDS = User-defined sequence

Dir	UDS Direction
0, none	Normal
1	Local
2	Remote

Program key action	CSI * + z
* = None	none, 0
Lock keys & modifiers	1
Restore factory defaults	2
Recall key definitions	3

Program key free memory report (*t = total bytes, *f = free)	CSI *t ; *f + y
Request program key free memory	CSI + x
Request key definition	CSI *n ; *m , w

*n = Key station number

*m = Modifier key:	
Normal	0, none, 1
Shift	2
Alt	3
Alt + Shift	4
Control	5
Shift + Ctrl	6
Alt + Ctrl	7
Alt + Ctrl + Shift	8

Request key type (* = decimal key station number) CSI * , u
Report key type CSI *n ; *t , v

*n = decimal key station number

*t = key type: Alphanumeric key 0
Function key 1

Report function key definition (for *...* see below) DCS " } *...* ST
Report modifiers/key state (for *...* see below) DCS " ~ *...* ST

... = *Key# / Mod# / Func# / UDS / Dir* (except no *Func#* for function key report)

Key#	VT	PC Keyboard
11	F1	F1
12	F2	F2
13	F3	F3
14	F4	F4
15	F5	F5
17	F6	F6
18	F7	F7
19	F8	F8
20	F9	F9
21	F10	F10
23	F11	F11
24	F12	F12
25	F13	
26	F14	
28	F15	
29	F16	
31	F17	
32	F18	
33	F19	
34	F20	

Mod#	Modifier Key
0, none	Normal
1	Normal
2	Shift
3	Alt
4	Alt + Shift
5	Control
6	Shift + Ctrl
7	Alt + Ctrl
8	Alt + Ctrl + Shift

Func# = Local function number

UDS = User-defined sequence

Dir	UDS Direction
0, none	Normal
1	Local
2	Remote

* Set key click volume CSI * SP r

* = Off 1
Low 2, 3, 4
High none, 0, 5, 6, 7, 8

* Set lock key style CSI * SP v

* = Caps lock none, 0, 1
Shift lock 2
Reverse lock 3

* Load LEDs CSI * q

* = Clear all LEDs 0
Light Num lock 1
Light Caps lock 2
Light Scroll lock 3
Extinguish Num lock 21
Extinguish Caps lock 22
Extinguish Scroll lock 23

Printer

Media copy - send screen data		CSI 2 i
Select digital printed data type		CSI *) p
	* = Print National only	none, 0, 1
	National & Line Drawing	2
	Print Multinational	3
	Print all characters	4
* Select printer type		CSI * $ s
	* = DEC ANSI	none, 0, 1
	IBM ProPrinter	2
	DEC + IBM	3

* Select ProPrinter character set — CSI *c * p

*c =	PC Greek	210	PC Portuguese	860
	PC Spanish	220	PC Hebrew	862
	PC International	437	PC French-Canada	863
	PC Multilingual	850	PC Danish-Norway	865
	PC Slavic (Latin 2)	852	PC Cyrillic	866
	PC Turkish	857		

Terminal Management

* Select Setup language		CSI * p
	* = English	none, 0, 1
	French	2
	German	3
	Spanish	4
	Italian	5
Load time of day (*h = hour 00 - 23, *m = minutes 00 - 59)		CSI *h ; *m , p
* CRT saver timing		CSI * - q
	* = Never	0
	5 min	5
	15 min	15
	30 min	30
	60 min	60
* Energy saver timing		CSI * - r
	* = Never	0
	5 min	5
	15 min	15
	30 min	30
Report terminal ID (*...* = 4 hexadecimal pairs)		DCS ! | *...* ST
Set terminal unit ID (*...* = 4 hexadecimal pairs)		DCS ! { *...* ST

Enter/exit VT PC Term mode / select ASCII or scancodes — CSI ? *m ; *c r

*m = VT mode or SCO ASCII/Scancodes as follows:

VT Emulation Mode	SCO Console Mode	
VT Mode	ASCII characters	none, 0
VT PCTerm Mode	Scancodes	1

*c = character set as follows:

VT Emulation Mode		SCO Console Mode	
210	PC Greek	none, 0	No change
220	PC Spanish	1	PC Multilingual
437	PC International	2	PC International
850	PC Multilingual	3	PC Danish/Norwegian
852	PC Slavic (Latin-2)	4	PC Spanish
857	PC Turkish	5	PC Portuguese
860	PC Portuguese	6	DEC Supplemental
862	PC Hebrew	7	ISO Latin-1
863	PC French-Canadian		
865	PC Danish		
866	PC Cyrillic		

Select conformance (operating) level — CSI *l ; *b ; " p

*l = level:	1 - VT100	none, 0, 1
	5 - VT520/525	2, 3, 4, 5
*b = data bits:	8-bit controls	none, 0, 2
	7-bit controls	1

Terminal mode emulation — CSI * SP ~

* = terminal mode:	VT520/525 (VT level 5)	1
	VT100	2
	VT52	3
	VT PCTerm	4
	WYSE 160/60	5
	WYSE PCTerm	6
	WYSE 50/50+	7
	WYSE 150/120	8
	TVI 950	9
	TVI 925	10
	TVI 910+	11
	ADDS A2	12
	SCO Console	13
	WYSE 325	14

Auto answerback mode set — CSI ? 100 h
Auto answerback mode reset — CSI ? 100 l
Conceal answerback message mode set — CSI ? 101 h
Conceal answerback message mode reset — CSI ? 101 l
Load answerback message (*...* = data string of hex pairs) — CSI 1 v *...* ST
Load banner message (*...* = string of up to 30 chars.) — CSI *e r *...* ST

*e = message encoding:	ASCII hexadecimal pairs	1
	Text as VT default char. set	2, none, 0

Status line type — CSI * $ ~

* =		
	No status line	0
	Indicator status line	1
	Host-writable status line	2

Communications

Select communication port — CSI *p ; *h * u

*p = printer port:

None	0	Comm1	1
Centronics	1	Comm2	2
Comm3	4	Comm3	3

*h = host port:

(note that the last * is part of the command)

Select communication speed — CSI *l ; *s * r

*l = comm line:

Host transmit	none, 0, 1
Host receive	2
Printer	3
Modem Hi	4
Modem Lo	5

*s = speed:

Use default	none, 0
300	1
600	2
1200	3
2400	4
4800	5
9600	6
19200	7
38400	8
57600	9
76800	10
115200	11

(note that the last * is part of the command)

Set port parameters — CSI *p ; *d ; *y ; *s + w

*p = port:

Comm port	none, 0, 1
Printer port	2

*d = data:

8 bits	1, 0, none
7 bits	2

*y = parity:

No parity	none, 0, 1
Even	2
Odd	3
Even	4
Odd, unchecked	5
Mark	6
Space	7

*s = stop bits:

1 bit	none, 0, 1
2 bits	2

Set transmit rate limit — CSI *k ; *s " u

*k = key type:		
	All keys	none, 0, 1
	Graphic key	2
	Function key	3

*s = characters per second:	150 cps	none, 0, 1
	50 cps	2
	30 cps	3

Transmit rate limiting mode set (limited) CSI ? 73 h
Transmit rate limiting mode reset (unlimited) CSI ? 73 l

Terminal Synchronization

Disconnect delay time CSI * $ q

* = delay time:	None	1
	60 ms	2
	2 seconds	none, 0, 3

Flow control CSI *p ; *d ; *f ; *t * s

*p = port type:

Comm port	none, 0, 1
Printer port	2

*d = direction:

Transmit	1, 0, none
Receive	2
Tx & Receive	3

*f = flow control type:

XON/XOFF or XPC	1, 0, none
DTR	2
Both	3
None	4

*t = flow control threshold:

Low (64)	none, 0, 1
High (768)	2

(note that the last * is part of the command)

Null mode set (ignore NUL) CSI ? 102 h
Null mode reset (accept NUL) CSI ? 102 l

AIXTerm Emulation

All commands are supported in both VT100 and HFT (High Function Terminal) modes unless indicated otherwise.

SINGLE BYTE CONTROLS

Bell	BEL
Backspace	BS
Horizontal tab	HT
Linefeed	LF
Vertical tab	VT
Form feed	FF
Carriage return	CR
Shift out	SO
Shift in	SI
Device control 1	DC1
Device control 3	DC3
Cancel	CAN
Substitute	SUB
Escape	ESC

CHARACTER ATTRIBUTES

Assign * attribute(s) to following characters	ESC [* m
Normal	0
Bold	1
Underscore	4
Blink (appears bold)	5
Reverse	7
Invisible (HFT)	8
Foreground colours (HFT)	30...37
Background colours (HFT)	40...47
Foreground colours (HFT)	90...97
Background colours (HFT)	100...107

CHARACTER SET SELECTION

United Kingdom character set G0 (VT100)	ESC (A
United Kingdom character set G1 (VT100)	ESC) A
United Kingdom character set G2 (VT100)	ESC * A
United Kingdom character set G3 (VT100)	ESC + A
ASCII (USASCII) character set G0 (VT100)	ESC (B
ASCII (USASCII) character set G1 (VT100)	ESC) B
ASCII (USASCII) character set G2 (VT100)	ESC * B
ASCII (USASCII) character set G3 (VT100)	ESC + B
Special graphics character set G0 (VT100)	ESC (0
Special graphics character set G1 (VT100)	ESC) 0
Special graphics character set G2 (VT100)	ESC * 0
Special graphics character set G3 (VT100)	ESC + 0
Single shift G2 (VT100)	ESC N

Single shift G3 (VT100)	ESC O
Set G0 character set (HFT)	ESC (<
Set G1 character set (HFT)	ESC) <
Lock shift G2 (VT100)	ESC n
Lock shift G3 (VT100)	ESC o

COLOUR

Set foreground & background colour — ESC [2 ; *fg ; *bg m

*fg and *bg are integers as listed below:

Dull	Colour	Bold
0	Black	8
1	Blue	9
2	Green	10
3	Cyan	11
4	Red	12
5	Magenta	13
6	Yellow	14
7	White	15

Set inverse & foreground & background colour (* as above)	ESC [7 ; *fg ; *bg ; m
Set normal foreground colour (* = integer as above)	ESC [= * F
Set normal background colour (* = integer as above)	ESC [= * G
Set reverse foreground colour (* = integer as above)	ESC [= * H
Set reverse background colour (* = integer as above)	ESC [= * I
Set graphic foreground colour (* = integer as above)	ESC [= * J
Set graphic background colour (* = integer as above)	ESC [= * K
Request current colour attribute (* = integer as above)	ESC [= * M

CURSOR

Clear tab stop — ESC [* g

Clear horizontal tab stop at active position	0
Vertical tab at cursor line (HFT)	1
Horizontal tabs on line (HFT)	2
All horizontal tabs	3
All vertical tabs (HFT)	4

Vertical tab stop (HFT)	ESC I
Cursor backward * tabs	ESC [* Z
Cursor horizontal absolute	ESC [* G
Cursor forward * tabs (HFT)	ESC [* I
Cursor tab stop control (HFT)	ESC [* W
Cursor down * lines (HFT)	ESC [* E
Cursor up * lines	ESC [* F
Horizontal tab stop	ESC H
Index cursor (move down one line)	ESC D
Reverse index cursor (move up one line)	ESC M
Move cursor to beginning of next line	ESC E
Move cursor left * columns	ESC [* D
Move cursor down * lines	ESC [* B
Move cursor right * columns	ESC [* C
Move cursor to line (*l) column (*c)	ESC [*l ; *c f

Move cursor to line (*l) column (*c)	ESC [*l ; *c H
Move cursor up * lines	ESC [* A
Move cursor up * tabs (HFT)	ESC [* Y
Restore cursor position	ESC [u
Save cursor position	ESC [s

DISPLAY

Restore cursor & attributes	ESC 8
Save cursor & attributes	ESC 7
Scroll display down * lines (HFT)	ESC [* T
Scroll display up * lines	ESC [* S
Scroll left * columns (HFT)	ESC [* SP @
Scroll right * columns (HFT)	ESC [* SP A
Select screen direction (HFT)	ESC [* 1 ; 1 S
Left-to-right, set to Latin keyboard	0
Right-to-left, set to National keyboard	1
Screen alignment display	ESC # 8
Set top & bottom margins	ESC [*t ; *b r
Erase status line	ESC [? E
Return from status line	ESC [? F
Hide status line	ESC [? H
Show status line	ESC [? S
Go to column * of status line	ESC [? * T
Set text parameters	ESC] * ; *t \007
Change window name & title to *t	0
Sets only the icon name	1
Sets only the title name	2

EDITING

Delete * characters from cursor position right	ESC [* P
Delete * lines from cursor position down	ESC [* M
Erase * characters from cursor right	ESC [* X
Erase area (* is one of the following)	ESC [* O
Erase to end of area	0
Erase from area start	1
Erase entire area	2
Erase display (* is one of the following)	ESC [* J
Erase to end of display	0
Erase from display start	1
Erase entire display	2
Erase field (* is one of the following)	ESC [* N
Erase to end of field	0
Erase from field start	1
Erase entire field	2
Erase line (* is one of the following)	ESC [* K
Erase to end of line	0
Erase from line start	1
Erase entire line	2

Insert * blank lines	ESC [* L
Insert * space characters	ESC [* @

GENERAL OPERATION

Lock shift G2	ESC n
Lock shift G3	ESC o
Reset to initial state	ESC c
ANSI specified modes	ESC [*;...;* h
IRM insert mode	4
SRM send/rec mode (HFT)	12
TSM tab stop mode (HFT)	18
LNM linefeed/newline	20
XTERM private modes	ESC [? *;...;* h
132/80 column mode	40
Scrollbar hide/show	42
Save scroll text on/off	43
Margin bell on/off	44
Reverse wraparound on/off	45
Screen buffer alternate/normal	47
Status line reverse/normal	48
Scroll mode page/normal	49
Other private modes	ESC [? *;...;* h
Normal/application cursor (VT100)	1
80/132 columns	3
Reverse/normal video	5
Origin/normal	6
Autowrap on/off	7
Autorept on/off	8
CNM CR-NL (HFT)	21
Reset mode, ANSI specified modes	ESC [* ;...; *
Reset mode, other private modes & XTERM private modes	ESC [? *;...;* l
Restore mode, other private modes & XTERM private modes	ESC [? *;...;* r
Save mode, other private modes & XTERM private modes	ESC [? *;...;* s
Ignore everything between ESC - P and ESC \.	
AIXTerm works as normal after ESC \	ESC - P ... ESC \

KEYBOARD & MOUSE

Select numeric keypad application mode (VT100)	ESC =
Select numeric keypad normal mode (VT100)	ESC >
Disable manual input (HFT)	ESC `
Enable manual input (HFT)	ESC b

REPORTS

Device status report (* is one of the following)	ESC [* n
Response from VT100: ready	0
Command from host: please report status	5
Command from host: report active position	6
Keyboard status information	ESC [* p

PF key report (HFT)	ESC [* q
Report cursor position	ESC [*l ; *c R
Report terminal identity (host to VT100)	ESC [c
Report terminal identity (host to VT100)	ESC [0 c
Terminal response (VT100 to host)	ESC [? 1 ; 2 c

AT&T 4410 Emulation

CHARACTER ATTRIBUTES

Normal	ESC [0 m
Dimmed	ESC [2 m
Underline	ESC [4 m
Flashing	ESC [5 m
Reverse video	ESC [7 m
Blanked	ESC [8 m

CURSOR

Cursor down one line or * lines	ESC [B *or* ESC [* B
Cursor left one column or * columns	ESC [D *or* ESC [* D
Cursor right one column or * columns	ESC [C *or* ESC [* C
Cursor up one line or * lines	ESC [A *or* ESC [* A
Cursor to line 1, column 1	ESC [H
Origin mode	ESC [? 6 h
Origin mode reset	ESC [? 6 l
Move cursor to line (*l) and column (*c)	ESC [*l ; *c f
Move cursor to line (*l) and column (*c)	ESC [*l ; *c H
Save cursor location	ESC 7
Restore cursor location	ESC 8
Reverse index	ESC M

DISPLAY

132 column display	ESC [? 3 h
80 column display	ESC [? 3 l
Clear all	ESC [2 J
Clear to cursor	ESC [1 J
Clear to end of display	ESC [J
Clear to end of line	ESC [K *or* ESC [0 K
Clear line to cursor	ESC [1 K
Clear entire line	ESC [2 K
Download label entry (*1 = 1-8, *2 = no. of chrs in def.)	ESC [*1 ; *2 q label definition
Reverse video screen	ESC [5 ? h
Reverse video screen reset	ESC [5 ? l
Scrolling region	ESC [*1 ; *2 r

EDITING

Delete character or * characters	ESC [P *or* ESC [* P
Delete line or * lines	ESC [M *or* ESC [* M
Insert character or * characters	ESC [@ *or* ESC [* @
Insert line or * lines	ESC [L *or* ESC [* L

GENERAL OPERATION

Reset terminal	ESC c
Report status	ESC [5 n
Test passed	ESC [0 n

BQ 3107 Emulation

CHARACTER DISPLAY

Blank area rendition	~
Blink area rendition	^
Select graphic rendition	ESC [* ; * ; * m
Select G0, national or ASCII character set	SI
Select G1 graphic symbols character set	SO
Select G2 accented characters and special symbols set	ESC E

CURSOR

Cursor addressing (1 to 80 = SP to g	DC3 *line *column
Cursor position is end of next transmitted text	ESC U
Cursor position is start of next transmitted text	ESC T
Cursor On (* = 0) or Off (* = 1)	ESC [* r
Move cursor to left margin of current line	CR
Move cursor one column left	BS
Move cursor one column right	DC2
Move cursor to begining of partition or field	DC4
Move cursor down one line	LF
Move cursor up one line	DC1
Move cursor to next tab stop	HT
Set tab stop	ESC 1
Cancel tab stop	ESC 2

ERASE

Active partition erasure	FF
Erase in field (0 = from cursor, 1 = to cursor, 2 = all)	ESC [* N
Erase in line (0 = from cursor, 1 = to cursor, 2 = all)	ESC [* K
Erase in partition (0 = from cursor, 1 = to cursor, 2 = all)	ESC [* J

FIELDS

Start of a fixed field	FS
Start of a variable field	GS *
Repeat fields	RS X

GENERAL

Buffer character repetition (* = @ to DEL)	US *
Define area qualification	ESC [* o
Format mode	ESC M
Normal mode	ESC N
Message waiting	ESC R
Set mode (? = SDP mode, ? < extended mode)	ESC [? = ; ? < ; ? 0 h
Reset mode (? = VIP mode, ? < 94 character mode)	ESC [? = ; ? < ; ? 0 l
Reset both partitions	ESC c
Select current partition (0 = partition 0, 1 = partition 1)	ESC [* v
Warning (bell)	BEL

DG 410/412 Emulation

DG Mode

In the following command sequences, <n> represents a 1-byte argument, <nn> represents a 2-byte argument, and <nnn> represents a 3-byte argument. Bytes are entered as ASCII characters. Only the four least significant bits are used in each byte.

Commands that are D100/200 compatible are indicated by an ◆.

CHARACTER ATTRIBUTES

Change attributes (<count><on><off>)	RS F N <nnn><n><n>
◆ Blink enable	ETX
◆ Blink disable	EOT
◆ Blink on	SO
◆ Blink off	SI
◆ Dim on	FS
◆ Dim off	GS
Protect enable	RS F V
Protect disable	RS F W
Protect on	RS F L
Protect off	RS F M
◆ Reverse video on	RS D *or* SYN
◆ Reverse video off	RS E *or* STX
◆ Underscore on	DC4
◆ Underscore off	NAK

CURSOR

◆ Carriage return	CR
◆ Cursor left	EM
◆ Cursor right	CAN
◆ Cursor down	SUB
◆ Cursor up	ETB
◆ New line	LF
Read screen address	RS F b
Write screen address (<column><row>)	RS F P <nn><nn>
◆ Read window address	ENQ
◆ Write window address	DLE *column *row
Screen home	RS F G
◆ Window home	BS
Set cursor type	RS F Q <nn>

DISPLAY

◆ Roll enable	DC2
◆ Roll disable	DC3

Scroll down	RS I
Scroll up	RS H
Scroll left	RS F C <n>
Scroll right	RS F D <n>
Select compressed spacing	RS F K
Select normal spacing	RS F J
Set margins	RS F X <nn><nn>
Set alternate margins	RS F Y <nn><nn><nn>
Set scroll rate	RS F T <n>
Set windows (<rows><0 = 81 cols, 1 = 135 cols>)	RS F B <nn><n>...
Show columns	RS F <nn><nn>
Horizontal scroll enable	RS F ^
Horizontal scroll disable	RS F]
Restore normal margins	RS F Z

EDITING

Delete character	RS K
Delete line	RS F I
Delete line between margins	RS F \
◆ Erase window	FF
Erase screen	RS F E
Erase unprotected	RS F F
◆ Erase to end of line	VT
Insert character	RS J
Insert line	RS F H
Insert line between margins	RS F [

GENERAL

◆ Bell	BEL
Read horizontal scroll offset	RS F O
◆ Read model ID	RS C
Reset	RS F A
Select ANSI mode	RS F @
Select 7/8 bit operation (0 = 7-bit, 1 = 8-bit)	RS F U *bit
Select character set	RS F S <nn>
Set keyboard language (0 = match native language, 1 = US ASCII & DG International)	RS F f *
Shift in	RS N
Shift out	RS O

PRINTING

Form bit dump	RS F ? 6
Window bit dump	RS F ? 5
◆ Print form	SOH
Print pass through on	RS F `
Print pass through off	RS F a
◆ Print window	DC1

DG 410/412 ANSI Standard Mode

CHARACTER ATTRIBUTES

Change attributes	CSI *count ; *on ; *off q

CURSOR

Backspace	BS
Carriage return	CR
Cursor left * columns	CSI * D
Cursor right * columns	CSI * C
Cursor down * lines	CSI * B
Cursor up * lines	CSI * A
Cursor position (line ; column)	CSI *l ; *c f
Cursor position (line ; column)	CSI *l ; *c H
Form feed	FF
Index	ESC D
Insert * space characters	CSI * @
Insert * lines	CSI * L
New line	LF
Next line	ESC E

EDITING

Delete * character(s) from cursor	CSI * P
Delete * lines from & including cursor line	CSI * M
End protected area	ESC w
Erase line portion (0 = from cursor, 1 = to, 2 = all)	CSI * K
Erase window portion (0 = from cursor, 1 = to, 2 = all)	CSI * J

GENERAL

Bell	BEL
Device status report	CSI 6 n

PRINTING

Media copy	CSI i

HP 700-92/96 Emulation

CHARACTER ATTRIBUTES

Assign * attribute(s) to following characters	ESC & d *
Assign invisible & * attribute(s) to following chars.	ESC & d s *

Dim	H	Dim, Flash & Underline	M
Flashing	A	Dim, Under & Inverse	N
Inverse video	B	Dim, Flash, Und. & Inv.	O
Invisible	S	Flash & Inverse	C
Underline	D	Flash & Underline	E
Dim & Flash	I	Flash, Inverse & Under	G
Dim & Inverse	J	Inverse & Underline	F
Dim & Underline	L	Attributes off	@
Dim, Flash & Inverse	K		

CHARACTER SETS

Select ROMAN 8 (normal) character set	SI
Select Line Drawing character set	SO

CURSOR

Clear all tab stops	ESC 3
Clear tab stop at current cursor position	ESC 2
Cursor relative addressing (column)	ESC & +/- * C
Cursor relative addressing (column/line)	ESC & a +/- *c c +/- *l R
Cursor relative addressing (line)	ESC & a +/- * R
Cursor relative addressing (line/column)	ESC & a +/- *l r +/- *c C
Cursor sensing absolute	ESC a
Cursor sensing relative	ESC `
End of line wrap inhibited	ESC & s 1 C
End of line wrap enabled	ESC & s 0 C
Memory absolute addressing (column)	ESC & a * C
Memory absolute addressing (column/line)	ESC & a *c c *l R
Memory absolute addressing (line)	ESC & a * R
Memory absolute addressing (line/column)	ESC & a *l r *c C
Move cursor home down	ESC F
Move cursor home up	ESC H *or* ESC h
Move cursor one column left	ESC D
Move cursor one column right	ESC C
Move cursor one line down	ESC B
Move cursor one line up	ESC A
Move cursor to left margin	ESC G
Move cursor to next tab stop	ESC I (uppercase i)
Move cursor to previous tab stop	ESC i
Screen relative addressing (column)	ESC & a * C
Screen relative addressing (column/line)	ESC & a *c c *l Y
Screen relative addressing (line)	ESC & a * Y
Screen relative addressing (line/column)	ESC & a *l y *c C
Set tab stop at current cursor position	ESC 1

DISPLAY

80 column display	ESC & w 6 f 80 X
132 column display	ESC & w 6 f 132 X
Clear all margins	ESC 9
Display next page	ESC U
Display previous page	ESC V
Format mode off	ESC X
Format mode on	ESC W
Jump scroll enabled	ESC & k 0 [
Memory lock disabled	ESC m
Memory lock enabled	ESC l
Scroll down one line	ESC T
Scroll up one line	ESC S
Select invisible display	ESC & w 13 F
Select visible display	ESC & w 12 F
Set left margin	ESC 4
Set right margin	ESC 5
Smooth scroll enabled	ESC & k 1 [
Define colour pair	ESC & v *parameters

*parameters can be one or more of the following:

<0/1> m	RGB (0) or HSL (1) colour specification method
<decimal> a	Red or Hue colour value for foreground
<decimal> b	Green or Saturation colour value for foreground
<decimal> c	Blue or Luminosity colour value for foreground
<decimal> x	Red or Hue colour value for background
<decimal> y	Green or Saturation colour value for background
<decimal> z	Blue or Luminosity colour value for background
<0 - 7> i	Colour pair # to be initialized
<0 - 7> s	Colour pair # to be selected
<0 - 7> ^	Colour pair definition status

Assign colours to colour pair (* = decimal #)	ESC & v * a * b * c * x * y * z <colour pair #> i
Select an alpha colour pair (* = 0 - 7)	ESC & v * S

EDITING

Clear display memory from cursor	ESC J
Clear line or field from cursor	ESC K
Delete character	ESC P
Delete line	ESC M
Insert character mode	ESC Q
Insert line	ESC L
Modify all mode disabled	ESC & k 0 M
Modify all mode enabled	ESC & k 1 M
Replace character mode	ESC R
Unprotected field end	ESC]
Unprotected field start	ESC [

FUNCTION KEYS

Begin user key definition mode	ESC j
Default definition for f1 key	ESC p
Default definition for f2 key	ESC q
Default definition for f3 key	ESC r
Default definition for f4 key	ESC s
Default definition for f5 key	ESC t
Default definition for f6 key	ESC u
Default definition for f7 key	ESC v
Default definition for f8 key	ESC w
Define f-key	ESC & f *
Disable User System & Menu and label Modes	ESC & j S
Enable User System & Menu and label Modes	ESC & j R
Enable f-keys & remove labels and status line	ESC & j @
Enable & display Modes labels	ESC & j A
Enable & display user function key labels	ESC & j B
End user key definition mode	ESC k
Replace key labels with character string	ESC & j *n L *s
Restore labels	ESC & j C

GENERAL OPERATION

7 bits & existing parity	ESC & k 0 I
8 bits & no parity	ESC & k 1 I
Audible tone disabled	ESC & k 0 D
Audible tone enabled	ESC & k 1 D
Check parity no	ESC & s 0 Z
Check parity yes	ESC & s 1 Z
Configuration menus locked	ESC & q 1 L
Configuration menus unlocked	ESC & q 0 L
Data speed high	ESC & s 1 X
Data speed low	ESC & s 0 X
DC2 not inhibited	ESC & s 0 H
DC2 inhibited	ESC & s 1 H
Delay one second	ESC @
Display functions mode disabled	ESC Z
Display functions mode enabled	ESC Y
Enter VT220 7-bit mode (25 line display, keypad F1 - F4 mapped to top left F1 - F4 keys, F5 - F12 as per VT220)	ESC & k 1 \
Hand shake not inhibited	ESC & s 0 G
Hand shake inhibited	ESC & s 1 G
Hard reset	ESC E
Local echo disabled	ESC & k 0 L
Local echo enabled	ESC & k 1 L
Local mode disabled (only for user f-key)	ESC & k 1 R
Local mode enabled (only for user f-key)	ESC & k 0 R
Modem disconnect	ESC f
Self test	ESC z
Soft reset	ESC g

KEYBOARD

Auto keyboard lock off	ESC & k 0 K
Auto keyboard lock on	ESC & k 1 K
Auto line feed mode off	ESC & k 0 A
Auto line feed mode on	ESC & k 1 A
Caps lock off	ESC & k 0 C
Caps lock on	ESC & k 1 C
Caps mode off	ESC & k 0 P
Caps mode on	ESC & k 1 P
Function key codes local only	ESC & s 0 A
Function key codes transmitted to host	ESC & s 1 A
Lock keyboard	ESC c
Space overwrite latch disabled	ESC & s 0 B
Space overwrite latch enabled	ESC & s 1 B
SPOW latch off	ESC & k 0 N
SPOW latch on	ESC & k 1 N
Unlock keyboard	ESC b

LOCAL EDITING MODE

Data block for transmission is cursor line	ESC & s 0 D
Data block for transmission is page	ESC & s 1 D
Enter edit mode	ESC & k 1 B
Enter interactive mode	ESC & k 0 B
Transmit block of text to host	ESC d

PRINTING

Copy all to printer	ESC & p M *or* ESC & p 0 M
Copy display memory to printer	ESC 0
Copy line to printer	ESC & p B *or* ESC & p 0 B
Copy page to printer	ESC & p F *or* ESC & p 0 F
Data transfer host to printer (* = 1-256)	ESC & p * W
Disable logging	ESC & p 13 C
Enable bottom logging	ESC & p 11 C
Enable top logging	ESC & p 12 C
Execute form feed	ESC & p 4 u 0 C
Execute * line feeds	ESC & p 1 * 4 u 1 C
Record mode on (* is optional)	ESC & p * 20 C
Select external device	ESC & p 4 D
Transfer display escape sequences no	ESC & s 0 N
Transfer display escape sequences yes	ESC & s 1 N

REPORTS

Request cursor position report disabled	ESC & x 0 C
Request cursor position report enabled	ESC & x 1 C
Request external printer status report	ESC & p 4 ^
Request primary terminal status report	ESC ^
Request secondary terminal status report	ESC ~
Request terminal identity report	ESC * s ^
Request application program name report	ESC * s 12347 ^

IBM 3151 Emulation

CHARACTER SET SELECTION

Select G0	SI
Select G1	SO
Select character set G0	ESC < *set
Select character set G1	ESC > *set

CURSOR

Backspace	BS
Carriage return, new line or LTA	CR
Cursor down	ESC B
Cursor left	ESC D
Cursor right	ESC C
Cursor up	ESC A
Cursor home	ESC H
Index	ESC SP M
Insert cursor	ESC Z
Line feed	VT
Line feed or new line	LF
Line feed or erase input	FF
Next line	ESC M
Page down AID	ESC ! B
Reverse index	ESC ! M
Read cursor address	ESC 5
Set buffer address	ESC X *row *column
Set cursor address	ESC Y *row *column
Reset buffer address mode	ESC SP Z
Tab	HT
Back tab	ESC 2
Set column tab	ESC 0
Clear column tab	ESC 1
Clear all column tabs	ESC SP 1

DISPLAY

Clear all	ESC ! L
Clear page	ESC L
Create viewport	ESC SP r *...*
Disable default field attribute	ESC ' ;
Disable field attribute visible renditions	ESC , ;
Disable host protect	ESC & ;
Disable OIA divide line	ESC * ;
Disable host protect	ESC & ;
Disable OIA divide line	ESC * ;
Disable partition separate line	ESC + ;
Disable read unprotected field	ESC % ;
Display machine status	ESC # :
Enable default field attribute	ESC ' :
Enable field attribute visible renditions	ESC , :

Enable host protect	ESC & :
Enable OIA divide line	ESC * :
Enable read unprotected field	ESC % :
Host message write	ESC = *message ESC =
Host message display	ESC # ;
Set character attribute	ESC 4 *attrib *operation
Set field attribute	ESC 3 *attrib *attrib *operation
Set field attribute response	ESC 3 *attrib *attrib

Create 1 viewport 24 rows x 80 columns	ESC SP r ! ! SP 8 " P
Create 1 viewport 25 rows x 80 columns	ESC SP r ! ! SP 9 " P
Create 1 viewport 28 rows x 80 columns	ESC SP r ! ! SP " D
Create 1 viewport 24 rows x 132 columns	ESC SP r ! ! SP 8 $ D
Create 1 viewport 25 rows x 132 columns	ESC SP r ! ! SP 9 $ D
Create 1 viewport 28 rows x 132 columns	ESC SP r ! ! SP $ D
Create 2 viewports in 80 column screen	ESC SP r " ! SP *r1 " 0 " SP *r2 " P
Create 2 viewports in 132 column screen	ESC SP r " ! SP *r1 $ $ " SP *r2 $ D
Create 3 viewports in 80 column screen	ESC SP r # ! SP *r1 " 0 " SP *r2 " 0 # SP *r3 " P
Create 3 viewports in 132 column screen	ESC SP r # ! SP *r1 $ $ " SP *r2 $ $ # SP *r3 $ D

*The ASCII character values of *r1, *r2 and *r3 are listed below. When creating two viewports, *r1 + *r2 must be 24 or 25. When creating three viewports, *r1 + *r2 + *r3 must be 24 or 25.*

Rows	ASCII	Rows	ASCII	Rows	ASCII	Rows	ASCII
1	!	8	(	14	.	20	4
2	"	9	)	15	/	21	5
3	#	10	*	16	0	22	6
4	$	11	+	17	1	23	7
5	%	12	,	18	2	24	8
6	&	13	-	19	3	25	9
7	'						

Select active partition command/response *(not model 11)*	ESC ! q *
Select host partition command/response *(not model 11)*	ESC SP q *
* A = Viewport 1, B = Viewport 2, C = Viewport 3	
Jump partition command/response *(not model 11)*	ESC " A
Enable partition separator line *(not model 11)*	ESC + :
Disable partition separator line *(not model 11)*	ESC + ;

EDITING

Delete character	ESC Q
Delete line	ESC O
Erase to end of field/line	ESC I
Erase to end of page	ESC J
Erase input	ESC K
Insert character	ESC P *character
Insert line	ESC N

GENERAL OPERATION

Bell	BEL
Cancel	ESC S or CAN
Disable write Null	ESC " ;
Enable write Null	ESC " :
Line turnaround character (if selected)	ETX, CR, EOT or DC3

Read status	ESC 6
Enter transparent mode (control characters displayed)	DLE STX
Exit transparent mode	DLE ETX
Mandatory disconnect	DLE EOT
Begin pass-through data stream	DLE DC2
End pass-through data stream	DLE DC4
Restart transmission (pacing)	DC1 (XON)
Stop transmission (pacing)	DC3 (XOFF)
Begin outbound trace	ESC SP :
End outbound trace	ESC SP ;
Reset to initial state	ESC SP S
Reset keyboard lock & keep MDT bit	ESC ! S
Read control 1	ESC SP 7
Read control 2	ESC ! 7
Read control 3	ESC " 7
Read control 4	ESC # 7
Read control 5	ESC $ 7
Read control 6	ESC % 7
Read control 7	ESC & 7
Read model	ESC SP 6
Read model (extended)	ESC " 6
Read terminal ID	ESC ! 6
Read all	ESC # 8
Read line/send line	ESC ! 8
Read message/send message	ESC SP 8
Read page/send page	ESC 8
Write send mark	ESC E
Set control 1	ESC SP 9 *mode1 *mode2 *op
Set control 2	ESC ! 9 *mode1 *mode2 *op
Set control 3	ESC " 9 *mode1 *mode2 *op
Set control 4	ESC # 9 *mode *operation
Set control 5	ESC $ 9 *m1 *m2 *m3 *m4 *op
Set control 6	ESC % 9 *m1 *m2 *m3 *m4 *op
Set control 7	ESC & 9 *m1 *m2 *m3 *op

KEYBOARD

Disable print key attention	ESC) ;
Disable reset key attention	ESC (;
Enable print key attention	ESC) :
Enable reset key attention	ESC (:
Keyboard lock	ESC :
Keyboard unlock	ESC ;
Load programmable function key	ESC ! = *fn *fnx *ff *fp ESC =
Set all default function keys	ESC SP t
Set default function key	ESC t *key

PRINTING

Print line	ESC U
Print message	ESC V
Print screen	ESC SP W
Print viewport	ESC W

MDIS Prism-8 & Prism-9 Emulations

CHARACTER SET SELECTION

Assign G0 label to * character set	ESC (*
Assign G1 label to * character set	ESC) *
Assign G2 label to * character set	ESC * * (second * is parameter)
Assign G3 label to * character set	ESC + *
Assign G0 labelled set to 7 bit codes	SI
Assign G1 labelled set to 7 bit codes	SO
Assign G2 labelled set to 7 bit codes	ESC n
Assign G3 labelled set to 7 bit codes	ESC o
Assign G1 labelled set to 8 bit codes	ESC ~
Assign G2 labelled set to 8 bit codes	ESC }
Assign G3 labelled set to 8 bit codes	ESC |
Assign G1 labelled set to 7 bit codes for 1 character	ESC R
Assign G2 labelled set to 7 bit codes for 1 character	ESC N
Assign G3 labelled set to 7 bit codes for 1 character	ESC O
Load redefinable character set	ESC P *b ; *c ; *e % q S1 ;....Sn ESC \

COMMUNICATIONS

Transmission on	XON
Transmission off	XOFF
Select 7-bit C1 code transmission	ESC SP F
Select 8-bit C1 code transmission	ESC SP G

CURSOR

Cursor off	Hex E4
Cursor on	Hex E2
Move cursor * lines up (default 1)	ESC [* A
Move cursor * lines down (default 1)	ESC [* B
Move cursor * columns right (default 1)	ESC [* C
Move cursor * columns left (default 1)	ESC [* D
Move cursor * lines down and to start of line (default 1)	ESC [* E
Move cursor * lines up and to start of line (default 1)	ESC [* F
Move cursor to specified line (*l) and column (*c) on page	ESC [*l ; *c ; H
Move cursor to specified line (*l) and column (*c) on page	ESC [*l ; *c ; f
Move cursor to absolute column number * position	ESC [* G
Move cursor to absolute column number * position	ESC [* `
Horizontal position relative	ESC [* a
Move cursor * columns left (default 1)	ESC [* j
Move cursor to absolute line number * position	ESC [* d
Move cursor * lines down (default 1)	ESC [* e
Move cursor * lines up (default 1)	ESC [* k
Move cursor * columns right (default 1)	ESC [* o
Line addressing relative to top line of page	ESC [< 6 l
Line addressing relative to scroll region	ESC [< 6 h
Make cursor invisible	ESC [< 4 l
Make cursor visible	ESC [< 4 h
Set tab stop at current cursor position	ESC H

Set tab stops at specified * column numbers	ESC [*c ; *c ; .... *c SP N
Clear tab stops (0 = at cursor position, 2 & 3 = all on page)	ESC [* g
Set tab stop at current cursor position	ESC [0 W
Clear tab stops (2 = at cursor position, 4 & 5 = all on page)	ESC [* W
Move cursor to next tab stop	HT
Move cursor to next tab stop	ESC [* I
Move cursor to previous tab stop	ESC [* Z

DISPLAY

Status line off	Hex E5
Status line on	Hex E3

Assign * attribute(s) to following characters (default 0) — ESC [* % {

Attributes:				
	Flashing	1	Bold	8
	Underline	2	Protected	32
	Inverse video	4		

Select graphic rendition — ESC [Pa;...Pa m

Attributes:				
	Clear all	0	Normal intensity	22
	Bold	1	Underline off	24
	Underline	4	Flashing off	25
	Flashing	5	Inverse video off	27
	Inverse video	7		

Assign * line attributes to current line — ESC [* % l

Attributes:	
Single width, single height (default)	0
Double width	1
Double height & width top half	2
Double height & width bottom half	3

No attributes	ETX SP
Bold attribute	ETX A
Flashing attribute	ETX B
Bold & Flashing attributes	ETX C
Inverse attribute	ETX D
Bold & Inverse attributes	ETX E
Flashing & Inverse attributes	ETX F
Bold, Flashing & Inverse attributes	ETX G
Blank attribute	ETX H
Bold & Blank attributes	ETX I
Flashing & Blank attributes	ETX J
Bold, Flashing & Blank attributes	ETX K
Inverse & Blank attributes	ETX L
Bold, Inverse & Blank attributes	ETX M
Flashing, Inverse & Blank attributes	ETX N
Bold, Flashing, Invers & Blank attributes	ETX O
Underline attribute	ETX P
Bold & Underline attributes	ETX Q
Flashing & Underline attributes	ETX R
Bold, Flashing & Underline attributes	ETX S
Inverse & Underline attributes	ETX T
Bold, Inverse & Underline attributes	ETX U
Flashing & Underline attributes	ETX V

Bold, Flashing, Inverse & Underline attributes	ETX W
Blank & Underline attributes	ETX X
Bold, Blank & Underline attributes	ETX Y
Flashing, Blank & Underline attributes	ETX Z
Bold, Flashing, Blank & Underline attributes	ETX [
Inverse, Blank & Underline attributes	ETX \
Bold, Inverse & Underline attributes	ETX]
Underline attribute	ETX 0
Bold & Underline attributes	ETX 1
Flashing & Underline attributes	ETX 2
Bold, Flashing & Underline attributes	ETX 3
Inverse & Underline attributes	ETX 4
Bold, Inverse & Underline attributes	ETX 5
Flashing, Inverse & Underline attributes	ETX 6
Bold, Flashing, Inverse & Underline attributes	ETX 7
Blank & Underline attributes	ETX 8
Inverse, Blank & Underline attributes	ETX /
Flashing, Inverse, Blank & Underline attributes	ETX ^
Flashing, Inverse, Blank & Underline attributes	ETX _

EDITING

Insert * number of blank characters from cursor position	ESC [* @
Delete * number of characters from cursor position	ESC [* P
Insert * number of blank lines from cursor position	ESC [* L
Delete * number of lines from cursor position	ESC [* M
Replace character mode	ESC [4 l
Insert character mode	ESC [4 h
Blank * number of columns from cursor position	ESC [* X
Erase in field (0 = from cursor, 1 = to cursor, 2 = all)	ESC [* N
Erase in line (0 = from cursor, 1 = to cursor, 2 = all)	ESC [* K
Erase in page (0 = from cursor, 1 = to cursor, 2 = all)	ESC [* J
Enable erasure of unprotected characters only	ESC [6 l
Enable all characters to be erased, including protected	ESC [6 h
Erasing characters clears display attributes to default	ESC [< 5 l
Erasing characters retains display attributes	ESC [< 5 h

ENCODING DATA

Escape sequence introducer	ESC
Control sequence introducer	ESC [
Device control string	ESC P
String terminator	ESC \
Cancel	CAN
Abort control sequence & display error	SUB
Set mode	ESC [*m ; *m ; ... *m h
Reset mode	ESC [*m ; *m ; ... *m l

FORMATTING DATA

Move cursor to left margin of current line	CR
Move cursor down one line	LF
Move cursor down one line	ESC D
Move cursor down one line	VT

Move cursor to start of next line	ESC E
Move cursor up one line	ESC M
Move cursor to start of new page	FF
Move cursor one column left	BS
Repeat last displayable character * times (default 1)	ESC [* b

KEYBOARD

Key presses generate codes which are sent to host	ESC [2 l
Key presses are ignored (except Break)	ESC [2 h
Define function key	ESC P *k % p *n ESC \
Extended keypad mode reset	ESC [< 15 l
Extended keypad mode set	ESC [< 15 h

PAGE MANIPULATION

Page layout definition — ESC [*p ; *l ; *c ; *s ; *e % w

where *p = page number in range 1 - 8, default 1
*l = number of lines, default 24
*c = number of columns, default 80 or 132
*s = start of scroll area, default 1
*e = end of scroll area, default as *l

Display buffer & video format definition — ESC [*p ; *c ; *f % x

where *p = number of pages, default 8 (80 col) or 4 (132 col)
*c = number of columns, default 80
*f = format options: 0 =single active page, 1 = multiple active page

Set scrolling area — ESC [*s ; *e % v

where *s = starting line number, default 1
*e = ending line number, default is page length

80 column display mode	ESC [14 l
132 column display mode	ESC [14 h
Move active position to absolute page number	ESC [* SP P
Move forward by * number of pages	ESC [* SP Q
Move backward by * number of pages	ESC [* SP R
Save page state mode reset	ESC [< 11 l
Save page state mode set	ESC [< 11 h
Save current active page state	ESC [% y
Restore last saved page state	ESC [% z
Page display absolute	ESC [*p 5 p
Display page number *	ESC [* % p
Move forward by * number of pages	ESC [* U
Move backward by * number of pages	ESC [* V
Scroll up * lines (forward)	ESC [* S
Scroll down * lines (backward)	ESC [* T
Active page display mode reset	ESC [< 7 l
Active page display mode set	ESC [< 7 h
Screen/scroll keys action mode reset	ESC [< 13 l
Screen/scroll keys action mode set	ESC [< 13 h

PRINTING

Printer output control	ESC [< *o ; *s ; *e i

where *o = output type as listed below, default 0
0 = print page, 1 = print partial page, 2 = hardcopy off
3 = hardcopy on, 4 = direct print off, 5 = direct print on
*s = starting line number, default start of scrolled region
*e = ending line number, default end of scrolled region

Media copy ESC [*o i

where *o = 0 = print page, 4 = direct print off, 5 = direct print on

REPORTS

Report on device configuration (* = 0 by default) ESC [< * c

Give terminal configuration report	0
Give screen configuration report	1
Give printer configuration report	2
Give keyboard configuration report	3

Device attributes (* = device type, 0) ESC [* c

Terminal configuration report ESC [< 10 ; *m ; *f ; *h ; *v c

where *m = model number (9 for 12090)
*f = features (1 = down-loadable charcter set,
2 = programmable function keys,
4 = software down-load capability
16 = field-read capability)
*h = hardware options
*v = version number

Screen configuration report ESC [< 11 ; *p ; *l ; *c ; *f c

where *p = number of (80 x 25) pages available
*l = maximum lines displayable on screen
*c = maximum columns displayable on screen
*f = features (1 = per field attribute capability,
2 = per character attribute capability,
4 = 80/132 screen width selectable)

Printer configuration report (* = printer type) ESC [< 12 ; * c

Keyboard configuration report ESC [< 13 ; *l ; *n c

where *l = keyboard layout (1 = standard, 2 = data entry)
*n = nationality (1 = UK, 2 = USA, 3 = German, 4 = French,
5 = Swiss (Ger), 6 = Swiss (Fre), 7 = French Canadian)

STATUS REPORTING

Report on device status (* = device identifier) ESC [< * n

Device status report (5 = device status, 6 = cursor position) ESC [* n

Terminal status report ESC [< 10 ; *e ; *g n

where *e = emulation mode (1 = ANSI 7-bit,
2 = ANSI 8-bit, 3 = 12080 mode)
*g = general status (1 = 7-bit comms link,
2 = flow control enabled, 4 = foreground executive active)

Screen status report ESC [< 11 ; *p ; *l ; *c ; *g n

where *p = number of pages currently defined
*l = number of lines displayed (24 or 25)

*c = number of columns displayed (80 or 132)
*g = general status (1 = multiple active page format,
2 = per-character attributes)

Printer status report (*g = general status, *b = buffer left)	ESC [< 12 ; *g ; *b n
Keyboard status report (*m = mode, *g = general status)	ESC [< 13 ; *m ; *g n
Cursor position report (*l = line, *c = column)	ESC [< *l ; *c R

SYSTEM MESSAGES

Write data into system message area starting at column *	ESC [* % }
System messages not visible	ESC [< 8 l
System messages displayed on last screen line	ESC [< 8 h

TERMINAL CONTROL

Soft reset	ESC [& p
Reset to initial state	ESC c
ANSI terminal emulation mode	ESC [< 12 l
Model 12080 terminal emulation mode	ESC [< 12 h
Sound alarm	BEL

MDIS Prism-12 Emulation

When *teemtalk* is running the Prism-12 emulation, the following commands will be executed in addition those listed previously for Prism-8 and Prism-9.

Data stream filler character	NUL
Cursor home	SOH
Function key control	STX *
* = Generate user defined codes	90
Do not generate any codes	91
Generate standard codes	92
Generate short codes (hex 80 - B3)	93
Set video attributes for next display field	ETX *
Cursor forward 1 character position	ACK
Sound bell	BEL
Backspace	BS
Line feed	LF
Cursor vertical position	VT *
Form feed	FF
Carriage return	CR
Select Multinational character set (in Multinational mode)	SO
Select ASCII character set (in Multinational mode)	SI
Horizontal position	DLE *
Cursor back	NAK
Cursor up	SUB
Escape sequence introducer	ESC
Special single shift	GS *
Space compression codes	Hex A0 to Hex BF
Reserved	Hex E0

Set S-mode	Hex E1
Cursor on	Hex E2
Start of system message	Hex E3 *
Cursor off	Hex E4
End of system message	Hex E5
Give terminal status	Hex E6
Set screen format	Hex E7 *
Display system message	Hex E8
Display user line 25	Hex E9
Select active screen	Hex EA *
Set R-mode	Hex EB
Set video prior conditions	Hex EC *
Screen move	Hex ED *
Filler	Hex EE
Character fill	Hex EF *
Page back	Hex F5
Page forward	Hex F6
Scroll back	Hex F7
Scroll forward	Hex F8
Run diagnostics	ESC D
Erase to end of page	ESC J
Erase to end of line	ESC K
DCS sequence	ESC P
Printer on	ESC R
Printer off	ESC T
Print screen	ESC U
CSI sequence introducer	ESC [

PT250 Emulation

AREA & LOGICAL ATTRIBUTES

Assert defined logical attributes	ESC [> 3 h
Assert defined logical attributes disabled	ESC [> 3 l
Clear (reset) selected areas	ESC $ K
Define area qualification	ESC [* o
* = All printing characters	2
Numeric characters	3
Alphabetic characters	4
Right-justify in area	5
Protected; no input accepted (default)	> 0
Must enter the area	> 1
Must fill the whole area	> 2
Set modified data tag	> 3
Define logical attributes	ESC [* v
* = All printing characters	2
Numeric characters	3
Alphabetic characters	4
Right-justify in area	5
Protected; no input accepted (default)	> 0
Must enter the area	> 1
Must fill the whole area	> 2
Set modified data tag	> 3
Field entry check	ESC $ C
Logical attributes start	ESC $ L
Logical attributes end	ESC $ M
Protected area start	ESC V
Protected area end	ESC W
Reset modified tags	ESC $ J
Selected area start	ESC F
Selected area end	ESC G

CHARACTER SET SELECTION

Set G0 alternate character set	ESC $ 2
Set G0 ASCII character set	ESC $ 0
Set G1 alternate character set	ESC $ 3
Set G1 ASCII character set	ESC $ 1

COMPRESSED COMMANDS

Compressed cursor position (*l = line, *c = column)	ESC 0 *l *c
Compressed logical area (* = logical attribute)	ESC 3 *
Compressed logical attributes (*l = line, *c = column *a = logical attributes *n = number of characters)	ESC 1 *l *c *a *n
Compressed visual area (* = visual attributes)	ESC 4 *
Compressed visual attributes (* = visual attributes)	ESC 2 *

CURSOR

Autowrap disabled	ESC [> 9 h
Autowrap enabled	ESC [> 9 l
Carriage return = carriage return only	ESC [> 1 l
Carriage return = carriage return & line feed	ESC [> 1 h
Cursor invisible	ESC $ S
Cursor movement keys immediate effect	ESC [> 13 l
Cursor movement keys require host permission	ESC [> 13 h
Cursor position report (*l = line, *c = column)	ESC [*l ; *c R
Cursor tabulation control	ESC [* W
* = Set tab at cursor position	0
Clear tab at cursor postion	2
Clear all tab stops	5
Cursor visible	ESC $ R
Home cursor absolute	ESC $ B
Home cursor relative	ESC $ A
Index (cursor down to next unlocked line)	ESC D
Line feed = line feed only	ESC [20 h
Line feed = line feed & carriage return	ESC [20 l
Move cursor down to next unlocked line 1st column	ESC E
Move cursor down * lines	ESC [* B
Move cursor down * unlocked lines to 1st column	ESC [* E
Move cursor left * columns	ESC [* D
Move cursor right * columns	ESC [* C
Move cursor to column * (absolute)	ESC [* G
Move cursor to line * (absolute)	ESC [* d
Move cursor to absolute line (*l) & column (*c)	ESC [*l ; *c H
Move cursor to relative line (*l) & column (*c)	ESC [*l ; *c f
Move cursor up * unlocked lines	ESC [* A
Move cursor up * unlocked lines to 1st column	ESC [* F
Restore cursor & attributes	ESC $ Q
Reverse index (cursor up to next unlocked line)	ESC M
Save cursor & attributes	ESC $ O
Set tab stop at current cursor position	ESC H
Tab cursor backward * tab stops	ESC [* Z
Tab cursor forward * tab stops	ESC [* I

DISPLAY

Clear display memory (except locked lines)	ESC ?
Display size	ESC [* N
* = 80 columns by 24 lines	1
80 columns by 48 lines (2 pages)	2
132 columns by 27 lines	3
80 columns by 25 lines	4
Display error message (* = string)	ESC : * ESC \
Display invisible	ESC $ E
Display memory 24 lines (1 page)	ESC [> 11 l
Display memory 48 lines (2 pages)	ESC [> 11 h
Display status line	ESC $ T

Display system line (data on line preserved)	ESC $ U
Display system line (blank)	ESC $ V
Display visible	ESC $ P
Jump scroll enabled	ESC [> 5 l
Lock lines (*l = screen line number to begin, *n = # of lines)	ESC [*l ; *n u
Next page (* = 1 page one, 2 page two)	ESC [* U
Page down	ESC $ b
Page up	ESC $ a
Previous page (* = 1 page one, 2 page two)	ESC [* V
Repeat previous character * times	ESC [* b
Screen wrap mode enabled	ESC [> 8 h
Screen wrap mode disabled	ESC [> 8 l
Scroll automatically	ESC $ W
Scroll manually only	ESC $ X
Scroll unlocked lines down * lines	ESC [* T
Scroll unlocked lines up * lines	ESC [* S
Smooth scroll enabled	ESC [> 5 h
Unlock lines (*l = screen line # to begin, *n = # of lines)	ESC [*l ; *n y

EDITING

Delete * characters from cursor position right	ESC [* P
Delete * lines from cursor position down	ESC [* M
Editing extent mode	ESC [* Q
* = Entire display	0
Line only	1
Area only	2
Enable all characters to be erased	ESC [6 h
Enable erasure of unprotected characters only	ESC [6 l
Enter character mode	ESC [> 2 l
Enter edit (block) mode	ESC [> 2 h
Erase * characters & substitute with pad characters	ESC [* X
Erase in area & substitute with pad characters	ESC [* O
* = Erase to end of area, line, or display	0
Erase from start of area, line, or display	1
Erase entire area, line, or display	2
Erase in display & substitute with pad characters	ESC [* J
* = Erase to end of display	0
Erase from start of display	1
Erase entire display	2
Erase in line & substitute with pad characters	ESC [* K
* = Erase to end of line	0
Erase from start of line	1
Erase entire line	2
Insert * blank lines	ESC [* L
Insert * space or null characters	ESC [* @
Insert mode disabled (replace mode selected)	ESC [4 l
Insert mode enabled	ESC [4 h
Pad character is null	ESC [> 7 l
Pad character is space	ESC [> 7 h

Read cursor character	ESC ;
Read cursor character normal mode	ESC [> 23 l
Read cursor character erase mode	ESC [> 23 h

GENERAL OPERATION

Action all control characters except CR & HT	ESC [> 14 h
Action all control characters including CR & HT	ESC [> 14 l
DOS merge mode disabled	ESC [> 25 l
DOS merge mode enabled	ESC [> 25 h
Host notification mode disabled	ESC [> 16 l
Host notification mode enabled	ESC [> 16 h
Local echo mode on	ESC [12 l
Local echo mode off	ESC [12 h
Reset to initial state	ESC c
Tab characters separate fields enabled	ESC [> 17 h
Tab characters separate fields disabled	ESC [> 17 l

KEYBOARD

Application program command	ESC _ * ESC \

Menu	0	Ctrl + Shift + Help	4
Help	1	Shift + Menu	5
Shift + Help	2	Ctrl + Menu	6
Ctrl + Help	3	Ctrl + Shift + Menu	7

Cursor movement keys immediate effect	ESC [> 13 l
Cursor movement keys require host permission	ESC [> 13 h
E2 mode enabled (Enter = 4 ESC sequences)	ESC [> 21 h
E2 mode disabled (Enter functions as normal)	ESC [> 21 l
Escape key disabled	ESC $ H
Escape key enabled	ESC $ I
Flow control codes from kbd not sent immediately	ESC [> 15 h
Flow control codes from keyboard sent immediately	ESC [> 15 l
Function keys (F#, PF#, PA#) terminated with CR	ESC [> 18 h
Function keys not terminated with CR	ESC [> 18 l
Hard keyboard lock disabled	ESC '
Hard keyboard lock enabled	ESC b
Load keyboard table (*d = data, *c = checksum)	ESC < *d *c ESC \
Numeric keypad application mode	ESC [> 10 h
Numeric keypad numeric mode	ESC [> 10 l
Print screen key local function	ESC [> 24 h
Print screen key normal function	ESC [> 24 l
Single shift three (* = key identifier)	ESC 0 *
Single shift two (* = key identifier)	ESC N *
Soft keyboard lock enabled	ESC $ F
Soft keyboard lock disabled	ESC $ G
Soft lock keyboard on illegal command enabled	ESC [> 19 h
Soft lock keyboard on illegal command disabled	ESC [> 19 l

LOCAL EDITING

Data block is cursor line	ESC [> 4 h
Data block is page(s) (depends on display memory)	ESC [> 4 l
Dump block data	ESC 6
Enter character mode	ESC [> 2 l
Enter edit (block) mode	ESC [> 2 h
Modified unprotected areas only transmitted	ESC [> 6 h
Modified & unmodified unprotected areas transmitted	ESC [> 6 l
Page dump waits for host request	ESC =
Transmission waits for host request	ESC S
Transmit block data (excluding locked lines)	ESC 5
Transmit selected areas	ESC [17 l
Transmit unprotected areas (depends on modified mode)	ESC [17 h

PRINTING

Auto print off	ESC [4 i
Auto print on (data not displayed)	ESC [5 i
Initiate page dump	ESC [> 2 i
Initiate screen transfer	ESC [> 1 i
Print & display received host data	ESC [> 3 i
Print screen	ESC [0 i
Print screen qualified areas	ESC [> 0 i

REPORTS

Device control string (* = string)	ESC P * ESC \
Display revision	ESC $ Z
Report potentially destructive action to host	ESC] * ESC \

* =	Reset to original state notification	0
	Clear screen notification	2
	Load keyboard table command failed	3
	Load keyboard table command successful	4

Report terminal identity	ESC [c
Report terminal identity	ESC [0 c
Report terminal status	ESC [* n

* =	Ready	0
	Report status	5
	Report cursor position	6

VISUAL ATTRIBUTES

Change visual attributes of area	ESC [* p

* =	Active position to end of area	0
	Start of area to active position	1
	Entire area	2

Change visual attributes of character	ESC [* q
Change visual attributes of display	ESC [* r

* =	Active position to end of display	0
	Start of display to active position	1
	Entire display	2

Change visual attributes of line		ESC [* t
* =	Active position to end of line	0
	Start of line to active position	1
	Entire line	2

Select graphic rendition — ESC [* m

Normal video	0	Strike-through	> 1
Dimmed	2	Invisible	> 2
Underline	4	Line drawing graphics	> 3
Flashing	5	Block drawing graphics	> 4
Inverse video	7		

Visual attributes locked	ESC [> 12 h
Visual attributes unlocked	ESC [> 12 l

ReGIS Emulation

MODE SELECTION

Exit to VT100/VT200 mode	ESC \

MOUSE BUTTON PROGRAMMING

Program a mouse button (*c = clear, *b = button, *p = press code, *r = release code)	ESC P *c $ w *b/*p/*r ESC \

SIXEL GRAPHICS

Direct sixels to host	ESC [? 2 i
Direct sixels to printer	ESC [? 0 i or ESC [? 1 i
Transmit sixel data (*p = pixel shape, *b = backgrnd colour *h = horiz. spacing, *..* = sixel data)	ESC P *p ; *b ; *h ; q *..* ESC \

COMMAND LEVEL INPUT SELECTION

Select command level input	;

COMMAND SET STORING/INVOKING

Clear all stored command sets	@.
Clear stored command set	@: character @;
Invoke command set	@ character
Store command set	@: character set definition @;

CURVE DRAWING

Draw arc from specified start position	C(A deg of drawing) start posn
Draw arc with specified centre position	C(A deg of drawing C) centre posn
Draw circle with specified centre	C(C) centre position
Draw circle specified circum. point	C circumference point
Draw closed interpolated curve intersecting current & specified positions	C(B) positions (E)
Draw closed interpolated curve intersecting current & specified positions, closed with a straight line	C(B)[] positions [](E)
Draw open interpolated curve	C(S) positions (E)
Draw open interpolated curve intersecting current & all specified positions	C(S)[] positions [](E)
Set temporary writing controls effective only for the command, using 'W' Writing Control cmd & options	C options (W(sub-opts)) opts

FILLING SHAPES

Define curved boundary shape for filling using 'C' Curve Drawing com. & options	F(C sub-options)
Define straight boundary shape for filling using 'V' Draw Vector command & options	F(V sub-options)
Set cursor position using 'P' command & options	F(P(sub-options))
Set temporary writing controls effective only for the command using 'W' Writing Control cmd & options	F(W(sub-options) options)

LOADING CHARACTER SETS

Assign name to set currently selected for loading	L(A ' set name ')
Select set for loading & assign name	L(A set number ' set name ')
Select specified character set for loading	L(A set number)
Specify character form in hex codes & ASCII reference character	L' ascii char ' hex codes

POSITION SELECTION

Select active position & move cursor to it	P[coordinates]
Specify position to move to via a PCV using PCV active only for current command	P(W(M pcm)) pcv
Specify series of positions to move to. Post-command active position = last specified position	P(S) positions & options (E)
Specify series of positions to move to. Post-command active position = pre-command active position	P(B) positions & options (E)
Specify writing with first bit of pattern	P[]

REQUESTING REPORTS

Request report of active position	R(P)
Request report of command set stored for specified character	R(M(character))
Request report of last detected error	R(E)
Request report of name assigned to char. set currently selected for loading	R(L)
Request report of total & remaining space available for storage of command sets	R(M(=))
Select GIN mode	R(P(I)

SCREEN SETTING

Select display addresing range	S(A[coords][coords]
Scroll from specified coordinates	S[coordinates]
Scroll from specified position	S(W(M pcm)) pcv
Define hardcopy region	S(H positions)
Specify printed image offset	S(H(positions)
Specify output map location lightness value (monochrome monitor)	S(M location (lightness))
Specify output map location RGB character	S(M location (rgb character))
Specify output map location HLS colour val.	S(M location (hls values))
Select specifed output map location colour for background	S(I location)
Select output map location colour approx. specified RGB character for background	S(I(rgb character))
Select output map location colour approx. specified HLS values for background	S(I(hls values))
Erase screen to current background	S(E)
Erase screen to specified background	S(I location ,E)
Specify time delay before command	S(T time)
Control cursor display	S(C control value)
Set temporary writing controls	S(W(sub-options))

TEXT DISPLAY

Select 1 of 17 standard sets of char. cell, character matrix & char. cell spacing	T(S standard set)
Select character cell size	T(S[cell width , cell height])
Select character cell & matrix height multiplier	T(H cell & matrix height mult)
Select character cell spacing	T[relative position]
Select character matrix size	T(U[matrix width , height])
Select character slant	T(I tilt)
Select character string & orientation	T(D string or S set D char or)
Select character string orientation	T(D orientation S set)
Select font	T(A font)
Select subscript/superscript/overstrike	T pcv
Select width & height multipliers for standard set 1 character matrix	T(M[width mult , height mult])
Set temporary writing controls	T(W sub-options))
Set temporary text controls	T(B) options (E)
Specify text	T' text'

VECTOR DRAWING

Draw point	V[]
Draw vector to specified coordinates	V [coordinates]
Draw vector to specified PCV	V pcv
Draw closed vector sequence	V(B) positions & options (E)
Draw open vector sequence	V(S) positions & options (E)
Set temporary writing controls	V(W(sub-options))

WRITING CONTROL

Character shading	W(S' chading character ')
Define writing pattern	W(P binary pattern)
Define writing pattern & set multiplier	W(P pattern def (M multiplier))
Pattern reversal control	W(N pattern control value)
Pixel memory bit plane selection	W(F plane selection value)
Select comp. writing with plane 0 enabled	W(F1,C)
Select comp. writing with plane 1 enabled	W(F2,C)
Select comp. writing both planes enabled	W(F3,C)
Select comp. writing for current write plane selection	W(C)
Select erase writing mode	W(E)
Select output map location colour approx. specified HLS values for foreground	W(I(hls values))
Select output map location colour approx. specified RGB character for foreground	W(I(rgb character))
Select overlay writing mode	W(V)
Select replace writing mode	W(R)
Select specified output map location foreground colour	W(I location)
Select standard writing pattern	W(P standard pattern number)
Select standard writing pattern & multiplier	W(P std pattern (M multiplier))
Set pixel change multiplier (PCM)	W(M multiplier)
Shading control	W(S(shading control value))
Shading horizontal limit selection	W(S(X)[x coordinate])
Shading vertical limit selection	W(S([, y coordinate]))

SCO Console Emulation

CONTROLLING TERMINAL PROCESSING

Sound audible tone	BEL
Select iBCSe2 compliance	ESC [= 2 L
Deselect iBCSe2 compliance	ESC [= 3 L
Save cursor position	ESC 7
Restore cursor position	ESC 8

KEYBOARD FUNCTIONS

Disable keyboard input	ESC [2 h
Enable keyboard input	ESC [2 l
Program function keys	ESC Q *key ' *data '

ASCII	105-Key ANSI	Enhanced PC-Style	*key Unshifted	*key Shifted
F1	F6	F1	0	<
F2	F7	F2	1	=
F3	F8	F3	2	>
F4	F9	F4	3	?
F5	F10	F5	4	@
F6	F11	F6	5	A
F7	F12	F7	6	B
F8	F13	F8	7	C
F9	F14	F9	8	D
F10	Help	F10	9	E
F11	Do	F11	:	F
F12	F17	F12	;	G
F13	F18		`	d
F14	F19		a	e
F15	F20		b	f
F16			c	g

*data = data string of up to 29 characters
' = a string delimiter (any character except contained in string)

COLOUR

Set foreground & background colour — ESC [2 ; *fg ; *bg m

*fg and *bg are integers as listed below:

Dull	Colour	Bold
0	Black	8
1	Blue	9
2	Green	10
3	Cyan	11
4	Red	12
5	Magenta	13
6	Yellow	14
7	White	15

Set inverse & foreground & background colour (* as above)	ESC [7 ; *fg ; *bg ; m
Set normal foreground colour (* = integer as above)	ESC [= * F
Set normal background colour (* = integer as above)	ESC [= * G
Set reverse foreground colour (* = integer as above)	ESC [= * H
Set reverse background colour (* = integer as above)	ESC [= * I
Set graphic foreground colour (* = integer as above)	ESC [= * J
Set graphic background colour (* = integer as above)	ESC [= * K
Request current colour attribute (* = integer as above)	ESC [= * M

CONTROLLING THE SCREEN DISPLAY

Assign * attribute(s) to following characters — ESC [* m

Default attributes	0
Bold on	1
Underline on	4
Flashing on	5
Inverse video on	7
Blank	8

Fill regions with attribute (* = integer as below) — ESC [= * L

* =	0	Fill with current attribute	2	Select iBCSe2 compliance
	1	Fill with normal attribute	3	Deselect iBCSe2 compliance

Select page (* = 1 - 6)	ESC [* z
Clear page	FF
Scroll display up * lines, insert blank lines	ESC [* S
Scroll display down * lines, insert blank lines	ESC [* T
Access bank 1 & 2 characters using decimal values	ESC [= * g (* = 0 - 255)
Clear tab stops (0 = cursor position, 3 = all)	ESC [* g

CURSOR

Cursor on	ESC [? 25 h
Cursor off	ESC [? 25 l
Move cursor to specified column (* = integer)	ESC [* ` *or* ESC [* G
Move cursor up * lines	ESC [* A
Move cursor down * lines	ESC [* B *or* ESC [* e
Move cursor right * columns	ESC [* C *or* ESC [* a
Move cursor left * columns	ESC [* D
Move cursor to specified line (* = integer)	ESC [* d
Move cursor to line (*l) column (*c)	ESC [*l ; *c H
Move cursor to line (*l) column (*c)	ESC [*l ; *c f
Move cursor down 1 line & to column 1	NAK
Move cursor to start of line	CR
Move cursor down 1 line in current column	LF
Move cursor up * lines & to first column	ESC [* F
Move cursor down * lines & to first column	ESC [* E
Move cursor one column left	BS
Move cursor to next tab stop	HT
Tab cursor backward * tabs	ESC [* Z
Enable cursor autowrap	ESC [? 7 h
Disable cursor autowrap	ESC [? 7 l

EDITING

Erase from cursor to end of display	ESC [0 J
Erase from start of display to cursor	ESC [1 J
Erase entire display	ESC [2 J
Erase from cursor to end of line	ESC [0 K
Erase from start of line to cursor	ESC [1 K
Erase entire line	ESC [2 K
Erase * characters from cursor right	ESC [* X
Insert * blank characters	ESC [* @
Insert * blank lines	ESC [* L
Delete * lines from cursor position down	ESC [* M
Delete * characters	ESC [* P
Set tab at cursor position	ESC H

PRINTING

Send page	ESC [2 i
Send line	ESC [? 3 i
Print page	ESC [0 i
Print all pages	ESC [? 11 i
Print cursor line	ESC [? 1 i
Transparent print mode off	ESC [? 4 i
Transparent print mode on	ESC [? 5 i
Auxiliary print mode on	ESC [5 i
Auxiliary print mode off	ESC [4 i

Siemens 97801 Emulation

CHARACTER SET SELECTION

Assign International character set to G0	ESC (@
Assign International character set to G1	ESC) @
Assign International A character set to G0	ESC (B
Assign International A character set to G1	ESC) B
Assign German character set to G0	ESC (K
Assign German character set to G1	ESC) K
Assign Brackets character set to G0	ESC (w
Assign Brackets character set to G1	ESC) w
Assign FACET character set to G0	ESC (c
Assign FACET character set to G1	ESC) c
Assign IBM character set to G0	ESC (v
Assign IBM character set to G1	ESC) v
Assign Euro character set to G0	ESC (u
Assign Euro character set to G1	ESC) u
Assign Mathematics Symbols character set to G0	ESC (t
Assign Mathematics Symbols character set to G1	ESC) t
Assign Blanks character set to G0	ESC (y
Assign Blanks character set to G1	ESC) y
Assign G2 to G0	ESC (x
Assign G2 to G1	ESC) x
Load G2 with character set (*s = @ or B, K, w ...)	ESC * *s
Load character generator address(es) with new symbol	ESC R B ... ESC \
(Three bytes address and 28 byte description of pattern in hex format)	
Switch to G0 (same as keyboard Ctrl + O)	SI
Switch to G1 (same as keyboard Ctrl + N)	SO
Switch within G0 (national/international)	ESC [5 v
Lock Change Code key	ESC [10 v
Unlock Change Code key	ESC [11 v
Report current code set	ESC [13 v

CURSOR

Cursor on	ESC [7 p
Cursor off	ESC [6 p
Move cursor up * lines	ESC [* A
Move cursor down * lines	ESC [* B
Move cursor right * columns	ESC [* C
Move cursor left * columns	ESC [* D
Move cursor to line *l and column *c	ESC [*l ; *c H
Report cursor position	ESC [6 n
Short poll of cursor position	ESC [5 p
Move cursor left one column	BS
Move cursor one tab to the right	HT
Move cursor * tabs to the left	ESC [* Z
Line Feed	LF
Carriage Return	CR
Move cursor to begining of next line	ESC E

Save cursor position	ESC [s
Move cursor to last saved position	ESC [u

DISPLAY AREA MOVEMENT

Roll mode (do not destroy data)	ESC [10 u
Scroll mode (destroy data)	ESC [11 u
Move display up * lines	ESC [* S
Move display down * lines	ESC [* T

EDITING

Insert * (1-80) blanks to the right starting at cursor position	ESC [* @
Insert * (1-24 or 25) lines, starting at cursor position	ESC [* L
Delete * character(s) ,including attributes, at cursor position	ESC [* P
Delete * line(s), including attributes, at cursor position	ESC [* M
Erase line - * determines extent	ESC [* K
Erase in screen area - * determines extent	ESC [* J

INITIALIZING SCREEN & ATTRIBUTES

Define screen moving area at line *t (top) to line *b (bottom)	ESC [*t ; *b r
Set 24 line mode	ESC [1 u
Set 25 line mode	ESC [0 u
Switch on/off blinking in 24/25th line	ESC [* p
* = Flashing on, Line 1-25 / 1-24 (25/24 line mode)	0
Flashing off, Line 1-25 / 1-24 (25/24 line mode)	1
Flashing on, line 25	2
Flashing off, line 25	3
Auto roll mode enabled	ESC [9 u
Page mode enabled	ESC [8 u
Set attribute(s) for the following character	ESC [*a ; ...*a m

*a = Normal	0	Inverse	7
Screen	2	Hidden	8
Underline	4	Store attributes	50
Blink	5		

Set delete character to blank	ESC [3 u
Set delete character to nil	ESC [2 u
Dim screen	ESC [8 p
Undim screen	ESC [9 p
Set background dark (white characters on black screen)	ESC [20 u
Set background highlight (black characters on white screen)	ESC [21 u
Set off cursor position	ESC [10 p
Video timeout enabled	ESC [5 u
Video timeout disabled	ESC [4 u
Reset screen to initial state	ESC c

KEYBOARD

Lock keyboard	ESC `
Unlock keyboard	ESC b
Keyboard repeat rate off	ESC [0 s
Keyboard repeat rate on	ESC [1 s

Sound bell	BEL
Key click disabled	ESC [2 s
Key click enabled	ESC [3 s
Report keyswitch status	ESC [0 w
Map scan codes corresponding to German keyboard values	ESC [7 u
Map scan codes corresponding to all other keyboard values	ESC [6 u
Load more national keyboards (Multiuser systems: 1024 Byte, PC-X/PC-X10: 10280 Byte)	ESC R A ... ESC \
Read actual keyboard layout	ESC E " y

SERVICE

Display all ESCape sequences (except ESC) on screen	ESC [3 v
Switch to standard mode	ESC [2 v
Display all ESCape sequences - system must be switched off to return to standard mode	ESC [4 v
Start system test and poll result	ESC [3 y
Poll firmware	ESC [4 y
Poll keyboard firmware	ESC [5 y
Fill the screen moving area with the following character	ESC [8 v
Display complete character generator	ESC [9 v
Reset the previous two commands	ESC [7 v

TA6530 Emulation

Conversational & Block Mode

ATTRIBUTES

Set display attribute * — ESC 6 *

Normal video	SP	Inverse invisible	,
Dimmed	!	Underline dim	1
Inverse video	$	Underline italics	2
Italics	"	Underline inverse	4
Invisible	(	Underline inverse dim	5
Underline	0	Underline inverse italics	6
Inverse dim	%	Underline invisible	8
Inverse italics	&	Underline inverse invisible	?

Set video prior condition register (* = attribute as above)	ESC 7 *
Set/reset colour map table	ESC - q
Read colour configuration (Block mode)	ESC - u
Set colour configuration (Block mode)	ESC - t
Read colour mapping table (Block mode)	ESC - v
Set colour mapping table (Block mode)	ESC - x

CURSOR

Back tab (Block mode)	ESC i
Clear all tabs	ESC 3
Clear tab at current position	ESC 2
Move cursor down one line	LF
Move cursor home	ESC H
Move cursor home down	ESC F
Move cursor left one column	BS
Move cursor right one column	ESC C
Move cursor to beginning of current line	CR
Move cursor to next tab stop	HT
Move cursor up one line	ESC A
Report cursor address	ESC a
Set cursor address	DC3
Set cursor address extended (Block mode)	ESC - D
Set tab at current position	ESC 1

DISPLAY

Clear memory to spaces	ESC I
Clear memory to spaces extended	ESC - I
Display message on 25th line	ESC o
Display next page (Conversational mode)	ESC U
Display previous page (Conversational mode)	ESC V
Display page *	ESC ; *
Scroll down one line (Conversational mode)	ESC T
Scroll up one line (Conversational mode)	ESC S

Select page * (Block mode)	ESC : *
Set current line to 40 (double width) columns	ESC 8
Set current line to 80 (single width) columns	ESC 9
Set max. number of pages for display (Block mode)	ESC p *
Set page size to 24 lines by 40 characters	ESC t
Start field (Block mode)	GS
Start field extended (Block mode)	ESC [*display *data *case
Start enhanced colour field (Block mode)	ESC `
Define field using pre-defined attributes (Block mode)	FS
Write message (*m) on 25th line	ESC o *m

EDITING

Delete character (Block mode)	ESC P
Delete line (Block mode)	ESC M
Disable local line editing (Block mode)	ESC N
Erase to end of line/field	ESC K
Erase to end of page/memory	ESC J
Insert character (Block mode)	ESC O
Insert line (Block mode)	ESC L
Reset modified data tags (Block mode)	ESC >

GENERAL OPERATION

Data compression (Enhanced) (Block mode)	DC2
Data compression (Limited) (Block mode)	DC4
Define data-type table (Block mode)	ESC r
Define data-type table extended (Block mode)	ESC - r
Define/update variable table (Block mode)	ESC - s
Delay processing for one second	ESC @
End of transmission (Block mode)	EOT
Enter protect submode (Block mode)	ESC W
Exit protect submode (Block mode)	ESC X
Execute self tests	ESC - P
Execute self test while loading	ESC z
Print current screen (Conv) or selected page (Block)	ESC 0 (zero)
Read buffer (Block mode)	ESC <
Read emulation configuration	ESC ?
Read with address (Block mode)	ESC = *
Read with address extended (Block mode)	ESC - J *
Read with address all (Block mode)	ESC] *
Read with address all extended (Block mode)	ESC - K *
Read with all attributes (Block mode)	ESC Q
Reinitialize (Block mode)	ESC q
Set buffer address (Block mode)	DC1
Set buffer address extended	ESC - C
Set emulation configuration	ESC v *
Soft reset	ESC [! p
Text start (Block mode)	STX
Text end (Block mode)	ETX
Sound bell	BEL

KEYBOARD

Define Return key (Conversational mode)	ESC u *
Lock keyboard	ESC c
Unlock keyboard	ESC b
Simulate function key	ESC d *

REPORTS

Report cursor address	ESC a
Report emulation status	ESC ^
Report firmware revision level	ESC _

ANSI Mode

CHARACTER SETS

Select G0 character set *	ESC (*
Select G1 character set *	ESC) *
Shift out to G0 character set	SI
Shift out to G1 character set	SO

CURSOR

Autowrap enabled	ESC [? 7 h
Autowrap disabled	ESC [? 7 l
Clear tab stops (0 = cursor position, 2 or 3 = all)	ESC [* g
Cursor enabled	ESC [? 25 h
Cursor disabled	ESC [? 25 l
Horizontal tab	HT
LF is LFCR (new line mode)	ESC [20 h
LF is LF only	ESC [20 l
Move cursor left one column	BS
Move cursor left * columns	ESC [* D
Move cursor right * columns	ESC [* C
Move cursor down one line	LF *or* VT *or* FF
Move cursor down one line	ESC D *or* IND
Move cursor down * lines	ESC [* B
Move cursor up one line	ESC M *or* RI
Move cursor up * lines	ESC [* A
Move cursor to beginning of line	CR
Move cursor to column one of next line	NEL
Move cursor to column one of next line	ESC E
Move cursor to column one & down * lines	ESC [* E
Move cursor to column one & up * lines	ESC [* F
Move cursor to column * on current line	ESC [* G
Move cursor to line *l and column *c	ESC [*l ; *c H
Move cursor * tab stops	ESC [* I
Move cursor * previous tab stops	ESC [* Z
Set/clear * tab stops	ESC [* W
Set horizontal tab	ESC H *or* HTS

DISPLAY

Insert * spaces at cursor location	ESC [* @
Restore cursor position & video attribute	ESC 8
Save cursor position & video attribute	ESC 7
Set current line to single width (80 columns)	ESC # 5
Set current line to double width (40 columns)	ESC # 6
Scroll display down * lines	ESC [* T
Scroll display up * lines	ESC [* S
Set current video attributes	ESC [* m
Write to message field	ESC P * = * ESC \

EDITING

Delete * blank lines at cursor position	ESC [* M
Delete * characters at cursor position	ESC [* P
Erase * characters & attributes at cursor	ESC [* X
Erase field *	ESC [* N
Erase line portion (0 = from, 1 = to, 2 = all)	ESC [* K
Erase screen portion (0 = from, 1 = to, 2 = all)	ESC [* J
Insert * blank lines at cursor position	ESC [* L
Repeat last character * times	ESC [* b

GENERAL OPERATION

Cancel current escape sequence	CAN
Execute self tests	ESC [* y
Reset emulation	ESC c
Set emulation configuration	ESC P * ? * ESC \
Set mode	ESC [* h
Reset mode	ESC [* l
Sound bell	BEL
Read screen contents	ESC [* ; * ; * ; * v
Terminate current escape sequence	SUB
Transmission enabled (XON)	DC1
Transmission disabled (XOFF)	DC3

KEYBOARD

Lock keyboard	ESC `
Lock keyboard	ESC [2 h
Unlock keyboard	ESC b
Unlock keyboard	ESC [2 l

REPORTS

Report configuration values	ESC [* x
Report cursor position	ESC [6 *
Report terminal ID & version	ESC [* c
Report status of last self test	ESC [5 *

Tek 4010/4014 Emulation

ALPHANUMARIC MODE

Select G0 character set for alpha text	ESC SI
Select G1 character set for alpha text	ESC SO

CURSOR MOVEMENT

Move cursor down 1 pixel	ESC \ b
Move cursor down 16 pixels	ESC \ B
Move cursor left 1 pixel	ESC \ d
Move cursor left 16 pixels	ESC \ D
Move cursor right 1 pixel	ESC \ c
Move cursor right 16 pixels	ESC \ C
Move cursor up 1 pixel	ESC \ a
Move cursor up 16 pixels	ESC \ A
Move cursor to beginning of line	ESC \ CR
Move text cursor down	LF
Move text cursor left	BS
Move text cursor right	HT
Move text cursor up	VT
Move text cursor to start of line	CR

GENERAL OPERATION

Clear screen & enter Graphics Text mode	ESC FF
Copy screen data to parallel port	ESC ETB
Request status report	ESC ENQ
Select bypass mode	ESC CAN
Sound bell	BEL

GRAPHICS TEXT MODE

Select character size 0 (80x34)	ESC 0
Select character size 1 (40x17)	ESC 1
Select character size 2 (26x11)	ESC 2
Select character size 3 (20x8)	ESC 3
Select Graphics Text font 1 (74x35)	ESC 8
Select Graphics Text font 2 (81x38)	ESC 9
Select Graphics Text font 3 (121x58)	ESC :
Select Graphics Text font 4 (133x64)	ESC ;
Select text zoom factor 1	ESC \ e
Select text zoom factor 2	ESC \ f
Select text zoom factor 3	ESC \ g
Select text zoom factor 4	ESC \ h

MODE SELECTION

Select Alphanumeric mode	ACK
Select Alphanumeric mode	CAN
Select Alphanumeric mode	ESC \ CAN
Select GIN mode	ESC SUB

Select Graphics Text mode	CR
Select Graphics Text mode	US
Select Graphics Text mode	ESC FF
Select Incremental Point mode	RS
Select Point mode	FS
Select Vector mode	GS
Select Vector mode	ESC \ GS

VECTOR MODE

Clear Vector mode screen	ESC \ FF
Deselect write-through & selective erase	ESC SOH
Disable block fill/erase	ESC ETX
Disable dark vector	BEL
Disable dark vector	ESC BEL
Disable rectangle drawing	ESC \ r
Enable block fill/erase	ESC STX
Enable circle plotting (* = ASCII equiv. of coords)	ESC \ O *
Enable dark vector	GS
Enable dark vector	ESC GS
Enable rectangle drawing (*c = corner coords)	ESC \ R *c *c
Enable selective erase	ESC DLE
Enable write-through mode	ESC NAK
Select dot-dash line style	ESC b
Select dot-dash line style	ESC j
Select dotted line style	ESC a
Select dotted line style	ESC i
Select long dash line style	ESC d
Select long dash line style	ESC I
Select short dash line style	ESC c
Select short dash line style	ESC k
Select solid line style	ESC `
Select solid line style	ESC e
Select solid line style	ESC f
Select solid line style	ESC g
Select solid line style	ESC h
Select solid line style	ESC m
Select solid line style	ESC n
Select solid line style	ESC o

TVI 955 Emulation

GENERAL OPERATION

Block mode on	ESC B
Local mode on	ESC c
Half duplex mode on	ESC D H
Full duplex mode on	ESC D F
Return to previous conversational mode	ESC C
Set terminal operating mode(s) (0 = 955, 1 = 950)	ESC [= * h
Reset terminal operating mode(s) (0 = 955, 1 = 950)	ESC [= * l
Select a terminal operating value (0 = 955, 1 = 950)	ESC [*1 ; *2 v
Select a programming compatibility mode (0 = 955, 1 = 950)	ESC [10 ; * v
Reset terminal to factory default values	ESC ~ 0
Reset terminal to saved settings values	ESC ~ 1
Reset function keys to factory default values	ESC ~ 2
Reset editing keys to factory default values	ESC ~ 3
Monitor mode on	ESC U
Monitor mode off	ESC X *or* ESC u

CHARACTER SETS & BLOCK GRAPHICS

Select character set (0 = US ASCII, 1 = UK ASCII)	ESC [9 ; * v
Special graphics mode on	ESC $
Special graphics mode off	ESC %
Select a character from the multinational character set	CTRL U *
Read 7-bit data words	ESC [= 1 l
Read 8-bit data words	ESC [= 1 h
Define block graphics area	ESC H w h

CURSOR

Cursor home	ESC [H *or* RS
Line feed	LF
Reverse line feed	ESC j
New line (line feed/carriage return)	US
Carriage return	CR
Move cursor up * lines	ESC [* A
Move cursor up one line	VT
Move cursor down one line	SYN
Move cursor down * lines	ESC [* B
Move cursor right * columns	ESC [* C
Move cursor right one column	FF
Move cursor left * columns	ESC [* D
Move cursor left one column	BS
Move cursor to line (*l) and column (*c)	ESC [*l ; *c H
Move cursor to line (*l) and column (*c)	ESC [*l ; *c f
Send cursor to line (*l) & columns 1 - 80 (*c)	ESC = *l *c
Send cursor to line (*l) & columns 81 - 132 (*c)	ESC = *l ~ *c
Send cursor to page (*p), line (*l) & columns 1 - 80 (*c)	ESC - *p *l *c
Send cursor to page (*p), line (*l) & columns 81 - 132 (*c)	ESC - *p *l ~ *c
Read cursor's line & column position	ESC ?

Read cursor's page, line & column position	ESC /
Read cursor's line & column position in decimal units	ESC [6 n
Read cursor's page, line & column position in decimal units	ESC [? 6 n

DISPLAY

Turn screen on	ESC n
Turn screen off	ESC o
Light background with dark characters	ESC b
Dark background with light characters	ESC d
Define visual attribute(s) *	ESC G *

0	Normal (default) video	8	Underline
1	Invisible normal video	9	Invisible underline
2	Flash	:	Underline & flash
3	Invisible flash	;	Invisible underline & flash
4	Reverse current background	<	Reverse & underline
5	Invisible reverse	=	Invisible reverse & underline
6	Reverse and flash	>	Reverse, underline & flash
7	Invisible reverse & flash	?	Invisible reverse, underline & flash

Attributes occupy a character space	ESC F 0
Attributes do not occupy a character space	ESC F 1
Half intensity mode	ESC [= 5 h
Full intensity mode	ESC [= 5 l
Page base attribute mode	ESC [= 2 h
Line base attribute mode	ESC [= 2 l
Select status line visual attribute(s)	ESC [3 ; * v

0	Normal	2	Normal underline
1	Reverse	3	Reverse underline

Set cursor style to * — ESC . *

0	Cursor not displayed	3	Flashing underline cursor
1	Flashing block cursor	4	Steady underline cursor
2	Steady block cursor		

Enable 132 columns per line	ESC [= 3 h
Enable 80 columns per line	ESC [= 3 l

EDITING MODES

Autowrap mode on	ESC [= 7 h
Autowrap mode off	ESC [= 7 l
New line mode on	ESC [= 6 h
New line mode off	ESC [= 6 l
DOWN key sends CTRL J	ESC [= 9 h
DOWN key sends CTRL V	ESC [= 9 l
Turn on write protect mode	ESC)
Turn off write protect mode	ESC (
Turn on protect mode	ESC &
Turn off protect mode	ESC '

EDITING DATA

Enable page edit mode	ESC N
Enable line edit mode	ESC O
Enable insert mode	ESC q
Enable replace mode	ESC r
Load a replacement character	ESC e *
Insert a replacement character at cursor position	ESC Q
Insert * replacement characters at cursor position	ESC [* @
Insert line of replacement characters on current line	ESC E
Insert * lines of replacement characters starting at cursor line	ESC [* L
Delete character at cursor position	ESC W
Delete * characters starting at cursor position	ESC [* P
Delete current line & replace with replacement characters	ESC R
Delete * lines at cursor line & replace with replacement characters	ESC [* M
Erase from cursor to end of line & replace with replacement characters	ESC T
Erase line portion & replace with replacement characters (0 = from cursor, 1 = to cursor, 2 = all unprotected)	ESC [* K
Erase from cursor to end of line & replace with null characters	ESC t
Erase from cursor to end of page & replace with replacement characters	ESC Y
Erase page portion & replace with replacement characters (0 = from cursor, 1 = to cursor, 2 = all unprotected)	ESC [* J
Erase from cursor to end of page & replace with null characters	ESC y
Clear current unprotected field, replace with replacement characters	CAN
Clear all characters & replace with null characters	ESC *
955 mode: Clear all characters & replace with replacement characters (reset protect and write protect modes)	ESC +
950 mode: Clear unprotected characters & replace with replacement characters (do not reset protect and write protect modes)	ESC +
955 mode: Clear unprotected characters & replace with write protected space characters (reset protect mode)	ESC ,
950 mode: Clear unprotected characters & replace with write-protected space characters (do not reset protect mode)	ESC ,
Clear unprotected characters & replace with replacement characters	ESC ; *or* SUB
Clear unprotected characters & replace with null characters	ESC :

FUNCTION KEYS

Select function key set (0 = set one, 1 = set two)	ESC [7 ; * v
Reprogram a function key	ESC ¦ *1 *2 <message> EM

Key	955 compatible *1 value Unshifted	Shifted	Key	955 compatible *1 value Unshifted	Shifted
F1	1	A	F9	9	I
F2	2	B	F10	:	J
F3	3	C	F11	;	K
F4	4	D	F12	<	L
F5	5	E	F13	=	M
F6	6	F	F14	>	N
F7	7	G	F15	?	O
F8	8	H	F16	@	P

Additional *1 values:	<space>	Clear entire current function key set from memory
	0	Load function keys in sequence

*2 message destination values:	1	Send message to host
	2	Send message to terminal
	3	Send message to both host and terminal

Save function key reprogramming in non-volatile memory	ESC [= 10 h
Do not save function key reprogramming in non-volatile memory	ESC [= 10 l
Invoke a function key	ESC [* ¦

REPROGRAMMING EDITING KEYS

Reprogram the SEND key (950 mode)	ESC 0 *k *c

*k =	1	Unshifted	2	Shifted
*c =	4	ESC 4 command	7	ESC 7 command
	5	ESC 5 command	S	ESC S command
	6	ESC 6 command	s	ESC s command

Reprogram any individual editing key (955 mode)	ESC 0 *Ps *p1 *p2 *p3
Reprogram all editing keys	ESC] *Ps *p1 ... *p60

KEYBOARD & BELL

Keyboard locked	ESC #
Keyboard unlocked	ESC "
Lock keys	ESC [= * l
Unlock keys	ESC [= * h

* =	11	Set Up	13	Clear Space
	12	Esc	14	Break

Local editing key mode enabled	ESC k
Duplex editing key mode enabled	ESC l
Load the margin bell column	ETB
Margin bell on	ESC [= 4 h
Margin bell off	ESC [= 4 l
Sound bell	BEL

LOADING & SENDING MESSAGES

Send terminal's identification	ESC M
Program the answerback message	ESC ^ <text> EM
Send the answerback message	ENQ
Display user message 1 on bottom screen line	ESC g
Display status line on bottom screen line	ESC h
Select contents of top information line	ESC [4 ; * v
Select contents of bottom information line	ESC [5 ; * v

* =	0	Blank	2	User message 1
	1	Status line	3	User message 2

Load text into user message 1	ESC f <text> CR
Load text into a user message	ESC _ *m *e <text> CR

User Message			Effect		
*m =	0	Status line message field	*e =	0	Clears message before loading
	1	User message 1		1	Writes over existing message
	2	User message 2			

Send contents of information line — ESC Z *

* = 0 User message 1
1 Status line
2 User message 2

PRINTING

Buffered copy print mode on	ESC @
Buffered copy print mode off	ESC A
Buffered transparent print mode on	ESC `
Buffered transparent print mode off	ESC a
Buffered bidirectional print mode on	DC2
Buffered bidirectional print mode off	DC4
Print unprotected formatted page	ESC P
Print all unformatted page	ESC L
Page print	ESC [0 ; * i

* =	0	Formatted all	4	Unformatted all	
	1	Formatted unprotected	5	Unformatted unprotected	

Define page print terminator — ESC p *

SCREEN MEMORY

Define number of lines on each page — ESC \ *

	Lines per Page	Number of Pages 4-Page Memory	Number of Pages 2-Page Memory
* = 1	24	4	2
2	48	2	1
3	96	1	-

Autopage mode on	ESC v
Autopage mode off	ESC w
Display previous page	ESC J
Display next page	ESC K
Display page *	ESC [1 ; * }

SCROLLING

Define a scrolling region	ESC [*t ; *b r
Enable line lock	ESC ! 1
Disable line lock	ESC ! 2

SENDING SCREEN DATA

Reprogram delimiter (*d) characters *1 & *2 — ESC x *d *1 *2

0	Field Separator	2	Start of protected field	4	Message terminator
1	End of line	3	End of protected field		

Send unprotected characters in cursor line up to & including cursor	ESC 4
Send unprotected page up to & including cursor	ESC 5
Send entire cursor line characters up to & including cursor	ESC 6
Send entire page up to & including cursor	ESC 7
Send unprotected message between start of text and end of text	ESC S
Send whole message between start of text (STX) and end of text (ETX)	ESC s

TAB STOPS

Clear typewriter tab stop at cursor position	ESC 2
Clear all typewriter tab stops	ESC 3
Create column of tab stops at cursor position	ESC 1
Move cursor forward to next typewriter or field tab stop	HT
Move cursor forward to next field tab stop	ESC i
Move cursor backward to previous typewriter or field tab stop	ESC I

Unisys T27 Emulation

FORM OPERATIONS

Set forms mode	ESC W
Reset forms mode	ESC X
Toggle forms mode	DC2
Exit forms mode	SOH

SEARCH OPERATIONS

Set search mode	ESC E
Set search character (if 80 hex or less)	ESC - *
Set search character (if greater than 80 hex)	ESC - ESC SO * ESC SI
Reset search mode	ESC F

POINTER MOVEMENT

Move pointer up	DC3
Move pointer down	LF
Move pointer right	ESC C *or* DC2
Move pointer left	BS
Align KBC to DCP	ESC &
Tab right	HT
Clear variable tabs	ESC #
Vertical tab down	VT
Home	DC4
Jump to page *	ESC $ *
Position pointer at *c column & *r row (using hex values)	ESC ^ *c *r
Position pointer at *c column & *r row (using ASCII chars.)	ESC " *c *r
Carriage return	CR *or* LF
Prevent align in cursor page	ESC 6

EDITING SEQUENCES

Insert character by line	ESC !
Insert character by page	ESC @
Delete character by line	ESC %
Delete character by page	ESC P
Line insert	ESC L
Line delete	EC M
Move line up	ESC >
Move line down	ESC <
Clear to end of line	ESC K *or* DC1
Clear to end of page	ESC J
Roll page up	ESC S
Roll page down	ESC T
Clear page	SOH *or* FF *or* ESC FF

VIDEO ATTRIBUTE SEQUENCES

Underline video highlight	ESC 3
Reverse video highlight	ESC 4
End highlight	ETB
Start video blink	CAN
Start secure video	EM
Start bright video	SUB
Set reverse video	ESC N
Set normal video	ESC O

TERMINAL RECONFIGURATION SEQUENCES

Store ASCII codes as data	ESC R A *start *length *data ESC R C
Configure Data Comm, Screen & KPT buffer sizes	ESC R B *dc *s *kpt
Reconfigure terminal	ESC R C
Selective key programming	ESC R D *hex *prog 00 ... *hex *prog 00 00
Store data in hexadecimal codes	ESC R H *start *length *data ESC R C
Program function keys F1 - F10	ESC R K *length *key *prog A 9 ... *length *key *prog A 9 A 9
Transmit error log	ESC R L
Copy temporary storage into nonvolatile RAM	ESC R P
Display message in environmental user status line	ESC R S *number of bytes *data
Transmit memory (temporary storage) contents to host	ESC R T *start *number of bytes

MISCELLANEOUS SEQUENCES

Start escape sequence	ESC
Set shift out (to extended character set)	ESC SO *or* SO
Reset shift out (shift in)	ESC SI *or* SI
Character translation	ESC ' *

* =	:	bright	7	end highlight
	/	underscore	8	blink
	.	reverse	9	secure

Reset keystroke lockout	ESC =
Fill with character *	ESC _ *
Transmit terminal screen to host	ESC (
Toggle audible alarm	ESC ? *or* BEL
Display character set	ESC space C
Load contents of permanent storage & reconfigure	ESC space D
Display version number	ESC space V
Toggle variable tabs	ESC . *or* VT
Set mobile home	ESC D
Lowercase disable	ESC Y
Lowercase enable	ESC Z
End of text processing	ETX
End of transmission	EOT

Viewdata Mode

COLOUR SELECTION

Background cell colour = previous character colour	ESC]
Cell background colour black (default)	ESC \
Select blue alphanumeric character set	ESC D
Select blue graphics character set	ESC T
Select cyan alphanumeric character set	ESC F
Select cyan graphics character set	ESC V
Select green alphanumeric character set	ESC B
Select green graphics character set	ESC R
Select magenta alphanumeric character set	ESC E
Select magenta graphics character set	ESC U
Select red alphanumeric character set	ESC A
Select red graphics character set	ESC Q
Select white alphanumeric character set	ESC G
Select white graphics character set	ESC W
Select yellow alphanumeric character set	ESC C
Select yellow graphics character set	ESC S

CHARACTER ATTRIBUTES

Block graphics	ESC Y
Border graphics	ESC Z
Flashing on	ESC H
Flashing off	ESC I
Single line height	ESC L
Double line height	ESC M

CURSOR

Cursor display on	DC1
Cursor display off	DC2
Home cursor	RS
Move cursor down one line	LF
Move cursor left one column	BS
Move cursor right one column	HT
Move cursor up one line	VT
Move cursor to beginning of line	CR

DISPLAY

Clear screen & home cursor	FF
Conceal display	ESC X
Hold graphics character	ESC ^
Release graphics character	ESC _

GENERAL OPERATION

Enter 40 column viewdata mode	ESC # 6
Enter 80 column viewdata mode	ESC # 5
Send Answerback string	ENQ

VT640 Emulation

ALPHANUMARIC MODE

Select G0 character set for alpha text	ESC SI
Select G1 character set for alpha text	ESC SO

CURSOR MOVEMENT

Move cursor down 1 pixel	ESC \ b
Move cursor down 16 pixels	ESC \ B
Move cursor left 1 pixel	ESC \ d
Move cursor left 16 pixels	ESC \ D
Move cursor right 1 pixel	ESC \ c
Move cursor right 16 pixels	ESC \ C
Move cursor up 1 pixel	ESC \ a
Move cursor up 16 pixels	ESC \ A
Move cursor to beginning of line	ESC \ CR
Move text cursor down	LF
Move text cursor left	BS
Move text cursor right	HT
Move text cursor up	VT
Move text cursor to start of line	CR

GENERAL OPERATION

Clear screen & enter Graphics Text mode	ESC FF
Copy screen data to parallel port	ESC ETB
Request status report	ESC ENQ
Select bypass mode	ESC CAN
Sound bell	BEL
Specify data (*) for graphics memory loading	ESC + * #
Specify screen address for g. memory load	ESC " *h ; *v a
Specify writing mode (0 = pix. off, 1 = on, 2 = comp)	ESC / * d
Transmit graphics memory (*h *v coords, *s bit sets)	ESC " *h ; *v *s c

GRAPHICS TEXT MODE

Select character size 0 (80x34)	ESC 0
Select character size 1 (40x17)	ESC 1
Select character size 2 (26x11)	ESC 2
Select character size 3 (20x8)	ESC 3
Select Graphics Text font 1 (74x35)	ESC 8
Select Graphics Text font 2 (81x38)	ESC 9
Select Graphics Text font 3 (121x58)	ESC :
Select Graphics Text font 4 (133x64)	ESC ;
Select text zoom factor 1	ESC \ e
Select text zoom factor 2	ESC \ f
Select text zoom factor 3	ESC \ g
Select text zoom factor 4	ESC \ h

MODE SELECTION

Select Alphanumeric mode	ACK
Select Alphanumeric mode	CAN
Select Alphanumeric mode	ESC \ CAN
Select GIN mode	ESC SUB
Select GIN mode	ESC " 4 g
Select GIN mode	ESC " 5 g
Select Graphics Text mode	CR
Select Graphics Text mode	US
Select Graphics Text mode	ESC FF
Select Incremental Point mode	RS
Select Point mode	FS
Select Vector mode	GS
Select Vector mode	ESC \ GS

VECTOR MODE

Clear Vector mode screen	ESC \ FF
Define user line style x (* = # pixels on ; # pixels off)	ESC / * a
Define user line style y (* = # pixels on ; # pixels off)	ESC / * b
Define user line style z (* = # pixels on ; # pixels off)	ESC / * c
Disable block fill/erase	ESC ETX
Disable dark vector	BEL
Disable dark vector	ESC BEL
Disable rectangle drawing	ESC \ r
Enable block fill/erase	ESC STX
Enable circle plotting (* = ASCII equiv. of coordinates)	ESC \ O *
Enable dark vector	GS
Enable dark vector	ESC GS
Enable rectangle drawing (*c = corner coordinates)	ESC \ R *c *c
Select 3 dot-dash line style	ESC e
Select 3 dot-dash line style	ESC m
Select dot-dash line style	ESC b
Select dot-dash line style	ESC j
Select dotted line style	ESC a
Select dotted line style	ESC i
Select long dot-dash line style	ESC f
Select long dot-dash line style	ESC n
Select long dash line style	ESC d
Select long dash line style	ESC I
Select medium dash line style	ESC g
Select medium dash line style	ESC o
Select short dash line style	ESC c
Select short dash line style	ESC k
Select solid line style	ESC `
Select solid line style	ESC h
Select user defined line style a	ESC x
Select user defined line style b	ESC y
Select user defined line style c	ESC z

W2119 Emulation

ALPHANUMARIC MODE

Select G0 character set for alpha text	ESC SI
Select G1 character set for alpha text	ESC SO

CURSOR MOVEMENT

Move cursor down 1 pixel	ESC \ b
Move cursor down 16 pixels	ESC \ B
Move cursor left 1 pixel	ESC \ d
Move cursor left 16 pixels	ESC \ D
Move cursor right 1 pixel	ESC \ c
Move cursor right 16 pixels	ESC \ C
Move cursor up 1 pixel	ESC \ a
Move cursor up 16 pixels	ESC \ A
Move cursor to beginning of line	ESC \ CR
Move text cursor down	LF
Move text cursor left	BS
Move text cursor right	HT
Move text cursor up	VT
Move text cursor to start of line	CR

GENERAL OPERATION

Clear screen & enter Graphics Text mode	ESC FF
Copy screen data to parallel port	ESC ETB
Deselect write-through & selective erase	ESC SOH
Enable selective erase	ESC DLE
Enable write-through	ESC NAK
Request cursor position report	ESC ENQ
Select bypass mode	ESC CAN
Sound bell	BEL

GRAPHICS TEXT MODE

Select graphics text font (120x58)	ESC :
Select graphics text font (132x38)	ESC <
Select graphics text font (132x64)	ESC ;
Select graphics text font (146x70)	ESC >
Select graphics text font (73x35)	ESC 8
Select graphics text font (80x38)	ESC 9
Select graphics text font (80x64)	ESC =
Select text zoom factor 1	ESC \ e
Select text zoom factor 2	ESC \ f
Select text zoom factor 3	ESC \ g
Select text zoom factor 4	ESC \ h

MODE SELECTION

Select Alpha mode & erase alpha memory	ESC EOT
Select Alphanumeric mode	ACK
Select Alphanumeric mode	CAN
Select Alphanumeric mode	ESC 2
Select Alphanumeric mode	ESC \ CAN
Select GIN mode	ESC SUB
Select Graphics Text mode	CR
Select Graphics Text mode	US
Select Graphics Text mode	ESC 1
Select Graphics Text mode	ESC FF
Select Incremental Point mode	RS
Select Point mode	FS
Select Vector mode	GS

VECTOR MODE

Clear Vector mode screen	ESC \ FF
Disable block fill/erase	ESC ETX
Disable dark vector	BEL
Disable dark vector	ESC BEL
Disable rectangle drawing	ESC \ r
Enable block fill/erase	ESC STX
Enable circle plotting (* = ASCII equiv. of coords)	ESC \ O *
Enable dark vector	GS
Enable dark vector	ESC GS
Enable rectangle drawing (*c = corner coords)	ESC \ R *c *c
Select dot-dash line style	ESC b
Select dot-dash line style	ESC j
Select dot-dash line style	ESC r
Select dotted line style	ESC a
Select dotted line style	ESC i
Select dotted line style	ESC q
Select long dash line style	ESC d
Select long dash line style	ESC I
Select long dash line style	ESC t
Select short dash line style	ESC c
Select short dash line style	ESC k
Select short dash line style	ESC s
Select solid line style	ESC `
Select solid line style	ESC e
Select solid line style	ESC f
Select solid line style	ESC g
Select solid line style	ESC h
Select solid line style	ESC m
Select solid line style	ESC n
Select solid line style	ESC o
Select solid line style	ESC p
Select solid line style	ESC u
Select solid line style	ESC v
Select solid line style	ESC w

Wyse Emulations

ATTRIBUTES

Assign character display attribute	ESC G *attribute
Assign line attribute	ESC G *line attribute
Assign write-protected character attribute	ESC ' *attribute
Line attribute mode on	ESC e 3
Page attribute mode on	ESC e 2
Wyse 60 character attribute mode on	ESC e 1
Wyse 60 character attribute mode off	ESC e 0

CHARACTER SETS (WY-60 only)

Define & load soft character — ESC c A *b *p *...*c CTRL Y

*b = bank 0-3, *p = position in character set (2-byte hex)
*...*c = character bit pattern (32-byte character string)

Automatic font loading enabled	ESC e O
Automatic font loading disabled	ESC e N
Load font bank with predefined character set	ESC c @ *bank *set

Bank: 0 = Bank 0, 1 = Bank 1, 2 = Bank 2, 3 = Bank 3

Set:				
	Native mode	@	Standard ANSI	G
	Multinational	A	44-line Native mode	'
	Standard ASCII	B	44-line Multinational	a
	Graphics 1	C	44-line PC Equivalent	b
	PC Equivalent	D	44-line Standard ASCII	c
	Graphics 2	E	44-line Standard ANSI	d
	Graphics 3	F		

Clear font bank (* = 0 - 3)	ESC c ? *
Specify font bank for primary character set (* = 0 - 3)	ESC c B *
Specify font bank for secondary character set (* = 0 - 3)	ESC c C *
Select primary character set for display	ESC c D
Select secondary character set for display	ESC c E

CLEARING DATA

Clear cursor column	ESC V
Clear entire rectangle in 80 column page	ESC c H *line *col *character
Clear entire rectangle in 132 column page	ESC c H *line ~ *col *character
Clear page to nulls	ESC *
Clear page to spaces	ESC +
Clear page to write-protected spaces	ESC ,
Clear unprotected column to nulls	ESC c K
Clear unprotected column to specified character	ESC c I *character
Clear unprotected line to nulls from cursor	ESC t
Clear unprotected line foreground to nulls from cursor	ESC c S
Clear unprotected line to spaces from cursor	ESC T
Clear unprotected line foreground to spaces from cursor	ESC c R
Clear unprotected page to attribute character	ESC !

Clear unprotected page to nulls	ESC :
Clear unprotected page to nulls from cursor	ESC y
Clear unprotected page foreground to nulls from cursor	ESC c Q
Clear unprotected page to spaces	ESC ; *or* SUB
Clear unprotected page to spaces from cursor	ESC Y
Clear unprotected page foreground to spaces from cursor	ESC c P
Clear unprotected page to specified character	ESC . *character
Clear unprotected rectangle in 80 column page	ESC c F *line *col *character
Clear unprotected rectangle in 132 column page	ESC c F *line ~ *col *character
Clear unprotected to end of line with nulls	ESC c L
Clear unprotected to end of line with spaces	ESC c O
Box rectangle in 80 column page	ESC c G *line *column
Box rectangle in 132 column page	ESC c G *line ~ *column
Box rectangle to right of cursor	ESC c N *width *height

COLOUR SELECTION

Wyse 350 colour:

Select colour palette (* = palette ID in range 0 - ?)	ESC % *
Redefine attribute association	ESC m *r *c *m

*r = display attribute group or write protect to be redefined (range 0 - 8)

*c = the colour assigned (range ! - 6)

*m = the monochrome attributes assigned:

0 = Normal, - = Reverse, . = Underline, / = Underline & reverse

Wyse 60 ASCII colour:

Foreground colour palette	ESC A a *
Select border colour	ESC A b *
Background colour	ESC A c *
Assign foreground colour	ESC A d *
Assign background colour	ESC A e *
Assign display attribute to unprotected characters	ESC A f *
Redefine character attribute association	ESC A g *attr *f *b *assoc
Assign foreground/background colours	ESC A h *
Assign fore/background colours to write-prot. chars.	ESC A i *
Assign foreground colours to write-protected chars.	ESC A j *
Assign background colours to write-protected chars.	ESC A k *
Assign display attribute to write-protected characters	ESC A l *
Assign replacement character colours & attributes	ESC A y *f *b *a

CURSOR

Address cursor in current 80/132 column page	ESC a *line R *column C
Address cursor in current 80 column page	ESC = *line *column
Address cursor in specific 80 column page	ESC w @ *page *line *column
Address cursor in specific 80 column window/page	ESC - *win/pg *line *column
Address cursor column	ESC _
Address cursor row	ESC [
Autowrap mode off	ESC d .
Autowrap mode on	ESC d /
Clear all tab stops	ESC 0
Clear tab stop	ESC 2 or ESC 3
Cursor down (scroll)	LF
Cursor left	BS

Cursor right	FF
Cursor up (no scroll)	VT
Cursor to start of current line	CR
Cursor to start of next line	US
Home cursor	ESC { or RS
Line lock mode on	ESC ` H
Line lock mode off	ESC ` I
Move cursor up; scroll	ESC j
Read 80 column window/page & cursor address	ESC /
Read 80 column page number & cursor address	ESC w '
Read cursor address in current 80 column page	ESC ?
Read cursor address in current 80/132 column page	ESC b
Redefine screen as one window & clear pages	ESC x 0
Set cursor display features	ESC ' *cursor
Set tab stop	ESC 1
Tabulate cursor	ESC i
Tab cursor	HT
Tab cursor backward	ESC I
Tabs are not initialized	ESC e :
Tabs are initialized	ESC e ;

DISPLAY

80 column display	ESC ' :
132 column display	ESC ' ;
80/132 change clears screen on	ESC e /
80/132 change clears screen off	ESC e .
Activate lower window	ESC }
Activate other window/display previous page	ESC J
Activate other window/display next page	ESC K
Activate upper window	ESC]
Autopage mode off	ESC d *
Autopage on	ESC d +
Autoscrolling mode on	ESC 0
Autoscrolling mode off	ESC N
Display 24 data lines	ESC e (
Display 25 data lines	ESC e)
Display 42 data lines	ESC e *
Display 43 data lines	ESC e +
Display graphics character	ESC H *key
Display next page	ESC w C
Display previous page	ESC w B
Display specific page	ESC w *page
Divide memory into pages	ESC w *length
Economy 80 column mode on	ESC e G
Economy 80 column mode off	ESC e F
Horizontal split higher	ESC x R
Horizontal split lower	ESC x P
Program label line	ESC f
Protect mode on	ESC &
Protect mode off	ESC '
Redefine screen as one window	ESC x @
Redefine screen as one window & clear pages	ESC x 0

Restore normal display	ESC ^ 0
Reverse display	ESC ^ 1
Roll window up in page	ESC w E
Roll window down in page	ESC w F
Split screen	ESC x C *line
Split screen (two pages only)	ESC x A *line
Split screen & clear pages	ESC x 3 *line
Split screen & clear pages (2 pages only)	ESC x 1 *line
Status line format (a = extended, b = standard)	ESC ' *
Status line message	ESC F *message CR
Status line not displayed	ESC ' c
Turn display off	ESC ' 8
Turn display on	ESC ' 9

EDITING

Begin send at top of page	ESC d '
Begin send at top of screen	ESC d &
Delete cursor character	ESC W
Delete cursor column	ESC c j
Delete cursor line	ESC R
Insert column of nulls	ESC c M
Insert line of spaces	ESC E
Insert mode on, replace mode off	ESC q
Insert mode off, replace mode on	ESC r
Insert space character	ESC Q
Page edit mode on (Wyse 60 mode)	ESC e #
Page edit mode off (Wyse 60 mode)	ESC e "
Write-protect mode off	ESC (
Write-protect mode on	ESC)

GENERAL OPERATION

Answerback mode off	ESC e SP
Answerback mode on	ESC e !
Graphics mode on	ESC H CTRL B
Graphics mode off	ESC H CTRL C
Received CR mode off	ESC e 4
Received CR mode on	ESC e 5
Run script in Wyse and TVI/ADDS/HZ enhanced modes	ESC c s *filename CR
Set MODEM port receive handshake	ESC c 2 *handshake
Set MODEM port transmit handshake	ESC c 4 *handshake

HOST COMMUNICATIONS

Select terminal emulation — ESC ~ *emulation

*emulation:				
	Wyse 50	@	VT52	6
	Wyse 50+	"	VT100	;
	Wyse 60	4	VT220-7	<
	TVI 910+	#	VT220-8	=
	TVI 912/920	'	VT320-7	B
	TVI 925	$	VT320-8	C
	ADDS VP A2	%		
	HZ 1500	&		

Enhance mode on	ESC ~ !
Enhance mode off	ESC ~ SP
Monitor mode on (display control codes)	ESC U
Monitor mode off	ESC u *or* ESC X
Block mode on	ESC B
Half-duplex mode on	ESC C ESC D H
Half-duplex block mode on	ESC D H ESC B
Full-duplex mode on	ESC C ESC D F
ACK mode (6 = off, 7 = on)	ESC e *
Set MODEM port operating parameters	ESC c 0 *b *s *p *w
Set maximum data transmission speed	ESC c 6 *max
Send terminal ID	ESC SP
Program answerback message	ESC c ; *answer CTRL Y
Answerback message (= = conceal, < = send)	ESC c *

KEYBOARD FUNCTIONS

Application key mode on	ESC ~ 3
Application key mode off	ESC ~ 2
Keyboard locked	ESC # *or* SI
Keyboard unlocked	ESC " *or* SO
Caps lock on	ESC e &
Caps lock off	ESC e ‘
Clear all programmable keys	ESC c U
Clear key definition	ESC z *key DEL
Key repeat on	ESC e -
Key repeat off	ESC e ,
Margin bell on	ESC e M
Margin bell off	ESC e L
Set margin bell at cursor position	ESC ` J
Program function key definition	ESC z *fkey seq DEL
Program key direction & definition	ESC Z *dir key seq DEL
Read key direction & definition	ESC Z ~ *key
Sound Bell	BEL
Turn local edit mode on, duplex edit mode off	ESC k
Turn local edit mode off, duplex edit mode on	ESC l

LABEL LINE

Clear function key label	ESC z *field CR
Clear shifted label line message	ESC z) CR
Clear unshifted label line message	ESC z (CR
Display shifted label line	ESC z P CR
Program/display function key label	ESC z *field *label CR
Program/display unshifted label line	ESC z (*text CR
Program shifted label line	ESC z) *text CR
Shifted label line off	ESC z DEL

SENDING DATA

Begin print/send at top of page	ESC d '
Begin print/send at top of screen	ESC d &
Bidirectional mode off	ESC d $

Bidirectional mode on	ESC d %
Enable transmission (XON/XOFF handshaking)	DC1 (XON)
Stop transmission (XON/XOFF handshaking)	DC3 (XOFF)
Mark block beginning	ESC 8
Mark block end	ESC 9
Print entire formatted page	ESC P
Print formatted unprotected page	ESC @
Print unformatted page	ESC p *or* ESC L
Secondary receive mode off	ESC d SP
Secondary receive mode on	ESC d !
Send ACK	ENQ
Send cursor character	ESC M
Send entire block	ESC s
Send entire cursor line	ESC 6
Send entire page	ESC 7
Send unprotected characters in block	ESC S
Send unprotected cursor line	ESC 4
Send unprotected page	ESC 5
Send next incoming character to printer port	DLE
Transparent print mode on	ESC d # *or* CAN
Turn auxiliary print mode on	DC2
Turn print modes off	DC4

Wyse PC Term Emulation

MONITOR MODE

Monitor mode on	ESC U
Monitor mode off	ESC u *or* ESC X

SELECTING PERSONALITIES

Enhance mode off	ESC v SPACE
Enhance mode on	ESC v !
Select WYSE 50+ personality	ESC v "
Select WYSE 50 personality	ESC v @
Select WYSE ASCII personality	ESC v 4
Select TeleVideo 905 personality	ESC v b
Select TeleVideo 910+ personality	ESC v #
Select TeleVideo 925 personality	ESC v $
Select TeleVideo 950 personality	ESC v (
Select ADDS A2 personality	ESC v %
Select PC Term personality	ESC v 5
Select HZ 1500 personality	ESC v &
Select VT52 personality	ESC v 6
Select VT100 personality	ESC v ;
Select VT220 7-bit personality	ESC v <
Select VT220 8-bit personality	ESC v =
Select UNIX Console personality	ESC v]

HOST COMMUNICATIONS

Enable transmission	CTRL Q
Stop transmission	CTRL S
Send ACK	CTRL E
Full-duplex mode on	ESC C ESC }
Half-duplex mode on	ESC C ESC {
Block mode on	ESC B ESC }
Half-duplex block mode on	ESC B ESC {
Send terminal ID	ESC M
Assign COMM 1 port as host port (enhanced)	ESC e 8
Assign COMM 2 port as host port (enhanced)	ESC e 9
Send time of day	ESC SPACE 2
Enable DTR COMM 1 port handshaking	CTRL N
Enable XON-XOFF/XPC COMM 1 port handshaking	CTRL O

TERMINAL & KEYBOARD CONTROL

Local edit mode on	ESC k
Duplex edit mode on	ESC l
Sound bell	CTRL G
Unlock keyboard	ESC "
Lock keyboard	ESC #
Keyclick off	ESC <
Keyclick on	ESC >

CAPS LOCK on (enhanced)	ESC e &
CAPS LOCK off (enhanced)	ESC e '
Margin bell off	ESC n
Margin bell on	ESC o
Select standard ASCII key code mode	ESC e H
Select PC scan code mode	ESC e I
Key repeat off (enhanced)	ESC e ,
Key repeat on (enhanced)	ESC e -
Application key mode off	ESC v 2
Application key mode on	ESC v 3
Read keyboard status	ESC [
Default unit	ESC m

PROGRAMMING KEYS

Program function key definition	ESC z *key *seq DEL
Clear function key definition	ESC z *key DEL
Program key direction & definition	ESC ¦ *p1 *p2 *seq CTRL Y
Read key direction & definition	ESC Z ~ *key
Clear key direction & definition	ESC z *dir *key DEL
Clear all programmable keys	ESC c U

DISPLAY

Screen display off	ESC O
Screen display on	ESC N
Reverse screen (light background)	ESC b
Restore normal screen (dark background)	ESC d
Set cursor display features	ESC . **cursor*
Display 25 data lines	ESC ^
Display 43 data lines	ESC _
Display next page	ESC K
Display previous page	ESC J
Load user line	ESC f
Display user line	ESC g
User line display off	ESC e *or* ESC h
Clear unshifted label line	ESC z (CR
Program & display function key label	ESC z *field *label CR
Clear function key label	ESC z *field CR
Assign display attribute to a message field	ESC \ *mf *attr
Clear unprotected page to display attribute	ESC ! *attr
Assign line attribute	ESC G *attr

PROTECTING DATA

Write-protect mode off	ESC (
Write-protect mode on	ESC)
Clear cursor column to write-protected spaces	ESC V
Protect mode off	ESC '
Protect mode on	ESC &

GRAPHICS CHARACTERS

Line-drawing graphics mode on	ESC $
Line-drawing graphics mode off	ESC %

CURSOR CONTROL

Cursor left (backspace)	CTRL H
Cursor right	CTRL L
Cursor up - no scroll	CTRL K
Cursor up - scroll	ESC j
Cursor down - no scroll	CTRL V
Cursor down - scroll	CTRL J
Cursor to start of line	CTRL M
Cursor to start of next line	CTRL _
Move cursor to home position on current page	ESC { *or* CTRL ^
Move cursor to specific line	ESC [*line
End-of-line wrap mode off	ESC 0
End-of-line wrap mode on	ESC ~
Received CR mode = CR	ESC 9
Received CR mode = CRLF	ESC 8
Autopage mode off	ESC w
Autopage mode on	ESC v
Address cursor in 80-column current page	ESC = *line *col
Address cursor in specific 80-column page	ESC - *page *line *col
Address cursor in specific 80-column window	ESC - *wind/page *line *col
Read cursor address in 80-column current page	ESC ?
Read 80-column window/page number & cursor address	ESC /

EDITING

Clear all tab stops	ESC 3
Set tab stop	ESC 1
Clear tab stop	ESC 2
Tabulate cursor	ESC i *or* CTRL I
Backtab	ESC I
Insert mode on, replace mode off	ESC Z
Insert mode off, replace mode on	ESC r
Insert space character	ESC Q
Insert line of spaces	ESC E
Delete cursor character	ESC W
Delete cursor line	ESC R

CLEARING DATA

Clear page to nulls	ESC *
Clear page to spaces	ESC +
Clear page to write-protected spaces	ESC ,
Clear unprotected page to spaces	ESC ; *or* ESC +
Clear unprotected page to nulls	ESC :
Clear unprotected page to display attribute	ESC ! *attr
Clear unprotected page to spaces from cursor	ESC Y
Clear unprotected page to nulls from cursor	ESC y
Clear unprotected line to spaces from cursor	ESC T
Clear unprotected line to nulls from cursor	ESC t
Fill page with Hs	ESC F

SENDING DATA

Send line through cursor	ESC 6
Send unprotected line through cursor	ESC 4
Send page through cursor	ESC 7
Send unprotected page through cursor	ESC 5
Mark block beginning	ESC CTRL B
Mark block end	ESC CTRL C
Send entire block	ESC s
Send unprotected characters in block	ESC S
Report terminal status	ESC [
Report attribute under cursor	ESC D

PRINT FUNCTIONS

Print formatted page through cursor	ESC P
Print formatted unprotected page through cursor	ESC P
Print unformatted page through cursor	ESC p *or* ESC L
Auxiliary print mode off	ESC A
Auxiliary print mode on	ESC @
Transparent print mode off	ESC a
Transparent print mode on	ESC `
Bidirectional mode off	CTRL T
Bidirectional mode on	CTRL R
Pass next incoming character to printer (enhanced)	CTRL P *schar
Set print terminator	ESC P *t1 *t2
Define delimiters	ESC x *d1 *d2

CHARACTER SETS

Select PC character set	ESC SPACE m *charset
Set national mode	ESC SPACE U
Set multinational mode	ESC SPACE T

325 COLOUR PALETTE MODE

Select colour map values	ESC SPACE $ *fc325 *bc *map
Select a predefined colour palette	ESC SPACE # *pal325
Map blank attribute	ESC SPACE %
Map reverse attribute	ESC SPACE &
Select border colour	ESC SPACE ` *col325
Disable intensity attribute	ESC SPACE "
Enable intensity attribute	ESC SPACE !

370/350 COLOUR MAP MODE

Select foreground colour palette	ESC SPACE a *pal370
Select background colour	ESC SPACE c *col370
Redefine character attribute association	ESC SPACE g *a *fc *bc *assoc

370/350 COLOUR DIRECT MODE

Assign foreground colour	ESC SPACE d *fc370
Assign background colour	ESC SPACE e *bc370
Assign display attribute to unprotected characters	ESC SPACE f *assattr

Assign foreground/background colours	ESC SPACE h *CGAcol
Assign fore/background colours to write-protected chars	ESC SPACE i *CGAcol
Assign foreground colours to write-protected chars	ESC SPACE j *fc370
Assign background colours to write-protected chars	ESC SPACE k *fc370
Assign display attribute to write-protected characters	ESC SPACE 1 *assattr

370/350 COLOUR MISCELLANEOUS

Select border colour	ESC SPACE b *c370
Assign replacement character colours & attributes	ESC SPACE y *fc370 *bc *attr

Additional Commands

DISPLAY COLOUR

DEC VT modes:	Foreground colour	CSI = * F
	Background colour	CSI = * G

where * is one of the following numbers:

0	Black	4	Red	8	Grey	12	Light Red
1	Blue	5	Magenta	9	Light Blue	13	Light Magenta
2	Green	6	Brown	10	Light Green	14	Yellow
3	Cyan	7	White	11	Light Cyan	15	Light White

Reflection 4 compatibility:	Foreground colour	ESC [3 x m
	Foreground+bold colour	ESC [4 x m
	Background colour	ESC [5 x m
	Background+bold colour	ESC [6 x m

DISPLAY SIZE

Number of screen lines — ESC [= 1 ; * p

MOUSE CURSOR

Mouse cursor style (see table below for * value) — ESC [= 2 ; * p

0	Default Cursor (I-Beam)	4		8	
1		5		9	
2		6		10	No Cursor
3		7			

MOUSE REPORTING IN ALPHANUMERIC APPLICATIONS

Arm the emulator for mouse operation — ESC [= *arg g

where *arg is of the format:

bit 7 - 3	0 0 1 1 0
bit 2	when set enables motion events
bit 1	when set enables button release events
bit 0	when set enables button press events

If all bits are cleared then any outstanding arming request is cancelled. The mouse remains armed until cancelled. When any of the selected events occur, the following report format is sent to the host:

ESC [= <Event Type> ; <Button Status> ; <Column> ; <Row> r

Where: <Event Type> is the event(s) that caused the report in the same format as the arming sequence.

<Button Status> is of the format: 00110LMR
where LMR indicates which button caused the event.

<Column> and <Row> are the alphanumeric position of the mouse.

REPORTS

Report application name & version (in DEC VT modes)	ESC [0 ; 1234 c

Notes

D

Product Specification

This appendix describes the level of support provided by each terminal emulation.

Introduction

The following sections describe the level of support provided by each terminal emulation throughout the product range. Note that your product version may not support all the terminal emulations listed here.

General

Limitations:

Key click not supported.

Badge and Magnetic Card reader support are supported via ‘Wedged' data devices connected to the unit’s keyboard.

No downloadable program module.

The keyboard layouts may differ but substantially provide the same capabilities as the native terminal.

No screensavers.

File Transfer protocols not supported on embedded products / thin clients.

API’s not supported on embedded products / thin clients.

Smooth Scroll and Variable Scroll rates not supported.

No graphics or APA graphics.

Telnet

Specification:

Implements RFC 854, 855, 856, 857, 858, 860, 1091, 1408, 1571, 1572.

Implements RFC 1205, 2877 for IBM 5250.

Implements RFC 2355, 1576, 1646, 1647 for IBM 3270.

AixTerm

Limitations:

No Vertical tab stops.

No Select Alternate presentation variant.

No Select reversed string.

No Select font in graphic rendition.

No Virtual terminal commands.

No Set curses fix.

No Page scroll.

No Alternate screen buffer.

No Xwindows capabilities.

Bull BQ3107/7107

Specification:

Reference manual Bull Questar 310, Terminal BQ 3107
(82 A2 78ST REV0. February 1990).

Limitations:

Remote and Line printing are not supported.

Data General D200/D410

Specification:

Dasher D410 Display Terminals User's Manual
(014-000761-02 December 1983).

Digital VT Emulation

Specification:

Digital VT 420 Programmer's Manual
(EK-VT420-RM-001).

Limitations:

The DEC Multisession and SSU protocols are not implemented.

HP 700/92 Emulation

Specification:

HP 2392A Reference Guide (02394-90001. April 1984).

IBM 3270 Emulation

Specification:

3270 Information Display System Data Stream Programmer's Reference
(GA23-0059-07).

Limitations:

No Double byte printing.

IBM 5250 Emulation

Specification:

5494 Remote Control Unit Functions Reference. Release 2.0. (SC30-3533-02).

Limitations:

No text assist in Right to Left writing mode.

No double-byte printing.

The 3812-1 Non Host Print Transform (Non-HPT) print protocol is not supported.

No Calculator / Hex key.

No Password encryption.

No Auxillary port support.

No Control Unit customisation.

The specification is also defined by the 5250 Device Capabilities report Bytes 0 thru 5 which are 0x7f,0x11,0x4e,0x00,0x03,0x80 for Display Sessions.

IBM 3151 Native Emulation Model 11 & 31

Specification:

IBM 3151 Ascii Display Station Reference Manual (GA18-2634-01. 1989).

ICL 7561

Specification:

ICL DRS300 manual (R15722/001 Appendix 1 September 1986).

Limitations:

Some field validation checks are not supported.

Load templates are not supported.

Host print protocol is not supported.

Stratus V102

Specification:

V102 Display Terminal Operator's Manual (TVI 131974-00 June 1985).

Limitations:

Page print flip mode not supported.

Serial configuration commands not supported.

Select character set commands not supported.

Tandem 6526/6530 Emulation

Specification:

Tandem 653x Multi-Page Terminal Programmer's Guide
(82310-B00 December 1983).

Limitations:

Telnet Line-Mode is not supported.

Ansi media copy commands are not supported.

No support for auxiliary port.

No support for extended buffer and cursor commands.

String configuration, machine and directory commands not supported.

Data table re-definition commands not supported.

Remote termination not supported.

I/O device and file commands not supported.

Set colour configuration commands not supported.

Televideo 955

Specification:

Televideo 955 Display Terminal Operator's Manual (131969-00-B Sept 1985).

Limitations:

Page print flip mode not supported.

Serial configuration commands not supported.

Select character set commands not supported.

Unisys T27

Specification:

Burroughs T27 Programmer's Reference Manual (1196904 Aug 1986).

Limitations:

Print protocol, printer sessions and auxiliary i/o are not supported.

Some local-only keyboard ctrl and esc commands are not supported.

Data sharing and scratchpad functions are not supported.

Wyse 60 Native Emulation

Specification:

WY-60 Programmer's Guide (880261-01 Rev A).

Limitations:

Only 16 colours supported, not 64.

Some colour commands are not supported.

No page edit mode.

Modem and aux port commands not supported.

No Keyboard scan code mode.

Character cell size commands not supported.

Function key label save commands not supported.

Automatic font loading not supported.

Remote caps lock commands not supported.

Ignore nulls commands not supported.

Attribute overwrite mode not supported.

Disable intensity commands not supported.

Some select personality commands not supported.

Wyseword mode not supported.

Wyse 50, 50+, TVI 910, 925, 950, ADDS-A2, HZ 1500, Wyse PC-Term

Specification:

WY355/ES Reference Manual (883227-01 Rev. A).

Limitations:

All modes:

As Wyse 60 above where applicable.

TVI modes:

Select Print / Line termination characters.

Wyse PC-Term:

Default unit command not supported.

Program key with direction not supported.

Set print terminators not supported.

Define delimiters not supported.

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