Intermec

Quick Reference Guide

JANUS 900 MHz Terminal Emulation for the Model 200 Controller

P/N 066576-001

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4 3270 and 5250 Commands

Before You Begin

This section introduces you to standard warranty provisions, safety precautions, warnings and cautions, document formatting conventions, and sources of additional product information.

Warranty Information

To receive a copy of the standard warranty provision for this product, contact your local Intermec sales organization. In the U.S. call 1-800-755-5505, and in Canada call 1-800-688-7043. Otherwise, refer to the Worldwide Sales & Service list that comes with this manual for the address and telephone number of your Intermec sales organization.

About This Manual

This table summarizes the information in each chapter and appendix.

Chapter	What You Will Find
1	Provides basic information for setting up and using your JANUS data collection computer with terminal emulation.
2	Describes the JANUS TE keypad and explains how to use terminal functions on the keypad.
3	Tells you how to customize your JANUS terminal emulation configuration.
4	Lists the terminal emulation commands you can use with your 3270 and 5250 terminals.
5	Lists the terminal emulation commands you can use with your VT/ANSI terminals.
6	Provides information about error messages that you may encounter while using terminal emulation software.
A	Provides a summary of available TE commands for all supported devices. It also provides copies of the configuration files included on your TE installation disk.
B	Provides information about VT/ANSI key support and instructions for remapping keys on your JANUS device.

Terms and Conventions

The following special terms and conventions occur throughout the manual.

PC Keypad Input

Keystrokes to be entered into the PC are emphasized in **bold**. "Choose **Y**" means you press the key labeled "Y" on the PC keyboard.

When you need to press and release a series of keys in order, the keys appear in order with no connectors. "Press **Shift A**" means that you press and release the **Shift** key, and then press **A**.

When you must press more than one key at the same time, the keys are connected by a dash in the text. "Press **Ctrl-Alt-Del**" means that to perform a warm boot on the host PC, you need to hold down the **Ctrl**, **Alt**, and **Del** keys at the same time. When the keys are connected by a dash, you must press and hold the keys in the order shown.

JANUS Keypad Input

Key icons represent keystrokes you enter on the JANUS device. For example, "press enter " directs you to press the key labeled "enter " on the JANUS keypad.

PC and JANUS Commands

Command syntax appears in the text as you should enter it into the PC or JANUS device. For example, to see a listing of directories on the device, type the following command:

```
dir
```

Optional command line parameters are enclosed in brackets [ ].

Notes

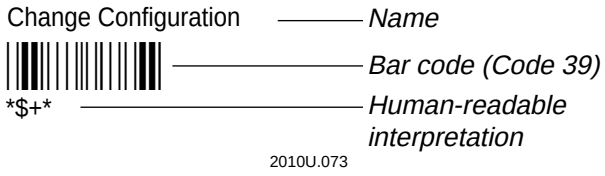
The notes in this manual use the following format.

Note: *Notes either provide extra information about a topic or contain special instructions for handling a particular condition or set of circumstances.*

IMPORTANT! *Is used to flag critical information about a topic.*

Format Conventions for Bar Codes

You can scan the bar codes listed in this manual to enter data or perform a command. The bar code labels in this manual are printed in the Code 39 symbology. Each bar code includes the name and human-readable interpretation. For example:



The asterisks (*) at the beginning and end of the human-readable interpretation are the start and stop codes for a Code 39 bar code label. If you are creating bar code labels with a bar code utility, it may automatically supply the asterisks as the start and stop code, so that you only need to type the actual text of the command. You can also create and print configuration labels and reader command labels in Code 93, which has its own start and stop codes.

Other Related Manuals

You may need to refer to other manuals when working with JANUS 900 MHz terminal emulation software. To order additional manuals, contact your local Intermec representative.

Intermec Manuals	Intermec Part No.
Model 200 Controller System Manual	063439
RF System/9180 Controller User's Manual	054292
900 MHz RF Equipment User's Manual	066163
900 MHz RF Gateway User's Manual	066164
JANUS 2010 Hand-Held Computer User's Manual (4MB)	065714
JANUS 2020 Hand-Held Computer User's Manual (4MB)	065715
JANUS 2050 Vehicle-Mount Computer User's Manual (4MB)	065716

Other Manuals

Intermec recommends that 5250 users obtain a copy of the *IBM 5494 Remote Control Unit Functions Reference Manual* for more detailed information regarding 5250 commands, local editing functions, and error messages.

1

Getting Started

This chapter provides basic information for setting up and using your JANUS data collection computer with 900 MHz terminal emulation software.

Introduction

Your JANUS™ 900 MHz device with terminal emulation (TE) software is a DOS-compatible, data collection computer that emulates IBM 3270, IBM 5250, or VT/ANSI terminals. Your JANUS 900 MHz RF device is shipped to you ready-to-use with terminal emulation software and special TE keypads (for 3270 and 5250) already installed.

You can use your JANUS TE device to:

- View terminal screens on your JANUS display.
- Enter data into the screens using the scanner or keypad.
- Access host commands and perform host functions.
- Automatically transmit the data to the host.

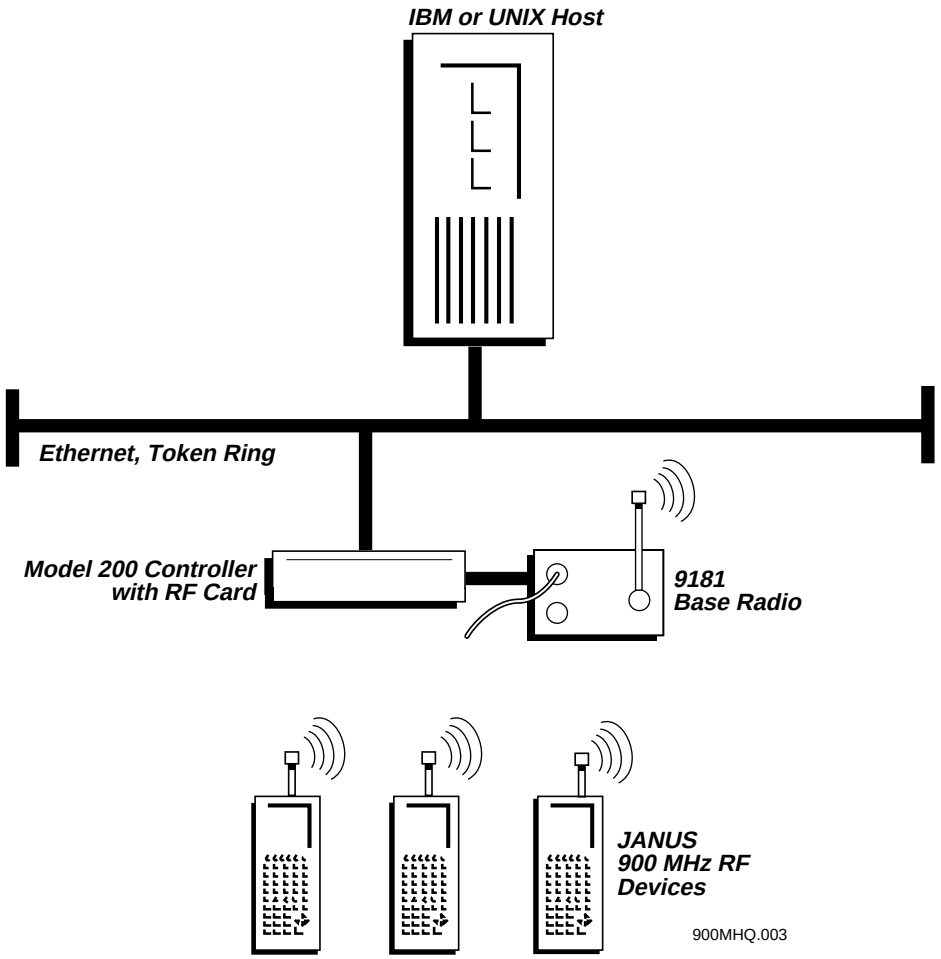
Other features of your JANUS TE device include:

- Auto-login capability.
- Password security.
- Choice of SNA or TCP/IP protocols for IBM terminal emulation.
- 5250 Field Advance configuration.
- Support for display of single byte international character sets.

Typical 900 MHz Configuration

In a typical 900 MHz RF configuration, JANUS devices communicate with a 9181 Base Radio Unit (BRU) using radio frequency (RF) communications. The 9181 communicates with the Model 200 Controller using a serial connection.

RF Adapter Card Connection



Starting Terminal Emulation

Before you can begin using your JANUS device with terminal emulation, you must start the terminal emulation program. You only need to start the program the first time you use it or if you exit. The JANUS device resumes terminal emulation for each data collection session.

To start terminal emulation

1. Type `te` at the DOS prompt on your JANUS device and press enter to start the terminal emulation program. The factory installed TE.BAT file loads the configured TE program(3270, 5250, or VT/ANSI).
2. Wait a few seconds while the display clears and the terminal emulation program starts.

   When the display on your JANUS device shows a login screen (VT/ANSI) or Sign on screen (3270 or 5250), you are ready to use your device as a terminal.

Typical VT/ANSI login screen

900MHQ.001

3270 or 5250 Sign on screen

900MHQ.004

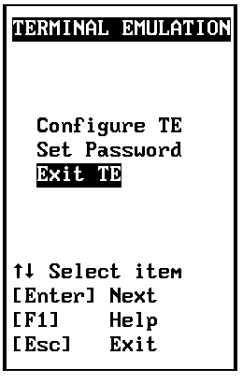
Exiting Terminal Emulation

If you want to use your JANUS device for another application, you must exit the terminal emulation program. Pressing the I/O button does not exit terminal emulation, instead it toggles the JANUS device between an operating state and a suspend state. Once you have started terminal emulation, your JANUS device resumes the terminal emulation program every time you press I/O and switch it to an operating state.

Note: *If the terminal emulation security feature is enabled, you will be asked to provide a password when you access the TE Configuration menu. For more information on establishing TE security, see "Setting Security for the TE Configuration Application" in Chapter 3.*

To exit 3270 and 5250 terminal emulation

1. Press Alt X to access the TE Configuration menu.
2. Highlight the Exit TE option and press enter.



To exit VT/ANSI terminal emulation

1. Press Ctrl F3 to access the TE Configuration Menu.
2. Highlight the Exit TE option and press enter.

   Or,

   Press Ctrl F5 to exit terminal emulation directly.

Unsupported Functions

Terminal Type	Unsupported Functions
3270 and 5250	• 3270 SFE (Start Field Extended) Order and Write Structured Field commands. • 5250 PRINT (X'F6) AID. • 5250 transparent data. • 5250 Write Control Character (WCC) supports error line adjustment field only. • 5250 Start of Header supports error line adjustment only. • 5250 write error code to window and write single structured fields. • 5250 write to display structured field. • 5250 alternate commands. • 5250 extended attributes. • 5250 I/O Feature Input Field accepts any character from all sources of input. • Autotab, Autorepeat, and Macro functions. • Telnet 3270 Regime option (RFC1041).
VT100/220/320, ANSI, and RDRANSI	• VT100 does not support these edit keys: home, insert, delete, page up, and page down. • VT52 mode, Column mode, Reverse Screen mode, and Interlace mode. • Double height and double width characters. • Programmable LEDs. • Screen alignment tests and self-tests. • Report terminal parameters command. The terminal does not send a response. • Identify terminal function. • Select character protection attribute. • National replacement and downloadable character sets. • Autorepeat mode.
All Types	• Printing is not supported.

Note: *Your JANUS device with terminal emulation does not have Interactive Reader Language (IRL) Desktop files loaded. IRL files are available on the JANUS companion disks if needed.*

2

Using TE Features

This chapter describes the JANUS TE keypad and explains how to use terminal functions on the keypad.

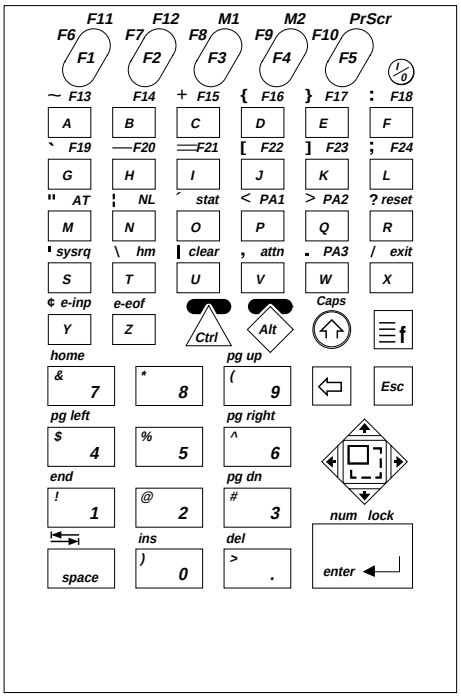
Using the JANUS TE Keypad

Your JANUS 900 MHz TE device comes with a special keypad that contains most of the keys available on 3270 or 5250 terminal keyboards. IBM TE keypads are similar to the regular JANUS keypads, but have additional commands that are specific to 3270 or 5250 systems. Many of these additional commands are accessed through key combinations described later in this chapter.

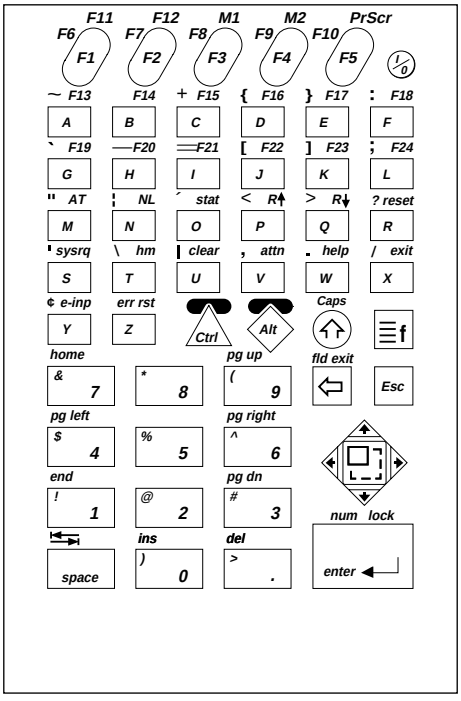
You enter VT100/220/320 and ANSI commands using a standard JANUS keypad.

JANUS 2010 and 2020 Terminal Emulation Keypads

3270



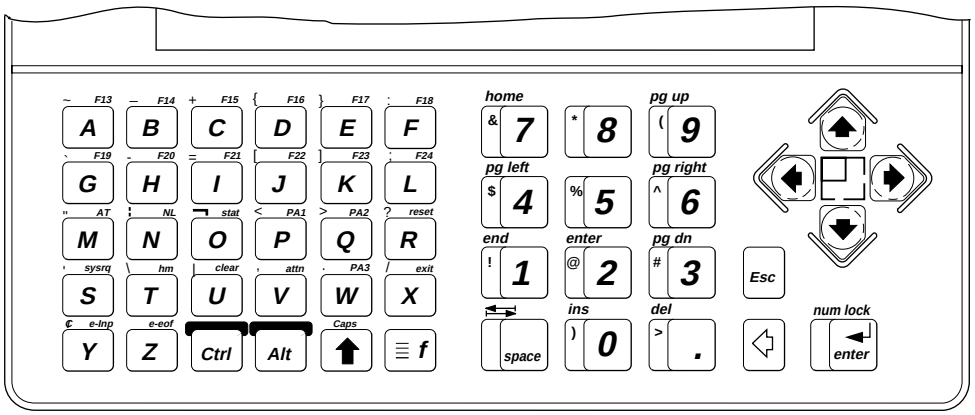
5250



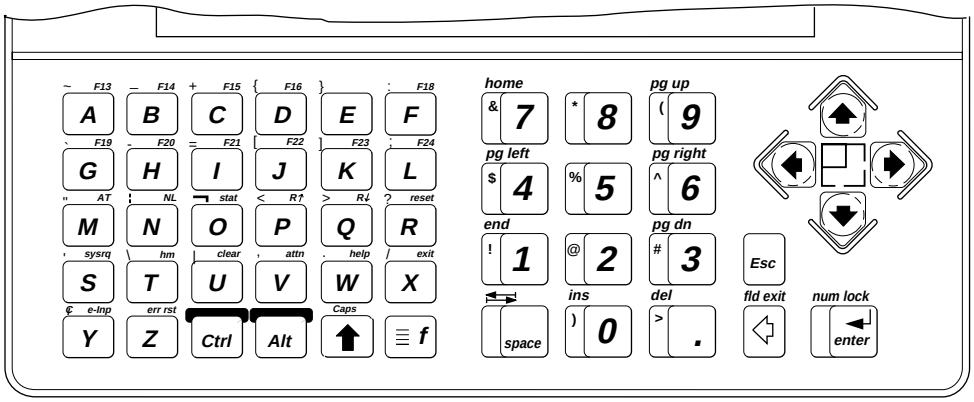
2-4TEQ.002

Note: *Although they appear on the keypad overlays, the M1, M2, and PrScr functions are not currently supported for 3270 and 5250 terminal emulation.*

JANUS 2050 Terminal Emulation Keypads



3270



5250

2-4TEQ.013

Accessing the Commands on the Keypad

As on all terminal keyboards, the keys on the JANUS TE keypad have their main function marked directly on the key itself. To access that character or function, just press the key. Your JANUS TE keypad provides access to additional keys and commands. The following paragraphs describe these keys.

Note: *When entering a key combination on the JANUS device, you do not need to press and hold the Ctrl , Alt , space , or ≡f keys. Once you press a key, the keystroke is stored in memory and is used with the next keystroke as a key combination.*

Accessing Uppercase Letters and Symbols

The ⇧ key accesses uppercase letters. For example, to type the letter "A" you press ⇧ A . This key also accesses the symbols printed on the number keys.

Accessing Characters or Commands

The Ctrl and Alt keys let you access characters or commands on the keypad that are printed above the letter keys and function keys. The Ctrl key activates the commands printed on the top left of the alphabetic keys. Similarly, the Alt key activates commands printed on the top right of the alphabetic keys.

To use the Ctrl and Alt keys, simply press and release the key, and then press the corresponding key that has the desired command or character printed above it. For example, to create an equal sign (=), press Ctrl and then press I .

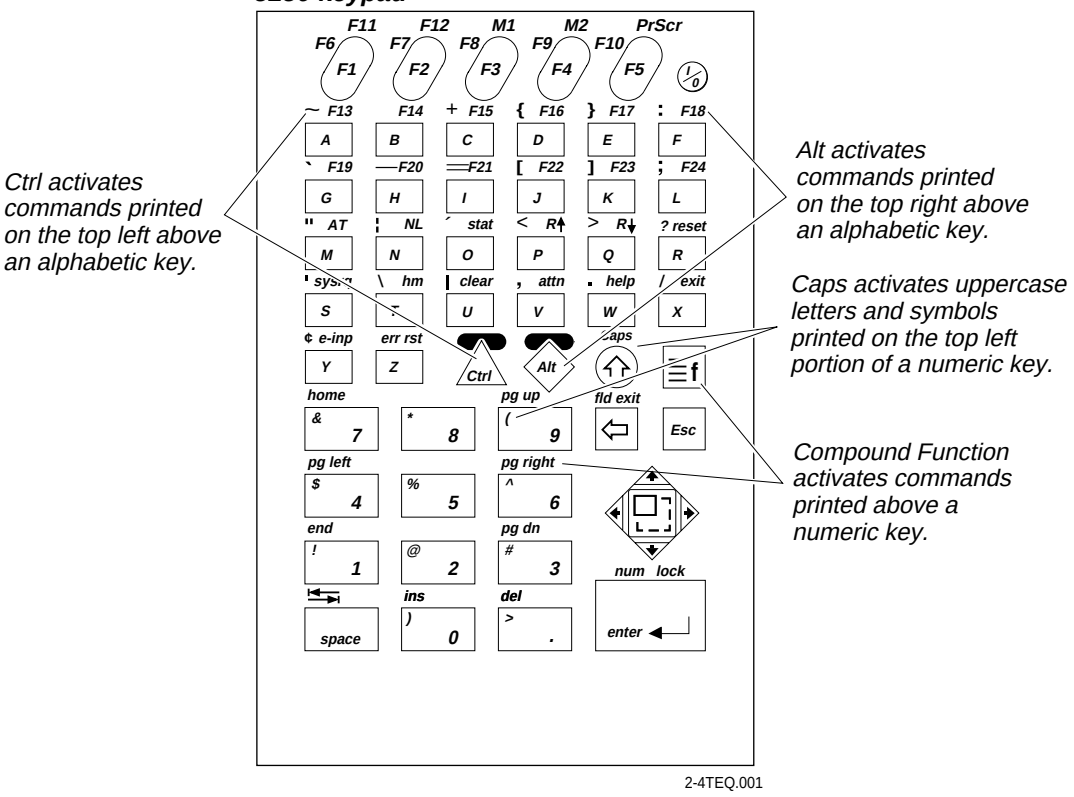
Note: *When you exit TE and return to the DOS prompt, the Ctrl key will no longer access the characters printed above the letter keys. Use the compound function key (≡f)instead.*

To provide even more commands on your keypad, the JANUS device features a compound function key. This key works similarly to the Ctrl and Alt keys by activating a different command when pressed. For terminal emulation keypads, use the ≡f key to access the commands printed above the numeric keys. For example, to activate the Insert command, you press Ctrl and then 0 . For a tab, you press ≡f and then space .

Your JANUS user's manual describes key sequences and commands that are not shown on the terminal emulation keypads. If you exit terminal emulation, the key sequences shown in the JANUS user's manual become available. For information on acquiring other keypads, contact your Intermec sales representative.

Note: *Unlike the regular JANUS keypad where you can press the* ≡f *key multiple times to access even more sets of commands, you cannot access multiple commands by pressing the* ≡f *key in TE.*

5250 keypad



Viewing the Input Screen

When you start terminal emulation, you see all or part of an input screen on the JANUS TE display. This section describes how you access other parts of the input screen when you are not operating in Full Screen mode and how to enter data into input fields.

The JANUS TE 16 x 20 display shows only part of each 25 x 80 screen that appears on a full-sized terminal. You can use the JANUS TE display to access the full screen by using the viewport movement functions described on the following pages. This guide uses the following terms to describe the TE display.

Screen Refers to a full 25 x 80 screen that appears on a standard terminal display.

Viewport Refers to the 16 x 20 JANUS TE display. The viewport shows only a portion of the 25 x 80 screen and you can move it around to show different areas of the standard terminal display.

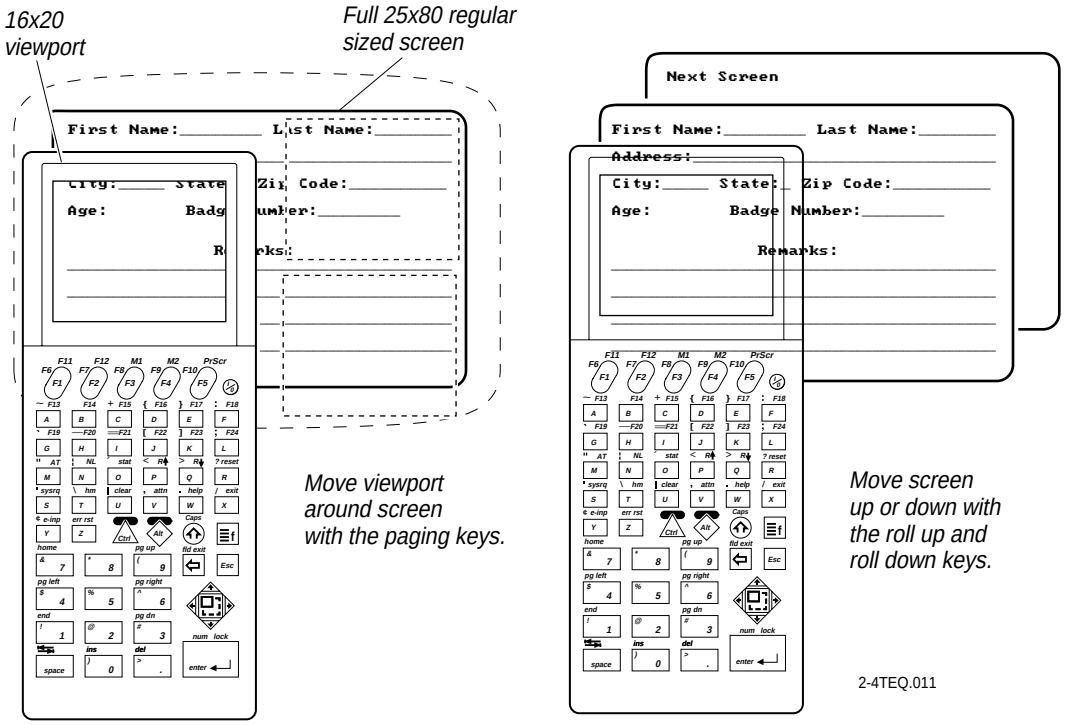
Note: *There are several display exceptions for non-EBCDIC keypad characters when you are working in Terminal Emulation mode. Brackets [ ](Ctrl J and Ctrl K) appear as parentheses ( ). You cannot use the ^ character (⇧ 6) in TE mode.*

How the Viewport Works

The viewport lets you view screens and enter data by showing the part of the screen you are using. When you need to access part of a screen that does not appear on the viewport, the viewport changes its display to show the part of the screen you need. The viewport acts as a window to the larger screen, and when it changes its display, it behaves as if it were "moving" across the screen.

Viewport movement functions are useful for viewing text that is outside of the viewport boundary or for viewing error regions on the TE display. Refer to your JANUS user's manual for a detailed explanation of viewport movement functions.

Note: *When you are using TE, the viewport automatically moves to the cursor when there is data entry from the host or the terminal.*



Understanding the Roll Command

5250 terminals support the Roll command (Hex 23) received from a host application. Using this command, a host application can roll an area of the screen up or down. The direction of the Roll and number of lines to Roll, are specified in the command.

The Roll command should not be confused with the Roll keys. The Roll keys cause the host to send down additional screens when you are at a Roll screen. A Roll screen typically has text in the lower right hand corner of the display indicating there are additional screens to view. For example, the text “More .....” or “+” in the lower right hand corner of the display indicates that you can press a Roll Up key to view additional information.

- A Roll command received from a host application moves the screen, but not the viewport. You can see the screen scroll through the viewport when you roll up or down, but the viewport itself remains stationary.
- Use the Paging keys (page up, page down, page right, page left) to move the viewport within a screen; they do not move the screen itself.

For more information on the roll up and roll down keys and paging keys, see Chapter 3, “3270 and 5250 Commands.” For more information on the Roll command, see the *IBM 5494 Remote Control Unit Functions Reference Manual*.

Auto-Advancing Through Fields on 5250 TE Screens

You can set up your JANUS device so that when you scan data into a field on a 5250 TE screen, a Field Exit command clears the rest of the field, advances to the next field, and triggers an auto-enter field to send an Enter to the application and submit the data. Using the auto-advance feature, you can just scan data and never touch the keypad.

To set up auto-advance for bar code scanning

1. To configure your JANUS device for auto-advancing, you need to set the Postamble command to the 5250 Field Exit code. The 5250 Field Exit code on your JANUS device is mapped to a PC backspace character.

   Note: *You configure preamble and postamble with the JANUS configuration application (IC.EXE). Preamble and postamble are disabled with the default configuration. See your JANUS user's manual for information on using the JANUS configuration application.*

2. Use the terminal configuration screen to toggle the Auto Field Advance setting to Disable. This disables the normal auto-advance feature so that the cursor does not automatically move to the next field on the application screen when a character is entered in the last character position of the field.

   The Disable Auto Field Advance setting functions as if the field has a mandatory field exit turned on (an AS/400 activated feature known as Check FE). As a result, legacy AS/400 applications do not have to be modified to turn this field on properly for bar code support.

   Note: *The default setting is Auto Field Advance enabled.*

3. Save your new configuration.

Understanding Status Line Messages

A status line is provided for JANUS devices configured as 3270 or 5250 terminals. Status messages are displayed on the status line and report the operating status of both the JANUS device and the host system or work station controller.

Use the Alt O keys to toggle the status line on and off.

TE Session Established

2-4TEQ.006

Host Processing Data

2-4TEQ.010

This table summarizes status line information.

Status Message	Description
blank	No activity, ready for operator input.
ERR (5250 terminals only)	The user pressed an AID key to transmit data to the host. The host did not accept the data and transmitted a Write Error command to the TE application indicating the field where the error occurred. Use the viewport to view the error message and corrective procedure. Press ErrRst to clear this message. You can type or scan data while the host is busy (XSYS appears on the status line). If an error occurs on the current screen being processed, you may have to scan or enter your data again.
INIT	Terminal is attempting to connect to the server.
INS	Terminal is in Insert mode.
LOCK	Keyboard is locked by the host application.

Status Message	Description
MSGWAIT (5250 terminals only)	A system message is waiting to be read.
PEND	The terminal is connected to the server and is pending for an active host session.
TNAPP	Terminal is in session with a host application.
TNSVR	Terminal is connected to the server.
F, C, or D	Current Viewport mode of the device. One of these characters is displayed to indicate the Viewport mode status. F Viewport Follow mode is enabled. C Viewport Center mode is enabled. D Viewport movement is disabled.
XSYS	The host is busy and the TE application is waiting for a host response. You can type or scan data, but the data will not appear on the screen until the host is available again.

3

Customizing Your Configuration

This chapter provides information for customizing your JANUS 900 MHz terminal emulation environment.

Changing TE Session Options

After you have installed TE software on your JANUS device, you need to configure the software for your unique operating environment. You can change TE configuration options for a session using the methods described below.

Note: *Preamble and postamble functions are configured using the JANUS configuration application (IC.EXE). Preamble and postamble are disabled with the default configuration. See your JANUS user's manual for information on using IC.EXE.*

Accessing the Configuration Application

To change 3270, 5250, and VT/ANSI options using the Configuration Application

1. Start the terminal emulation program. For more information, see "Starting Terminal Emulation" in Chapter 1.

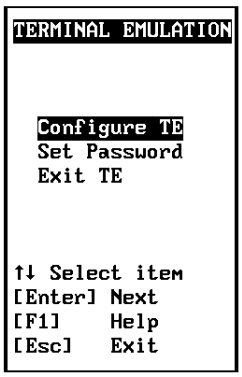
2. Press Alt X to access the 3270 or 5250 configuration application.

   Or,

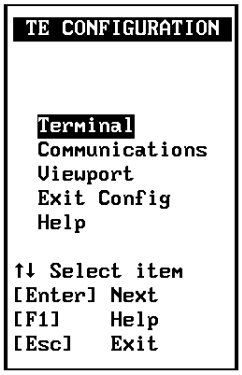
   Press Ctrl F3 to access the VT/ANSI configuration application.

   If you do not press Alt X or Ctrl F3, you bypass the configuration application, and your terminal emulation session begins after a 5-second delay.

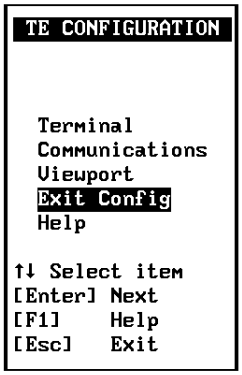
3. Select Configure TE and press enter to specify configuration options.



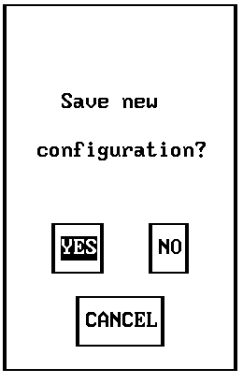
4. Use the ▲ or ▼ to highlight the function that you want to configure and press enter.



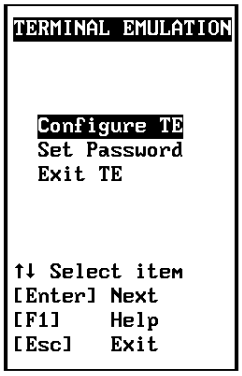
5. After making your changes, highlight Exit Config and press enter to exit the configuration application.



6. After entering all configuration parameters, you can save the configuration you created during the session.
   - Choose Yes and press enter if you want to save the configuration options. Configuration options are saved to the RAM drive, drive E.
   - Choose No and press enter if you do not want to save the configuration options. You then exit to the DOS prompt.
   - Choose Cancel and press enter to return to the TE Configuration Menu. This option gives you an opportunity to change or correct the configuration options that you selected.



7. Choose one of these options on the Exit menu.

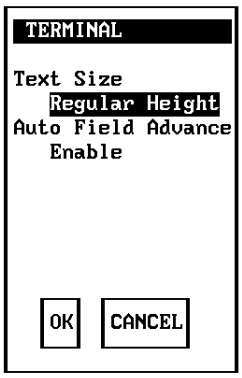


   - Select Configure TE and press enter to return to the TE Configuration Menu.
   - Select Set Password and press enter to set a terminal emulation password. For more information on TE passwords, see "Setting Security for the TE Configuration Application" later in this chapter.
   - Select Exit TE and press enter to exit the configuration application.

3270 and 5250 Configuration Parameters

Use the following screens to enter configuration information for terminal configuration, communications configuration, and viewport movement parameters.

Terminal

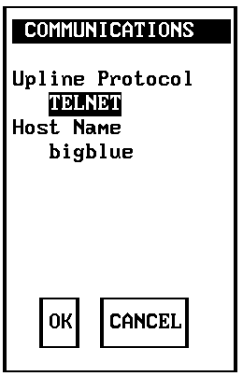


Text Size Specifies the text size displayed on the JANUS screen. Options are regular height (normal characters) or double height (double high text).

Note: *Display of double height characters is not supported on the JANUS 2050.*

Auto Field Advance Enables or disables the auto field advance option. Auto field advance enabled is the default setting.

Communications

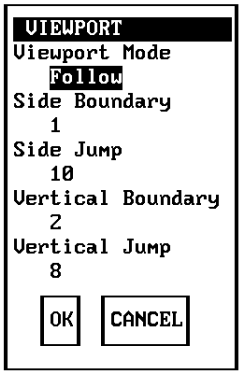


Upline Protocol Select the protocol you are planning to use. Setting the upline protocol (upline to the Model 200 Controller) to SNA forces the JANUS device to use the SNA 5250 Terminal Session Manager (TSM) on the Model 200 Controller for communicating with the host. Setting the protocol to TELNET forces the client to use the Telnet TSM to communicate via TCP/IP to the host. Both TSM components reside on the Model 200 Controller and are transparent to the terminal emulation user.

Host Name Enter the name of the host to which you want the JANUS device to connect. The host name can be up to 15 characters in length.

Note: *If you have linked a device with a host name on the Model 200 Controller, you do not need to enter a host name on this screen. If you have not linked a device with a host name on the controller, you must enter a host name for this parameter. The host name on this screen must match a host name in the list of available hosts defined on the controller.*

Viewport



Viewport Mode Specifies one of the following viewport movement modes:

- Follow enables Viewport Follow cursor mode.
- Center enables Viewport Center mode.
- Manual disables Viewport movement.

Side Boundary (Follow mode) Controls side movement of the viewport. The viewport moves when the cursor is the specified number of characters from the side boundary. Options are 1 to 10 characters.

Side Jump (Follow mode) Specifies the number of characters the viewport moves in a horizontal direction. Options are 1 to 10 characters.

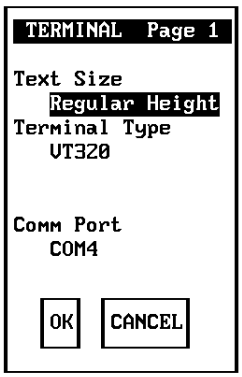
Vertical Boundary (Follow mode) Moves the viewport when the cursor is the specified number of characters from the vertical viewport boundary. Options are 1 to 10 characters.

Vertical Jump (Follow mode) The JANUS device uses this parameter to control vertical movement of the viewport. Options are 1 to 10 characters.

VT and ANSI Configuration Parameters

Use the following screens to enter configuration information for terminal configuration, communications configuration, and viewport movement parameters.

Terminal

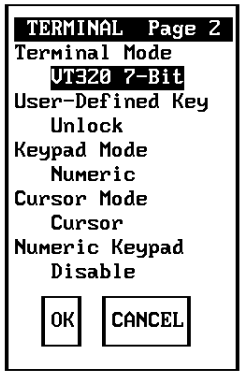


Text Size Specifies the text size displayed on the JANUS screen. Options are regular height (normal characters) or double height (double high text).The default is regular height.

Note: *Display of double height characters is not supported on the JANUS 2050.*

Terminal Type Selects the terminal type used by the host system. The supported terminal types are: VT100, VT220, VT320, ANSI, and RDRANSI.

Comm Port Select the serial port you are using for terminal emulation. Use COM4 for the RF communications port, or COM1 for CrossBar. The default is COM4.



Terminal Mode VT series terminals have different modes to exchange escape sequences, control commands, and status reports with an application.

User-Defined Key For VT220/320 only, you can set this field to lock or unlock. There are 15 programmable function keys: F6 through F14, Do, Help, and F17 through F20. When this field is set to Unlock, you can program any of the function keys you want. When you set the field to Lock, the function keys cannot be reprogrammed. The default is Unlock.

Keypad Mode VT series terminals have two modes for function keys, editing keys, and numeric keys: Application mode and Numeric mode. These keys generate different key codes depending on the mode your VT terminal is using. The default is Numeric mode.

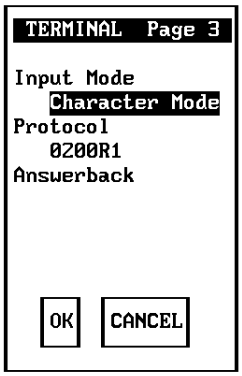
If you select Numeric mode, you generate ANSI cursor control ESC sequences that correspond to what appears on the face of the keys.

If you select Application mode, you generate application ESC sequences for the key code. For more information, see Appendix B, “VT/ANSI Keyboard Remapping.”

Cursor Mode VT series terminals have two modes for arrow keys: Application mode and Cursor mode. These keys generate different key codes depending on the mode your terminal is using. The default is Cursor mode.

Numeric Keypad You can use this field to enable or disable Numeric Keypad mode on the JANUS device. The default is disable.

When you enable Numeric Keypad mode, numeric keys function like the numeric keys on the numeric keypad. When you disable Numeric Keypad mode, numeric keys function like the numeric keys on the main keyboard.



Input Mode Options are Line mode or Character mode.

If you select Line mode, you enter a line of characters on your JANUS device and press enter before it is transferred to the host. In Line mode, communications overhead is reduced because input is sent one line at a time instead of one or a few characters at a time.

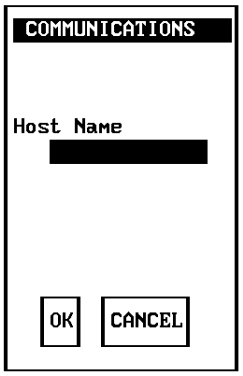
If you select Character mode, each character you type is immediately sent to the host.

Protocol Toggles between 0200R1, standard, and enhanced. You must use the 0200R1 protocol if you want your JANUS device to communicate with the Model 200 Controller.

Answerback The answerback string is sent from a connected JANUS device to the host in response to an ENQ from the host or as a key sequence from the user.

This field can be up to 30 characters in length. Any ASCII character from 0 to 255 can be entered as part of the answerback string. A carriage return can be placed anywhere in the Answerback field. Enter the following four characters for a carriage return: **<cr>**.

Communications

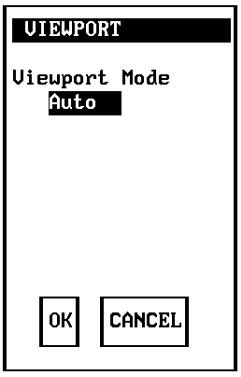


Host Name Enter the name of the host to which you want the JANUS device to connect. The host name can be up to 15 characters in length and is case sensitive.

Note: *If you have linked a device with a host name on the Model 200 Controller, you do not need to enter a host name on this screen. If you have not linked a device with a host name on the controller, you must enter a host name for this parameter. The host name on this screen must match a host name in the list of available hosts defined on the controller.*

Viewport

Viewport Mode You can choose the Viewport mode to be auto or manual. Auto Viewport mode enables the viewport to automatically follow the cursor during the terminal emulation session. Manual Viewport mode requires you to move the JANUS viewport to follow the cursor. The default is Auto mode.



Setting Security for the TE Configuration Application

You can set a password to control access to the terminal emulation configuration application. When a TE password is enabled, the Verify TE Password screen is displayed when you use a hot key (Alt X for 3270 and 5250 or Ctrl F8 for VT / ANSI) to access the configuration application.

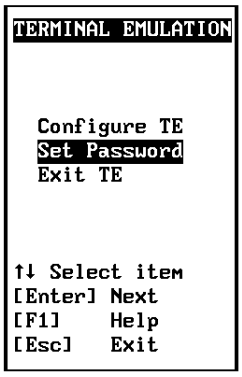
A TE password can be a maximum of 10 characters in length and is stored in an encrypted form in the TE.SEC file. A password that you set on the device using the TE configuration feature is only valid for the current TE session. When you reconnect to the host through the Model 200 Controller, the permanent password stored on the Model 200 Controller is again downloaded to the connected device and overwrites TE.SEC.

Note: *The TE.SEC file should be stored on the E drive and* ***NOT*** *on the C drive. Intermec recommends that you keep a backup encrypted TE.SEC file on the C drive in case the E drive version is lost or damaged.*

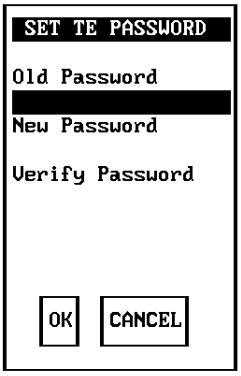
To enable or disable the TE password

1. Press Alt X (3270 or 5250) or Ctrl F8 (VT / ANSI) to access the TE configuration application.

2. Use the ▲ or ▼ to highlight Set Password and press enter.



3. Enter information on the Set TE Password screen then Select OK and press enter.



Old Password This field is for password verification purposes. Asterisks representing the password are displayed on the screen. An error message, "Incorrect Old Password Entry," appears if the data you enter does not match the original password.

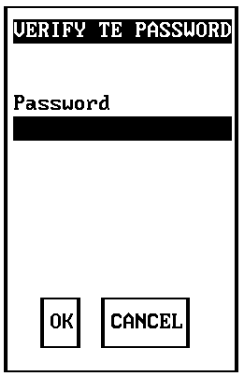
Note: *Leave this field blank if no password is configured.*

New Password Type the new password in this field. Asterisks are displayed in the field for each keystroke you enter in this field. To disable the security feature, leave this field blank.

Verify Password Type the new password again to verify that it was entered correctly. Asterisks are displayed for keystrokes in this field.

Note: *To remove an existing password, enter the current password in the Old Password field and leave the New Password and Verify Password fields blank. Choose OK and press enter to remove password protection.*

4. After you set a password, the Verify TE Password screen is displayed when you attempt to access the TE configuration application. Type the password and press enter ↵ to proceed.



Using the Auto-Login Feature

The TE auto-login feature is invoked at TE startup when an auto-login script is detected. The script file, AUTOLOG.SCR must be stored in the application startup directory.

Auto-login information is lost when you reboot your JANUS device. In addition, processing of the auto-login script is terminated if you press any key during the auto-login sequence. The Auto-Login Restart commands (Alt F5 for 3270/5250 or Ctrl F4 for VT/ANSI) allows you to restart the auto-login sequence when a host session is broken. For more information on the Auto-Login Restart commands, see Chapter 4, "3270 and 5250 Commands" or Chapter 5, "VT/ANSI Commands."

IMPORTANT! *Auto-login information is saved when you end a TE session by logging off from the host computer. This DOES NOT prevent another user from establishing a TE session using your login informationd. You must exit the terminal emulation application to purge auto-login information.*

Developing Auto-Login Scripts

A typical auto-login script consists of a few Input and InputHidden commands followed by a HostName command, followed by a series of WaitFor and Send commands. A very simple script may not have any input commands if all of the JANUS devices are using the same account.

There are six commands you can use to create auto-login scripts. All commands are case sensitive. For example, WaitFor is a command but Waitfor is not a valid command. For more information on auto-login scripts, see "Sample Auto-Login Scripts" in Appendix A.

Auto-login script commands are defined below:

Input Input is called with two parameters. The first parameter is a quoted string that is used as a prompt to the user. The second parameter is a string variable name indicating where the text string will be stored.

InputHidden Same as the Input script command except that user input is echoed as a string of asterisks.

HostName HostName is followed by a quoted string. The quoted string can be a host name or an asterisk. The host name command acts as an IF clause. If the host name matches, the following section of the script is executed up to the next host name command. If an asterisk is used, it matches any host name.

WaitFor Wait for a list of up to 10 strings. The strings must be quotes and must be separated by a comma. The strings cannot exceed 20 characters in length.

Send This command sends a quoted string or string variable to the host. The quoted string can have an embedded control key in VT/ANSI emulation and embedded IBM mnemonics in 3270 and 5250 emulation.

PromptSessionStart PromptSessionStart is a predefined variable. If this variable is defined and set to any value other than 0, TE prompts the user to press enter before starting a Telnet session with the host.

Control Characters for Auto-Login Scripts

You can also include control characters in your auto-login script. The control character must be enclosed by < > in the AUTOLOG.SCR file.

Note: *For VT/ANSI terminal emulation, you can also use the corresponding hexadecimal value to represent the control character. For a description of control characters and their hexadecimal equivalents, see the "Full ASCII Table" in your JANUS user's manual.*

3270/5250 Control Characters

Control Character	Definition	Control Character	Definition	Control Character	Definition
<ATTN>	Attention	<RTAB>	Right Tab	<F12>	Function Key
<CLEAR>	Clear	<SPACE>	Space	<F13>	Function Key
<CUR_DN>	Cursor Down	<F1>	Function Key	<F14>	Function Key
<CUR_LF>	Cursor Left	<F2>	Function Key	<F15>	Function Key
<CUR_RT>	Cursor Right	<F3>	Function Key	<F16>	Function Key
<CUR_UP>	Cursor Up	<F4>	Function Key	<F17>	Function Key
<DEL>	Delete	<F5>	Function Key	<F18>	Function Key
<ERS_EOF>	Erase EOF	<F6>	Function Key	<F19>	Function Key
<HOME>	Home	<F7>	Function Key	<F20>	Function Key
<INS>	Insert	<F8>	Function Key	<F21>	Function Key
<LTAB>	Left Tab	<F9>	Function Key	<F22>	Function Key
<NEWLN>	New Line	<F10>	Function Key	<F23>	Function Key
<RESET>	Reset	<F11>	Function Key	<F24>	Function Key

VT/ANSI Control Characters

Control Character	Definition	Control Character	Definition	Control Character	Definition
<ACK>	Acknowledgment	<ENQ>	Enquiry	<NUL>	Null, or zeroes
<BEL>	Bell	<EOT>	End of Transmission	<RS>	Record Separator
<BS>	Backspace	<ESC>	Escape	<SI>	Shift In
<CAN>	Cancel	<ETB>	End Transmission Block	<SO>	Shift Out
<CR>	Carriage Return	<ETX>	End of Text	<SOH>	Start of Heading
<DC1>	Device Control 1 (XON)	<FF>	Form Feed	<STX>	Start of Text
<DC2>	Device Control 2	<FS>	File Separator	<SUB>	Substitute
<DC3>	Device Control 3 (XOFF)	<GS>	Group Separator	<SYN>	Synchronous Idle
<DC4>	Device Control	<HT>	Horizontal Tab	<US>	Unit Separator
<DLE>	Data Link Escape	<LF>	Line Feed	<VT>	Vertical Tab
<EM>	End of Medium	<NAK>	Negative Acknowledge		

Loading the Auto-Login File

Create your auto-login file using any text editor or copy and modify one of the example scripts in Appendix A. Save the file you create as AUTOLOG.SCR. You must load the AUTOLOG.SCR file in the same directory as the TE application. Refer to your JANUS user's manual for information about creating drive images and loading the drive image on your JANUS device.

Configuring Terminal Emulation to Display International Characters

You can configure your JANUS 900 MHz terminal emulation device to display single byte international characters. In order to use international character sets, you must configure the device to load Code Page 850. You must copy the Code Page Table with the international characters you want to display to the DISPTBLS.MAP file and then create and download a new drive image on your JANUS device. Refer to your JANUS user's manual for information about creating drive images and loading the drive image on your JANUS device.

Note: *International character maps for 3270 and 5250 TE are stored in the USERDATA \ TERMAPPS \ IBMTE directory on the Model 200 Controller. International character maps for VT/ANSI TE are stored in the USERDATA \ TERMAPPS \ VTTE directory.*

IBM 3270 and 5250 Code Pages

Country	Code Page	File	Other Countries
U. S. English	37	037-850.MAP	Canada
Germany	273	273-850.MAP	
Norway	277	277-850.MAP	Denmark
Sweden	278	278-850.MAP	Finland
Italy	280	280-850.MAP	
Spain	284	284-850.MAP	
France	297	297-850.MAP	
Portugal	500	500-850.MAP	Belgium, Brazil, Switzerland

VT/ANSI Code Pages

To use a custom translation table for VT/ANSI terminal emulation, make a copy of ISO1-850.MAP (for UNIX hosts) or DEC-850.MAP (for DEC/VAX hosts) and copy the file to DISPTBLS.MAP on the JANUS device.

Character Set	File
ISO8859-1	ISO1-850.MAP
DEC Multinational	DEC-850.MAP

AUTOEXEC.BAT and CONFIG.SYS Changes

After installing the correct code page table, you will also need to make modifications to the CONFIG.SYS and AUTOEXEC.BAT files on the JANUS device to load the correct Code Page and display the international characters. The CONFIG.SYS change sets up the display system to use Code Page 850. The AUTOEXEC.BAT change selects Code Page 850 for the display.

Lines added to CONFIG.SYS

```
DEVICE=D:\DISPLAY.SYS CON=(LCD,437,1)
```

Lines added to AUTOEXEC.BAT

```
D:
MODE CON CP PREP=((850)D:\LCD.CPI)
MODE CON CP SELECT=850
NLSFUNC
CHCP 850
```

4

3270 and 5250 Commands

This chapter lists all of the terminal emulation commands you can use with 3270 and 5250 terminals.

Command Descriptions

IMPORTANT! *To scan the bar code labels in this chapter, you must configure your JANUS device to use Code 39 in Full ASCII mode.*

This chapter contains an alphabetical listing of the 3270 and 5250 terminal emulation commands that you can use on your JANUS device. Each command contains a description, key sequence, and bar code. You will also find program function and program attention keys listed with their associated bar codes, but no function description because you can program the keys differently for each application.

Arrow Keys

Arrow keys move the cursor one space up, down, right, or left. You can move the cursor to any place on the display, even within protected fields. To select a specific arrow key, press one of the arrows on the edges of this key.

Keypad: 

Scan: N / A

Attention

The Attention key contacts the host and asks permission to send data from the JANUS display. The keypad locks automatically when you send this command or any other AID command. When the host computer grants permission to send data, the keypad unlocks. This key is useful for finding out if the host computer is free before you attempt to transmit data.

For 5250 terminals, this key sequence prompts the host system to display the Operational Assistant Menu.

Keypad: 

Scan: Attention

%ATTN

Auto-Login Restart

Auto-Login Restart restarts the auto-login script from the correct host name statement.

Keypad: Alt F5

Scan:

Auto-Login Restart

%ALRS

Backtab

Backtab moves the cursor back to the most recent first field position. If the cursor is in the middle of a field, Backtab moves it to the first position of the same field. If the cursor is at the first position of a field, Backtab moves it to the first position of the preceding input field.

Keypad: Shift ≡f space or ≡f ≡f space

Scan:

Backtab

%BTAB

Clear

This command clears the display and moves the cursor to the home position. This is an AID key.

For 5250 terminals, this command sends the clear AID (X'BD) function to the host computer, which then clears the keyboard.

Keypad: Alt U

Scan:

Clear

%CLR

Cursor Home

Cursor Home is one of two home commands. Cursor Home moves the cursor to the first input position on the terminal screen and moves the viewport to that position. If you want to move the viewport to the upper left corner of the terminal screen without moving the cursor, use the Home command.

Keypad: Alt T

Scan: Home

%Hm

Delete

This command deletes the character at the current cursor position. When you delete a character, all characters to the right of the cursor shift left one position. The cursor must be in an unprotected field when you use this key.

Keypad: f .

Scan: Delete

%DEL

End

This command moves the viewport to the end of the last line displayed on the TE application screen. When you move the viewport, the cursor does not move.

Keypad: f 1

Scan: End

%END

Enter

Pressing Enter sends all input to the host computer, including the cursor position, and lets the host know what data to expect next. Enter is an AID key.

Keypad: 

Scan: Enter

%CR

Erase to End of Field

This command erases all characters from the cursor to the end of the field. If the field is protected or the cursor is in a field attribute instead of an input position, then pressing this key will lock the keyboard. Press Reset to unlock the keyboard.

Keypad: 3270 5250

Scan: Erase to End of Field

%EOF

Erase Field

This command erases all characters in the field where the cursor is positioned.

Keypad: 

Scan: Erase Field

%FERS

Erase Input

Erase Input clears all input fields and moves the cursor to the first input position (the first input position on the terminal screen) on the display. This command will not erase protected fields. If you press this key when the display shows only protected fields, the cursor will return to the home position.

Keypad: Alt + Y

Scan: Erase Input

%EINP

Erase Last Word

This command erases from the cursor back to the origin of a word or a space on the display.

Keypad: Ctrl + ←

Scan: Erase Last Word

%WERS

Error Reset

5250 terminal emulation only

Error Reset unlocks the keypad when it has locked due to a 5250 error condition. It also resets the Help, Insert, System Request, and Command keys. An error message appears when data entry occurs in S/3X or AS/400 applications.

Keypad: Alt + R

Scan: Error Reset (if host computer is configured for this function)

%ERR

Exit

This command takes you to the TE configuration menu where you can close the current terminal emulation session, open another session, change TE configuration parameters, or exit TE.

Keypad: Alt X

Scan: Exit

%EXIT

Fast Cursor Right/Left

This command moves the cursor two positions to the right or left rather than one.

Keypad: Fast Cursor Right Alt 6 Fast Cursor Left Alt 4

Scan: Fast Cursor Right

%FCRT

Fast Cursor Left

%FCLT

Field+ and Field-

5250 terminal emulation only

The Field+ command operates as a Field Exit key in all fields.

The Field- command operation can vary depending on the system. With most systems, the Field- command operates the same as the Field+ and Field Exit commands except that you can only use it in signed numeric and numeric only fields. Field- inserts a minus sign in the last position of a signed numeric field.

Keypad: Field+ Alt F3 Field- Alt F4

Scan: Field +

%FLD+

Field -

%FLD-

Field Exit

5250 terminal emulation only

This command exits an input field and moves the cursor to the beginning of the next input field. If you press this key while the cursor is between characters, then all of the characters to the right of the cursor will be erased. Field Exit works nearly the same as pressing Erase to End of Field followed by a Tab, but some additional field processing may be done depending upon the Field Formatted Word (FFW). See the *IBM 5494 Remote Control Unit Functions Reference Manual* for a more detailed description of FFW.

Keypad: ⇦

Scan: Field Exit

%FLDX

Help

5250 terminal emulation only

Help causes the host system to display the Help Main Menu if a local processing error has not occurred. If a local processing error occurs, the TE application automatically handles the error condition. For more information on TE error messages, see Chapter 6, "Troubleshooting."

Keypad: Alt W

Scan: Help

%HELP

Home

Moves the viewport to the top left corner of the TE application screen. When you move the viewport, the cursor does not move.

Keypad: ≡f 7

Scan: Home

%HOME

Insert

This command puts the keypad into Insert mode. Insert mode lets you insert characters between other characters in a field. If you insert characters after the field is full, enter data at a field attribute or in a protected field, the keypad locks up. If you press any key that initiates host communication (such as ↵), you turn off Insert mode and unlock the keypad. The status line indicates when the device is operating in Insert mode.

Keypad: ≡f 0

Scan: Insert

%INS

New Line

Use this command to move the cursor to the first unprotected character position of the first line in the display. If the entire display is a protected field, the cursor returns to the home position.

Keypad: Alt N

Scan: New Line

%NL

Paging Keys

Paging keys move the viewport to the next adjacent area on the screen. These keys move the viewport within the screen; the screen itself does not advance or scroll.

The paging keys let you view the rest of the screen without entering data. When you page, you move only the viewport, not the cursor, and the cursor disappears from the display. Either the Home key or the Cursor Home key bring the cursor back into view. The Home key brings the viewport back to where you left the cursor before you started paging. The Cursor Home key brings both the viewport and the cursor to the first field position on the screen.

Keypad:

Page Up

[f] [9] or [f] ↑

Page Right

[f] [6] or [f] →

Page Down

[f] [3] or [f] ↓

Page Left

[f] [4] or [f] ←

Scan:

Page Up

%PGUP

Page Down

%PGDN

Page Right

%PGRT

Page Left

%PGLT

Reset

3270 terminal emulation only

Reset unlocks the keypad if it is locked due to an error and will clear the status line of most error messages. You cannot use the Reset command when the JANUS device is communicating with the host computer.

Keypad: Alt R

Scan: Reset

%RST

Reshow

This command resends a screen image from the locally maintained host buffer to refresh the terminal screen.

Keypad: Alt 1

Scan: Reshow

%RSHW

Roll Up and Roll Down

5250 terminal emulation only

Roll up and roll down are AID keys that the JANUS device sends to the host to request additional screens. The host transmits a new screen display in response to this command. The new screens allow you to view data either above or below what appears on the display.

Do not confuse the Roll Up and Roll Down AID keys with the Roll command (Hex 23) received from a host application. For more information on the Roll command, see "Understanding the Roll Command" in Chapter 2.

Keypad:

Roll Up	Roll Down
Alt P	Alt Q

Scan:

Roll Up (if host computer is configured for this function)

%ROUP

Roll Down

%RODN

Scroll

Use these commands to move the cursor one space up, down, right, or left. You can move the cursor to any place on the display, even within protected fields.

Keypad: N / A

Scan:

Scroll Up

%UP

Scroll Down

%DN

Scroll Left

%LF

Scroll Right

%RT

Status

This command toggles the JANUS display between the status display and the normal field input display. Press this key once to bring up the status line, and press it again to remove the status line. If a local editing error occurs for any reason, the screen line automatically appears, displaying an error message.

Keypad: Alt O

Scan:

Status

%STAT

System Request

The use of these AID keys depends on the system. Most systems use these commands to sign on or off, select alternate tasks, interrupt the present program to start a new task, or request permission to send data.

For 5250 terminals, this command prompts the host system to display the System Request Menu.

Keypad: Alt S

Scan: System Request

%SYSR

Tab

The Tab key moves the cursor to the first position in the next input field.

Keypad: ≡f space

Scan: Tab

%TAB

Program Function Keys

When you press a program function key or scan its bar code, you send the data on the display to the host, and the function you specified is performed on this data. Each function is determined by the application you use with your system. See your application user's manual for details on the functions. Program function keys are AID keys, and the keypad remains locked while the function you chose is being performed.

Function Key	Bar Code
F1	F1  *%F1*
F2	F2  *%F2*
F3	F3  *%F3*
F4	F4  *%F4*
F5	F5  *%F5*
Ctrl F1	F6  *%F6*
Ctrl F2	F7  *%F7*

Program Function Keys (continued)

Function Key	Bar Code
Ctrl F3	F8 *%F8*
Ctrl F4	F9 *%F9
Ctrl F5	F10 *%F10*
Alt F1	F11 *%F11*
Alt F2	F12 *%F12*
Alt A	F13 *%F13*
Alt B	F14 *%F14*
Alt C	F15 *%F15*
Alt D	F16 *%F16*

Program Function Keys (continued)

Function Key	Bar Code
Alt E	F17  *%F17*
Alt F	F18  *%F18*
Alt G	F19  *%F19*
Alt H	F20  *%F20*
Alt I	F21  *%F21*
Alt J	F22  *%F22*
Alt K	F23  *%F23*
Alt L	F24  *%F24*

Program Attention Keys

You can use the program attention keys to send messages to the host. The specific application you use with your system defines these messages. See your application user's manual for details on the messages each program attention key sends. Program attention keys are AID keys.

3270 Keys

Key	Bar Code
PA1 Alt P	 *%PA1*
PA2 Alt Q	 *%PA2*
PA3 Alt W	 *%PA3*

5250 Keys

Key	Bar Code
PA1 Alt 8	 *%PA1*
PA2 Alt 5	 *%PA2*
PA3 Alt 2	 *%PA3*

Other Keys - 5250 Terminals

The following characters are unique to the 5250 TE keypad and are not shown in the Code 39 Full ASCII Bar Code Chart in your JANUS user's manual.

Key	Bar Code
¢ 	 *%CENT*
¬ 	 *%NOT*
Duplicate 	 *%DUP*
Field Mark	 *%FM*

5

VT/ANSI Commands

This chapter lists all of the terminal emulation commands you can use with your VT100/220/320 and ANSI terminals.

Editing Key Commands - VT220/320 Terminals

IMPORTANT! *To scan the bar code labels in this chapter, you must configure your JANUS device to use Code 39 in Full ASCII mode.*

The following editing key commands are listed in alphabetical order. Each command is listed with its corresponding key sequence and bar code. Program function keys are listed with their bar codes, but no description is provided since these keys are programmed differently for each application.

The function of each editing key is determined by the software application you are using. Refer to your application user's manual for information about the editing key functions.

Auto-Login Restart

Auto-Login Restart restarts the auto-login script from the correct host name statement in the script. For this command to work, the WaitFor string must match the last data sent from the host. For example, if the WaitFor string is the login prompt "login: " with a space after the colon, the WaitFor string must include a space for the auto-login restart to work.

Keypad: Ctrl F4

Scan:

Auto-Login Restart

%ALRS

Find

Keypad: ≡f 7

Scan: Find

%FIND

Insert

Keypad: ≡f 0

Scan: Insert

%INS

Next Screen

Keypad: ≡f 3

Scan: Next Screen

%NEXT

Previous Screen

Keypad: ≡f 9

Scan: Previous Screen

%PREV

Remove

Keypad: ≡f .

Scan: Remove

%REM

Select

Keypad: ≡f 1

Scan: Select

%SEL

Program Function Keys

When you press a program function key or scan its bar code, you send the data on the display to the host and the JANUS device performs the function you specified on this data. The software application you are using determines the function of each editing key. Refer to your application user's manual for information about the editing key functions.

Note: *VT100 terminals only support function keys F1 to F5.*

Function Key	Bar Code
F1	F1  *%F1*
F2	F2  *%F2*

Program Function Keys (continued)

Function Key	Bar Code
F3	F3  *%F3*
F4	F4  *%F4*
F5	F5  *%F5*
f F1	F6  *%F6*
f F2	F7  *%F7*
f F3	F8  *%F8*
f F4	F9  *%F9*
f F5	F10  *%F10*
Alt F1	F11  *%F11*

Program Function Keys (continued)

Function Key	Bar Code
Alt F2	F12  *%F12*
Alt F3	F13  *%F13*
Alt F4	F14  *%F14*
Alt F5	F15  *%F15*
Alt ≡f F1	F16  *%F16*
Alt ≡f F2	F17  *%F17*
Alt ≡f F3	F18  *%F18*
Alt ≡f F4	F19  *%F19*
Alt ≡f F5	F20  *%F20*

Additional Functions

You can use the function keys and bar codes shown next to enter viewport movement and additional TE commands on VT100/220/320 and ANSI terminals.

Function Key	Bar Code
Alt ↑	Move Viewport Up 1 Line  *%UP*
Alt ↓	Move Viewport Down 1 Line  *%DN*
Alt →	Move Viewport Right 1 Column  *%RT*
Alt ←	Move Viewport Left 1 Column  *%LF*
Ctrl F1	Enter Line Mode  *%LINE*
Ctrl F2	Enter Character Mode  *%CHAR*
Ctrl F3	Enter Configuration Menu  *%MENU*
Ctrl F5	Exit TE  *%EXIT*

Function Key	Bar Code
f ↑	Page Up  *%PGUP*
f ↓	Page Down  *%PGDN*
f →	Page Right  *%PGRT*
f ←	Page Left  *%PGLT*

6

Troubleshooting

This chapter provides information about informative error messages that you may encounter while running JANUS terminal emulation.

Understanding Error Messages

The following tables list the error messages by category in alphabetical order. If an error message appears on your screen, locate it in the table and use the problem and solution columns to help you correct the error. TE error handling routines provide error detection for local editing errors.

As shown in the illustration below, recoverable errors display in the status line portion of the JANUS screen for 5250 and 3270 terminals only. If the status line option is not currently selected, a recoverable error causes it to appear. Non-recoverable errors display directly on your screen. When a non-recoverable error occurs, your TE session ends, and you exit directly to a DOS prompt.

2-4TEQ.012

Local Editing Errors

Error Message	Problem	Solution
Attn Not Processed (5250 error)	The host was unable to process your Attention request.	Press Alt Z to reset the terminal and try again later.
Digit Only (5250 error)	You have entered an invalid character in a digit only field.	Enter a valid character for this type of field.
DUP Field Required (5250 error)	You have pressed a DUP key in a field that does not have the DUP bit enabled.	Enter a valid command for this type of field.
Field minus invalid	You have pressed the Field - key in a nonnumeric field.	Use the Field Exit or Field + key.

Error Message	Problem	Solution
Field not in Field Format Table (5250 error)	The cursor is not positioned correctly in a data input field.	Position the cursor correctly and try again.
FM Field Required (5250 error)	You have pressed a Field Mark key in a field that does not have the DUP bit enabled.	Enter a valid command for this type of field.
Function not implemented (5250 error)	You have pressed an unsupported function key or entered an invalid key sequence.	Try the function again using the correct key sequence.
Help Not Processed (5250 error)	The host was unable to process your Help request.	Press Alt Z to reset the terminal and try again.
Invalid control sequence	You have pressed an unsupported function key or entered an invalid key sequence.	Enter a valid key sequence.
Mandatory field!	You have attempted to bypass a mandatory data entry field using a Field +, Field -, or Field Exit key.	Enter data in the field.
Monocase Only (5250 error)	You have entered an invalid character in a monocase only field.	Enter a valid character for this type of field.
No more room for insert	You have entered more characters than allowed in a field.	Press ≡f O to reset the terminal. Retry using fewer characters.
Numeric Only	You have entered an invalid character in a numeric only field.	Enter a valid character for this type of field.
Protected Field	You are attempting to enter data in a protected region of the screen.	Press Alt Z to reset the terminal.
Roll Down Not Processed (5250 error)	The host computer was unable to process your Roll Down request.	Press Alt Z to reset the terminal and try again.
Roll Up Not Processed (5250 error)	The host computer was unable to process your Roll Up request.	Press Alt Z to reset the terminal and try again.
Signed Numeric Only (5250 error)	You have entered an invalid character in a signed numeric field.	Reenter a valid character for this type of field.

Error Message	Problem	Solution
SysRq Not Processed (5250 error)	The host computer was unable to process your System Request.	Press Alt Z to reset the terminal and try again.

Note: *Your JANUS device running terminal emulation software may also receive session termination error messages from the Model 200 Controller. Session termination messages consist of a message followed by a primary and secondary return code error, which can be used in network troubleshooting. These messages are written to the error log file on the Model 200 Controller. For more information on the error log and session termination messages, see Appendix A, "Troubleshooting," in the* Model 200 Controller System Manual.

A

Reference

This appendix provides a summary of available TE commands for all supported devices. It also provides a summary of the TE files and listings of the configuration files included on your TE installation disk.

3270 and 5250 Command Summary

This chart lists the bar code labels for all 3270 and 5250 commands in alphabetical order.

Attention
%ATTN

Auto-Login Restart
%ALRS

Backtab
%BTAB

Clear
%CLR

Cursor Home
%Hm

Delete
%DEL

End
%END

Enter
%CR

Erase to End of Field
%EOF

Erase Field
%FERS

Erase Input
%EINP

Erase Last Word
%WERS

Error Reset (5250 Only)
%ERR

Exit
%EXIT

Fast Cursor Right
%FCRT

Fast Cursor Left
%FCLT

Field + (5250 Only)
%FLD+

Field - (5250 Only)
%FLD-

Field Exit (5250 only)
%FLDX

Help (5250 Only)
%HELP

Home
%HOME

Insert
%INS

New Line
%NL

Page Up
%PGUP

3270 and 5250 Command Summary (continued)

Page Down

%PGDN

Page Right

%PGRT

Page Left

%PGLT

Reset (3270 Only)

%RST

Reshow

%RSHW

Roll Up (5250 only)

%ROUP

Roll Down (5250 only)

%RODN

Scroll Up

%UP

Scroll Down

%DN

Scroll Left

%LF

Scroll Right

%RT

Status

%STAT

System Request

%SYSR

Tab

%TAB

VT220/320 Command Summary

Auto-Login Restart

%ALRS

Find

%FIND

Insert Here

%INS

Next Screen

%NEXT

Previous Screen

%PREV

Remove

%REM

Select

%SEL

VT/ANSI Additional Functions

Enter Character Mode

%CHAR

Enter Configuration Menu

%MENU

Enter Line Mode

%LINE

Exit TE

%EXIT

Move Viewport Up 1 Line

%UP

Move Viewport Down 1 Line

%DN

Move Viewport Right 1 Column

%RT

Move Viewport Left 1 Column

%LF

Page Up

%PGUP

Page Down

%PGUDN

Page Right

%PGRT

Page Left

%PGLT

JANUS Viewport Movement Commands

The following selected viewport movement commands are provided for reference purposes. See your JANUS user's manual for detailed information about viewport movement commands.

Disable Viewport Movement Keys

$+DV0

Enable Viewport Movement Keys

$+DV1

Enable Manual Viewport Movement

$+DZ0

Enable Auto Viewport Movement

$+DZ1

Viewport Down

%+

Viewport Up

%/

Viewport Left

%-

Viewport Right

.-

Viewport End

..%.

Viewport Home

..%/

Viewport Page Down

..%-

Viewport Page Up

..%+

Viewport to Cursor

/-

Cursor to Viewport

..%%

Terminal Emulation Files

The following table lists and describes all of the terminal emulation files.

Environment	File Name	Description
3270	J93270.EXE	3270 terminal emulation executable file for a 900 MHz RF environment. Requires Model 200 Controller v3.X and above.
	TE3270.CFG	Configuration files for 3270 terminals. Terminal emulation configuration information is saved to this file.
	JAN3270.MAP	Key mapping file for JANUS 3270 terminal emulation. Read only file.
5250	J95250.EXE	5250 terminal emulation executable file for a 900 MHz RF environment. Requires Model 200 Controller v3.X and above.
	TE5250.CFG	Configuration files for 5250 terminals. Terminal emulation configuration information is saved to this file.
	JAN5250.MAP	Key mapping file for JANUS 5250 terminal emulation. Read only file.
VT/ANSI	TNVT900.EXE	VT/ANSI terminal emulation executable for a 900 MHz RF environment. Requires Model 200 Controller v3.X and above.
	TE.CFG	Configuration file for VT100/220/320 and ANSI terminals.
Common Files	TE.BAT	Starts the terminal emulation application.
	TE.SEC	Terminal emulation security file. You must have TE.SEC to access to the terminal emulation configuration menu.
	AUTOLOG.SCR	Optional file. This is a script file containing auto-login script information. This file must be present if the auto-login feature is used.
	DISPTBLS.MAP	Optional file. This is a file containing Code Page 850 information which allows for single byte international character support when you run the terminal emulation program.

Reinstalling Terminal Emulation Software

Your JANUS 900 MHz RF device with terminal emulation comes from the factory with IRL removed and terminal emulation software and a terminal emulation keypad installed. Follow the guidelines below if you need to reinstall the factory default drive C and D images and terminal emulation software on your JANUS device.

- Locate the IMG<version>.EXE file on your JANUS Boot Utilities Companion disk. This self expanding executable produces the drive C, drive D, and system software images that you will load onto your JANUS device.
- See your JANUS user's manual for detailed instructions on creating or changing drive C or D images.
- Delete IRLDESK.EXE, IRL.BAT., and IRL001.DAT from the extracted drive D image files.
- Copy the following files from the TE application disk to the drive D image you are building.

3270 TE Files	5250 TE Files	VT/ANSI TE Files
J93270.EXE	J95250.EXE	TNVT900.EXE
JAN3270.MAP	JAN5250.MAP	
DISPTBLS.MAP	DISPTBLS.MAP	DISPTBLS.MAP
TE.BAT	TE.BAT	TE.BAT
TE.SEC	TE.SEC	TE.SEC
		TE.CFG

- Make the following modifications to the CONFIG.SYS and AUTOEXEC.BAT files to load the correct Code Page and display the international characters. The CONFIG.SYS change sets up the display system to use Code Page 850. The AUTOEXEC.BAT change selects Code Page 850 for the display.

Line added to CONFIG.SYS

```
DEVICE=D:\DISPLAY.SYS CON=(LCD,437,1)
```

Lines added to AUTOEXEC.BAT

```
D:
MODE CON CP PREP=((850)D:\LCD.CPI)
MODE CON CP SELECT=850
NLSFUNC
CHCP 850
```

- If you are installing TNVT900.EXE, be sure that the TE.CFG configuration file is loaded on drive E. You can accomplish this by making a one line change to the AUTOEXEC.BAT file

  Line added to AUTOEXEC.BAT

  ```
  IF EXIST D:\TNVT900.EXE COPY D:\TE.CFG E:
  ```

- Add your application or make other changes to the drive images.
- Load the new images on your JANUS device.

Sample Auto-Login Scripts

Listed below are example auto-login scripts. You can use these scripts as they are or use them as the starting point for creating your own auto-login files.

In the first example, the HostName command in this script will match the host the user will access. The "#" starts a comment that continues to the end of line. The WaitFor command waits for a string to be displayed by the host. The WaitFor command will take up to 10 strings 20 characters long. The strings must be enclosed in quotes and separated by a comma. The Send command in the example script sends a fixed user name and password. The angle brackets can enclose uppercase mnemonics or hex values. The next WaitFor / Send pair works the same as the first set.

Auto-Login Script With All Devices Using the Same Account

```
HostName "*"                  # Use this to log into any host
WaitFor "login:"              # Wait for the login prompt
Send "user_name<CR>"          # Send the user name
WaitFor "Password:"           # Wait for the password prompt
Send "users_password<CR>"     # Send the users password
```

In the second example, the Input and Send commands use input variables. Input commands require a prompt string followed by a comma and a variable name to store the string in. The InputHidden command Will display "*" in place of any characters typed by the user. All input commands must be before the first HostName command. The Send command only accepts a single argument so two sends are required to send the user name and a carriage return.

Auto-Login With Different User Names and Passwords

```
Input "Enter user name", username # prompt for user name
InputHidden "Enter Password", password # Prompt for password
HostName "*"
WaitFor "login:"              # Wait for the login prompt
Send username                 # Send the user name
Send "<CR>"                   # Send a carriage return
WaitFor "Password:"           # Wait for the password prompt
Send password                 # Send the users password
Send "<CR>"                   # Send a carriage return
```

Additional modifications to this script allow the user to move automatically to an application after logging in.

Auto-Login to an Application

```
Input “Enter user name”, username # prompt for user name
InputHidden “Enter Password”, password # Prompt for password
HostName “*”
WaitFor “login:”              # Wait for the login prompt
Send username                 # Send the user name
Send “<CR>”                   # Send a carriage return
WaitFor “Password:”           # Wait for the password prompt
Send password                 # Send the users password
Send “<CR>”                   # Send a carriage return
WaitFor “Main Menu”           # Wait for the main menu
Send “3”
Send “<CR>”                   # Pick option 3 from the menu
WaitFor “Wip Menu”            # Wait for the work in process menu
Send “1”
Send “<CR>”                   # Pick option 1 from the menu
```

In this script a section for the host name BigHost is added to the beginning of the script. If the user logs into any host other than BigHost the script will start at the HostName “*” line. This allows for different processing on each host.

Auto-Login With Variable Processing

```
Input “Enter user name”, username # prompt for user name
InputHidden “Enter Password”, password # Prompt for password
HostName “BigHost” # Use this portion of the script for BigHost
WaitFor “User:”               # Wait for the user prompt
Send username                 # Send the user name
Send “<CR>”                   # Send a carriage return
WaitFor “Password:”           # Wait for the password prompt
Send password                 # Send the users password
Send “<CR>”                   # Send a carriage return
HostName “*”                  # Match any other host name
WaitFor “login:”              # Wait for the login prompt
Send username                 # Send the user name
Send “<CR>”                   # Send a carriage return
WaitFor “Password:”           # Wait for the password prompt
Send password                 # Send the users password
Send “<CR>”                   # Send a carriage return
WaitFor “Main Menu”           # Wait for the main menu
Send “3”
Send “<CR>”                   # Pick option 3 from the menu
WaitFor “Wip Menu”            # Wait for the work in process menu
Send “1”
Send “<CR>”                   # Pick option 1 from the menu
```

TE.CFG Configuration File

VT and ANSI configuration information is stored in a configuration file named TE.CFG. You can use any text editor to modify TE.CFG on your PC before it is formed into an image and programmed into the JANUS devices. Edit TE.CFG according to the instructions provided in the file listing.

Note: *Refer to your JANUS user's manual for information on programming drive images on your JANUS device.*

```
! ********************************
! ***  TE configuration file    ***
! ********************************
! Note: Comment lines begin with ':' or '!'.

: -------------------------
: Environment Configuration
: -------------------------
: Note: () indicates any text string.
:
: TermType  - VT100, VT220, VT320, ANSI, RDRANSI
: TranId    - (Transaction ID followed by the system delimiter)
: CommPort  - COM1, COM4
: HostName  - (Name of the remote host or leave blank to use DCM host)

TermType=VT320
TranId=$TEV,
CommPort=COM4
HostName=

: -------------------
: Janus Configuration
: -------------------
: Note: () indicates any text string.
:       [] indicates recommended configuration option.
:
: Preamble  - (Any text character string)
: Postamble - (Any text character string, use trailing \r for CR and \t for TAB)
: NumericKeypad - [Disable], Enable
: TextSize      - [RegularHeight], DoubleHeight

Preamble=
Postamble=\r
NumericKeypad=Disable
TextSize=RegularHeight
```

TE.CFG Configuration File (continued)

```
: ---------------------
: Session Configuration
: ---------------------
: Note: [] indicates recommended configuration option.
:
: InputMode    - CharMode,[LineMode]
: ViewportMode - [Auto], Manual
: ProtocolMode - Standard, Enhanced, [0200R1]

InputMode=CharMode
ViewportMode=Auto
ProtocolMode=0200R1
: -------------------------
: VT Terminal Configuration -- For VT terminals only
: -------------------------
: Note: [] indicates recommended configuration option.
:
: KeypadMode     - [Numeric], Application
: CursorMode     - [Cursor], Application
: TermMode       - [VT100], [VT220-7bit], VT220-8bit, [VT320-7bit], VT320-8bit
: UserDefinedKey - [Unlock], Lock

KeypadMode=Numeric
CursorMode=Cursor
TermMode=VT320-7bit
UserDefinedKey=Unlock

: -------------------------
: VT Terminal Key remapping
: -------------------------
: Note: <keysym> = bios keycode in hex. Must be 4 bytes.
:        string  = Text string to send can include mneumonics ie <CR>
:                  or two byte hex.  Must be quoted.
:
: Remap          - = <keysym> = "string"
: Macro          - = <keysym> = "string"
: RunMacro       - = <keysym>

: The following will remap CTL-F1 if uncommented
:Remap=<405E>="send this to the host<CR>"
: remap CTL-F2
:Remap=<405F>="send something else to the host<CR>line 2<CR>"
: macro for 'a'
:Macro=<0061>="macro number 1<0d>"
: macro for 'e'
:Macro=<0065>="multi line macro <CR>line 2<0d>line 3<CR>"
: use CTL-F5 as run macro key
:RunMacro=<4062>
```

B

VT/ANSI Keyboard Remapping

This appendix provides information about VT/ANSI key support and instructions for remapping keys on your JANUS device.

Understanding VT/ANSI Key Support

These tables show how the numeric and special keys on VT keyboards map to the JANUS keys when you set the Keypad mode in the Terminal screen.

VT100 Terminals

This table shows what code is transmitted to the host when you press the numeric or special keys on a VT100 numeric keypad and a JANUS keypad. The transmitted code depends on if the Keypad mode is set to Numeric or Application mode.

VT100 Numeric Keypad Key	JANUS Keys (Numeric Keypad Mode On)	Numeric Mode Transmitted Code	Application Mode Transmitted Code
0	0	0	Esc O p
1	1	1	Esc O q
2	2	2	Esc O r
3	3	3	Esc O s
4	4	4	Esc O t
5	5	5	Esc O u
6	6	6	Esc O v
7	7	7	Esc O w
8	8	8	Esc O x
9	9	9	Esc O y
- (minus)	Alt h	- (minus)	Esc O m
, (comma)	Alt v	, (comma)	Esc O l
. (period)	Alt w	. (period)	Esc O n
PF1	F1	Esc O P	Esc O P
PF2	F2	Esc O Q	Esc O Q
PF3	F3	Esc O R	Esc O R
PF4	F4	Esc O S	Esc O S
Enter	F5	CR	Esc O M

VT220/320 Terminals

This table shows what code is transmitted to the host when you press the keys on a VT220/320 keypad and a JANUS keypad.

VT220/320 Key	JANUS Key	VT220/320 Transmitted Code
Find	Home	CSI 1 ~
Insert Here	Insert	CSI 2 ~
Remove	Delete	CSI 3 ~
Select	End	CSI 4 ~
Previous Screen	Page Up	CSI 5 ~
Next Screen	Page Down	CSI 6 ~
F1 (Hold Screen)	None	None (Local function keys)
F2 (Print Screen)	None	None (Local function keys)
F3 (Set Up)	None	None (Local function keys)
F4	None	None (Local function keys)
F5 (Break)	None	None (Local function keys)
F6	F6	CSI 1 7 ~
F7	F7	CSI 1 8 ~
F8	F8	CSI 1 9 ~
F9	F9	CSI 2 0 ~
F10	F10	CSI 2 1 ~
F11 (Esc in VT100 mode)	Alt F1	CSI 2 3 ~
F12 (BS in VT100 mode)	Alt F2	CSI 2 4 ~
F13 (LF in VT100 mode)	Alt F3	CSI 2 5 ~
F14	Alt F4	CSI 2 6 ~
F15 (Do)	Alt F5	CSI 2 8 ~
F16 (Help)	Alt F6	CSI 2 9 ~
F17	Alt F7	CSI 3 1 ~
F18	Alt F8	CSI 3 2 ~
F19	Alt F9	CSI 3 3 ~
F20	Alt F10	CSI 3 4 ~

This table shows what code is transmitted to the host when you press the numeric or special keys on a VT220/320 numeric keypad and a JANUS keypad. The transmitted code depends on if the Keypad mode is set to Numeric or Application mode.

VT220/320 Numeric Keypad Keys	JANUS Key(s) (Numeric Keypad On)	Numeric Mode Transmitted Code	Application Mode Transmitted Code
0	0	0	SS3 p
1	1	1	SS3 q
2	2	2	SS3 r
3	3	3	SS3 s
4	4	4	SS3 t
5	5	5	SS3 u
6	6	6	SS3 v
7	7	7	SS3 w
8	8	8	SS3 x
9	9	9	SS3 y
- (minus)	Alt h	- (minus)	SS3 m
, (comma)	Alt v	, (comma)	SS3 l
. (period)	Alt w	. (period)	SS3 n
PF1	F1	SS3 P	SS3 P
PF2	F2	SS3 Q	SS3 Q
PF3	F3	SS3 R	SS3 R
PF4	F4	SS3 S	SS3 S
Enter	F5	CR or CR LF	SS3 M

ANSI Terminals

ANSI terminals support standard alphanumeric keys and arrow keys. However, they do not support function keys. This table lists the JANUS TE keys that carry out special runtime functions.

JANUS Key	TE Runtime Function
Ctrl F1	Enter Line mode
Ctrl F2	Enter Character mode
Ctrl F3	Enter hot key configuration menu
Ctrl F5	Exit TE
Alt ↑	Move viewport up by one line
Alt ↓	Move viewport down by one line
Alt ←	Move viewport left by one column
Alt →	Move viewport right by column
f ↑	Move viewport up by one viewport
f ↓	Move viewport down by one viewport
f ←	Move viewport left by one viewport
f →	Move viewport right by one viewport

Remapping the JANUS Keys

You can modify the TE.CFG file on your JANUS device to remap a JANUS key or a two-key sequence. When you remap JANUS keys, you are changing the function of the keys on your JANUS device. You may need to remap keys if your terminal emulation program requires users to press a key that is not on a standard 101-key keyboard. You can also create a macro and remap a key or two-key sequence to run the macro.

You can remap any JANUS key or two-key sequence that performs an action specific to a PC or that does not perform any JANUS action. For example, you can remap A because it performs the PC action of typing a lowercase letter A. You can also remap Ctrl A because it does not perform any JANUS action.

You cannot remap a JANUS key or two-key sequence that performs an action specific to JANUS devices. For example, Ctrl ↑ moves the viewport up, which is a JANUS-specific action.

Note: *You can change the hot key sequence (Ctrl F3) that accesses the TE Configuration menu. If you remap the hot key sequence, at the Intermec JANUS 20X0 VT/ANSI Terminal Emulation screen you can still access the TE Configuration menu by pressing Ctrl F3 .*

Each key or two-key sequence generates a 4-byte hexadecimal code. This code identifies the key or keys pressed. For example:

Key	Action	4-byte hex code
B	Types a lowercase B	0062
Shift B	Types an uppercase B	0042
Ctrl B	None	0002
Alt B	None	4030

To remap a JANUS key or two-key sequence

1. Choose the key or two-key sequence to remap and determine the current 4-byte hex code of the keys and the code you will enter to remap the keys. For help, see the table at the end of this section.
2. On the JANUS device at the DOS prompt, type:

   ```
   edlin e:\te.cfg
   ```
3. At the end of the TE.CFG file, add the Remap command:

   `remap=<`*`key`*`>=`*`string`*

   where:

   key is the 4-byte hex code that identifies the key or keys.

   string is the new action for the key or keys. The string can be a text string, ASCII mnemonic, or another 2-byte hex code. If the string includes blank spaces, enclose the entire string in quotation marks.
4. Save the TE.CFG file and exit the ASCII text editor.

For example, whenever you press Ctrl F1 on the JANUS device, you want it to send a message and then enter a carriage return. In the TE.CFG file, type:

```
remap=<405E>="My battery is low<CR>"
```

To create a macro

1. Choose the key or two-key sequence that you want to use for the macro and the key or two-key sequence that will activate the macro.
2. Determine the current 4-byte hex code of the macro and the activation keys. For help, see the table at the end of this section.
3. On the JANUS device at the DOS prompt, type:

   `edlin e:\te.cfg`
4. At the end of the TE.CFG file, add the Remap command:

   `macro=<key>=string`

   where:

   key is the 4-byte hex code that identifies the key or keys.

   string is the new action for the key or keys. The string can be a text string, ASCII mnemonic, or another 2-byte hex code. If the string includes blank spaces, enclose the entire string in quotation marks.
5. At the end of the macros, type:

   `runmacro=<key>`

   where *key* is the 4-byte hex code that identifies the key or keys that activates the macro.
6. Save the TE.CFG file and exit the ASCII text editor.

For example, to activate the macro, you want to press Ctrl F6. Then, when the macro is activated, you press A and it sends a message and then enters a carriage return. If you do not activate the macro, the JANUS device sends an 'a.' In the TE.CFG file, type:

```
macro=<0061>=“Send this message to the host<CR>“
runmacro=<4062>
```

Key Code Table

Key	ASCII/Extended	ASCII/Extended With Shift	ASCII/Extended With Ctrl	ASCII/Extended With Alt
0	0030	0029		4080
1	0031	0021		
2	0032	0040	4003	4078
3	0033	0023		4079
4	0034	0024		407A
5	0035	0025		407B
6	0036	005E	001E	407C
7	0037	0026		407D
8	0038	002A		407E
9	0039	0028		407F
A	0061	0041	0001	401E
B	0062	0042	0002	4030
C	0063	0043	0003	402E
D	0064	0044	0004	4020
E	0065	0045	0005	4012
F	0066	0046	0006	4021
G	0067	0047	0007	4022
H	0068	0048	0008	4023
I	0069	0049	0009	4017
J	006A	004A	000A	4024
K	006B	004B	000B	4025
L	006C	004C	000C	4026
M	006D	004D	000D	4032
N	006E	004E	000E	4031

Key Code Table (continued)

Key	ASCII/Extended	ASCII/Extended With Shift	ASCII/Extended With Ctrl	ASCII/Extended With Alt
O	006F	004F	000F	4018
P	0070	0050	0010	4019
Q	0071	0051	0011	4010
R	0072	0052	0012	4013
S	0073	0053	0013	401F
T	0074	0054	0014	4014
U	0075	0055	0015	4016
V	0076	0056	0016	402F
W	0077	0057	0017	4011
X	0078	0058	0018	402D
Y	0079	0059	0019	4015
Z	007A	005A	001A	402C
‘	0027	0022		4028
,	002C	003C		4033
-	002D	005F	001F	4081
.	002E	003E		4034
/	002F	003F		4035
;	003B	003A		4027
=	003D	002B		4082
[	005B	007B	001B	401A
\	005C	007C	001C	
]	005D	007D	001D	401B
`	0060	007E		4029

Key Code Table (continued)

Key	ASCII/Extended	ASCII/Extended With Shift	ASCII/Extended With Ctrl	ASCII/Extended With Alt
F1	403B	4054	405E	4068
F2	403C	4055	405F	4069
F3	403D	4056	4060	406A
F4	403E	4057	4061	406B
F5	403F	4058	4062	406C
F6	4040	4059	4063	406D
F7	4041	405A	4064	406E
F8	4042	405B	4065	406F
F9	4043	405C	4066	4070
F10	4044	405D	4067	4071
F11 (extended)	4085	4087	4089	408B
F12 (extended)	4086	4088	408A	408C
Bksp	0008	0008	007F	4083
Center		0035		
Del	4053	402E	4093	
Del (extended)	4053	4053	4093	40A3
Down	4050	4032	4091	
Down (extended)	4050	4050	4091	40A0
End	404F	4031	4075	
End (extended)	404F	404F	4075	409F
Enter	000D	000D	000A	401C
Enter (extended)	000D	000D	000A	40A6
Esc	001B	001B	001B	4001

Key Code Table (continued)

Key	ASCII/Extended	ASCII/Extended With Shift	ASCII/Extended With Ctrl	ASCII/Extended With Alt
Gray +		002B		
Gray -		002D		
Gray /	002F	003F		40A4
Home	4047	4037	4077	
Home (extended)	4047	4047	4077	4097
Ins	4052	4030	4092	
Ins (extended)	4052	4052	4092	40A2
Left	404B	4034	4073	
Left (extended)	404B	404B	4073	409B
PgDn	4051	4033	4076	
PgDn (extended)	4051	4051	4076	40A1
PgUp	4049	4049	4039	
PgUp (extended)	4049	4049	4049	4099
Right	404D	4036	4074	
Right (extended)	404D	404D	4074	409D
Scroll				
Space	0020	0020	0020	0020
Tab	0009	400F	4094	40A5
Up	4048	4038	408D	
Up (extended)	4048	4048	408D	4098

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