Read This First!

This manual contains information about configuring the terminals, developing and using applications, running diagnostics, using reader commands and configuration commands, and using default and optional applications. It also contains full ASCII tables and bar code charts and English and International font sets.

If you need to learn about the terminal's features, install the terminal, learn about the menu system, operate the terminal in a network, or troubleshoot problems, you also need to download the appropriate user's manual:

- *Trakker Antares 241X Hand-Held Terminal User's Manual* (P/N 069538)
- *Trakker Antares 242X Hand-Held Terminal User's Manual* (P/N 064024)
- *Trakker Antares 243X Hand-Held Terminal User's Manual* (P/N 071791)
- *Trakker Antares 2455 Vehicle-Mount Terminal User's Manual* (P/N 067358)
- *Trakker Antares 2475 Vehicle-Mount Terminal User's Manual* (P/N 072383)
- *Trakker Antares 248X Stationary Terminal User's Manual* (P/N 066960)

If you have a 246X, the *Trakker Antares 246X Stationary Terminal User's Manual* (P/N 068575) contains all the information you need.

Intermec

Addendum

Trakker Antares® 2400 Family System Manual

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Contents

Trakker Antares 2400 Family System Manual Addendum

This addendum describes the enhancements and features of firmware version 7.15 and covers these topics:

- 802.1x security enhancements
- Options for the 243X
- Configuration command updates

How to Use This Addendum

This addendum contains the latest information about Trakker Antares® terminals with firmware version 7.15. Read this addendum before you begin using your Trakker Antares terminal.

The hardware and software on Trakker Antares terminals have been updated substantially to improve efficiency and ease of use. These changes are not yet reflected in the system manual or user's manual, but they are described here in detail.

The information in this addendum applies to the Trakker Antares 241X, 242X, 243X, 2455, 2475, and 248X terminals. For more information about the topics covered in this addendum, refer to the *Trakker Antares 2400 Family System Manual* (P/N 071389) or your user's manual. If there are any conflicts between the information in this addendum and the information in the 2400 Family system manual or your user's manual, use the information in this addendum. Please keep this addendum with your manuals.

All of our manuals are available in PDF format from the Intermec web site at www.intermec.com.

Manual	Part Number
Trakker Antares 241X Handheld Terminal User's Manual	069538
Trakker Antares 242X Handheld Terminal User's Manual	064024
Trakker Antares 243X Handheld Terminal User's Manual	071791
Trakker Antares 2455 Vehicle-Mount Terminal User's Manual	067358
Trakker Antares 2475 Vehicle-Mount Terminal User's Manual	072383
Trakker Antares 248X Stationary Terminal User's Manual	068575

If You Do Not Have Firmware Version 7.15

If you have an earlier version of firmware, you can download version 7.15 at no charge from the Intermec web site at www.intermec.com. If you are not going to upgrade to version 7.15, use the 2400 Family system manual with your Trakker Antares user's manual and disregard this addendum.

What's New in Firmware Version 7.15?

With firmware version 7.15, these changes have been made to Trakker Antares hardware and software:

- 802.1x security has been enhanced to provide new functionality to the current TTLS security and support for Cisco's LEAP security. For more information, see the next section, "802.1x Security Enhancements."
- The 243X has two new options: an integrated E1022 linear imager and a 48-key large alphanumeric keypad. For more information, see "Options for the 243X" on page 11.
- Configuration commands have been updated. For more information, see "Configuration Command Updates" on page 14.

802.1x Security Enhancements

Trakker Antares radio frequency (RF) terminals have the option of supporting 802.1x security using one of these Extensible Authentication Protocol (EAP) types:

- Tunneled Transport Layer Security (TTLS) is a standards-based authentication type with multiple vendor support.
- Lightweight Extensible Access Protocol (LEAP) is Cisco's proprietary authentication type.

Both of these security options are described in this section. However, please also note the following security enhancements:

- The TTLS security option is referred to as "802.1x security" throughout the 2400 Family system manual and your user's manual. Unless otherwise noted in this addendum, these references to "802.1x security" apply to both TTLS and LEAP security.
- TTLS and LEAP security are supported on terminals using TCP/IP, WTP, or UDP Plus. For more information about network protocols, see "About Network Connectivity and Protocols" in Chapter 1 of the 2400 Family system manual.
- The About TRAKKER 2400 screen in the TRAKKER Antares 2400 Menu System displays the 802.1x security option, if any, you have loaded on your terminal (TTLS or LEAP).
- A radio configuration option has been added to the Trakker Antares DOS Firmware Upgrade Utility to support LEAP security. For more information about upgrading the terminal using the Trakker Antares DOS Firmware Upgrade Utility, see "Upgrading the Firmware" in Chapter 2 of the 2400 Family system manual.

TTLS Security Update

During authentication, TTLS security uses the date that is set on your Trakker Antares terminal to make sure that the terminal falls within the valid date range of the certificate received from the authentication server. Your Trakker Antares terminal uses the BASEDATE.TXT file to set the current date. BASEDATE.TXT is originally set to the release date of the most recent version of firmware; however, it is now updated in these situations:

- When you download the latest version of firmware to your PC, BASEDATE.TXT is updated to reflect the current time and date on your PC.
- If BASEDATE.TXT is not loaded on your terminal, it will be created
  - When you download the latest version of firmware to your PC. It will reflect the current time and date on your PC.
  - When you set the current time and date on your terminal.
- If BASEDATE.TXT is loaded on your terminal, the BASEDATE.TXT text is updated when you set the current time and date on your terminal.

Configuring 802.1x LEAP Security

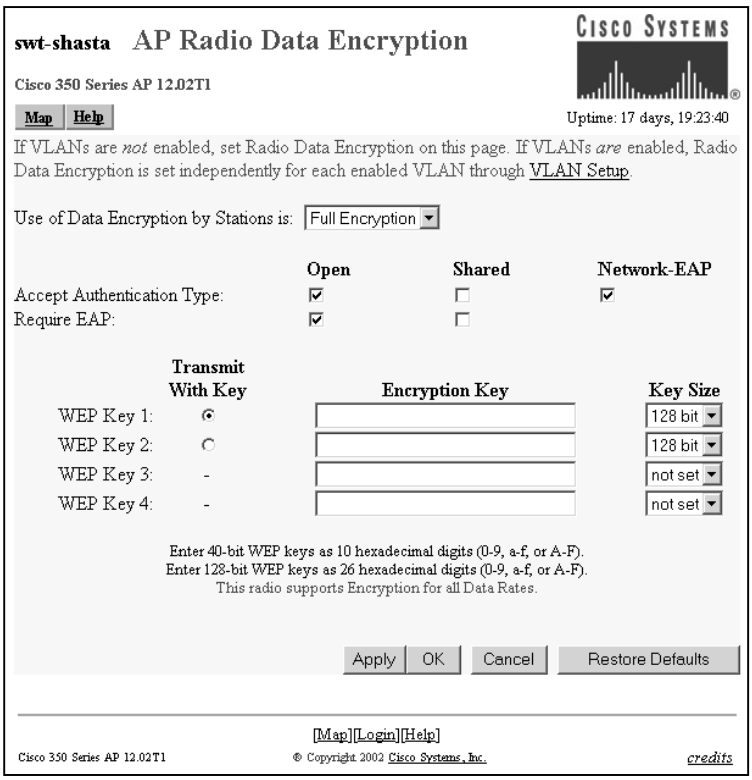
To use LEAP security on your terminal, you need

- an authentication server that supports LEAP.
- a Cisco access point.
- a Trakker Antares terminal. Your terminal must have an 802.11b radio, the LEAP security option, and firmware version 7.15 or later.

Note: Unlike TTLS security, LEAP security only requires the standard 2MB of memory on the terminal. It does not require the additional 4MB memory option.

To enable LEAP security on the terminal

1. Make sure that your authentication server is properly configured. For help, see the documentation for your authentication server.
2. Make sure that your Cisco access point is properly configured for LEAP security. For help, see the documentation for your Cisco access point.
3. Configure your Cisco access point to communicate with your Trakker Antares terminal using LEAP security.
   a. Access the AP Radio Data Encryption screen. For help, see the documentation for your Cisco access point.



Note: The AP Radio Data Encryption screen for your Cisco access point may look different than the one shown here.

b Check the Open check box for both Accept Authentication Type and Require EAP.

c Click OK.

4 Set the network configuration parameters on your Trakker Antares terminal. For help, see your user's manual and the 2400 Family system manual.

5 Set the User Name and Password parameters on your Trakker Antares terminal.

a Scan this bar code to access the TRAKKER Antares 2400 Menu System:

TRAKKER Antares 2400 Menu System

..-.

The Main Menu appears.

b Choose Configuration Menu, Communications Menu, and then choose Radio.

c Use the arrow keys to scroll to the LEAP screen and set the User Name and Password parameters.

If you just want to make sure that your terminal can be authenticated, you can use the default values of "anonymous" and "anonymous." However, Intermec recommends that you set your permanent user name and password to unique values. For help, see Chapter 6, "Configuration Command Reference," in the 2400 Family system manual.

6 Exit the menu system and save all changes.

7 When the terminal is authenticated, it emits a low beep and then a high beep. The application that was running on the terminal, if any, resumes.

If authentication fails, the terminal emits a high beep and then a low beep. The terminal will wait 60 seconds and restart the authentication process. For help, see the next section, "Troubleshooting 802.1x TTLS or LEAP Security."

Troubleshooting 802.1x TTLS or LEAP Security

This table contains possible solutions for problems you may have while configuring 802.1x TTLS or LEAP security. This troubleshooting information supplements the information in the troubleshooting chapter of your user's manual.

Problems While Configuring 802.1x TTLS or LEAP Security

Problem	Possible Solution
You are having trouble downloading the 802.1x TTLS security option. This error code appears on the Error Logger screen: `0x037E`	To download 802.1x TTLS security, you need to have the 4MB flash memory option on your terminal. To upgrade your terminal with the 4MB flash option, contact your local Intermec representative.
You are configuring 802.1x LEAP security. The terminal indicates that it is not authenticated by emitting a high beep and a low beep. This error code appears on the Error Logger screen: `0x377`	Make sure that: • the User Name and Password parameters on your terminal match the user name and password on your server. You may need to re-enter the password on both your terminal and server. • on an Odyssey™ server, the user and group are allowed and the group policy is allowed to log in to the server. For help, see the documentation that shipped with your server software. • the IP address and secret key for your access point must match the IP address and secret key on your server. You may need to re-enter the IP address and secret key on both your access point and server. • your server is active and that it can communicate with your access point. You can use the PING command to determine communications. • the server software is running on the server PC. • the UDP port (standard RADIUS port, 1812) on your server is active. For help, see the documentation that shipped with your server software.

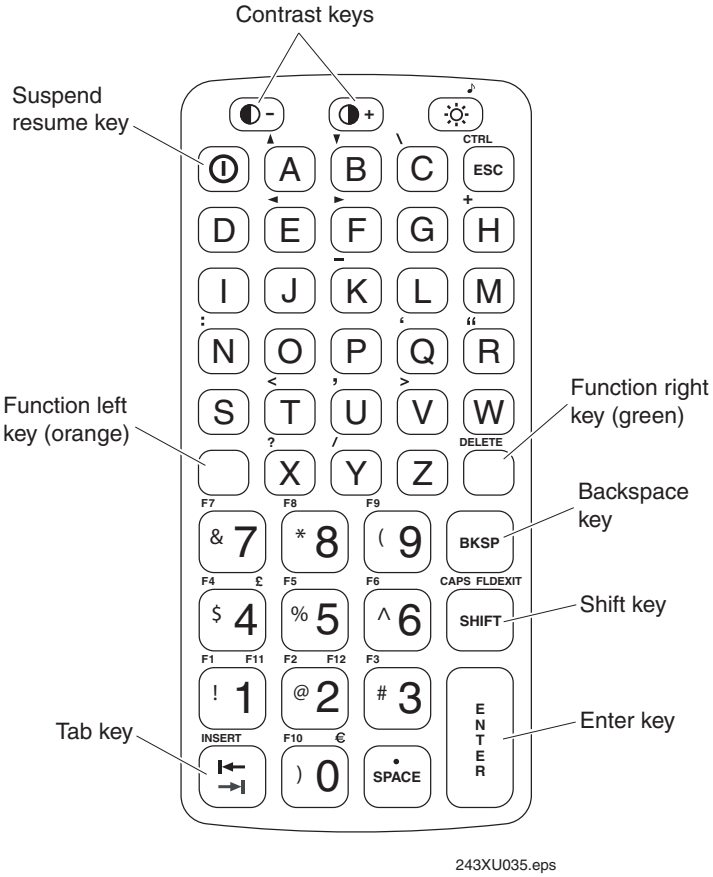
Problems While Configuring 802.1x TTLS or LEAP Security (continued)

Problem	Possible Solution
You are configuring 802.1x LEAP security. The terminal indicates that it is authenticated by emitting a low beep and a high beep, but it does not communicate with the host.	Make sure that the terminal IP address, host IP address, subnet mask, and default router are properly configured for your network.
	Note: Do not cold boot the terminal. Cold booting the terminal resets the time and date.

Options for the 243X

This section describes these 243X options:

- 48-key large alphanumeric keypad
- Integrated E1022 linear imager



48-Key Large Alphanumeric Keypad: *This illustration shows the 48-key keypad. For help using this keypad, see the Trakker Antares 243X Handheld Terminal User's Manual (P/N 071791).*

Most of the information about these features is included in the *Trakker Antares 243X Handheld Terminal User's Manual* (P/N 071791), however the following diagnostic and configuration commands have been modified:

- Keypad Table diagnostic
- Keypad Type configuration command
- Scanner Selection configuration command

Keypad Table Diagnostic

This diagnostic is used to identify the keypad table that you have loaded on your terminal. When you run the Keypad Table diagnostic, a hex code appears on the terminal screen indicating which keypad table is loaded on the terminal. These hex codes have been added to support the 48-key large alphanumeric keypad.

Hex Code	Description
0x23	Programmable, 48-key, 243X
0x24	International, 48-key, 243X
0x25	Terminal emulation, 48-key, 243X

For more information about the Keypad Table diagnostic, see "Keypad Table" in Chapter 4 of the 2400 Family system manual.

Keypad Type Configuration Command

If you change the keypad overlay on your terminal, you need to use this command to configure the keypad type to match the new keypad overlay. The syntax for this command is:

KT*data*

These values for data have been added to support the 48-key large alphanumeric keypad:

a Programmable, 48-key keypad, 243X
b International, 48-key keypad, 243X
c Terminal emulation, 48-key keypad, 243X

For more information about the Keypad Type command, see "Keypad Type" in Chapter 6 of the 2400 Family system manual.

Note: To set this command using the following bar codes, you need to configure the terminal to use Code 39 in Full ASCII mode. For help, see "Code 39" in Chapter 6 of the 2400 Family system manual.

To configure the keypad type for the 48-key keypad overlays

1 Scan one of these bar codes:

Set Keypad Type to Programmable 48-key, 243X

$+KTa

Set Keypad Type to International 48-key, 243X

$+KTb

Set Keypad Type to Terminal Emulation 48-key, 243X

$+KTc

2 Scan this bar code to save the configuration change in flash memory:

Save Configuration in Flash Memory

.+1

3 Scan this bar code to boot the terminal and use the new keypad type:

Reset Firmware

-.

Scanner Selection Configuration Command

You use this command to configure the terminal for the type of scanner you are using with the terminal. With firmware version 7.15, there is an additional value for scanner type.

The syntax for this command is:

SS*data*

where acceptable values for *data* indicate the type of scanner that the terminal is using.

The following value for data is now supported on 243X terminals with the integrated E1022 linear imager option:

16 Integrated non-PDF 417 linear imager (241X, 243X)

By default, this value should already be set on your terminal. However you can also set this value by scanning this bar code:

Integrated Linear Imager

$+SS16

For more information about the Scanner Selection command, see "Scanner Selection" in Chapter 6 of the 2400 Family system manual.

Configuration Command Updates

This section describes these new and updated configuration commands:

- AP (Access Point) Density
- Display Spacing

AP Density Update

Terminals: 2415, 2425, 2435, 2455, 2475, and 2485/6 with 802.11b radios.

Description: The AP (Access Point) Density command is referred to as the Distance Between APs (Access Points) command on Trakker Antares terminals with firmware version 6.15 or later. This command controls the roaming sensitivity of the radios.

Values for AP density were referred to as low, medium, and high. These values correlate to the values for distance between APs, which are large, medium, and small. For instance, a high AP density is the same as a small distance between APs. This setting lets you create a higher performance radio network, however, with a small distance between access points, you will need significantly more access points to cover a given area.

Syntax: LG*data*

Acceptable values for *data* are:

1 Large
2 Medium
3 Small

Default: Large

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Radio.

Bar Codes: Scan one of these bar codes:

Large Distance Between APs

$+LG1

Medium Distance Between APs

$+LG2

Small Distance Between APs

$+LG3

Display Spacing Update

Terminals: 241X, 242X, 243X, 2455, 2475, and 2481/6.

Description: You use this command to define the font size and spacing between each row and column on the terminal screen. To define the Display Spacing command, you set three parameters: font type, column spacing, and row spacing. With firmware version 7.15, there is an additional value for font type.

Syntax: DK*data*

where *data* must be 5 digits or 1 letter and four digits. The first digit or letter indicates the font type and now supports the following value:

B 5 pixels wide by 8 pixels high (5x8) font size

The second and third digits are any two-digit column spacing value from 00 to 15.

The fourth and fifth digits are any two-digit row spacing value from 00 to 24.

Bar Codes: To set the standard spacing for the 5x8 font type, scan this bar code:

5x8 font size, 32 columns x 16 rows

$+DKB0000

Or: To set the display spacing for the 5x8 font type:

1 Scan this bar code:

Enter Accumulate Mode /
Set Display Spacing for 5x8 font type

+/$+DKB

2 Scan a four-digit numeric value for *data* where the first two digits are the column spacing value from 00 to 15 and the second two digits are the row spacing value from 00 to 24.

0

1

2

3

4

5

6

7

8

9

3 Scan this bar code:

Exit Accumulate Mode

-/

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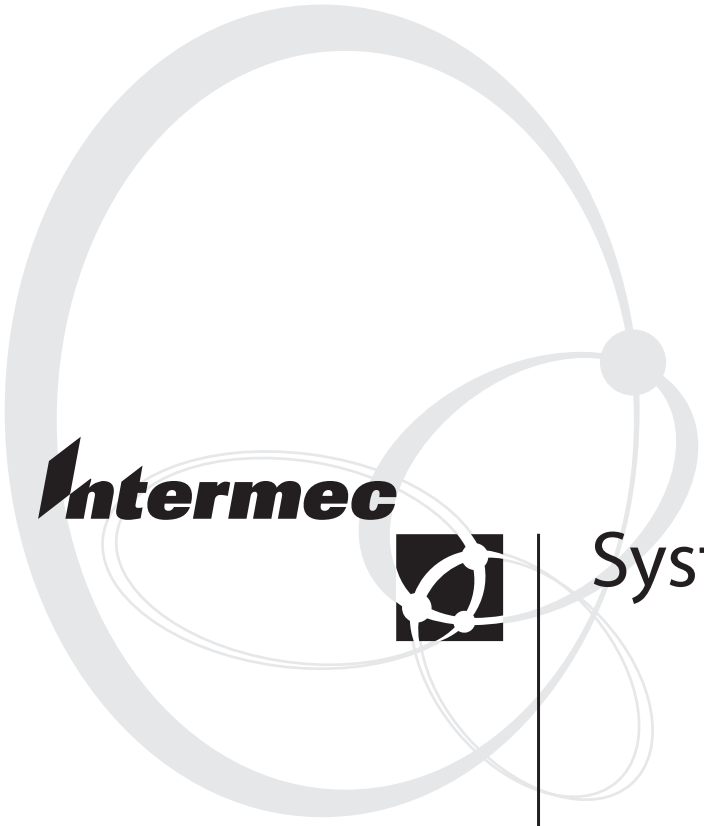
Trakker Antares 2400 Family System Manual Addendum

P/N 073395-001



Intermec

System Manual

Trakker Antares® 2400 Family

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Document Change Record

This page records the changes to this manual. The manual was originally released as version 001.

Version	Date	Description of Change
002	09/2001	Added the 243X to the system manual. Explained the new features and changes for firmware versions 4.X through 7.0: • Added new configuration commands: Display Spacing and Beep Frequency. • Modified existing configuration commands: Display Contrast, Display Font Type, Keypad Type, Scanner Selection, and Symbology Identifiers. • Removed screen mapping.
003	06/2002	Added the 2475 to the system manual. Explained the new features and changes for firmware version 6.20 through 7.12: • Added new configuration commands: Microwave Robustness and ICMP. • Modified existing configuration commands: Beep Duration, Beep Frequency, Code 128, DHCP (Terminal), Display Video Mode, Keypad Type, Reservation Threshold, and Scanner Selection. • Modified Serial Port Test diagnostic and removed Destructive RAM Test diagnostic. • Added support for new features: Wireless Transport Protocol (WTP), Thai language font, Trakker Antares Firmware Upgrade Utility. • Modified instructions for existing features: clone application and custom bitmap support. • Removed Trakker Antares native terminal emulation
004	12/2002	Explained the new features and changes for firmware version 7.14: • These configuration commands for the 802.1x security option were added: Password, Server Certificate Common Name, and User Name. • The Power Management command was modified to provide three power management options. • The upgrade section was modified to include information about saving custom applications and files. • Information about how to choose a TE 2000 application was added to Appendix D.
005	06/2003	Added the *Trakker Antares 2400 Family System Manual Addendum* (P/N 073395-001). The addendum contains information to support firmware version 7.15.

Contents

B Full ASCII Charts

C International Character Support

D Using Default and Optional Applications

I Index

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. A documentation roadmap is also provided to guide you in finding the appropriate information.

Warranty Information

To receive a copy of the standard warranty provision for this product, contact your local Intermec support services organization. In the U.S.A. call 1-800-755-5505, and in Canada call 1-800-668-7043. If you live outside the U.S.A. or Canada, you can find your local Intermec support services organization on the Intermec Web site at www.intermec.com.

Safety Summary

Your safety is extremely important. Read and follow all warnings and cautions in this book before handling and operating Intermec equipment. You can be seriously injured, and equipment and data can be damaged if you do not follow the safety warnings and cautions.

Do not repair or adjust alone Do not repair or adjust energized equipment alone under any circumstances. Someone capable of providing first aid must always be present for your safety.

First aid Always obtain first aid or medical attention immediately after an injury. Never neglect an injury, no matter how slight it seems.

Resuscitation Begin resuscitation immediately if someone is injured and stops breathing. Any delay could result in death. To work on or near high voltage, you should be familiar with approved industrial first aid methods.

Energized equipment Never work on energized equipment unless authorized by a responsible authority. Energized electrical equipment is dangerous. Electrical shock from energized equipment can cause death. If you must perform authorized emergency work on energized equipment, be sure that you comply strictly with approved safety regulations.

Warnings, Cautions, and Notes

The warnings, cautions, and notes in this manual use the following format.

Warning
A warning alerts you of an operating procedure, practice, condition, or statement that must be strictly observed to avoid death or serious injury to the persons working on the equipment.

Avertissement
Un avertissement vous avertit d'une procédure de fonctionnement, d'une méthode, d'un état ou d'un rapport qui doit être strictement respecté pour éviter l'occurrence de mort ou de blessures graves aux personnes manupulant l'équipement.

Caution
A caution alerts you to an operating procedure, practice, condition, or statement that must be strictly observed to prevent equipment damage or destruction, or corruption or loss of data.

Conseil
Une précaution vous avertit d'une procédure de fonctionnement, d'une méthode, d'un état ou d'un rapport qui doit être strictement respecté pour empêcher l'endommagement ou la destruction de l'équipement, ou l'altération ou la perte de données.

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

About This Manual

This manual supports Trakker Antares® terminals with firmware version 7.14 and earlier. It contains all of the necessary system information to configure, operate, and program the Trakker Antares 2400 Family of terminals. Use this manual in conjunction with your terminal user's manual, which contains specific information about installing, configuring, operating, troubleshooting, and maintaining your terminal.

This manual was written for two audiences:

- All users who need to know how to use the terminal to collect data.
- MIS personnel, operations personnel, analysts and programmers who need to know how to operate, configure, test, and connect the terminals to a network or system. A basic understanding of DOS, programming, data communications, and network protocols is necessary. You should also understand your company's network and data collection software.

What You Will Find in This Manual

This manual explains how to use the features and options available on all models of Trakker Antares terminals. The next table summarizes the information in each chapter and appendix.

Chapter	Summary
1	Provides an overview of the Trakker Antares 2400 Family of terminals and describes network connectivity and protocols.
2	Describes how to configure the terminals, explains the terminal's configuration parameters, and describes how to restore the default configuration.
3	Explains how to create, download, and run applications on the programmable terminals.
4	Explains how to run diagnostics on the terminal to help analyze hardware, application, and firmware problems.
5	Describes the reader commands that you can use while operating the terminal. Reader commands, such as Change Configuration, allow you to perform a task on the terminal.
6	Describes all the configuration commands supported on the terminal.
A	Lists the default configuration values and provides a configuration command reference list in alphabetical order by command syntax.
B	Contains the full ASCII table and full ASCII chart of Code 39 bar code labels.
C	Lists some of the international characters that the terminal can display.
D	Describes how to determine which default applications you may have loaded on your terminal. Also describes how to use the APPTSK.BIN and EM9560.BIN applications that are shipped on the terminals and describes how to use the optional DOS applications.

For information about using IBM 3270, IBM 5250, or VT/100/220/320 and ANSI terminal emulation, see the appropriate TE 2000™ guide:

- *TE 2000 5250 Terminal Emulation Programmer's Guide* (P/N 977-055-004)
- *TE 2000 3270 Terminal Emulation Programmer's Guide* (P/N 977-055-003)
- *TE 2000 VT/ANSI Terminal Emulation Programmer's Guide* (P/N 977-055-005).

For information about using dcBrowser, see the documentation that ships with your DCS 30X or dcBrowser gateway software.

Terminology

You should be aware of how the following terms are used in this manual:

Term	Description
DCS 300 and Model 200 Controller	The DCS 300 is a data collection server that replaced the Model 200 Controller. The RF terminal can communicate with either the DCS 300 or the Model 200 Controller. Unless otherwise noted, you can use either the DCS 300 or the Model 200 Controller.
DCS 30X	DCS 30X refers to the DCS 300, the DCS 301, and the DCS 302 data collection servers. The term DCS 30X is used throughout this manual. Unless otherwise noted, you can use either the DCS 300, the DCS 301, or the DCS 302.
Host	The term “host” refers to a personal computer or other computer that communicates with the terminal.
Terminal	The generic term “terminal” refers to any Trakker Antares terminal. More specific terms, such as “Trakker Antares 241X terminal” or “2455,” indicate a specific type of terminal.
Standard terminal	The term “Standard terminal” refers to Trakker Antares terminals that can only communicate through the wired network: 2410, 2420, 2430, 2460, 2480, and 2481 terminals.
RF terminal	The term “RF terminal” refers to Trakker Antares terminals that can communicate through the RF network: 2415, 2425, 2435, 2455, 2475, 2485, and 2486 terminals.
Ethernet terminal	The term “Ethernet terminal” refers to Trakker Antares terminals that can communicate through the Ethernet network: 2461, 2480 (with the Ethernet card option), and 2481 (with the Ethernet card option) terminals.
2400 Family or Trakker Antares	The terms “Trakker Antares” and “2400 Family” identify the product family of Trakker Antares hand-held, stationary, and vehicle-mount terminals.

Conventions for Input From a Keypad or Keyboard

This table describes the formatting conventions for input from PC keyboards, host computer keyboards, and terminal keypads:

Convention	How to Interpret the Convention
`Special text`	Shows the command as you should enter it into the terminal. See "Conventions for Commands" later in this chapter.
Italic text	Indicates that you must replace the parameter with a value. See "Conventions for Commands" later in this chapter.
Bold text	Indicates the keys you must press on a PC or host computer keyboard. For example, "press **Enter**" means you press the key labeled "Enter" on the PC or host computer keyboard.
[↵]	Shows the key you must press on the terminal. For example, "press [↵] " directs you to press the Enter key on the terminal keypad.
[f] [↵] [2] [4] [8]	Shows a series of terminal keys you must press and release in the order shown. For example, "Press [f] [↵] [2] [4] [8] to access the TRAKKER Antares 2400 Menu System."
[f] – [↵]	Shows a series of terminal keys you must press simultaneously. Also, you must press and hold the keys in the order shown.

Note: The 246X terminal does not use the TRAKKER Antares 2400 Menu System.

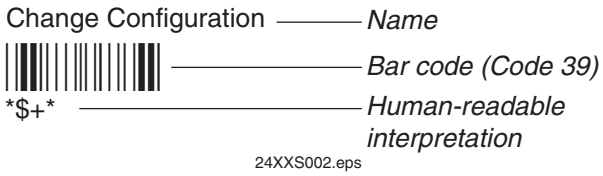
The [↵] key is used to represent the Enter key throughout this manual. If you have one of the terminals listed next, you must use the indicated key instead of the [↵] key in the [f] [↵] [2] [4] [8] key sequence to access the TRAKKER Antares 2400 Menu System.

Terminal	Key
241X	(
242X	◁
243X	FIELD EXIT or RETURN, depending on your keypad

Note: The keys on the 243X terminal appear different from the keys on other terminals in the Trakker Antares 2400 Family. For help, refer to the *Trakker Antares 243X Hand-Held Terminal User's Manual* (P/N 071791).

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:

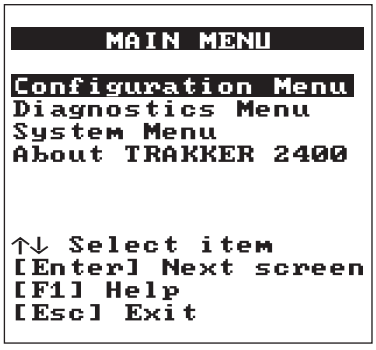


24XXS002.eps

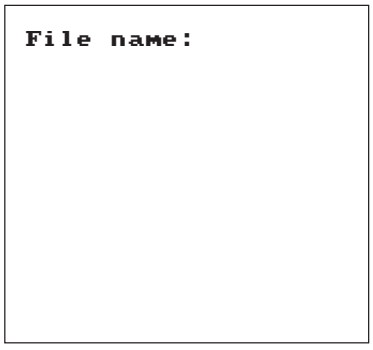
The asterisks (*) at the beginning and end of the human-readable interpretation are the start and stop codes for a Code 39 bar code label. If you are creating bar code labels with a bar code utility, it may automatically supply the asterisks as the start and stop code, so that you only need to type the 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.

Conventions for Software Screens and Messages

This manual includes illustrations that represent how the Trakker Antares terminals display software screens and messages. Here are two examples:



24XXS030.eps



24XXS031.eps

Conventions for Commands

This manual includes sample commands that are shown exactly as you should type them on your terminal or network device. The manual also describes the syntax for many commands, defining each parameter in the command. This table defines the conventions used in this manual:

Convention	Description
`Special font`	Commands appear in this font. You enter the command exactly as it is shown.
Italic text	Italics indicate a variable, which you must replace with a real value, such as a number, filename, keyword, or command.
[ ]	Brackets enclose a parameter that you may omit from the command. Do not include the brackets in the command.
Required parameters	If a parameter is not enclosed in brackets [ ], the parameter is required. You **must** include the parameter in the command; otherwise, the command will not execute correctly.
where	This word introduces a list of the command's parameters and explains the values you can specify for them.

Other Intermec Manuals

You may need additional information when working with the Trakker Antares terminals in a data collection system. Please visit our Web site at www.intermec.com to download many of our current manuals in PDF format. To order printed versions of the Intermec manuals, contact your local Intermec representative or distributor.

1

Introducing the Trakker Antares 2400 Family

This chapter provides an overview of the Trakker Antares 2400 Family of terminals and describes network connectivity and protocols.

What Is the Trakker Antares 2400 Family?

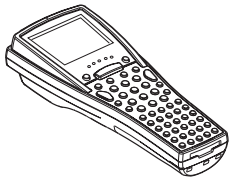
The Trakker Antares 2400 Family of terminals provides a comprehensive data collection solution for manufacturing, warehousing, distribution, healthcare, and retail environments. This full family of products shares the same programming tools, configuration, and connectivity. The 2400 Family includes the following terminals:

- 2410 and 2415 hand-held
- 2420, 2425, and 2425CS hand-held
- 2430 and 2435 hand-held
- 2455 vehicle-mount
- 2460 and 2461 light industrial stationary
- 2475 vehicle-mount
- 2480, 2481, 2485, and 2486 heavy industrial stationary

For information about the 2425CS, see the documentation that ships with the 2425CS.

The 2400 Family is a Wi-Fi certified family of products. The 2415, 2425, 2435, 2455, 2475, 2485, and 2486 terminals with an IEEE 802.11b radio installed are Wi-Fi certified for interoperability with other 802.11b wireless LAN devices.

Trakker Antares 241X Terminals



The Trakker Antares 2410 and 2415 terminals are small, lightweight, hand-held data collection terminals that are designed for a range of applications, including commercial applications such as in-store retail.

The Trakker Antares 241X family of terminals includes these models:

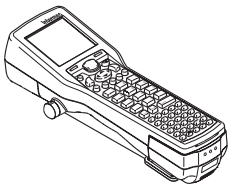
2410 The 2410 is a programmable data collection terminal that runs custom batch applications. The terminal has a flash drive to store applications and files. The 2410 also has an integrated input/output (I/O) port to transmit data to and accept data from a host or PC through RS-232 serial communications.

2415 The 2415 has all of the capabilities of the 2410; however, it can also communicate in a radio frequency (RF) network. Because it can communicate using RF, the 2415 provides real-time communications to a host either through the access points and the DCS 30X or directly through the access points. The 2415 can also run client/server applications, TE 2000™ terminal emulation applications, and Data Collection Browser™ (dcBrowser™), which lets you run Web-based applications.

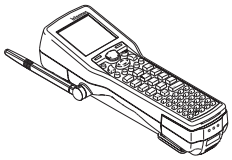
Trakker Antares 242X Terminals

The 2420 and 2425 terminals are hand-held data collection terminals. You can use these programmable terminals to run custom applications or terminal emulation applications.

The Trakker Antares 242X family of terminals includes these models:



2420 The 2420 is a programmable data collection terminal that has 512K of RAM reserved for custom applications. The terminal has a 750K flash drive to store applications and files. The 2420 also has a serial port to transmit data to and accept data from a host or PC through RS-232 serial communications.



2425 The 2425 has all of the capabilities of the 2420 with the additional ability to communicate in the RF network. Because it can communicate using RF, the 2425 provides real-time communications to a host either through the access points and DCS 30X or directly through the access points. The 2425 can also run client/server applications, terminal emulation applications, and dcBrowser, which lets you run Web-based applications.

Trakker Antares 243X Terminals

The 2430 and 2435 terminals are hand-held data collection terminals. You can use these programmable terminals to run custom applications or terminal emulation applications.

The Trakker Antares 243X family of terminals includes these models:

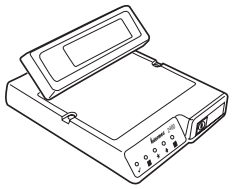
2430 The 2430 is a programmable data collection terminal that runs custom batch applications. The 2430 has a flash drive to store applications and files and an integrated I/O port to transmit data to and accept data from a host computer or other serial device using RS-232 communications. The versatile display features of the 2430 allow you to resize the screen up to 21 lines by 31 characters based on operator preference and work environment.

2435 The 2435 has all of the same functionality as the 2430 with the additional ability for real-time communications through an RF network. The 2435 can communicate with a host either through the access points and the DCS 30X or directly through the access points. The 2435 can also run client/server applications, TE 2000 terminal emulation applications and dcBrowser, which lets you run Web-based applications.

Trakker Antares 2455 Terminals

2455 The 2455 is a vehicle-mount data collection terminal that can communicate in an RF network. You can use this programmable terminal to run client/server applications, terminal emulation applications, and dcBrowser, which lets you run Web-based applications.

Trakker Antares 246X Terminals



The Trakker Antares 2460 and 2461 stationary terminals are desktop data collection terminals. You can use these programmable terminals to run client/server applications such as work-in-process, time and attendance, or document tracking.

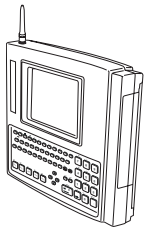
The Trakker Antares 246X family of terminals includes these models:

2460 The 2460 is a programmable data collection terminal that uses serial ports to transmit data to and receive data from a host or PC. The 2460 has two serial ports, COM1 and COM2.

2461 The 2461 is a programmable data collection terminal that has both a serial port and an Ethernet connector to transmit data and receive data.

Note: The 246X terminals are mentioned in this manual; however, the primary source of information for these terminals is the user's manual. For help using the 246X, see the *Trakker Antares 246X Stationary Terminal User's Manual* (P/N 068575).

Trakker Antares 2475 Terminals

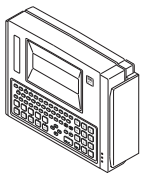


2475 The 2475 is a vehicle-mount data collection terminal that can communicate in an RF network. You can use this programmable terminal to run client/server applications, terminal emulation applications, and dcBrowser, which lets you run Web-based applications.

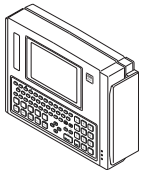
Trakker Antares 248X Terminals

The Trakker Antares 248X terminals (2480, 2481, 2485, and 2486) are compact stationary data collection terminals that are designed for a range of applications including process tracking, labor collection, and time and attendance applications. You can use these programmable terminals to run either client/server applications or terminal emulation.

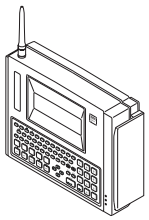
The Trakker Antares 248X family of terminals includes these models:



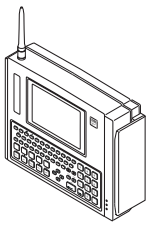
2480 The 2480 is a programmable data collection terminal. It has a serial port to transmit data to and accept data from a host or PC through RS-232 serial communications. With the optional Ethernet card, the 2480 can also transmit and receive data through Ethernet communications. The 2480 has a 4-line by 40-character screen.



2481 The 2481 has the same functionality as the 2480. The only difference between these two models is the screen size. The 2481 has a 12-line by 40-character screen that is configurable up to 25 lines.



2485 The 2485 is a programmable data collection terminal with the additional ability to communicate in the RF network. The 2485 provides wireless communications to a host either through the access points and DCS 30X or directly through the access points. The 2485 has a 4-line by 40-character screen.



2486 The 2486 has the same functionality as the 2485. The only difference between these two models is the screen size. The 2486 has a 12-line by 40-character screen that is configurable up to 25 lines.

What's New in Firmware Version 7.14?

Note: Firmware version 7.14 is supported on all terminals in the Trakker Antares 2400 Family except for the 246X. The 246X terminal supports firmware version 6.2X and earlier. For help using the 246X terminal, see the *Trakker Antares 246X Stationary Terminal User's Manual* (P/N 068575).

With this system manual revision, several significant changes were made to support software for firmware version 7.14:

- These configuration commands for the 802.1x security option were added: Password, Server Certificate Common Name, and User Name.
- The Power Management command was modified to provide three power management options.
- The upgrade section was modified to include information about saving custom applications and files.
- Information about how to choose a TE 2000 application was added to Appendix D.

About Network Connectivity and Protocols

The 2400 Family of terminals are data collection terminals with network support. The terminals communicate with a host computer or other serial device through the terminal's serial port. The Ethernet terminal communicates with a host directly through the Ethernet network. The RF terminal also communicates with a host either through the DCS 30X or directly through the access points. The access point acts as a bridge between the Ethernet or wired network and the RF network.

In a UDP Plus or WTP network, the terminal communicates through an access point using the DCS 30X to a host on a wired network. In a TCP/IP network, the terminal communicates through the access point directly to a host on a wired network.

The communications protocol stack for the terminal is developed using the Open Systems Interconnection (OSI) seven-layer model. The next illustration shows how the network and RS-232 serial port map into the OSI model.

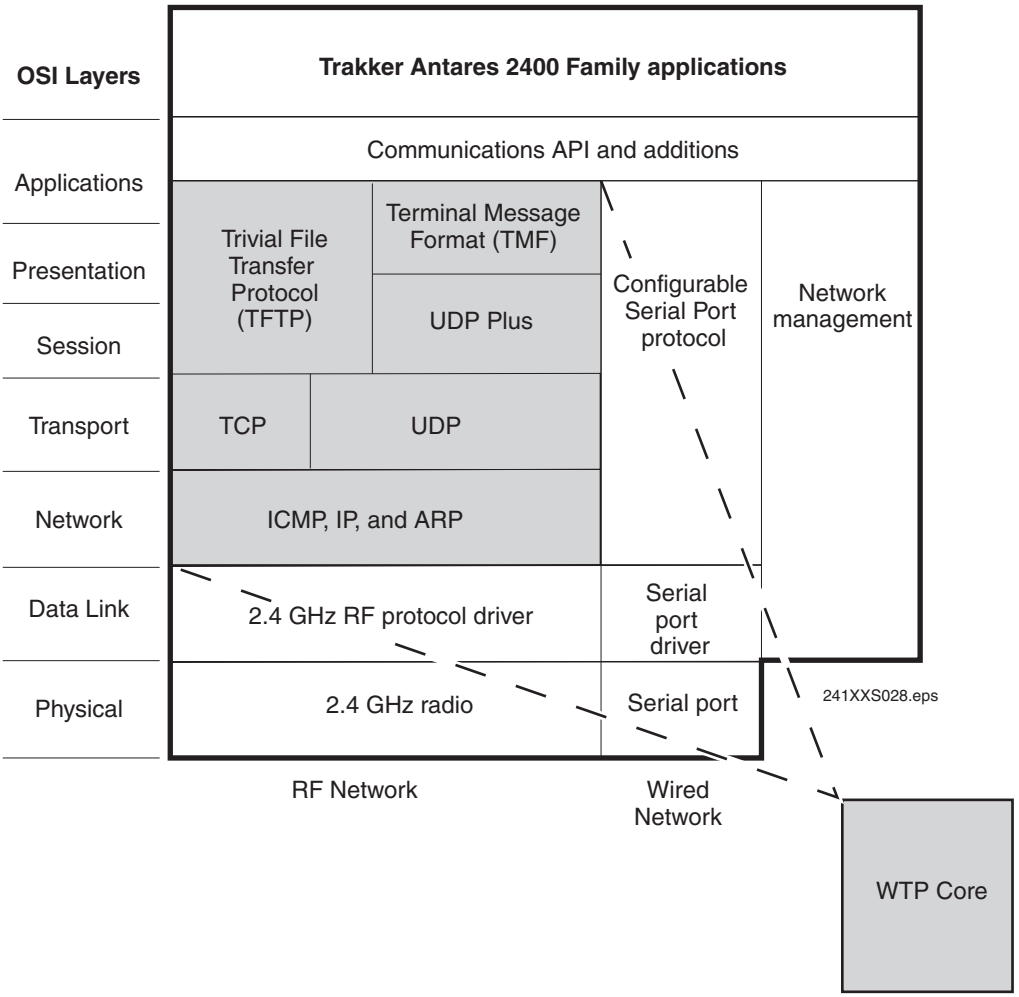
The terminal applications including terminal emulation and screen mapping are on top of the protocol stack. Intermec provides a terminal communications API (application program interface) to interface to the protocol stack. The API provides a common interface to these Intermec value-added protocols:

- Terminal Message Format (TMF) is an Intermec proprietary protocol that is used to route data and network management messages between applications on the terminal and peer tasks on the DCS 30X or host.
- UDP Plus is an Intermec protocol built on top of the User Datagram Protocol (UDP). It maximizes the performance of wireless (RF) and hardwired networks and provides robust data communications.
- WTP is an Intermec protocol that is designed to be used with TE 2000 terminal emulation. With terminal emulation, WTP provides access to two host sessions and supports switching keys between the two sessions.
- Trivial File Transfer Protocol (TFTP) allows efficient file exchange between the terminal and the DCS 300 or host.

- Configurable Serial Port (CSP) protocol allows efficient file exchange between the terminal and the host through RS-232 serial communications. The terminal uses either the XMODEM or YMODEM protocol to transfer files using reader commands.
- Network management provides network access to the terminal configuration, status, and statistics. Network management uses the Terminal Message Format to receive and send messages.

The remaining layers in the protocol stack are a series of standard protocols that interface with the drivers and hardware needed to support the RF network and RS-232 serial communications.

Trakker Antares Terminal Protocol Stack and the OSI Model



Note: In a WTP network, the WTP core replaces the shaded layers shown. For help using WTP, see the appropriate TE 2000 user's guide.

The terminals use these protocols:

Layer	Protocol	Description
Physical	2.4 GHz radio	Provides spread spectrum radio signal control.
	Serial Port	Provides serial communications.
Data Link	2.4 GHz RF protocol driver	Provides RF media access control. The default hardwired media access control (MAC) protocol used with TCP/IP supports the Ethernet II standard.
	Serial port driver	Provides serial communications control that uses CSP and the standard XMODEM or the YMODEM protocol for data transfer.
Network	ICMP, IP, and ARP	The Internet Control Message Protocol (ICMP) complies with the standard outlined in RFC 826. The Internet Protocol (IP) complies with the standard outlined in RFC 791. The Address Resolution Protocol (ARP) complies with the standard outlined in RFC 826.
Transport	UDP	The User Datagram Protocol (UDP) complies with the standard outlined in RFC 768.
	TCP	Transmission Control Protocol (TCP) complies with the standard outlined in RFC 793.
Session and Presentation	UDP Plus	UDP Plus is an Intermec proprietary session layer protocol built on UDP. The UDP Plus session layer provides these services: • guaranteed delivery • duplicated message removal • link connection and status management • network error recovery • congestion control • device error detection
	TFTP	Trivial File Transfer Protocol (TFTP) allows efficient file exchange between the terminal and the DCS 300 or host. TFTP complies with the standard outlined in RFC 1350.
Presentation and Application	TMF	Terminal Message Format is an Intermec proprietary protocol that is used to route data, configuration, and network management messages between applications on the terminal and peer tasks on the DCS 30X or host.

Trakker Antares Protocol Descriptions

Layer	Protocol	Description
Application, Presentation, Session, Transport, and Network	WTP	Wireless Transaction Protocol (WTP) is an Intermec proprietary protocol that provides these Ethernet level services: • duplicated message removal • guaranteed delivery • link connection and status management • network error recovery • congestion control • device error detection

2

Configuring the Terminals

This chapter describes how to configure the terminals, discusses the terminal's configuration parameters, and describes how to restore the default configuration.

How to Configure the Terminals

You can customize many operating characteristics of the 2400 Family of terminals such as the volume of their audio signals and the bar code symbologies they decode. These characteristics are controlled by configuration parameters. The values you set for the configuration parameters determine how the terminal operates. To learn about each parameter, see Chapter 6, "Configuration Command Reference."

This chapter describes how to configure terminals using the UDP Plus or TCP/IP networks. If you are using a WTP network, see the appropriate TE 2000™ user's guide. You can configure the terminals by using any of these methods:

Use the TRAKKER Antares 2400 Menu System With menus and screens, the TRAKKER Antares 2400 Menu System lets you view the current configuration and modify configuration parameters. For help, see your user's manual.

Scan bar code labels You can change the terminal's configuration parameters by scanning Code 39 or Code 93 bar code labels that contain configuration commands. This method is a fast, easy way to change the terminal's configuration. You can scan the bar code labels in this manual, or you can create your own bar code labels. For help, see "Configuring the Terminal by Scanning Bar Code Labels" on page 2-4.

Send commands through the serial port You can change the terminal's configuration parameters by sending commands from a host computer or PC that is connected to the terminal's serial port. For help, see "Configuring the Terminal Through the Serial Port" on page 2-5.

Send commands through the Ethernet or RF port You can change the terminal's configuration parameters by sending commands through the UDP Plus or TCP/IP network. This method lets you configure one or more terminals at the same time. For help, see "Configuring the Terminal Through the Network" on page 2-7.

Use the clone application You can set the terminal's configuration parameters by using the clone application to copy configuration parameters from one terminal to another. This method is a fast, easy way to configure your new terminals with the same parameters as your existing terminals. For help, see "Configuring the Terminal With the Clone Application" on page 2-13.

About the Configurations

The terminal uses three configurations: current, active, and default. Having separate current and active configurations lets you control the active configuration while letting each operator make some changes to the current configuration, such as scanning a bar code to change the beep volume.

Current This configuration, also called the runtime configuration, uses the configuration that is saved in RAM. When you change a parameter by using the menu system, by scanning a bar code, by sending it from a host application, or by sending it from the DCS 300, the terminal updates the current configuration. The changes to the current configuration are lost when you boot or reset the terminal.

Active When you update the flash memory, the terminal copies the current configuration to the active configuration. The active configuration is the configuration that the terminal uses when you boot or reset the terminal.

Default This configuration is the factory default configuration. You may want to restore the default configuration. For help, see "Restoring the Terminal's Default Configuration" on page 2-20.

Configuring the Terminal by Scanning Bar Code Labels

You can configure the terminal by scanning bar code labels that are listed in this manual or by creating your own Code 39 or Code 93 bar code labels. For example, you can scan this bar code label to set the beep volume to a quiet audio level:

Set Beep Volume to Quiet

$+BV1

Note: If you are working in the TRAKKER Antares 2400 Menu System, you cannot scan configuration commands. Exit the menu system to scan configuration commands.

As you scan bar code labels to configure the terminal, the terminal accepts and sets all commands. However, the terminal only uses the parameters that are valid for the current configuration. For example, if you configure COM1 to use the Configurable protocol, disable Handshake, and set a value for Poll, the terminal will set the value for Poll, but it will not use this value because Handshake is disabled.

If you want to save your changes after you boot or reset the terminal, you must save them in the terminal's flash memory. For help, see "Saving Configuration Changes in Flash Memory" on page 2-19.

To configure the terminal, you can scan separate bar code labels, or you can create bar code labels that contain more than one configuration command. For example, you can create one bar code label to configure the terminal for:

- One-Shot Scanner mode (SB0)
- Scanner Redundancy set to high (SR2)
- Beep Volume set to very loud (BV4)
- Disable Keypad Clicker (KC0)

One-Shot Scanner Mode, Set Scanner Redundancy to High,
Set Beep Volume to Very Loud, Disable Keypad Clicker

$+SB0SR2BV4KC0

When you create a bar code label to set several configuration commands, follow these rules:

- The bar code label must be printed using Code 39 or Code 93 symbology. If you need to scan a Code 39 bar code label that includes quotes or periods, you must configure the terminal to use Code 39 in Full ASCII mode.
- The bar code label must include the start and stop character. Most bar code printing utilities automatically include the start and stop character.
- The bar code label must start with $+ (Change Configuration command).
- Each configuration command must include the command syntax and the value for the command. For example, BV is the command syntax for Beep Volume and the value 4 sets the beep volume to very loud.
- If you set one configuration command to a string of ASCII characters and another configuration command follows, you must enclose the value in quotes. If you do not include the quotation marks, the terminal will interpret everything after the first command as data and will not find the second configuration command.

  For example, to set the preamble to BV, use $+ADBV (no quotes are needed). To set the preamble to BV and turn off the beep volume, use $+AD"BV"BV0, or change the order and use $+BV0ADBV. To clear the preamble and postamble from a single label, use $+AD""AE.
- To include quotation marks when you set a value, the entire value must be enclosed in quotation marks. Type two sets of quotation marks ("") to include one quotation mark as the value for a command. For example, to set the preamble to ABC"D, use $+AD"ABC""D".

Configuring the Terminal Through the Serial Port

You can write a host application that configures the terminal by sending reader and configuration commands through the serial port. For a list of reader commands, see Chapter 5, “Reader Command Reference.” For a list of configuration commands, see Chapter 6, “Configuration Command Reference.” You must connect the terminal to the host by either using a special cable or a communications dock and a special cable. Once the terminal and the host are communicating, you can configure the terminal.

If you are using the Configurable protocol, you must enable Frame mode and the Configuration Commands Via Serial Port command. You cannot configure the terminal through the serial port if you are using Configurable protocol with no EOM or Binary protocol on that port.

You can continue running an application on the terminal while configuring the terminal from the host. However, if you send a configuration command that changes the serial port parameters, you may not be able to continue sending commands unless you also reconfigure your host. You can also improve TMF performance by disabling the Network Activate command before sending commands through the serial port. For help, see "Network Activate" in Chapter 6.

To set up the application

- Write a host application that can send transactions to and receive transactions from the terminal in this format:

SOM	*TMF field*	*commands*	EOM

where:

SOM — is the start of message field.

TMF field — is only used if the Configuration Commands Via Serial Port are enabled with TMF. It is a 2-byte field containing one of these values:

- CG — Configuration Get request sent from the host application.
- Cg — Configuration Get response sent from the terminal to the host.
- CS — Configuration Set request sent from the host application.
- Cs — Configuration Set response sent from the terminal to the host.

To send data to an application instead of sending configuration commands, use the letter `A` followed by a space in the TMF field. If the TMF field does not contain CG, Cg, CS, Cs, or A, the terminal ignores the transaction.

commands — are the reader and configuration commands that you want to set on the terminal or get the current value of from the terminal. To save configuration changes in flash memory, send the reader command `.+1` as the last command.

EOM — is the end of message field.

If the Configuration Commands Via Serial Port command is enabled without TMF or if you are using a protocol other than Configurable, leave this field blank.

Note: For security purposes, you cannot get the values for Security ID and WEP Key. To get the value for Symbology Identifiers, you need to use the command syntax and the value for Parameter 1. For example, to get the value for the Code 39 symbology identifier, use `CY01`. For help, see "Symbology Identifiers" in Chapter 6.

Example with TMF

In the host application, you want to set the values for the beep volume and keypad caps lock on the terminal. Send this transaction from the host application:

```
CS$+BV4KA1.+1
```

Note: SOM and EOM are not shown in this example.

where:

CS	is a TMF Configuration Set request.
$+	is the Change Configuration reader command.
BV4	sets the Beep Volume command to a value of 4, which is a very loud beep volume.
KA1	enables the Keypad Caps Lock configuration command.
.+1	saves the configuration changes to the terminal's flash memory.

The terminal returns this transaction to the host application:

```
Cs$+BV4KA1.+1
```

where:

Cs	is a TMF Configuration Set response.
$+	is the Change Configuration reader command.
BV4	means the Beep Volume command has been changed to a value of 4, which is a very loud beep volume.
KA1	means the Keypad Caps Lock configuration command was enabled.
.+1	means the configuration changes have been saved in flash memory.

Configuring the Terminal Through the Network

You can remotely configure the RF or Ethernet terminal by using one of these methods:

- Send a command from the DCS 300 (UDP Plus network only).
- Send a command from an application on the host computer (UDP Plus and TCP/IP networks).

Before you can send a command to the terminal, it must be communicating with the RF network. You must have already installed and configured the access points. If you are using a UDP Plus network, you must have installed and configured the DCS 300.

You can modify most RF network parameters through the network, except for these parameters:

- Acknowledgement Delay Lower Limit
- Acknowledgement Delay Upper Limit
- Controller Connect Check Receive Timer
- Controller Connect Check Send Timer
- DHCP (Controller)
- DHCP (Terminal)
- Maximum Retries
- Network Activate
- TCP Maximum Retries
- TCP/IP Maximum Transmit Timeout

You can modify these parameters or configure the terminal locally by using the TRAKKER Antares 2400 Menu System or by scanning a command from a Code 39 or Code 93 bar code label.

Note: You can continue running an application on the terminal while configuring the terminal from the network.

Sending a Command From the DCS 300

You can use the DCS 300 to configure one or more terminals in your RF or Ethernet network. The DCS 300 lets you group together terminals that you want to receive the same reader and configuration commands.

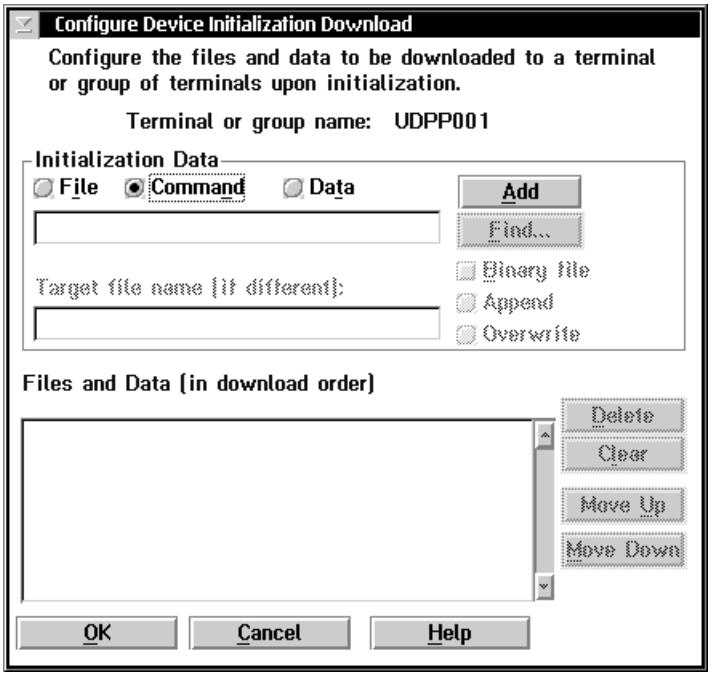
This method is very efficient if you need to change the same configuration parameters for several terminals in one area. For example, you may want to set the Beep Volume to very loud and turn on Keypad Caps Lock for all the terminals in one area.

Note: You can configure an RF or Ethernet terminal from the DCS 300, but you cannot get configuration data from the terminal.

To send commands from the DCS 300

1. Using the Download Server feature on the server, select the terminal or group to which you want to download the reader and configuration commands, and then choose Edit. For help configuring a group of terminals, see the *DCS 300 User's Manual* (P/N 067296).

2. In the Initialization Data box, choose the Command option button.



3. In the Initialization Data box field, enter the reader or configuration command, and then choose Add. The command appears in the Files and Data box.

   For example, enter this command to set the Beep Volume to very loud:

   ```
   $+BV4
   ```

Note: You can set the Postamble or Preamble configuration command to use characters from the extended ASCII character set such as the Field Exit code for 5250 TE. For help, see the appropriate TE manual.

4. Repeat Step 3 to add another reader or configuration command, or choose OK.
5. To save the configuration changes in flash memory, enter `.+1` as the last command.

   If you do not save the configuration changes in flash memory, the commands only change the current configuration.
6. Choose OK. The Terminal Download Configuration dialog box appears.
7. Choose Download to download the commands and change the configuration of the selected terminals.

Sending a Command From the Host

You can write a host application that configures one RF or Ethernet terminal. This host application must be able to communicate with the DCS 300 in a UDP Plus network or directly through the access point in a TCP/IP direct connect network.

Configuring the Terminal in a UDP Plus Network

You can use the host computer to configure a terminal in your RF or Ethernet network. To send and receive configuration data or files, you need to write a host application that can communicate with the DCS 300. For help, see the *DCS 300 User's Manual*. You use the Terminal Message Format (TMF) protocol to send and receive transactions between the host application and the terminal.

To set up the DCS 300

- Configure a peer-to-peer destination name for the host application. Create a transaction ID, $NGCFGRSP, that will be routed to this destination name. The DCS 300 uses the transaction ID to route responses from the terminal back to the host application. $NGCFGRSP is a special transaction ID that the server uses to forward configuration response data from a terminal.

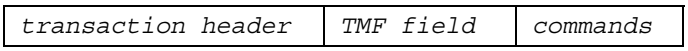
  All configuration responses will be routed with the $NGCFGRSP transaction ID. The DCS 300 cannot keep track of multiple applications sending reader or configuration commands. If you have two host applications sending reader or configuration commands, they must both be configured to receive the $NGCFGRSP transactions, and therefore both will receive all responses from all terminals.

To set up the host computer

- Verify that the host computer can communicate with the DCS 300.

To set up the application

- Prepare and write a host application that can communicate with the DCS 300 and send transactions to and receive transactions from the terminal in this format:



  where:

  transaction header is a 96-byte field containing the message number, date and time, source application ID, destinations application ID, transaction ID, and other information. You must set the system message (SYS$MSG) flag to E in the transaction header. For help, see the *DCS 300 User's Manual*.

TMF field is a 2-byte field containing one of these values:

- CG Configuration Get request sent from the host application.
- Cg Configuration Get response sent from the terminal to the host.
- CS Configuration Set request sent from the host application.
- Cs Configuration Set response sent from the terminal to the host.

commands are the reader and configuration commands that you want to set on the terminal or the current value you want to retrieve from the terminal. To save configuration changes in flash memory, send the reader command `.+1` as the last command.

For a list of commands, see Chapter 5, "Reader Command Reference," or Chapter 6, "Configuration Command Reference."

To see examples of the host application transactions, see "Example 1" on page 2-12 and "Example 2" on page 2-13.

Configuring the Terminal in a TCP/IP Direct Connect Network

You can use the host computer to configure an RF or Ethernet terminal in your TCP/IP network.

To send and receive configuration data, you need to write a host application that can communicate with the terminal directly through an access point or through the Ethernet network. You use the Terminal Message Format (TMF) protocol to send and receive transactions between the host application and the terminal.

For more information about developing an application, see "Transferring Files in a TCP/IP Direct Connect Network" on page 2-15.

Note: You can continue running an application on the terminal while configuring the terminal from the host.

To set up the host computer

- Verify that you can communicate with the terminal.

To set up the application

- Prepare and write a host application that can communicate with the terminal. Configuration commands must be sent to network port 6000 on the terminal. Message transactions to and receive transactions from the terminal on network port 6000 must conform to the following format:

TMF field	*commands*

where:

TMF field is a 2-byte field containing one of these values:

- CG Configuration Get request sent from the host application.
- Cg Configuration Get response sent from the terminal to the host.
- CS Configuration Set request sent from the host application.
- Cs Configuration Set response sent from the terminal to the host.

commands are the reader and configuration commands that you want to set on the terminal or the current value you want to retrieve from the terminal. To save configuration changes in flash memory, send the reader command `.+1` as the last command.

For a list of commands, see Chapter 5, "Reader Command Reference," or Chapter 6, "Configuration Command Reference."

Example 1

In the host application, you want to get the current values of two configuration commands from the terminal. Send this transaction from the host application:

```
CG$+NABV
```

Note: The transaction header is not shown in this example. You do not need a transaction header for a host application in a TCP/IP network.

where:

- CG is a TMF Configuration Get request.
- $+ is the Change Configuration reader command.
- NA is the Network Activate configuration command.
- BV is the Beep Volume configuration command.

The terminal returns this transaction to the host application.

```
Cg$+NA1BV4
```

where:

- Cg is a TMF Configuration Get response.
- $+ is the Change Configuration reader command.
- NA1 means the Network Activate configuration command is currently set to a value of 1, which means that the RF or Ethernet network is enabled.
- BV4 means the Beep Volume configuration command is currently set to a value of 4, which is a very loud beep volume.

Example 2
In the host application, you want to set the value for two configuration commands on the terminal. Send this transaction from the host application:

```
CS$+BV4KA1
```

Note: The transaction header is not shown in this example. You do not need a transaction header for a host application in a TCP/IP network.

where:

CS is a TMF Configuration Set request.

$+ is the Change Configuration reader command.

BV4 sets the Beep Volume configuration command to a value of 4, which is a very loud beep volume.

KA1 sets the Keypad Caps Lock configuration command to a value of 1, which enables the Keypad Caps Lock.

The terminal returns this transaction to the host application.

```
Cs$+BV4KA1
```

where:

Cs is a TMF Configuration Set response.

$+ is the Change Configuration reader command.

BV4 means the Beep Volume configuration command has been changed to a value of 4, which is a very loud beep volume.

KA1 means the Keypad Caps Lock configuration command has been changed to a value of 1, which enables the Keypad Caps Lock.

Configuring the Terminal With the Clone Application

The clone application uses XMODEM-1K protocol to copy configuration parameters and applications from one terminal (server terminal) to another (client terminal). The server and client terminals must have the same

- hardware configuration.
- version of firmware.
- version of the clone application.

Note: The clone application does not clone terminals with double-byte fonts or the 802.1x security option.

The clone application copies all configuration parameters from the server terminal to the client terminal, except for

- terminal IP address.
- security ID.

You need to configure these parameters separately. The clone application also removes all existing files on the client terminal's C drive and replaces them with the files on the server terminal's C drive.

For more information about upgrading firmware, see "Upgrading the Firmware" on page 2-22. For more information about downloading applications, see "How to Download Applications" in Chapter 3.

To clone configuration parameters and applications

1. Make sure the server terminal's configuration is saved in flash memory by scanning this bar code:

   Save Configuration in Flash Memory

   .+1

2. Load all applications and files to clone on the server terminal's C drive.
3. (RF terminals only) Disable the radio on both the server terminal and the client terminal.
4. Run the clone application on the server unit.
   a. From the Main Menu, select System Menu, and then select Clone Unit.
   b. Select OK to continue.
   c. Select Server.
5. Run the clone application on the client unit.
   a. From the Main Menu, select System Menu, and then select Clone Unit.
   b. Select OK to continue.
   c. Select Client.
6. Connect COM1 on the server terminal to COM1 on the client terminal using an RS-232 null modem cable. If you are cloning a 243X terminal, you can use the cloning cable accessory (P/N 216-909-001).

   The cloning process automatically begins once you connect the terminals. The client terminal lists the applications when cloning is complete.
7. On the server terminal, press Esc to exit. You can also configure another terminal by connecting it to the server terminal.

Transferring Files in a TCP/IP Direct Connect Network

In a TCP/IP direct connect network, you can use a host application to transfer files and send data between the terminal and host.

To initiate file transfers from the host, you must write a host application that can communicate directly with an RF or Ethernet terminal. You use the file management reader commands such as Receive File and Transmit File to transfer files between the terminal and the host. For help, see Chapter 5, "Reader Command Reference."

To initiate file transfers from the terminal, you do not need to develop a host application as described in this section. You can use the Receive File and Transmit File reader commands within a terminal application or by scanning bar code labels. For help, see Chapter 5, "Reader Command Reference."

To use the built-in TFTP client on the RF or Ethernet terminal, the

- TFTP (Trivial File Transfer Protocol) server must be running on the host.
- TFTP server must be running on at least a Pentium processor or equivalent.
- RF or Ethernet terminal must be communicating with the host that is running the TFTP server.
- TFTP server or some other application on the host must be able to send the reader command on the network.

Note: You can continue running an application, except TE, on the RF or Ethernet terminal while transferring files from the host.

To transfer files or send configuration data from the host

1. Make sure the TFTP server is running on the host and the RF or Ethernet terminal is communicating with the host.
2. Start the host application that can send reader commands to the terminal.
3. Send the two-character TMF code, CS (Configuration Set request) followed by the reader or configuration command. For help with TMF, see "Configuring the Terminal in a TCP/IP Direct Connect Network" on page 2-11.

   For example, to send the application INVENTRY.BIN from drive C on the host to drive C on the terminal, enter this command:

   ```
   CS.%R,c:inventry.bin,c:inventry.bin
   ```

   For command information, see Chapter 5, "Reader Command Reference," or Chapter 6, "Configuration Command Reference."

CLIENT.CPP is the source for a sample application you can run on the host. You can use CLIENT.CPP to send reader commands to the RF or Ethernet terminal and receive the resulting messages.

The source code for the sample utilities CLIENT.CPP and the include file UTILS.H is shown on the next pages. You can build the application using Microsoft Visual C++ version 4.0 or later and the Windows sockets library that is included with Microsoft Visual C++. You can also develop your own application to meet the needs of your host environment.

You run the resulting application (CLIENT.EXE) from the DOS command line. The application expects NCM to be defined as the terminal IP address in the hosts file. Once running, the application prompts you to enter a reader command, which it then sends to the RF or Ethernet terminal. The application also displays any return messages. Reader commands are handled by the Trakker Antares operating system, so you can continue running an application while you use the CLIENT.EXE application to send commands.

To use the sample utility CLIENT.CPP

1. Make sure the TFTP server is running on the host and the RF or Ethernet terminal is communicating with the host.
2. In the hosts file on the host, add the terminal IP addresses and the target name, NCM. For example, to send files or data to the terminal with an IP address of 192.9.200.130, add this line to the hosts file:

   ```
   192.9.200.130 ncm
   ```

3. Start the CLIENT.EXE application on the host.
4. When the "Enter Command" prompt appears on the host, enter the two-character TMF code, CS (Configuration Set request) followed by the reader or configuration command.

   For example, to send the application INVENTRY.BIN from drive C on the host to drive C on the terminal, enter this command:

   ```
   CS.%R,c:inventry.bin,c:inventry.bin
   ```

CLIENT.CPP Sample Application for a TCP/IP Direct Connect Network

```
#include <windows.h>
#include <stdio.h>
#include "Utils.h"

// our application uses a fixed port number
const unsigned short SERVER_PORT = 6000;
const unsigned short CLIENT_PORT = 6001;
// we will default to the local host machine
// unless argv[1] has a hostname
const char SERVER_HOSTNAME[] = "ncm";

int main(int argc, char *argv[])
{
```

CLIENT.CPP Sample Application for a TCP/IP Direct Connect Network (continued)

```
// turn on the socket library for this process
    WSADATA wsad;
    int error = WSAStartup(MAKEWORD(1,1), &wsad);
    if (error != 0)
        ErrorMessage("WSAStartup", WSAGetLastError());

// create an unitialized connection-oriented socket
    SOCKET connection;
    connection = socket(PF_INET, SOCK_DGRAM, 0);
    if (connection == INVALID_SOCKET)
        ErrorMessage("socket", WSAGetLastError());

// lookup the IP address of the requested host
    HOSTENT *phostent = gethostbyname(argc == 2 ? argv[1] : SERVER_HOSTNAME);
    if (phostent == 0)
        ErrorMessage("gethostbyname", WSAGetLastError());

// define a SOCKADDR to contain the IP address of the
// server and the port number of our application
    SOCKADDR_IN serverAddress;
    memset(&serverAddress, 0, sizeof(serverAddress));
    serverAddress.sin_family = PF_INET;
    serverAddress.sin_port   = htons(SERVER_PORT);
memcpy(&serverAddress.sin_addr, phostent->h_addr_list[0], phostent->h_length);
// Bind a well known port of 6000 to the socket
      SOCKADDR_IN clientAddress;
      memset(&clientAddress, 0, sizeof(clientAddress));
      clientAddress.sin_family = PF_INET;
      clientAddress.sin_port = htons(CLIENT_PORT);
      clientAddress.sin_addr.s_addr = htonl(INADDR_ANY);
      if(!(bind(connection, (LPSOCKADDR)&clientAddress, sizeof(clientAddress))
      ==0))
      {
           ErrorMessage("bind", WSAGetLastError());
      }
// attempt to connect to the server
    error = connect(connection, (const SOCKADDR *)&serverAddress,
    sizeof(serverAddress));
    if (error != 0)
        ErrorMessage("connect", WSAGetLastError());

// check the local name for the socket
      SOCKADDR_IN localName;
      memset(&localName, 0, sizeof(localName));
      int localNameLength = sizeof(localName);
      error = getsockname(connection, (LPSOCKADDR)&localName, &localNameLength);
```

CLIENT.CPP Sample Application for a TCP/IP Direct Connect Network (continued)

```
// run the user-interface
    char sz[1024];
      char rz[1024];
    BOOL bConnectionAlive = TRUE;
    printf("> ");
      int Scount, Rcount;
    int cbRecv, cbSend;
    Scount = Rcount = 0;
    int cbLen, rcLen;
    unsigned char *psend = (unsigned char *)sz;

// continue while not EOF on the console and the connection is alive
   while (bConnectionAlive)
   {
// send the string entered by the user
         printf("Enter Command:\n");
         printf("> ");
         gets(sz);
         if(sz[0] != 'q')
         {
               cbLen = strlen(sz);
               cbSend = send(connection, (const char *)psend, cbLen, 0);
               if (cbSend < 0)
               {
                    Scount++;
                    printf("send failed %d\n", Scount);
                    bConnectionAlive = FALSE;
                    ErrorMessage("send", WSAGetLastError());
               }
              Sleep(2000);
// receive the converted string from the server
               memset(&rz, 0, sizeof(rz));
               rcLen = sizeof(rz);
               cbRecv = recv(connection, rz, rcLen, 0);
               if (cbRecv < 0)
               {
                    Rcount++;
                    printf("receive failed %d\n", Rcount);
                    ErrorMessage("receive", WSAGetLastError());
                    bConnectionAlive = FALSE;
               }
// printf the converted string
               printf("response:%s\n",rz);
               printf("\n> ");
               Sleep(1000);
         }
         else
              bConnectionAlive = FALSE;
    }
```

CLIENT.CPP Sample Application for a TCP/IP Direct Connect Network (continued)

```
// release the resources held by the socket
    error = closesocket(connection);
    if (error != 0)
        ErrorMessage("closesocket", WSAGetLastError());

// release the resources held by the socket library
    error = WSACleanup();
    if (error != 0)
        ErrorMessage("WSACleanup", WSAGetLastError());
    return 0;
}
```

UTILS.H Utility (Used by CLIENT.CPP)

```
#include <windows.h>
inline void ErrorMessage(LPCTSTR szFn, DWORD dwError = GetLastError())
{
    TCHAR szTitle[1024];
    TCHAR szPrompt[1024];
    BOOL bRet = FormatMessage(FORMAT_MESSAGE_FROM_SYSTEM,
             0, dwError,
             0,
             szPrompt,
             sizeof(szPrompt),
             0);
    if (!bRet)
        lstrcpy(szPrompt, __TEXT("Unknown Error"));
    wsprintf(szTitle, __TEXT("%s failed with error code (0x%x)!"), szFn, dwError);
    int id = MessageBox(HWND_DESKTOP, szPrompt, szTitle,
MB_ABORTRETRYIGNORE|MB_SETFOREGROUND);
    if (id != IDIGNORE)
        ExitProcess(0);
}
```

Saving Configuration Changes in Flash Memory

If you configure the terminal by scanning bar code labels, using the serial port, or using the network, you may want to save the changes in flash memory by

- scanning the Save Configuration in Flash Memory reader command bar code label.
- sending the Save Configuration in Flash Memory reader command through the network.
- using the TRAKKER Antares 2400 Menu System.

To save configuration changes by scanning a bar code label

- Scan this bar code label:

  Save Configuration in Flash Memory

  .+1

To save configuration changes by sending a command through the network

- Send .+1 as the last command from the host application or the DCS 300.

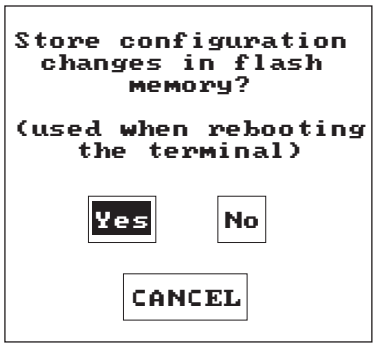
To save configuration changes using the menu system

1. Press f ↵ 2 4 8 or scan this bar code.

   TRAKKER Antares 2400 Menu System

   ..-.

   The Main Menu appears.
2. Choose System Menu and press ↵. The System Menu appears.
3. Choose the Store Configuration command and press ↵. The Store Configuration screen appears.
4. Choose Yes to save the configuration in flash memory. To exit without saving the configuration, choose Cancel. The System Menu appears.
5. Press Esc to exit the System Menu. The Main Menu appears.
6. Choose another menu from the Main Menu or press Esc to exit the TRAKKER Antares 2400 Menu System.



24XXS033.eps

Restoring the Terminal's Default Configuration

The default configuration for the terminal is listed in Appendix A. You can restore the terminal's default configuration by

- scanning the Default Configuration bar code label.
- sending a command through the network.
- using the TRAKKER Antares 2400 Menu System.

If you restore the default configuration, you need to set the primary network communications parameters on the RF terminal to reestablish communications with other devices in the RF network. You may also need to reset the serial port or Ethernet parameters to communicate with other devices in your wired network.

To restore the default configuration by scanning a bar code label

- Scan this bar code label:

  Default Configuration

  .+

To restore the default configuration by sending a command through the network

- Send `.+0` from the host application or the DCS 300.

To restore the default configuration using the menu system

1. Press f ↵ 2 4 8 or scan this bar code label:

   TRAKKER Antares 2400 Menu System

   ..-.

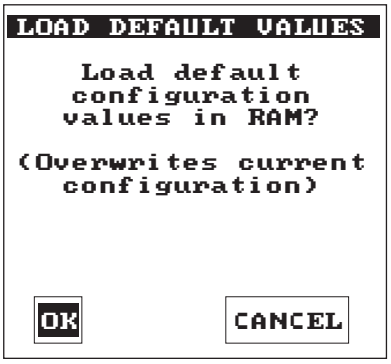
   The Main Menu appears.

2. Choose System Menu and press ↵. The System Menu appears.

3. Choose the Load Default Values command and press ↵. The Load Default Values screen appears.

4. Choose OK and press ↵ to load the default configuration values. The default values will override the current runtime configuration on the terminal.

   To exit without loading the default values, choose Cancel and press ↵. The System Menu appears.



24XXS034.eps

5. Press Esc to exit the System Menu. The Main Menu appears.

6. Choose another menu from the Main Menu or press Esc to exit the TRAKKER Antares 2400 Menu System.

Upgrading the Terminal

This section explains how to upgrade the firmware on the terminal and how to load double-byte fonts, if you choose to order them after you receive your terminal. You can also upgrade the terminal for:

- TE 2000 (new releases)
- Data Collection Browser™ (dcBrowser™)

For pricing and availability, contact your local Intermec representative.

Upgrading the Firmware

When you upgrade the firmware, you remove existing applications and files on the terminal and restore the terminal's default configuration. Make sure you back up your custom files and applications, such as TE 2000, dcBrowser, and ROM-DOS™, so that you can reinstall them after the upgrade procedure. For help, see "Using the Serial Port to Transfer Applications and Files" in Chapter 3.

You will need to set the primary network communications parameters on the RF terminal to reestablish communications with other devices in the RF network. You may also need to reset the serial port or Ethernet parameters to communicate with other devices in your wired network.

Note: Trakker Antares Native terminal emulation is only supported on terminals with firmware version 6.23 and earlier. If you want to upgrade your firmware to version 7.0 or later and continue to use a terminal emulation application, you can order TE 2000. For help, see your local Intermec sales representative.

You can download the latest version of firmware from the Intermec Web site at www.intermec.com. When you download the firmware files, you will be prompted to also download the Trakker Antares Firmware Upgrade Utility (TAUPGRADE.EXE) and the FileCopy application (FILECOPYx.x.EXE, where x.x is the version number). Download TAUPGRADE.EXE if you are using a PC with Microsoft Windows 2000/NT/XP. Download FILECOPYx.x.EXE if you have or need to load TE 2000 on your terminal.

You can upgrade your terminal firmware using the

- Trakker Antares DOS Firmware Upgrade Utility (UPGRADE.BAT). This utility is included with the firmware upgrade. You can use this utility to upgrade the firmware using an MS-DOS window on a PC with Microsoft Windows 95/98.

  If you want to use the DOS Firmware Upgrade Utility on a PC with Windows 2000/NT/XP, you can follow the upgrade procedure through Step 13. Print the UPGRADE.BAT file. Identify the numbers that are associated with the menu selections in Steps 15 through 18. When you get to Step 14, type:

  ```
  UPGRADE X X X X
  ```

where the Xs represent the menu selection numbers.

- Trakker Antares Firmware Upgrade Utility (TAUPGRADE.EXE). This utility is available at no charge from the Intermec Web site at www.intermec.com. It allows you to upgrade the terminal firmware using a Microsoft Windows interface on a PC with Microsoft Windows 2000/NT/XP.

Note: The Trakker Antares Firmware Upgrade Utility cannot be used to upgrade terminals with 802.1x security.

- Firmware Upgrade Utility on the DCS 300.

This section describes how to use the DOS Firmware Upgrade Utility and the Trakker Antares Firmware Upgrade Utility. For help using the Firmware Upgrade Utility on the DCS 300, see the *DCS 300 User's Manual*.

To upgrade the firmware using the Trakker Antares DOS Firmware Upgrade Utility

Note: Make sure you back up your custom files and applications, such as TE 2000, dcBrowser, and ROM-DOS, so that you can reinstall them after the upgrade procedure. For help, see "Using the Serial Port to Transfer Applications and Files" in Chapter 3.

1. Open the MS-DOS window, and then open the MS-DOS Prompt Properties dialog box. On the Memory tab, set the Initial Environment field to 4096. Close the MS-DOS window and re-open it.
2. Connect the terminal to a PC running Windows 95/98. For help see your user's manual.
3. Create a new directory on your PC.
4. Copy these five upgrade files to the directory that you created in Step 3:
   - INSTALL.BAT
   - INSTALL.INF
   - README.TXT
   - TKANT*xxx*.EXE, where *xxx* is the firmware revision number. Or, TKVxxxxx.EXE, where *xxxxx* is the field trial release number.
   - WHATSNEW.TXT
5. Access the MS-DOS window.
6. Change to the directory where the upgrade files are located.
7. Type:

   ```
   INSTALL
   ```

   The batch file explodes the TKANT*xxx*.EXE or TKVxxxxx.EXE file to a new directory. This new directory contains all the files you need to perform an upgrade.

8. On the terminal, press [f] [↵] [2] [4] [8] or scan this bar code label:

   TRAKKER Antares 2400 Menu System

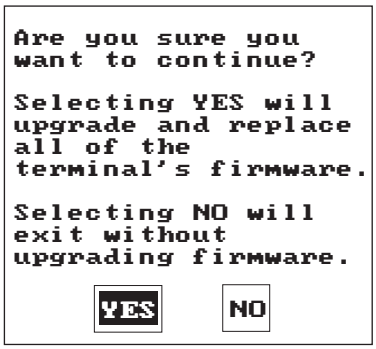
   ..-.

   The Main Menu appears.

9. Choose System Menu and press [↵]. The System Menu appears.
10. Choose Upgrade Firmware and press [↵]. The Upgrade Firmware screen appears.

24XXS035.eps

11. Choose OK to continue. The next screen appears.



24XXS036.eps

12. Choose Yes to continue and upgrade the firmware. The terminal reboots and then displays the Loader Waiting screen.

    If you reach the Loader Waiting screen and cannot upgrade or continue, press [Esc] once or [½] twice to exit without upgrading the firmware. The Boot Menu appears. Press [2] or [L] to access the Loader Waiting screen.

13. On your PC in the MS-DOS window, change to the directory that contains the upgrade files in Step 6.

14. Type:

    ```
    UPGRADE
    ```

    A menu appears asking you to select a communications port.

    If you are using Windows 2000/NT/XP, print the UPGRADE.BAT file. Identify the numbers that are associated with the menu selections in Steps 15 through 18. Type:

    ```
    UPGRADE X X X X
    ```

    where the Xs represent the menu selection numbers.

15. Select a communications port:

Type This Value	Communications Port
1	COM1
2	COM2
3	COM3
4	COM4

    A menu appears asking you to select a download speed.

16. Select a download speed:

Type This Value	Download Speed
1	9600 baud
2	19200 baud
3	38400 baud
4	57600 baud
5	115200 baud

    A menu appears asking you to select which protocol stack to use.

17. Select a protocol stack:

Type This Value	Protocol Stack
1	UDP Plus
2	TCP/IP
3	Batch/Serial
4	WTP

    A menu appears asking you to select the communication hardware for your terminal.

18. Select the communications hardware:

Type This Value	Communications Hardware
1	OpenAir radio
2	802.11b radio
3	Ethernet
4	802.11b radio and 802.1x security

Note: You can only select 802.11b radio and 802.1x security if you selected TCP/IP in Step 17 and you have either the 802.1x security option or the 4MB flash memory.

The Loader screen appears and begins downloading the firmware and application to the terminal.

19. When you are done upgrading the firmware, the terminal returns to its default configuration. You will need to reconfigure the terminal. For help, see "How to Configure the Terminals" on page 2-3.
20. If necessary, reload your custom applications and files on the terminal. For help, see "Using the Serial Port to Transfer Applications and Files" in Chapter 3.

To upgrade the firmware using the Trakker Antares Firmware Upgrade Utility

Note: Make sure you back up your custom files and applications, such as TE 2000, dcBrowser, and ROM-DOS, so that you can reinstall them after the upgrade procedure. For help, see "Using the Serial Port to Transfer Applications and Files" in Chapter 3.

1. The Trakker Antares Firmware Upgrade Utility is included with the firmware upgrade. Install the utility (TAUPGRADE.EXE) on your PC.
2. Use the online help that ships with the utility to upgrade the firmware on your terminal.
3. If necessary, reload your custom applications and files on the terminal. For help, see "Using the Serial Port to Transfer Applications and Files" in Chapter 3.

Loading Double-Byte Fonts

If you ordered the optional 4MB flash drive (drive D), you can order a double-byte font and load the font on your terminal. To order a double-byte font, contact your local Intermec representative.

Note: Double-byte fonts are not available for terminals with the 802.1x security option.

You can also order the Thai language font as a configuration option for the Trakker Antares 2400 Family. For help, contact your local Intermec representative. Use the next table to determine which file name you need.

Language	File Name
Simplified Chinese, VT	24DBCSCT.FON
Simplified Chinese, 5250	24DBCSCL.FON
Japanese EUC (unix), VT	24DBCSJT.FON
Japanese, 5250	24DBCSJL.FON
Korean, VT	24DBCSKT.FON
Korean, 5250	24DBCSKL.FON
Big 5 Chinese, VT	24DBCSTT.FON
Big 5 Chinese, 5250	24DBCSTL.FON

Note: If you are using a Japanese double-byte font, the cursor symbol is represented by an arrow symbol.

If you have a 241X terminal, you may also need to order a keypad overlay to use the double-byte font. For more information, contact your local Intermec representative.

To load a double-byte font

1. Connect your terminal to a PC running Windows 95/98. For help, see your user's manual.
2. On your PC, copy the FLOADER.EXE application and the double-byte font file into a directory.
3. On your terminal, press f ↵ 2 4 8 or scan this bar code label:

   TRAKKER Antares 2400 Menu System

   ..-.

   The Main Menu appears.
4. Choose System Menu and press ↵. The System Menu appears.
5. Choose Upgrade Firmware and press ↵. The Upgrade Firmware screen appears.
6. Choose OK to continue.

7. Choose Yes to continue and upgrade the firmware. The terminal reboots and displays the Loader Waiting screen.

Note: If you reach the Loader Waiting screen and cannot upgrade or continue, press Esc once or ⏻ twice to exit without upgrading the firmware. The Boot Menu appears. Press 2 or L to access the Loader Waiting screen.

8. On your PC, access the MS-DOS window.
9. At the prompt, change to the directory that contains the double-byte font.
10. Type:

    `FLOADER /COM`*`n`* `/`*`baudrate filename`*`.FON`

    where:

    baudrate is b9600, b19200, b38400, b57600, or b115200.

    filename is one of the file names in the table.

    n is the number of the COM port.

    The font is downloaded to your terminal.

11. On your terminal, press Esc to exit the Loader Waiting screen, and press 1 or B to boot the terminal.

3

Developing and Using Applications

This chapter explains how to create, download, and run applications on the programmable terminals.

About the Trakker Antares Programmable Terminals

The Trakker Antares terminals ship loaded with a terminal emulation application or a sample application. If you ordered the DOS option, the terminal also ships with the necessary DOS files you need to run DOS applications.

You can also develop your own data collection applications for the terminal and download the applications to the terminal. After you download an application to the terminal, you are ready to run the application and use it. This chapter describes how to

- develop applications for the terminals. For help, see "Creating Applications for the Terminal" on page 3-5.
- download applications and files to the programmable terminals. For help, see "How to Download Applications" on page 3-9.
- run applications on the terminals. For help, see "Running Applications on the Terminal" on page 3-22.

Note: This chapter describes how to create, download, and run DOS applications. To use DOS on the Trakker Antares terminal, you must order the DOS option. For help, contact your local Intermec representative.

The next table lists specifications and technical information you need to know to develop applications for the Trakker Antares terminals.

Trakker Antares Programmable Terminal Specifications

Specification	Description	Terminals
Serial Communications	RS-232 serial communications through COM1	• 241X through the serial port or communications dock • 242X through the serial interface module, communications dock, or optical link adapter • 243X, 2455, 246X, 2475, 248X
	RS-232 serial communications through COM4	• 2455 • 248X with the enhanced input/output board option and adapter cable accessory
	RS-232/422/485 serial communications through COM2	• 2460 • 248X with the enhanced input/output board option
RF Communications	802.11b radio OpenAir radio	All RF terminals

Trakker Antares Programmable Terminal Specifications (continued)

Specification	Description	Terminals
Network protocol	UDP Plus provides host connectivity through the DCS 30X	• 2415, 2425, 2435, 2455, 2475, 2485/6 in the RF network through an access point • 2461, 2480/1 (with the optional Ethernet card) in the Ethernet network
	TCP/IP provides host connectivity through the RF or Ethernet network	• 2415, 2425, 2435, 2455, 2475, 2485/6 in the RF network through an access point • 2461, 2480/1 (with the optional Ethernet card) in the Ethernet network
	WTP provides host connectivity through the DCS 30X	• 2415, 2425, 2435, 2455, 2475, 2485/6 in the RF network through an access point • 2461, 2480/1 (with the optional Ethernet card) in the Ethernet network
Drives and File system	Drive C, approximately 750K flash for user, up to 128 files	All terminals
	Drive D, optional 2MB configurable flash memory storage, up to 128 files (configurable as a storage drive or a storage space for double-byte fonts)	All terminals
	Drive E, configurable (up to 256K) RAM disk, up to 128 files	All terminals
	Drive G, optional 2MB or 4MB extended SRAM drive, up to 128 files	2410, 2420, 2430, 2475, 2485/6, 2480/1 with Ethernet connectivity
Application	Programmed in Microsoft C, customer defined, stored on drive C. Maximum size of a single application is 512K (less the size of the RAM drive, if configured).	All terminals
Application name	Customer defined, eight characters with three-character extension	All terminals
Storing applications	Multiple (maximum depends on the drive space)	All terminals
Developing applications	Using Trakker Antares Programmer's Software Kit (PSK) or EZBuilder	All terminals

Trakker Antares Programmable Terminal Specifications (continued)

Specification	Description	Terminals
Downloading applications	RS-232/422/485 serial communications from the PC or host computer	• 241X, 242X (also through the modem), 243X, 2455, 2475 through RS-232 only • 2460, 248X (with the enhanced input/output board option) through RS-232/422/485
	RF or Ethernet communications from the DCS 300 to the terminal's flash drive	• 2415, 2425, 2435, 2455, 2475, 2485/6 through RF • 2461, 2480/1 (with the optional Ethernet card) through Ethernet
	RF or Ethernet communications and TFTP from a host application to the terminal's flash drive	• 2415, 2425, 2435, 2455, 2475, 2485/6 through RF • 2461, 2480/1 (with the optional Ethernet card) through Ethernet

Creating Applications for the Terminal

The Trakker Antares terminals run applications programmed in Microsoft C. You can use the Trakker Antares Programmer's Software Kit (PSK) or EZBuilder and Microsoft C/C++ functions to create two types of applications for the terminal:

- Native Trakker Antares applications (.BIN executable binary format)
- DOS applications (.EXE executable format) (only available with the DOS option)

You can download the latest versions of the PSK and EZBuilder from the Intermec Web site at www.intermec.com.

DOS applications and native Trakker Antares applications are mutually exclusive. You can either run a DOS .EXE application or a native Trakker Antares .BIN application. For help running DOS .EXE applications, see "Using DOS on the Terminal" in Appendix D.

To use DOS applications, you must have the DOS option, and the terminal must be running firmware version 6.12 or later. If you are using an earlier version of firmware, you must upgrade the firmware. For help, contact you local Intermec service representative.

To create applications

1. Use the PSK or EZBuilder to develop your application.

   Convert a JANUS® application or IRL program to use on the terminal.

2. (.BIN applications) Convert the application to a binary file.

Each step is described in the next sections.

Note: You build your applications differently for terminals running .BIN applications and terminals running DOS .EXE applications. For help, see the *Trakker Antares Application Development Tools System Manual* (P/N 064433).

Using the PSK or EZBuilder to Develop Applications

Intermec has two development tools, the Trakker Antares PSK and EZBuilder, which you can use to create applications for the terminals.

Developing Applications Using the PSK

You can download the latest version of the PSK at no charge from the Intermec Web site at www.intermec.com. This kit has a full set of programming tools to help you create applications for the terminal:

- Programmer's Software Kit (PSK)
- Application Simulator
- FileCopy utility
- Sample programs and Make files

In addition to the PSK, you also need an Intermec-certified 16-bit C/C++ compiler, such as *Microsoft Visual C/C++*. For help, see your Intermec sales representative.

Note: You must use the Trakker Antares PSK version 4.2 or later to create DOS applications. To support DOS .EXE applications, some PSK library functions were moved from the IM24LIB library to the LLIBCA library. The IM24LIB library contains Intermec-specific functions.

The PSK is a library of C functions that control the Trakker Antares programmable terminals. You can program the terminal to display prompts and error messages, to collect and display data, and to transmit data to an upline DCS 30X or host computer. The PSK functions work with most standard Microsoft C functions. You can create complex applications that collect, store, manipulate, and transmit data to meet your system needs.

The Application Simulator is a terminate-and-stay resident (TSR) program that lets you debug and run Trakker Antares applications on a DOS or Windows PC. The Simulator captures the PSK and C functions and makes the PC mimic a Trakker Antares terminal.

Developing Applications Using EZBuilder

EZBuilder (P/N 066381) is a software code generator product that provides programmers and technically oriented non-programmers with a quick and easy way to create applications for the Trakker Antares terminal.

EZBuilder contains these items:

- EZBuilder software
- Intermec certified 16-bit C/C++ compiler
- Application Simulator
- PSK libraries
- FileCopy utility
- Sample EZBuilder programs
- *EZBuilder Getting Started Guide* (P/N 066450)
- *EZBuilder Tutorial* (P/N 066449)

Using EZBuilder, you enter simple commands to create menus, screens, and transactions and to define menu items, labels, and data fields. You can also set attributes, define function keys, and specify other processing, such as calculations, for the application. After you define the application, EZBuilder generates the program code for the application. The Application Simulator mimics a Trakker Antares terminal and lets you test the application on your computer.

Converting JANUS Applications and IRL Programs

You can modify a JANUS application or an IRL program to run on your Trakker Antares terminal.

Converting Applications Between JANUS and Trakker Antares

You can develop applications that run on both the JANUS devices and the Trakker Antares terminals. However, there are some differences that you need to plan for in your applications. The Trakker Antares is an intelligent terminal. A JANUS device is a DOS-compatible computer. Because of these differences, there are some features and functions that are different between the JANUS PSK and the Trakker Antares PSK.

In general, a C/C++ application written for Trakker Antares terminals requires minor changes to run on a JANUS device. However, an application written for a JANUS device may require more changes to work properly on a Trakker Antares terminal. JANUS applications developed with the JANUS PSK and compiler libraries are relatively easy to convert to an application for the Trakker Antares terminals.

There are several methods you can use to convert applications to and from JANUS devices and Trakker Antares terminals. For help with converting applications, see the *Trakker Antares Application Development Tools System Manual*.

Converting IRL Programs Between the 95XX and Trakker Antares

The Trakker Antares terminals and the 95XX terminals run different types of applications. The Trakker Antares terminals can run Microsoft C/C++ applications while the 95XX terminals run IRL (Intermec Reader Language) programs.

The Trakker Antares terminals support IRL by using IRL to C conversion programs. You can convert IRL programs to Microsoft C/C++ applications that use the Trakker Antares PSK functions. For information about converting IRL programs, contact your local Intermec service representative.

You can also convert your IRL program by developing a new C/C++ application using the Trakker Antares Programmer's Software Kit or EZBuilder and Microsoft C/C++ functions.

If you are using a 2460 or a 248X with the enhanced input/output board option in a CrossBar network, the application needs to send and receive data through COM2. After your application is converted, you can download the application to the terminal and begin using it in your network.

Converting the Application to a Binary File

If you ordered the DOS option, you can download the executable (.EXE) file to your terminal and run the DOS .EXE application. However, if you want to run a native Trakker Antares application, you must store it as a binary file (.BIN). You can convert a native Trakker Antares application from an .EXE file to a .BIN file using one of the following methods:

- If you use EZBuilder to create the application, specify a file format (.EXE or .BIN) in the Build Options dialog box before you build the application.
- Use the FileCopy utility to convert the .EXE file to a .BIN file when you download the file. For help, see "Using the Serial Port to Transfer Applications and Files" on page 3-11.
- Use the EXE2ABS.EXE program that comes with the Trakker Antares PSK or EZBuilder to convert the file.

This section explains how to use the EXE2ABS.EXE program to convert an executable file (.EXE) to an executable binary file (.BIN).

To convert an executable file to a binary file using EXE2ABS.EXE

1. Use the Trakker Antares PSK or EZBuilder to develop the application.
2. Convert the application from an executable file to a binary file by typing this command on your development PC:

   drive:\intermec\im24\lib\exe2abs *filename*.exe

   The conversion application (EXE2ABS.EXE) creates an executable binary file named *filename*.BIN.

   For example, if your application is named SHIPPING.EXE and the Intermec directory is on drive C, type this command on your PC:

   ```
   c:\intermec\im24\lib\exe2abs shipping.exe
   ```

   The conversion application creates the SHIPPING.BIN file.

3. If you plan to download applications and files from the DCS 300 or host through the RF network or the Ethernet network, copy all the binary application files and any data files to a 3.5-inch disk. Continue with the instructions for "Using the DCS 300 to Download Applications and Files" on page 3-17.

Creating a Custom Logo

You can create a custom logo that appears on the terminal screen each time the terminal boots. This custom logo replaces the "initializing" graphic on the Trakker Antares splash screen.

To use a custom logo

1. On your PC, create a custom logo in bitmap format. The bitmap should be 128 x 20 pixels in size.
2. Save the custom logo as USERINIT.BMP.
3. Download USERINIT.BMP from your PC to the terminal flash drive C using the serial port, DCS 300, or a host application. For help, see the next section, "How to Download Applications."

How to Download Applications

You can download applications and files to the programmable terminals by using any of the following methods:

- Serial port
- DCS 300
- Host application

These methods are described in the next procedures.

You can also use reader commands to transfer files. For help, see "Transmit File" and "Receive File" in Chapter 5. To learn how to run applications on the terminal, see "Running Applications on the Terminal" on page 3-22.

Use a serial port to download applications and files to the terminal

1. Create your applications using the Trakker Antares Programmer's Software Kit (PSK) or EZBuilder. For help, see "Creating Applications for the Terminal" on page 3-5.
2. (.BIN applications) Convert each application to a binary file.
   - Use the PSK utility EXE2ABS.EXE. For help, see "Converting the Application to a Binary File" on page 3-8.
   - Use FileCopy or EZBuilder.
3. Connect the terminal's serial port to the host computer or PC. For help, see your terminal user's manual.
4. Use the FileCopy utility, VIEW246X.EXE, or LOADER.EXE on the host computer or PC to download applications and files to the terminal. For help, see "Using the Serial Port to Transfer Applications and Files" on page 3-11.
5. (.BIN applications) Use the TRAKKER Antares 2400 Menu System to load and run an application. For help, see "Running Applications on the Terminal" on page 3-22.
6. (DOS .EXE applications) If you ordered the DOS option, start DOS on the terminal and run a DOS application. For help, see "Using DOS on the Terminal" in Appendix D.

Use the DCS 300 to download applications and files to the terminal

1. Create your applications using the Trakker Antares PSK or EZBuilder. For help, see "Creating Applications for the Terminal" on page 3-5.
2. (.BIN applications) Convert each application to a binary file.
   - Use the PSK utility EXE2ABS.EXE. For help, see "Converting the Application to a Binary File" on page 3-8.
   - Use FileCopy or EZBuilder.
3. Copy the applications and files to the DCS 300. For help, see "Copying Applications and Files to the DCS 300" on page 3-18.
4. Use the Download Server feature on the DCS 300 to download applications and files to the terminal. For help, see "Downloading Applications and Files to the Terminal" on page 3-19.
5. (.BIN applications) Use the TRAKKER Antares 2400 Menu System to load and run an application. For help, see "Running Applications on the Terminal" on page 3-22.

6. (DOS .EXE applications) If you ordered the DOS option, start DOS on the terminal and run a DOS application. For help, see "Using DOS on the Terminal" in Appendix D.

Use a host application to download applications and files to the terminal

1. Create your applications using the Trakker Antares PSK or EZBuilder. For help, see "Creating Applications for the Terminal" on page 3-5.
2. (.BIN applications) Convert each application to a binary file.
   - Use the PSK utility EXE2ABS.EXE. For help, see "Converting the Application to a Binary File" on page 3-8.
   - Use FileCopy or EZBuilder.
3. Copy the applications and files to the host.
4. Write a host application that can communicate with the terminal directly through an access point or through the Ethernet network. Use the host application to download applications and files to the terminal. For help, see "Transferring Files in a TCP/IP Direct Connect Network" in Chapter 2.
5. (.BIN applications) Use the TRAKKER Antares 2400 Menu System to load and run an application. For help, see "Running Applications on the Terminal" on page 3-22.

   Use the host application to send the Run Program command.
6. (DOS .EXE applications) If you ordered the DOS option, start DOS on the terminal and run a DOS application. For help, see "Using DOS on the Terminal" in Appendix D.

Using the Serial Port to Transfer Applications and Files

You can download or upload applications and files between a PC or host computer and the terminal using serial communications. For help connecting the terminal, see your terminal user's manual. Once the terminal is connected, you can transfer files to or from the terminal using one of the following methods:

- Use the FileCopy utility that ships with the Trakker Antares Programmer's Software Kit (PSK) and EZBuilder to copy files to and from the terminal. This utility is also available at no charge from the Intermec Web site at www.intermec.com.
- Use the VIEW246X.EXE program that comes with the firmware upgrade software to copy files to and from the terminal. You also need the FLASHLDR.BIN file that comes with the firmware upgrade software.
- Use the LOADER.EXE program that comes with the firmware upgrade software to copy files to the terminal.
- Use the EZBuilder "download" tool. For help, see the EZBuilder online help.

- Use the Receive File or Transmit File reader commands. For help, see Chapter 5, “Reader Command Reference.”
- (2460 terminal or 248X terminal with enhanced input/output board option only) Use the following reader commands to download an application through the 9154 or 9161 controller to a 2460 or 248X in a CrossBar network:
  - Receive and Convert 7-Bit ASCII Files to 8-Bit Binary Files
  - Transmit and Convert 8-Bit Binary Files to 7-Bit ASCII Files

  For help, see Chapter 5, “Reader Command Reference.”

This section explains

- how to use the FileCopy utility to download or upload applications and files to or from the terminal.
- how to use the VIEW246X.EXE program to download or upload applications and files to or from the terminal.
- how to use the LOADER.EXE program to download applications to the terminal.

You can use the FileCopy utility and LOADER.EXE to download either .EXE or .BIN application files. However, to run a native Trakker Antares application on the terminal, it must be stored as an executable binary file (.BIN).

If you are using the FileCopy utility, you can automatically convert any .EXE file to a binary file (.BIN) before downloading the file. If you are using LOADER.EXE, you need to use EXE2ABS.EXE to convert the .EXE file to a .BIN file. For help, see “Converting the Application to a Binary File” on page 3-8.

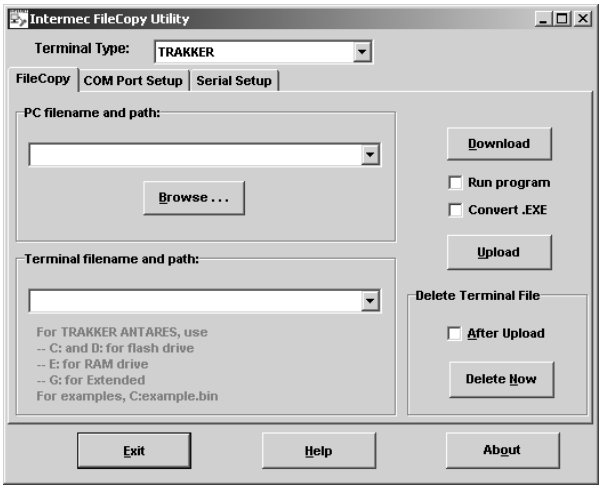
To transfer applications and files to or from the terminal using the FileCopy utility

1. Connect the Trakker Antares terminal to your host computer or PC.

2. Run FileCopy on your host computer or PC. The Trakker Antares FileCopy Utility dialog box appears.

   FileCopy includes detailed online help. You can click the Help button or press **F1** to get more information.

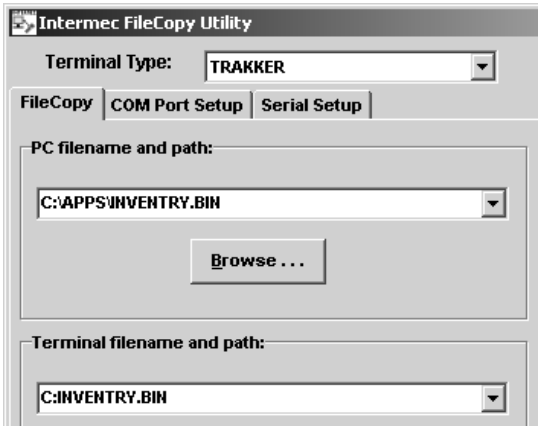
FileCopy Utility Dialog Box



3. Check the serial port and serial communications parameters to verify that the settings for your PC match the values that are set for the terminal's serial port.
   a. Select the COM Port Setup tab to select and configure the following parameters:
      - PC COM port
      - Trakker Antares COM port
      - Communications protocol
      - File Transfer protocol
      - Baud rate, parity, data bits, and stop bits
   b. Select the Serial Communication Setup tab to verify and configure the PC's serial communications parameters.
   c. Use the TRAKKER Antares 2400 Menu System to configure the serial port parameters on the terminal. For help, see the configuration chapter in your terminal user's manual.
4. Make sure the terminal is running an application that will not be updated during the file transfer. If you are in the TRAKKER Antares 2400 Menu System, exit the menu system.

   You can run the APPTSK.BIN application while transferring files. For help, see "Running Applications on the Terminal" on page 3-22.

5. Select the FileCopy tab to download or upload applications and files.



   a. In the PC filename and path field, type the path and filename (*filename*.EXE or *filename*.BIN) for the file on your PC.

      Click the down arrow to select a previously used filename from a list.

      To view the files on your PC, click the Browse button.

   b. In the TRAKKER Antares filename field, type the drive and filename on the terminal.

      Click the down arrow to select a previously used filename from a list.

      Applications must be stored on drive C. Depending on your terminal options and configuration, you can download other files to drive C, D, E, or G (if available).

Note: If you are downloading a DOS application that uses terminate-and-stay resident (TSR) programs, you also need to download and install the TSR files on the terminal. If your application uses a TSR on drive C, transfer the TSR to drive C along with the application. If your application uses a TSR on drive A, you need to recreate drive A to include the TSR. For help, see "Customizing Drive A" in Appendix D.

6. If you are downloading a .BIN file and want to run the application on the terminal immediately after it is downloaded, select the Run program check box.

   If you are downloading an .EXE file and want to convert it to a .BIN so you can run it on the terminal immediately after it is downloaded, select the Run program check box and select the Convert .EXE check box.

7. Click Download to copy the file from the PC to the terminal. If you selected the Run program check box, the terminal boots, resets, and runs the application you downloaded. Otherwise, the current application continues to run on the terminal.

   Click Upload to copy the file from the terminal to the PC.

8. To download or upload another file, repeat Step 5 through Step 7.
9. Click Exit to close the FileCopy utility.

You are ready to run the application from the terminal. For help, see "Running Applications on the Terminal" on page 3-22.

To transfer applications and files to and from the terminal using VIEW246X.EXE

1. Connect the terminal to your PC running Windows 95/98. For help connecting the terminal, see your terminal user's manual.
2. On the terminal, access the Loader Waiting screen.
   a. Press f ↵ 2 4 8 or scan this bar code label:

      TRAKKER Antares 2400 Menu System

      ..-.

      The Main Menu appears.

   b. From the Main Menu, choose System Menu, Upgrade Firmware, and choose OK.

   c. Choose Yes to continue. The terminal reboots and displays the Loader Waiting screen.

   Note: If you reach the Loader Waiting screen and cannot continue, press esc once or ½ twice to exit. The Boot Menu appears. Press 2 or L to access the Loader Waiting screen.

3. On your PC, access an MS-DOS window.
4. Change to the directory that contains the VIEW246X.EXE application and the FLASHLDR.BIN file.
5. Type `VIEW246X` and press Enter to run the application.
6. Use these available commands to copy files to or from the terminal:

Command	Description
`dir <drive> { > filename }`	Displays the contents of a drive on the terminal and creates a .txt file with this information, where `<drive>` is the name of the drive and `{ > filename }` is the name of the .txt file.
`del term_filename`	Deletes a file from the terminal, where `term_filename` is the name of the file.
`cls`	Clears the screen.

VIEW246X.EXE Commands (continued)

Command	Description
`copyfromterm <cf> term_filename, pc_filename`	Copies a file from the terminal to the PC where `term_filename` is the name of the file on the terminal and `pc_filename` is the name that the file will be given on the PC. Example: Type `cf c:\basedate.txt d:\date.txt` to copy `basedate.txt` from the C drive on the terminal to the D drive on the PC and rename the file `date.txt`.
`copytoterm <ct> pc_filename, term_filename`	Copies a file from the PC to the terminal where `pc_filename` is the name of the file on the PC and `term_filename` is the name that the file will be given on the terminal. Example: Type `ct d:\basedate.txt c:\basedate.txt` to copy the file `basedate.txt` from the D drive on the PC to the C drive on the terminal.
`help`	Displays the help screen.
`quit or exit`	Closes the VIEW246X.EXE application.

To transfer applications and files to the terminal using LOADER.EXE

Note: Before you can transfer applications and files, you must open the MS-DOS window and open the MS-DOS Prompt Properties dialog box. In the Memory tab, set the Initial Environment field to 4096. Close the MS-DOS window and re-open it.

1. Connect the terminal to your PC. For help connecting the terminal, see your terminal user's manual.
2. On your PC, load the application or file that you want to download.
3. Access the MS-DOS window.
4. Change to the directory that contains the LOADER.EXE program.
5. On the terminal, access the Loader Waiting screen.
   a. Press f ↵ 2 4 8 or scan this bar code label:

      TRAKKER Antares 2400 Menu System

      ..-.

      The Main Menu appears.

b. From the Main Menu, choose System Menu, Upgrade Firmware, and choose OK.

c. Choose Yes to continue. The terminal reboots and displays the Loader Waiting screen.

Note: If you reach the Loader Waiting screen and cannot continue, press esc once or ½ twice to exit. The Boot Menu appears. Press 2 or L to access the Loader Waiting screen.

6. On your PC, type:

   `LOADER pathname\filename`

   where:

   pathname is the path to the application or file that you want to download.

   filename is the name of the application or file that you want to download.

The Loader screen appears and the file or application is transferred to the terminal.

Using the DCS 300 to Download Applications and Files

You can download applications and files to an RF or Ethernet terminal using network communications. The advantage to downloading files through RF or Ethernet network communications is that you can download multiple files to one or more terminals.

You use RF or Ethernet communications to download applications from the DCS 300 to RF or Ethernet terminals running UDP Plus or WTP or from the host to RF or Ethernet terminals running TCP/IP. This section explains how to use the DCS 300 to download applications and files. For help downloading files in a TCP/IP network, see "Transferring Files in a TCP/IP Direct Connect Network" in Chapter 2.

To download applications and files from the DCS 300

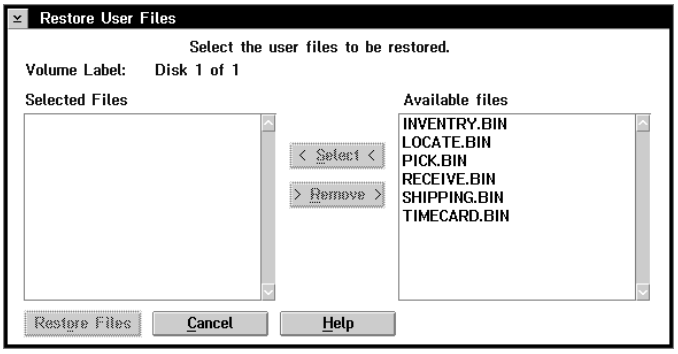
1. Copy the applications and files to the DCS 300. For help see the next section, "Copying Applications and Files to the DCS 300."
2. Use the Download Server feature on the DCS 300 to download the applications and files to the RF or Ethernet terminal. For help, see "Downloading Applications and Files to the Terminal" on page 3-19.

   Or, use the Receive File or Transmit File reader commands to download the applications and files to the RF or Ethernet terminal. For help, see Chapter 5, "Reader Command Reference."

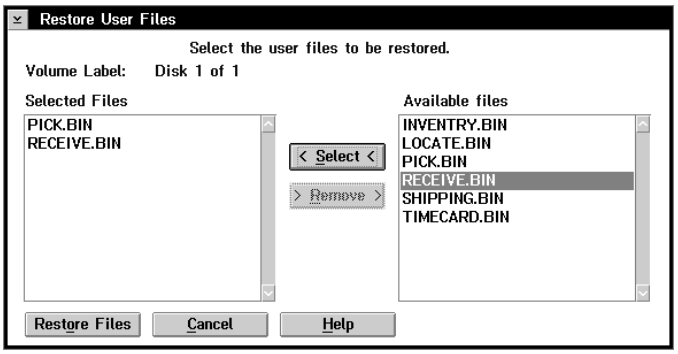
Each step is described in the next sections. Before you start, make sure that the RF or Ethernet terminal is communicating with the DCS 300. For help installing or configuring the network, see the networking chapter in your terminal user's manual.

Copying Applications and Files to the DCS 300

1. Copy the applications and files to a 3.5-inch disk.
2. Insert the disk into the disk drive of the DCS 300.
3. From the main menu sidebar buttons, choose File Handling. The File Handling dialog box appears.
4. In the File Handling list box, select Restore User Files and choose OK. A message box appears telling you to insert the disk in the disk drive of the DCS 300.
5. Choose OK. The Restore User Files dialog box appears. The files on the disk appear in the Available Files list box.



6. In the Available Files list box, add all the files that you want to restore to the Selected Files list box.



   a. Select the file name.
   b. Choose Select. The file name appears in the Selected Files list box.

      If the Selected Files list box displays any files that you do not want to restore, select the file name and choose Remove.

7. Choose Restore Files. The DCS 300 restores the files you selected to the D:\USERDATA directory.
8. Remove your disk from the disk drive.

Downloading Applications and Files to the Terminal

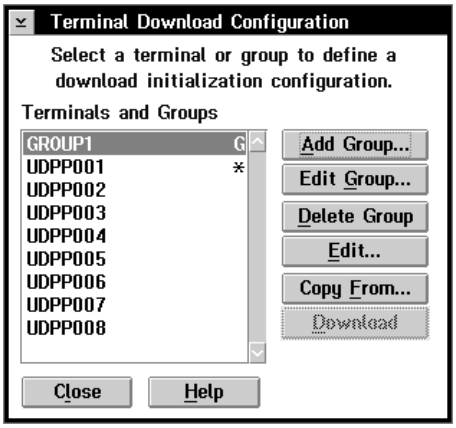
Once the applications and files are stored on the DCS 300, you can use the Download Server feature on the DCS 300 to download applications and files to one or more RF or Ethernet terminals.

To prepare the terminal

1. (2415, 2425, or 2435 only) Make sure the main battery pack is fully charged.
2. Make sure the terminal is on and communicating with the DCS 300.

To download applications and files to the terminal

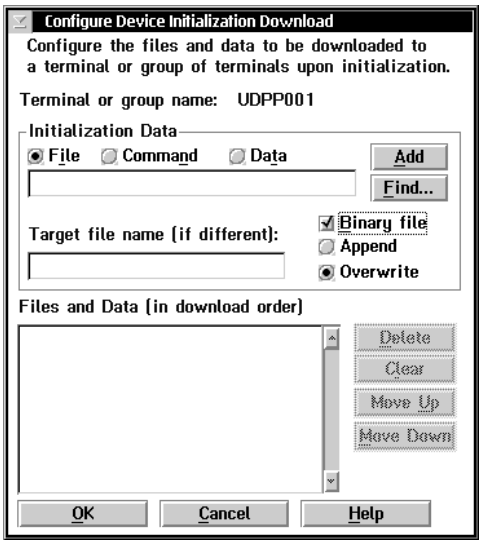
1. If data collection is not started on the DCS 300, choose Start Data Collection from the main menu sidebar buttons.
2. From the main menu sidebar buttons, choose System Maintenance. The System Maintenance dialog box appears.
3. Select Configure Download Server and choose Start. The Terminal Download Configuration dialog box appears.



4. In the Terminals and Groups list box, select a terminal or group of terminals to receive the binary applications and files.

   For help defining a group of terminals, see the user's manual for the DCS 300.

5. Choose Edit. The Configure Device Initialization Download dialog box appears.



6. Verify that there are no files (or entries) listed in the Files and Data list box. If there are entries, select the entries and choose Clear to remove them.
7. In the Initialization Data box, choose File.
8. In the field, type:

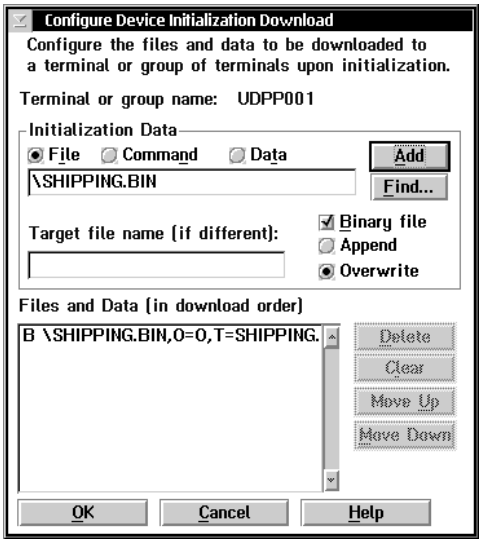
   `\filename`

   where *filename* is the name of the executable binary application.

   Choose Find, select your application, and choose OK.
9. Select the Binary file check box.
10. Select the Overwrite option button to overwrite an existing file with the same name.
11. In the Target file name field, type a name if you want to save the file under a different name on the terminal.

    Do NOT enter a slash or backslash character before the target filename.

12. Choose Add. The file appears in the Files and Data list box with a B for binary in the leftmost column.



13. Repeat Steps 7 through 12 to select another application.
14. You can also download files used by your application such as an employee list or a part number list.

    To download additional files, choose File in the Initialization Data box. Type the filename including the backslash. Disable the Binary file check box and choose Add.
15. Choose OK to save your changes and return to the Terminal Download Configuration dialog box.
16. In the Terminals and Groups list box, choose the terminal or group you configured if it is not already highlighted and marked with an asterisk.
17. Choose Download. A Download initiated message box appears.
18. Choose OK. The executable binary applications and files are downloaded to the terminal or group of terminals. If you are downloading the applications and files to many terminals or if there is a lot of traffic in your RF or Ethernet network, the download may take longer. All files are downloaded and stored on the terminal's flash drive C.

Note: If you use terminate-and-stay resident (TSR) programs in your DOS application, you also need to download and install the TSR files on the terminal. If your application uses a TSR on drive C, transfer the TSR to drive C along with the application. If your application uses a TSR on drive A, you need to recreate drive A to include the TSR. For help, see "Customizing Drive A" in Appendix D.

19. Click Close to close the dialog box and return to the System Maintenance dialog box.

After you download an application to the terminal, you can run the application. For help, see the next section "Running Applications on the Terminal."

Running Applications on the Terminal

After you download an application to the terminal, you are ready to run the application and use it. Depending on the type of application you want to run, you can use one or more of these methods:

- Use the FileCopy utility. For help, see "Using the Serial Port to Transfer Applications and Files" on page 3-11.
- Use the Run Program reader command. For help, see "Run Program" in Chapter 5.
- (DOS option only) Use DOS to run DOS applications. For help, see "Using DOS on the Terminal" in Appendix D.
- Use the TRAKKER Antares 2400 Menu System. For help, continue with the next procedure.

Note: You must use DOS to run DOS applications; however, once you have started DOS, you can switch between DOS and the TRAKKER Antares 2400 Menu System as needed.

To run an application on the terminal

1. Press f ↵ 2 4 8 or scan this bar code label to access the TRAKKER Antares 2400 Menu System.

   TRAKKER Antares 2400 Menu System

   ..-.

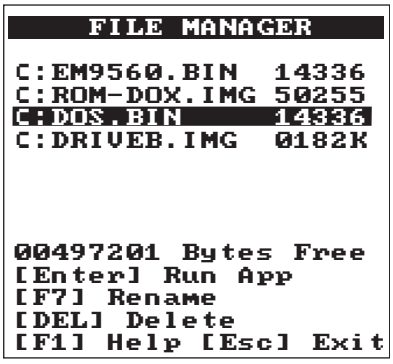
   The Main Menu appears.

2. Choose System Menu and press ↵ . The System Menu appears.
3. Choose File Manager and press ↵ . The File Manager screen appears prompting you to select a drive.

File Manager Screen

24XXS086.eps

4. Press [↵] to select drive C, or press [<] or [>] to select the letter of the drive you want to manage, and then press [↵] . The File Manager screen appears and lists all the files stored on the drive.



24XXS087.eps

5. Press [v] or [^] to select an application and press [↵] . The terminal boots, resets all firmware, and runs the application.

   If you also made configuration changes while you were working in the menu system, you will be prompted to store your changes in flash memory. After you save or discard the changes, the terminal boots, resets all firmware, and runs the application.

Note: You can press [f] [F2] to rename a file or [f] [.] to delete a file.

You can begin using the application to collect data. Repeat the instructions in this section to run another application on the terminal.

4

Running Diagnostics

This chapter explains how to run diagnostics on the terminal to help analyze hardware, application, and firmware problems.

What Diagnostics Are Available?

You can run diagnostics on the terminal to help analyze hardware and firmware problems, fix application problems, and view system information. You use the TRAKKER Antares 2400 Menu System to run diagnostics. This chapter lists the diagnostics in alphabetical order. Use the following tables to find the software, hardware, and system diagnostics you want to run.

Note: Diagnostics are not available on 246X terminals, because 246X terminals do not use the TRAKKER Antares 2400 Menu System.

Diagnostics Listed by Category

Hardware Diagnostic Test	Description	Page No.
Battery/PIC Status	Shows the power level of the backup battery. Indicates the backup battery's current volts, temperature, and charging status. Reports main board and the I/O board temperature, and the status of the EEPROM checksum and the master bus.	4-9
Beeper Test	Sounds a series of beeps to test the beeper by using a range of beep volumes and beep frequencies.	4-11
Display Test	Tests and turns on the pixels on the screen to make sure all areas of the screen are working correctly.	4-13
Hardware Configuration	Lists the terminal's hardware components that were installed at the Intermec factory, including the RF country code.	4-15
Keypad Test	Shows the hexadecimal, decimal, and scan code value for any key or key combination on the keyboard.	4-17
Radio Test	(RF terminals only) Tests the radio to make sure it is working.	4-19
Scanner Test	Tests the laser scanner to make sure it is working.	4-20
Serial Loopback Test	Verifies that the hardware for the RS-232 serial port is functioning correctly.	4-20

Diagnostics Listed by Category (continued)

System Diagnostic Test	Description	Page No.
Access Point	(RF terminals only) Lists information about the access point the RF terminal is communicating with across the network.	4-7
Application Efficiency	Displays the application efficiency percentage to help determine the impact that the application has on the terminal's battery power.	4-7
Code Verify	Determines if the terminal's firmware has been overwritten.	4-12
Malloc Application Information	Shows how memory is allocated and used by the current application.	4-18
Malloc Firmware Information	Shows how memory is allocated and used in the terminal firmware.	4-18
Serial Port Test	Tests serial communications between the terminal and the host computer or serial device.	4-21
Subsystem Versions	Lists the version of each major firmware subsystem loaded on the terminal.	4-22

Software Diagnostic Test	Description	Page No.
Application Events	Shows the current status of each application event to help debug applications.	4-8
Clear Task Profiles	Clears the Task Status counters so that you can begin accumulating new task statistics for the Task Status screen and the Application Efficiency screen.	4-12
Error Logger	Lists any errors that the firmware did not expect.	4-13
Font Test	Lists the double-byte font, if any, that is loaded in the terminal.	4-14
Keypad Table	Lists the number of the keypad table that is loaded in the terminal.	4-16
Task Status	Shows the task name, stack, the percentage of time each subsystem has been running, and the stack usage.	4-23

Running Diagnostics From the Menu System

The TRAKKER Antares 2400 Menu System is a menu-driven application that lets you configure the terminal, view system information, and run diagnostics. You can access the TRAKKER Antares 2400 Menu System and run diagnostics while running any application.

To run diagnostics from the TRAKKER Antares 2400 Menu System

1. Press f ↵ 2 4 8 or scan this bar code:

   TRAKKER Antares 2400 Menu System

   ..-.

   The Main Menu appears.

24XXS030.eps

2. Press ↓ to choose the Diagnostics Menu and press ↵ . The Diagnostics Menu appears.

24XXS040.eps

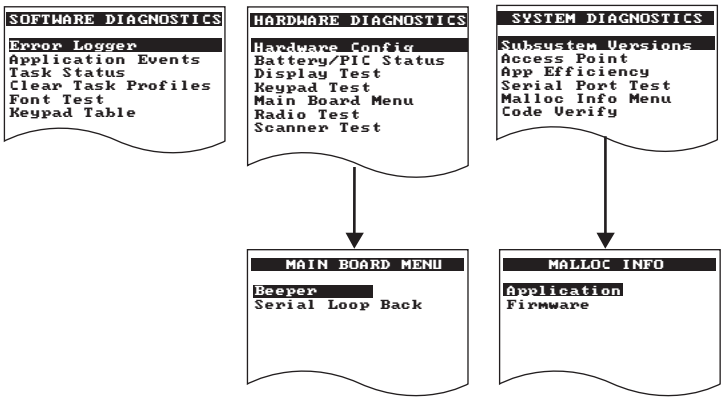
The Diagnostics Menu contains these commands:

Software Diagnostics Lets you run software diagnostics to help analyze software problems on the terminal. For example, you can view the Error Logger file to view system errors.

Hardware Diagnostics Lets you run hardware diagnostics to help analyze hardware problems on the terminal. For example, you can check the power remaining and the condition of the batteries.

System Diagnostics Lets you run system diagnostics to help analyze network, system, or application problems on the terminal. For example, you can run diagnostics to check the communications between the 2455 and the access point.

3. Press ↑ or ↓ to choose Software Diagnostics, Hardware Diagnostics, or System Diagnostics and press ↵ . One of the diagnostics menus appears.



24XXS041.eps

Note: The Radio Test and Access Point diagnostics are only available for RF terminals. These diagnostics do not appear on terminals that do not have radios.

4. Press ↑ or ↓ to choose the diagnostic test you want to run and press ↵ . The diagnostic screen appears. Use the information on the screen or follow the instructions to run the diagnostic test. For help, see the next section, "Defining the Diagnostics Screens."
5. Press Esc to exit each diagnostic screen and to exit the diagnostics menus.
6. Choose another menu from the Main Menu or press Esc to exit the TRAKKER Antares 2400 Menu System. If you have made any changes, a screen prompts you to store the changes in flash memory. For help, see "Exiting the Menu System" in the configuration chapter of your user's manual.

After you exit the menu system, the terminal will resume the application you were running when you started the menu system.

Defining the Diagnostics Screens

This section lists the diagnostics in alphabetical order. You can find the following information about each diagnostic test:

- Description and purpose
- Menu where the diagnostic is available
- Sample diagnostic screen
- Definition and explanation of the diagnostic screen

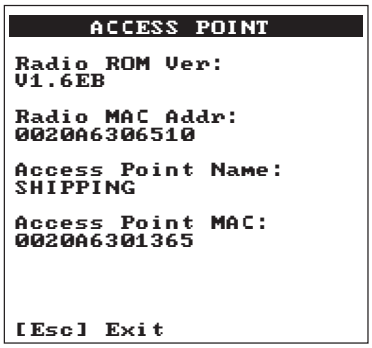
To find diagnostics listed by category, see "What Diagnostics Are Available?" on page 4-3.

Access Point

Purpose: Use the Access Point screen to get version and address information about the access point the terminal is communicating with across the RF network. This diagnostic only applies to RF terminals.

Where Available: System Diagnostics menu

Sample Screen:



24XXS045.eps

Definition: The screen displays the radio ROM firmware version and the radio MAC (machine) address for the terminal. It also displays the access point name and the access point MAC. If you have a problem with the radio or the connection to the access point, use the information on this screen to troubleshoot your network configuration.

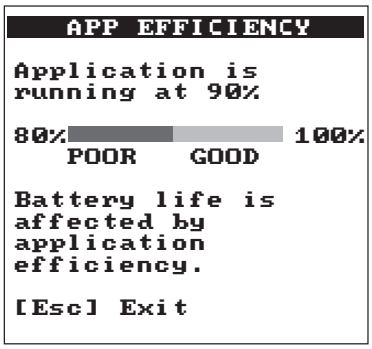
Application Efficiency

Purpose: Use the Application Efficiency screen to determine if your application is effectively using, and therefore maximizing, battery life on the terminal.

Where Available: System Diagnostics menu

Application Efficiency (continued)

Sample Screen:



24XXS046.eps

Definition: The screen displays the application efficiency percentage. The closer the percentage is to 100%, the more efficient the application is at using battery power. When less power is required, the terminal automatically goes into an internal Standby mode to draw power at a lower level.

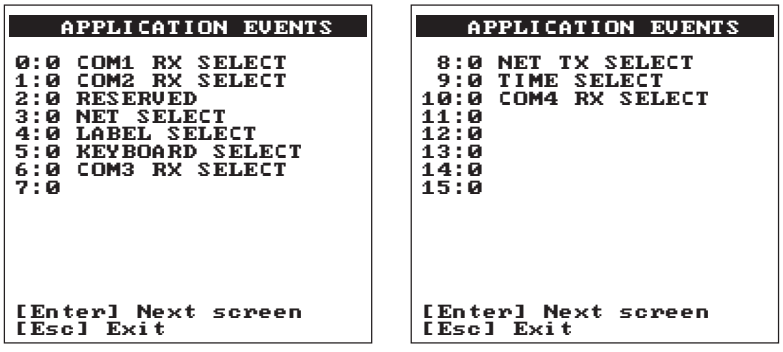
An efficient application uses the Trakker Antares PSK (Programmer's Software Kit) functions to wait for events to occur, and it does not poll in an infinite loop. When programmed correctly with the PSK or EZBuilder, the application uses the terminal's battery power as efficiently as possible and does not prevent the terminal from going into Standby mode.

Application Events

Purpose: A programmer can use the current status of each event to help debug applications running on the terminal.

Where Available: Software Diagnostics menu.

Sample Screen:



24XXS047.eps

Application Events (continued)

Definition: The terminal uses an event-driven architecture. All inputs to the terminal, such as from the keypad or from the network, arrive in the form of an event. You can check the status of each event using the Application Events screen. When an event is serviced by the application, the event is cleared.

0 means the event is cleared. 1 means the event has occurred (or is set).

Battery/PIC Status

Purpose: Depending on the type of terminal you have, you can use the Battery/PIC status screens to get information about the terminal's main (lithium-ion) battery pack, backup (NiCad) battery, or main board.

241X, 242X, and 243X Terminals

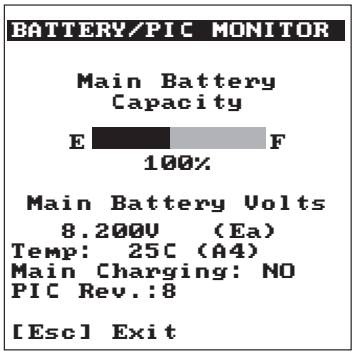
Note: While the battery is charging, do not use this screen to determine when the battery is fully charged. To determine when the battery is fully charged, use the status LEDs on the battery chargers or communications dock.

Where Available: Hardware Diagnostics menu, Battery/PIC Status, and then choose either Main Battery/PIC or Backup Battery/PIC.

Note: The Backup Battery/PIC option is only available for the 242X terminal, because the 241X and 243X terminals do not have a backup battery.

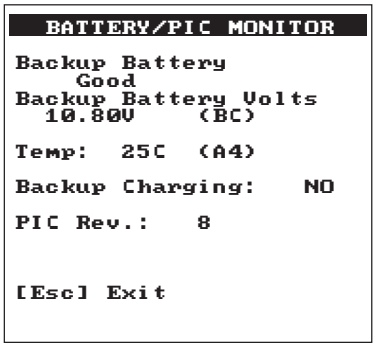
Sample Screen:

Main Battery/PIC Screen



24XXS052.eps

Backup Battery/PIC Screen



24XXS053.eps

Definition: The Main Battery/PIC screen displays the main battery capacity, the percentage of battery power remaining in the battery pack. You can continue using the battery pack until the terminal indicates that the battery is low: the Battery LED on your 241X turns on, the Battery icon on your 242X appears on the screen, or the Battery status icon on your 243X appears on the screen.

Battery/PIC Status (continued)

Note: The 243X Battery status icon only appears if the status icons are enabled. For help enabling the status icons, see "Display Video Mode" in Chapter 6.

The Backup Battery/PIC screen indicates the status of the backup battery power, either GOOD or LOW. If the status is LOW, turn off the terminal. Let the main battery pack charge the backup battery. The backup battery fully charges in approximately 18 hours.

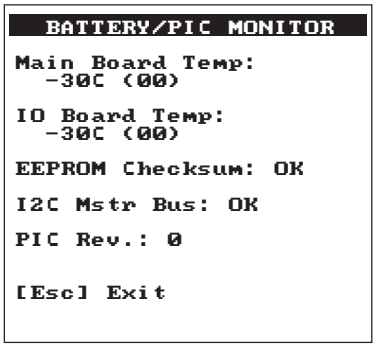
You can also use these screens to find out the current volts, temperature, and charging status. For both screens, the PIC Rev field is the firmware version that is running on the battery monitory processor.

2455, 2475, and 248X Terminals

Where Available: Hardware Diagnostics menu, Battery/PIC Status, and then choose either Main Battery/PIC or Backup Battery/PIC.

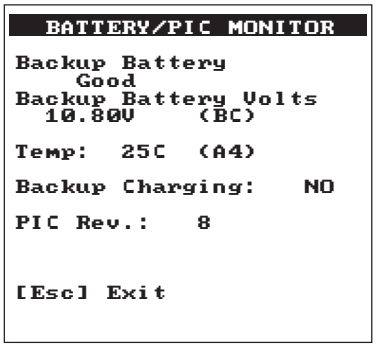
Sample Screen:

Main Battery/PIC Screen



24XXS050.eps

Backup Battery/PIC Screen



24XXS051.eps

Definition: The Main Battery/PIC screen does not provide information about the main battery because 2455, 2475, and 248X terminals do not have a main battery. Instead, this screen reports the temperature of the main board and the I/O board, as well as the status of the EEPROM checksum and the master bus.

The Backup Battery/PIC screen displays the status of the backup battery:

Good The backup battery is operating correctly. No action is required.

Low The backup battery needs to be charged. For help, see "Charging the Backup Battery" in Chapter 1 of the 2455, 2475, or 248X user's manual.

Bad The backup battery may be disconnected or not operating correctly. If you have a 2455, you can check if the backup battery is connected or replace it. For help, follow the instructions in "Replacing the Backup Battery" in Chapter 6 of the 2455 user's manual. If you have a 2475 or 248X, contact your local Intermec service representative.

Battery/PIC Status (continued)

Note: The NiCad backup battery in the 2475 and 248X is not user-serviceable. You must return the Trakker Antares 2475 or 248X terminal to Intermec to replace the backup battery.

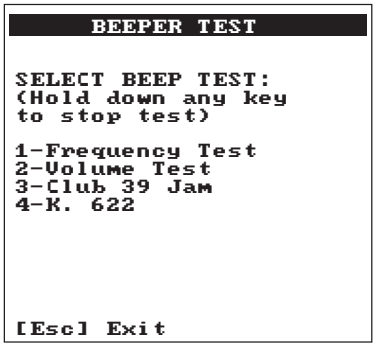
The Backup Battery/PIC screen also shows the current volts, temperature, and charging status. The number in parentheses after the volts and temperature is the hexadecimal value returned from the processor. On both screens, the PIC Rev field is the firmware version that is running on the battery monitory processor.

Beeper Test

Purpose: You can test the terminal beeper to make sure the entire beep volume range and beep frequency range are available and working correctly. The Beeper Test can also help you distinguish the different beep volumes to choose a level that you can hear in your working environment.

Where Available: Choose the Main Board Menu from the Hardware Diagnostics menu.

Sample Screen:



24XXS056.eps

Definition: Press 1 to test the beep frequency range. The terminal will sound a series of beeps starting from a low frequency beep through the range to a high frequency beep, and then back to a low frequency beep.

Press 2 to test the beep volume. The terminal sounds a series of beeps from a quiet beep to a very loud beep.

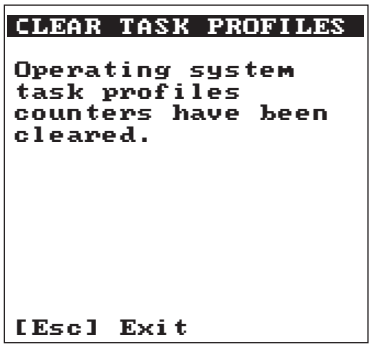
Tests 3 and 4 also test the beep volume and frequency by playing a short tune. If you do not hear any beeps during any of these tests, you may have a problem with the beeper or internal speakers. For help, contact your local Intermec service representative.

Clear Task Profiles

Purpose: Clears the task profile counters so that you can begin accumulating statistics on the firmware subsystem tasks from a known point in time.

Where Available: Software Diagnostics menu

Sample Screen:



24XXS058.eps

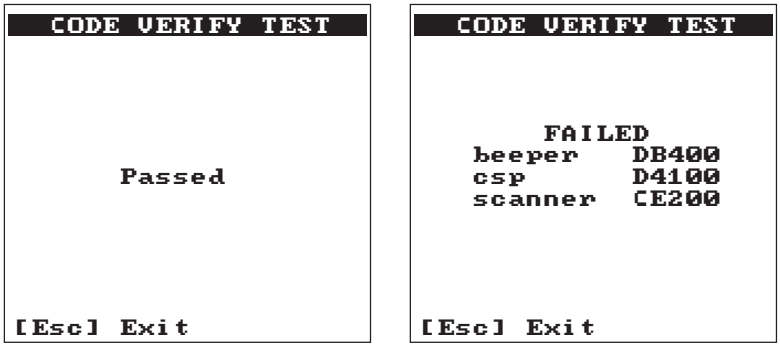
Definition: When you select the Clear Task Profiles option, the terminal clears the %Time field on the Task Status screen. It also resets all counters that are used to calculate the Application Efficiency screen.

Code Verify

Purpose: A programmer or application developer can use this diagnostic to determine if the terminal's firmware has been overwritten.

Where Available: System Diagnostics menu

Sample Screen:



24XXS059.eps

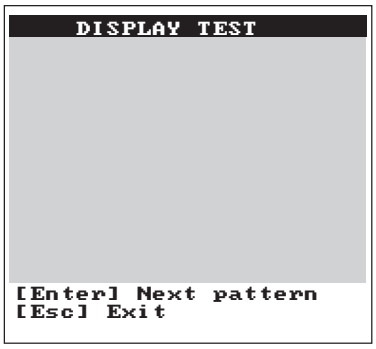
Definition: If this diagnostic passes, "Passed" appears on the screen. If this diagnostic fails, then the name of the firmware driver that failed and its address appears on the screen.

Display Test

Purpose: Use the Display Test to make sure that every pixel on the terminal screen is working correctly. For example, you may want to test the screen if you do not see complete characters on the screen.

Where Available: Hardware Diagnostics menu

Sample Screen:



24XXS062.eps

Definition: Press ↵ to display each of the four patterns. After 5 seconds, the entire screen is filled with the current test pattern. Press ↵ to display the next pattern. The first two patterns appear as a shaded pattern and turn off every other pixel. The third pattern turns on every pixel and appears as a black square. The fourth pattern turns off every pixel and appears as a clear square.

If any of these patterns are not displayed correctly, you may have a problem with the LCD. For help, contact your local Intermec service representative.

Error Logger

Purpose: If you suspect that your terminal has a problem, you can use the Error Logger to help diagnose the problem.

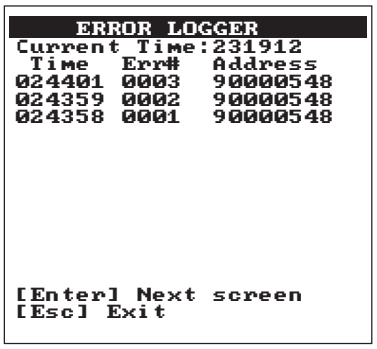
The terminal posts an entry to the Error Logger whenever it detects an unexpected condition. Each entry does not necessarily indicate a problem. For example, if an application is not waiting for keyboard input and you press enough keys to fill the keyboard queue, the terminal will post a queue full error to the Error Logger. For a list of possible errors, see "Error Numbers and Messages" on page 4-24.

Note: The Error Logger is not intended to be an application debugging tool.

Where Available: Software Diagnostics menu

Error Logger (continued)

Sample Screen:



24XXS063.eps

Definition: The Error Logger screen shows the last 30 errors in three columns:

- The first column displays the time in HHMMSS format.
- The second column displays the error number. To learn which error message is associated with the error number, see "Error Numbers and Messages" on page 4-24.
- The third column displays the internal firmware address, which helps identify why the error occurred.

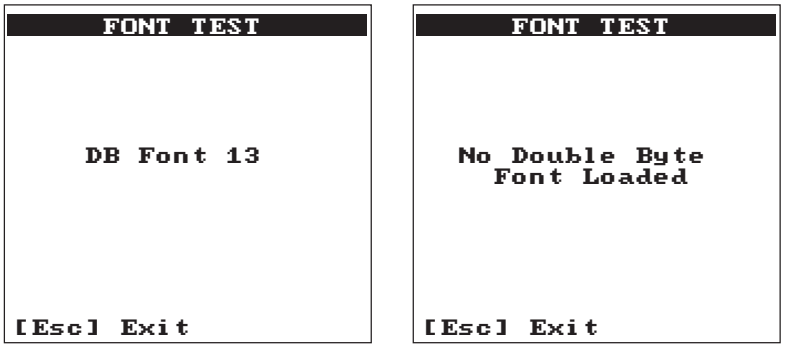
Press [↵] to see the next screen of errors.

Font Test

Purpose: You can use this diagnostic to identify which double-byte font, if any, you have loaded on your terminal.

Where Available: Software Diagnostics menu

Sample Screen:



24XXS064.eps

Font Test (continued)

Definition: If you ordered the optional 4MB flash memory for your terminal, you can use the Trakker Antares Font Loader to download a double-byte font set to the terminal. See your local Intermec sales representative for information about ordering double-byte fonts.

Use this table to match the font number with the double-byte font that is loaded on your terminal.

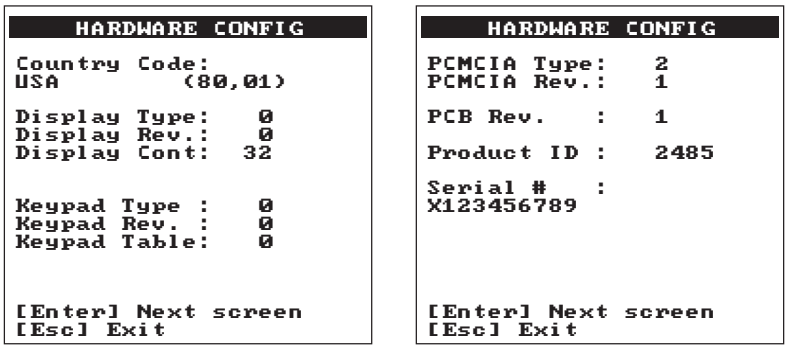
Font Number	Double-Byte Font	File Name
1	Simplified Chinese, VT	24DBCSCT.fon
2	Japanese, 5250	24DBCSJL.fon
4	Korean, VT	24DBCSKT.fon
5	Korean, 5250	24DBCSKL.fon
8	Big 5 Chinese, VT	24DBCSTT.fon
9	Japanese, VT	24DBCSJT.fon
11	Big 5 Chinese, 5250	24DBCSTL.fon
13	Simplified Chinese, 5250	24DBCSCL.fon

Hardware Configuration

Purpose: If you are discussing a problem with Intermec, you can use the Hardware Configuration screen to tell the Intermec representative the exact version of hardware that was installed on the terminal at the Intermec factory.

Where Available: Hardware Diagnostics menu

Sample Screen:



24XXS065.eps

Hardware Configuration (continued)

Definition: Press ↵ to display the next screen of hardware information. If you are having a specific problem with one system, such as the radio, note the hardware versions on the terminal before contacting your local Intermec service representative.

The country code information on the Hardware Configuration screen is only valid when the radio (Network Activate command) is enabled. If the radio is disabled, the country code information is not valid. For help, see "Network Activate" in Chapter 6.

Keypad Table

Purpose: Intermec service personnel use this diagnostic to identify the number of the keypad table that you have loaded on your terminal.

Where Available: Software Diagnostics menu

Sample Screen:

24XXS067.eps

Definition: This table matches the hex code on the screen with a description of the keypad table that is loaded on your terminal.

Hex	Description	Hex	Description	Hex	Description
0x00	Terminal Emulation, 242X	0x06	Function key with large numeric, 37-key, 248X	0x12	European (AT), 2455
0x01	Programmable, 242X	0x07	French AZERTY, 2475, 248X	0x13	Compatible 1, VMT and LI (AT), 246X
0x02	English QWERTY (XT), 2475, 248X	0x08	Italian QWERTY, 2475, 248X	0x14	Programmable/international, 55-key, 241X
0x03	5250 alphanumeric (XT), 2475, 248X	0x09	Spanish QWERTY, 2475, 248X	0x15	Terminal emulation, 55-key, 241X
0x04	3270 alphanumeric (XT), 2475, 248X	0x10	3270 alphanumeric (AT), 2455	0x16	Terminal emulation, 39-key, 243X
0x05	VT/ANSI alphanumeric (XT), 2475, 248X	0x11	VT/ANSI alphanumeric (AT), 2455	0x17	Not used

Keypad Table (continued)

Hex	Description	Hex	Description	Hex	Description
0x18	Programmable, 37-key, 241X	0x0B	Portuguese QWERTY, 2475, 248X	0x1B	Programmable, function key with large numeric, 241X
0x19	Terminal emulation, 37-key, 241X	0x0C	Terminal emulation with backspace key, 242X	0x1C	Terminal emulation, function key with large numeric, 241X
0x20	Terminal emulation, 57-key, 243X	0x0D	Programmable with backspace key, 242X	0x1D	International, function key with large numeric, 241X
0x21	Programmable, 39-key, 243X	0x0E	English ABCD (AT), 2455	0x1E	Programmable, 57-key, 243X
0x22	European, 39-key, 243X	0x0F	5250 alphanumeric (AT), 2455	0x1F	European, 57-key, 243X
0x0A	German QWERTY, 2475, 248X	0x1A	International, 37-key, 241X		

Keypad Test

Purpose: An application programmer can use the Keypad Test screen to quickly find the hexadecimal key code value, the decimal key code value, and the scan code for any key on the keypad. You can also use the test to make sure the keypad is operating correctly.

Where Available: Hardware Diagnostics menu

Sample Screen:

```
KEYPAD TEST

Key   Hex     Dec    Scan
'a'    61      97     1E
'b'    62      98     30
'c'    63      99     2E
'd'    64     100     20
'e'    65     101     12
'f'    66     102     21
'g'    67     103     22
'h'    68     104     23
'i'    69     105     17
'j'    6A     106     24
'k'    6B     107     25
'l'    6C     108     26
'm'    6D     109     32

[Esc] Exit
```

24XXS068.eps

Definition: Press any key or key combination on the keypad to display the hexadecimal, decimal, and scan code value of the key. When you press Esc, the terminal pauses for a few seconds to display the values before you exit the screen. For a complete list of key codes, see the "Trakker Antares Terminal Font Set" in Appendix C or refer to the *Trakker Antares Application Development Tools System Manual* (Part No. 064433).

Malloc Application Information

Purpose: A programmer or application developer can use the Malloc Application Information screen to see how memory is allocated and used by the current application.

Where Available: Choose the Malloc Info Menu from the System Diagnostics menu.

Sample Screen:

24XXS070.eps

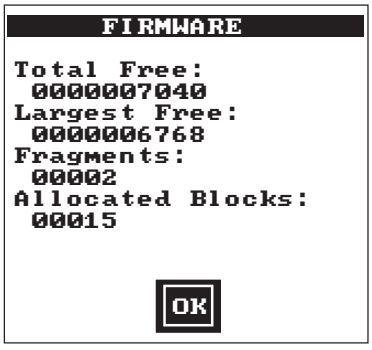
Definition: The screen displays the memory allocation used by the application. You can view the total free memory, largest block of free memory, number of memory fragments, and total number of allocated blocks of memory. You can use this diagnostic screen to troubleshoot a memory leak where the application is mallocing memory, but not freeing memory.

Malloc Firmware Information

Purpose: A programmer or application developer can use the Malloc Firmware Information screen to see how memory is allocated and used in the terminal firmware. The firmware includes the operating environment, firmware, drivers, and TRAKKER Antares 2400 Menu System.

Where Available: Choose the Malloc Info Menu from the System Diagnostics menu.

Sample Screen:



24XXS071.eps

Malloc Firmware Information (continued)

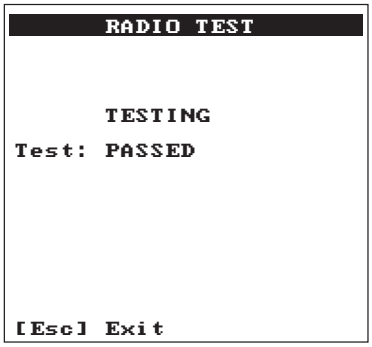
Definition: The screen displays the memory allocation for the terminal firmware. You can view the total free memory, the largest block of free memory, the number of memory fragments, and the total number of allocated blocks of memory.

Radio Test

Purpose: Use the Radio Test screen to verify that you have a working radio. This diagnostic only applies to RF terminals.

Where Available: Hardware Diagnostics menu

Sample Screen:



24XXS073.eps

Definition: Before you start the test, make sure the radio (Network Activate command) is enabled. If the radio is disabled, the test results on the Radio Test screen are not valid. For help, see "Network Activate" in Chapter 6.

Press ↵ to start the radio test. The results of the test appear on the screen once the test is complete. If SUCCESS or PASSED appear, the radio is working correctly. If FAILED appears, note the error number. You may have a problem with the radio inside the RF terminal. For help, contact your local Intermec service representative.

Caution
If the Radio Test fails, stop using the terminal. Contact your local Intermec service representative.

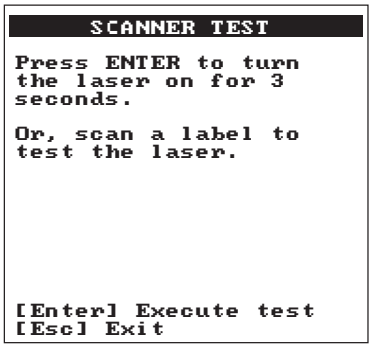
Conseil
Si le test Radio échoue, veuillez ne plus utiliser le terminal. Contactez le représentant du service clientèle Intermec de votre région.

Scanner Test

Purpose: Use the Scanner Test to make sure the integrated laser scanner and scan button or the tethered laser scanner and scanner trigger are operating correctly.

Where Available: Hardware Diagnostics menu

Sample Screen:



24XXS074.eps

Definition: To start the test, press ↵. If the laser scanner turns on, the scanner is working correctly. If the laser scanner does not turn on, you may have a problem with the scanner. If you are using a tethered scanner, make sure you are using one that is supported on the terminal.

Note: If you are using a 241X with an integrated linear imager, it takes about 2 seconds for the laser to turn on after you press ⬯. If you are using a 241X with an integrated PDF 417 scanner, the laser briefly flashes and then turns on about 2 seconds after you press ⬯.

If the laser scanner did turn on in the first test, try scanning a bar code label. If the laser scanner turns on, the scan button or scanner trigger is working correctly. If the laser scanner does not turn on, you may have a problem with the scan button or scanner trigger. For help with scanner problems, contact your local Intermec service representative.

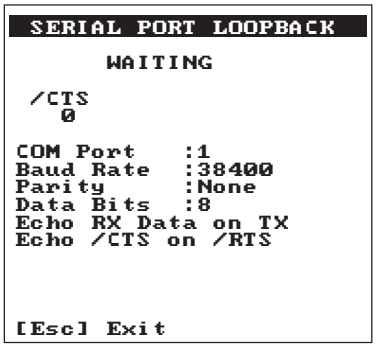
Serial Loopback Test

Purpose: Use the Serial Loopback test to verify that the hardware for the RS-232 serial port is functioning correctly. To run this diagnostic test, you need to connect the terminal to a host computer or other serial device.

Where Available: Choose the Main Board Menu from the Hardware Diagnostics menu.

Serial Loopback Test (continued)

Sample Screen:



24XXS075.eps

Definition: The serial loopback test begins immediately. If the serial port hardware is functioning correctly, the terminal displays WAITING and then RECEIVING. The Serial Loopback test uses the serial communications settings that are listed on the bottom half of the screen.

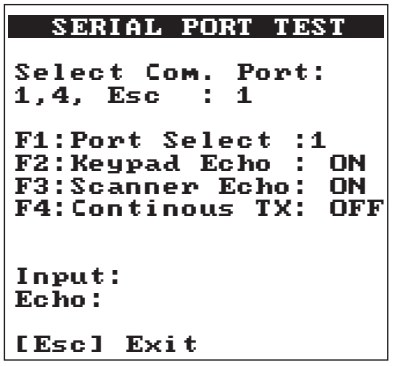
On the host, you can use a serial communications package to send data to the terminal. If the terminal is communicating with the host, the data is echoed back. If there is a problem, an error message appears on the terminal screen. The status information on the screen is updated every 500 ms. For help with serial port errors, contact your local Intermec service representative.

Serial Port Test

Purpose: Use the Serial Port Test screen to test or troubleshoot serial communications between the terminal and the host computer or serial device. To run this diagnostic test, you must connect the terminal to a host or serial loopback connector.

Where Available: System Diagnostics menu

Sample Screen:



24XXS076.eps

Serial Port Test (continued)

Definition: Press 1 to test the RS-232 serial communications port. The screen displays the function key options you can use in this diagnostic screen.

F1 Selects the serial port.

F2 Toggles the keypad echo on and off. If you turn the keypad echo on, characters you type on the keypad are displayed on the bottom line of the screen and transmitted to the host.

F3 Toggles the scanner echo on and off. If you turn the scanner echo on, the bar code label you scan is displayed on the bottom line of the screen and transmitted to the host.

F4 Toggles the Continuous Transmit mode on and off. If you turn continuous transmit on, the terminal continuously sends out a string of characters.

Esc Exits the Serial Port Test diagnostic screen.

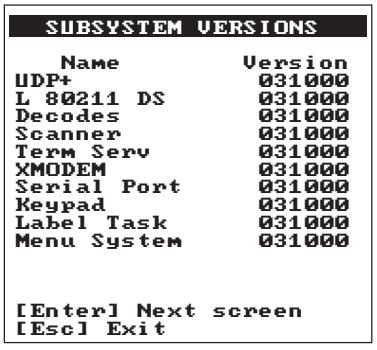
On the host, you use an RS-232 serial communications package to receive data from the terminal. To test serial communications, enter or scan data on the terminal. If the terminal is communicating with the host, you will see the data. If there is a problem, check the serial port parameters and make sure they match the host settings. For help with serial port errors, see the Troubleshooting chapter in your user's manual, or contact your local Intermec service representative.

Subsystem Versions

Purpose: If you are discussing a problem with Intermec, you can use the Subsystem Versions screen to tell the Intermec representative the exact version of firmware subsystems loaded on the terminal. Radio driver, network, or radio subsystem information only applies to RF terminals.

Where Available: System Diagnostics menu

Sample Screen:



24XXS077.eps

Subsystem Versions (continued)

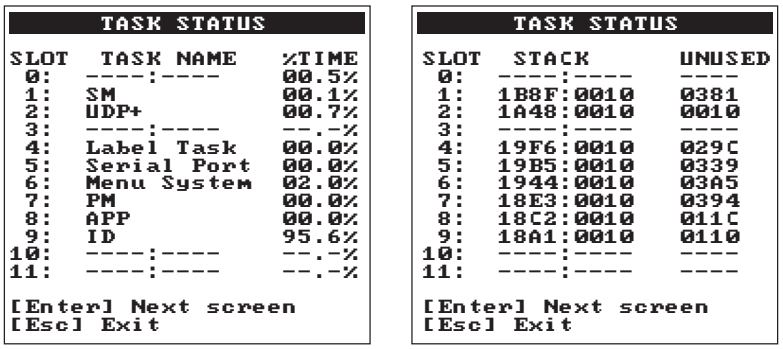
Definition: Press ↵ to display the next screen of subsystem information. If you are having a specific problem with one system, note the version loaded on the terminal before contacting your local Intermec service representative.

Task Status

Purpose: A programmer can use the Task Status screens to view the task name, stack, and the percentage of time a task has been running. You can also use the Task Status screen to determine the type of RF network protocol, TCP/IP, UDP Plus, or WTP, loaded on the terminal.

Where Available: Software Diagnostics menu

Sample Screen:



24XXS078.eps

Definition: The %Time field measures the relative amount of time that a given software task or component is active. For example, Idle Task (ID) in the Power Management software is a component. The %Time that Idle Task is active is directly proportional to battery life.

The ID (idle) address should have the largest %Time field. If any other address (task) is large, you probably have a problem.

You can also check the task list to determine the RF network protocol loaded on the terminal. Check the list of task names for UDP+, TCP/IP, or WTP. A task name of UDP+ means the terminal uses UDP Plus for RF communications. A task name of TCP/IP means the terminal uses TCP/IP for RF communications. A task name of WTP means the terminal uses WTP for RF communications.

To refresh the statistics and start from a known point in time, use the Clear Task Profiles diagnostic option to clear the task status counters.

Error Numbers and Messages

This table lists the error numbers that are posted to the second column on the Error Logger screen and lists the message associated with each number. You can use this information to help you interpret the errors logged for the terminal.

To view the Error Logger screen, from the TRAKKER Antares 2400 Menu System, choose Diagnostics Menu, Software Diagnostics, and then Error Logger.

Error Number	Message	Error Number	Message
0x01	Communications port in use	0x62	UDP+: NULL buffer was passed
0x02	Transmission completed	0x63	UDP+: Message received bigger than buffer
0x03	Transmission cancelled	0x64	UDP+: Message already transmitted
0x04	Communications error	0x65	UDP+: Invalid parameter block
0x10	Attempt to recover by auto suspend/resume	0x66	Network not active or not configured properly
0x11	Card Change Detected	0x67	NCB pointer is null
0x12	Glitch in communications to radio	0x68	Data pointer is null or data length invalid
0x51	Response larger than buffer	0x69	Network error
0x52	Reader command is invalid	0x6A	Previous application message occupies send buffer
0x53	Set attribute with bad value	0x6B	Network error
0x54	Write to read-only attribute	0x6C	Network error
0x55	General error not covered	0x6D	Network error
0x56	Incorrect parameter or string length	0x6E	Network error
0x57	Queue or pool empty	0x6F	An attempt was made to establish a new TCP connection
0x58	Action not permitted from this origin	0x70	The Ninit usnet call failed
0x59	Indicates that a DLE character has been found	0x71	The Nportinit usnet call failed
0x5A	During configuration parsing, a digit was expected	0x72	The Nterm usnet call failed
0x5B	Configuration item is invalid	0x73	The Portterm usnet call failed
0x5F	Event out of sync with queue	0x74	The Nopen usnet call failed
0x60	Queue is full	0x75	The Nclose usnet call failed
0x61	UDP+: Buffer too large to send	0x76	The Nread usnet call failed

Error Numbers and Messages (continued)

Error Number	Message	Error Number	Message
0x77	The Nwrite usnet call failed	0xA8	Invalid command
0x78	Invalid group event	0xA9	Invalid configuration combination
0x79	Network PM failed	0xAA	Invalid viewport request
0x7A	Invalid send buffer	0xAC	No description available
0x7B	The send buff is not empty	0xAD	Invalid logical key requested
0x7C	A failure occurred in UDP timer	0xAE	Invalid modifier requested
0x7D	Maximum number of bad sequence numbers has occurred. Possible duplicate IP address in network.	0xB0	Invalid device
0x7E	Could not connect to controller	0xC0	IP format 0.x.x.x or 127.x.x.x
0x7F	DHCP failed to obtain an IP address	0xC1	Controller and device IP same
0x80	File open failed	0xC2	Default router and device IP same
0x81	Read or write request failed	0xC3	Default router not on device network
0x82	The getbuf usnet call failed	0xC4	IP and Subnet invalid
0x83	Data or ACK receive failed	0xC5	Configuration set timeout
0x84	File write failed	0x110	No TCB slot available
0x85	File close failed	0x111	No RAM available for stack
0x86	Controller denied request	0x112	Invalid time
0x87	Network activate off	0x113	Invalid slot
0x90	Card: unknown command to driver	0x114	Invalid delay type
0x91	Card: invalid code	0x115	Invalid event
0x92	Card: process response	0x116	Invalid group event
0x93	Card: offset too big	0x117	Invalid resource
0x94	Card: entry not in hash list	0x118	Invalid mailbox
0x95	Card: security ID	0x119	Invalid memory release
0xA1	Invalid sub-function request	0x11A	Function timeout expired
0xA2	Table is full	0x11B	Periodic event table full
0xA3	Index out of range	0x11C	Invalid profile_type code
0xA4	Time value at that index is zero	0x11D	Invalid MMU180 page number
0xA5	Pointers do not match	0x11E	Device not open
0xA6	Requested row value not supported	0x11F	Device not open or not device owner
0xA7	Requested column value not supported	0x120	Invalid pool ID

Error Numbers and Messages (continued)

Error Number	Message	Error Number	Message
0x121	Invalid block size for pool	0x183	File with no extension error
0x122	Invalid pool type	0x184	Invalid file extension
0x123	No table space available for message	0x185	Seek not permitted from Append mode
0x134	Invalid file descriptor pointer	0x186	Read not permitted in write only file
0x135	Task not suspended	0x191	Duplicate drive letter
0x136	Not owner of stream	0x192	Invalid drive letter
0x137	Stream access error	0x193	Duplicate file name
0x138	Color requested > NUMCOLORS	0x194	Invalid file name
0x139	Missed system time required	0x195	Directory full
0x13A	Mtenv table full	0x196	Disk full
0x13B	Acquire/release table full	0x197	Invalid file control block
0x13C	Too small of memory release to MTmeminit	0x198	Invalid seek mode
0x13D	Chkmem detects memory chain corrupt	0x199	Different drives
0x13E	MBXLIMIT messages in mailbox	0x19A	End of file
0x13F	Too small of memory passed to MTmeminit	0x19B	Drive table full
0x140	Memory allocation error	0x19C	File system error
0x141	Null pointer passed to system call	0x19D	Invalid seek offset mode combination
0x142	Error allocating label task resource	0x1D0	Application load error
0x143	Invalid task name string	0x1D1	Application load error
0x150	File transfer user abort	0x1E0	Application load error
0x151	File transfer lost connection	0x1E1	Application load error
0x152	File transfer receiver canceled	0x1E2	No second flash chip, used by display
0x153	File transfer transmitter canceled	0x1F0	Add Decode - The Decode symbology is already present in the auto-discrimination table.
0x154	File transfer bad protocol character	0x1F1	Drop Decode - The Decode symbology was not found in the auto-discrimination table.
0x180	File system type errors	0x1F2	Intermediate row which was already read
0x181	File open error	0x1F3	Intermediate row successfully decoded
0x182	File write error	0x1F4	Command symbology (Code 39)

Error Numbers and Messages (continued)

Error Number	Message	Error Number	Message
0x1F5	Code39 half-ASCII	0x212	Parity error while decoding character
0x1F6	Good decode	0x213	Guard character not found
0x1F7	Label has already been read this trigger pull	0x214	Invalid row number (Code 49 or Code 16K)
0x1F8	Votes aren't all in for the label	0x215	Unable to scale counts buffer
0x1F9	Get config character returned a quoted quote	0x216	Error in 2 of 5 label
0x200	Decodes auto-discrimination table full	0x217	Wrong length 2 of 5 label
0x201	Decode Data command error: Not enough resources to attempt to decode the counts.	0x218	Longer than maximum 2 of 5 label length
0x202	Invalid Decodes command	0x219	Valid label region not found
0x203	Invalid Decode symbology specified	0x21A	Ink spread exceeded threshold
0x204	Unable to decode input scan	0x21B	The denominator of an expression is 0
0x205	Missing start or stop character	0x21C	ASCIIfication of Full ASCII failed
0x206	Number of counts less than minimum	0x21D	Raw scan buffer. No decode attempted yet
0x207	Invalid character found	0x21E	Error upgrading Flash on a Scanner Module
0x208	Invalid acceleration between characters	0x21E	Field is full no more input allowed until this is returned
0x20A	Label length less than minimum	0x21F	Address not in the application data space range.
0x20B	Incorrect check digit	0x221	Movement direction parameter invalid, not one of four viewport directions
0x20C	Output string too short	0x222	End of display block outside virtual display
0x20D	Leading margin not found	0x223	A printable keycode was passed in a command to set manual movement
0x20E	Invalid start or stop pattern	0x224	Both start and end outside of virtual display
0x20F	Not enough counts for whole label	0x225	First parameter to function invalid
0x210	Missing trailing margin	0x226	Invalid com source number i.e. > E_NET
0x211	Invalid supplement to UPC label	0x227	Input requested with no valid source to receive it from

Error Numbers and Messages (continued)

Error Number	Message	Error Number	Message
0x228	Start of display block outside virtual display	0x423C	Informational: returned due to function key 10 pressed
0x22A	PSK coding error	0x423D	Informational: returned due to tab key pressed
0x22B	Network error	0x4240	Informational: returned due to escape key pressed
0x22C	No description available	0x4242	Informational: returned due to Up Arrow key pressed
0x22D	Informational: Follow Cursor mode not enabled	0x4243	Informational: returned due to Down Arrow key pressed
0x22E	The cursor detection value in a set follow cursor command is larger than the viewport size	0x5220	Both row and column in viewport set XY invalid but adjusted to end
0x230	The viewport movement value is larger than the viewport size	0x5229	Informational browse mode active
0x231	Data transmitted before cancel request accepted	0x522F	Attempted to cancel transmit buffer that was never called before
0x241	Data entered does not match mask type	0x5232	Viewporting is turned off-physical and virtual screens same size
0x4233	Informational: returned due to function key 1 pressed	0x523F	Informational: Viewport moved as far as possible hitting edge
0x4234	Informational: returned due to function key 2 pressed	0x250	NMI for keypad received prior to vector
0x4235	Informational: returned due to function key 3 pressed	0x251	NMI for PMU received prior to vector
0x4236	Informational: returned due to function key 4 pressed	0x260	SpOpen not previously called successfully
0x4237	Informational: returned due to function key 5 pressed	0x261	The port handle is unknown to CSP
0x4238	Informational: returned due to function key 6 pressed	0x262	Control block pointer is NULL
0x4239	Informational: returned due to function key 7 pressed	0x263	Port is not valid
0x423A	Informational: returned due to function key 8 pressed	0x264	Unknown mode
0x423B	Informational: returned due to function key 9 pressed	0x265	Another CSP client has called SpOpen

Error Numbers and Messages (continued)

Error Number	Message	Error Number	Message
0x266	Data pointer is NULL	0x285	No answer
0x267	Frame mode configuration error	0x286	No CTS from modem
0x268	SOM configured, but no EOM configured	0x287	Modem returned error
0x269	SOM = EOM1 or SOM = EOM2, both invalid	0x288	Modem speed incorrect
0x26A	SOM, EOM1, or EOM2 set to invalid character (DLE, XON, XOFF)	0x289	Check modem speed
0x26B	EOM1 = EOM2, invalid	0x290	COM Port is not enabled in HW Config
0x26C	Suspend Resume cycle occurred.	0x300	Keypad 'HOT KEY' 0 has a NULL pointer to a far routine
0x26D	Protocol ran out of retries.	0x301	Keypad 'HOT KEY' 1 has a NULL pointer to a far routine
0x26E	Configuration change caused reset	0x302	Keypad 'HOT KEY' 2 has a NULL pointer to a far routine
0x26F	Receive error in packet	0x303	Keypad 'HOT KEY' 3 has a NULL pointer to a far routine
0x270	Library does not exist	0x304	Keypad 'HOT KEY' 4 has a NULL pointer to a far routine
0x271	BIN not in library	0x305	Keypad 'HOT KEY' 5 has a NULL pointer to a far routine
0x272	No relocatable BIN header	0x306	Keypad 'HOT KEY' 6 has a NULL pointer to a far routine
0x273	PCMCIA card configuration failed	0x307	Keypad 'HOT KEY' 7 has a NULL pointer to a far routine
0x280	Modem returned OK	0x308	Keypad 'HOT KEY' 8 has a NULL pointer to a far routine
0x281	Modem operation failed	0x309	Keypad 'HOT KEY' 9 has a NULL pointer to a far routine
0x282	No carrier detected	0x30A	Keypad 'HOT KEY' 10 has a NULL pointer to a far routine
0x283	No dial tone	0x30B	Keypad 'HOT KEY' 11 has a NULL pointer to a far routine
0x284	Line is busy	0x30C	Keypad 'HOT KEY' 12 has a NULL pointer to a far routine
0x26F	Receive error in packet	0x303	Keypad 'HOT KEY' 3 has a NULL pointer to a far routine

Error Numbers and Messages (continued)

Error Number	Message	Error Number	Message
0x30D	Keypad 'HOT KEY' 13 has a NULL pointer to a far routine	0x335	Escape opcode exception
0x30E	Keypad 'HOT KEY' 14 has a NULL pointer to a far routine	0x336	Unused int 7E subsystem
0x30F	Keypad 'HOT KEY' 15 has a NULL pointer to a far routine	0x337	Check for powerdown
0x310	PIC interface error	0x340	MultiDrop or Polling Mode D protocol error
0x311	Battery value not valid due to charging	0x341	Bus error
0x330	Unexpected interrupt	0x342	Bus not available
0x331	Divide by zero	0x343	Bus write acknowledge timeout
0x332	INT0 detected overflow exception	0x344	XOFF prevents CSP TX
0x333	Array bounds exception	0x345	Reset from master interrupts CSP TX
0x334	Unused opcode exception	0x353	802.11b radio initialization failed. Cold boot or reset to recover.

802.1x Security Error Numbers and Messages

This table lists the error numbers that are posted by the security code in the terminal and lists the message associated with each number. You can use this information to help you interpret the errors logged for the terminal.

Error Number	Message	Error Number	Message
0x0370	An encryption key with an invalid replay counter has been received and discarded.	0x0375	An error occurred while trying to send an Extensible Authentication Protocol (EAP) response. No buffer could be obtained, or the output queue was full, so the response was not sent.
0x0371	An encryption key with an invalid key hash has been received and discarded.	0x0376	An invalid or unrecognized Extensible Authentication Protocol (EAP)frame was received and discarded.
0x0372	An encryption key with an unrecognized decode algorithm has been received and discarded.	0x0377	The authenticator rejected the terminal. The most likely cause is that the user name or password is incorrect.
0x0374	A challenge for a security protocol that is not supported in the terminal was received and rejected.	0x0378	The CACERT.PEM file could not be loaded from drive C on the terminal. The file is either not on drive C, or it is too large.

802.1x Security Error Numbers and Messages (continued)

Error Number	Message	Error Number	Message
0x0379	The active application on the terminal cannot be successfully reloaded after authentication.	0x0513	The root certificate authority certificate on the terminal cannot validate the server certificate. The server certificate is either invalid, improperly installed, or issued by a foreign certificate authority.
0x037A	The 802.1x state machine on the terminal was unable to handle an event.	0x0518	There is a problem with the intermediate certificate authority. It cannot be used to validate the server certificate.
0x037B	The 802.1x "Authenticating" state has timed out. A likely cause is a breakdown in the communications between the terminal and the authentication server.	0x0540	The root certificate authority certificate was not installed or is invalid.
0x037C	An error occurred while trying to send an EAP response. The output queue was full, so the response was not sent.	0x0541	No common name could be obtained from the server certificate.
0x037D	The application running on the terminal is not compatible with the authentication process.	0x0542	Neither of the RADIUS server names on the terminal match the name received in the server certificate.
0x0509	The time and date on the terminal predates the range of valid dates for the server certificate.	0x0543	An unexpected error occurred while attempting to establish the TLS tunnel.
0x050A	The time and date on the terminal postdates the range of valid dates for the server certificate.	0x0544	A login failure was received through the TLS tunnel.

5

Reader Command Reference

This chapter describes the reader commands that you can use while operating the terminal. Reader commands, such as Change Configuration, allow you to perform a task on the terminal.

Using Reader Commands

A reader command causes the terminal to perform a task. Some reader commands temporarily override the configuration settings and some actually change the configuration settings. For example, you can reset the terminal to the default configuration or change the configuration.

Note: Not all reader commands are supported in the Reader Command Menu on the terminal.

You can execute reader commands by

- scanning a command from a Code 39 or Code 93 bar code label.
- pressing keys on the keypad or choosing a command from the TRAKKER Antares 2400 Menu System.
- sending a command from a device on the serial, Ethernet, or RF network.

There are three general types of reader commands:

- Accumulate mode commands
- Operating commands
- File management commands

The accumulate mode commands are described in “Using Accumulate Mode” on page 5-5. The operating and file management commands are listed alphabetically by command name. For a list of all commands sorted by category, use the table “Reader Commands Listed by Category” on page 5-4.

Note: The Code 39 bar code labels in this chapter show an asterisk (*) at the beginning and end of the human-readable interpretation to represent the start and stop codes. If you are creating your own Code 39 bar code labels, your bar code printing utility may automatically supply the asterisks as the start/stop code.

Reader Commands Listed by Category

This section lists the configuration commands in alphabetical order. Use these lists to find accumulate mode, operating, and file management commands.

Not all reader commands apply to all terminals. Use the following tables to determine which commands are supported on your Trakker Antares terminal.

Accumulate Mode Commands	241X	242X	243X	2455	246X	2475	248X
Backspace, 5-8	X	X	X	X	X	X	X
Clear, 5-9	X	X	X	X	X	X	X
Enter, 5-11	X	X	X	X	X	X	X
Enter Accumulate Mode, 5-11	X	X	X	X	X	X	X
Exit Accumulate Mode, 5-11	X	X	X	X	X	X	X

Operating Commands	241X	242X	243X	2455	246X	2475	248X
Backlight On and Off, 5-7	X	X	X				
Boot Terminal, 5-8	X	X	X	X	X	X	X
Change Configuration, 5-8	X	X	X	X	X	X	X
Default Configuration, 5-9	X	X	X	X	X	X	X
TRAKKER Antares 2400 Menu System, 5-12	X	X	X	X		X	X
Multiple-Read Labels, 5-12	X	X	X	X	X	X	X
Reset Firmware, 5-20	X	X	X	X	X	X	X
Save Configuration in Flash Memory, 5-21	X	X	X	X	X	X	X
Scanner Trigger On and Off, 5-22	X	X	X		X	X	X
Set Time and Date, 5-23	X	X	X	X	X	X	X
Status Lights Control, 5-23				X	X	X	X

Reader Commands Listed by Category (continued)

File Management Commands	241X	242X	243X	2455	246X	2475	248X
Abort Program, 5-7	X	X	X	X	X	X	X
Delete File, 5-10	X	X	X	X	X	X	X
List Files, 5-12	X	X	X	X		X	X
Receive File, 5-13	X	X	X	X	X	X	X
Rename File, 5-19	X	X	X	X	X	X	X
Run Program, 5-20	X	X	X	X	X	X	X
Transmit File, 5-25	X	X	X	X	X	X	X

Using Accumulate Mode

You can use Accumulate mode to collect data from a series of bar code labels and enter them as a single label. When you put the terminal in Accumulate mode, the terminal will collect all scanned bar code labels in the terminal's buffer until you scan either the Enter command or the Exit Accumulate mode command.

As you accumulate the data from bar code labels, the data is visible on the bottom line of the screen. You can edit the accumulated data with the Backspace, Clear, and Enter commands. If you are not in Accumulate mode, these commands have no effect and you will hear an error beep.

When you exit Accumulate mode, the accumulated data is "entered" as data records. Up to 250 characters can be held in the buffer. If the data record count exceeds 250 characters, the data is truncated. If you reset the terminal (software or hardware reset), you exit Accumulate mode, the entire buffer is cleared, and all data accumulated is lost.

The syntax to use the Enter Accumulate command is:

`+/data`

where:

+/ is the syntax for the Enter Accumulate mode command.

data is the data you want to enter. This data can be a configuration command or it can be a reader command that is executed when you exit Accumulate mode.

Note: If you are using the advanced long range scanner or scan module, you may not be able to scan the bar code labels in this manual. However, you can still send commands through the serial port or network. For help, see Chapter 2, "Configuring the Terminals."

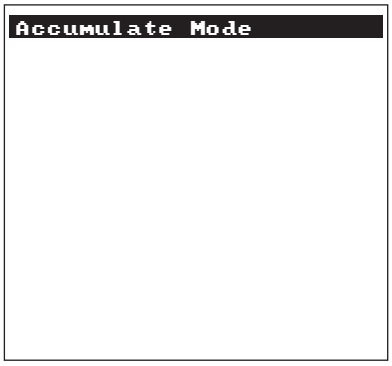
To use Accumulate mode

1. Scan this bar code label to Enter Accumulate mode:

   Enter Accumulate Mode

   +/

   The Accumulate Mode screen appears.



24XXS057.eps

2. Scan the bar code labels for the data you want to enter. You can scan labels from the "Full ASCII Bar Code Chart" in Appendix B.

Note: You can create one bar code label by combining Steps 1 and 2 above. Most of the examples in this manual use one bar code label.

3. If necessary, edit the accumulated data by scanning one of these bar code labels:

   Backspace *-+*

   Clear *- -*

   Enter **

4. Scan this bar code label to exit Accumulate mode and enter the data record.

   Exit Accumulate Mode

   -/

Each Accumulate mode reader command is described in the next section, "Defining the Reader Commands."

Defining the Reader Commands

This section lists the reader commands in alphabetical order. You can find the following information about each reader command:

- Description and purpose
- How to access the command from the network, keypad, or menu
- Bar code labels you can scan to use the reader commands

To find reader commands listed by category, see "Reader Commands Listed by Category" on page 5-4.

Abort Program

Description: Aborts or exits the application that is running. The terminal exits the current application and starts running the default sample application (APPTSK.BIN).

From Network: `/$`

Keypad or Menu: Not supported

Scan: Abort Program

/$

Backlight On and Off

Description: Turns the backlight on to easily view the terminal screen in dimly lit environments, or turns the backlight off. If the backlight is on, it stays on for the length of time set in the Display Backlight Timeout command as long as there is no keypad or scanning activity.

From Network:

`%.1`	Backlight On
`%.0`	Backlight Off
`%.2`	Toggle Backlight

Keypad or Menu: Press the Backlight key (or) or key sequence to turn the backlight on or off.

Scan: Backlight On

%.1

Backlight Off

%.0

Toggle Backlight

%.2

Backspace

Description: Deletes the last character from the current data record being accumulated. If there is no data in the buffer, the command has no effect.

From Network: Not supported

Keypad or Menu: Not supported

Scan: Backspace

-+

Boot Terminal

Description: Boots the terminal. The terminal runs through power-on self test (POST) to test each major subsystem. The terminal then uses the configuration currently saved in flash memory to boot, and your application appears on the screen.

Use this command when you upgrade the firmware on the terminal or if your terminal locks up and will not respond.

From Network: `-.1`

Keypad or Menu: From the Main Menu, choose System Menu and then Upgrade Firmware. Choose OK, choose YES, and then press Esc. The Boot Menu appears. Press 1 or B to boot the terminal.

Scan: Boot Terminal

-.1

Change Configuration

Description: This command must precede any configuration command. If you enter a valid string, the terminal configuration is modified and the terminal sounds a high beep. For help with configuration commands, see Chapter 6, "Configuration Command Reference."

From Network: `$+command[command]...[command n]`

where *command* is a configuration command with the value you want to set.

Keypad or Menu: From the Main Menu, choose Configuration Menu.

Change Configuration (continued)

Example: Change Configuration / Turn Off Beep Volume

$+BV0

The Change Configuration command is followed by the configuration command to turn off the beep volume (BV0).

Clear

Description: Deletes the entire data record you are accumulating. If there is no data in the buffer, the command has no effect.

From Network: Not supported

Keypad or Menu: Not supported

Scan: Clear

- -

Default Configuration

Description: Sets the current and active terminal configurations to the default configuration, resets the firmware, boots the terminal, and runs your application. This command does not reset the time and date. The default configuration for the terminal is listed in Appendix A. For help, see "Restoring the Terminal's Default Configuration" in Chapter 2.

When you use this command, the default configuration is saved in RAM and flash memory. The runtime and boot configuration are changed to the default configuration.

If you restore the default configuration, you must set the primary network communications parameters on the RF terminal to reestablish communications with other devices in the RF network. You may also need to reset the serial port or Ethernet parameters to communicate with other devices in your wired network. For help, see Chapter 2, "Configuring the Terminals."

From Network: .+0

Keypad or Menu: From the Main Menu, choose System Menu, and then choose Load Default Values.

Scan: Default Configuration

.+0

Delete File

Description: Deletes a file from a drive on the terminal.

From Network: `..--drive:filename`

where:

`..--`	is the command to delete a file.
drive:	indicates the drive where you want to delete a file. You must include the colon (:) after the drive letter.
filename	is the file you want to delete.

Note: You cannot use wildcard characters with this reader command. For example, you cannot send the command "`..c:*.*`" to the terminal.

Keypad or Menu: From the Main Menu, choose System Menu, and then choose File Manager. Choose the drive where you want to delete files.

Note: To use the bar code labels in Appendix B, you may need to configure the terminal to use Code 39 in Full ASCII mode. For help, see "Code 39" in Chapter 6.

Scan:

1. Scan this bar code label:

   Enter Accumulate Mode / Delete File

   +/..--

2. Scan the bar code labels for the file you want to delete. You can scan labels from the "Full ASCII Bar Code Chart" in Appendix B. The label must use this format:

   `drive:filename`

3. Scan this bar code label to exit Accumulate mode and delete the file.

   Exit Accumulate Mode

   -/

Or: You can create your own bar code labels to delete files by creating a bar code in this command format:

`..--drive:filename`

Example: To delete the file SHIPPING.BIN from drive C, use this command:

`..--c:shipping.bin`

Enter

Description: Enters the current data record and remains in Accumulate mode. If no data exists, a null string is entered.

Note: The Enter command consists of a Start and Stop character and does not contain any data values. Therefore, if the terminal is configured for a decoded input device, which requires at least one data value in a bar code, it cannot scan the Enter command. For a list of decoded input devices, see your user's manual or contact your local Intermec sales representative.

From Network: Not supported

Keypad or Menu: Not supported

Scan: Enter

**

Enter Accumulate Mode

Description: Enters Accumulate mode. You can accumulate data from a series of bar code labels and enter them as a single label.

From Network: Not supported

Keypad or Menu: Not supported

Scan: Enter Accumulate Mode

+/

Exit Accumulate Mode

Description: Exits Accumulate mode and transmits the current data record. If no data has been accumulated, an empty data record is entered.

From Network: Not supported

Keypad or Menu: Not supported

Scan: Exit Accumulate Mode

-/

List Files

Description: A List Files reader command is not available in the current release. However, if you want to see a list of files on the terminal, you can use the TRAKKER Antares 2400 Menu System.

Keypad or Menu: From the Main Menu, choose System Menu, and then choose File Manager. Choose the drive where you want to list the files.

TRAKKER Antares 2400 Menu System

Description: Starts the TRAKKER Antares 2400 Menu System.

Note: You can use the Command Processing configuration command to disable the TRAKKER Antares 2400 Menu System reader command. If you disable this reader command, you can no longer access the TRAKKER Antares 2400 Menu System using the keypad. For help, see "Command Processing" in Chapter 6.

From Network: Not supported

Keypad or Menu: f ↵ 2 4 8

Scan: TRAKKER Antares 2400 Menu System

..-.

Multiple-Read Labels

Description: A multiple-read label is a Code 39 or Code 93 bar code label that has a space as the first character after the start code. The terminal stores a multiple-read label in the buffer until you execute a command to transmit the label or scan a regular label.

If you disable multiple-read labels, the terminal processes the bar code label as a regular label and reads and decodes the space as data. A regular bar code label is executed as soon as you scan it.

From Network: Not supported

Keypad or Menu: Not supported

Label Syntax: <Start Code><SP>*data*<Stop Code>

where <SP> is the ASCII space character and *data* is the content of the label.

Multiple-Read Labels (continued)

Example: Multiple-Read Bar Code Label

* A*

After you scan a multiple-read bar code label, the accumulated data appears on the bottom line of the terminal screen. You can use the Accumulate mode commands, such as Backspace or Clear, to edit the data.

Receive File

There are three ways to receive files on the Trakker Antares terminals:

- Use the serial port to receive files on the terminal
- Use the serial port to receive and convert 7-bit ASCII files to 8-bit binary files on the terminal
- Use network communications to receive files on the RF or Ethernet terminal

For help connecting the terminal to a host computer or the DCS 300, see your user's manual.

Receive File Through the Serial Port

Description: Receives a file from the host computer through the serial port and saves it on the terminal.

On the host, you must transmit the file using a serial communications package (i.e., Windows 3.1 Terminal, Win95 HyperTerminal, Crosstalk, or ProComm) that supports one of these protocols:

- XMODEM
- XMODEM-1K
- YMODEM

XMODEM-1K is a version of XMODEM that supports 1024-byte blocks and the standard 128-byte XMODEM data blocks, which increases the throughput. YMODEM has the additional ability to transfer a file name with the file's data, and it preserves the length of the file without padding. With YMODEM, you can also receive a batch of files on the terminal.

Note: Trakker Antares filenames are up to eight characters with a three-character extension. Files you transfer from the host must use the Trakker Antares naming conventions.

Receive File Through the Serial Port (continued)

From Network:	`.%Xn,drive:filename`	Receives a file using XMODEM protocol
	`.%Kn,drive:filename`	Receives a file using XMODEM-1K protocol
	`.%Yn,drive:filename`	Receives a file using YMODEM protocol
Or:	`.%Yn,drive:`	Receives a batch of files using YMODEM

where:

`.%X`	is the command to receive a file using XMODEM protocol.
`.%K`	is the command to receive a file using XMODEM-1K protocol.
`.%Y`	is the command to receive a file using YMODEM protocol.
n	indicates the terminal's serial port: 1, 2, or 4.
drive:	indicates the drive on the terminal where you want to receive and store the file. You must include the colon (:) after the drive letter.
filename	is the file you want to receive and save on the terminal.

Keypad or Menu: Not supported

Note: To scan these bar code labels, you must configure the terminal to use Code 39 in Full ASCII mode. For help, see "Code 39" in Chapter 6.

Scan: 1. Scan this bar code label:

Enter Accumulate Mode / Receive File

+/.%

2. Scan the bar code label for the communications protocol you want to use.

XMODEM *X*

XMODEM-1K *K*

YMODEM *Y*

3. Scan the bar code label for the terminal COM port you are using to receive the file. The label also includes the required comma.

COM1 *1,*

COM2 *2,*

COM4 *4,*

Receive File Through the Serial Port (continued)

4. Scan the bar code label or labels for the file you want to receive. You can scan labels from the "Full ASCII Bar Code Chart" in Appendix B. The label must use this format:

   drive:filename

5. Scan this bar code label to exit Accumulate mode and receive the file.

   Exit Accumulate Mode

   -/

Or: You can create your own bar code labels to receive files by creating a bar code in this command format:

`.%Xn,drive:filename` (for XMODEM)

`.%Kn,drive:filename` (for XMODEM-1K)

`.%Yn,drive:filename` (for YMODEM)

Example: To receive the file SHIPPING.BIN on the terminal's drive C by using the XMODEM protocol through COM1, use this command:

```
.%X1,c:shipping.bin
```

Batch Transfer: To transfer a batch of files to the terminal by using the YMODEM protocol, use your serial communications package to start the transfer. You usually select a batch of files using a wild card file specification. The host must send only the filename and extension, not the drive and directory path in the data stream.

Next, use this command to receive the files on the terminal:

`.%Yn,drive:`

For example, to receive the files through COM1 to drive C on the terminal, use this command:

```
.%Y1,c:
```

All files that match the wild card specification are transferred from the host and received to drive C on the terminal. If any file does not transfer, the remainder of the batch transfer is aborted.

Receive and Convert 7-Bit ASCII Files to 8-Bit Binary Files

Description: Receives a file from the host computer through the serial port, converts the file from a 7-bit ASCII hexadecimal file to an 8-bit binary file, and saves the file on the terminal. You must have the terminal connected to the host through a serial port. For help, see your user's manual.

Terminal applications are 8-bit binary files. Some network protocols like the Intermec Multi-Drop protocol in a CrossBar network use 7-bit ASCII files. When you send 8-bit binary files across a 7-bit system without converting the files, the files are not compatible and will not run on the terminal.

On the host, you use a hexadecimal conversion utility to convert the 8-bit binary file to a 7-bit ASCII hexadecimal file. Intermec has a DOS utility called HEX.EXE to convert files. The source code for HEX.EXE is also available. For help, see your Intermec service representative. Once the file is converted to a 7-bit ASCII hexadecimal file, you use the Receive File command and a host utility to transfer the 7-bit file to the terminal and convert it back to an 8-bit file.

Note: Trakker Antares filenames are up to eight characters with a three-character extension. Files you transfer from the host must use the Trakker Antares naming conventions.

From Network: `.%Hn,drive:filename`

where:

`.%H`	is the command to receive a file that was converted from 7-bit ASCII hexadecimal and convert it back to an 8-bit binary file. The terminal uses the current serial port configuration (protocol, baud rate, etc.) for the file transfer.
n	indicates the terminal's serial port: 1, 2, or 4.
drive:	indicates the drive on the terminal where you want to receive and store the file. You must include the colon (:) after the drive letter.
filename	is the file you want to receive and save on the terminal.

Keypad or Menu: Not supported

Note: To scan these bar code labels, you must configure the terminal to use Code 39 in Full ASCII mode. For help, see "Code 39" in Chapter 6.

Receive and Convert 7-Bit ASCII Files to 8-Bit Binary Files (continued)

Scan: 1. Scan this bar code label:

Enter Accumulate Mode / Receive File

+/.%H

2. Scan the bar code label for the terminal COM port you are using to receive the file. The label also includes the required comma.

COM1

1,

COM2

2,

COM4

4,

3. Scan the bar code label or labels for the file you want to receive. You can scan labels from the "Full ASCII Bar Code Chart" in Appendix B. The label must use this format:

drive:filename

4. Scan this bar code label to exit Accumulate mode and receive the file.

Exit Accumulate Mode

-/

Or: You can create your own bar code labels to receive files by creating a bar code in this command format:

.%Hn,*drive:filename*

Example: You want to send an application from the host in your CrossBar network to the terminal. On the host, use HEX.EXE to convert the application from SHIPPING.BIN to SHIPPING.HEX. On the host, use a utility such as InterScan to transmit SHIPPING.HEX through the 9154 or 9161 to the terminal. Enter this command to receive the file SHIPPING.BIN on the terminal's drive C through COM2:

```
.%H2,c:shipping.bin
```

The file SHIPPING.HEX is transferred, converted from 7-bit ASCII hexadecimal to 8-bit binary, and stored as SHIPPING.BIN on the terminal.

Receive File Through Network Communications

Description: Receives a file from the DCS 300 or host and saves it on the RF or Ethernet terminal.

From Network: `.%R,`*`fromfilename,drive:tofilename`*

where:

`.%R` is the command to receive a file that is transmitted over the RF or Ethernet network to the terminal.

fromfilename is the name of the file you are transmitting from the DCS 300 or host to the terminal. On the DCS 300, the file must be sent from the D:\USERDATA directory. To receive a file from the host, you must identify the path and filename.

Note: Do not enter D:\USERDATA in the *fromfilename* field.

drive: indicates the drive on the RF or Ethernet terminal where you want to receive and store the file. You must include the colon (:) after the drive letter.

tofilename is the name of the file you want to save on the RF or Ethernet terminal.

Keypad or Menu: Not supported

Note: To scan these bar code labels, you must configure the terminal to use Code 39 in Full ASCII mode. For help, see "Code 39" in Chapter 6.

Scan: 1. Scan this bar code label:

Enter Accumulate Mode / Receive File

+/.%R,

2. Scan the bar code labels for the file you want to receive. You can scan labels from the "Full ASCII Bar Code Chart" in Appendix B. The label must use this format:

   `fromfilename,drive:tofilename`

3. Scan this bar code label to exit Accumulate mode and receive the file.

Exit Accumulate Mode

-/

Receive File Through Network Communications (continued)

Or: You can create your own bar code labels to receive files by creating a bar code in this command format:

`.%R,`*`fromfilename,drive:tofilename`*

Example: To receive the file SHIPPING.BIN on the terminal's drive C, use this command:

`.%R,shipping.bin,c:shipping.bin`

Rename File

Description: Renames a file stored on the terminal.

From Network: `...-`*`drive:oldfilename,drive:newfilename`*

where:

`...-`	is the command to rename a file.
drive:	indicates the drive where the *oldfilename* is stored. You must include the colon (:) after the drive letter.
oldfilename	is the name of the file you want to rename.
drive:	indicates the drive where the *newfilename* is stored. You must include the colon (:) after the drive letter. The drive letter **MUST** match the drive letter you entered for the *oldfilename*.
newfilename	is the new name of the file.

Keypad or Menu: From the Main Menu, choose System Menu, and then choose File Manager. Choose the drive where you want to rename files.

Note: To use the bar code labels in Appendix B, you may need to configure the terminal to use Code 39 in Full ASCII mode. For help, see "Code 39" in Chapter 6.

Scan: 1. Scan this bar code label:

Enter Accumulate Mode / Rename File

+/...-

2. Scan the bar code labels for the file you want to rename. You can scan labels from the "Full ASCII Bar Code Chart" in Appendix B. The label must use this format:

`drive:oldfilename,drive:newfilename`

Rename File (continued)

3. Scan this bar code label to exit Accumulate mode and rename the file.

Exit Accumulate Mode

-/

Or: You can create your own bar code labels to rename files by creating a bar code in this command format:

`...-drive:oldfilename,drive:newfilename`

Example: To rename the file SHIPPING.BIN on drive C to DOCK1.BIN, use this command:

```
...-c:shipping.bin,c:dock1.bin
```

Reset Firmware

Description: Resets all firmware on the terminal, resets the application, and runs the application. You can use this command to perform a warm boot and restart your application if you are having problems.

From Network: - .

Keypad or Menu: From the main menu, chose System Menu, and then choose Upgrade Firmware.

Scan: Reset Firmware

-.

Run Program

Description: Runs the specified program or application that is stored on the terminal.

Note: You cannot store and run applications from the RAM drive (E).

From Network: `//drive:filename`

where:

`//`	is the command to run an application.
drive:	indicates the drive where the application is stored. You must include the colon (:) after the drive letter.
filename	is the application you want to run.

Run Program (continued)

Keypad or Menu: From the Main Menu, choose System Menu, and then choose File Manager. Choose the drive where the application is stored.

Note: To use the bar code labels in Appendix B, you may need to configure the terminal to use Code 39 in Full ASCII mode. For help, see "Code 39" in Chapter 6.

Scan: 1. Scan this bar code label:

Enter Accumulate Mode / Run Program

+///

2. Scan the bar code label or labels for the application you want to run. You can scan labels from the "Full ASCII Bar Code Chart" in Appendix B. The label must use this format:

   drive:filename

3. Scan this bar code label to exit Accumulate mode and run the application.

Exit Accumulate Mode

-/

Or: You can create your own bar code labels to run applications by creating a bar code in this command format:

//drive:filename

Example: To run the application SHIPPING.BIN, use this command:

```
//c:shipping.bin
```

Save Configuration in Flash Memory

Description: Saves the current configuration in flash memory. When you configure the terminal by scanning bar code labels or sending commands from a network device, the configuration changes are saved in RAM. When you save the configuration to flash memory, the current configuration becomes the active configuration, and it will be used the next time you boot or reset the terminal.

From Network: `.+1`

Keypad or Menu: From the Main Menu, choose System Menu, and then choose Store Configuration.

Save Configuration in Flash Memory (continued)

Scan: Save Configuration in Flash Memory

.+1

Scanner Trigger On and Off

The Scanner Trigger On and the Scanner Trigger Off commands perform the same functions as pulling and releasing the scanner trigger on an external scanner or pushing and releasing the Scan button on a hand-held terminal keypad.

After a Scanner Trigger On command is sent, the scanner operates differently depending on the Scanner mode and scanner trigger configuration settings:

- If you configure the terminal to use One-Shot Scanner mode and level triggering, the scanner automatically turns off after a good read of a bar code label or after the scanner timeout period elapses.
- If you configure the terminal to use Automatic Scanner mode and level triggering, the scanner remains on after a good read of a bar code label. You can use the Scanner Trigger Off command to turn off the scanner, or you can set the Scanner Timeout command to automatically turn off the scanner after it stays on for the period of time set.

Note: Intermec does not recommend that you use a Scanner Trigger On or Scanner Trigger Off command with the Scanner Trigger command set to edge triggering.

Description: The Scanner Trigger On command performs the same function as pulling the scanner trigger on an external scanner or pushing the Scan button on a hand-held terminal keypad.

From Network: `/.`

Keypad or Menu: Not supported

Scan: Not supported

Description: The Scanner Trigger Off command performs the same function as releasing the scanner trigger on an external scanner or the Scan button on the hand-held terminal keypad.

From Network: `/%`

Keypad or Menu: Not supported

Scan: Not supported

Set Time and Date

Description: Sets the time and date on the terminal. When the terminal receives the time broadcast command from the 9154 or 9161 controller, the command sets the clock on the terminal. You can configure the clock with seconds or without seconds.

Use this command **only** for backward compatibility with the 95XX terminal. In the 95XX terminal documentation, this command was called Enable Clock. If you do not need backward compatibility, use the Time and Date configuration command. For help, see "Time and Date" in Chapter 6.

From Network: `/+data`

Acceptable formats for data to set the time and date are:

yy/mm/dd:hh:mm:ss
yy/mm/dd:hh:mm
hh:mm:ss
hh:mm

Year values (*yy*) from 00 to 95 are interpreted as 2000 through 2095. Year values from 96 to 99 are interpreted as 1996 through 1999.

Keypad or Menu: Not supported.

Example: Set Time and Date to 1:30

/+1/Z30

Note: To use this reader command, you must configure the terminal to use Code 39 in Full ASCII mode. For help, see "Code 39" in Chapter 6.

Status Lights Control

Description: Controls the Modifier Key, Caps Lock, Good Read, and User Defined status lights on the 2455, 246X, 2475, and 248X. For a description of each light, see your user's manual.

Note: The 246X does not have a Caps Lock status light.

You can also use this reader command in conjunction with the im_command function to program the User Defined status LED or status icon for the 241X and 243X terminals. For help, see the *Trakker Antares Application Development Tools System Manual* (P/N 064433).

Status Lights Control (continued)

From Network: `$%data`

where *data* must be 8 digits, corresponding to:

Digit	Status Light	Value	Meaning
1	Modifier Key	0	Off
		1	On
		X	No change
2	Caps Lock	0	Off
		1	On
		X	No change
3	Good Read	0	Off
		1	On
		X	No change
4	User Defined	0	Off
		1	On
		X	No change
5 to 8	Not used	XXXX	No change

All status lights are turned off when you reset or boot the terminal.

Keypad or Menu: Not supported

Scan: All Status Lights Off

$%0000XXXX

All Status Lights On

$%1111XXXX

Or: To turn a specific status light on or off, follow these steps:

1. Scan this bar code label:

   Enter Accumulate Mode / Status Lights Control

   +/$%

Status Lights Control (continued)

2. Scan one of these labels to set the value for digit 1:

Off

0

On

1

No Change

X

3. Repeat Step 2 to set digits 2, 3, and 4.
4. Scan this bar code label to set digits 5 through 8 as X:

No Change

XXXX

Note: You need to set digits 5 through 8 as X. Do **not** try to set these digits to any other value.

5. Scan this bar code label to exit Accumulate mode.

Exit Accumulate Mode

-/

Transmit File

There are three ways to transmit files from the Trakker Antares terminals:

- Use the serial port to transmit files from the terminal.
- Use the serial port to convert and transmit 8-bit binary files to 7-bit ASCII files from the terminal.
- Use network communications to transmit files from the RF or Ethernet terminal.

For help connecting the terminal to a host computer or the DCS 300, see your user's manual.

Transmit File Through the Serial Port

Description: Transmits a file from the terminal through the serial port and saves it on the host computer.

On the host, you must receive the file using a serial communications package (i.e., Windows 3.1 Terminal, Win95 HyperTerminal, Crosstalk, or ProComm) that supports one of these protocols:

- XMODEM
- XMODEM-1K
- YMODEM

XMODEM-1K is a version of XMODEM that supports 1024-byte blocks as well as the standard 128-byte XMODEM data blocks, which increases the throughput. YMODEM has the additional ability to transfer a file name with the file's data, and it preserves the length of the file without padding.

Note: Trakker Antares filenames are up to eight characters with a three-character extension. Files you transfer from the host must use the Trakker Antares naming conventions.

From Network:

`%%Xn,drive:filename`	Transmits a file using XMODEM protocol
`%%Kn,drive:filename`	Transmits a file using XMODEM-1K protocol
`%%Yn,drive:filename`	Transmits a file using YMODEM protocol

where:

`%%X`	is the command to transmit a file using XMODEM protocol.
`%%K`	is the command to transmit a file using XMODEM-1K protocol.
`%%Y`	is the command to transmit a file using YMODEM protocol.
n	indicates the terminal's serial port: 1, 2, or 4.
drive:	indicates the drive where the file is stored on the terminal. You must include the colon (:) after the drive letter.
filename	is the file you want to transmit.

Keypad or Menu: Not supported

Note: To scan these bar code labels, you must configure the terminal to use Code 39 in Full ASCII mode. For help, see "Code 39" in Chapter 6.

Transmit File Through the Serial Port (continued)

Scan: 1. Scan this bar code label:

Enter Accumulate Mode / Transmit File

+/%%

2. Scan the bar code label for the communications protocol you want to use.

XMODEM

X

XMODEM-1K

K

YMODEM

Y

3. Scan the bar code label for the terminal COM port you are using to transmit the file. The label also includes the required comma.

COM1

1,

COM2

2,

COM4

4,

4. Scan the bar code labels for the file you want to transmit. You can scan labels from the "Full ASCII Bar Code Chart" in Appendix B. The label must use this format:

drive:filename

5. Scan this bar code label to exit Accumulate mode and transmit the file.

Exit Accumulate Mode

-/

Or: You can create your own bar code labels to transmit files by creating a bar code in this command format:

```
%%Xn,drive:filename      (for XMODEM)
%%Kn,drive:filename      (for XMODEM-1K)
%%Yn,drive:filename      (for YMODEM)
```

Example: To transmit the file SHIPPING.DAT from drive C through COM1 to the host using XMODEM protocol, use this command:

```
%%X1,c:shipping.dat
```

Transmit and Convert 8-Bit Binary Files to 7-Bit ASCII Files

Description: Converts the file from an 8-bit binary file to a 7-bit ASCII hexadecimal file, transmits the file from the terminal through the serial port, and saves the file on the host computer. The terminal must be connected to the host through a serial port.

Trakker Antares applications are 8-bit binary files. Some network protocols like the Intermec Multi-Drop protocol in a CrossBar network use 7-bit ASCII files. When you send 8-bit binary files across a 7-bit system without converting the files, the files are not compatible and will not run.

You use the Transmit File command and a host utility to convert the 8-bit binary file to a 7-bit ASCII hexadecimal file and transfer it from the terminal. On the host, you use a hexadecimal conversion utility to convert the 7-bit ASCII hexadecimal file to an 8-bit binary file. Intermec has a DOS utility called HEX.EXE to convert files. The source code for HEX.EXE is also available. For help, see your Intermec service representative.

Note: Trakker Antares filenames are up to eight characters with a three-character extension. Files you transfer from the host must use the Trakker Antares naming conventions.

From Network: `%%Hn,drive:filename`

where:

`%%H`	is the command to convert an 8-bit binary file to a 7-bit ASCII hexadecimal file and transmit it. The terminal uses the current serial port configuration (protocol, baud rate, etc.) for the file transfer.
`n`	indicates the terminal's serial port: 1, 2, or 4.
drive:	indicates the drive where the file is stored on the terminal. You must include the colon (:) after the drive letter.
filename	is the file you want to transmit.

Keypad or Menu: Not supported

Note: To scan these bar code labels, you must configure the terminal to use Code 39 in Full ASCII mode. For help, see "Code 39" in Chapter 6.

Scan: 1. Scan this bar code label:

Enter Accumulate Mode / Transmit File

+/%%H

Transmit and Convert 8-Bit Binary Files to 7-Bit ASCII Files (continued)

2. Scan the bar code label for the terminal COM port you are using to transmit the file. The label also includes the required comma.

COM1  *1,*

COM2  *2,*

COM4  *4,*

3. Scan the bar code labels for the file you want to transmit. You can scan labels from the "Full ASCII Bar Code Chart" in Appendix B. The label must use this format:

   `drive:filename`

4. Scan this bar code label to exit Accumulate mode and transmit the file.

Exit Accumulate Mode 
-/

Or: You can create your own bar code labels to transmit files by creating a bar code in this command format:

`%%Hn,drive:filename`

Example: You want to upload an application from the terminal in your CrossBar network to the host. On the host, you must receive the file using a utility such as InterScan. Enter this command to transmit the file SHIPPING.BIN from the terminal's drive C through COM2:

```
%%H2,c:shipping.bin
```

The file is converted from 8-bit binary to 7-bit ASCII hexadecimal and transmitted to the host. Use HEX.EXE to convert the application back to its original 8-bit binary format.

Transmit File Through Network Communications

Description: Transmits a file from the Ethernet or RF terminal and saves it on the DCS 300 or host.

From Network: `%%R,drive:fromfilename,tofilename`

where:

`%%R`	is the command to transmit a file over the RF or Ethernet network from the terminal to the DCS 300 or host.
drive:	indicates the drive where the file is stored on the terminal. You must include the colon (:) after the drive letter.

Transmit File Through Network Communications (continued)

fromfilename is the name of the file you are transmitting from the terminal to the DCS 300 or host.

tofilename is the name of the file that will be saved on the DCS 300 or host. On the DCS 300, the file is saved on the D:\USERDATA directory. To transmit a file to the host, you must identify the path and filename where you want to save the file. Do **not** enter D:\USERDATA in the *tofilename* field.

Keypad or Menu: Not supported

Note: To scan these bar code labels, you must configure the terminal to use Code 39 in Full ASCII mode. For help, see "Code 39" in Chapter 6.

Scan: 1. Scan this bar code label:

Enter Accumulate Mode / Transmit File

+/%%R,

2. Scan the bar code labels for the file you want to transmit. You can scan labels from the "Full ASCII Bar Code Chart" in Appendix B. The label must use this format:

   drive:fromfilename,tofilename

3. Scan this bar code label to exit Accumulate mode and transmit the file.

   Exit Accumulate Mode

-/

Or: You can create your own bar code labels to transmit files by creating a bar code in this command format:

`%%R,`*`drive:fromfilename,tofilename`*

Example: To transmit the file SHIPPING.DAT from drive C to the controller or host, use this command:

```
%%R,c:shipping.dat,shipping.dat
```

6

Configuration Command Reference

This chapter describes all the configuration commands supported on the terminal.

Using Configuration Commands

A configuration command changes the way the terminal operates. For example, you can change the Beep Volume and make the terminal beep very loud in a noisy environment. You can execute configuration commands by

- scanning a command from a Code 39 or Code 93 bar code label. Code 39 bar code labels are provided in this chapter. For help, see Chapter 2, "Configuring the Terminals."
- choosing a command from the TRAKKER Antares 2400 Menu System. For help, see Chapter 2, "Configuring the Terminals."
- sending a command from a device on the serial, RF, or Ethernet network. For help, see Chapter 2, "Configuring the Terminals."

Note: If you are working in the TRAKKER Antares 2400 Menu System, you cannot scan configuration commands. Exit the menu system to scan configuration commands.

This chapter contains the following information about each configuration command:

- List of terminals that support the command
- Command description and purpose
- Command syntax and options
- Default setting
- Location within the TRAKKER Antares 2400 Menu System
- Bar code labels you can scan to set or change each command

The configuration commands are listed alphabetically by command name. For a list of commands sorted by category, use the next table, "Configuration Commands Listed by Category." If you want to look up a command by its syntax, see "Configuration Commands by Syntax" in Appendix A.

Note: The Code 39 bar code labels in this chapter show an asterisk (*) at the beginning and end of the human-readable interpretation to represent the start and stop codes. If you are creating your own Code 39 bar code labels, your bar code printing utility may automatically supply the asterisks as the start/stop code.

Note: If you are using the advanced long range scanner or scan module, you may not be able to scan the bar code labels in this manual. However, you can still send commands through the serial port or network. For help, see Chapter 2, "Configuring the Terminals."

Configuration Commands Listed by Category

This chapter lists the configuration commands in alphabetical order. Use these lists to find the configuration commands you may need to set for bar code symbologies, operations, serial network communications, or RF and Ethernet network communications.

Not all configuration commands apply to all terminals. Use the following tables to determine which commands are supported on your Trakker Antares® terminal.

Bar Code Symbologies	241X	242X	243X	2455	246X	2475	248X
Codabar, 6-24	X	X	X	X	X	X	X
Code 11, 6-26	X	X	X	X	X	X	X
Code 2 of 5, 6-26	X	X	X	X	X	X	X
Code 39, 6-28	X	X	X	X	X	X	X
Code 93, 6-32	X	X	X	X	X	X	X
Code 128, 6-32	X	X	X	X	X	X	X
Interleaved 2 of 5, 6-79	X	X	X	X	X	X	X
MSI, 6-95	X	X	X	X	X	X	X
PDF 417, 6-105	X	X	X				
Plessey, 6-105	X	X	X	X	X	X	X
UPC/EAN, 6-154	X	X	X	X	X	X	X

Configuration Commands Listed by Category (continued)

Operations	241X	242X	243X	2455	246X	2475	248X
Append Time, 6-14	X	X	X	X	X	X	X
Automatic Shutoff, 6-14	X	X	X	X	X	X	X
Beep Duration, 6-18	X	X	X	X	X	X	X
Beep Frequency, 6-20	X	X	X	X		X	X
Beep Volume, 6-22	X	X	X	X	X	X	X
Character Set, 6-23					X		
Command Processing, 6-41	X	X	X	X	X	X	X
Decode Security, 6-53	X	X	X	X	X	X	X
Display Backlight Timeout, 6-58	X	X	X				
Display Contrast, 6-60	X	X	X	X		X	X
Display Font Type, 6-61	X	X	X	X		X	X
Display Row Spacing, 6-62	X	X	X	X		X	X
Display Spacing, 6-63	X	X	X	X		X	X
Display Video Mode, 6-66	X	X	X	X		X	X
Flash Memory Configuration, 6-70	X	X	X	X	X	X	X
Keypad Caps Lock, 6-81	X	X	X	X	X	X	X
Keypad Clicker, 6-82	X	X	X	X	X	X	X
Keypad Control, 6-82	X	X	X	X	X	X	X
Keypad Type, 6-83	X	X	X	X		X	X
Postamble, 6-108	X	X	X	X	X	X	X
Preamble, 6-110	X	X	X	X	X	X	X
RAM Drive Size, 6-112	X	X	X	X	X	X	X
Resume Execution, 6-116	X	X	X	X	X	X	X
Scan Ahead, 6-118	X	X	X	X	X	X	X
Scanner Mode, 6-119	X	X	X	X	X	X	X
Scanner Redundancy, 6-121	X	X	X	X	X	X	X
Scanner Selection, 6-122	X	X	X	X	X	X	X
Scanner Timeout, 6-124	X	X	X	X	X	X	X
Scanner Trigger, 6-126	X	X	X	X	X	X	X
Suspend/Resume Control, 6-137	X	X	X	X	X	X	X
Symbology Identifiers, 6-138	X	X	X	X	X	X	X
Time and Date, 6-147	X	X	X	X	X	X	X
Time in Seconds, 6-148	X	X	X	X	X	X	X

Configuration Commands Listed by Category (continued)

Serial Network Communications	241X	242X	243X	2455	246X	2475	248X
Baud Rate, 6-16	X	X	X	X	X	X	X
Configuration Commands Via Serial Port, 6-45	X	X	X	X	X	X	X
Data Bits, 6-52	X	X	X	X	X	X	X
End of Message (EOM), 6-68	X	X	X	X	X	X	X
Flow Control, 6-72	X	X	X	X	X	X	X
Handshake, 6-74	X	X	X	X	X	X	X
Longitudinal Redundancy Check (LRC), 6-87	X	X	X	X	X	X	X
Modem Dial Sequence, 6-92		X					
Modem Initialization Sequence, 6-94		X					
Multi-Drop Address, 6-96					X		X
Parity, 6-102	X	X	X	X	X	X	X
Poll (Polling), 6-106	X	X	X	X	X	X	X
RS-232 or RS-422/485 COM2 Interface, 6-117					X		X
Scanner Port (COM4), 6-120				X			
Serial Port Protocol, 6-128	X	X	X	X	X	X	X
Start of Message (SOM), 6-132	X	X	X	X	X	X	X
Stop Bits, 6-135	X	X	X	X	X	X	X
Timeout Delay, 6-149	X	X	X	X	X	X	X

Configuration Commands Listed by Category (continued)

RF and Ethernet Network Communications	2415	2425	2435	2455	2461	2475	248X
Acknowledgement Delay Lower Limit, 6-10	X	X	X	X		X	X
Acknowledgement Delay Upper Limit, 6-11	X	X	X	X		X	X
AP MAC Address, 6-13	X	X	X	X		X	X
Controller Connect Check Receive Timer, 6-47	X	X	X	X		X	X
Controller Connect Check Send Timer, 6-49	X	X	X	X		X	X
Controller IP Address, 6-50	X	X	X	X	X	X	X
Default Router, 6-54	X	X	X	X	X	X	X
DHCP (Controller), 6-56	X	X	X	X	X	X	X
DHCP (Terminal), 6-57	X	X	X	X	X	X	X
Host IP Address, 6-75	X	X	X	X	X	X	X
Internet Control Message Protocol (ICMP), 6-77	X	X	X	X		X	X
Maximum Retries, 6-88	X	X	X	X		X	X
Network Activate, 6-98	X	X	X	X	X	X	X
Network Loopback, 6-98	X	X	X	X		X	X
Network Port, 6-100	X	X	X	X	X	X	X
Radio MAC Address, 6-112	X	X	X	X		X	X
Subnet Mask, 6-136	X	X	X	X	X	X	X
TCP Maximum Retries, 6-143	X	X	X	X	X	X	X
TCP/IP Maximum Transmit Timeout, 6-144	X	X	X	X	X	X	X
Terminal IP Address, 6-145	X	X	X	X	X	X	X

Configuration Commands Listed by Category (continued)

OpenAir RF Network	2415	2425	2435	2455	246X	2475	2485/6
Domain, 6-67	X	X	X	X			X
Inactivity Timeout, 6-78	X	X	X	X			X
Roaming Flag, 6-118	X	X	X	X			X
Security Identification (ID), 6-127	X	X	X	X			X
Transmit Mode, 6-151	X	X	X	X			X
Wakeup On Broadcast, 6-158	X	X	X	X			X

802.11b RF Network	2415	2425	2435	2455	246X	2475	2485/6
AP Density, 6-12	X	X	X	X		X	X
Maximum Sleep Duration, 6-89	X	X	X	X		X	X
Medium Reservation, 6-91	X	X	X	X		X	X
Microwave Robustness, 6-91	X	X	X	X		X	X
Network Name, 6-99	X	X	X	X		X	X
Power Management, 6-110	X	X	X	X		X	X
Receive All Multicast, 6-114	X	X	X	X		X	X
Reservation Threshold, 6-115	X	X	X	X		X	X
Station Name, 6-134	X	X	X	X		X	X
Transmit Rate, 6-152	X	X	X	X		X	X
Transmit Rate Fallback, 6-153	X	X	X	X		X	X
WEP Encryption, 6-159	X	X	X	X		X	X
WEP Key, 6-160	X	X	X	X		X	X
WEP Transmit Key, 6-162	X	X	X	X		X	X

802.11b RF with 802.1x Security Network	2415	2425	2435	2455	246X	2475	2485/6
Password, 6-103	X	X	X	X		X	X
Server Certificate Common Name, 6-130	X	X	X	X		X	X
User Name, 6-157	X	X	X	X		X	X

Entering Variable Data in a Configuration Command

You can enter variable data for many of the configuration commands. For example, you can set a preamble that is up to 25 ASCII characters long. You need to follow these general instructions to enter variable data.

To enter variable data in a configuration command

1. Scan a bar code label with this syntax:

   `+/$+command`

   where:

+/	is the syntax for the Enter Accumulate Mode command.
$+	is the syntax for the Change Configuration command.
command	is the syntax for the command you want to change.

   For example, the command syntax for a preamble is AD*data*. To change or set a preamble, scan this bar code:

   Enter Accumulate Mode / Change Configuration / Set Preamble

   +/$+AD

   The Accumulate Mode screen appears.

2. Scan a bar code label from the "Full ASCII Bar Code Chart" in Appendix B. To set the preamble to the character T, scan this label:

   T

   T

Note: To use the bar code labels in Appendix B, you must configure the terminal to use Code 39 in Full ASCII mode. For help, see "Code 39" on page 6-28.

3. Scan the Exit Accumulate Mode bar code label to update the terminal's configuration:

   Exit Accumulate Mode

   -/

Acknowledgement Delay Lower Limit

Terminals: 2415, 2425, 2435, 2455, 2475, and 2485/6.

Description: When the terminal sends a message to the DCS 30X, the terminal waits to receive a response acknowledging the message. If no response is received within the acknowledgement delay lower limit time, the terminal sends the message again at the time interval set for the lower limit. The terminal will continue to send the data at increasingly longer intervals until it reaches the acknowledgement delay upper limit time. The terminal continues sending the message at the time interval set for the upper limit until a response is received or a timeout error occurs.

Syntax: NV*data*

Acceptable values for *data* are any number from 200 to 2000 ms.

Default: 300 ms

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Advanced Network.

Bar Codes: To set the default acknowledgement delay lower limit, scan this bar code:

Default Acknowledgement Delay Lower Limit

$+NV300

Or: To set the acknowledgement delay lower limit:

1. Scan this bar code:

   Enter Accumulate Mode / Set Acknowledgement Delay Lower Limit

   +/$+NV

2. Scan a numeric value for *data* from these bar codes:

0

1

2

3

4

5

Acknowledgement Delay Lower Limit (continued)


6


7


8


9

3. Scan this bar code:

Exit Accumulate Mode


-/

Acknowledgement Delay Upper Limit

Terminals: 2415, 2425, 2435, 2455, 2475, and 2485/6.

Description: When the terminal sends a message to the DCS 30X, the terminal waits to receive a response acknowledging the message. If no response is received within the Acknowledgement Delay Lower Limit time, the terminal sends the message again at the time interval set for the lower limit. The terminal will continue to send the data at increasingly longer intervals until it reaches the Acknowledgement Delay Upper Limit time. The terminal continues sending the message at the time interval set for the upper limit until a response is received or a timeout error occurs.

Syntax: NU*data*

Acceptable values for *data* are any number from 2000 to 60000 ms.

Default: 5000 ms

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Advanced Network.

Bar Codes: To set the default acknowledgement delay upper limit, scan this bar code:

Default Acknowledgement Delay Upper Limit


$+NU5000

Acknowledgement Delay Upper Limit (continued)

Or: To set the acknowledgement delay upper limit:

1. Scan this bar code:

   Enter Accumulate Mode / Set Acknowledgement Delay Upper Limit

   +/$+NU

2. Scan a numeric value for *data* from these bar codes:

   0

   1

   2

   3

   4

   5

   6

   7

   8

   9

3. Scan this bar code:

   Exit Accumulate Mode

   -/

AP Density

Terminals: 2415, 2425, 2435, 2455, 2475, and 2485/6 with 802.11b radios.

Description: Controls the roaming sensitivity of the radios. You can use this parameter to virtually reduce the range of the radio. When you increase the AP density, you do not reduce the absolute range of the radio, but the roaming algorithms are modified to allow significant overlap of the radio coverage. Increasing the AP density lets you create a higher performance radio network, but you will need significantly more access points to cover a given area.

AP Density (continued)

Syntax: LG*data*

Acceptable values for *data* are:

1 Low density
2 Medium density
3 High density

Default: Low density

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Radio.

Bar Codes: Scan one of these bar codes:

Low AP Density

$+LG1

Medium AP Density

$+LG2

High AP Density

$+LG3

AP MAC Address

Terminals: 2415, 2425, 2435, 2455, 2475, and 2485/6.

Description: Returns the MAC address of the radio that is installed in the access point that the terminal is communicating with. You can only use this read-only command in an application to return the value (MAC address) to the application.

Syntax: RA

Default: None

Menu System: N/A

Bar Codes: N/A

Append Time

Terminals: All Trakker Antares terminals.

Description: Appends the time to bar code labels that are scanned into the terminal. You can also use the Time in Seconds command to append the time in hours and minutes only, or hours, minutes, and seconds. The time is appended to the data in the form HH:MM:SS. For help, see "Time in Seconds" on page 6-148.

Syntax: DE*data*

Acceptable values for *data* are:

0 Disabled
1 Enabled

Default: Disabled

Menu System: From the Main Menu, choose Configuration Menu, then Terminal Menu, and then Append Time.

Bar Codes: Scan one of these bar codes:

Disable Append Time

$+DE0

Enable Append Time

$+DE1

Automatic Shutoff

Terminals: All Trakker Antares terminals.

Description: Defines the maximum length of time the terminal remains on when there is no activity. When you do not use the terminal for the length of time set with this command, the terminal automatically turns off as if you had pressed [⏻] to turn it off.

When you press [⏻] to turn on the terminal, the terminal either resumes exactly where it was when you turned it off, or the terminal boots and restarts your application. Resume is controlled through the Resume Execution command. For help, see "Resume Execution" on page 6-116.

Power Management Tip: You should use the Automatic Shutoff feature to preserve battery pack power on 241X, 242X, and 243X terminals.

Automatic Shutoff (continued)

Syntax: EZ*data*

Acceptable values for *data* are:

0	Disabled (always on)
02-75	Shutoff time in minutes

Default: 0 (Disabled)

Menu System: From the Main Menu, choose Configuration Menu, then Terminal Menu, and then Power Management.

Bar Codes: To disable automatic shutoff, scan this bar code:

Disable Automatic Shutoff

$+EZ0

Or: To set a timeout:

1. Scan this bar code:

   Enter Accumulate Mode / Set Automatic Shutoff

   +/$+EZ

2. Scan a numeric value for *data* from these bar codes:

0

1

2

3

4

5

6

7

8

9

Automatic Shutoff (continued)

3. Scan this bar code:

Exit Accumulate Mode

-/

Baud Rate

Terminals: All Trakker Antares terminals.

Description: Sets the baud rate for the serial port on the terminal. The baud rate must match the baud rate of the device (i.e. the host computer) that the terminal is communicating with through the serial port.

You can configure the baud rate for these communications protocols: Binary, Configurable, Master Polling, and Polling Mode D. For more information, see the networking chapter in your user's manual.

Syntax: YA*n.data*

where *n* is:

1 COM1 serial port
2 COM2 serial port (246X and 248X terminals only)
3 COM3 serial port (242X terminals only)
4 COM4 serial port (242X, 2455, and 248X terminals only)

Acceptable values for *data* are:

3 1200 baud
4 2400 baud
5 4800 baud
6 9600 baud
7 19200 baud
8 38400 baud

Note: For COM3 serial ports, the maximum baud rate is actually 33600 baud.

Default: 19200

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Serial Port.

Baud Rate (continued)

Bar Codes: To set the default baud rate for each serial port, scan these bar codes:

Default Baud Rate for COM1

$+YA1.7

Default Baud Rate for COM2

$+YA2.7

Default Baud Rate for COM3

$+YA3.7

Default Baud Rate for COM4

$+YA4.7

Or: To set the baud rate for one serial port:

1. Scan this bar code:

   Enter Accumulate Mode / Set Baud Rate

   +/$+YA

2. Scan the serial port from these bar codes:

   COM1

   1.

   COM2

   2.

   COM3

   3.

   COM4

   4.

3. Scan the baud rate from these bar codes:

   1200 Baud

   3

   2400 Baud

   4

   4800 Baud

   5

   9600 Baud

   6

Baud Rate (continued)

19200 Baud

7

38400 Baud

8

4. Scan this bar code:

Exit Accumulate Mode

-/

5. Repeat Steps 1 through 4 to set the baud rate for another serial port.

Beep Duration

Terminals: All Trakker Antares terminals.

Description: Sets the length of the terminal's audio signals. You can define a different duration for the high and the low beep tone. Use Beep Duration with Beep Frequency and Beep Volume to define audio signals (beeps and keyclicks) according to operator preference and work environment.

Syntax: BD*databeep*

Acceptable values for *data* are any number from 2 to 7999 ms.

Acceptable values for *beep* are:

H	High
L	Low

Default:

243X:	150 ms high and 50 ms low beep tones
241X, 242X, 2455, 246X, 2475, 248X:	50 ms, high and 50 ms low beep tones

Menu System: Not supported.

Bar Codes: To set the default beep duration, scan one of these bar codes:

Default Beep Duration, 243X

$+BD150HBD50L

Beep Duration (continued)

Default Beep Duration, 241X, 242X, 2455, 246X, 2475, 248X

$+BD50HBD50L

Or: To set a beep duration:

1. Scan this bar code:

   Enter Accumulate Mode / Set Beep Duration

   +/$+BD

2. Scan a numeric value for *data* from these bar codes:

   0

   1

   2

   3

   4

   5

   6

   7

   8

   9

3. Scan the beep tone for which you are setting the beep duration:

   High

   H

   Low

   L

4. Scan this bar code:

   Exit Accumulate Mode

   -/

Beep Frequency

Terminals: 241X, 242X, 243X, 2455, 2475, and 248X.

Description: Sets the frequency, or pitch, of the terminal's audio signals. Use Beep Frequency with Beep Duration and Beep Volume to define audio signals (beeps and keyclicks) according to operator preference and work environment.

Note: The beep frequency response varies between terminals. You may need to test several beep frequencies to find the optimal frequency for the operator and work environment.

Syntax: BF*databeep*

Acceptable values for *data* are any number from 20 to 8000 Hz.

Acceptable values for *beep* are:

H High
L Low

Default:

241X:	2400 Hz high, 1400 Hz low
243X:	1900 Hz high, 1050 Hz low
242X, 2455, 246X, 2475, 248X:	2400 Hz high, 1200 Hz low

Menu System: Not supported.

Bar Codes: To set the default beep frequency, scan one of these bar codes:

Default Beep Frequency, 241X

$+BF2400HBF1400L

Default Beep Frequency, 243X

$+BF1900HBF1050L

Default Beep Frequency, 242X, 2455, 246X, 2475, 248X

$+BF2400HBF1200L

Beep Frequency (continued)

Or: To set a beep frequency:

1. Scan this bar code:

   Enter Accumulate Mode / Set Beep Frequency

   +/$+BF

2. Scan a numeric value for *data* from these bar codes:

   0

   1

   2

   3

   4

   5

   6

   7

   8

   9

3. Scan the beep tone for which you are setting the beep frequency:

   High

   H

   Low

   L

4. Scan this bar code:

   Exit Accumulate Mode

   -/

Beep Volume

Terminals: All Trakker Antares terminals.

Description: Adjusts the volume of the terminal's audio signals. Use Beep Volume with Beep Duration and Beep Frequency to define audio signals (beeps and keyclicks) according to operator preference and work environment.

If you set the Beep Volume command to off, you will not hear any audio signals including the keyclick.

Syntax: BV*data*

Acceptable values for *data* are:

0	Off
1	Quiet
2	Normal
3	Loud
4	Very loud
8	Lower volume
9	Raise volume

Default: Very loud

Menu System: From the Main Menu, choose Configuration Menu, then Terminal Menu, and then Beeper.

Bar Codes: Scan one of these bar codes:

Beep Volume Off

$+BV0

Beep Volume Quiet

$+BV1

Beep Volume Normal

$+BV2

Beep Volume Loud

$+BV3

Beep Volume Very Loud

$+BV4

Beep Volume (continued)

Or: Scan one of these bar codes repeatedly to change the beep volume:

Lower Beep Volume

$+BV8

Raise Beep Volume

$+BV9

Character Set

Terminals: 246X.

Description: Determines the language used to display characters.

Syntax: DX*data*

Acceptable values for *data* are:

0 U.S. ASCII
1 French
2 German
3 United Kingdom
4 Danish / Norwegian
5 Swedish
6 Italian
7 Spanish

Default: U.S. ASCII

Menu System: N/A

Bar Codes: Scan one of these bar code labels:

U.S. ASCII Character Set

$+DX0

French Character Set

$+DX1

German Character Set

$+DX2

United Kingdom Character Set

$+DX3

Danish Character Set

$+DX4

Swedish Character Set

$+DX5

Character Set (continued)

Italian Character Set

$+DX6

Spanish Character Set

$+DX7

The next table lists the ASCII characters that change for the seven European languages. Only these 11 characters change in any character set. All other characters in the ASCII chart remain as defined in the "Full ASCII Table" in Appendix B.

Country	Hexadecimal Value										
	23	40	5B	5C	5D	5E	60	7B	7C	7D	7E
United States	#	@	[	\	]	^	'	{	|	}	~
England	£	@	[	\	]	^	'	{	¦	}	~
Germany	#	§	Ä	Ö	Ü	^	'	ä	ö	ü	ß
Denmark	#	@	Æ	Ø	Å	^	'	æ	ø	å	~
France	#	à	°	ç	§	^	'	é	ù	è	¨
Sweden	#	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
Italy	#	@	°	ç	é	^	ù	à	ò	è	ì
Spain		@	¡	Ñ	¿	^	'	¨	ñ	}	~

Codabar

Terminals: All Trakker Antares terminals.

Description: Enables or disables decoding of Codabar symbology. Codabar is a self-checking, discrete symbology. The American Blood Commission (ABC) Codabar requires that you retain and transmit the start/stop code digits when processing a Codabar symbol. As a result, configuration CD10 is an illegal configuration.

Codabar (continued)

Syntax: CD*data*

Acceptable values for *data* must be two digits, corresponding to:

Digit	Value	Description
First	0	Disabled
	1	ABC
	2	Standard
	3	Concatenated
Second	0	Discard Start/Stop
	1	Transmit ABCD Start/Stop
	2	Transmit DC1-DC4 Start/Stop

Note: Concatenated is not supported on terminals with an integrated E1022 linear imager or an integrated PDF 417 scan engine.

Default: Disabled

Menu System: From the Main Menu, choose Configuration Menu, and then Symbologies Menu.

Bar Codes: Scan one of these bar codes:

Disabled, Discard Start/Stop
$+CD00

ABC, Transmit ABCD Start/Stop
$+CD11

ABC, Transmit DC1-DC4 Start/Stop
$+CD12

Standard, Discard Start/Stop
$+CD20

Standard, Transmit ABCD Start/Stop
$+CD21

Standard, Transmit DC1-DC4 Start/Stop
$+CD22

Concatenated, Discard Start/Stop
$+CD30

Concatenated, Transmit ABCD Start/Stop
$+CD31

Concatenated, Transmit DC1-DC4 Start/Stop
$+CD32

Code 11

Terminals: All Trakker Antares terminals configured for non-decoded scanning.

Description: Enables or disables decoding of Code 11 symbology. Code 11 is a very high density, discrete numeric bar code. It is most extensively used in labeling telecommunications components and equipment.

Syntax: CG*data*

Acceptable values for *data* are:

0 Disabled
1 Code 11 enabled with one check digit
2 Code 11 enabled with two check digits

Default: Disabled

Menu System: From the Main Menu, choose Configuration Menu, then Symbologies Menu, and then Code 11.

Bar Codes: Scan one of these bar codes:

Disable Code 11

$+CG0

Code 11 Enabled With One Check Digit

$+CG1

Code 11 Enabled With Two Check Digits

$+CG2

Code 2 of 5

Terminals: All Trakker Antares terminals.

Description: Enables or disables decoding of Code 2 of 5 symbology. Code 2 of 5 uses the bars to encode information and the spaces to separate the individual bars. This code is discrete and self-checking.

You can only enable Code 2 of 5 if the Interleaved 2 of 5 (I 2 of 5) code is disabled. If you enable I 2 of 5, Code 2 of 5 is automatically disabled.

Code 2 of 5 (continued)

Syntax: CC*data*

where *data* consists of three digits as follows:

First digit:	0	Code 2 of 5, 3 Bar Start/Stop
	1	Code 2 of 5, 2 Bar Start/Stop
Second and third digits:	00	Disable Code 2 of 5
	01-32	Label Length

Note: Label lengths less than 3 are not supported on terminals with an integrated E1022 linear imager or an integrated PDF 417 scan engine.

Default: Disabled

Menu System: From the Main Menu, choose Configuration Menu, then Symbologies Menu, and then 2 of 5/I 2 of 5.

Bar Codes: To disable Code 2 of 5, scan this bar code:

Disable Code 2 of 5

$+CC000

Or: To enable Code 2 of 5:

1. Scan one of these bar codes:

Enter Accumulate Mode / Enable Code 2 of 5, 3 Bar Start/Stop

+/$+CC0

Enter Accumulate Mode / Enable Code 2 of 5, 2 Bar Start/Stop

+/$+CC1

2. Scan a two-digit numeric value to set the label length (01-32) from these bar codes.

0

1

2

3

4

5

Code 2 of 5 (continued)


6


7


8


9

3. Scan this bar code:

Exit Accumulate Mode


-/

Code 39

Terminals: All Trakker Antares terminals.

Description: Enables or disables decoding of Code 39 symbology. Code 39 is discrete, variable length, and self-checking. The character set is uppercase A to Z, 0 to 9, dollar sign ($), period (.), slash (/), percent (%), space ( ), plus (+), and minus (-).

There are three types of ASCII the terminal decodes:

- Code 39 non-full ASCII
- Code 39 full ASCII
- Code 39 mixed-full ASCII

Code 39 non-full ASCII Non-full ASCII uses a one-character encoding scheme. For example, you encode the data “SAMPLE” as follows:


SAMPLE

This label decodes as *SAMPLE*.

Code 39 full ASCII Full ASCII uses a two-character encoding scheme to extend the character set to 128 characters. You use the dollar sign ($), slash (/), percent (%), or plus (+) followed by an uppercase letter to represent one of the characters in the extended set. You must encode lowercase letters as a plus sign (+) followed by their uppercase equivalents. For a list of ASCII characters and their Code 39 representations, see the “Full ASCII Table” in Appendix B.

Use Code 39 full ASCII to enter ASCII control characters or lowercase characters as data. You should also enable Code 39 full ASCII to use ASCII command characters.

Code 39 (continued)

For example, you encode the data “sample” in Code 39 full ASCII as follows:

+S+A+M+P+L+E

In Code 39 non-full ASCII, this label decodes as *+S+A+M+P+L+E*. In Code 39 full ASCII, this label decodes as *sample*.

Code 39 mixed-full ASCII Use mixed-full ASCII when printers encode the same label two different ways. For example, if you have a bar code with the data $%a, some printers encode the data as follows:

/D/E+A

In the Full ASCII Table in Appendix B, /D represents $ and /E represents %. If you configure the terminal for Code 39 full ASCII, the terminal decodes the data as $%a because there are three valid full ASCII character pairs to represent the data.

Other printers encode the data $%a as:

$%+A

The $ and % are valid Code 39 characters in the non-full ASCII character set. However, the terminal will not decode this label if it is configured for full ASCII, because the data is not represented by valid full ASCII character pairs. To decode the label correctly, you need to configure the terminal for mixed-full ASCII.

When you configure the terminal for Code 39 mixed-full ASCII, the terminal will decode both of the labels above as $%a.

Mixed-full ASCII interprets any valid full ASCII character pairs that appear in the label, but does not require that all data be encoded with a valid full ASCII character pair. If you are uncertain how your labels are encoded, configure the terminal for mixed-full ASCII, which decodes all valid Code 39 labels.

If you configure the terminal for Code 39 full ASCII, you should check for Code 39 mixed-full ASCII. Mixed-full ASCII does not apply when you configure the terminal for non-full ASCII.

Note: The interpretive text shown under bar code labels does not always accurately reflect the data that is encoded in the label. The interpretive text represents how the label should be decoded.

Code 39 (continued)

Use this table to help configure your terminal.

Code 39 Option	Bar Code Label	Decodes
Non-full ASCII	\$%+A /D/E+A	\$%+A /D/E+A
Full ASCII	\$%+A /D/E+A	No decode \$%a
Mixed-full ASCII	\$%+A /D/E+A	\$%a \$%a

Syntax: CB*data*

Acceptable values for *data* must be three digits, corresponding to:

First digit:	0	Disabled
	1	Enabled with no check digit
	2	Enabled with check digit
	3	HIBC (Health Industry Bar Code)
	4	With AIAG check digit
Second digit:	0	Discard check digit
	1	Retain check digit
Third digit:	0	Code 39 non-full ASCII
	1	Code 39 full ASCII
	2	Code 39 mixed-full ASCII

Note: Selecting HIBC Code 39 automatically sets the configuration to non-full ASCII with the check digit transmitted. HIBC and With AIAG check digit are not supported on terminals with an integrated E1022 linear imager or an integrated PDF 417 scan engine.

Default: Enable Code 39 Full ASCII with no check digit (111)

Menu System: From the Main Menu, choose Configuration Menu, then Symbologies Menu, and then Code 39.

Bar Codes: To disable Code 39, scan this bar code:

Disable Code 39

\$+CB0

Code 39 (continued)

Or: To enable Code 39:

1. Scan this bar code:

   Enter Accumulate Mode / Enable Code 39

   +/$+CB

2. Scan one of these bar codes to set the first digit:

   Without a Check Digit

   1

   With a Check Digit

   2

   HIBC Code 39

   3

   With AIAG Check Digit

   4

3. Scan one of these bar codes to set the second digit:

   Discard Check Digit

   0

   Transmit Check Digit

   1

4. Scan one of these bar codes to set the third digit:

   Code 39 Non-Full ASCII

   0

   Code 39 Full ASCII

   1

   Code 39 Mixed-Full ASCII

   2

5. Scan this bar code:

   Exit Accumulate Mode

   -/

Code 93

Terminals: All Trakker Antares terminals.

Description: Enables or disables decoding of Code 93 symbology. Code 93 is a variable length, continuous symbology that uses four element widths.

Syntax: CF*data*

Acceptable values for *data* are:

0 Disabled
1 Enabled

Default: Disabled

Menu System: From the Main Menu, choose Configuration Menu, then Symbologies Menu, and then Code 93.

Bar Codes: Scan one of these bar codes:

Disable Code 93

$+CF0

Enable Code 93

$+CF1

Code 128

Terminals: All Trakker Antares terminals.

Description: Enables or disables decoding of Code 128 symbology. Code 128 is a very high density alphanumeric symbology that supports the extended ASCII character set. It is a variable length, continuous code that uses multiple element widths.

If you configure Standard Code 128, the terminal will not decode Function Code 1 characters in the first position of a bar code label. Any subsequent Function Code 1 characters are translated to the ASCII GS character as a separator for variable length fields.

When you enable Standard Code 128, it is automatically configured for industry standard concatenation.

Note: For help configuring UCC/EAN Code 128, see “UCC/EAN Code 128” on page 6-34. For help configuring ISBT Code 128, see “ISBT Code 128” on page 6-35.

Code 128 (continued)

Syntax: CH*data*

Acceptable values for *data* are:

0 Disabled
1 Standard Code 128
2 UCC/EAN Code 128
8 ISBT Code 128

Note: ISBT Code 128 is not supported on terminals with an integrated E1022 linear imager or an integrated PDF 417 scan engine.

Default: Standard

Menu System: From the Main Menu, choose Configuration Menu, then Symbologies Menu, and then Code 128.

Bar Codes: Scan one of these bar codes:

Disable Code 128
$+CH0

Enable Standard Code 128
$+CH1

Enable UCC/EAN Code 128
$+CH2

Enable ISBT Code 128
$+CH8

Or: To configure Standard Code 128:

Note: To set this command using the bar code labels in Appendix B, you must configure the terminal to use Code 39 in Full ASCII mode. For help, see "Code 39" on page 6-28.

1. Scan this bar code:

Enter Accumulate Mode / Enable Standard Code 128
+/$+CH1

Code 128 (continued)

2. Scan one of these bar codes to disable or enable concatenation:

Disable Concatenation

0

Enable Concatenation

1

3. Scan this bar code:

Exit Accumulate Mode

-/

UCC/EAN Code 128

Description: Enables and configures decoding of the UCC/EAN Code 128 symbology. When you enable the UCC/EAN Code 128 symbology, it is automatically configured for concatenation.

If you configure UCC/EAN Code 128, the terminal will decode a bar code label as Standard Code 128 unless one of the first two characters are a start character and a Function Code 1. In this case, the bar code label is processed as described next:

1. The Function Code 1 character is not transmitted.
2. The three symbology ID characters,]C1, are transmitted.
3. The remaining Code 128 characters are decoded as Standard Code 128.

Syntax: CH2*data*

where *data* is 2 digits selected from this list:

Digits	Values	Description
1	0	Symbology identifier (ID) disabled.
	1	Symbology identifier enabled. Output of]C1.
2	0	Concatenation disabled.
	1	Restricted concatenation enabled.

Default: Digit 1: Symbology ID disabled
Digit 2: Concatenation enabled

UCC/EAN Code 128 (continued)

Bar Codes: To configure UCC/EAN Code 128:

1. Scan this bar code:

   Enter Accumulate Mode / Enable UCC/EAN Code 128

   +/$+CH2

2. Scan one of these bar codes to disable or enable symbology ID:

   Disable Symbology ID

   0

   Enable Symbology ID

   1

3. Scan one of these bar codes to disable or enable concatenation:

   Disable Concatenation

   0

   Enable Concatenation

   1

4. Scan this bar code:

   Exit Accumulate Mode

   -/

ISBT Code 128

Description: Enables and configures decoding of ISBT Code 128 symbology. ISBT Code 128 is the global bar code labeling standard for the blood banking industry. It is used to support the world-wide distribution, tracking and handling of blood bags and blood components.

For more information on ISBT Code 128, refer to the *ISBT 128 Bar Code Symbology and Application Specification for Labeling of Whole Blood and Blood Components* prepared by the International Council for Commonality in Blood Banking Automation.

Syntax: CH8*data*

where *data* can be up to 10 digits selected from this list:

Digits	Values	Description
1	0	Symbology identifier (ID) disabled.

ISBT Code 128 (continued)

Digits	Values	Description
	1	Symbology identifier enabled. Output of]C0 indicates a single ISBT 128 bar code was read. Output of]C4 indicates that a pair of ISBT Code 128 bar codes was read.
2	0	Concatenation disabled.
	1	Restricted concatenation enabled.
3-4	See List *	Left Data ID (identifier) to be matched for restricted concatenation. * List of valid combinations are: =% Blood Groups and Rh => Expiration Date &> Expiration Date and Time =* Collection Date &* Collection Date and Time =< ISBT Product Code =) Manufacturer ID &) Manufacturer Lot Number =& Concatenation Bar Code &< National Product Code &(National Special Test &! Unit Exclusion Status &; National Special Donor =n Donation ID Number where n is a value from 0 to 9 or uppercase A through Z &n National Use Bar Code where n is a value from lowercase a through z
5-6	See List *	Right Data ID to be matched for restricted concatenation. See the list of valid combinations for digits 3 and 4.
7-9	000-999	Bar code concatenation control parameters. If digit 10 is “d,” digits 7 and 8 refer to the nominal distance in millimeters between the stop characters of two bar code labels that can be concatenated, and digit 9 is the bar code label positioning tolerance. If the distance between the two bar code labels is outside the limit set (assuming standard ISBT bar code print size), the bar code labels will not be concatenated. If digit 10 is “t,” digits 7, 8, and 9 are the decode time limit in milliseconds. If both bar code labels are not decoded in the same beam sweep within this time, the bar code labels are not concatenated. This time parameter is only accurate to a 25-millisecond resolution.

ISBT Code 128 (continued)

Digits	Values	Description
10	d or t	Identifies the concatenation control as either the distance "d" between bar code labels or the time "t" in which concatenated bar code labels must be decoded. See the description for Digits 7-9.

Note: The Left Data ID and Right Data ID are used only with the restricted concatenation option. For example, the terminal will concatenate only those bar code labels with data identifiers that match the configured data identifiers. The spacing between bar codes that can be concatenated must be between 2 and 5 character widths.

Default: Digit 1: Symbology ID disabled
Digit 2: Concatenation disabled

Bar Codes: To enable ISBT Code 128 with the default settings, scan this bar code.

Enable ISBT Code 128

$+CH8

Or: To configure ISBT Code 128:

Note: To set this command using the bar code labels in Appendix B, you must configure the terminal to use Code 39 in Full ASCII mode. For help, see "Code 39" on page 6-28.

1. Scan this bar code:

   Enter Accumulate Mode / Enable ISBT Code 128

   +/$+CH8

2. Scan one of these bar codes to disable or enable symbology ID:

   Disable Symbology ID

   0

   Enable Symbology ID

   1

Note: Steps 3 through 9 are optional.

ISBT Code 128 (continued)

3. Scan one of these bar codes to disable or enable concatenation:

Disable Concatenation

0

Enable Concatenation

1

If you disabled concatenation, go to Step 10. Otherwise, continue with Step 4.

4. Scan one of these bar codes to set the Left Data ID:

Blood Groups and Rh

=%

Expiration Date

=>

Expiration Date and Time

&>

Collection Date

*=**

Collection Date and Time

*&**

ISBT Product Code

=<

Manufacturer ID

=)

Manufacturer Lot Number

&)

Concatenation Bar Code

=&

National Product Code

&<

National Special Test

&(

Unit Exclusion Status

&!

National Special Donor

&;

Donation ID Number (See Note)

=

ISBT Code 128 (continued)

National Use Bar Code (See Note)

&

If you scan the Donation ID Number or National Use Bar Code, continue with Step 5. Otherwise, go to Step 6.

5. For the Donation ID Number or the National Use Bar Code, scan an alphanumeric bar code from the "Full ASCII Bar Code Chart" in Appendix B.
   - For the Donation ID Number, scan a value from 0 through 9 or uppercase A through Z.
   - For the National Use Bar Code, scan a value from lowercase a through z.
6. Scan one of these bar codes to set the Right Data ID:

Blood Groups and Rh

=%

Expiration Date

=>

Expiration Date and Time

&>

Collection Date

*=**

Collection Date and Time

*&**

ISBT Product Code

=<

Manufacturer ID

=)

Manufacturer Lot Number

&)

Concatenation Bar Code

=&

National Product Code

&<

National Special Test

&(

Unit Exclusion Status

&!

ISBT Code 128 (continued)

National Special Donor

&;

Donation ID Number (See Note)

=

National Use Bar Code (See Note)

&

7. For the Donation ID Number or the National Use Bar Code, scan an alphanumeric bar code from the "Full ASCII Bar Code Chart" in Appendix B.
   - For the Donation ID Number, scan a value from 0 through 9 or uppercase A through Z.
   - For the National Use Bar Code, scan a value from lowercase a through z.
8. If you want to keep the default concatenation control parameters, go to Step 10.
   - The default concatenation distance is 16 mm ± 0 mm.
   - The default concatenation decode time limit is 160 ms.

   If you want to set the concatenation control parameters, follow these instructions:
   - To set the concatenation decode time limit, scan these bar codes to set the time from 001 to 999 ms.
   - To set the concatenation distance, scan these bar codes to set the distance from 00 to 99 mm and the tolerance from ± 1 to 9 mm.

0

1

2

3

4

5

6

7

8

9

ISBT Code 128 (continued)

9. Scan one of these bar codes to set the concatenation distance or time limit:

Distance

d

Time

t

10. Scan this bar code:

Exit Accumulate Mode

-/

Command Processing

Terminals: All Trakker Antares terminals.

Description: Command processing allows you to disable or enable reader commands. For example, you can disable the Change Configuration command. There are two ways to enable or disable reader commands:

- Use the Command Processing configuration command described here.
- Use the Reader Command Menu option in the Configuration Menu of the TRAKKER Antares 2400 Menu System.

You may want to disable reader commands to prevent a user from accidentally entering a command or to use data that would otherwise be treated as a command. Any Code 39 or Code 93 bar code label that contains the 2-character to 4-character commands for Command Processing is treated as a reader command unless the command is disabled.

For example, if you disable the Menu System reader command, you can no longer access the TRAKKER Antares 2400 Menu System using the keypad.

If you want to disable or enable several commands, it is easier to use the menu system. For help, see Chapter 2, “Configuring the Terminals.” For a description of each reader command that you can enable or disable with Command Processing, see Chapter 5, “Reader Command Reference.”

Note: Not all reader commands are available on all terminals. To determine which commands are available on your terminal, see Chapter 5, “Reader Command Reference.”

Command Processing (continued)

Syntax: DC*data*

Acceptable values for *data* are:

0	Disable all reader commands
1	Enable all reader commands
2	Disable override
3	Enable override
*command*0	Disable reader command
*command*1	Enable reader command

The Enable Override option is a temporary setting that allows you to enable all the reader commands for as long as you need them. For help using the Enable Override and Disable Override options, see "Using the Override Options" on page 6-45.

Default: All reader commands enabled

Menu System: From the Main Menu, choose Configuration Menu, then Terminal Menu, and then Reader Commands.

Note: Before using the following scanning options, you must make sure that the Enable Override option is not on. For help, see "Using the Override Options" on page 6-45.

Bar Codes: To disable or enable all the reader commands, scan one of these bar codes:

Disable All Reader Commands

$+DC0

Enable All Reader Commands

$+DC1

Or: To disable or enable specific reader commands, perform these steps:

1. Scan this bar code:

   Enter Accumulate Mode / Command Processing

   +/$+DC

2. Scan the bar code to disable or enable one reader command.

   Abort Program

   /$

Command Processing (continued)

Boot Terminal

-.1

Change Configuration

$+

Default/Save Configuration

.+

Delete File

..--

Receive File

.%

Rename File

...-

Reset Firmware

-.

Run Program

//

Scanner Trigger Off

/%

Scanner Trigger On

/.

Set Time and Date

/+

Status Lights and Sense Inputs Control

$%

TRAKKER Antares 2400 Menu System

..-.

Transmit File

%%

Note: Accumulate mode commands are separated into two bar codes so that the command can be accumulated rather than executed as a command. You need to scan the following bar codes in order from left to right.

Backspace

-

(continued)

+

Command Processing (continued)

Clear

-

(continued)

-

Enter Accumulate Mode

+

(continued)

/

Exit Accumulate Mode

-

(continued)

/

3. Scan one of these bar codes:

Disable the Command

0

Enable the Command

1

4. Repeat Steps 2 and 3 to disable or enable another reader command.

Note: You can accumulate up to 250 characters in the buffer. If the data accumulated exceeds 250 characters, you will hear an error beep and the terminal will reject the last bar code read.

5. Scan this bar code:

Exit Accumulate Mode

-/

Other: To disable or enable the ability to scan multiple-read labels, scan one of these bar codes:

Disable Multiple-Read Labels

$+DC0

Enable Multiple-Read Labels

$+DC1

Command Processing (continued)

To quickly disable or enable the Menu System (Test and Service Mode), scan one of these bar codes:

Disable Menu System

$+DC..-.0

Enable Menu System

$+DC..-.1

Using the Override Options

You can disable or enable reader commands using the Command Processing configuration command or the TRAKKER Antares 2400 Menu System. To temporarily enable all the reader commands, you can use the Enable Override option. You must use the Disable Override option to return the terminal to the previous configuration.

Note: If you do not use the Disable Override option, you may not be able to disable or enable reader commands.

The Enable Override option is the only bar code label you can scan to enable reader commands if you have disabled all reader commands (DC0). However, you can also enable reader commands in the TRAKKER Antares 2400 Menu System.

Bar Codes: To use the override options, scan one of these bar code labels:

Enable Override

$+DC3

Disable Override

$+DC2

Configuration Commands Via Serial Port

Terminals: All Trakker Antares terminals.

Description: Allows you to control the data the terminal receives through the serial port. You can configure this command for the Configurable communications protocol. For more information, see the networking chapter in your user's manual.

You can set this command to execute reader and configuration commands received through the serial port or treat all data as data without checking for special command syntax. There are three options:

Disabled All data received through the serial port is treated as data. The terminal will not execute reader or configuration commands sent or encoded in the data.

Configuration Commands Via Serial Port (continued)

Enabled with TMF If the data is sent with the TMF (Terminal Message Format) header, the terminal will check for and execute reader or configuration commands received through the serial port. With TMF, you can execute reader and configuration commands or send and receive data about the current terminal configuration.

Enabled without TMF The terminal will check for and execute all reader and configuration commands (i.e., Receive File reader command or Beep Volume change configuration command).

Note: Before you can enable Configuration Commands Via Serial Port with or without TMF, you must configure the EOM command.

Syntax: YT*n.data*

where *n* is:

1 COM1 serial port
2 COM2 serial port (246X and 248X terminals only)
3 COM3 serial port (242X terminals only)
4 COM4 serial port (242X, 2455, and 248X terminals only)

Acceptable values for *data* are:

0 Disabled
1 Enabled with TMF
2 Enabled without TMF

Default: Enabled without TMF

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Serial Port.

Bar Codes: To set the default for each serial port, scan these bar codes:

COM1 Commands Via Serial Port Enabled Without TMF

$+YT1.2

COM2 Commands Via Serial Port Enabled Without TMF

$+YT2.2*

COM3 Commands Via Serial Port Enabled Without TMF

$+YT3.2

COM4 Commands Via Serial Port Enabled Without TMF

$+YT4.2

Configuration Commands Via Serial Port (continued)

Or: To disable the configuration commands via serial port for each serial port, scan these bar codes:

COM1 Commands Via Serial Port Disabled

$+YT1.0

COM2 Commands Via Serial Port Disabled

$+YT2.0*

COM3 Commands Via Serial Port Disabled

$+YT3.0

COM4 Commands Via Serial Port Disabled

$+YT4.0

Or: To set the configuration commands via serial port to enabled with TMF for each serial port, scan these bar codes:

COM1 Commands Via Serial Port Enabled With TMF

$+YT1.1

COM2 Commands Via Serial Port Enabled With TMF

$+YT2.1*

COM3 Commands Via Serial Port Enabled With TMF

$+YT3.1

COM4 Commands Via Serial Port Enabled With TMF

$+YT4.1

Controller Connect Check Receive Timer

Terminals: 2415, 2425, 2435, 2455, 2475, and 2485/6.

Description: During periods of inactivity on the terminal, the terminal still sends messages to the DCS 30X to check the RF or Ethernet connection. If no message is received within the time set for the Controller Connect Check Receive Timer, the terminal is no longer connected to the DCS 30X and the Network Connect status light (or the Connect LED or the Connect icon) blinks. The timer countdown resets each time a valid message is received.

Power Management Tip: Intermec strongly recommends that you use the optimum setting of 60 seconds.

Syntax: NP*data*

Acceptable values for *data* are any number from 1 to 3600 seconds (60 minutes).

Controller Connect Check Receive Timer (continued)

Default: 60 seconds

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Advanced Network.

Bar Codes: To set the default controller connect check receive timer, scan this bar code:

Default Controller Connect Check Receive Timer

$+NP60

Or: To set the controller connect check receive timer:

1. Scan this bar code:

   Enter Accumulate Mode / Set Controller Connect Check Receive Timer

   +/$+NP

2. Scan a numeric value for *data* from these bar codes:

   0

   1

   2

   3

   4

   5

   6

   7

   8

   9

3. Scan this bar code:

   Exit Accumulate Mode

   -/

Controller Connect Check Send Timer

Terminals: 2415, 2425, 2435, 2455, 2475, and 2485/6.

Description: During periods of inactivity on the terminal, the terminal still sends messages to the DCS 30X to check the RF or Ethernet connection. The terminal sends a message at the time interval set for the Controller Connect Check Send Timer. The timer countdown resets each time a valid message is sent or received.

Power Management Tip: Intermec strongly recommends that you use the optimum setting of 35 seconds.

Syntax: NQ*data*

Acceptable values for *data* are any number from 1 to 3600 seconds (60 minutes).

Default: 35 seconds

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Advanced Network.

Bar Codes: To set the default controller connect check send timer, scan this bar code:

Default Controller Connect Check Send Timer

$+NQ35

Or: To set the controller connect check send timer:

1. Scan this bar code:

   Enter Accumulate Mode / Set Controller Connect Check Send Timer

   +/$+NQ

2. Scan a numeric value for *data* from these bar codes:

   0

   1

   2

   3

   4

   5

Controller Connect Check Send Timer (continued)


6


7


8


9

3. Scan this bar code:

Exit Accumulate Mode


-/

Controller IP Address

Terminals: 2415, 2425, 2435, 2455, 2461, 2475, 2480/1 with the Ethernet option, and 2485/6 using the UDP Plus network.

Description: Defines the IP address assigned to the DCS 30X in your network. An IP address is a unique network level address you assign to each device in a TCP/IP network. The controller IP address you set on the terminal must match the address that is set on the DCS 30X.

If you plan to enable DHCP (Dynamic Host Configuration Protocol), you can set the controller IP address to any valid IP address. The terminal will locate and reset the IP address after you enable DHCP. For help, see "DHCP (Controller)" on page 6-56.

Syntax: NC*n.n.n.n*

where each *n* address segment is a number from 0 to 255. The controller IP address field consists of four separate numbers, each separated by a period.

Note: The RF or Ethernet network cannot be activated if the first address segment in the IP address is set to 0, 127, or a number greater than 223.

Default: 0.0.0.0

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Primary Network.

Controller IP Address (continued)

Bar Codes: To set the default controller IP address, scan this bar code:

Default Controller IP Address

$+NC0.0.0.0

Or: To set the controller IP address:

1. Scan this bar code:

   Enter Accumulate Mode / Set Controller IP Address

   +/$+NC

2. Scan a numeric value from 0 to 255 to set an *n* field of the controller IP address from these bar codes.

   0

   1

   2

   3

   4

   5

   6

   7

   8

   9

3. Scan this bar code:

   . (Period)

   .

4. Repeat Steps 2 and 3 to set the next three numbers in the controller IP address field. After you scan the last address segment, go to Step 5. Do **not** scan the period after the last address segment.

Controller IP Address (continued)

5. Scan this bar code:

Exit Accumulate Mode

-/

Data Bits

Terminals: All Trakker Antares terminals.

Description: Sets the number of data bits the terminal uses when communicating with another device (i.e., host computer) through the serial port. You can configure the data bits for the Binary and Configurable communications protocols. For more information, see the networking chapter in your user's manual.

Syntax: YI*n.data*

where *n* is:

1 COM1 serial port
2 COM2 serial port (246X and 248X terminals only)
3 COM3 serial port (242X terminals only)
4 COM4 serial port (242X, 2455, and 248X terminals only)

Acceptable values for *data* are:

7 7 data bits
8 8 data bits

Default: 7 data bits

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Serial Port.

Bar Codes: Scan one of these bar codes:

7 Data Bits for COM1

$+YI1.7

8 Data Bits for COM1

$+YI1.8

7 Data Bits for COM2

$+YI2.7

8 Data Bits for COM2

$+YI2.8

Data Bits (continued)

7 Data Bits for COM3

$+YI3.7

8 Data Bits for COM3

$+YI3.8

7 Data Bits for COM4

$+YI4.7

8 Data Bits for COM4

$+YI4.8

Decode Security

Terminals: All Trakker Antares terminals.

Description: Defines the security level to use when decoding bar codes. When you select a lower decode security level, the terminal can decode bar codes with poorer print quality.

Note: You should only use the low parameter as a temporary solution until you can improve the bar code label print quality.

Syntax: CS*data*

Acceptable values for *data* are:

0 Low
1 Moderate
2 High

Default: Moderate

Menu System: From the Main Menu, choose Configuration, then Terminal Menu, and then Scanner.

Bar Codes: Scan one of these bar codes:

Low Decode Security

$+CS0

Moderate Decode Security

$+CS1

High Decode Security

$+CS2

Default Router

Terminals: 2415, 2425, 2435, 2455, 2461, 2475, 2480/1 with the Ethernet option, and 2485/6 using the TCP/IP or UDP Plus network.

Description: Defines the IP address assigned to the default router in your RF or Ethernet network. The router provides a software and hardware connection between two or more subnetworks that permits traffic to be routed from one subnetwork to another on the basis of the intended destinations of that traffic.

When the DCS 30X or host (TCP/IP network) is on a different subnetwork than the terminal, you need to set the IP address assigned to the default router. The terminal uses the router address to send packets across the network to the DCS 30X, controller, or host. The default of 0.0.0.0 means there is no default router.

Syntax: NX*n.n.n.n*

where each *n* address segment is a number from 0 to 255. The default router address field consists of four separate numbers, each separated by a period.

Note: The RF or Ethernet network cannot be activated if the first address segment in the IP address is set to 0, 127, or a number greater than 223.

Default: 0.0.0.0

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Advanced Network.

Bar Codes: To set the default value for the default router, scan this bar code:

No Default Router

$+NX0.0.0.0

Or: To set the default router address:

1. Scan this bar code:

   Enter Accumulate Mode / Set Default Router

   +/$+NX

Default Router (continued)

2. Scan a numeric value from 0 to 255 to set an *n* field of the default router address from these bar codes.


0


1


2


3


4


5


6


7


8


9

3. Scan this bar code:

. (Period)


.

4. Repeat Steps 2 and 3 to set the next three numbers in the default router address field. After you scan the last address segment, go to Step 5. Do **not** scan the period after the last address segment.

5. Scan this bar code:

Exit Accumulate Mode


-/

DHCP (Controller)

Terminals: 2415, 2425, 2435, 2455, 2461, 2475, 2480/1 with the Ethernet option, and 2485/6 using the UDP Plus network.

Description: If your DCS 30X is operating as a DHCP (Dynamic Host Configuration Protocol) client, its IP address will change each time it is turned on. When the DHCP controller command is enabled on the terminal, the terminal can identify and use the DCS 30X's IP address. The terminal IP address is not changed by this command. To use DHCP to change the terminal IP address, see the next section, "DHCP (Terminal)."

Before you can enable DHCP on the terminal, you must configure the network parameters for the terminal, including the controller IP address. Although the terminal identifies the DCS 30X's IP address and resets the controller IP address on the terminal, you must assign a valid controller IP address before you can enable this command.

Important: After you enable or disable DHCP, you must save the configuration in flash memory for the change to take effect.

Syntax: NI*data*

Acceptable values for *data* are:

0 Disable DHCP (Controller)
1 Enable DHCP (Controller)

Default: Disabled

Menu System: Not supported.

Bar Codes: 1. Scan one of these bar codes to disable or enable DHCP (Controller):

Disable DHCP (Controller)

$+NI0

Enable DHCP (Controller)

$+NI1

2. To save the changes in flash memory, scan this bar code:

Save Configuration in Flash Memory

.+1

DHCP (Terminal)

Terminals: 2415, 2425, 2435, 2455, 2461, 2475, 2480/1 with the Ethernet option, and 2485/6 using the TCP/IP network.

Description: When DHCP (Dynamic Host Configuration Protocol) is enabled on the terminal, the terminal receives its IP address from the DHCP server. The IP address it receives may be permanent or leased.

Permanent The terminal uses the assigned IP address until you reboot the terminal.

Leased The terminal uses the assigned IP for leased amount of time that is specified by the server. The terminal must renew the lease before it expires to maintain communication.

Note: The leased DHCP server setting is not supported on the 2461.

The DHCP server assigns the following network parameters:

- Terminal IP Address
- Subnet Mask (optional)
- Default Router (optional)

The Terminal IP Address field displays 0.0.0.0 to indicate that DHCP is enabled, however, the terminal uses the IP address that it receives from the DHCP server. To see the IP address that the DHCP server assigns to the terminal, from the Main Menu, choose About TRAKKER 2400.

The parameters assigned by the DHCP server are not permanently stored on the terminal. These parameters are reset each time you reboot the terminal.

Syntax: Not supported.

Default: Enabled

Menu System: To use the menu system and enable the terminal to use DHCP:

1. From the Main Menu, choose Configuration Menu, Communications Menu, and then Primary Network.
2. Set the Terminal IP Address.
   - To enable DHCP, set the Terminal IP Address to 0.0.0.0.
   - To disable DHCP, set the Terminal IP Address to a value other than 0.0.0.0.
3. Set the Network Activate command to enabled.
4. Exit the menu system and save all changes.

DHCP (Terminal) (continued)

Bar Codes: To use bar codes and enable the terminal to use DHCP:

1. Set the Terminal IP Address.
   - To enable DHCP, set the Terminal IP Address to the default value of 0.0.0.0.

     Default Terminal IP Address

     $+ND0.0.0.0
   - To disable DHCP, set the Terminal IP Address to a value other than 0.0.0.0. For help, see "Terminal IP Address" on page 6-145.
2. Set a controller IP address or a host IP address. For help, see "Controller IP Address" on page 6-50 or "Host IP Address" on page 6-75.
3. Set the Network Activate command to enabled.

   Enable RF or Ethernet Network

   $+NA1

Display Backlight Timeout

Terminals: 241X, 242X, and 243X.

Description: Defines the amount of time the backlight stays on as long as there is no keypad or scanning activity on the terminal. The backlight timeout resets each time there is activity. This setting significantly affects the terminal's battery life. If you set a longer backlight timeout value, you will use the power in the main battery pack at a faster rate.

Syntax: DF*data*

Acceptable values for *data* are:

00	Disabled
01-60	Timeout in seconds

Default: 10 seconds

Menu System: From the Main Menu, choose Configuration Menu, then Terminal Menu, and then Display.

Display Backlight Timeout (continued)

Bar Codes: To disable the backlight timeout, scan this bar code:

Disable Backlight Timeout

$+DF00

Or: To set the backlight timeout:

1. Scan this bar code:

   Enter Accumulate Mode / Set Backlight Timeout

   +/$+DF

2. Scan a two-digit numeric value for *data* from these bar codes.

   0

   1

   2

   3

   4

   5

   6

   7

   8

   9

3. Scan this bar code:

   Exit Accumulate Mode

   -/

Display Contrast

Terminals: 241X, 242X, 243X, 2455, 2475, 248X.

Description: Defines the contrast (low or high) of the characters against the terminal screen. When the contrast is set to the highest level, the characters are bright against a bright background. When the contrast is set to the lowest level, the characters are dark against a dark background. The contrast levels that correspond to values are different, depending on the type of terminal you have.

Syntax: DJ*data*

Acceptable values for *data* are 0 to 9 where:

Value	241X, 242X, and 243X	2455, 2475,and 248X
0	Brightest screen, brightest characters	Darkest screen, darkest characters
3	Maximum contrast	Maximum contrast
7	Darkest screen, darkest characters	Brightest screen, brightest characters
8	One level brighter	One level darker
9	One level darker	One level brighter

Values 1 through 6 set the display contrast incrementally brighter or darker.

Default: 3 (Maximum contrast)

Menu System: From the Main Menu, choose Configuration Menu, then Terminal Menu, and then Display.

Bar Codes: Scan one of these bar codes:

0 - Brightest or Darkest Display Contrast

$+DJ0

1

$+DJ1

2

$+DJ2

3 - Maximum Display Contrast

$+DJ3

4

$+DJ4

5

$+DJ5

Display Contrast (continued)

6

$+DJ6

7 - Darkest or Brightest Display Contrast

$+DJ7

Or: Scan one of these bar codes repeatedly to change the display contrast:

Brighter or Darker Display Contrast

$+DJ8

Darker or Brighter Display Contrast

$+DJ9

Display Font Type

Terminals: 241X, 242X, 243X, 2455, 2475, and 248X with firmware version 6.2X and earlier.

Description: Sets the number of rows and columns for a font on the terminal screen. For example, you can set a regular size font (8x8), a font with double-height characters (8x16), or a font with double-width and double-height characters (16x16).

If you are using firmware version 7.0 or later, the font type functions within the parameters of the Display Spacing command. For help, see “Display Spacing” on page 6-63.

Syntax: DT*data*

Acceptable values for *data* are:

0 8 pixels by 8 pixels (8x8) font size
1 8 pixels wide by 16 pixels high (8x16) font size
2 16 pixels wide by 16 pixels high (16x16) font size
6 5 pixels wide by 6 pixels high (5x6) font size
7 6 pixels wide by 8 pixels high (6x8) font size
8 8 pixels wide by 10 pixels high (8x10) font size
9 12 pixels wide by 16 pixels high (12x16) font size

Note: The 2480 and 2485 only support the 8x16 and 16x16 font size.

Default: 8x8

Menu System: From the Main Menu, choose Configuration Menu, then Terminal Menu, and then Display.

Display Font Type (continued)

Bar Codes: Scan one of these bar codes:

Set Display Font Type to 8x8

$+DT0

Set Display Font Type to 8x16

$+DT1

Set Display Font Type to 16x16

$+DT2

Set Display Font Type to 5x6

$+DT6

Set Display Font Type to 6x8

$+DT7

Set Display Font Type to 8x10

$+DT8

Set Display Font Type to 12x16

$+DT9

Display Row Spacing

Terminals: 241X, 242X, 243X, 2455, 2475, and 2481/6 with firmware version 6.2X and earlier.

Description: Sets the row spacing on the terminals. Row spacing lets you define the amount of additional space (scan lines) between the lines on the screen. The number of scan lines is two times the value you set for the row spacing. A scan line is a row of pixels. A value of 8 adds 16 blank scan lines to increase the space between lines on the screen.

If you are using firmware version 7.0 or later, the row spacing functions within the parameters of the Display Spacing command. For help, see “Display Spacing” on page 6-63.

Syntax: DL*data*

Acceptable values for *data* are any number from 0 to 8.

Default: 0

Menu System: From the Main Menu, choose Configuration Menu, then Terminal Menu, and then Display.

Display Row Spacing (continued)

Bar Codes: Scan one of these bar codes:

Set Row Spacing to 0

$+DL0

Set Row Spacing to 1

$+DL1

Set Row Spacing to 2

$+DL2

Set Row Spacing to 3

$+DL3

Set Row Spacing to 4

$+DL4

Set Row Spacing to 5

$+DL5

Set Row Spacing to 6

$+DL6

Set Row Spacing to 7

$+DL7

Set Row Spacing to 8

$+DL8

Display Spacing

Terminals: 241X, 242X, 243X, 2455, 2475, and 2481/6.

Description: Defines the font size and spacing between each row and column on the terminal screen. You specify column and row spacing between font characters in numbers of pixel columns or pixel rows to be added between the font characters.

To define the Display Spacing command, you set three parameters: font type, column spacing, and row spacing. The font type parameter is one character while the column spacing and row spacing parameters are two characters each.

Note: The row spacing parameter used in this command adds the number of pixel rows that you set for the parameter. The row spacing parameter in the Display Row Spacing command (firmware version 6.23 and earlier) adds two times the number of pixel rows that you set for the parameter.

Display Spacing (continued)

Use the following guidelines to determine how to set the optimal display spacing based on operator preference and operating environment.

- Font arrays already have one or two lines of spacing built in for character separation.
- The font type parameter determines the maximum size of each individual font character.
- Larger font types generate larger spacing values yielding fewer characters per row and fewer rows on the display.

Note: If the status icons are enabled on the 243X, it uses one column of five pixels to display the status icons. Therefore, the 243X yields one less column of characters than the indicated number of columns. For help enabling or disabling the 243X status icons, see "Display Video Mode" on page 6-66.

Syntax: DK*data*

where *data* must be 5 digits selected from this list of parameters:

Parameter 1: Acceptable values for *Parameter 1* are:

0	8 pixels by 8 pixels (8x8) font size
1	8 pixels wide by 16 pixels high (8x16) font size
2	16 pixels wide by 16 pixels high (16x16) font size
6	5 pixels wide by 6 pixels high (5x6) font size
7	6 pixels wide by 8 pixels high (6x8) font size
8	8 pixels wide by 10 pixels high (8x10) font size
9	12 pixels wide by 16 pixels high (12x16) font size

Parameter 2: Any two-digit column spacing value from 00 to 15.

Parameter 3: Any two-digit row spacing value from 00 to 24.

Default: 00000 (8x8 font size, no column spacing, no row spacing)

Menu System: From the Main Menu, choose Configuration Menu, then Terminal Menu, and then Display.

Note: When you change the display spacing, the terminal clears the screen of all data. Make sure all of your data is saved before changing the display spacing.

Display Spacing (continued)

Bar Codes: To set the default value for the display spacing, scan this bar code:

8x8 font size, 20 columns x 16 rows

$+DK00000

Or: To set the standard spacing for a particular font type, scan one of these bar codes:

8x16 font size, 20 columns x 8 rows

$+DK10000

16x16 font size, 10 columns x 8 rows

$+DK20000

12x16 font size, 12 columns x 8 rows

$+DK90100

8x10 font size, 17 columns x 12 rows

$+DK80100

6x8 font size, 26 columns x 16 rows

$+DK70000

5x6 font size, 32 columns x 21 rows

$+DK60000

Or: To set the display spacing:

1. Scan this bar code:

   Enter Accumulate Mode / Set Display Spacing

   +/$+DK

2. Scan a five-digit numeric value for *data* from these bar codes.

0

1

2

3

4

5

Display Spacing (continued)


6


7


8


9

3. Scan this bar code:

Exit Accumulate Mode


-/

Display Video Mode

Terminals: 241X, 242X, 243X, 2455, 2475, and 248X.

Description: Sets the display video mode that is used on the terminal screen. You can set the display video mode to original, normal, or inverse. The default is original and displays dark characters on a light background. Normal mode displays the darkest possible characters on the lightest possible background. Inverse mode displays the lightest possible characters on the darkest possible background.

If you have a 243X terminal, you can also use this command to display the status icons on the right side of the screen. Normal/Icon (Nrm/Icon) mode displays the icons in normal display video mode, and Inverse/Icon (Inv/Icon) mode displays the icons in inverse display video mode. For help using the 243X status icons, see the *Trakker Antares 243X Hand-Held Terminal User's Manual* (Part No. 071791).

Syntax: DN*data*

Acceptable values for *data* are:

0 Original
1 Normal
2 Inverse
3 Nrm/Icon (243X)
4 Inv/Icon (243X)

Note: The Nrm/Icon mode and Inv/Icon mode only apply to the 243X terminals.

Default: 0 (Original)

Display Video Mode (continued)

Menu System: From the Main Menu, choose Configuration Menu, then Terminal Menu, and then Display.

Bar Codes: Scan one of these bar codes:

Original Display Video Mode

$+DN0

Normal Display Video Mode

$+DN1

Inverse Display Video Mode

$+DN2

Normal Display Video Mode with Icons

$+DN3

Inverse Display Video Mode with Icons

$+DN4

Domain

Terminals: 2415, 2425, 2435, 2455, 2475, and 2485/6 with OpenAir radios.

Description: Defines a logical partition or subnetwork of the RF network. To establish communications, you must assign the same domain number to every RF device in the subnetwork. You can roam between access points as long as all the RF devices have the same domain number. You can also assign different domain numbers if you want to establish different RF subnetworks in the same area.

Syntax: RW*data*

Acceptable values for *data* are any number from 0 to 15.

Default: 0

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Radio.

Bar Codes: To set the default domain, scan this bar code:

Default Domain

$+RW0

Domain (continued)

Or: 1. Scan this bar code:

Enter Accumulate Mode / Set Domain

+/$+RW

2. Scan a numeric value for *data* from these bar codes:

0

1

2

3

4

5

6

7

8

9

3. Scan this bar code:

Exit Accumulate Mode

-/

End of Message (EOM)

Terminals: All Trakker Antares terminals.

Description: Attaches an EOM to the end of a data block to indicate the end of data transmission to and from a terminal. When EOM is disabled, the terminal communicates in Character mode. When EOM is enabled, the terminal communicates in Frame mode. You can configure EOM for the Configurable communications protocol. For more information, see the networking chapter in your user's manual.

You can set EOM to use characters from the extended ASCII character set using the TRAKKER Antares 2400 Menu System. This procedure is similar to the one for setting the preamble and postamble. For help, see "Entering ASCII Control Characters" in the configuration chapter in your user's manual.

End of Message (continued)

You must configure a value for EOM before you can set these other serial communications commands:

- Configuration Commands Via Serial Port
- Handshake
- LRC
- Start of Message (SOM)

Note: EOM **cannot** equal the same value as SOM, and EOM1 **cannot** equal the same value as EOM2.

EOM **cannot** be set to these values:

- AFF (ACK)
- DLE
- NEG (NAK)
- Poll
- RES (EOT)
- REQ (ENQ)
- SEL
- XOFF
- XON

Syntax: YZ*n.data*

where *n* is:

1 COM1 serial port
2 COM2 serial port (246X and 248X terminals only)
3 COM3 serial port (242X terminals only)
4 COM4 serial port (242X, 2455, and 248X terminals only)

Acceptable values for *data* are one or two ASCII characters.

Default: \x03 (hexadecimal value for ETX)

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Serial Port.

Bar Codes: To disable EOM for each serial port, scan these bar codes:

Disable EOM for COM1

$+YZ1.

Disable EOM for COM2

$+YZ2.

Disable EOM for COM3

$+YZ3.

Disable EOM for COM4

$+YZ4.

End of Message (continued)

Or: To set EOM to one or two ASCII characters for one serial port:

Note: To set this command using the bar code labels in Appendix B, you must configure the terminal to use Code 39 in Full ASCII mode. For help, see "Code 39" on page 6-28.

1. Scan this bar code:

   Enter Accumulate Mode / Set EOM

   +/$+YZ

2. Scan the serial port from these bar codes:

   COM1

   1.

   COM2

   2.

   COM3

   3.

   COM4

   4.

3. Scan one or two bar codes for *data* from the "Full ASCII Bar Code Chart" in Appendix B.
4. Scan this bar code:

   Exit Accumulate Mode

   -/

5. Repeat Steps 2 through 4 to set EOM for another serial port.

Flash Memory Configuration

Terminals: All Trakker Antares terminals.

Description: Configures the use of the optional 2MB extended flash memory. If you have a terminal with the 4MB flash memory option, you can either configure the extra 2MB of flash memory as a drive D, or you can use it to store double-byte fonts. If you configure the flash memory as drive D, use this drive to store large lookup tables and data files. You can store up to 128 files on drive D or store up to 2MB of double-byte fonts.

Flash Memory Configuration (continued)

After you configure the flash memory, you must save the configuration in flash memory and boot the terminal for the change to take effect.

Note: You can only configure the extra 2MB flash memory (of the total 4MB) as a drive or to store fonts. You cannot use the space for both. If you configure drive D, you cannot store a font in flash memory.

Syntax: FF*data*

Acceptable values for *data* are:

0 Configure flash memory for double-byte fonts
32 Configure flash memory as the 2MB drive D

Default: 0 (Configure flash memory for double-byte fonts)

Menu System: Not supported.

Bar Codes: 1. Scan one of these bar codes to configure flash memory:

Configure Flash Memory For Double-Byte Fonts

$+FF0

Configure Flash Memory as Drive D

$+FF32

2. To save the changes in flash memory, scan this bar code:

Save Configuration in Flash Memory

.+1

3. Scan this bar code to boot the terminal and use the 2MB flash memory to store double-byte fonts or as drive D:

Reset Firmware

-.

Note: When you boot or reset the terminal, any fonts or files in flash memory on drive D are erased.

4. If you configured flash memory to store double-byte fonts, use the Trakker Antares Font Editor to download the double-byte font set to the terminal. See your local Intermec sales representative for information about the Trakker Antares Font Editor.

Flow Control

Terminals: All Trakker Antares terminals.

Description: Regulates the data transmission through the serial port. The terminal is a DTE (Data Terminal Equipment) device. There are several flow control options.

- CTS checking where Clear To Send (CTS) is a hardware signal flow control. The terminal sets and clears Request To Send (RTS) when it is ready to receive. The terminal checks CTS when it tries to transmit data.
- XON/XOFF response causes the terminal to respond to XON/XOFF characters received while transmitting.
- XON/XOFF control specifies that the terminal transmits XON/XOFF characters to control the incoming data flow.
- XON/XOFF response and control specify that the terminal responds to and transmits XON/XOFF characters.
- CTS/RTS for DTE-DTE allows for peer connections. Each terminal's RTS output pin is connected to the CTS input pin of the other terminal. Each terminal sets RTS whenever it is ready to receive data and waits for CTS to be set before sending data.

You can configure flow control for these communications protocols: Binary, Configurable, and Polling Mode D. For more information, see the networking chapter in your user's manual.

Syntax: YL*n.data*

where *n* is:

1 COM1 serial port
2 COM2 serial port (246X and 248X terminals only)
3 COM3 serial port (242X terminals only)
4 COM4 serial port (242X, 2455, and 248X terminals only)

Acceptable values for *data* are:

0 No flow control
1 CTS checking
2 XON/XOFF response
3 XON/XOFF control
4 XON/XOFF response and control
5 CTS/RTS for DTE-DTE

Default: 0 (no flow control)

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Serial Port.

Flow Control (continued)

Bar Codes: To set the default flow control for each serial port, scan these bar codes:

No Flow Control for COM1

$+YL1.0

No Flow Control for COM2

$+YL2.0

No Flow Control for COM3

$+YL3.0

No Flow Control for COM4

$+YL4.0

Or: To set the flow control for one serial port:

1. Scan this bar code:

   Enter Accumulate Mode / Set Flow Control

   +/$+YL

2. Scan the serial port from these bar codes:

   COM1

   1.

   COM2

   2.

   COM3

   3.

   COM4

   4.

3. Scan the flow control setting from these bar codes:

   No Flow Control

   0

   CTS Checking

   1

   XON/XOFF Response

   2

   XON/XOFF Control

   3

Flow Control (continued)

XON/XOFF Response and Control

4

CTS/RTS for DTE-DTE

5

4. Scan this bar code:

Exit Accumulate Mode

-/

5. Repeat Steps 1 through 4 to set the flow control for another serial port.

Handshake

Terminals: All Trakker Antares terminals.

Description: Enables or disables the handshake event that is an affirmative acknowledge to a message received through the serial port. You can configure handshake for the Configurable communications protocol. For more information, see the networking chapter in your user's manual.

Note: Before you can enable Handshake, you need to configure the EOM command. Handshake is also referred to as AFF (affirmative acknowledge) on other Intermec data collection devices.

Syntax: YJ*n.data*

where *n* is:

1 COM1 serial port
2 COM2 serial port (246X and 248X terminals only)
3 COM3 serial port (242X terminals only)
4 COM4 serial port (242X, 2455, and 248X terminals only)

An acceptable value for *data* is any ASCII character.

Disabled	No characters, no ACK or NAK transmitted
Enabled	\x06 (hexadecimal value for ACK)

Default: No characters (Disabled)

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Serial Port.

Handshake (continued)

Bar Codes: To disable handshake, scan one of these bar codes:

Note: To scan these bar code labels, you must configure the terminal to use Code 39 in Full ASCII mode. For help, see "Code 39" on page 6-28.

Disable Handshake for COM1

$+YJ1.

Disable Handshake for COM2

$+YJ2.

Disable Handshake for COM3

$+YJ3.

Disable Handshake for COM4

$+YJ4.

Or: To enable handshake, scan one of these bar codes:

Enable Handshake (Set to ACK) for COM1

$+YJ1.$F

Enable Handshake (Set to ACK) for COM2

$+YJ2.$F

Enable Handshake (Set to ACK) for COM3

$+YJ3.$F

Enable Handshake (Set to ACK) for COM4

$+YJ4.$F

Host IP Address

Terminals: 2415, 2425, 2435, 2455, 2461, 2475, 2480/1 with the Ethernet option, and 2485/6 using the TCP/IP network.

Description: Defines the IP address assigned to the host computer in your RF or Ethernet network. An IP address is a unique network level address you assign to each device in a TCP/IP direct connect network. The host IP address you set on the terminal must match the address that is set on the host.

Host IP Address (continued)

Syntax: NC*n.n.n.n*

where each *n* address segment is a number from 0 to 255. The host IP address field consists of four separate numbers, each separated by a period.

Note: The RF or Ethernet network cannot be activated if the first address segment in the IP address is set to 0, 127, or a number greater than 223.

Default: 0.0.0.0

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Primary Network.

Bar Codes: To set the default host IP address, scan this bar code:

Default Host IP Address

$+NC0.0.0.0

Or: To set the host IP address:

1. Scan this bar code:

   Enter Accumulate Mode / Set Host IP Address

   +/$+NC

2. Scan a numeric value from 0 to 255 to set an *n* field of the host IP address from these bar codes.

0

1

2

3

4

5

6

7

8

9

Host IP Address (continued)

3. Scan this bar code:

   . (Period)

   .

4. Repeat Steps 2 and 3 to set the next three numbers in the host IP address field. After you scan the last address segment, go to Step 5. Do **not** scan the period after the last address segment.
5. Scan this bar code:

   Exit Accumulate Mode

   -/

ICMP (Internet Control Message Protocol)

Terminals: 2415, 2425, 2435, 2455, 2475, and 2485/6.

Description: Enables or disables ICMP messages sent from the terminal.

Syntax: NZ*data*

Acceptable values for *data* are:

0 Disable ICMP messages
1 Enable ICMP messages

Default: Enabled

Menu System: Not supported.

Bar Codes: Scan one of these bar codes:

Disable ICMP Messages

$+NZ0

Enable ICMP Messages

$+NZ1

Inactivity Timeout

Terminals: 2415, 2425, 2435, 2455, 2475, and 2485/6 with OpenAir radios.

Description: Defines the amount of time the radio on the terminal waits to go into a low power state. If no data is sent or received within the inactivity timeout period set, the radio goes into a low power state to conserve power. If you set a high value, the radio stays on longer at a higher power rate and uses power at a faster rate.

Power Management Tip: Intermec strongly recommends that you use the optimum inactivity timeout of 5 seconds to preserve power.

Syntax: RY*data*

Acceptable values for *data* are:

0	Radio never turns off
1-51	Inactivity timeout in seconds multiplied by a value of 5

where *data*=1 sets a timeout delay of 5 seconds, *data*=2 sets a timeout delay of 10 seconds, and so on, up to *data*=51 for a timeout delay of 255 seconds.

Default: 5 seconds

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Radio.

Bar Codes: To set the default inactivity timeout to 5 seconds, scan this bar code:

Default Inactivity Timeout

$+RY1

Or: To set the inactivity timeout:

1. Scan this bar code:

Enter Accumulate Mode / Set Inactivity Timeout

+/$+RY

Inactivity Timeout (continued)

2. Scan a numeric value for *data* from these bar codes:


0


1


2


3


4


5


6


7


8


9

3. Scan this bar code:

Exit Accumulate Mode


-/

Interleaved 2 of 5

Terminals: All Trakker Antares terminals.

Description: Enables or disables decoding of Interleaved 2 of 5 (I 2 of 5) symbology. I 2 of 5 is a high-density, self-checking, continuous numeric symbology. It is mainly used in inventory distribution and the automobile industry.

Enabling I 2 of 5 automatically disables Code 2 of 5.

Syntax: CA*data*

Acceptable values for *data* are:

0	Disabled
2-32	Fixed length (even number only)
95	Case code (6 or 14) with check digit verified but discarded
96	Variable length with check digit verified but discarded
97	Variable length without a check digit
98	Case code (6 or 14) with a check digit
99	Variable length with a check digit

Interleaved 2 of 5 (continued)

Caution
Using the variable length without a check digit configuration option can cause substitution errors.

Conseil
Des erreurs de substitution peuvent survenir si vous utilisez la longueur variable sans option de vérification de configuration de chiffres.

Default: Disabled

Menu System: From the Main Menu, choose Configuration Menu, then Symbologies Menu, and then 2 of 5/I 2 of 5.

Bar Codes: Scan one of these bar codes:

Disable Interleaved 2 of 5
$+CA0

Enable Case Code With Check Digit Verified But Discarded
$+CA95

Enable Variable Length With Check Digit Verified But Discarded
$+CA96

Enable Variable Length Without a Check Digit
$+CA97

Enable Variable Length With a Check Digit
$+CA99

Enable Case Code With a Check Digit
$+CA98

Or: To set Interleaved 2 of 5 to a fixed length:

1. Scan this bar code:

   Enter Accumulate Mode / Set Fixed Length
   +/$+CA

2. Scan a numeric value for *data* from these bar codes. (Use even numbers 2-32 only.)

   0

   1

Interleaved 2 of 5 (continued)


2


3


4


6


8

3. Scan this bar code:

Exit Accumulate Mode


-/

Keypad Caps Lock

Terminals: All Trakker Antares terminals.

Description: Turns the caps lock on and off. With the caps lock turned on, all alphabetic characters you type on the keypad will be uppercase or capital letters.

Syntax: KA*data*

Acceptable values for *data* are:

0 Caps lock off
1 Caps lock on

Default: Caps lock off

Menu System: From the Main Menu, choose Configuration Menu, then Terminal Menu, and then Keypad.

Bar Codes: Scan one of these bar codes:

Caps Lock Off


$+KA0

Caps Lock On


$+KA1

Keypad Clicker

Terminals: All Trakker Antares terminals.

Description: Enables or disables the keypad clicker. The terminal sounds a click each time you press a key or decode a row of a two-dimensional symbology.

Note: If the Beep Volume command is set to off, you will not hear any audio signals including the keyclick.

Syntax: KC*data*

Acceptable values for *data* are:

0 Disable keypad clicker
1 Enable keypad clicker

Default: Enabled

Menu System: From the Main Menu, choose Configuration Menu, then Terminal Menu, and then Keypad.

Bar Codes: Scan one of these bar codes:

Disable Keypad Clicker

$+KC0

Enable Keypad Clicker

$+KC1

Keypad Control

Terminals: All Trakker Antares terminals.

Description: Enables or disables the keypad. When you disable the keypad, you cannot use the keypad to enter information into the terminal.

Syntax: KE*data*

Acceptable values for *data* are:

0 Disable keypad
1 Enable keypad

Default: Enabled

Menu System: Not supported.

Keypad Control (continued)

Bar Codes: Scan one of these bar codes:

Disable Keypad

$+KE0

Enable Keypad

$+KE1

Keypad Type

Terminals: 241X, 242X, 243X, 2455, 2475, and 248X.

Description: The keypad type is initially configured in the terminal's firmware at the Intermec factory. If you change the keypad overlay, you need to configure the keypad type to match the new keypad overlay.

Important: After you change the keypad type, you must save the configuration in flash memory and boot the terminal for the change to take effect.

Note: With the English alphanumeric, programmable, or international keypads, you can access all the characters in the "Trakker Antares Terminal Font Set" in Appendix C.

Syntax: KT*data*

Acceptable values for *data* are:

0	Hardware (factory) default, 241X, 242X, 243X, 2455, 2475, 248X	C	Portuguese alphanumeric keypad, 2475, 248X	P	Programmable, 37-key (Alphanumeric w/large numeric) keypad, 241X
1	Terminal emulation keypad, 242X	D	Terminal emulation with backspace key, 242X	Q	Terminal emulation 37-key (Alphanumeric w/large numeric) keypad, 241X
2	Programmable (English or European) keypad, 242X	E	Programmable with backspace key, 242X	R	International, 37-key (Alphanumeric w/large numeric) keypad, 241X
3	English alphanumeric keypad, 2475, 248X	F	English ABCD keypad, 2455	S	Programmable, 37-key (Function key w/large numeric) keypad, 241X
4	5250 terminal emulation keypad, 2475, 248X	G	IBM 5250 TE keypad, 2455	T	Terminal emulation 37-key (Function key w/large numeric) keypad, 241X
5	3270 terminal emulation keypad, 2475, 248X	H	IBM 3270 TE keypad, 2455	U	International, 37-key (Function key w/large numeric) keypad, 241X

Keypad Type (continued)

6	VT/ANSI terminal emulation keypad, 2475, 248X	I	VT/ANSI TE keypad, 2455	V	U.S. English alphanumeric, 57-key keypad, 243X
7	Numeric keypad (oversized function numeric or Time and Attendance), 248X	J	European keypad, 2455	W	International alphanumeric, 57-key keypad, 243X
8	French alphanumeric keypad, 2475, 248X	K	AT compatible 1, 2455, 246X	X	TE 2000 alphanumeric, 57-key keypad, 243X
9	Italian alphanumeric keypad, 2475, 248X	L	Programmable/international, 55-key keypad, 241X	Y	U.S. English function numeric, 39-key keypad, 243X
A	Spanish alphanumeric keypad, 2475, 248X	M	Terminal emulation, 55-key keypad, 241X	Z	International function numeric, 39-key keypad, 243X
B	German alphanumeric keypad, 2475, 248X	N	TE 2000 function numeric, 39-key keypad, 243X		

Default: Hardware Default

Menu System: From the Main Menu, choose Configuration Menu, then Terminal Menu, and then Keypad.

Bar Codes: 1. Scan one of these bar codes:

Set Keypad Type to Hardware Default

$+KT0

Set Keypad Type to Terminal Emulation, 242X

$+KT1

Set Keypad Type to Programmable, 242X

$+KT2

Set Keypad Type to English, 2475, 248X

$+KT3

Set Keypad Type to 5250 TE, 2475, 248X

$+KT4

Set Keypad Type to 3270 TE, 2475, 248X

$+KT5

Set Keypad Type to VT/ANSI, 2475, 248X

$+KT6

Set Keypad Type to Numeric, 248X

$+KT7

Keypad Type (continued)

Set Keypad Type to French Alphanumeric, 2475, 248X

$+KT8

Set Keypad Type to Italian Alphanumeric, 2475, 248X

$+KT9

Set Keypad Type to Spanish Alphanumeric, 2475, 248X

$+KTA

Set Keypad Type to German Alphanumeric, 2475, 248X

$+KTB

Set Keypad Type to Portuguese Alphanumeric, 2475, 248X

$+KTC

Set Keypad Type to Terminal Emulation with Backspace Key, 242X

$+KTD

Set Keypad Type to Programmable with Backspace Key, 242X

$+KTE

Set Keypad Type to English ABCD, 2455

$+KTF

Set Keypad Type to IBM 5250 TE, 2455

$+KTG

Set Keypad Type to IBM 3270 TE, 2455

$+KTH

Set Keypad Type to VT/ANSI TE, 2455

$+KTI

Set Keypad Type to European, 2455

$+KTJ

Set Keypad Type to Programmable / International, 55-key, 241X

$+KTL

Set Keypad Type to Terminal emulation, 55-key, 241X

$+KTM

Set Keypad Type to TE 2000 function numeric, 39-key keypad, 243X

$+KTN

Set Keypad Type to Programmable, 37-key (Alphanumeric w/large numeric), 241X

$+KTP

Keypad Type (continued)

Set Keypad Type to TE 2000, 37-key (Alphanumeric w/large numeric), 241X

$+KTQ

Set Keypad Type to International, 37-key (Alphanumeric w/large numeric), 241X

$+KTR

Set Keypad Type to Programmable, 37-key (Function key w/large numeric), 241X

$+KTS

Set Keypad Type to TE 2000, 37-key (Function key w/large numeric), 241X

$+KTT

Set Keypad Type to International, 37-key (Function key w/large numeric), 241X

$+KTU

Set Keypad Type to U.S. English alphanumeric, 57-key keypad, 243X

$+KTV

Set Keypad Type to International alphanumeric, 57-key keypad, 243X

$+KTW

Set Keypad Type to TE 2000 alphanumeric, 57-key keypad, 243X

$+KTX

Set Keypad Type to U.S. English function numeric, 39-key keypad, 243X

$+KTY

Set Keypad Type to International function numeric, 39-key keypad, 243X

$+KTZ

2. Scan this bar code to save the configuration change in flash memory:

Save Configuration in Flash Memory

.+1

3. Scan this bar code to boot the terminal and use the new keypad type:

Reset Firmware

-.

Longitudinal Redundancy Check (LRC)

Terminals: All Trakker Antares terminals.

Description: The LRC character is an error-checking character that you can append to transmitted and received blocks of data. You can configure LRC for the Configurable communications protocol. For more information, see the networking chapter in your user's manual.

Note: Before you can enable LRC, you must configure the EOM command.

Syntax: YF*n.data*

where *n* is:

1 COM1 serial port
2 COM2 serial port (246X and 248X terminals only)
3 COM3 serial port (242X terminals only)
4 COM4 serial port (242X, 2455, and 248X terminals only)

Acceptable values for *data* are:

0 LRC disabled
1 LRC enabled

Default: Disabled

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Serial Port.

Bar Codes: To disable LRC, scan one of these bar codes:

Disable LRC for COM1

$+YF1.0

Disable LRC for COM2

$+YF2.0

Disable LRC for COM3

$+YF3.0

Disable LRC for COM4

$+YF4.0

Longitudinal Redundancy Check (continued)

Or: To enable LRC, scan one of these bar codes:

Enable LRC for COM1

$+YF1.1

Enable LRC for COM2

$+YF2.1

Enable LRC for COM3

$+YF3.1

Enable LRC for COM4

$+YF4.1

Maximum Retries

Terminals: 2415, 2425, 2435, 2455, 2475, and 2485/6.

Description: Defines the number of times the terminal will attempt to send a disconnect request message to the DCS 30X. The terminal sends connect and disconnect request messages to the DCS 30X when you turn the terminal on and off.

Tip: Intermec strongly recommends that you use the optimum setting of 7 retries.

Syntax: NR*data*

Acceptable values for *data* are:

0	Terminal retries indefinitely
1-99	Number of retries

Default: 7

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Advanced Network.

Bar Codes: To set the default number of maximum retries, scan this bar code:

Default Maximum Retries

$+NR7

Maximum Retries (continued)

Or: To set the maximum retries:

1. Scan this bar code:

   Enter Accumulate Mode / Set Maximum Retries

   +/$+NR

2. Scan a numeric value for *data* from these bar codes:

   0

   1

   2

   3

   4

   5

   6

   7

   8

   9

3. Scan this bar code:

   Exit Accumulate Mode

   -/

Maximum Sleep Duration

Terminals: 2415, 2425, 2435, 2455, 2475, and 2485/6 with 802.11b radios.

Description: Specifies the maximum amount of time the radio is allowed to sleep.

Note: Before you set the maximum sleep duration, you must enable the Power Management command.

Maximum Sleep Duration (continued)

Syntax: LI*data*

Acceptable values for *data* are from 0 to 65535 ms.

Default: 100 ms

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Radio.

Bar Codes: To set the default maximum sleep duration, scan this bar code:

Default Maximum Sleep Duration

$+LI100

Or: To set the maximum sleep duration:

1. Scan this bar code:

   Enter Accumulate Mode / Set Maximum Sleep Duration

   +/$+LI

2. Scan a numeric value for *data* from these bar codes:

0

1

2

3

4

5

6

7

8

9

Maximum Sleep Duration (continued)

3. Scan this bar code:

Exit Accumulate Mode

-/

Medium Reservation

Terminals: 2415, 2425, 2435, 2455, 2475, and 2485/6 with 802.11b radios.

Description: Determines if the terminal uses medium reservation (RTS/CTS). You should enable this parameter if your network has hidden stations. When you enable this parameter, you also need to set the Reservation Threshold command. You may want to disable this parameter to improve network response time if the terminal usually sends very small packets and the network does not have any hidden stations.

Syntax: LC*data*

Acceptable values for *data* are:

0	Disabled
1	Enabled

Default: Enabled

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Radio.

Bar Codes: Scan one of these bar codes:

Disable Medium Reservation

$+LC0

Enable Medium Reservation

$+LC1

Microwave Robustness

Terminals: 2415, 2425, 2435, 2455, 2475, and 2485/6 with 802.11b radios.

Description: Modifies the transmit rate so it does not permanently fall back to a slower rate. You should enable this command when you are operating the terminal in a room that contains microwave ovens.

Microwave Robustness (continued)

Syntax: LQ*data*

Acceptable values for *data* are:

0 Disabled
1 Enabled

Default: Disabled

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Radio.

Bar Codes: Scan one of these bar codes:

Disable Microwave Robustness

$+LQ0

Enable Microwave Robustness

$+LQ1

Modem Dial Sequence

Terminals: 2420 with modem option.

Description: Defines the dialing sequence that is used when the terminal establishes a modem connection.

Syntax: YD3.*data*

where *data* can be up to 25 characters from this table.

Character	Description
0-9	DTMF digits 0 through 9
A-D	DTMF letters A through D
*	The star digit (tone dialing only)
#	The gate digit (tone dialing only)
W	Wait for dial tone
@	Wait for silence
&	Wait for credit card dialing tone

Modem Dial Sequence (continued)

Character	Description
,	Pause
(	Ignored. You can use this character to format the dial sequence.
)	Ignored. You can use this character to format the dial sequence.
-	Ignored. You can use this character to format the dial sequence.
.	Ignored. You can use this character to format the dial sequence.
<space>	Ignored. You can use this character to format the dial sequence.

Default: 0 (no dial sequence)

Menu System: Not supported.

Bar Codes: To set the default modem dial sequence, scan this bar code:

Default Modem Dial Sequence

$+YD3

Or: To set the modem dial sequence for COM3:

Note: To set this command using the bar code labels in Appendix B, you must configure the terminal to use Code 39 in Full ASCII mode. For help, see "Code 39" on page 6-28.

1. Scan this bar code:

   Enter Accumulate Mode / Set Modem Dial Sequence

   +/$+YD3

2. Scan a value for *data* from the "Full ASCII Bar Code Chart" in Appendix B. The modem dial sequence can be from 1 to 25 characters.
3. Scan this bar code:

   Exit Accumulate Mode

   -/

Modem Initialization Sequence

Terminals: 2420 with modem option.

Description: Defines an initialization string that the terminal sends to the modem before the modem dial sequence.

Syntax: YM3.*data*

where *data* can be up to 25 characters from this table.

Character	Description
0-9	DTMF digits 0 through 9
A-D	DTMF letters A through D
*	The star digit (tone dialing only)
#	The gate digit (tone dialing only)
W	Wait for dial tone
@	Wait for silence
&	Wait for credit card dialing tone
,	Pause
(	Ignored. You can use this character to format the dial sequence.
)	Ignored. You can use this character to format the dial sequence.
-	Ignored. You can use this character to format the dial sequence.
.	Ignored. You can use this character to format the dial sequence.
<space>	Ignored. You can use this character to format the dial sequence.

Default: 0 (auto rate)

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Serial Port [COM3].

Bar Codes: To set the default modem initialization sequence, scan this bar code:

Default Modem Initialization Sequence

$+YM3

Modem Initialization Sequence (continued)

Or: To set the modem dial sequence for COM3:

Note: To set this command using the bar code labels in Appendix B, you must configure the terminal to use Code 39 in Full ASCII mode. For help, see "Code 39" on page 6-28.

1. Scan this bar code:

   Enter Accumulate Mode / Set Modem Initialization Sequence

   +/$+YM3

2. Scan a value for *data* from the "Full ASCII Bar Code Chart" in Appendix B. The modem dial sequence can be from 1 to 25 characters.
3. Scan this bar code:

   Exit Accumulate Mode

   -/

MSI

Terminals: All Trakker Antares terminals.

Description: Enables or disables decoding of MSI symbology. MSI code is similar to Plessey code in that it includes a start pattern, data characters, one or two check digits, and a stop pattern.

Syntax: CN*data*

Acceptable values for *data* are:

First digit:	0	Disabled
	1	No check digits
	2	1 modulus 10 check digit
	3	2 modulus 10 check digit
Second digit:	0	Discard check digit
	1	Transmit check digit

Default: Disabled

Menu System: From the Main Menu, choose Configuration Menu, and then Symbologies Menu.

MSI (continued)

Bar Codes: Scan one of these bar codes:

Disable MSI

$+CN00

MSI Without Check Digits

$+CN10

MSI With 1 Modulus 10 Check Digit, Discard Check Digit

$+CN20

MSI With 1 Modulus 10 Check Digit, Transmit Check Digit

$+CN21

MSI With 2 Modulus 10 Check Digits, Discard Check Digits

$+CN30

MSI With 2 Modulus 10 Check Digits, Transmit Check Digits

$+CN31

Multi-Drop Address

Terminals: 2460 and 248X with enhanced I/O board option.

Description: Defines the address of the communications port when you are using Multi-Drop protocol on COM2. Each multi-drop address has unique POL and SEL characters that are automatically set when you configure the address. The POL and SEL combination for each address is listed in the next table.

Address	POL	SEL	Address	POL	SEL
A	FS	GS	M	4	5
B	RS	US	N	6	7
C	SP	!	O	8	9
D	“	#	P	:	;
E	$	%	Q	<	=
F	&	‘	R	>	?
G	(	)	S	@	A
H	*	+	T	B	C
I	‘	-	U	D	E
J	.	/	V	F	G
K	0	1	W	H	I
L	2	3	X	J	K

Multi-Drop Address (continued)

Address	POL	SEL	Address	POL	SEL
Y	L	M	2	T	U
Z	N	O	3	V	W
0	P	Q	4	X	Y
1	R	S	5	Z	[

Syntax: YN2.*data*

where *data* can be an alphanumeric value from A through Z or 0 to 5.

Default: A

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Serial Port [COM2].

Bar Codes: To set the default multi-drop address:

Default Multi-Drop Address (A) for COM2

$+YN2.A

Or: To set the multi-drop address:

Note: To set this command using the bar code labels in Appendix B, you must configure the terminal to use Code 39 in Full ASCII mode. For help, see "Code 39" on page 6-28.

1. Scan this bar code:

   Enter Accumulate Mode / Set Multi-Drop Address

   +/$+YN2.

2. Scan a value for *data* from the "Full ASCII Bar Code Chart" in Appendix B. The address is a single alphanumeric character from A through Z or 0 to 5.
3. Scan this bar code:

   Exit Accumulate Mode

   -/

Network Activate

Terminals: 2415, 2425, 2435, 2455, 2461, 2475, 2480/1 with the Ethernet option, and 2485/6.

Description: Enables or disables network communications between the terminal and other devices in the RF or Ethernet network. On a terminal with an Ethernet card, the Network Activate command disables or enables Ethernet communications. On an RF terminal, the Network Activate command disables or enables RF communications.

When you enable this parameter, the terminal attempts to establish communications with the DCS 30X or host computer. You must enable this parameter for RF or Ethernet data collection. When you disable this parameter, the network is disabled and no RF or Ethernet communications are provided. On an RF terminal, the radio is turned off.

Note: Unless you are operating your terminal in a DHCP or WTP environment, you need to set the Terminal IP Address command and either the Host IP Address or the Controller IP Address command before enabling the RF or Ethernet network.

Syntax: NA*data*

Acceptable values for *data* are:

0 Disabled
1 RF or Ethernet network (enabled)

Default: Disabled

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Primary Network.

Bar Codes: Scan one of these bar codes:

Disable Network Activate

$+NA0

Enable RF or Ethernet Network

$+NA1

Network Loopback

Terminals: 2415, 2425, 2435, 2455, 2475, and 2485/6.

Description: Transmits all messages received from the DCS 30X back to the DCS 30X. Messages received by the radio are not passed on to the terminal applications unless they are configuration commands. Messages continue to be looped back to the DCS 30X as long as this feature is enabled. Messages originating from the terminal are still transmitted to the DCS 30X.

Network Loopback (continued)

Use the Network Loopback parameter to troubleshoot RF or Ethernet communications problems.

Syntax: NL*data*

Acceptable values for *data* are:

0 Disabled
1 Enabled

Default: Disabled

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Advanced Network.

Bar Codes: Scan one of these bar codes:

Disable Network Loopback

$+NL0

Enable Network Loopback

$+NL1

Network Name

Terminals: 2415, 2425, 2435, 2455, 2475, and 2485/6 with 802.11b radios.

Description: Defines an RF subnetwork. To communicate, all access points and RF terminals in the subnetwork must have the same network name, which is case-sensitive. If you set this parameter to "ANY," the terminal can associate with any access point, regardless of the access point network name.

You can roam between access points as long as all of the RF devices have the same network name. You can also create subnetworks in the same area by assigning different network names to terminals and access points.

Syntax: LA*data*

Acceptable values for *data* are up to 32 ASCII characters.

Default: INTERMEC

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Radio.

Network Name (continued)

Bar Codes: To set the default network name, scan this bar code:

Default Network Name

$+LAINTERMEC

Or: To set the network name to "ANY," scan this bar code label:

Set Network Name to ANY

$+LAANY

Or: To set the network name to an ASCII character string:

Note: To set this command using the bar code labels in Appendix B, you must configure the terminal to use Code 39 in Full ASCII mode. For help, see "Code 39" on page 6-28.

1. Scan this bar code:

   Enter Accumulate Mode / Set Network Name

   +/$+LA

2. Scan a value for *data* from the "Full ASCII Bar Code Chart" in Appendix B. The network name can be from 1 to 32 characters.

3. Scan this bar code:

   Exit Accumulate Mode

   -/

Network Port

Terminals: 2415, 2425, 2435, 2455, 2461, 2475, 2480/1 with the Ethernet option, and 2485/6 using the TCP/IP or UDP Plus network.

Description: Defines the network port that TCP/IP or UDP Plus uses for communications in the RF or Ethernet network.

Network Port (continued)

In a TCP/IP network, set the network port to the appropriate port for the application you are using on the terminal. The default network port value, which is 23, enables VT/ANSI Telnet communications. In a UDP Plus network, set the network port on the terminal to the same value as the network port on the DCS 30X.

Syntax: NG*data*

Acceptable values for *data* are any number from 1 to 65535.

Default: 00023 Terminal with TCP/IP
05555 Terminal with UDP Plus

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Advanced Network.

Bar Codes: To set the default network port for a terminal with TCP/IP, scan this bar code:

Default Network Port for TCP/IP

$+NG23

To set the default network port for a terminal with UDP Plus, scan this bar code:

Default Network Port for UDP Plus

$+NG5555

Or: To set the network port:

1. Scan this bar code:

   Enter Accumulate Mode / Set Network Port

   +/$+NG

2. Scan a numeric value for *data* from these bar codes:

   0

   1

   2

   3

Network Port (continued)


4


5


6


7


8


9

3. Scan this bar code:

Exit Accumulate Mode


-/

Parity

Terminals: All Trakker Antares terminals.

Description: Sets the parity for the serial port. The terminal uses parity for error checking in data transmissions. You can configure parity for the Binary and Configurable communications protocols. For more information, see the networking chapter in your user's manual.

Syntax: YB*n*.*data*

where *n* is:

1 COM1 serial port
2 COM2 serial port (246X and 248X terminals only)
3 COM3 serial port (242X terminals only)
4 COM4 serial port (242X, 2455, and 248X terminals only)

Acceptable values for *data* are:

0 No parity
1 Even parity
2 Odd parity

Default: Even

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Serial Port.

Parity (continued)

Bar Codes: To set the default parity for each serial port, scan these bar codes:

Even Parity for COM1
$+YB1.1

Even Parity for COM2
$+YB2.1

Even Parity for COM3
$+YB3.1

Even Parity for COM4
$+YB4.1

Or: To set no parity for each serial port, scan these bar codes:

No Parity for COM1
$+YB1.0

No Parity for COM2
$+YB2.0

No Parity for COM3
$+YB3.0

No Parity for COM4
$+YB4.0

Or: To set an odd parity for each serial port, scan these bar codes:

Odd Parity for COM1
$+YB1.2

Odd Parity for COM2
$+YB2.0

Odd Parity for COM3
$+YB3.2

Odd Parity for COM4
$+YB4.2

Password

Terminals: 2415, 2425, 2435, 2455, 2475, and 2485/6 with an 802.11b radio and the 802.1x security option.

Description: Defines the password of the terminal for 802.1x security. If you enter a password that is longer than 32 characters, the string is truncated, and only the first 32 characters are used. The password field always displays three asterisks symbols (*) regardless of the length of your password.

Password (continued)

Syntax: LT*data*

Acceptable values for *data* are from 1 to 32 ASCII characters.

Default: anonymous

Note: You can use the default password to make sure that your terminal can be authenticated. However, you must set a unique user name, password, and at least one server certificate common name for secure data transmission.

Menu System: From the Main Menu, choose Configuration Menu, Communications Menu, and then choose Radio.

Bar Codes: To set the default password, scan this bar code:

Default Password

$+LTanonymous

Or: To set the password to an ASCII character string:

Note: To set this command using the bar code labels in Appendix B, you must configure the terminal to use Code 39 in Full ASCII mode. For help, see "Code 39" on page 6-28.

1. Scan this bar code:

   Enter Accumulate Mode / Set Password

   +/$+LT

2. Scan a value for *data* from the "Full ASCII Bar Code Chart" in Appendix B. The password can be from 1 to 32 characters.
3. Scan this bar code:

   Exit Accumulate Mode

   -/

PDF 417

Terminals: 241X, 242X, and 243X terminals with a PDF 417 scanner.

Description: The PDF 417 symbology is a stacked 2D symbology that allows you to scan across rows of code. Each row consists of start/stop characters, row identifiers, and symbol characters, which consist of four bars and four spaces each and contain the actual data. This symbology uses error correction symbol characters appended at the end to recover loss of data.

Note: PDF 417 is a decoded bar code symbology and requires at least one data value in a bar code. Therefore, if the terminal is configured to scan decoded bar code symbologies, it cannot scan the Enter reader command, which only consists of a Start and Stop character and does not contain any data values.

Syntax: CQ*data*

Acceptable values for *data* are:

0 Disabled
1 Enabled

Default: Enabled

Menu System: From the Main Menu, choose Configuration Menu, and then Symbologies Menu.

Bar Codes: Scan one of these bar codes:

Disable PDF 417

$+CQ0

Enable PDF 417

$+CQ1

Plessey

Terminals: All Trakker Antares terminals.

Description: Enables or disables decoding of Plessey symbology. Plessey code is pulse-width modulated like most other bar codes. It includes a start character, data characters, an eight-bit cyclic check digit, a termination bar, and usually a reverse start character. The code is continuous and not self-checking. You need to configure two parameters for Plessey code: Start Code and Check Digit.

Plessey (continued)

Syntax: CI*data*

Acceptable values for *data* are:

00	Disabled
10	Plessey with reverse start code
30	Transmit check digit
31	Discard check digit

Default: Disabled

Menu System: From the Main Menu, choose Configuration Menu, then Symbologies Menu, and then Plessey.

Bar Codes: To disable Plessey:

Disable Plessey

$+CI00

Or: To set Plessey, complete these steps:

1. Scan this bar code:

   Plessey With Reverse Start Code

   $+CI10

2. Scan one of these bar codes to transmit or retain the check digit:

   Transmit Check Digit

   $+CI30

   Discard Check Digit

   $+CI31

Poll (Polling)

Terminals: All Trakker Antares terminals.

Description: Solicits or requests data from a polled device. You can configure polling for the Configurable communications protocol. For more information, see the networking chapter in your user's manual.

Note: Before you can enable the Poll command, you must configure the EOM and Handshake commands.

Poll (continued)

Syntax: YR*n*.*data*

where *n* is:

1 COM1 serial port
2 COM2 serial port (246X and 248X terminals only)
3 COM3 serial port (242X terminals only)
4 COM4 serial port (242X, 2455, and 248X terminals only)

An acceptable value for *data* is any ASCII character.

Disabled	No characters, no polling
Enabled	\x1C (hexadecimal value for FS, File Separator)

Default: No characters (Disabled)

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Serial Port.

Bar Codes: To disable poll, scan one of these bar codes:

Disable Poll for COM1

$+YR1.

Disable Poll for COM2

$+YR2.

Disable Poll for COM3

$+YR3.

Disable Poll for COM4

$+YR4.

Or: To enable poll, scan one of these bar codes:

Note: To scan these bar code labels, you must configure the terminal to use Code 39 in Full ASCII mode. For help, see "Code 39" on page 6-28.

Enable Poll (Set to FS) for COM1

$+YR1.%B

Enable Poll (Set to FS) for COM2

$+YR2.%B

Poll (continued)

Enable Poll (Set to FS) for COM3

$+YR3.%B

Enable Poll (Set to FS) for COM4

$+YR4.%B

Note: FS is encoded as %B in a Code 39 bar code label.

Postamble

Terminals: All Trakker Antares terminals.

Description: Sets the postamble that is appended to any data you scan with the terminal. Common postambles include cursor controls such as a tab or a carriage return line feed.

You can set the postamble to use characters from the extended ASCII character set such as the Field Exit code for 5250 TE. However, you cannot scan in extended ASCII characters in the Postamble command. You must use the TRAKKER Antares 2400 Menu System. For help, see "Entering ASCII Control Characters" in the configuration chapter in your user's manual.

Syntax: AE*data*

Acceptable values for *data* are up to 25 ASCII characters. If you are entering quotation marks as data or grouping configuration commands, you must enclose the *data* within quotation marks (see the example).

Note: To scan a bar code label that includes quotes, you must configure the terminal to use Code 39 in Full ASCII mode. For help, see "Code 39" on page 6-28.

Default: No characters (Disabled)

Menu System: From the Main Menu, choose Configuration Menu, then Terminal Menu, and then Preamble/Postamble.

Postamble (continued)

Bar Codes: To disable the postamble, scan this bar code:

Disable Postamble

$+AE

Or: To set the postamble to an ASCII character string:

Note: To set this command using the bar code labels in Appendix B, you must configure the terminal to use Code 39 in Full ASCII mode. For help, see "Code 39" on page 6-28.

1. Scan this bar code:

   Enter Accumulate Mode / Set Postamble

   +/$+AE

2. Scan a value for *data* from the "Full ASCII Bar Code Chart" in Appendix B. The postamble can be from 1 to 25 characters.
3. Scan this bar code:

   Exit Accumulate Mode

   -/

Example: You want to set a postamble that includes quotation marks. Enter the postamble by scanning this full ASCII bar code label:

Set Postamble to "B"

$+AE"""B"""

You must enclose the data within quotation marks and precede each quotation mark with another quotation mark so that the quotation marks are not treated as the end of the data.

Power Management

Terminals: 2415, 2425, 2435, 2455, 2475, and 2485/6 with 802.11b radios.

Description: Determines if power management is enabled for the radio. If you use enhanced or standard power management, the radio conserves power by sleeping between messages. Using standard power management decreases the performance of the RF network, but it increases the life of battery-powered devices. Using enhanced power management increases the performance of the RF network, but it decreases the life of battery-powered devices.

Syntax: LH*data*

Acceptable values for *data* are:

0 Disabled
1 Enhanced
2 Standard

Default: Enhanced

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Radio.

Bar Codes: Scan one of these bar codes:

Disable Power Management

$+LH0

Enable Enhanced Power Management

$+LH1

Enable Standard Power Management

$+LH2

Preamble

Terminals: All Trakker Antares terminals.

Description: Sets the preamble that precedes any data you scan with the terminal. Common preambles include a data location number or an operator number.

Preamble (continued)

You can set the preamble to use characters from the extended ASCII character set. However, you cannot scan in extended ASCII characters in the Preamble command. You must use the TRAKKER Antares 2400 Menu System. For help, see "Entering ASCII Control Characters" in the configuration chapter in your user's manual.

Syntax: AD*data*

Acceptable values for *data* are up to 25 ASCII characters. If you are entering quotation marks as data or grouping configuration commands, you need to enclose the *data* within quotation marks (see the example).

Note: To scan a bar code label that includes quotes, you must configure the terminal to use Code 39 in Full ASCII mode. For help, see "Code 39" on page 6-28.

Default: No characters (Disabled)

Menu System: From the Main Menu, choose Configuration Menu, then Terminal Menu, and then Preamble/Postamble.

Bar Codes: To disable the preamble, scan this bar code:

Disable Preamble

$+AD

Or: To set the preamble to an ASCII character string:

Note: To set this command using the bar code labels in Appendix B, you must configure the terminal to use Code 39 in Full ASCII mode. For help, see "Code 39" on page 6-28.

1. Scan this bar code:

   Enter Accumulate Mode / Set Preamble

   +/$+AD

2. Scan a value for *data* from the "Full ASCII Bar Code Chart" in Appendix B. The preamble can be from 1 to 25 characters.
3. Scan this bar code:

   Exit Accumulate Mode

   -/

Preamble (continued)

Example: You want to set a preamble that includes quotation marks. Enter the preamble by scanning this full ASCII bar code label:

Set Preamble to “B”

$+AD"""B"""

You must enclose the data within quotation marks and precede each quotation mark with another quotation mark so that the quotation marks are not treated as the end of the data.

Radio MAC Address

Terminals: 2415, 2425, 2435, 2455, 2475, and 2485/6.

Description: Returns the MAC address of the radio that is installed in the RF terminal. You can only use this read-only command in an application to return the value (MAC address) to the application.

Syntax: RI

Default: None

Menu System: N/A

Bar Codes: N/A

RAM Drive Size

Terminals: All Trakker Antares terminals.

Description: Configures the size and use of the RAM drive (drive E). You can use the RAM drive to temporarily store data and files. You can also disable the RAM drive and use the additional 256K for application execution space or programmable (Malloc) memory allocations.

After you set the RAM drive, you must save the configuration in flash memory and boot the terminal for the change to take effect.

Note: When you boot or reset the terminal, all files on the RAM drive are destroyed.

RAM Drive Size (continued)

Syntax: FR*data*

Acceptable values for *data* are:

0	Disabled, no RAM drive
16-256	RAM drive size in kilobytes (K)

Default: 0 (Disabled)

Menu System: From the Main Menu, choose Configuration Menu, then Terminal Menu, and then RAM Drive.

Bar Codes: To disable the RAM drive, scan this bar code:

Disable RAM Drive

$+FR0

Or: To set the RAM drive size:

1. Scan this bar code:

   Enter Accumulate Mode / Set RAM Drive Size

   +/$+FR

2. Scan a numeric value for *data* from these bar codes:

0

1

2

3

4

5

6

7

8

9

RAM Drive Size (continued)

3. Scan this bar code:

   Exit Accumulate Mode

   -/

4. Scan this bar code to save the configuration change in flash memory:

   Save Configuration in Flash Memory

   .+1

5. Scan this bar code to boot the terminal and use the RAM drive:

   Reset Firmware

   -.

Receive All Multicast

Terminals: 2415, 2425, 2435, 2455, 2475, and 2485/6 with 802.11b radios.

Description: Determines if the RF terminal needs to receive all multicast messages. If you enable this parameter, the radio stays awake to receive all multicast messages forwarded by the access point. If you disable this parameter, the radio sleeps more often and conserves battery power.

Note: Before you can set receive all multicast, you must enable the Power Management command.

Syntax: LJ*data*

Acceptable values for *data* are:

0 Disabled
1 Enabled

Default: Enabled

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Radio.

Receive All Multicast (continued)

Bar Codes: Scan one of these bar codes:

Disable Receive All Multicast

$+LJ0

Enable Receive All Multicast

$+LJ1

Reservation Threshold

Terminals: 2415, 2425, 2435, 2455, 2475, and 2485/6 with 802.11b radios.

Description: Specifies the maximum packet size that the RF terminal can send before it uses medium reservation (RTS/CTS). Packets that are greater than or equal to this packet size use the medium reservation mechanism to help prevent collisions with packets from other devices.

Note: Before you can set the reservation threshold, you must enable the Medium Reservation command.

Syntax: LD*data*

Acceptable values for *data* are from 1 to 2346.

Default: 500

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Radio.

Bar Codes: To set the default reservation threshold, scan this bar code:

Default Reservation Threshold

$+LD500

Or: To set the reservation threshold:

1. Scan this bar code:

   Enter Accumulate Mode / Set Reservation Threshold

   +/$+LD

Reservation Threshold (continued)

2. Scan a numeric value for *data* from these bar codes:


0


1


2


3


4


5


6


7


8


9

3. Scan this bar code:

Exit Accumulate Mode


-/

Resume Execution

Terminals: All Trakker Antares terminals.

Description: Defines the way in which the terminal resumes when you press ⍥ to turn on the terminal. If you set this parameter to resume not allowed and you press ⍥ to turn off the terminal, it will boot and restart the application that was running when you turned off the terminal. If you set this parameter to resume allowed and press ⍥ to turn on the terminal, the terminal resumes exactly where it was when you turned off the terminal.

If resume is set to not allowed, when you press ⍥ to turn off the terminal, the terminal will end the host connection before it turns off. Do not try to turn on the terminal immediately after you turn it off.

Syntax: ER*data*

Acceptable values for *data* are:

0 Not allowed
1 Allowed

Resume Execution (continued)

Default: Allowed

Menu System: From the Main Menu, choose Configuration Menu, then Terminal Menu, and then Power Management.

Bar Codes: Scan one of these bar codes:

Resume Execution Not Allowed

$+ER0

Resume Execution Allowed

$+ER1

RS-232 or RS-422/485 COM2 Interface

Terminals: 2460 and 248X with enhanced I/O board option.

Description: Defines the interface for the COM2 communications port. If you have a 2460 or a 248X with an enhanced input/output board, you can use COM2 for either RS-232 or RS-422/485 communications. If you are using Multi-Drop protocol, you do not need to set this parameter because the terminal automatically sets the RS-485 interface.

Syntax: YK2.*data*

Acceptable values for *data* are:

0 RS-232
1 RS-422/485

Default: RS-232

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Serial Port [COM2].

Bar Codes: To set the interface for COM2, scan one of these bar codes:

Enable RS-232 Interface

$+YK2.0

Enable RS-422/485 Interface

$+YK2.1*

Roaming Flag

Terminals: 2415, 2425, 2435, 2455, 2475, and 2485/6 with OpenAir radios.

Description: Determines whether or not the RF terminal can roam between access points. All access points are master stations, and each master has a unique channel. If you have five access points in one domain, the RF terminal will connect to one access point when you turn it on. This access point becomes the master station for the RF terminal. When you set the roaming flag to "Not Allowed," the RF terminal will only communicate with the master station (access point) to which it first connects. If you allow roaming, the RF terminal can communicate with any access point in the same domain.

Syntax: RR*data*

Acceptable values for *data* are:

0 Allowed
1 Not allowed

Default: Allowed

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Radio.

Bar Codes: Scan one of these bar codes:

Roaming Allowed

$+RR0

Roaming Not Allowed

$+RR1

Scan Ahead

Terminals: All Trakker Antares terminals.

Description: Enables or disables scan ahead. If you enable this parameter, you can scan a number of labels that are held in a stack until the terminal can process the data. If you disable this parameter, the terminal processes each label you scan before you can scan the next label.

Syntax: SD*data*

Acceptable values for *data* are:

0 Disabled (scan one label at a time)
1 Enabled (scan many labels at a time)

Scan Ahead (continued)

Default: Disabled

Menu System: From the Main Menu, choose Configuration Menu, then Terminal Menu, and then Scanner.

Bar Codes: Scan one of these bar codes:

Disable Scan Ahead

$+SD0

Enable Scan Ahead

$+SD1

Scanner Mode

Terminals: All Trakker Antares terminals.

Description: Defines how the scanner operates when you press the Scan button or activate a laser scanner that is connected to the terminal. There are two modes: one-shot and automatic.

One-shot mode In one-shot mode, you need to press the Scan button or activate the laser scanner each time you want to scan a bar code. After you scan a bar code, the scanner turns off.

Automatic mode In automatic (auto-trigger) mode, you press the Scan button once or activate the laser scanner once to scan a series of bar codes. When you release the button or trigger, the scanner turns off. To scan the same bar code more than once, you need to release the button or trigger, or scan a different bar code before attempting a second scan.

Note: Automatic mode is not supported on some tethered decoded scanners. For help, contact your local Intermec service representative.

Syntax: SB*data*

Acceptable values for *data* are:

0 One-shot mode
1 Automatic mode

Default: One-Shot mode

Menu System: From the Main Menu, choose Configuration Menu, then Terminal Menu, and then Scanner.

Scanner Mode (continued)

Bar Codes: Scan one of these bar codes:

Enable One-Shot Mode

$+SB0

Enable Automatic Mode

$+SB1

Scanner Port (COM4)

Terminals: 2455.

Description: Allows you to configure the Scanner port to function either as a Scanner port or as an additional serial port (COM4). There are three options:

Scanner port Allows you to connect a scanner to the Scanner port on the bottom back panel of the 2455.

RS-232 port Allows you to use the Scanner port as COM4 to connect a serial device. In this configuration, the Scanner port supports TTL voltage-level (0-5V) serial devices.

Inverted RS-232 port Allows you to use the Scanner port as COM4 to connect a serial device. In this configuration, the Scanner port supports inverted TTL voltage-level serial devices.

If you plan to use the Scanner port as COM4, you must order the COM Port Adapter Cable (Part No. 061799). You must use this cable to connect a serial device to COM4. This cable does not provide an environmentally sealed connection to the 2455.

Syntax: IX*data*

Acceptable values for *data* are:

0 Scanner port
1 RS-232 (COM4) port
2 Inverted RS-232 (COM4) port

Default: Scanner port enabled

Menu System: From the Main Menu, choose Configuration Menu, then Terminal Menu, and then Scanner.

Bar Codes: Scan one of these bar codes:

Enable Scanner Port

$+IX0

Enable RS-232 (COM4) Port

$+IX1

Scanner Port (COM4) (continued)

Enable Inverted RS-232 (COM4) Port

$+IX2

Scanner Redundancy

Terminals: All Trakker Antares terminals.

Description: Defines the number of scans (voting) of a bar code label that must decode correctly for a good read of the label. Voting requires the terminal to decode the same bar code multiple times during a single scanner event and to compare the decoded information a specific number of times before signaling a good read. There are three options:

None Allows the terminal to accept the first good read. This setting speeds up terminal performance and is recommended when scanning good quality bar code labels.

Normal The terminal decodes the bar code a minimum number of times in each scanner event. The number of comparisons that are made depends on each bar code symbology.

High The terminal decodes the bar code a maximum number of times in each scanner event. The number of comparisons depends on each bar code symbology. This setting is recommended when scanning poor quality labels that may cause substitution errors.

Syntax: SR*data*

Acceptable values for *data* are:

0 None
1 Normal
2 High

Default: Normal

Menu System: From the Main Menu, choose Configuration Menu, then Terminal Menu, and then Scanner.

Bar Codes: Scan one of these bar codes:

Scanner Redundancy None

$+SR0

Scanner Redundancy Normal

$+SR1

Scanner Redundancy (continued)

Scanner Redundancy High

$+SR2

Scanner Selection

Terminals: All Trakker Antares terminals.

Description: Identifies the type of scanner you have connected to the terminal. The terminal can optimize the scanning performance by using the scanner you define in this command. When you select a specific scanner, other scanners may not function properly. Your terminal may not work if you connect an incompatible scanner or if you select an incorrect option for your input device.

For 241X, 242X, and 243X terminals, you can also use this command to configure the spotting beam when you have a long range or high visibility scanner on the terminal. There are three options:

No aim The spotting beam is turned off. When you press the Scan button, the laser scanner starts scanning immediately.

Short aim The spotting beam appears for 400 ms to help you aim the laser scanner before it starts scanning.

Long aim The spotting beam appears for 1 second to help you aim the laser scanner before it starts scanning.

For 242X terminals, the Scanner Selection configuration command is only used when a module for cabled scanners, long range scan module, or a high visibility scan module is installed on the terminal.

Note: For 243X terminals, you **must** define this command and select the tethered input device that is connected to the terminal. If this command is not defined for the appropriate input device, the scanner trigger on the input device may activate the integrated scanner on the terminal.

Syntax: SS*data*

Acceptable values for *data* are:

0 All compatible scanners (including wands)
1 146X CCD scanners (242X, 2455, 246X, 2475, 248X)
3 151X laser scanners (242X, 2455, 246X, 2475, 248X)
4 1545 laser scanner (242X, 2455, 246X, 2475, 248X)
5 Non-Intermec tethered laser scanners
6 155X laser scanners

Scanner Selection (continued)

Acceptable values for *data* are (*continued*):

7 Tethered long range laser scanners (242X, 2455, 246X, 2475, 248X)
10 Integrated (241X, 242X, 243X)
11 Integrated scanner / scan module, including normal, long range, high density, or high visibility (long range or high visibility with no aim) (241X, 242X, 243X)
12 Integrated long range, high density, or high visibility scanner / scan module with short aim (241X, 242X, 243X)
13 Integrated long range, high density, or high visibility scanner / scan module with long aim (241X, 242X, 243X)
14 Integrated PDF 417 scanner / scan module (241X, 242X)
15 Serial PDF 417 scanner (Intermec 1551E laser scanner) (241X, 242X, 243X)
16 Integrated non-PDF 417 linear imager (241X)
17 Serial non-PDF 417 scanner (Intermec 1553 XLR laser scanner) (242X, 243X)
98 No scanner

For help configuring a long range laser scanner, see the user's manual that shipped with your scanner.

Note: For 242X terminals, SS0 through SS7 work only when a module for cabled scanners is installed on the terminal. SS12 and SS13 work only when a long range or high visibility scan module is installed. SS11 configures the standard range and high density scan modules.

Note: If you are using the advanced long range scanner or scan module, you may not be able to scan the bar code labels in this manual. However, you can still send commands through the serial port or network. For help, see Chapter 2, "Configuring the Terminals."

Default: Specific integrated scanner installed on the terminal (integrated scanners)
All compatible scanners (tethered scanners)

Menu System: From the Main Menu, choose Configuration Menu, then Terminal Menu, and then Scanner.

Bar Codes: Scan one of these bar codes:

All Compatible Scanners

$+SS0

146X CCD Scanners

$+SS1

151X Laser Scanners

$+SS3

1545 Laser Scanner

$+SS4

Scanner Selection (continued)

Compatible Symbol Scanners

$+SS5

155X Laser Scanners

$+SS6

Tethered Long Range Laser Scanners

$+SS7

Integrated Scanner

$+SS10

Integrated Scanner / Scan Module (No Aim)

$+SS11

Integrated Scanner / Scan Module (Short Aim)

$+SS12

Integrated Scanner / Scan Module (Long Aim)

$+SS13

Integrated PDF 417
Laser Scanner / Scan Module

$+SS14

Intermec 1551E PDF 417 Laser Scanner

$+SS15

Integrated Linear Imager

$+SS16

Intermec 1553 XLR Laser Scanner

$+SS17

No Scanner

$+SS98

Scanner Timeout

Terminals: All Trakker Antares terminals.

Description: Defines the maximum length of time the scanner stays on after you press the Scan button or activate a laser scanner that is connected to the terminal.

Note: Scanner Timeout is not supported on PDF 417 scanners, as well as, some tethered decoded scanners. For help, contact your local Intermec service representative.

Scanner Timeout (continued)

Syntax: SA*data*

Acceptable values for *data* are:

0	Disabled
1-60	Shutoff time in seconds
3-60	Shutoff time in seconds (decoded scanners with Scanner Trigger set to pulse triggering)

Note: If you are using a decoded scanner, the scanner defaults to a timeout of 3 seconds. The menu system may display the default scanner timeout value of Disabled, however, the actual timeout is 3 seconds. Do **not** try to set the scanner timeout to Disabled.

Default: Disabled (no timeout)

Menu System: From the Main Menu, choose Configuration Menu, then Terminal Menu, and then Scanner.

Bar Codes: To set the default scanner timeout, scan this bar code:

Disable Scanner Timeout

$+SA0

Or: To set the scanner timeout:

1. Scan this bar code:

   Enter Accumulate Mode / Set Scanner Timeout

   +/$+SA

2. Scan a numeric value for *data* from these bar codes:

   0

   1

   2

   3

   4

   5

Scanner Timeout (continued)


6


7


8


9

3. Scan this bar code:

Exit Accumulate Mode


-/

Scanner Trigger

Terminals: All Trakker Antares terminals.

Description: Scanner trigger allows you to set level triggering and either edge or pulse triggering depending on the type of scanner you are using.

Level triggering Level triggering is available on terminals using either decoded or non-decoded scanners. With level triggering, when you activate the scanner, the laser turns on and stays on until you release the trigger on the laser scanner.

Edge triggering Edge triggering is available on terminals using non-decoded scanners. With edge triggering, when you activate the scanner, the laser turns on and stays on. When you activate the scanner a second time, the laser turns off. Simply releasing the button or trigger does not turn off the laser. If the laser is left on, the scanner timeout turns the laser off.

Pulse triggering Pulse triggering is supported on 241X terminals using the integrated PDF 417 scanner or linear imager and on 242X terminals using the PDF 417 scan module. With pulse triggering, when you activate the scanner, the laser turns on. The laser remains on until the scanner timeout turns the laser off. If the scanner timeout is set to 0, the laser turns off after 3 seconds.

Note: Earlier versions of PDF 417 scanners do not support pulse triggering. For help upgrading your scanner, contact your local Intermec service representative.

Syntax: SC*data*

Acceptable values for *data* are:

0 Level triggering
1 Edge or Pulse triggering

Scanner Trigger (continued)

Default: Level triggering

Menu System: From the Main Menu, choose Configuration Menu, then Terminal Menu, and then Scanner.

Bar Codes: Scan one of these bar codes:

Enable Level Triggering

$+SC0

Enable Edge or Pulse Triggering

$+SC1

Security Identification

Terminals: 2415, 2425, 2435, 2455, 2475, and 2485/6 with OpenAir radios.

Description: Defines a password for secured transmission and receipt of data between devices in the RF network. To communicate, all access points and RF terminals in the subnetwork must have the same security ID.

Note: The Network Activate command must be configured to the RF network before you can save any changes to this parameter.

Syntax: RS*data*

Acceptable values for *data* are up to 20 ASCII characters.

Default: No characters or blank (Disabled)

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Radio.

The actual security ID does not appear on the screen. The words (ID unchanged) indicate that the password has not been changed in the current menu session. If you change the security ID, you see the new password until you exit the Configuration Menu and update the current (runtime) configuration.

Bar Codes: To disable or set the security ID to no characters, scan this bar code label:

Disable Security ID

$+RS

Security Identification (continued)

Or: To set the security ID to an ASCII character string:

Note: To set this command using the bar code labels in Appendix B, you must configure the terminal to use Code 39 in Full ASCII mode. For help, see "Code 39" on page 6-28.

1. Scan this bar code:

   Enter Accumulate Mode / Set Security ID

   +/$+RS

2. Scan a value for *data* from the "Full ASCII Bar Code Chart" in Appendix B. The security ID can be from 1 to 20 characters.
3. Scan this bar code:

   Exit Accumulate Mode

   -/

Serial Port Protocol

Terminals: All Trakker Antares terminals.

Description: Allows you to set the protocol that the serial port uses to communicate with the connected device. Communications protocols determine exactly how data is transmitted between the terminal and the serial device. Each protocol has parameters you can set, such as baud rate and parity. Both the terminal and the serial device must use the same protocol and parameter settings to communicate properly.

The terminal can communicate in these five protocols:

- Binary
- Configurable protocol
- Master Polling
- Multi-Drop (COM2 only)
- Polling Mode D

Additionally, you can simulate Point-to-Point protocol by modifying the Configurable protocol. Each protocol is described in the networking chapter in your user's manual.

Serial Port Protocol (continued)

Syntax: YU*n*.*data*

where *n* is:

1 COM1 serial port
2 COM2 serial port (246X and 248X terminals only)
3 COM3 serial port (242X terminals only)
4 COM4 serial port (242X, 2455, and 248X terminals only)

Acceptable values for *data* are:

0 Configurable
2 Polling mode D
3 Multi-Drop (COM2 only)
8 Master polling mode D
12 Binary

Default: Configurable

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Serial Port.

Bar Codes: To set the default serial port protocol, scan one of these bar codes:

Configurable Protocol for COM1

$+YU1.0

Configurable Protocol for COM2

$+YU2.0

Configurable Protocol for COM3

$+YU3.0

Configurable Protocol for COM4

$+YU4.0

Or: To set the serial port protocol for one serial port:

1. Scan this bar code:

   Enter Accumulate Mode / Set Serial Port Protocol
   
   +/$+YU

2. Scan one of these bar codes to set the COM port:

   COM1
   
   1.

   COM2
   
   2.

Serial Port Protocol (continued)

COM3

3.

COM4

4.

3. Scan the protocol setting:

Configurable

0

Polling Mode D

2

Multi-Drop

3

Master Polling Mode D

8

Binary

12

4. Scan this bar code:

Exit Accumulate Mode

-/

5. Repeat Steps 1 through 4 to set the serial port protocol for another port.

Server Certificate Common Name (Server Cert CN)

Terminals: 2415, 2425, 2435, 2455, 2475, and 2485/6 with an 802.11b radio with 802.1x security.

Description: The Server Certificate Common Name (Server Cert CN) is the name of the certificate on the authentication server. You obtain this value from the authentication server. You only need to identify one server cert CN for secure data transmission, however, you can also identify a second server cert CN for a backup authentication server.

If the name of the certificate on the authentication server is longer than 32 characters, configure the server cert CN for the first 32 characters. You can authenticate to a certificate with a name that is longer than 32 characters, however, the terminal will only check the first 32 characters.

Syntax: LU*data* Server 1 Certificate Common Name
LV*data* Server 2 Certificate Common Name

Acceptable values for *data* are from 1 to 32 ASCII characters.

Server Cert CN (continued)

Default: No characters or blank (Disabled)

Note: You can leave the server certificate common name blank if you just want to make sure that your terminal can be authenticated. However, you must set a unique user name, password, and at least one server certificate common name for secure data transmission.

Menu System: From the Main Menu, choose Configuration Menu, Communications Menu, and then choose Radio.

Bar Codes: To disable or set the default server certificate common name to no characters, scan one of these bar codes:

Disable Server 1 Cert CN

$+LU

Disable Server 2 Cert CN

$+LV

Or: To set the server certificate common name to an ASCII character string:

Note: To set this command using the bar code labels in Appendix B, you must configure the terminal to use Code 39 in Full ASCII mode. For help, see "Code 39" on page 6-28.

1. Scan this bar code:

   Enter Accumulate Mode / Set Server 1 Cert CN

   +/$+LU

   Enter Accumulate Mode / Set Server 2 Cert CN

   +/$+LV

2. Scan a value for *data* from the "Full ASCII Bar Code Chart" in Appendix B. The server certificate common name can be from 1 to 32 characters.
3. Scan this bar code:

   Exit Accumulate Mode

   -/

Start of Message (SOM)

Terminals: All Trakker Antares terminals.

Description: SOM is the first character in a message sent to or received from the host computer through one of the terminal's serial ports. You can configure LRC for the Configurable communications protocol. For more information, see the networking chapter in your user's manual.

You can set SOM to use characters from the extended ASCII character set using the TRAKKER Antares 2400 Menu System. This procedure is similar to the one for setting the preamble and postamble. For help, see "Entering ASCII Control Characters" in the configuration chapter in your user's manual.

SOM **cannot** equal the same value that is set for EOM. You **cannot** set SOM to any of these values:

- AFF (ACK)
- DLE
- NEG (NAK)
- Poll
- RES (EOT)
- REQ (ENQ)
- SEL
- XOFF
- XON

Note: Before you can enable SOM, you must configure the EOM command.

Syntax: YY*n*.*data*

where *n* is:

1 COM1 serial port
2 COM2 serial port (246X and 248X terminals only)
3 COM3 serial port (242X terminals only)
4 COM4 serial port (242X, 2455, and 248X terminals only)

An acceptable value for *data* is any ASCII character.

Default: \x02 (hexadecimal value for STX)

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Serial Port.

SOM (continued)

Bar Codes: To disable SOM for each serial port, scan these bar codes:

Disable SOM for COM1

$+YY1.

Disable SOM for COM2

$+YY2.

Disable SOM for COM3

$+YY3.

Disable SOM for COM4

$+YY4.

Or: To set SOM to an ASCII character for one serial port:

Note: To set this command using the bar code labels in Appendix B, you must configure the terminal to use Code 39 in Full ASCII mode. For help, see "Code 39" on page 6-28.

1. Scan this bar code:

   Enter Accumulate Mode / Set SOM

   +/$+YY

2. Scan the serial port from these bar codes:

   COM1

   1.

   COM2

   2.

   COM3

   3.

   COM4

   4.

3. Scan a bar code for *data* from the "Full ASCII Bar Code Chart" in Appendix B.
4. Scan this bar code:

   Exit Accumulate Mode

   -/

5. Repeat Steps 1 through 4 to set SOM for another serial port.

Station Name

Terminals: 2415, 2425, 2435, 2455, 2475, and 2485/6 with 802.11b radios.

Description: Identifies the RF terminal to the network. For example, you may want to define station names so that you can identify RF terminals when using site survey tools.

Syntax: LB*data*

Acceptable values for *data* are up to 32 ASCII characters.

Default: Trakker 2400

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Radio.

Bar Codes: To set the default station name, scan this bar code:

Default Station Name

$+LBTRAKKER 2400

Or: To set the station name to an ASCII character string:

Note: To set this command using the bar code labels in Appendix B, you must configure the terminal to use Code 39 in Full ASCII mode. For help, see "Code 39" on page 6-28.

1. Scan this bar code:

   Enter Accumulate Mode / Set Station Name

   +/$+LB

2. Scan a value for *data* from the "Full ASCII Bar Code Chart" in Appendix B. The station name can be from 1 to 32 characters.
3. Scan this bar code:

   Exit Accumulate Mode

   -/

Stop Bits

Terminals: All Trakker Antares terminals.

Description: Sets the number of stop bits on the serial port. You can configure the stop bits for the Binary and Configurable communications protocols. For more information, see the networking chapter in your user's manual.

Syntax: YC*n*.*data*

where *n* is:

1 COM1 serial port
2 COM2 serial port (246X and 248X terminals only)
3 COM3 serial port (242X terminals only)
4 COM4 serial port (242X, 2455, and 248X terminals only)

Acceptable values for *data* are:

1 1 stop bit
2 2 stop bits

Default: 1 stop bit

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Serial Port.

Bar Codes: To set the stop bits, scan one of these bar codes:

1 Stop Bit for COM1

$+YC1.1

2 Stop Bits for COM1

$+YC1.2

1 Stop Bit for COM2

$+YC2.1

2 Stop Bits for COM2

$+YC2.2

1 Stop Bit for COM3

$+YC3.1

2 Stop Bits for COM3

$+YC3.2

1 Stop Bit for COM4

$+YC4.1

2 Stop Bits for COM4

$+YC4.2

Subnet Mask

Terminals: 2415, 2425, 2435, 2455, 2461, 2475, 2480/1 with the Ethernet option, and 2485/6 using the TCP/IP or UDP Plus network.

Description: Defines the subnet mask, an internal TCP/IP stack variable that is used to separate the subnetwork address from the local IP address. The TCP/IP stack performs a bit-wise AND on the IP address and the subnet mask. Each address segment represents one byte, where 255 converts to FF hex.

This computation is used to find out if the DCS 30X (UDP Plus) or host (TCP/IP) and terminal are on different subnetworks. If the terminal is on a different IP subnetwork than the DCS 30X or host, you must set the subnet mask and the default router.

For example, if the IP address is 192.009.150.184 and the subnet mask is 255.255.255.0, the subnetwork address is 192.009.150.0. The default subnet mask 255.255.255.0 indicates that the terminal uses a standard IP network mask.

Syntax: NS*n.n.n.n*

where each *n* address segment is a number from 0 to 255. The subnet mask field consists of four separate numbers, each separated by a period.

Default: 255.255.255.0

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Advanced Network.

Bar Codes: To set the default subnet mask address, scan this bar code:

Default Subnet Mask

$+NS255.255.255.0

Or: To set the subnet mask:

1. Scan this bar code:

   Enter Accumulate Mode / Set Subnet Mask

   +/$+NS

2. Scan a numeric value from 0 to 255 to set an *n* field of the subnet mask address from these bar codes.

   0

   1

Subnet Mask (continued)


2


3


4


5


6


7


8


9

3. Scan this bar code:

. (Period)


.

4. Repeat Steps 2 and 3 to set the next three numbers in the subnet mask address field. After you scan the last address segment, go to Step 5. Do **not** scan the period after the last address segment.
5. Scan this bar code:

Exit Accumulate Mode


-/

Suspend/Resume Control

Terminals: All Trakker Antares terminals.

Description: Controls the operation of the ⅒ key (suspend/resume). When the ⅒ key is enabled, you can turn the terminal on and off. When the ⅒ key is disabled, you cannot turn off the terminal.

Syntax: EF*data*

Acceptable values for *data* are:

0 Enabled
1 Disabled

Default: Enabled

Suspend/Resume Control (continued)

Menu System: Not supported.

Bar Codes: Scan one of these bar codes:

Enable ⅋ Key

$+EF0

Disable ⅋ Key

$+EF1

Symbology Identifiers

Terminals: All Trakker Antares terminals.

Description: Symbology identifiers allow you to indicate what type of data is being sent by prepending an identifier to the data. You can prepend one of the following types of character strings to identify which symbology the data is using:

AIM ISO/IEC Standard The AIM Standard for symbology identifiers consists of a three-character structure indicating the symbology and the optional features of the symbology. For more information about the AIM Standard for symbology identifiers, refer to the AIM ISO/IEC Standard.

User-Defined ASCII Character String The user-defined symbology identifier is one to four ASCII characters in length. You can configure user-defined symbology identifiers to assign custom identifier strings to the bar code symbologies.

The Symbology Identifiers command contains four parameters. To disable or enable all symbology identifiers to the ISO/IEC Standard, you need to configure the first two parameters. To enable a user-defined symbology identifier, you need to configure all four parameters.

Syntax: CY*data*

where *data* must be 3 to 8 digits selected from this list of parameters:

Parameter 1:	00	All Symbology IDs (Disabled or ISO/IEC Standard Enabled)
	01	Code 39
	02	Code 128
	03	Codabar
	04	Code 93
	05	Code 11
	06	Interleaved 2 of 5
	08	PDF 417
	09	MSI
	10	Plessey
	11	Code 2 of 5 with 2 bar start/stop codes

Symbology Identifiers (continued)

Parameter 1: *(continued)*	12	Code 2 of 5 with 3 bar start/stop codes
	16	UPC-A
	17	UPC-E
	18	EAN-8
	19	EAN-13
Parameter 2:	0	Disabled
	1	ISO/IEC Standard (Enabled)
	2	User-defined
Parameter 3:	1	User-defined character string length of 1
	2	User-defined character string length of 2
	3	User-defined character string length of 3
	4	User-defined character string length of 4
Parameter 4:	xxxx	ASCII string of 1 to 4 characters in length indicating the user-defined value.

Note: The PDF 417 symbology identifier is not available on terminals that are not configured to scan PDF 417 bar code labels. You also may be able to define symbology identifiers for bar code symbologies that the terminal is not configured to support.

Default: 000 (all symbology identifiers disabled)

Note: To set this command using the bar code labels in Appendix B, you must configure the terminal to use Code 39 in Full ASCII mode. For help, see "Code 39" on page 6-28.

Menu System: To configure symbology identifiers using the menu system:

1. From the Main Menu, choose Configuration Menu, and then choose Symbology IDs Menu.
2. Set all symbology identifiers to the ISO/IEC Standard.
   a. Select All Symbology IDs.
   b. Set the command to ISO/IEC Std. (Enabled).
3. Select a symbology identifier, or select all symbology identifiers with the All Symbology IDs option.
4. Set the symbology identifier to Disabled, ISO/IEC Standard (Enabled), or User-Defined. If you select User-Defined, continue with Step 5. Otherwise continue with Step 7.

   If you selected the All Symbology IDs option in Step 3, you can only select Disabled or ISO/IEC Standard (Enabled). You must individually select a symbology to set a user-defined symbology identifier.

Symbology Identifiers (continued)

5. Set a user-defined character string length from 1 to 4.
6. Select a value for the user-defined symbology ID from the "Full ASCII Bar Code Chart" in Appendix B. The user-defined symbology ID should be 1 to 4 characters in length depending on the character string length value that you set in Step 5.
7. Repeat Steps 3 to 6 to configure another symbology identifier.

Bar Codes: To set the default configuration and disable all symbology identifiers, scan this bar code:

Disable All Symbology Identifiers

$+CY000

Or: To set all symbology identifiers to the ISO/IEC Standard, scan this bar code:

Enable ISO/IEC Standard For All Symbology Identifiers

$+CY001

Or: To enable or disable the ISO/IEC Standard for one or more symbologies, or to set a user-defined symbology identifier for one or more symbologies:

Note: If you are using firmware version 6.20 or earlier, you must set all symbology identifiers to the ISO/IEC Standard before you can set a user-defined symbology identifier.

Note: To set this command using the bar code labels in Appendix B, you must configure the terminal to use Code 39 in Full ASCII mode. For help, see "Code 39" on page 6-28.

1. Scan this bar code:

   Enter Accumulate Mode / Set Symbology Identifiers

   +/$+CY

2. Scan one of these bar codes:

   All Symbology IDs

   00

   Code 39

   01

Symbology Identifiers (continued)

Code 128

02

Codabar

03

Code 93

04

Code 11

05

Interleaved 2 of 5

06

PDF 417

08

MSI

09

Plessey

10

Code 2 of 5
With 2 Bar Start/Stop Codes

11

Code 2 of 5
With 3 Bar Start/Stop Codes

12

UPC-A

16

UPC-E

17

EAN-8

18

EAN-13

19

3. Scan one of these bar codes:

Disable Symbology ID

0

Enable ISO/IEC Standard Symbology ID

1

Enable User-Defined Symbology ID

2

If you enabled a user-defined symbology identifier, continue with Step 4. Otherwise, continue with Step 6.

Symbology Identifiers (continued)

4. Scan a numeric value for the character string length of the user-defined symbology identifier from these bar codes:


1


2


3


4

5. Scan a value for the user-defined symbology identifier from the "Full ASCII Bar Code Chart" in Appendix B. The user-defined symbology identifier should be 1 to 4 characters in length depending on the character string length value that you scanned in Step 5.
6. Repeat Steps 3 to 6 to configure another symbology identifier.
7. Scan this bar code:

Exit Accumulate Mode


-/

Example 1: You want to enable the ISO/IEC Standard symbology identifier for all bar code symbologies except Plessey.

1. Scan this bar code:

Enable ISO/IEC Standard for All Symbology Identifiers


$+CY001

2. Scan this bar code:

Disable ISO/IEC Standard Symbology ID for Plessey


$+CY100

Example 2: You want to enable a user-defined symbology identifier that is four characters in length (UPCA) for UPC-A.

1. Scan this bar code:

Enable ISO/IEC Standard for All Symbology Identifiers


$+CY001

Symbology Identifiers (continued)

2. Scan this bar code:

Enable 4-Character User-Defined Symbology ID (UPCA) for UPC-A

$+CY1624UPCA

TCP Maximum Retries

Terminals: 2415, 2425, 2435, 2455, 2461, 2475, 2480/1 with the Ethernet option, and 2485/6.

Description: Defines the maximum number of times that TCP will attempt to transmit data before giving up and terminating the TCP connection.

Syntax: NJ*data*

Acceptable values for *data* are any number from 5 to 50.

Default: 12

Menu System: Not supported.

Bar Codes: To set the default TCP maximum retries, scan this bar code:

Default TCP Maximum Retries

$+NJ12

Or: To set the TCP maximum retries:

1. Scan this bar code:

Enter Accumulate Mode / Set TCP Maximum Retries

+/$+NJ

2. Scan a numeric value for *data* from these bar codes:

0

1

2

3

TCP Maximum Retries (continued)


4


5


6


7


8


9

3. Scan this bar code:

Exit Accumulate Mode


-/

TCP/IP Maximum Transmit Timeout

Terminals: 2415, 2425, 2435, 2455, 2461, 2475, 2480/1 with the Ethernet option, and 2485/6 using the TCP/IP network.

Description: Defines the maximum timeout that TCP will allow between retries of a transmission in a TCP/IP direct connect network before it gives up. For example, a value of 20 indicates that the timeout between retries is never longer than 20 seconds. Intermec has determined that the optimum setting is 20 seconds.

Syntax: NH*data*

Acceptable values for *data* are:

0	No timeout
1-128	Transmit timeout in seconds

Default: 20 seconds

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Advanced Network.

Bar Codes: To set the default TCP/IP maximum transmit timeout, scan this bar code:

Default TCP/IP Maximum Transmit Timeout


$+NH20

TCP/IP Maximum Transmit Timeout (continued)

Or: To set the TCP/IP maximum transmit timeout:

1. Scan this bar code:

   Enter Accumulate Mode / Set TCP/IP Maximum Transmit Timeout

   +/$+NH

2. Scan a numeric value for *data* from these bar codes:

   0

   1

   2

   3

   4

   5

   6

   7

   8

   9

3. Scan this bar code:

   Exit Accumulate Mode

   -/

Terminal IP Address

Terminals: 2415, 2425, 2435, 2455, 2461, 2475, 2480/1 with the Ethernet option, and 2485/6.

Description: Defines the IP address assigned to the terminal in your RF or Ethernet network. An IP address is a unique network level address you assign to each device in a TCP/IP network. The IP address you set on the terminal must be the same as the address that is set on the DCS 30X or host computer.

Terminal IP Address (continued)

Syntax: ND*n.n.n.n*

where each *n* address segment is a number from 0 to 255. The terminal IP address field consists of four separate numbers, each separated by a period.

Note: The RF or Ethernet network cannot be activated if the first address segment in the IP address is set to 127 or a number greater than 223.

Default: 0.0.0.0 (DHCP enabled)

Note: If you are using the TCP/IP network, the default terminal IP address enables the terminal as a DHCP client. For more information, see "DHCP (Terminal)" on page 6-57. If you are using the UDP Plus or WTP network, you must set the terminal IP address before you can activate the network.

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Primary Network.

Bar Codes: To set the default terminal IP address, scan this bar code:

Default Terminal IP Address (DHCP enabled)

$+ND0.0.0.0

Or: To set the terminal IP address:

1. Scan this bar code:

   Enter Accumulate Mode / Set Terminal IP Address

   +/$+ND

2. Scan a numeric value from 0 to 255 to set an *n* field of the terminal IP address from these bar codes.

0

1

2

3

4

5

Terminal IP Address (continued)


6


7


8


9

3. Scan this bar code:

. (Period)


.

4. Repeat Steps 2 and 3 to set the next three numbers in the terminal IP address field. After you scan the last address segment, go to Step 5. Do **not** scan the period after the last address segment.
5. Scan this bar code:

Exit Accumulate Mode


-/

Time and Date

Terminals: All Trakker Antares terminals.

Description: Sets the time and date on the terminal.

Syntax: DB*data*

Acceptable values for *data* are 12 digits corresponding to:

yy	00-99	Year
mm	01-12	Month of the year
dd	01-31	Day of the month
hh	00-23	Hour
mm	00-59	Minutes
ss	00-59	Seconds

Year values (*yy*) from 00 to 95 are interpreted as 2000 through 2095. Year values from 96 to 99 are interpreted as 1996 through 1999.

Default: The date of the most recent firmware installation or upgrade.

Time and Date (continued)

Menu System: From the Main Menu, choose System Menu.

Bar Codes: To set the time and date:

1. Scan this bar code:

   Enter Accumulate Mode / Set Time and Date

   +/$+DB

2. Scan a numeric value for each digit from these bar codes:

   0

   1

   2

   3

   4

   5

   6

   7

   8

   9

3. Scan this bar code:

   Exit Accumulate Mode

   -/

Time in Seconds

Terminals: All Trakker Antares terminals.

Description: If you enable the Append Time command, you can enable the Time in Seconds command to append the seconds to each bar code label that is scanned into the terminal. To append the time in only hours and minutes, disable the Time in Seconds command.

Time in Seconds (continued)

Syntax: DA*data*

Acceptable values for *data* are:

0 Disabled
1 Enabled

Default: Disabled

Menu System: From the Main Menu, choose Configuration Menu, then Terminal Menu, and then Append Time.

Bar Codes: Scan one of these bar codes:

Disable Time in Seconds

$+DA0

Enable Time in Seconds

$+DA1

Timeout Delay

Terminals: All Trakker Antares terminals.

Description: If handshaking is enabled, the terminal expects a response to each message that is sent to the host through a serial port. The timeout delay is the amount of time the terminal waits to receive a response. You can configure the timeout delay for the Configurable communications protocol. For more information, see the networking chapter in your user's manual. When the timeout expires, the terminal tries to send the message again. If no response is received after the terminal tries to send the message three times, a timeout error occurs. In polling mode D, the terminal sends another poll sequence when it resends the message.

Note: Before you can set Timeout Delay, you need to configure the EOM and Handshake commands.

Syntax: YE*n*.*data*

where *n* is:

1 COM1 serial port
2 COM2 serial port (246X and 248X terminals only)
3 COM3 serial port (242X terminals only)
4 COM4 serial port (242X, 2455, and 248X terminals only)

Timeout Delay (continued)

Acceptable values for *data* are:

0	5 ms
1	100 ms
2	500 ms
3	2 sec
4	10 sec
5	20 sec
6	40 sec
7	60 sec

Default: 10 seconds

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Serial Port.

Bar Codes: To set the default timeout delay, scan one of these bar codes:

Timeout Delay 10 sec for COM1

$+YE1.4

Timeout Delay 10 sec for COM2

$+YE2.4

Timeout Delay 10 sec for COM3

$+YE3.4

Timeout Delay 10 sec for COM4

$+YE4.4

Or: To set the timeout delay for one serial port:

1. Scan this bar code:

   Enter Accumulate Mode / Set Timeout Delay

   +/$+YE

2. Scan the serial port from these bar codes:

   COM1

   1.

   COM2

   2.

   COM3

   3.

   COM4

   4.

Timeout Delay (continued)

3. Scan the timeout delay from these bar codes:

Timeout Delay 5 ms

0

Timeout Delay 100 ms

1

Timeout Delay 500 ms

2

Timeout Delay 2 sec

3

Timeout Delay 10 sec

4

Timeout Delay 20 sec

5

Timeout Delay 40 sec

6

Timeout Delay 60 sec

7

4. Scan this bar code:

Exit Accumulate Mode

-/

5. Repeat Steps 1 through 4 to set the timeout delay for another serial port.

Transmit Mode

Terminals: 2415, 2425, 2435, 2455, 2475, and 2485/6 with OpenAir radios.

Description: Defines the transmit mode that the RF terminal radio uses. There are three modes:

BFSK Binary Frequency Shift Key. A broadcasting method the radio uses that lengthens the range but halves the throughput. This method is switched when the RF protocol on the terminal determines that communications are degrading.

QFSK Quad Frequency Shift Key. A broadcasting method the radio uses that shortens the range, but doubles the throughput. QFSK is the method used under standard radio conditions.

Auto The terminal radio automatically switches modes between BFSK and QFSK as needed.

Transmit Mode (continued)

Note: Even if you set this configuration command, the radio on the RF terminal will reset the parameter as needed to maximize the broadcasting range and throughput.

Syntax: RT*data*

Acceptable values for *data* are:

0 BFSK (Binary Frequency Shift Key)
1 QFSK (Quad Frequency Shift Key)
3 Auto

Default: BFSK

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Radio.

Bar Codes: Scan one of these bar codes:

Set Transmit Mode to BFSK

$+RT0

Set Transmit Mode to QFSK

$+RT1

Set Transmit Mode to Auto

$+RT3

Transmit Rate

Terminals: 2415, 2425, 2435, 2455, 2475, and 2485/6 with 802.11b radios.

Description: Sets the bit rate for data transmissions. A slower transmit rate provides a better range. You should configure the terminals that are on the perimeter of the access point coverage area to the slower transmit rate. A faster transmit rate provides better throughput. You should configure most of the terminals to the faster transmit range.

Syntax: LE*data*

Acceptable values for *data* are:

0 Maximum available
1 1 Mbps (Low)
2 2 Mbps (Standard)
5 5.5 Mbps (Medium)
11 11 Mbps (High)

Transmit Rate (continued)

Default: Maximum available

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Radio.

Bar Codes: Scan one of these bar codes:

Set Transmit Rate to Maximum Available

$+LE0

Set Transmit Rate to 1 Mbps

$+LE1

Set Transmit Rate to 2 Mbps

$+LE2

Set Transmit Rate to 5.5 Mbps

$+LE5

Set Transmit Rate to 11 Mbps

$+LE11

Transmit Rate Fallback

Terminals: 2415, 2425, 2435, 2455, 2475, and 2485/6 with 802.11b radios.

Description: Determines if the RF terminal will try slower rates than the specified transmit rate. A packet may be undeliverable to a device at a given rate due to interference or range limitations. If you enable this command, the terminal will attempt to deliver the packet at a slower rate, which may have greater range or increased interference tolerance.

Syntax: LF*data*

Acceptable values for *data* are:

0 Disabled
1 Enabled

Default: Enabled

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Radio.

Transmit Rate Fallback (continued)

Bar Codes: Scan one of these bar codes:

Disable Transmit Rate Fallback

$+LF0

Enable Transmit Rate Fallback

$+LF1

UPC/EAN

Terminals: All Trakker Antares terminals.

Description: Enables or disables the decoding of Universal Product Code (UPC)/European Article Numbering (EAN) symbology. UPC/EAN are fixed-length, numeric, continuous symbologies that use four element widths. A terminal that is configured to decode EAN bar codes can decode UPC, but the reverse is not true. UPC code is a subset of EAN code.

To define the UPC/EAN symbology, you set up to seven digits. The supplemental portion of a UPC or EAN label is a weak symbology and can be missed by the scanner for several reasons. In situations where supplementals are known to be present, reading just the main symbol can be prevented until a valid supplemental is found. When using a laser scanner, performance degradation is not noticeable.

The fifth, sixth, and seventh digits are optional. To set the sixth digit, you must set the fifth digit. To set the seventh digit, you must set all seven digits.

Syntax: CE*data*

where *data* must be 4 to 7 digits selected from this list:

First digit:	0	UPC-A/EAN-13 disabled
	1	UPC-A/EAN-13 enabled
	2	UPC-A only enabled
Second digit:	0	UPC-E disabled
	1	UPC-E enabled
	2	Expanded zeroes
Third digit:	0	EAN-8 disabled
	1	EAN-8 enabled
Fourth digit:	0	Supplementals not allowed
	1	Supplementals allowed
	2	Supplementals required
	3	Two-digit supplementals required
	4	Five-digit supplementals required

UPC/EAN (continued)

Fifth digit:	0	Discard check digit
	1	Transmit check digit
Sixth digit:	0	Discard number system digit
	1	Transmit number system digit
Seventh digit:	0	Discard the leading zero for UPC-A
	1	Retain the leading zero for UPC-A

Default: 1111111

First digit:	UPC-A/EAN-13 enabled
Second digit:	UPC-E enabled
Third digit:	EAN-8 enabled
Fourth digit:	Supplementals allowed
Fifth digit:	Transmit check digit
Sixth digit:	Transmit number system digit
Seventh digit:	Retain leading zero for UPC-A

Menu System: From the Main Menu, choose Configuration Menu, then Symbologies Menu, and then UPC/EAN.

Bar Codes: To disable UPC/EAN, scan this bar code:

Disable UPC/EAN

$+CE0000000

Or: To enable UPC/EAN:

1. Scan this bar code:

   Enter Accumulate Mode / Enable UPC/EAN

   +/$+CE

2. Scan one of these bar codes to set the first digit:

   Disable UPC/EAN-13

   0

   Enable UPC/EAN-13

   1

Enable UPC-A Only

2

3. Scan one of these bar codes to set the second digit:

Disable UPC-E

0

Enable UPC-E

1

Expand Zeroes

2

4. Scan one of these bar codes to set the third digit:

Disable EAN-8

0

Enable EAN-8

1

5. Scan one of these bar codes to set the fourth digit:

Supplementals Not Allowed

0

Supplementals Allowed

1

Supplementals Required

2

Two-Digit Supplementals Required

3

Five-Digit Supplementals Required

4

6. (Optional) Scan one of these bar codes to set the fifth digit:

Discard Check Digit

0

Transmit Check Digit

1

UPC/EAN (continued)

7. (Optional) Scan one of these bar codes to set the sixth digit:

Discard Number System Digit

0

Transmit Number System Digit

1

Note: If you discard the number system digit, one leading digit is discarded from UPC-A, UPC-E, and EAN-8, and two leading digits are discarded from EAN-13.

8. (Optional) If you enabled UPC-A/EAN-13, scan one of these bar codes to set the seventh digit:

Discard Leading Zero for UPC-A

0

Transmit Leading Zero for UPC-A

1

9. Scan this bar code:

Exit Accumulate Mode

-/

User Name

Terminals: 2415, 2425, 2435, 2455, 2475, and 2485/6 with an 802.11b radio and the 802.1x security option.

Description: Defines the user name of the terminal for 802.1x security. If you enter a user name that is longer than 32 characters, the string is truncated, and only the first 32 characters are used.

Syntax: LS*data*

Acceptable values for *data* are from 1 to 32 ASCII characters.

Default: anonymous

Note: You can use the default user name to make sure that your terminal can be authenticated. However, you must set a unique user name, password, and at least one server certificate common name for secure data transmission.

User Name (continued)

Menu System: From the Main Menu, choose Configuration Menu, Communications Menu, and then choose Radio.

Bar Codes: To set the default user name, scan this bar code:

Default User Name

$+LSanonymous

Or: To set the user name to an ASCII character string:

Note: To set this command using the bar code labels in Appendix B, you must configure the terminal to use Code 39 in Full ASCII mode. For help, see "Code 39" on page 6-28.

1. Scan this bar code:

   Enter Accumulate Mode / Set User Name

   +/$+LS

2. Scan a value for *data* from the "Full ASCII Bar Code Chart" in Appendix B. The user name can be from 1 to 32 characters.
3. Scan this bar code:

   Exit Accumulate Mode

   -/

Wakeup On Broadcast

Terminals: 2415, 2425, 2435, 2455, 2475, and 2485/6 with OpenAir radios.

Description: Determines if the RF terminal can receive broadcast messages sent from the network. If the wakeup on broadcast is enabled, the radio on the RF terminal will turn on to receive broadcast messages. If this command is disabled, the terminal radio will ignore broadcast messages.

Power Management Tip: For 241X, 242X, and 243X terminals, if your network has many broadcast messages, you may want to disable the Wakeup On Broadcast command to preserve the battery pack's power.

Wakeup On Broadcast (continued)

Syntax: RB*data*

Acceptable values for *data* are:

0 Disabled
1 Enabled

Default: Disabled

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Radio.

Bar Codes: Scan one of these bar codes:

Disable Wakeup On Broadcast

$+RB0

Enable Wakeup On Broadcast

$+RB1

WEP Encryption

Terminals: 2415, 2425, 2435, 2455, 2475, and 2485/6 with 802.11b radios.

Note: If you have a terminal with the 802.1x security option, the WEP Encryption command is managed by the 802.1x security feature. This command cannot be configured manually.

Description: Determines if you want the RF terminal to use the Wired Equivalent Privacy (WEP) algorithm for data encryption of wireless communications. WEP protects the transmitted data using a 64-bit or 128-bit seed key and the RC4 encryption algorithm. However, when WEP is enabled, it only protects the data packet information. It does not protect the physical layer header, so other devices on the network can listen to the control data needed to manage the network.

Syntax: LK*data*

Acceptable values for *data* are:

0 Disabled
1 Enabled

Default: Disabled

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Radio.

WEP Encryption (continued)

Bar Codes: Scan one of these bar codes:

Disable WEP Encryption

$+LK0

Enable WEP Encryption

$+LK1

WEP Key

Terminals: 2415, 2425, 2435, 2455, 2475, and 2485/6 with 802.11b radios.

Note: The WEP Key command cannot be manually configured on terminals with the 802.1x security option.

Description: Sets the values for the WEP default keys. The RF terminal can receive a WEP encryption that uses any of four WEP keys. The WEP keys must appear in the same order on both the access point and the RF terminal.

WEP 64 has four 40-bit encryption keys and one 24-bit initialization vector (IV) key. For WEP 64, you enter 5 ASCII characters, printable or nonprintable, or 5 hex pairs for the key. WEP 128 provides a higher level of security and has four 104-bit encryption keys and one 24-bit IV key. For WEP 128, you enter 13 ASCII characters, printable or nonprintable, or 13 hex pairs for the key.

If you enter fewer than the required number of ASCII characters or hex pairs, the key is not saved. If you enter more than the required ASCII characters or hex pairs, the key is truncated.

Note: You need to enable the WEP Encryption command before you set the WEP key values.

Syntax:

LM*data*	WEP Key 1
LN*data*	WEP Key 2
LO*data*	WEP Key 3
LP*data*	WEP Key 4

For WEP 64, acceptable values for *data* are 5 ASCII characters or 5 hex pairs. For WEP 128, acceptable values for *data* are 13 ASCII characters or 13 hex pairs. If you use hex pairs, you must enter:

`0x`*nn*

before you enter multiple values for *data* where *nn* is the hexadecimal values of the nonprintable characters. For example, to use a carriage return (0x0C) as a value in a WEP key string, send this command:

```
$+LM0X41420D4142
```

WEP Key (continued)

The following value is returned:

```
AB<cr>AB
```

Note: If you use nonprintable ASCII characters using the TRAKKER Antares 2400 Menu System, you must enter:

```
\xnn
```

where *nn* is the hexadecimal value of a single nonprintable character. You may not enter a character with a value of \x00 using the menu system. For example, to use a carriage return (0x0C) as a value in a WEP key string, enter this value:

```
AB\x0xAB
```

The following value is returned:

```
AB<cr>AB
```

Default: WEP Key 1 is set to 80211 for WEP 64.

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Radio.

Bar Codes: To set the default value for WEP key 1, scan this bar code:

Set WEP Key 1 to 80211

$+LM80211

Or: To set a WEP key:

Note: To set this command using the bar code labels in Appendix B, you must configure the terminal to use Code 39 in Full ASCII mode. For help, see "Code 39" on page 6-28.

1. Scan this bar code:

   Enter Accumulate Mode

   +/

2. Scan one of these bar codes to set a WEP key:

   Set WEP Key 1

   $+LM

   Set WEP Key 2

   $+LN

WEP Key (continued)

Set WEP Key 3

$+LO

Set WEP Key 4

$+LP

3. Scan a value for *data* from the "Full ASCII Bar Code Chart" in Appendix B. The WEP key should be five ASCII characters.
4. Scan this bar code:

Exit Accumulate Mode

-/

WEP Transmit Key

Terminals: 2415, 2425, 2435, 2455, 2475, and 2485/6 with 802.11b radios.

Note: The WEP Transmit Key command cannot be manually configured on terminals with the 802.1x security option.

Description: Determines which of the four WEP keys the RF terminal uses to transmit data. You can set this parameter to a value from 1 to 4. The default value is 1, which indicates that the RF terminal uses WEP Key 1. The access point and the RF terminal must use the same WEP transmit key.

Note: You need to enable the WEP Encryption command and set the WEP key values before you can select a WEP transmit key.

Syntax: LL*data*

Acceptable values for *data* are any number from 1 to 4.

Default: 1

Menu System: From the Main Menu, choose Configuration Menu, then Communications Menu, and then Radio.

WEP Transmit Key (continued)

Bar Codes: To set the default WEP transmit key, scan this bar code:

Default WEP Transmit Key

$+LL1

Or: To set the WEP transmit key:

1. Scan this bar code:

   Enter Accumulate Mode / Set WEP Transmit Key

   +/$+LL

2. Scan a numeric value for *data* from these bar codes:

   1

   2

   3

   4

3. Scan this bar code:

   Exit Accumulate Mode

   -/

A

Default Configurations and Command Syntax

This appendix lists the default configuration values and provides a configuration command reference list in alphabetical order by command syntax.

Default Configuration

The next tables list the terminal's default configuration values. You can use the TRAKKER Antares 2400 Menu System to set the terminal to the default configuration. For help, see "Restoring the Terminal's Default Configuration" in Chapter 2.

Not all configuration commands apply to all terminals. To determine which commands apply to your Trakker Antares® terminal, see "Configuration Commands Listed by Category" in Chapter 6.

Default Configuration

Bar Code Symbology

Parameter	Default Value
Codabar	Disabled
Code 11	Disabled
Code 2 of 5	Disabled
Code 39	Full ASCII Code 39 enabled with no check digit
Code 93	Disabled
Code 128	Standard
Interleaved 2 of 5	Disabled
MSI	Disabled
PDF 417	Disabled
Plessey	Disabled
UPC/EAN	UPC-A/EAN-13 enabled, UPC-E and EAN-8 enabled, supplementals allowed, transmit check digit, transmit number system digit, and retain leading zero for UPC-A

Default Configuration for Operations (continued)

Operations Parameter	Default Value
Append Time	Disabled
Automatic Shutoff	0 minutes (disabled)
Beep Duration	150 ms high, 50 ms low (243X) 50 ms high, 50 ms low (241X, 242X, 2455, 246X, 2475, 248X)
Beep Frequency	2400 Hz high, 1400 Hz low (241X) 1900 Hz high, 1050 Hz low (243X) 2400 Hz high, 1200 Hz low (242X, 2455, 2475, 248X)
Beep Volume	Very loud
Character Set	U.S. ASCII
Command Processing	All reader commands enabled
Decode Security	Moderate
Display Backlight Timeout	10 seconds
Display Spacing	00000 (8x8 font size, no column spacing, no row spacing)
Display Contrast	3 (maximum contrast)
Display Font Type	8x16 font
Display Row Spacing	0
Display Video Mode	Original
Flash Memory Configuration	0 (flash memory for double-byte fonts)
Keypad Caps Lock	Caps lock off
Keypad Clicker	Enabled
Keypad Control	Enabled
Keypad Type	Hardware default
Postamble	No characters (disabled)
Preamble	No characters (disabled)
RAM Drive Size	0 (no RAM drive)
Resume Execution	Allowed
Scan Ahead	Disabled
Scanner Mode	One-Shot mode
Scanner Redundancy	Normal

Default Configuration for Operations (continued)

Operations Parameter	Default Value
Scanner Selection	Specific integrated scanner installed on the terminal (integrated scanners). All compatible scanners (tethered scanners)
Scanner Timeout	Disabled (no timeout)
Scanner Trigger	Level triggering
Suspend/Resume Control	Enabled
Symbology Identifiers	000 (All symbology identifiers disabled)
Time and Date	The date of the most recent firmware installation or upgrade. (See note below.)
Time in Seconds	Disabled

Note: When you restore the default configuration, Time and Date is not reset to the default value. Time and Date only returns to its default value when you boot the system, upgrade the firmware, or perform a destructive reset.

Serial Network Parameter	Default Value
Baud Rate	19200
Configuration Commands Via Serial Port	Enabled without TMF
Data Bits	7
End of Message (EOM)	\x03 (hexadecimal value for ETX)
Flow Control	0 (no flow control)
Handshake	Disabled
LRC (Longitudinal Redundancy Check)	Disabled
Modem Dial Sequence	0 (no dial sequence)
Modem Initialization Sequence	0 (auto rate)
Multi-Drop Address	A
Parity	Even
Poll (Polling)	Disabled
RS-232 or RS-422/485 COM2 Interface	RS-232
Scanner Port (2455 COM4 only)	Scanner enabled
Serial Port Protocol	Configurable
Start of Message (SOM)	\x02 (hexadecimal value for STX)
Stop Bits	1
Timeout Delay	10 seconds

Default Configuration for RF or Ethernet Communications (continued)

RF or Ethernet Network Parameter	Default Value
Acknowledgement Delay Lower Limit	300 ms
Acknowledgement Delay Upper Limit	5000 ms
AP MAC Address	None
Controller Connect Check Receive Timer	60 seconds
Controller Connect Check Send Timer	35 seconds
Controller IP Address	0.0.0.0
Default Router	0.0.0.0
DHCP (Controller)	Disabled
DHCP (Terminal)	Enabled
Host IP Address	0.0.0.0
Internet Control Message Protocol (ICMP)	Disabled
Maximum Retries	7
Network Activate	Disabled
Network Loopback	Disabled
Network Port	23 (Telnet) for a TCP/IP network 5555 for a UDP Plus network
Radio MAC Address	None
Subnet Mask	255.255.255.0
TCP Maximum Retries	12
TCP/IP Maximum Transmit Timeout	20 seconds
Terminal IP Address	0.0.0.0

OpenAir RF Network Parameter	Default Value
Domain	0
Inactivity Timeout	5 seconds
Roaming Flag	Allowed
Security Identification (ID)	None
Transmit Mode	BFSK
Wakeup On Broadcast	No (disabled)

Default Configuration for 802.11b RF Communications (continued)

802.11b RF Network Parameter	Default Value
AP Density	Low
Maximum Sleep Duration	100 ms
Medium Reservation	Enabled
Microwave Robustness	Disabled
Network Name	INTERMEC
Power Management	Enhanced
Receive All Multicast	Enabled
Reservation Threshold	500
Station Name	TRAKKER 2400
Transmit Rate	Maximum available
Transmit Rate Fallback	Enabled
WEP Encryption	Disabled
WEP Key	80211 (set for WEP 64 on WEP Key 1)
WEP Transmit Key	1

802.11b with 802.1x Security Network Parameter	Default Value
Password	anonymous
Server 1 Certificate Common Name	None
Server 2 Certificate Common Name	None
User Name	anonymous

Configuration Commands by Syntax

The next table lists all of the configuration commands that are available on the Trakker Antares terminals. The configuration commands are listed in alphabetic order by syntax. For a list of configuration commands by category, see "Configuration Commands Listed by Category" in Chapter 6.

Syntax	Command	For Help, See Page
None	DHCP (Terminal)	6-57
AD*data*	Preamble	6-110
AE*data*	Postamble	6-108
BD*databeep*	Beep Duration	6-18
BF*data*	Beep Frequency	6-20
BV*data*	Beep Volume	6-22
CA*data*	Interleaved 2 of 5 Code (I 2 of 5)	6-79
CB*data*	Code 39	6-28
CC*data*	Code 2 of 5 (2 of 5)	6-26
CD*data*	Codabar	6-24
CE*data*	UPC/EAN	6-154
CF*data*	Code 93	6-32
CG*data*	Code 11	6-26
CH*data*	Code 128	6-32
CI*data*	Plessey	6-105
CN*data*	MSI	6-95
CQ*data*	PDF 417	6-105
CS*data*	Decode Security	6-53
CY*data*	Symbology Identifiers	6-138
DA*data*	Time in Seconds	6-148
DB*data*	Time and Date	6-147
DC*data*	Command Processing	6-41
DE*data*	Append Time	6-14
DF*data*	Display Backlight Timeout	6-58
DJ*data*	Display Contrast	6-60
DK*data*	Display Spacing	6-63
DL*data*	Display Row Spacing	6-62

Configuration Commands by Syntax (continued)

Syntax	Command	For Help, See Page
DN*data*	Display Video Mode	6-66
DT*data*	Display Font Type	6-61
DX*data*	Character Set	6-23
EF*data*	Suspend/Resume Control	6-137
ER*data*	Resume Execution	6-116
EZ*data*	Automatic Shutoff	6-14
FF*data*	Flash Memory Configuration	6-70
FR*data*	RAM Drive Size	6-112
IX*data*	Scanner Port (COM4)	6-120
KA*data*	Keypad Caps Lock	6-81
KC*data*	Keypad Clicker	6-82
KE*data*	Keypad Control	6-82
KT*data*	Keypad Type	6-83
LA*data*	Network Name	6-99
LB*data*	Station Name	6-134
LC*data*	Medium Reservation	6-91
LD*data*	Reservation Threshold	6-115
LE*data*	Transmit Rate	6-152
LF*data*	Transmit Rate Fallback	6-153
LG*data*	AP Density	6-12
LH*data*	Power Management	6-110
LI*data*	Maximum Sleep Duration	6-89
LJ*data*	Receive All Multicast	6-114
LK*data*	WEP Encryption	6-159
LL*data*	WEP Transmit Key	6-162
LM*data*	WEP Key 1	6-160
LN*data*	WEP Key 2	6-160
LO*data*	WEP Key 3	6-160
LP*data*	WEP Key 4	6-160
LQ*data*	Microwave Robustness	6-91
LS*data*	User Name	6-157
LT*data*	Password	6-103

Configuration Commands by Syntax (continued)

Syntax	Command	For Help, See Page
LU*data*	Server 1 Certificate Common Name	6-130
LV*data*	Server 2 Certificate Common Name	6-130
NA*data*	Network Activate	6-98
NC*data*	Controller IP Address (UDP Plus network)	6-50
NC*data*	Host IP Address (TCP/IP network)	6-75
ND*data*	Terminal IP Address	6-145
NG*data*	Network Port	6-100
NH*data*	TCP/IP Maximum Transmit Timeout	6-144
NI*data*	DHCP (Controller)	6-56
NJ*data*	TCP Maximum Retries	6-143
NL*data*	Network Loopback	6-98
NP*data*	Controller Connect Check Receive Timer	6-47
NQ*data*	Controller Connect Check Send Timer	6-49
NR*data*	Maximum Retries	6-88
NS*data*	Subnet Mask	6-136
NU*data*	Acknowledgement Delay Upper Limit	6-11
NVdata	Acknowledgement Delay Lower Limit	6-10
NX*data*	Default Router	6-54
NZ*data*	ICMP (Internet Control Message Protocol)	6-77
RA	AP MAC Address	6-13
RB*data*	Wakeup On Broadcast	6-158
RI	Radio MAC Address	6-112
RR*data*	Roaming Flag	6-118
RS*data*	Security Identification	6-127
RT*data*	Transmit Mode	6-151
RW*data*	Domain	6-67
RY*data*	Inactivity Timeout	6-78
SA*data*	Scanner Timeout	6-124
SB*data*	Scanner Mode	6-119
SC*data*	Scanner Trigger	6-126
SD*data*	Scan Ahead	6-118
SR*data*	Scanner Redundancy	6-121

Configuration Commands by Syntax (continued)

Syntax	Command	For Help, See Page
SS*data*	Scanner Selection	6-122
YA*n.data*	Baud Rate	6-16
YB*n.data*	Parity	6-102
YC*n.data*	Stop Bits	6-135
YD3.*data*	Modem Dial Sequence	6-92
YE*n.data*	Timeout Delay	6-149
YF*n.data*	LRC (Longitudinal Redundancy Check)	6-87
YI*n.data*	Data Bits	6-52
YJ*n.data*	Handshake (also known as AFF)	6-74
YK2.*data*	RS-232 or RS-422/485 COM2 Interface	6-117
YL*n.data*	Flow Control	6-72
YM3.*data*	Modem Initialization Sequence	6-94
YN2.*data*	Multi-Drop Address	6-96
YR*n.data*	Poll (Polling)	6-106
YT*n.data*	Configuration Commands Via Serial Port	6-45
YU*n.data*	Serial Port Protocol	6-128
YY*n.data*	Start of Message (SOM)	6-132
YZ*n.data*	End of Message (EOM)	6-68

B

Full ASCII Charts

This appendix contains the full ASCII table and the full ASCII chart of Code 39 bar code labels.

Full ASCII Table

This table lists the ASCII characters and their binary, hexadecimal, and Code 39 equivalents.

Full ASCII Table

Binary[0]	Hex[1]	Decimal	Code 39	ASCII[2]	Binary[0]	Hex[1]	Decimal	Code 39	ASCII[2]
00000000	00	00	%U	NUL	00100000	20	32	SP	SP[3]
00000001	01	01	$A	SOH	00100001	21	33	/A	!
00000010	02	02	$B	STX	00100010	22	34	/B	"
00000011	03	03	$C	ETX	00100011	23	35	/C	#
00000100	04	04	$D	EOT	00100100	24	36	/D	$
00000101	05	05	$E	ENQ	00100101	25	37	/E	%
00000110	06	06	$F	ACK	00100110	26	38	/F	&
00000111	07	07	$G	BEL	00100111	27	39	/G	'
00001000	08	08	$H	BS	00101000	28	40	/H	(
00001001	09	09	$I	HT	00101001	29	41	/I	)
00001010	0A	10	$J	LF	00101010	2A	42	/J	*
00001011	0B	11	$K	VT	00101011	2B	43	/K	+
00001100	0C	12	$L	FF	00101100	2C	44	/L	,
00001101	0D	13	$M	CR	00101101	2D	45	/M	-
00001110	0E	14	$N	SO	00101110	2E	46	/N	.
00001111	0F	15	$O	SI	00101111	2F	47	/O	/
00010000	10	16	$P	DLE	00110000	30	48	/P[4]	0
00010001	11	17	$Q	DC1	00110001	31	49	/Q	1
00010010	12	18	$R	DC2	00110010	32	50	/R	2
00010011	13	19	$S	DC3	00110011	33	51	/S	3
00010100	14	20	$T	DC4	00110100	34	52	/T	4
00010101	15	21	$U	NAK	00110101	35	53	/U	5
00010110	16	22	$V	SYN	00110110	36	54	/V	6
00010111	17	23	$W	ETB	00110111	37	55	/W	7
00011000	18	24	$X	CAN	00111000	38	56	/X	8
00011001	19	25	$Y	EM	00111001	39	57	/Y	9
00011010	1A	26	$Z	SUB	00111010	3A	58	/Z	:
00011011	1B	27	%A	ESC	00111011	3B	59	%F	;
00011100	1C	28	%B	FS	00111100	3C	60	%G	<
00011101	1D	29	%C	GS	00111101	3D	61	%H	=
00011110	1E	30	%D	RS	00111110	3E	62	%I	>
00011111	1F	31	%E	US	00111111	3F	63	%J	?

Full ASCII Table (continued)

Binary[0]	Hex[1]	Decimal	Code 39	ASCII[2]	Binary[0]	Hex[1]	Decimal	Code 39	ASCII[2]
01000000	40	64	%V	@	01100000	60	96	%W	`
01000001	41	65	A	A	01100001	61	97	+A	a
01000010	42	66	B	B	01100010	62	98	+B	b
01000011	43	67	C	C	01100011	63	99	+C	c
01000100	44	68	D	D	01100100	64	100	+D	d
01000101	45	69	E	E	01100101	65	101	+E	e
01000110	46	70	F	F	01100110	66	102	+F	f
01000111	47	71	G	G	01100111	67	103	+G	g
01001000	48	72	H	H	01101000	68	104	+H	h
01001001	49	73	I	I	01101001	69	105	+I	i
01001010	4A	74	J	J	01101010	6A	106	+J	j
01001011	4B	75	K	K	01101011	6B	107	+K	k
01001100	4C	76	L	L	01101100	6C	108	+L	l
01001101	4D	77	M	M	01101101	6D	109	+M	m
01001110	4E	78	N	N	01101110	6E	110	+N	n
01001111	4F	79	O	O	01101111	6F	111	+O	o
01010000	50	80	P	P	01110000	70	112	+P	p
01010001	51	81	Q	Q	01110001	71	113	+Q	q
01010010	52	82	R	R	01110010	72	114	+R	r
01010011	53	83	S	S	01110011	73	115	+S	s
01010100	54	84	T	T	01110100	74	116	+T	t
01010101	55	85	U	U	01110101	75	117	+U	u
01010110	56	86	V	V	01110110	76	118	+V	v
01010111	57	87	W	W	01110111	77	119	+W	w
01011000	58	88	X	X	01111000	78	120	+X	x
01011001	59	89	Y	Y	01111001	79	121	+Y	y
01011010	5A	90	Z	Z	01111010	7A	122	+Z	z
01011011	5B	91	%K	[	01111011	7B	123	%P	{
01011100	5C	92	%L	\	01111100	7C	124	%Q	|
01011101	5D	93	%M	]	01111101	7D	125	%R	}
01011110	5E	94	%N	^	01111110	7E	126	%S	~
01011111	5F	95	%O	_	01111111	7F	127	%T[5]	n[6]

Notes for the Full ASCII Table

0 Bit positions are 76543210.
1 This column lists the hexadecimal value.
2 This column lists the ASCII character.
3 SP is the SPACE character.
4 The Code 39 characters /P through /Y may be interchanged with the numbers 0 through 9.
5 %T may be interchanged with %X or %Y or %Z.
6 n is the Delete character.

Full ASCII Control Characters Table

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

Full ASCII Bar Code Chart

The charts in this section list the Code 39 bar code label for each ASCII character. To use these bar code labels, you must configure the Trakker Antares terminal to use Code 39 in Full ASCII mode. For help, see "Code 39" in Chapter 6.

Control Characters

NUL

%U

SOH

$A

STX

$B

ETX

$C

EOT

$D

ENQ

$E

ACK

$F

BEL

$G

BS

$H

HT

$I

LF

$J

VT

$K

FF

$L

CR

$M

SO

$N

SI

$O

DLE

$P

DC1

$Q

DC2

$R

DC3

$S

DC4

$T

NAK

$U

SYN

$V

ETB

$W

Control Characters (continued)

CAN

$X

EM

$Y

SUB

$Z

ESC

%A

FS

%B

GS

%C

RS

%D

US

%E

DEL

%T

Symbols and Punctuation Marks

! (exclamation point)

/A

" (quotation marks)

/B

#

/C

$

/D

%

/E

&

/F

' (apostrophe)

/G

(

/H

)

/I

* (asterisk)

/J

+

/K

- (dash)

/M

/

/O

=

%H

. (period)

/N

, (comma)

/L

: (colon)

/Z

; (semicolon)

%F

Symbols and Punctuation Marks (continued)

?

%J

<

%G

>

%I

@

%V

[

%K

]

%M

~ (tilde)

%S

^

%N

_ (underline)

%O

\

%L

` (left single quote)

%W

¦ (pipe)

%Q

{

%P

}

%R

Space

* *

Numbers

0

0

1

1

2

2

3

3

4

4

5

5

6

6

7

7

8

8

9

9

Uppercase Letters

A

A

B

B

C

C

D

D

E

E

F

F

G

G

H

H

I

I

J

J

K

K

L

L

M

M

N

N

O

O

P

P

Q

Q

R

R

S

S

T

T

U

U

V

V

W

W

X

X

Y

Y

Z

Z

Lowercase Letters

a

+A

b

+B

c

+C

d

+D

e

+E

f

+F

g

+G

h

+H

i

+I

j

+J

k

+K

l

+L

m

+M

n

+N

o

+O

p

+P

q

+Q

r

+R

s

+S

t

+T

u

+U

v

+V

w

+W

x

+X

y

+Y

z

+Z

C

International Character Support

This appendix lists some of the international characters that the terminal can display.

Trakker Antares Terminal Font Set

The Trakker Antares terminals use an English and Western European font set that supports languages such as French, German, Italian, Portuguese, and Spanish. The terminals can also use a Japanese Katakana font set. You can develop applications that display the characters in either of the terminal font sets.

Note: The Japanese Katakana font set is not available for the 246X, 2480, and 2485 terminals.

English and Western European Font Set

This table lists the characters that you can display on the terminal. The decimal, scan code, and hexadecimal values are the same for all programmable keypads and overlays. The terminal keys that are listed in the table are an example of the terminal keys that you press to display the character. Other keypads and overlays may require that you press different terminal keys to display the character.

Note: The terminal character set is similar to Microsoft's DOS Code Page 850 with the exception of decimal characters 1 through 6 and 10 through 13. These characters were replaced to provide additional line draw capability.

Character	Terminal Keys	Decimal	Scan Code	Hexadecimal
Space	Ctrl 0	0	03	00
╧	Ctrl A	1	1E	01
╨	Ctrl B	2	30	02
╤	Ctrl C	3	2E	03
╥	Ctrl D	4	20	04
╙	Ctrl E	5	12	05
╘	Ctrl F	6	21	06
·	Ctrl G	7	22	07
		8	0E	08
o	Ctrl I	9	0F	09
		10	24	0A
╒	Ctrl K	11	25	0B
╓	Ctrl L	12	26	0C

English and Western European Font Set (continued)

Character	Terminal Keys	Decimal	Scan Code	Hexadecimal
╫		13	32	0D
╪	Ctrl N	14	31	0E
	Ctrl O	15	18	0F
	Ctrl P	16	19	10
	Ctrl Q	17	10	11
	Ctrl R	18	13	12
	Ctrl S	19	1F	13
¶	Ctrl T	20	14	14
§	Ctrl U	21	16	15
;	Ctrl V	22	2F	16
	Ctrl W	23	11	17
⎫	Ctrl X	24	2D	18
⎭	Ctrl Y	25	15	19
⎬	Ctrl Z	26	2C	1A
⎩	Ctrl esc	27	01	1B
⎿	Ctrl F1	28	2B	1C
	Ctrl F2	29	1B	1D
	Ctrl F3 / Ctrl 6	30	07	1E
	Ctrl F4	31	0C	1F
Space	f ←	32	39	20
!	⇧ 1	33	02	21
"	f M	34	28	22
#	⇧ 3	35	04	23
$	⇧ 4	36	05	24
%	⇧ 5	37	06	25
&	⇧ 7	38	08	26
’	f S	39	28	27
(	⇧ 9	40	0A	28
)	⇧ 0	41	0B	29

English and Western European Font Set (continued)

Character	Terminal Keys	Decimal	Scan Code	Hexadecimal
*	⇧ 8	42	09	2A
+	f C	43	0D	2B
, (comma)	f V	44	33	2C
- (dash)	f H	45	0C	2D
. (period)	. / f W	46	34	2E
/	f O / f X	47	3F	2F
0	0	48	0B	30
1	1	49	02	31
2	2	50	03	32
3	3	51	04	33
4	4	52	05	34
5	5	53	06	35
6	6	54	07	36
7	7	55	08	37
8	8	56	09	38
9	9	57	0A	39
:	f F	58	27	3A
;	f L	59	27	3B
<	f P / f 2	60	33	3C
=	f I	61	0D	3D
>	f 3	62	34	3E
?	f R	63	35	3F
@	⇧ 2	64	03	40
A	⇧ A	65	1E	41
B	⇧ B	66	30	42
C	⇧ C	67	2E	43
D	⇧ D	68	20	44
E	⇧ E	69	12	45
F	⇧ F	70	21	46
G	⇧ G	71	22	47

English and Western European Font Set (continued)

Character	Terminal Keys	Decimal	Scan Code	Hexadecimal
H	⇧ H	72	23	48
I	⇧ I	73	17	49
J	⇧ J	74	24	4A
K	⇧ K	75	25	4B
L	⇧ L	76	26	4C
M	⇧ M	77	32	4D
N	⇧ N	78	31	4E
O	⇧ O	79	18	4F
P	⇧ P	80	19	50
Q	⇧ Q	81	10	51
R	⇧ R	82	13	52
S	⇧ S	83	1F	53
T	⇧ T	84	14	54
U	⇧ U	85	16	55
V	⇧ V	86	2F	56
W	⇧ W	87	11	57
X	⇧ X	88	2D	58
Y	⇧ Y	89	15	59
Z	⇧ Z	90	2C	5A
[	f J	91	1A	5B
\	f T	92	2B	5C
]	f K	93	1B	5D
^	⇧ 6	94	07	5E
_ (underline)	f B	95	0C	5F
`	f G	96	29	60
a	A	97	1E	61
b	B	98	30	62
c	C	99	2E	63
d	D	100	20	64

English and Western European Font Set (continued)

Character	Terminal Keys	Decimal	Scan Code	Hexadecimal
e	E	101	12	65
f	F	102	21	66
g	G	103	22	67
h	H	104	23	68
i	I	105	17	69
j	J	106	24	6A
k	K	107	25	6B
l	L	108	26	6C
m	M	109	32	6D
n	N	110	31	6E
o	O	111	18	6F
p	P	112	19	70
q	Q	113	10	71
r	R	114	13	72
s	S	115	1F	73
t	T	116	14	74
u	U	117	16	75
v	V	118	2F	76
w	W	119	11	77
x	X	120	2D	78
y	Y	121	15	79
z	Z	122	2C	7A
{	f D	123	1A	7B
| (solid pipe)	f Q	124	2B	7C
}	f E	125	1B	7D
~	f A	126	29	7E
		127	53E0	7F
Ç	f D	128	2E	80
ü	f F3 U	129	16	81

English and Western European Font Set (continued)

Character	Terminal Keys	Decimal	Scan Code	Hexadecimal
é	=f F4 E	130	12	82
â	=f F1 A	131	1E	83
ä	=f F3 A	132	1E	84
à	=f F2 A	133	1E	85
å	=f A	134	1A	86
ç	=f C	135	2E	87
ê	=f F1 E	136	12	88
ë	=f F3 E	137	12	89
è	=f F2 E	138	12	8A
ï	=f F3 I	139	17	8B
î	=f F1 I	140	17	8C
ì	=f F2 I	141	17	8D
Ä	=f F3 ⇧ A	142	1E	8E
Å	=f B	143	1A	8F
É	=f F4 ⇧ E	144	12	90
æ		145	4F00	91
Æ		146	7100	92
ô	=f F1 O	147	18	93
ö	=f F3 O	148	18	94
ò	=f F2 O	149	18	95
û	=f F1 U	150	16	96
ù	=f F2 U	151	16	97
ÿ	=f F3 Y	152	15	98
Ö	=f F3 ⇧ O	153	18	99
Ü	=f F3 ⇧ U	154	16	9A
ø		155	E00D	9B
£	=f 5	156	08	9C
Ø		157	50E0	9D
×		158	4BE0	9E

English and Western European Font Set (continued)

Character	Terminal Keys	Decimal	Scan Code	Hexadecimal
ƒ		159	4DE0	9F
á	=f F4 A	160	1E	A0
í	=f F4 I	161	17	A1
ó	=f F4 O	162	18	A2
ú	=f F4 U	163	16	A3
ñ	=f I	164	27	A4
Ñ	=f J	165	27	A5
a	=f 8	166	29	A6
o	=f 9	167	29	A7
¿	=f R	168	0D	A8
®		169	1C0A	A9
¬ (not symbol)	=f 6	170	29	AA
½	=f X	171	06	AB
¼	=f W	172	05	AC
¡	=f S	173	0D	AD
«	=f K	174	2C	AE
»	=f F	175	2D	AF
░		176	04F5	B0
▒		177	78E0	B1
▓		178	7900	B2
│		179	7A00	B3
┤		180	1BCF	B4
Á	=f F4 ⇧ A	181	1E	B5
Â	=f F1 ⇧ A	182	1E	B6
À	=f F2 ⇧ A	183	1E	B7
©		184	29A6	B8
╣		185	29A7	B9
║		186	0100	BA
╗		187	A500	BB

English and Western European Font Set (continued)

Character	Terminal Keys	Decimal	Scan Code	Hexadecimal
╝		188	6000	BC
¢		189	6100	BD
¥		190	6200	BE
┐		191	6300	BF
└		192	A600	C0
┴		193	1A86	C1
┬		194	1A8F	C2
├		195	2E87	C3
─		196	2E80	C4
┼		197	0DF8	C5
Ã		198	1E	C6
Ã		199	1E	C7
╚		200	2300	C8
╔		201	27A4	C9
╩		202	27A5	CA
╦		203	2CAE	CB
╠		204	2600	CC
═		205	32E6	CD
╬		206	1FE1	CE
¤	=f 4	207	1B	CF
ð		208	1900	D0
Ð		209	1000	D1
Ê	=f F1 ⇧ E	210	12	D2
Ë	=f F3 ⇧ E	211	12	D3
È	=f F2 ⇧ E	212	12	D4
€	⇧ . / =f U	213	5C	D5
Í	=f F4 ⇧ I	214	17	D6
Î	=f F1 ⇧ I	215	17	D7
Ï	=f F3 ⇧ I	216	17	D8

English and Western European Font Set (continued)

Character	Terminal Keys	Decimal	Scan Code	Hexadecimal
┘		217	07F3	D9
┌		218	2C00	DA
▉		219	6D00	DB
■		220	0F00	DC
¦ (broken pipe)	_f N	221	56	DD
Ì	=f F2 ⇧ I	222	17	DE
■		223	5A00	DF
Ó	_f .	224	52 / 78	E0
β	=f N	225	1F	E1
Ô	=f F1 ⇧ O	226	18	E2
Ò	=f F2 ⇧ O	227	18	E3
õ		228	18	E4
Õ		229	18	E5
µ	=f M	230	32	E6
Þ		231	4100	E7
þ		232	4200	E8
Ú	=f F4 ⇧ U	233	16	E9
Û	=f F1 ⇧ U	234	16	EA
Ù	=f F2 ⇧ U	235	16	EB
ý	=f F4 Y	236	15	EC
Ý	=f F4 ⇧ Y	237	15	ED
¯		238	2EBD	EE
´	_f S	239	2EEE	EF
-	=f .	240	None	F0
±		241	None	F1
=	_f I	242	None	F2
¾	=f Y	243	07	F3
¶	=f O	244	13	F4
§	=f 0	245	04	F5

English and Western European Font Set (continued)

Character	Terminal Keys	Decimal	Scan Code	Hexadecimal
÷		246	None	F6
¸		247	None	F7
° (degree)	=f E / =f G	248	0D	F8
¨		249	None	F9
• (dot)		250	None	FA
¹ (superscript)	=f T	251	02	FB
³ (superscript)	=f V	252	04	FC
² (superscript)		253	None	FD
■		254	None	FE
Space		255	None	FF

Japanese Katakana Font Set

This table lists the characters that you can display on the terminal using the 8x16 font grid type or the 16x16 font grid type. To display these characters, you create an application and use the Trakker Antares PSK functions im_putchar_kana_8x16 and im_puts_kana_8x16. You cannot enter these characters from the keypad. For help, see the *Trakker Antares PSK Reference Manual* in the *Trakker Antares Application Development Tools System Manual* (P/N 064433).

Note: The terminal character set is similar to Microsoft's DOS Code Page 897, Japanese #1.

Character	Decimal	Hexadecimal	Character	Decimal	Hexadecimal
Space	0	00		23	17
│	1	01	¢	25	19
┤	2	02	→	26	1A
┐	3	03	←	27	1B
└	4	04		28	1C
┴	5	05	¬	29	1D
┬	6	06		30	1E
├	7	07	!	33	21
─	8	08	"	34	22
┼	9	09	#	35	23
┘	10	0A	$	36	24
┌	11	0B	%	37	25
▒ (horiz. lines)	12	0C	&	38	26
▒ (vert. lines)	13	0D	’	39	27
▉	14	0E	(	40	28
	15	0F	)	41	29
►	16	10	*	42	2A
◄	17	11	+	43	2B
↕	18	12	,	44	2C
✕	20	14	-	45	2D
◷	21	15	.	46	2E
	22	16	/	47	2F

Japanese Katakana Character Set (continued)

Character	Decimal	Hexadecimal	Character	Decimal	Hexadecimal
0	48	30	M	77	4D
1	49	31	N	78	4E
2	50	32	O	79	4F
3	51	33	P	80	50
4	52	34	Q	81	51
5	53	35	R	82	52
6	54	36	S	83	53
7	55	37	T	84	54
8	56	38	U	85	55
9	57	39	V	86	56
:	58	3A	W	87	57
;	59	3B	X	88	58
<	60	3C	Y	89	59
=	61	3D	Z	90	5A
>	62	3E	[	91	5B
?	63	3F	¥	92	5C
@	64	40	]	93	5D
A	65	41	^	94	5E
B	66	42	_	95	5F
C	67	43	‘	96	60
D	68	44	a	97	61
E	69	45	b	98	62
F	70	46	c	99	63
G	71	47	d	100	64
H	72	48	e	101	65
I	73	49	f	102	66
J	74	4A	g	103	67
K	75	4B	h	104	68
L	76	4C	i	105	69

Japanese Katakana Character Set (continued)

Character	Decimal	Hexadecimal	Character	Decimal	Hexadecimal
j	106	6A	.	169	A9
k	107	6B	¾	170	AA
l	108	6C	À	171	AB
m	109	6D	Á	172	AC
n	110	6E	½	173	AD
o	111	6F	¿	174	AE
p	112	70	/	175	AF
q	113	71	—	176	B0
r	114	72	A	177	B1
s	115	73	B	178	B2
t	116	74	C	179	B3
u	117	75	D	180	B4
v	118	76	E	181	B5
w	119	77	F	182	B6
x	120	78	G	183	B7
y	121	79	H	184	B8
z	122	7A	I	185	B9
{	123	7B	J	186	BA
¦ (broken pipe)	124	7C	K	187	BB
}	125	7D	L	188	BC
~	126	7E	M	189	BD
	161	A1	N	190	BE
	162	A2	O	191	BF
	163	A3	P	192	C0
	164	A4	Q	193	C1
·	165	A5	R	194	C2
<	166	A6	S	195	C3
»	167	A7	T	196	C4
¼	168	A8	U	197	C5

Japanese Katakana Character Set (continued)

Character	Decimal	Hexadecimal	Character	Decimal	Hexadecimal
V	198	C6	(	211	D3
W	199	C7	)	212	D4
X	200	C8	_	213	D5
Y	201	C9	+	214	D6
Z	202	CA	|	215	D7
!	203	CB	{	216	D8
@	204	CC	}	217	D9
#	205	CD	:	218	DA
$	206	CE	"	219	DB
%	207	CF	~	220	DC
^	208	D0	>	221	DD
&	209	D1	"	222	DE
*	210	D2	º	223	DF

D

Using Default and Optional Applications

This appendix describes how to determine which default applications you may have loaded on your terminal. It also describes how to use the APPTSK.BIN and EM9560.BIN applications and describes how to use the optional DOS applications.

About the Applications Shipped on the Terminal

Unless you have the 802.1x security option, the Trakker Antares terminals ship with these two applications:

- APPTSK.BIN
- EM9560.BIN

Both applications are stored on drive C. In addition to these two applications, your terminal may have a TE 2000™ terminal emulation application or a Data Collection Browser™ (dcBrowser™) application stored on drive C. To determine which application you may have loaded on your terminal, continue with the next section, "Identifying the Default Applications."

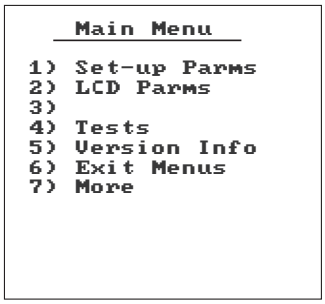
If you ordered the DOS option, the terminal ships with the necessary DOS files you need to run DOS applications. For help using DOS applications, see "Using DOS on the Terminal" on page D-14. To learn how to use the APPTSK.BIN and EM9560.BIN applications, see "Defining APPTSK.BIN and EM9560.BIN" on page D-4.

Identifying the Default Applications

Your terminal may have a TE 2000 terminal emulation application or a dcBrowser application stored on drive C. This section helps you identify which of these applications you may have installed on your terminal.

TE 2000 Terminal Emulation

1. On your terminal, press [=f] [F1] to access the TE 2000 menu. If you have a 241X with a 37-key keypad, press (f) (5). If you have a 243X, press [ ] [ ].
2. If you have TE 2000 terminal emulation, the TE 2000 main menu appears.
3. By default, your terminal is configured for TE 2000 VT/ANSI. To change the configuration to TE 2000 5250 or TE 2000 3270, from the TE 2000 main menu, select Set-up Parms and press [↵]. A password prompt appears.
4. Type [C] [R] [5] [2] [4] [0] [1] and press [↵].
5. Select Protocol Opts, Data Stream, and then select the appropriate TE 2000 configuration.



24XXS080.eps

6. Save your changes by selecting Exit Menus from the TE 2000 main menu. Press Y, and type C R 5 2 4 0 1 at the Enter Password prompt.

For information about using TE 2000 IBM 3270, TE 2000 IBM 5250, or TE 2000 VT/100/220/320 and ANSI terminal emulation, see the appropriate TE 2000 guide:

- *TE 2000 5250 Terminal Emulation Programmer's Guide* (P/N 977-055-004)
- *TE 2000 3270 Terminal Emulation Programmer's Guide* (P/N 977-055-003)
- *TE 2000 VT/ANSI Terminal Emulation Programmer's Guide* (P/N 977-055-005)

dcBrowser Client

1. On your terminal, access the TRAKKER Antares 2400 Menu System by pressing f ↵ 2 4 8 or by scanning this bar code:

   TRAKKER Antares 2400 Menu System

   ..-.

2. From the Main Menu, choose System Menu and then File Manager.
3. Select drive C and then press Enter. A list of applications that are loaded on your terminal appears. If you have the dcBrowser client loaded on your terminal, this filename is listed:

   `DCBT24.BIN`

   If you do not see this filename, you do not have the dcBrowser client loaded on your terminal.

For information about using dcBrowser, see the documentation that ships with your DCS 30X or dcBrowser gateway software.

Defining APPTSK.BIN and EM9560.BIN

Unless you have the 802.1x security option, you can run APPTSK.BIN or EM9560.BIN.

APPTSK.BIN This application is the default application on all terminals. If you exit an application or if certain errors occur, the terminal resets and runs APPTSK.BIN. You can use APPTSK.BIN to scan, enter, transmit, and display data.

EM9560.BIN This application emulates a subset of the functionality available on the Intermec 95XX terminals, such as the 9512 and 9560. You can use EM9560.BIN to scan, enter, transmit, and display data.

APPTSK.BIN and EM9560.BIN include these features:

- Works with any protocol that is supported on the terminal. Both the terminal and the device you are communicating with must use the same protocol (serial, Ethernet, or RF) and parameter settings.
- Sends scanned or keyboard data out all serial, Ethernet, or RF ports.
- Buffers the keyboard data until you press ↵.
- Receives data from any serial, Ethernet, or RF port, displays the data on the terminal screen, and parses the data for commands.
- Receives data through any serial port and transmits it out the Ethernet or RF port.
- Receives data through the Ethernet or RF port and transmits it out all serial ports.
- (APPTSK.BIN only) Displays the time and date, which can be toggled on and off.

The main difference between the two applications is that you can use the EM9560.BIN application to emulate specific functions of the 95XXs.

Defining the Emulation Features of EM9560.BIN

With the EM9560.BIN application, you can use the programmable terminal as a remote input/output terminal in which all prompts and commands are controlled by the host computer. With this application, the terminal is similar to a 95XX in Data Entry mode with no application running.

Note: For the 95XXs, Data Entry mode with no application running is also referred to as an unprogrammed state or 95XX dumb terminal mode.

EM9560.BIN lets you use the terminal to emulate these specific 95XX features:

- An Enter key without any preceding data transmits an empty data packet.
- The terminal display is similar to, but not identical to, the 9560 buffered display mode.
- All function keys transmit the corresponding characters `F1`, `F2`, and so on.
- When Code 128 is configured for Standard Code 128 symbology and you scan a UCC/EAN label, the terminal will discard the Function 1 characters. Although this does not meet the industry standard for Code 128, it does emulate the 95XX, which was manufactured before the current standard was established. Other Code 128 configurations work as defined in this system manual.
- The Set Time and Date reader (data entry) command is supported. When the terminal receives a time broadcast command (/+) from the 9154 or 9161 controller, the command sets the clock on the terminal.
- The High Beep reader command is supported. When a backslash character (\) is sent to the terminal through any serial or network port, the terminal sounds a high beep.

- The Low Beep reader command is supported. When the BEL character is sent to the terminal through any serial or network port, the terminal sounds a low beep.
- When control codes (ANSI escape sequences) are sent to the terminal through any serial or network port, the terminal formats the display. For a list of control codes, see the next section, "Using Display Control Codes."
- Buffered and transparent display modes are supported. The Display Setting configuration command (OD) is also supported. For help, see "Using Display Modes" on page D-7.
- You can emulate Accumulate mode so that keypad data can be combined with scanned data. For help, see "Using Accumulate Mode" on page D-8.
- Preamble A, Preamble B, and Postamble C are supported through the AA, AB, and AC configuration commands or through the reader commands +., ++, and +%. For help, see "Setting Preambles and Postambles" on page D-9.
- Full ASCII mode for Code 39 can be configured through the CB or RB configuration commands or through the reader commands +$ and -$. For help, see "Full ASCII Mode for Code 39" on page D-10.
- You can add message headers that indicate the length of the message. For help, see "Using Message Length Headers" on page D-11.
- The Exit Configuration Mode, Save Settings configuration command ($-) is not required, but bar code labels with this command scan correctly.

Using Display Control Codes

You can use control codes to position the cursor or to format the terminal display. The EM9560.BIN application recognizes the display control codes listed next.

Command	Control Code	Description or Action
Backspace	`BS (08 Hex)`	Moves the cursor one position to the left until the cursor reaches the first column. If the cursor is in the first column of any row except the first row, a Backspace command moves the cursor to the last column of the previous row.
Cursor Position	`ESC[`*`n`*`;`*`v`*`H`	Moves the cursor to the position specified by the *n* and *v* parameters where: *n* specifies the row or line number. *v* specifies the column number. If you enter zero or no parameter, *n* and *v* are set to one. If *n* or *v* exceeds the maximum row or column number on the display, the parameters are set to the screen's maximum.

Using Display Control Codes (continued)

Command	Control Code	Description or Action
Erase Display	ESC[2J	Erases the entire display and returns the cursor to the home position (row 1, column 1). This command also erases the entire virtual display image (buffer with up to four rows of the most recently displayed data).
Home	CR (0D Hex)	Returns the cursor to the first column of the current row.
Next Line	LF (0A Hex)	Moves the cursor down one row in the current column position. If the cursor is already in the last row, a new line is added.
Restore Cursor Position	ESC[u	Restores the cursor position saved with a Save Cursor Position command. Each Restore Cursor Position command must be paired with a preceding Save Cursor Position command. If a Save Cursor Position command has not been previously entered, the cursor position will not change.
Save Cursor Position	ESC[s	Saves the current cursor position. Successive Save Cursor Position commands overwrite the previous position that was saved.

Using Display Modes

With the EM9560.BIN application, you can use Buffered display mode and Transparent display mode. In Buffered mode, new data is placed on a new line keeping blocks of data separated. In Transparent mode, new data is placed at the current cursor position, which makes screen formatting by the host easier.

Syntax: DM*data*

Acceptable values for *data* are**:**

0 Buffered display mode
1 Transparent display mode

Default: Transparent display mode

Bar Codes: Scan one of these bar codes:

Buffered Display Mode

$+DM0

Transparent Display Mode

$+DM1

Using Display Modes (continued)

Other: To provide compatibility with the 95XX, you can also use this syntax:

OD*data*

where *data* is a 0 or 1.

Using Accumulate Mode

With the EM9560.BIN application, you can emulate Accumulate mode (Emulation mode). Data that you accumulate appears on the bottom line of the terminal display. You can edit this data using the reader commands for backspace and clear or you can use the ← key.

You scan a bar code to toggle between Emulation mode and Native mode.

Default: Native mode

Note: To set this command using bar code labels, you must also use the bar code labels in Appendix B. To use these labels, you must configure the terminal to use Code 39 in Full ASCII mode. For help, see "Full ASCII Mode for Code 39" on page D-10 or "Code 39" in Chapter 6.

Bar Codes: To use Emulation mode:

1. Scan this bar code:

   Toggle Emulation Mode/Native Mode

   ACCUMULATE

2. Scan this bar code:

   Enter Accumulate Mode

   +/

3. Scan data from the "Full ASCII Bar Code Chart" in Appendix B or type data using the keypad.

4. Scan this bar code:

   Exit Accumulate Mode

   -/

Setting Preambles and Postambles

With the EM9560.BIN application, you can set Preamble A, Preamble B, and Postamble C on the terminal and make it compatible with the 95XXs. The preambles are prepended and the postamble is appended to the data that is transmitted through all the serial ports.

Preamble A, Preamble B, and Postamble C can each be up to 25 ASCII characters in length. If you enter a preamble or postamble command without entering data, the preamble or postamble buffer is cleared.

Syntax:

Preamble A	AA*data*	or	+.*data*
Preamble B	AB*data*	or	++*data*
Postamble C	AC*data*	or	+%*data*

Note: To set this command using bar code labels, you must also use the bar code labels in Appendix B. To use these labels, you must configure the terminal to use Code 39 in Full ASCII mode. For help, see "Full ASCII Mode for Code 39" on page D-10 or "Code 39" in Chapter 6.

Bar Codes: To set the preamble or postamble using the AA, AB, or AC configuration commands:

1. Scan one of these bar code labels:

Enter Accumulate Mode / Set Preamble A

+/$+AA

Enter Accumulate Mode / Set Preamble B

+/$+AB

Enter Accumulate Mode / Set Postamble C

+/$+AC

2. Scan a value for *data* from the "Full ASCII Bar Code Chart" in Appendix B. The preamble or postamble can be from 1 to 25 characters.
3. Scan this bar code:

Exit Accumulate Mode

-/

4. Repeat Steps 1 to 3 to set another preamble or postamble.

Setting Preambles and Postambles (continued)

Or: To set the preamble or postamble using the +., ++, or +% reader commands:

1. Scan one of these bar code labels:

   Enter Accumulate Mode / Set Preamble A

   +/+.

   Enter Accumulate Mode / Set Preamble B

   +/++

   Enter Accumulate Mode / Set Postamble C

   +/+%

2. Scan a value for *data* from the "Full ASCII Bar Code Chart" in Appendix B. The preamble or postamble can be from 1 to 25 characters.
3. Scan this bar code:

   Exit Accumulate Mode

   -/

4. Repeat Steps 1 to 3 to set another preamble or postamble.

Full ASCII Mode for Code 39

With the EM9560.BIN application, you can configure Full ASCII mode for Code 39 using any of these commands:

- Code 39 configuration command (CB)
- Enter Full ASCII Mode reader command (+$) and the Exit Full ASCII Mode reader command (-$)

The last two commands are compatible with the 95XXs. Each command is described next. For help with the Code 39 configuration command (CB), see "Code 39" in Chapter 6.

Note: Use the CB configuration command unless your terminals need to be compatible with the 95XXs in your data collection network.

Command: Enter Full ASCII Mode reader command

Full ASCII Mode for Code 39 (continued)

Description: Enables Code 39 Full ASCII mode so the terminal decodes Code 39 bar code labels by using a two-character encoding scheme to extend the character set to 128 characters. For a list of ASCII characters, see the "Full ASCII Table" in Appendix B.

Syntax: +$

Bar Codes: Full ASCII

+$

Command: Exit Full ASCII Mode reader command

Description: Exits Code 39 Full ASCII mode and puts the terminal in Code 39 Non-Full ASCII mode (one-character encoding scheme).

Syntax: -$

Bar Codes: Exit Full ASCII

-$

Using Message Length Headers

You can use the EM9560.BIN application to add message headers that indicate the length of the message. When you send or receive a message, the application pre-appends a header to the message. If the message being received already has a header, the application strips the existing header and pre-appends the new message length header.

You can create a two-byte binary header, a four-byte ASCII header, or a mixed mode header. A mixed mode header pre-appends a four-byte ASCII header to received messages and a two-byte binary header to sent messages.

Syntax: NH*data*

Acceptable values for *data* are:

0 No header
1 Two-byte binary header on messages sent and received
2 Four-byte ASCII header on messages sent and received
3 Four-byte ASCII header on messages sent and two-byte binary header on messages received

Default: No header

Using Message Length Headers (continued)

Bar Codes: Scan one of these bar codes:

No Header

$+NH0

Two-Byte Binary Header

$+NH1

Four-Byte ASCII Header

$+NH2

Four-Byte ASCII / Two-Byte Binary Header

$+NH3

Unsupported 95XX Features

These 95XX features are **not** supported by the EM9560.BIN application on the terminal.

- Capacity reader command (%$).
- Command Override reader (data entry) command (DLE).
- Download Program command from the 9154 or 9161 controller. Use the Transmit File reader command. For help, see Chapter 5, "Reader Command Reference."
- Forward and Review reader commands (%+ and %/).
- Right Host Message reader command (HT).
- Computer Response Required Mode (CRRM) configuration command (PB), Enter CRRM reader command (./), and Exit CRRM reader command (.-).
- Preamble A Required configuration command (OA).
- Resume IRL configuration command (XG).
- Separate transmit and receive EOM characters (PI and PJ). The configurable EOM (PF, YZ) is used for both transmit and receive EOM.

Note: Although these 95XX features are **not** supported, the terminals have many additional features such as Ethernet or RF communications that are not available on the 95XXs.

Running APPTSK.BIN and EM9560.BIN

There are two ways to run APPTSK.BIN or EM9560.BIN:

- Use the Run Program reader command.
- Use the TRAKKER Antares 2400 Menu System.

The instructions in this section explain how to use the Run Program reader command. For help using the TRAKKER Antares 2400 Menu System to run an application, see the "Using Applications" chapter in the user's manual.

To run APPTSK.BIN or EM9560.BIN on the terminal

1. Scan one of these bar code labels:

   Run APPTSK.BIN

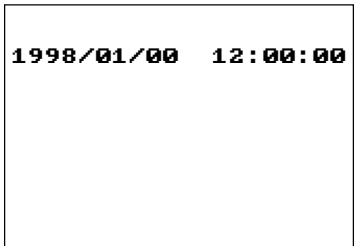
   //C:APPTSK.BIN

   Run EM9560.BIN

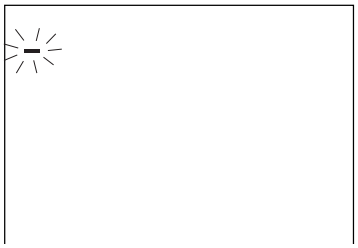
   //C:EM9560.BIN

   The terminal boots, resets all firmware, and runs the application. The initial screen for the application appears. You see one of these screens:

   APPTSK.BIN Screen

   EM9560.BIN Screen

   If you are using a large font size or small column width, only the hours and minutes will be displayed on the APPTSK.BIN initial screen. For help, see "Display Spacing" in Chapter 6.

2. Scan this bar code label to toggle the clock display on or off.

   Toggle Clock Display

   CLOCKDISPLAY

3. Use the application to scan bar code labels, enter data through the keyboard, and transmit data.

This section lists some examples of how you can use the applications with your Trakker Antares terminals.

Example 1

Use the application to troubleshoot and test communications before loading and running your data collection application. Connect the terminal to your network. Type data ("Hello World") on the Trakker Antares terminal keyboard or scan a bar code label. The data is sent out to all serial and network ports and should be received by the host if your terminal is installed and configured correctly. Send data from the host and verify that the data appears on the terminal screen.

Example 2

Connect a serial input device, such as a 1550 scanner, to a serial port on the Trakker Antares terminal. Data from the input device is displayed on the terminal screen and transmitted out the network (Ethernet or RF) port.

Example 3

Connect the TD2400 communications dock to a serial port on the 2485. Use a 2420 to collect data. Use the TD2400 communications dock to upload data from the 2420 to the 2485. Data is transmitted to the 2485 and out the Ethernet or RF port to the connected network devices.

Example 4

Use the 248X as a gateway between the CrossBar network and the Ethernet or RF network. Connect the 248X as a downline device in your CrossBar network. Connect the 2480/1 with the Ethernet option to your Ethernet network, or connect the 2485/6 to your RF network. While running the APPTSK.BIN or EM9560.BIN application, you can send data from the Ethernet or RF network through the 248X to the 9154 or 9161 and vice versa.

Example 5

Connect the COM1 serial port to the COM2 serial port on a 246X or 248X terminal. Use the terminal to configure itself by typing and entering configuration commands on the keypad or keyboard.

Example 6

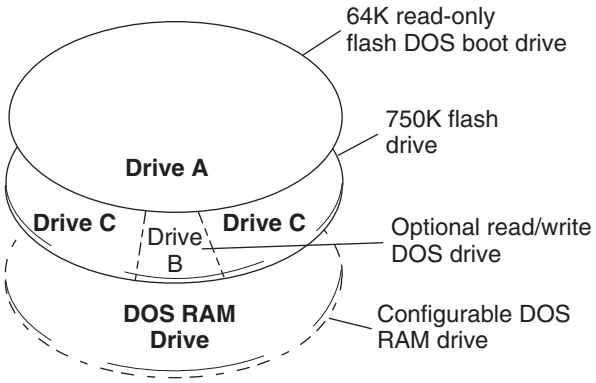
Connect the serial port on the 248X to the serial port on the 246X terminal. Use the 248X to configure the 246X by typing and entering configuration commands on the 248X keypad.

Using DOS on the Terminal

With the DOS option, the Trakker Antares terminals can run ROM-DOS™, which is compatible with DOS version 6.22. ROM-DOS provides application compatibility at the DOS level and interface compatibility at the BIOS level.

On each DOS drive, filenames are customer defined using eight characters with a three-character extension. You cannot define any subdirectories.

DOS Drives



Drive A This drive is a 64K block of flash memory that is a read-only DOS boot drive. You can configure drive A, but you cannot write to it within an application. Drive A is created and initialized once you run the DOS.BIN application.

Drive B This drive is an optional read/write DOS drive that resides as a subdirectory on drive C. Drive B is limited by the space available on drive C. You can configure drive B by modifying the DRIVEB.IMG file that defines the ROM-DOS commands available on the terminal. For help, see “Customizing Drive B” on page D-25.

Drive C This drive is a 2MB flash drive. You can use up to 750K of this flash drive to store up to 128 files, which includes drive B. DOS .EXE applications must be stored on drive C. You use standard ANSI C library interface definitions to access the information on this drive.

The following DOS files are installed originally on drive C.

File	Definition
DOS.BIN	This application reboots and runs ROM-DOS on a Trakker Antares terminal so that you can run DOS .EXE applications.
ROM-DOS.IMG	This file is the image file for ROM-DOS version 6.22.
DRIVEB.IMG	This image file contains the contents of DOS drive B. You cannot reference drive B from a Trakker Antares .BIN application file. If you delete this file, you lose drive B and the ROM-DOS commands that are defined for drive B.

Note: If you do not want to use DOS on the Trakker Antares terminal, you can save space by deleting DOS.BIN, ROM-DOS.IMG, and DRIVEB.IMG from drive C.

DOS RAM Drive This drive is a configurable DOS RAM drive. The contents of this drive are erased when you boot or reset the terminal. You use standard ANSI C functions to access the files on this drive. If you configure a DOS RAM drive, DOS assigns drive C to the RAM drive and reassigns the remaining Trakker Antares drives. For example, the Trakker Antares drive C becomes drive D. For help creating a DOS RAM drive, see "Configuring a DOS RAM Drive" on page D-27. By default, the RAM drive is not configured and the memory is available for programmable (Malloc) memory.

There are two types of RAM drives that are mutually exclusive depending on whether you run native Trakker Antares .BIN applications or DOS .EXE applications. You use the standard RAM drive E for .BIN applications or you use a DOS RAM drive for DOS .EXE applications. Before you start using DOS on the terminal, you must disable the standard RAM drive. For help, see "RAM Drive Size" in Chapter 6.

DOS .EXE applications are customer defined. You have 380K total RAM that you can use for DOS .EXE application execution space. You can also configure a DOS RAM drive. If the RAM drive is configured, your application execution space is reduced by the amount of the RAM drive. The remaining RAM is the Malloc/free memory pool.

Starting DOS on the Terminal

Before you can run DOS applications on the terminal, you need to start DOS. After you start DOS, you can switch between DOS and the TRAKKER Antares 2400 Menu System as needed.

You must run the file DOS.BIN to start DOS. There are two ways to start DOS:

- Use the Run Program reader command.
- Use the TRAKKER Antares 2400 Menu System.

The instructions in this section briefly explain both methods. For help using the TRAKKER Antares 2400 Menu System, see your user's manual. For help using the Run Program reader command, see Chapter 5, "Reader Command Reference."

Note: If you run DOS on the terminal, you cannot use the standard RAM drive E for native Trakker Antares .BIN applications. Disable the RAM drive before you start DOS. For help, see "RAM Drive Size" in Chapter 6.

To start DOS on the terminal

1. Press ⏻ to turn on the terminal.
2. Scan this full ASCII Code 39 bar code label:

Run DOS.BIN

//C:DOS.BIN

Or:

a. Access the TRAKKER Antares 2400 Menu System by pressing f ↵ 2 4 8 or scanning the following bar code label:

TRAKKER Antares 2400 Menu System

..-.

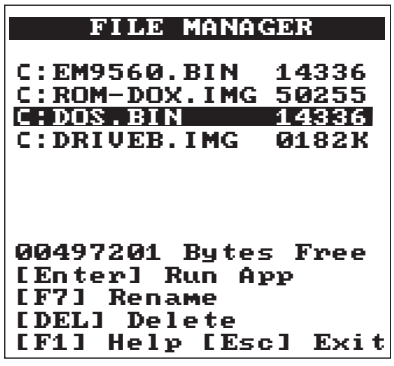
The Main Menu appears.

b. Choose System Menu and press ↵ . The System Menu appears.

c. Choose File Manager and press ↵ . The File Manager screen appears prompting you to select a drive.

24XXS086.eps

d. Press ↵ to select drive C. The File Manager screen appears listing all the files stored on drive C.



24XXS087.eps

Note: Drive C may contain additional applications, such as custom applications or terminal emulation applications.

e. Choose C:DOS.BIN and press ↵. Exit the menu system. If you made any configuration changes while you were working in the menu system, you will be prompted to store your changes in flash memory.

The terminal boots, resets all firmware, and starts DOS. You see the A: prompt on the terminal screen. If you turn the terminal off and then back on, the terminal either resumes exactly where it was when you turned it off, or the terminal boots and restarts DOS. Resume is controlled through the Resume Execution command.

Note: When DOS is running, label or bar code data is always entered into the keyboard buffer in Wedge mode.

Running DOS Applications and Using ROM-DOS Commands

After you load your files and applications, you are ready to run your DOS applications. You can use DOS on the terminal as you do on a PC with some limitations. You can also create bar code labels for applications or commands that you use frequently.

DOS applications and Trakker Antares applications are mutually exclusive. You can either run a DOS .EXE application or you can run a native Trakker Antares .BIN application.

Note: You cannot run a DOS .EXE application from the TRAKKER Antares 2400 Menu System.

To run a DOS application

1. If necessary, change to the drive where the application is stored. At the DOS prompt, enter the drive letter followed by a colon (:) and press ↵, or scan one of these full ASCII Code 39 bar code labels:

A:

A:<CR>

B:

B:<CR>

C:

C:<CR>

2. Enter the filename of the DOS application and press ↵, or scan a bar code label that you have created for the application. For example, if the DOS application filename is SHIPPING.EXE, you can create this full ASCII bar code label:

   SHIPPING.EXE

   SHIPPING.EXE<CR>

Note: You can encode a <CR> (Enter) into the bar code label. If you do not include the <CR> in the bar code, you must press ↵ after you scan a bar code label for a drive, command, or a DOS application.

Using ROM-DOS Commands

You can use ROM-DOS commands on the terminal as you do on a PC with some limitations.

To use ROM-DOS commands

- From the DOS prompt on the terminal, type a ROM-DOS command and press ↵ to execute the command. For example, you can list the files on drive C by entering this command:

  ```
  dir
  ```

  You can also scan a bar code label that you have created for the ROM-DOS command. For example, you can scan this full ASCII bar code label to use the DIR command:

  DIR command

  DIR<CR>

There are internal and external ROM-DOS commands. Internal commands such as CLS and DIR are built into the main body of ROM-DOS and are implemented within COMMAND.COM. When you load DOS into memory, all internal commands are available. The external ROM-DOS commands are defined on drive B. For help using ROM-DOS commands, see a DOS manual.

Note: You must use the ROM-DOS commands that are provided on the terminal. The ROM-DOS commands are also available from the Intermec Web site at www.intermec.com. DOS commands or ROM-DOS commands copied from another computer will not run on a Trakker Antares terminal.

The next table lists the ROM-DOS commands and the level of support that is provided on the terminal.

ROM-DOS Commands in Alphabetical Order

ROM-DOS Command	Supported?	External ROM-DOS Command on Default Drive B	Notes
ATTRIB	Yes	Yes	You can only use ATTRIB on DOS drives.
CD	Yes		
CHKDSK	Limited		You can only use CHKDSK on DOS drives.
CHOICE	Yes	Yes	
CLS	Yes		
COPY	Yes		
DATE	Yes		
DEL	Yes		
DELTREE	Yes	Yes	You can only use DELTREE on DOS drives.
DIR	Yes		
DISKCOMP	Limited		You can only use DISKCOMP on DOS drives.
DUMP	Yes	Yes	You can only use DUMP on DOS drives.
ECHO	Yes		
ERASE	Yes		
EXIT	Yes		
FIND	Yes	Yes	
FOR	Yes		
GOTO	Yes		
IF	Yes		
LOADHIGH	No		
MEM	Yes	Yes	
MIRROR	Limited		You can only use MIRROR on DOS drives.
MODE	Limited	Yes	The MODE command is limited by the lack of PC-compatible hardware on the Trakker Antares terminal.
MORE	Yes	Yes	
MOVE	Yes	Yes	

ROM-DOS Commands in Alphabetical Order (continued)

ROM-DOS Command	Supported?	External ROM-DOS Command on Default Drive B	Notes
PAUSE	Yes		
PM	Yes	Yes	PM.COM is a Trakker Antares command that enables or disables the power management scheme used by the BIOS get keyboard key function and the BIOS check keyboard key function. For help using PM.COM, see the next section.
PROMPT	Yes		
REM	Yes		
REMDISK	No		
REMSERVER	No		
REN	Yes		
RSZ	No		
SET	Yes		
SHIFT	Yes		
SORT	Yes	Yes	
Standard console redirection commands	Yes		
SUBST	Yes	Yes	
SYS	Limited		You can only use SYS on DOS drives.
TIME	Yes		
TREE	Yes	Yes	
TYPE	Yes		
VDISK	Yes	Yes	Use VDISK to create a DOS RAM drive.
VER	Yes		
VERSION.SYS	Yes	Yes	
XCOPY	Yes	Yes	

Using the PM.COM Command

PM.COM is a Trakker Antares command that enables or disables the power management scheme used by the BIOS get keyboard key function and the BIOS check keyboard key function. When you enable power management (PM.COM), the BIOS progressively increases the wait interval when requesting key input from the keyboard. You can run PM.COM from AUTOEXEC.BAT or at the DOS prompt.

The syntax for PM.COM is:

```
PM data
```

Acceptable values for *data* are:

0 Disables BIOS power management
1 Enables BIOS power management

Stopping DOS and Running a .BIN Application

You can stop or exit DOS by running a native Trakker Antares .BIN application. Once you run a .BIN application other than DOS.BIN, the terminal stops or exits DOS. There are two ways to run an application:

- Use the Run Program reader command.
- Use the TRAKKER Antares 2400 Menu System.

For help using the TRAKKER Antares 2400 Menu System, see your user's manual. For help using the Run Program reader command, see Chapter 5, "Reader Command Reference."

Customizing DOS Drives and Commands

You can customize DOS on your Trakker Antares terminal by

- changing AUTOEXEC.BAT or CONFIG.SYS and customizing drive A.
- adding or removing external ROM-DOS commands that are available on drive B.
- creating a DOS application or TSR for drive C.

Intermec recommends that you create all the files on your PC, and then download the files to your terminal. The next section explains the DOS software tools that you need to customize drive A and B.

Trakker Antares DOS Software Tools

The DOS software tools listed in the following table are necessary for creating and downloading files to drives A and B.

DOS Software Tools

Software Tool	Definition
MAKE_A.BAT	Creates a file named DRIVEA.BIN that contains the drive A image. The maximum size of drive A is 64K.
MAKE_B.BAT	Creates a DRIVEB.IMG file that contains the external ROM-DOS commands for drive B. You can copy the DRIVEB.IMG file from the PC to drive C on the terminal.
PUT_A.BAT	Downloads the drive A image file (DRIVEA.BIN) from a PC to the terminal. This tool actually replaces all files on drive A.

The DOS software tools, ROM-DOS commands for drive B, and drive A files are available from the Intermec Web site at www.intermec.com. (Choose Support, Product Support, and then Downloads.) For additional help, contact your local Intermec service representative.

Note: The self-extracting executable file that you download from the Intermec Web site includes the DOS software tools and support files; ROM-DOS commands; and drive A files. LISTFILE.DRV, PROMERGE.EXE, and ROMDISK.EXE are support files that are required to use MAKE_A.BAT, MAKE_B.BAT, and PUT_A.BAT.

Customizing Drive A

Drive A is a 64K block of flash memory that is a read-only DOS drive. You can configure drive A, but you cannot write to it when you run an application.

Original Contents of Drive A

The next table describes the files that are factory installed on drive A.

File	Definition
ANTIFS.EXE	Provides an Installable File System (IFS) for the Trakker Antares proprietary file system so that DOS can recognize and use drives C, D, and G. Removing the ANTIFS.EXE file from drive A may result in no drive C.
AUTOEXEC.BAT	Loads programs and defines paths. When you run DOS.BIN to start DOS, the AUTOEXEC.BAT file runs automatically.
COMMAND.COM	Supports internal ROM-DOS commands. It is required for user interface and batch file processing. COMMAND.COM is the default DOS command that displays the DOS prompt.
COMMAND.HLP	Provides help for ROM-DOS commands. You can type `/?` after most ROM-DOS commands to get help or information about a command.
CONFIG.SYS	Loads device drivers. For limitations, see “Limitations of ROM-DOS” on page D-28.

The default AUTOEXEC.BAT file contains these lines:

Command Line	Definition
`@echo off`	The AUTOEXEC.BAT commands are not displayed on the terminal as they are executed.
`antifs.exe`	Installs the Installable File System (IFS) for the Trakker Antares proprietary file system so that DOS can recognize and use drives C, D, and G.
`set dircmd=/p/a/o:gn`	Directs the DIR command to list all files; include hidden files (/a) by pages (/p); group directories first (/o:g); and sort by filename (n).
`set path=a:\;b:\;c:\`	Directs DOS to look for commands and programs in the root directories of drives A, B, and C.
`cls`	Clears the screen.
`ver`	Displays the ROM-DOS version.
`If exist c:\user.bat c:\user`	If a file named USER.BAT is on drive C, the terminal runs that batch file. You can create a USER.BAT file that includes changes to modify drive A rather than having to recreate and reload the drive A image.

The default CONFIG.SYS file contains one command line:

Command Line	Definition
`rem device=b:\vdisk.sys`	You can use the VDISK.SYS command to create a virtual ROM-DOS RAM drive. The command is remarked out in the CONFIG.SYS file so that there is no RAM drive. For help, see "Configuring a DOS RAM Drive" on page D-27

Changing DOS Files on Drive A

The contents of drive A cannot be changed directly. The default AUTOEXEC.BAT file checks for a USER.BAT file on drive C that you can use to execute startup commands or files without changing drive A. To change or add files on drive A, you must use the DOS software tools MAKE_A.BAT and PUT_A.BAT.

To add a file to drive A or modify AUTOEXEC.BAT or CONFIG.SYS

1. On the PC, create a new directory or folder named DOSTOOLS and copy the DOS tools MAKE_A.BAT and PUT_A.BAT into this directory.

   You can download the DOS software tools and a copy of the original drive A files from the Intermec Web site. For help, see "Trakker Antares DOS Software Tools" on page D-22.

2. In the DOSTOOLS directory, create a subdirectory named DRIVEA that contains all the drive A files. For example, the directory may contain ANTIFS.EXE, AUTOEXEC.BAT, COMMAND.COM, COMMAND.HLP, and CONFIG.SYS.

Note: Make sure to include ALL drive A files on the DRIVEA subdirectory. The contents of this subdirectory will replace the contents of drive A.

3. Edit one of the existing drive A files such as the AUTOEXEC.BAT or CONFIG.SYS file. You can also create a new batch file or TSR to add to drive A and put the file in the DRIVEA subdirectory.
4. From the DOSTOOLS directory, type this command:

   `MAKE_A.BAT`

   The batch file creates the image file named DRIVEA.BIN that contains all the files in the subdirectory DRIVEA.
5. Connect the PC to the terminal through a serial connection.
6. On the terminal, press f ↵ 2 4 8 to access the TRAKKER Antares 2400 Menu System. The Main Menu appears.
7. Choose System Menu and press ↵. The System Menu appears.
8. Choose Upgrade Firmware and press ↵. The Upgrade Firmware screen appears.
9. Choose OK to continue. The next screen appears prompting you to continue upgrading the firmware. In this case, you are not actually upgrading all the firmware. You will only be replacing the files on drive A.
10. Choose Yes to continue and upgrade drive A. The terminal reboots and displays the Loader Waiting screen.
11. On your PC, open an MS-DOS window and change to the DOSTOOLS directory.
12. On your PC, type this command:

    `PUT_A.BAT`

The Loader screen appears and the DRIVEA.IMG file is transferred to the terminal and used to replace the contents of drive A. Once the batch file is complete and drive A is replaced, the terminal boots and displays the DOS prompt.

Note: When you use PUT_A.BAT, you are replacing all files on drive A.

Customizing Drive B

Drive B is an optional read/write DOS drive. It contains an image of the external ROM-DOS commands that are available by default on the Trakker Antares terminal. Drive B resides as a subdirectory on drive C and is limited by the space available on drive C.

As with drive A, the contents of drive B cannot be changed directly. To make configuration changes, you must use the DOS software tool MAKE_B.BAT.

To change drive B, you must recreate the file DRIVEB.IMG. When you do, you are *replacing* all files on drive B.

The following files are the default files installed originally on drive B.

ATTRIB.COM	MOVE.COM
CHOICE.COM	PM.COM
DELTREE.EXE	SORT.COM
DUMP.EXE	SUBST.EXE
FIND.COM	TREE.COM
MEM.EXE	VDISK.SYS
MODE.COM	VERSION.COM
MORE.COM	XCOPY.COM

VDISK.SYS and PM.COM are ROM-DOS commands that were created for the Trakker Antares terminal. For help with VDISK.SYS, see "Configuring a DOS RAM Drive" on page D-27. For help with PM.COM, see "Using the PM.COM Command" on page D-22. For information about other ROM-DOS commands, see a DOS manual.

Note: Make sure that you only use ROM-DOS commands provided by Intermec, because some of these commands have been modified specifically for the Trakker Antares terminal. You can download the ROM-DOS commands from the Intermec Web site. For help, see "Trakker Antares DOS Software Tools" on page D-22.

To change the contents of drive B

1. On the PC, create a new directory or folder named DOSTOOLS and copy the DOS tool MAKE_B.BAT into this directory.
2. In the DOSTOOLS directory, create a subdirectory named DRIVEB that contains all the files (including any external ROM-DOS commands) that you want to use on the terminal's drive B.
3. From the DOSTOOLS directory, type this command:

   ```
   MAKE_B.BAT
   ```

   The batch file creates the image file named DRIVEB.IMG that contains all the files in the subdirectory DRIVEB.
4. Transfer the DRIVEB.IMG file from the PC to drive C on the terminal. For help with transferring files to the terminal, see "How to Download Applications" in Chapter 3.

Configuring a DOS RAM Drive

You have 380K total RAM that you can use for DOS .EXE application execution space. You can also configure a ROM-DOS RAM drive. If the RAM drive is configured, your application execution space is reduced by the size of the RAM drive. The remaining RAM is the Malloc/free memory pool. The contents of this drive are erased when you boot or reset the terminal.

To configure a DOS RAM drive

1. On your PC, edit or create the CONFIG.SYS file.
2. Remove "rem" from the start of this line:

   ```
   rem device=b:\vdisk.sys
   ```

3. Add or set parameters for the DOS RAM drive using this syntax:

   ```
   device=vdisk [size [secs[dirs]]][/E]
   ```

   where:

vdisk	VDISK is a device driver that partitions some of DOS memory as a RAM disk. Any data that is stored on the DOS RAM drive is lost when you reboot the Trakker Antares terminal. All data on the RAM drive is saved when you turn the terminal off and on (suspend and resume). The VDISK driver increases the resident size of DOS.
size	Sets the size in bytes of the DOS RAM drive. The default size is 64K. The memory or size that you set is allocated from the DOS memory pool, and it will decrease the amount of memory available for applications.
secs	Sets the sector size in bytes. The default value is 512 bytes per sector. You can set the sector size to 128, 256, 512, or 1024. All other values are not valid and the sector size defaults to 512.
dirs	Sets the number of root directory entries. The default value is 64 directory entries. You can set the root directory entries to any number from 2 to 1024. If you enter an odd number, it is rounded up to the nearest multiple of 16 to fill the entire sector.
/E	This parameter is not valid, because the Trakker Antares terminal does not contain extended memory.

4. Copy the CONFIG.SYS file to the directory or folder that contains your DOS files for drive A.
5. Create a drive A image file to download to the terminal. For help, see "Customizing Drive A" on page D-23.

After you replace drive A and create the DOS RAM drive, DOS assigns drive C to the RAM drive and reassigns the remaining Trakker Antares drive letters. For example, the Trakker Antares drive C becomes drive D.

Limitations of ROM-DOS

The Trakker Antares terminal supports a limited set of DOS. Here are the limitations:

- Applications cannot interact directly with hardware nor memory locations such as timer ticks.
- **Ctrl-Alt-Del** is not supported. Use the Reset Firmware command or boot the terminal. For help, see "Booting the Terminal" or "Resetting the Terminal" in the troubleshooting chapter in your user's manual.
- DOS batch file commands are all supported except LOADHIGH (no high memory is available).
- Some DOS processing commands are not supported because DOS=HIGH, DOS=UMB, DEVICEHIGH=*n*, and DOS switches are not supported.
- RAMDRIVE.SYS is not compatible with the Trakker Antares terminal. You can use VDISK.SYS as a replacement for this DOS driver. For help, see "Configuring a DOS RAM Drive" on page D-27.

The following table lists the BIOS interfaces that are supported and those that are not supported by ROM-DOS on the Trakker Antares terminal.

ROM-DOS BIOS Interfaces

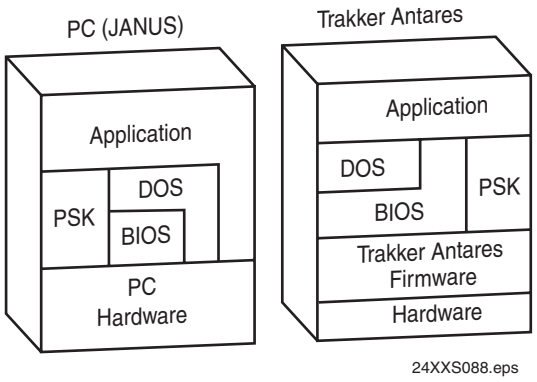
BIOS Interface	Supported?	Notes
INT 10H – Display Functions		
INT 10H function 0EH	Yes	
INT 10H functions 0H, 2H, 3H, 6H, 7H, 8H, 9H, 13H	Limited	These functions are limited by the lack of PC-compatible hardware on the Trakker Antares terminal.
INT 11H	Yes	
INT 12H	Yes	
INT 13	No	The Trakker Antares terminal contains flash memory rather than a disk drive.
INT 14H – Compatibility Functions		
INT 14H functions 01H–03H	Yes	
INT 14H functions 0H	Limited	This function is limited by the existing Trakker Antares system interface.
INT 15H function 4F	Yes	

ROM-DOS BIOS Interfaces (continued)

BIOS Interface	Supported?	Notes
INT 16H – Keypad Functions		
INT 16H functions 00H, 01H, 10H, 11H, 12H	Yes	
INT 17 – Time Functions		
INT 1AH functions 00H, 01H, 02H, 03H, 04H, 05H	Yes	
INT 1AH functions 06H, 07H	No	These functions are not supported due to the lack of PC-compatible hardware on the Trakker Antares terminal.

DOS Architecture on the Terminal

The following diagram shows the Trakker Antares DOS architecture compared to the JANUS® (PC) DOS architecture. You can use the diagram to determine the limitations of DOS on the terminal.



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Trakker Antares 2400 Family System Manual

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