



## ***Read This First!***

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This manual contains information about the terminal's features, installing the terminal, learning about the menu system, operating the terminal in a network, and troubleshooting problems.

If you need to learn how to configure the terminal, develop and use applications, run diagnostics, use reader commands and configuration commands, or use default and optional applications, you also need to download the [\*Trakker Antares 2400 Family System Manual\*](#) (P/N 071389).



The Intermec logo consists of the word "Intermec" in a bold, italicized, sans-serif font. To the right of the text is a square icon containing a stylized white graphic of three overlapping circles or paths.

User's Manual

**Trakker Antares<sup>®</sup>  
243X Handheld  
Terminal**

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This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (<http://www.openssl.org/>)

This product includes cryptographic software written by Eric Young. ([ey@cryptsoft.com](mailto:ey@cryptsoft.com))

## Document Change Record

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

Version	Date	Description of Change
002	6/2002	Described new features and changes for firmware version 7.12: <ul style="list-style-type: none"><li>• Added a cold-temperature option and an environmental rating of IP54.</li><li>• Added the holster accessory and included additional supported tethered scanners and cables.</li><li>• Added support for the Wireless Transport Protocol (WTP) and modified support for the status icons.</li></ul>
003	12/2002	Added information to support the 802.1x security option in firmware version 7.14.
004	5/2003	Added information to support firmware version 7.15 including: <ul style="list-style-type: none"><li>• Integrated E1022 linear imager</li><li>• 48-key large alphanumeric keypad</li><li>• 802.1x LEAP security</li></ul>



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## **Contents**

## Before You Begin

This section provides you with safety information, technical support information, and sources for additional product information.

### Safety Summary

Your safety is extremely important. Read and follow all warnings and cautions in this document 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.

### Safety Icons

This section explains how to identify and understand dangers, warnings, cautions, and notes that are in this document. You may also see icons that tell you when to follow ESD procedures and when to take special precautions for handling optical parts.



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 manipulant l'équipement.**



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.

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

## Global Services and Support

### Warranty Information

To understand the warranty for your Intermec product, visit the Intermec web site at <http://www.intermec.com>, click Support, and then click Warranty.

Disclaimer of warranties: The sample code included in this document is presented for reference only. The code does not necessarily represent complete, tested programs. The code is provided "as is with all faults." All warranties are expressly disclaimed, including the implied warranties of merchantability and fitness for a particular purpose.

### Web Support

Visit the Intermec web site at <http://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.

Visit the Intermec technical knowledge base (Knowledge Central) at <http://intermec.custhelp.com> to review technical information or to request technical support for your Intermec product.

### Telephone Support

These services are available from Intermec Technologies Corporation.

Service	Description	Call 1-800-755-5505 and choose this option
Factory Repair and On-site Repair	Request a return authorization number for authorized service center repair, or request an on-site repair technician.	1
Technical Support	Get technical support on your Intermec product.	2

**Telephone Support (continued)**

<b>Service</b>	<b>Description</b>	<b>Call 1-800-755-5505 and choose this option</b>
Service Contract Status	Inquire about an existing contract, renew a contract, or ask invoicing questions.	3
Schedule Site Surveys or Installations	Schedule a site survey, or request a product or system installation.	4
Ordering Products	Talk to sales administration, place an order, or check the status of your order.	5

**Who Should Read This Document?**

This manual provides you with information about the features of the Trakker Antares® 2430 and 2435 handheld terminals, and how to install, configure, operate, maintain, and troubleshoot them. Use this manual in conjunction with the *Trakker Antares 2400 Family System Manual* (P/N 071389), which contains detailed information about configuring, operating, and programming all terminals in the 2400 Family.

Before you install and configure the 243X, you should be familiar with your network and general networking terms, such as IP address.

**Related Documents**

The Intermec web site at <http://www.intermec.com> contains many of our documents that you can download in PDF format.

To order printed versions of the Intermec manuals, contact your local Intermec representative or distributor.

***Before You Begin***



# 1 Learning About the Terminal

This chapter introduces the Trakker Antares 2430 and 2435 handheld terminals and their features including the batteries, memory, drives, and input devices. This chapter covers these topics:

- What are the Trakker Antares 243X terminals
- What's new
- Using the terminal for the first time
- Unpacking the terminal
- Using the terminal's battery pack
- Using the keypad
- Using the screen
- Learning about the status icons
- Learning about the audio signals
- Using the terminal's serial port
- Using the terminal's scanner
- Connecting to a serial device or network
- Defining the terminal's drives

## What Are the Trakker Antares 243X Terminals?

You can use the 2430 and 2435 handheld programmable terminals to run custom applications or terminal emulation applications.



**Trakker Antares 243X terminal:** The 2430 and 2435 are ergonomic handheld data collection terminals.

### 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 input/output (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 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 Data Collection Browser™ (dcBrowser™), which lets you run Web-based applications.



The 2435 with an IEEE 802.11b radio installed is Wi-Fi certified for interoperability with other 802.11b wireless LAN devices.



## What's New?

With this user's manual revision, the following changes were made to support hardware and software on Trakker Antares 243X terminals with firmware version 7.15:



- The integrated E1022 linear imager option was added.
- The 48-key large alphanumeric keypad was added.
- 802.1x Cisco LEAP security was added.

For more information about the software changes that were made to support firmware version 7.15, see the *Trakker Antares 2400 Family System Manual Addendum* (P/N 073395).

## Using the Terminal for the First Time

Before you can use the 243X for the first time, you need to perform certain steps, such as charging and installing the battery pack. You can find this information throughout this user's manual. However, if you want to start using the terminal immediately, see the *Trakker Antares 243X Handheld Terminal Quick Start Guide* (P/N 071792).

### To use the 243X for the first time

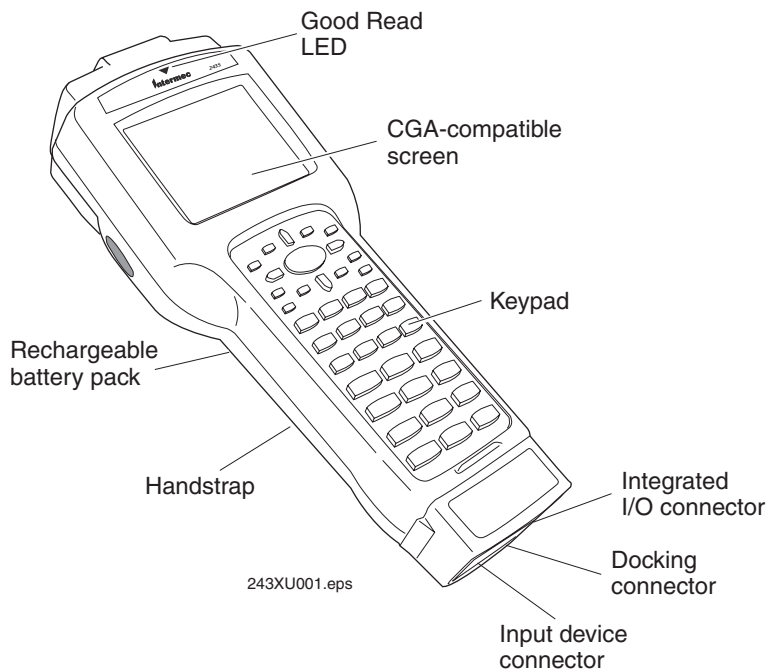
- 1 Unpack the terminal and documentation. For help, see “Unpacking the Terminal” on page 6.
- 2 Charge and install the battery pack (sold separately). For more information about batteries, see “Using the Terminal's Battery Pack” on page 7.
- 3 Press  or  to turn on the terminal. For more information about the keypad, see “Using the Keypad” on page 11.
- 4 Set the time and date. For help using the TRAKKER Antares 2400 Menu System, see “Configuring the Terminal With the Menu System” on page 33.
- 5 Configure the serial port parameters. For more information, see “Using Serial Communications on the Terminal” on page 51.
- 6 (2435 only) Configure the RF parameters. For more information, see “Using RF Communications on the 2435” on page 54.
- 7 (2435 with 802.1x security only) Configure the 802.1x TTLS or LEAP security parameters. For help, see “Configuring the 802.1x Security Parameters” on page 58.
- 8 Enable the bar code symbologies that you want to be able to scan. For more information, see Chapter 6, “Configuration Command Reference,” in the 2400 Family system manual.

- 9 Exit the menu system and save your configuration changes to flash memory. For help, see “Exiting the Menu System” on page 40.

When you are done with these steps, the default application or TE 2000 application that is loaded on your terminal will start. You are ready to use the terminal.


## Learning About the 243X Features

The 243X is designed to make data collection easy and includes these features:



**243X features:** This illustration identifies the features of the 243X. For more information about each feature, see the next table.

### 243X Features

Feature	Description
CGA-compatible screen	The screen is a backlit LCD that is configurable up to 21 lines by 32 characters. The screen also supports double-byte characters, user-programmable fonts, and bitmap graphics.
	 <p><b>Note:</b> If status icons are enabled, the screen is configurable up to 21 lines by 31 characters instead of 21 lines by 32 characters. For more information about the status icons, see “Learning About the Status Icons” on page 20.</p>
Good Read LED and audio signals	The Good Read LED indicates the status of bar code scanning. The 243X also has status icons and a beeper that provide you with feedback for terminal operations.

**243X Features (continued)**

<b>Feature</b>	<b>Description</b>
Keypad	There are three keypad options with different overlays. The 243X ships with a keypad and an overlay that supports the type of application that you ordered.
Integrated I/O connector	The 6-pin connector acts as a serial port or power supply connector. You can connect the 243X to a serial device with the serial adapter cable. You can also connect the 243X to the AC power supply with a power adapter cable.
Input device connector	The 9-pin connector on the connector module allows you to connect an input device to the 243X. Depending on the type of connector module you choose, the terminal supports either non-decoded input devices or decoded input devices.
Docking connector	The docking connector allows you to insert the 243X into the vehicle dock accessory.
Handstrap	The elastic handstrap attaches to the back of the terminal to let you hold the terminal easily and securely for long periods of use.
Rechargeable battery pack and backup power source	The 243X uses a rechargeable lithium-ion battery pack as its main power source. The terminal has a backup power source that maintains the terminal's status, memory, and real-time clock (for up to 15 minutes) when the battery pack is changed.
Internal antenna (2435 only)	The 2435 uses an internal antenna that supports RF communications.

**Options for the Terminals**

These options are available for both the 2430 and the 2435:

- Programmable terminal with 57-key alphanumeric, 39-key function numeric, or 48-key large alphanumeric keypad and overlays for U.S. English or International languages
- Integrated laser scanner (standard range, long range, advanced long range, or linear imager)
- Standard connector module (for non-decoded tethered input devices) or serial connector module (for decoded tethered input devices)
- Cold-temperature option (heater installed)
- Trakker Antares ROM-DOS™ support

This option is also available for the 2430:

- 2MB or 4MB extended storage drive, used for custom applications or files

These options are also available for the 2435:

- 4MB flash memory configured for 802.1x TTLS security
- 802.1x Cisco LEAP security
- UDP Plus (DCS 30X network), WTP, or TCP/IP

- TE 2000 IBM 3270, TE 2000 IBM 5250, and TE 2000 VT100/220/320 and ANSI terminal emulation application with 57-key alphanumeric, 39-key function numeric, or 48-key large alphanumeric keypads
- dcBrowser application
- WLI Forum 2.4 GHz OpenAir radio or IEEE 802.11b radio

This manual explains how to use the features and options available on all models of the Trakker Antares terminals.

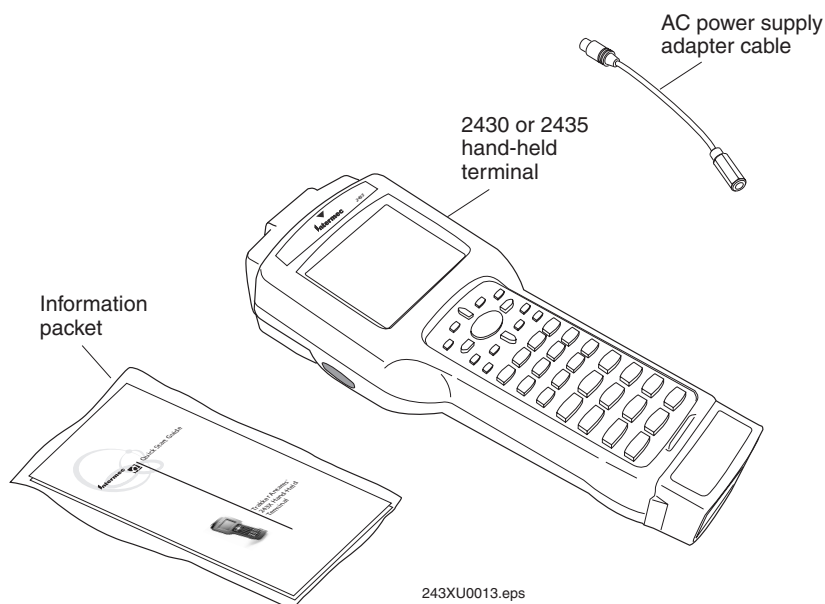
For additional help using terminal emulation, see the appropriate TE 2000 manual:

- *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 additional help using dcBrowser, see the documentation that ships with your DCS 30X, the dcBrowser gateway software, or the *Data Collection Browser Client User's Guide* (P/N 070011).

## Unpacking the Terminal

When you remove the 243X from its box, save the box and shipping material in case you need to ship or store the terminal.



**243X shipping box:** This illustration shows the contents of the 243X shipping box.

The shipping box contains:

- 2430 or 2435 handheld terminal
- AC power supply adapter cable
- 243X quick start guide
- Manual safety supplement (Important 243X Information!)
- Handstrap (attached to the back of the 243X)



**Note:** You also need a main battery pack to operate the terminal. See your Intermec sales representative for the battery packs that are currently available.

## Using the Terminal's Battery Pack



Warning



**The lithium-ion battery pack that is used in this device may present a fire or chemical burn hazard if it is mistreated. Do not disassemble it, heat it above 100°C (212°F) or incinerate it.**

**Avertissement: Le paquet de piles d'ions de lithium qui est utilisé dans cet appareil peut présenter un risque feu ou un risque chimique de brûlure s'il est maltraité. Il ne faut pas le désassembler, le réchauffer à une température plus élevée que 100°C (212°F) ou l'incinérer.**

The main power source for the 243X is a lithium-ion battery pack (P/N 073152). When you change the battery pack, a backup power source maintains the terminal status, memory, and real-time clock for at least 15 minutes.

If you use the terminal in a very hot or very cold environment, battery life will be reduced. Battery life depends on temperature, battery model, input device, age of the battery pack, your usage, and duty cycle factors. If you use the terminal for extended periods of time in sub-freezing environments, you may need to change the main battery pack more often.



**Note:** Do not press  or  when there is no battery pack installed in the terminal.

Follow these tips to get the best battery performance and life possible:

- Keep a spare, fully charged battery pack on hand.
- Keep a charged battery pack installed in the terminal to maximize the backup power source's life and so you can continue to operate the terminal without interruption.
- If the terminal turns off due to a low battery, do not turn the terminal back on. Replace or charge the battery pack before you continue using the terminal.

- Do not store the terminal in a cold temperature environment. When you are not using the terminal, keep it in a warm area to make sure the battery charger will continue operating.
- Store the battery chargers and spare batteries in a warm (office) environment to ensure the most efficient operation.
- Charge the main battery pack in an area or room where the temperature is above freezing.
- If you have been using the terminal in a cold temperature environment and need to replace or charge the battery, let the battery warm up for a half-hour before you charge it.

## Determining When the Battery Pack Is Low

The battery pack is the main power source for the terminal, and it charges the backup power source when required. If the battery charge goes low, you need to replace it with a charged battery pack or charge the battery pack as soon as possible.

There are two ways to determine if the battery pack is low:

- The Battery status icon turns on and the terminal beeps once every 15 seconds. For help using the status icons, see “Learning About the Status Icons” on page 20.
- Check the status of the battery pack using the Battery/PIC Status diagnostic test. For help, see Chapter 4, “Running Diagnostics,” in the *Trakker Antares 2400 Family System Manual* (P/N 071389).



**Note:** While the battery is charging, do not use this diagnostic test to determine when the battery is fully charged. To determine when the battery is fully charged, use the status LEDs on the battery chargers.

## Charging the Battery Pack

You must fully charge the battery pack before you can use the terminal.

### To charge the battery pack

- Place the battery pack in an empty slot in the Z2400 battery charger (P/N Z2400A). The battery pack fully charges in 4 to 6 hours. For help, see the documentation that came with your charger.

Or,

- Install the battery pack in the terminal. For help, see the next section, “Installing the Battery Pack.” Connect one end of the AC power supply adapter cable to the AC power supply, and connect the other end of the AC power supply adapter cable to the power port on the 243X. The battery pack is fully charged in about 4 to 6 hours.

You can also use the powered vehicle dock (P/N 071695) (sold and ordered separately) connected to an AC power supply to charge the battery. For help, see the *Trakker Antares 243X Vehicle Dock Installation Instructions* (P/N 071793).



Warning



**Replace the battery pack with P/N 073152 only. The use of any other battery pack may present a risk of fire or explosion.**

**Avertissement: Remplacez le bloc-batterie par la pièce réf. n° 073152 seulement. L'utilisation de tout autre bloc-batterie présente un risque d'incendie ou d'explosion.**

Contact your local Intermec sales representative for a replacement battery pack. **DISPOSE OF USED BATTERY PACKS PROMPTLY. KEEP THEM AWAY FROM CHILDREN.**

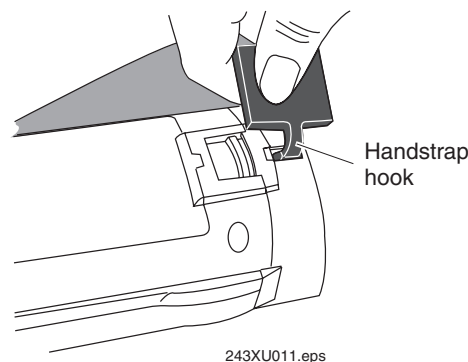
## Installing the Battery Pack



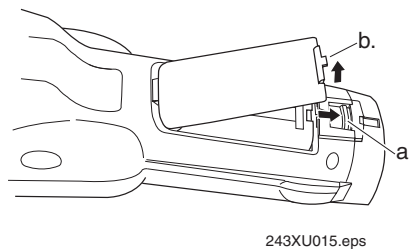
**Note:** Do not press  or  when there is no battery pack installed in the terminal.

### To install the battery pack

- 1 The 243X ships with the handstrap installed. Before you install the battery pack, you must remove the handstrap. Rotate the handstrap hook 90 degrees left or right, and unhook it from the 243X.

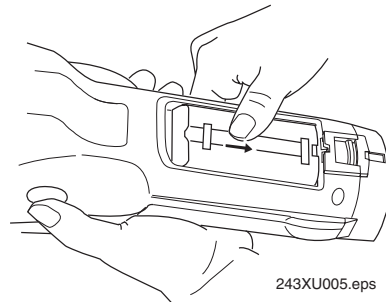


- 2 Open the battery door.

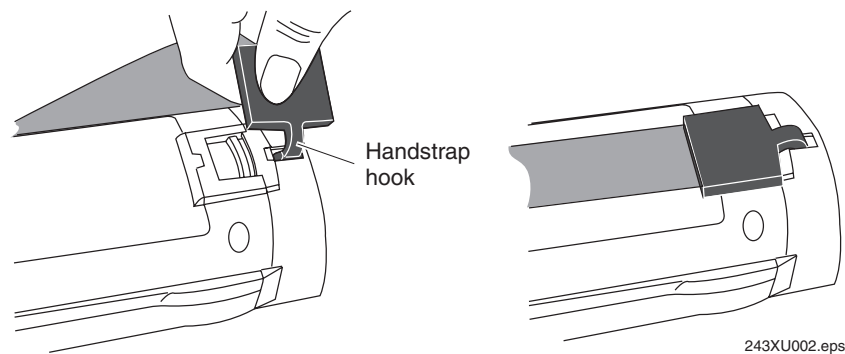


- a Push down on the battery door latch and slide it toward the bottom end of the 243X.

- b** Lift up the bottom edge of the battery door to remove it. You may need to use a pointed object to lift the door open. Remove the foam insert if necessary.
- 3** Place the battery pack into the battery compartment with the contacts pointed toward the bottom of the 243X.
- 4** Slide the battery pack down toward the bottom of the 243X until it locks into the connectors in the battery compartment. See the next illustration.



- 5** Insert the top edge of the battery door into the top of the battery compartment. Push the door down to close it over the battery compartment.
- 6** Push the battery door latch up and slide it toward the top end of the 243X to lock the door in place.
- 7** Attach the handstrap by inserting the handstrap hook as shown and rotating the handstrap hook 90 degrees toward the top of the terminal.









**Note:** The handstrap is most effective if it crosses the entire back of the hand and not just the fingers.



## Managing Battery Power

To maximize the life of the battery pack, use these power management features.

### Managing Battery Power

Situation	Ways to Save Battery Power
You are operating the terminal and the Battery status icon turns on.	<p>Press  or  to turn off the terminal. Remove the battery pack and insert another fully charged battery pack. You must insert another fully charged battery pack within 15 minutes of removing the old battery pack or you may lose data.</p> <p>Or, if you want to continue using the terminal and you do not have another battery pack, insert the terminal into the powered vehicle dock. The vehicle dock must be connected to an AC power supply.</p>
You are not using the terminal for 5 minutes or longer.	<p>Make sure the Battery status icon is not on. Press  or  to turn off the terminal.</p> <p>Or, use the Automatic Shutoff feature. Automatic shutoff turns off the terminal when there is no activity on the terminal for the length of time you set. For help, see “Automatic Shutoff” in Chapter 6 of the 2400 Family system manual.</p>
You are going to store the terminal for more than a day.	<p>Save your data and end your terminal session to minimize the risk of data loss. Press  or  to turn off the terminal. Insert a fully charged battery pack before you store the terminal.</p>

## Using the Keypad

The 243X has the following keypad options and overlays:

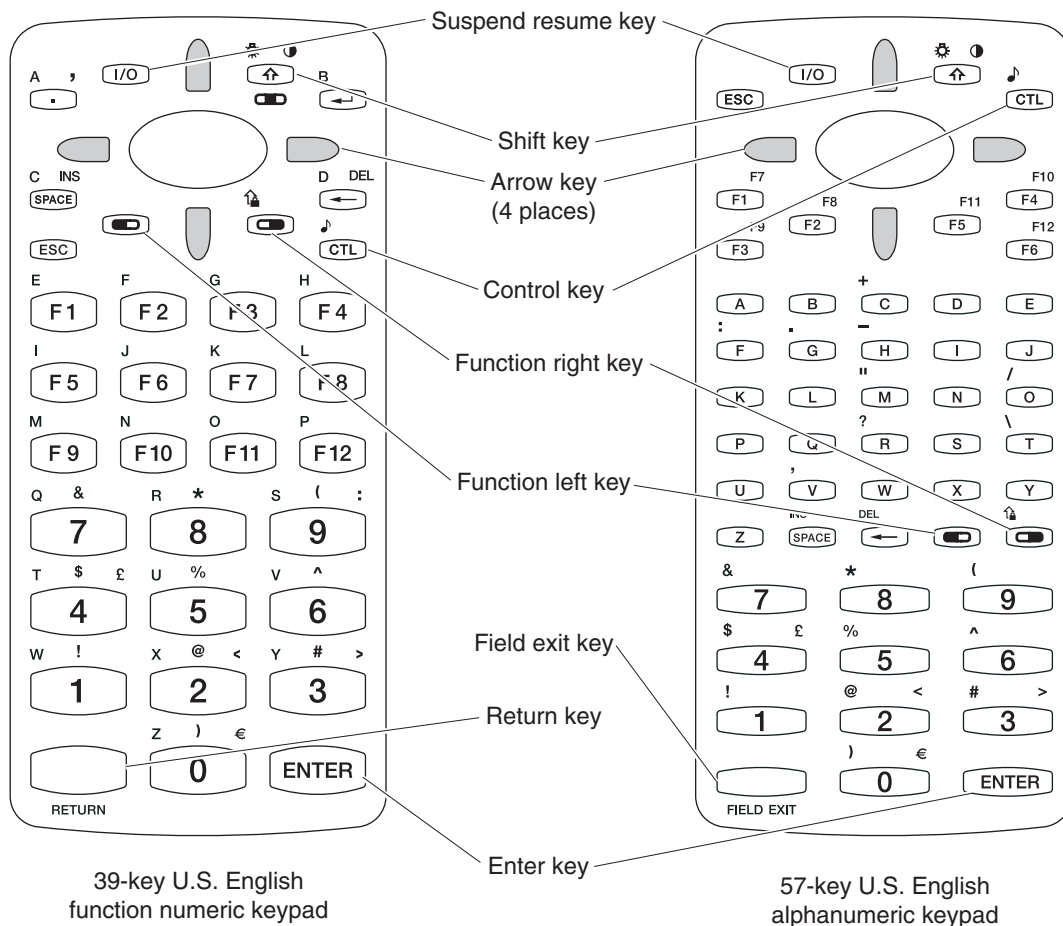
- 57-key alphanumeric keypad
- 39-key function numeric keypad
- 48-key large alphanumeric keypad
- TE 2000 terminal emulation overlays

The 57-key, 39-key, and 48-key keypads are available in U.S. English and International. The International option supports French, German, Italian, Portuguese, and Spanish. Although the keypads are smaller than standard PC or terminal keyboards, you can use special keys to access all the characters and functions that you need.

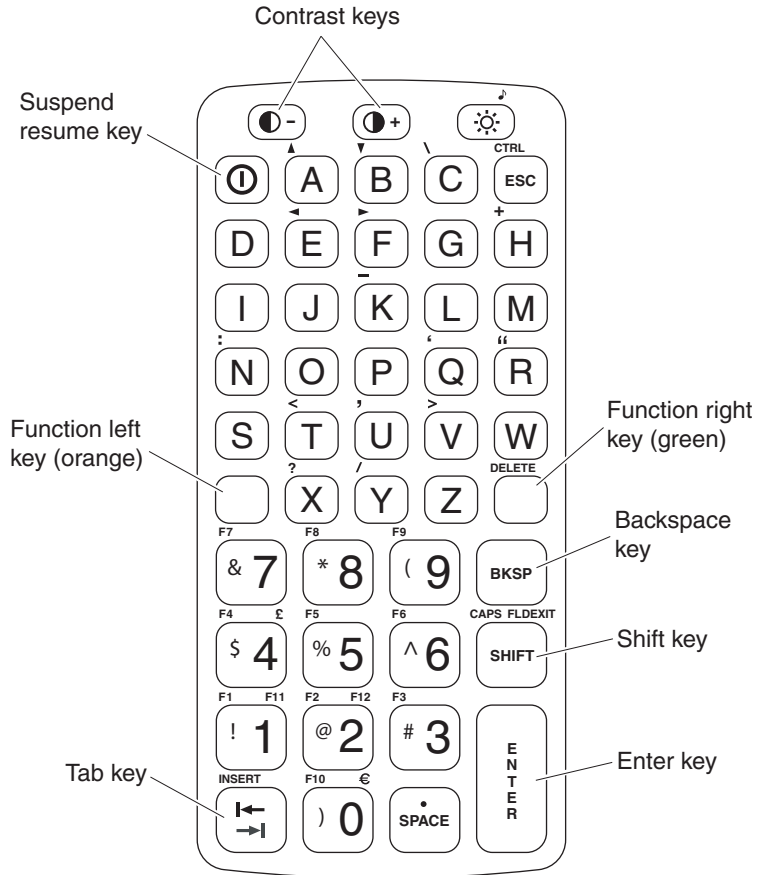
All keypad options also support overlays for TE 2000 3270, TE 2000 5250, and TE 2000 VT/ANSI. When you order a TE 2000 application, you also receive the appropriate TE 2000 keypad overlay. Each TE 2000 keypad overlay is similar to the standard U.S. English keypad overlay, but it contains additional keys that are available on an IBM 3270, IBM 5250, or VT/ANSI keyboard. For additional help using terminal emulation, see the appropriate TE 2000 guide.

## Finding the Special Keys

Before you use the terminal's keypad, make sure you are familiar with the different types of keys on the keypad. You need to use these special keys on all keypad options. The special keys that you use to type characters or perform functions are explained in the next sections.



**39-key function numeric and 57-key alphanumeric keypads:** This illustration shows where the special keys are located on the 39-key and 57-key keypads.



243XU035.eps

**48-key large alphanumeric keypad:** This illustration shows where the special keys are located on the 48-key keypad.






**Note:** To access the TRAKKER Antares 2400 Main Menu, you need to use the correct key sequence for your keypad:

Keypad	To Access the TRAKKER Antares 2400 Main Menu
57-key keypad	Press    .
39-key keypad	Press    .
48-key keypad	Press the orange  key, and then press    .




## Typing the Characters Printed on the Keypad

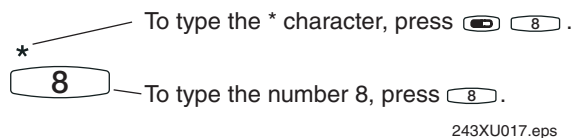
Characters, symbols, and functions are printed in four places on or above the keys. The keys are also color-coded to make it easier to remember key combinations.

### Typing Characters on the 39-Key or 57-Key Keypad

Position on the Keypad	Color on Overlay	To Type the Character
Printed on the key		Press the key.
Left side above the key	Orange	Press the  key and then the key.
Centered above the key	Pink	Press the  key and then the key.
Right side above the key	Blue	Press the  key and then the key.





### Typing Characters on the 48-Key Keypad



Position on the Keypad	Color on Overlay	To Type the Character
Printed on the key in black		Press the key.
Printed on the key in blue		Press the  key and then the key.
Left side above the key	Orange	Press the orange  key and then the key.
Right side above the key	Green	Press the green  key and then the key.




**Typing characters using the 57-key U.S. English alphanumeric keypad:** This example shows you how to type characters on the keypad.

## Using the Suspend/Resume Key

The terminal’s Suspend/Resume key is the  key or the  key on the top left side of the keypad. When you press  or  to turn off the terminal, the terminal does not actually shut off but goes into a Suspend mode. In Suspend mode, the terminal continues to power all memory and turns off the power to most of the hardware. This mode is referred to as “off” in the rest of this manual.

When you press  or  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. If you are using 802.1x security, the terminal may reauthenticate before it starts your application. Resume is controlled through the Resume Execution command. For help, see “Resume Execution” in Chapter 6 of the 2400 Family system manual.



**Note:** The terminal displays the boot menu the first time you turn it on. At the boot menu, press  to initialize the firmware and boot the terminal.

Even if you change the battery pack while the terminal is turned off, the terminal resumes or boots the next time the terminal is turned on.

## Using the Modifier Keys

The keypad does not have a physical key for every character and function available. You use the modifier keys to access characters or perform functions that do not have a physical key on the keypad:

- On the 39-key and 57-key keypads, you use Function Left (⏪), Function Right (⏩), Control (Ctrl), and Shift (⇧).
- On the 48-key keypad, you use Function Left (the orange key), Function Right (the green key), and Shift (SHIFT).

On all three keypads, you also use the Shift key to type uppercase alphabetic characters.

When you press a modifier key, the key is held in a buffer until you press another key. If the status icons are enabled, the Modifier Key status icon on the right side of the terminal's screen turns on to remind you that the key is being held in the buffer. When you press another key, the key combination is entered into the terminal. The Modifier Key status icon turns off unless the second key that you pressed is another modifier key that is different from the first one that you pressed. For help using the status icons, see the procedure in “Learning About the Status Icons” on page 20.

To flush the modifier key from the buffer without performing any action, just press the key again. The Modifier Key status icon turns off.

### To use the Function Left, Function Right, Control, and Shift keys

- 1 Press a modifier key, such as ⇧ or SHIFT. The Modifier Key status icon turns on.
- 2 Press the second key. The Modifier Key status icon turns off.

For example, to type the Euro symbol (€) on a 39-key keypad, press ⏪. The Modifier Key status icon turns on. Press 0. The Modifier Key status icon turns off, and a Euro symbol appears on the screen.

## Capitalizing All Characters

To type all alphabetic characters as uppercase letters, you can:

- press ⇧ or SHIFT before every letter you type.
- use the Keypad Caps Lock configuration command. For help, see “Keypad Caps Lock” in Chapter 6 of the 2400 Family system manual.
- enable the Caps Lock feature. For help, continue with the next two sections.





**Note:** You cannot access the TRAKKER Antares 2400 Menu System while the Caps Lock feature is enabled.



### Using Caps Lock With a 39-Key or 57-Key Keypad

This section describes how to use the Caps Lock feature with a 39-key or 57-key keypad.



#### To enable Caps Lock using a 39-key or 57-key keypad

- 1 Press . If the status icons are enabled, the Modifier Key status icon turns on. For help using the status icons, see the procedure in “Learning About the Status Icons” on page 20.
- 2 Press . The Caps Lock icon turns on and the Modifier Key icon turns off.
- 3 Type an alphabetic character. The letter appears as an uppercase character on the terminal’s screen. The Caps Lock feature remains on until you disable it.

#### To disable Caps Lock using a 39-key or 57-key keypad

- 1 Press . The Modifier Key status icon turns on.
- 2 Press . The Caps Lock and Modifier Key status icons turn off.
- 3 Type an alphabetic character. The letter appears as a lowercase letter on the terminal’s screen.



#### To type a lowercase letter with Caps Lock enabled

- Press  or  and an alphabetic character.



### Using Caps Lock With a 48-Key Keypad

This section describes how to use the Caps Lock feature with a 48-key keypad.

#### To enable Caps Lock using a 48-key keypad



- 1 Press the orange  key. If the status icons are enabled, the Modifier Key status icon turns on. For help using the status icons, see the procedure in “Learning About the Status Icons” on page 20.
- 2 Press . The Caps Lock icon turns on and the Modifier Key icon turns off.

#### To disable Caps Lock using a 48-key keypad

- 1 Press . The Modifier Key status icon turns on.
- 2 Press the orange  key. The Caps Lock and Modifier Key status icons turn off.

- 3 Type an alphabetic character. The letter appears as a lowercase letter on the terminal's screen.

#### To type a lowercase letter with Caps Lock enabled



- Press  or  and an alphabetic character.











## Using the International Keypads


You can order the 243X with an International keypad overlay that supports French, German, Italian, Portuguese, and Spanish. Like the U.S. English keypads, you use the international keypad to enter all the characters printed on or above the keys. For help, see “Typing the Characters Printed on the Keypad” on page 13. You can also use the international keypad to type characters with diacritical marks.


If you try to accent a character and the resulting character is not supported on the terminal, the plain (unaccented) character appears on the terminal screen. For a complete list of the international characters available in the terminal font, see Appendix C, “International Character Support,” in the 2400 Family system manual.

#### To type characters with a diacritical mark using the 39-key keypad

- 1 Press  . If the status icons are enabled, the Caps Lock status icon turns on. For help using the status icons, see the procedure in “Learning About the Status Icons” on page 20.
- 2 Press the key combination for the diacritical mark.

To Type	Press
^ (circumflex)	 
` (grave)	 
¨ (umlaut)	 
´ (acute)	 
~ (tilde)	 

To remove the diacritical mark from the keypad buffer without entering any key, press . The Modifier Key status icon turns off.

- 3 Enter one of the following types of characters:
  - To accent a lowercase character, press , and then press the character.
  - To accent an uppercase character, press the character.
- 4 The accented character or diacritical mark appears on the screen, the Modifier Key status icon turns off, and the Caps Lock status icon remains on.



**Note:** You need to use the Left Arrow key (⬅) and the Right Arrow key (➡) to type a diacritical mark above the letters “U” and “Y” respectively.

**To type characters with a diacritical mark using the 57-key keypad**

1 Press the key combination for the diacritical mark.

To Type	Press
^ (circumflex)	6
` (grave)	S
¨ (umlaut)	P
´ (acute)	Q
˜ (tilde)	A

To remove the diacritical mark from the keypad buffer without entering any key, press . The Modifier Key status icon turns off.

2 Enter one of the following types of characters:

- To accent a lowercase character, press the character.
- To accent an uppercase character, press , and then press the character.
- To type the diacritical mark by itself, press the key.

3 The accented character or diacritical mark appears on the screen and the Modifier Key status icon turns off.

**To type characters with a diacritical mark using the 48-key keypad**

1 Press the key combination for the diacritical mark.


To Type	Press
^ (circumflex)	
` (grave)	orange  key,
¨ (umlaut)	orange  key,
´ (acute)	orange  key,
˜ (tilde)	orange  key,

To remove the diacritical mark from the keypad buffer without entering any key, press the orange key press or twice. The Modifier Key status icon turns off.

2 Enter one of the following types of characters:

- To accent a lowercase character, press the character.
- To accent an uppercase character, press , and then press the character.



- To type the diacritical mark by itself, press the  key.
- 3 The accented character or diacritical mark appears on the screen and the Modifier Key status icon turns off.

## Using the TE 2000 Keypads

The 2435 supports TE 2000 VT100/220/320/340 and ANSI, TE 2000 5250, and TE 2000 3270. When you order a TE 2000 application, you also receive the appropriate TE 2000 keypad overlay. TE 2000 keypad overlays let you enter the same keys that you can enter from a VT/ANSI keyboard, an IBM 5250 keyboard, or an IBM 3270 keyboard.

Like the 39-key function numeric, the 57-key alphanumeric keypad, and the 48-key large alphanumeric overlays, the TE 2000 keypad overlay lets you enter all the characters printed on or above the keys. For help, see “Typing the Characters Printed on the Keypad” on page 13. The TE 2000 keypad overlays also come with the same special keys that are on the 39-key function numeric, 57-key alphanumeric keypad, and 48-key large alphanumeric overlays. For help, see “Finding the Special Keys” on page 12. For help using TE 2000, see the appropriate TE 2000 guide.

## Using the Screen

You can use the terminal’s screen to view data, run applications, monitor the terminal’s status, and perform many other functions. The CGA-compatible screen is a backlit LCD that is configurable up to 21 lines by 32 characters. The screen also supports double-byte characters, user-programmable fonts, and bitmap graphics.









**Note:** If you have the status icons enabled, the screen is configurable up to 21 lines by 31 characters. For more information about the status icons, see “Learning About the Status Icons” on page 20.

The 243X screen has versatile display features that allow you to resize the screen based on operator preference and work environment. For help, see “Display Spacing” in Chapter 6 of the 2400 Family system manual.

You can also use the keypad to change the backlight and display contrast.

### Adjusting Display Contrast and Backlight

To Do This	39-Key or 57-Key Keypad	48-Key Keypad
Turn the backlight on and off	Press  .	Press  .
Adjust the display contrast.	Press   .	Press  or  .



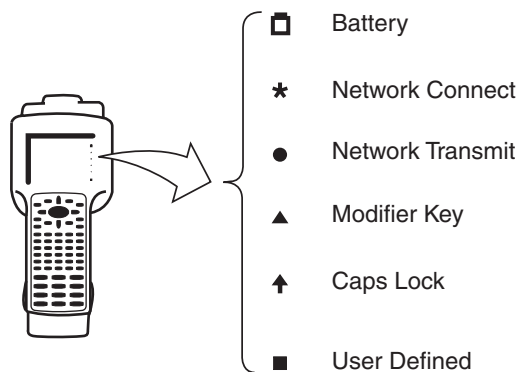
**Note:** Battery life is diminished with the backlight turned on.

When you use the keypad to change the backlight or contrast, the changes are not saved permanently in flash memory. You can save the changes in flash memory later. For help, see “Exiting Screens and Saving Changes” on page 40.

For more information about backlight and display contrast, see “Display Contrast” or “Display Backlight Timeout” in Chapter 6 of the 2400 Family system manual.

## Learning About the Status Icons

You can use the status icons on the right side of the screen to monitor the status of battery power, special keys, and network communications. The status icons are disabled by default.



243XU032.eps

**243X status icons:** This illustration shows you where to find the status icons. The status icons are disabled by default. To enable the status icons, see the next procedure.

### To enable the status icons



**Note:** If you enable status icons, the screen is configurable up to 21 lines by 31 characters instead of 21 lines by 32 characters.

1 Scan this bar code to enter the TRAKKER Antares 2400 Menu System:

TRAKKER Antares 2400 Menu System
















\*..\*

2 Choose Configuration Menu, Terminal Menu, and then choose Display.

3 Set the Display Video Mode command to normal display with icons (Nrm/Icon) or inverse display with icons (Inv/Icon).

4 Exit the Menu System and save all changes. The status icons are now enabled.

**243X Status Icon Descriptions**

Icon	Name	Description												
	Battery	This icon remains off when you have a charged battery pack in the terminal. The icon turns on when there is a low battery charge and the terminal is on. When the terminal beeps once every 15 seconds, replace the battery pack with a charged battery pack or charge the battery pack as soon as possible.												
	Network Connect	<p>This icon tells you if the 2435 is connected to your network. The Network Connect status icon may be off, blinking, or on.</p> <table border="1"> <thead> <tr> <th>Protocol</th> <th>Status Icon Off</th> <th>Status Icon Blinks</th> <th>Status Icon On</th> </tr> </thead> <tbody> <tr> <td>TCP/IP</td> <td>Not connected.</td> <td>Not used.</td> <td>Connected to an access point.</td> </tr> <tr> <td>UDP Plus or WTP</td> <td>Not connected.</td> <td>Connected to an access point, but not to a DCS 30X.</td> <td>Connected to a DCS 30X.</td> </tr> </tbody> </table> <p>When the Network Connect status icon is off, you are not connected to the network. Make sure the Network Activate command is enabled and that the terminal is configured correctly for your RF network. Make sure that you are in range of an access point.</p> <p>In a UDP Plus or WTP network, this status icon is not instantaneously updated, but it does tell you the communications status the last time data was sent or received from the 2435.</p>	Protocol	Status Icon Off	Status Icon Blinks	Status Icon On	TCP/IP	Not connected.	Not used.	Connected to an access point.	UDP Plus or WTP	Not connected.	Connected to an access point, but not to a DCS 30X.	Connected to a DCS 30X.
Protocol	Status Icon Off	Status Icon Blinks	Status Icon On											
TCP/IP	Not connected.	Not used.	Connected to an access point.											
UDP Plus or WTP	Not connected.	Connected to an access point, but not to a DCS 30X.	Connected to a DCS 30X.											
	Network Transmit	This status icon turns on when data is buffered in the RF network interface. The data is either waiting to be transmitted to the DCS 30X or host, or received data has not been accepted by the application on the 2435. When no data is being buffered in the interface, the Network Transmit status icon is off.												
	Modifier Key	This status icon indicates that one of the modifier keys, such as  , is enabled. When you press another key, the key combination is available to the application. The Modifier status icon turns off unless the second key that you pressed is another modifier key that is different from the first one that you pressed.												
	Caps Lock	<p>This status icon turns on when you press  or the orange  key and  to enable the Caps Lock feature. When you press  or the orange  key and  again to disable Caps Lock, the icon turns off.</p> <p>If Caps Lock is enabled, this icon remains on until you disable Caps Lock.</p>												
	User Defined	This icon is user controlled. You can use the Trakker Antares Programmer's Software Kit (PSK) to program this icon to turn on and off for any task or error within your application. For help, see the Trakker Antares Application Development Tools System Manual (P/N 064433).												

## Learning About the Audio Signals





The terminal has a beeper that provides you with audio feedback as you use the terminal. For example, you hear a beep tone each time you enter or scan a valid command. You can change the beep volume, beep duration, and beep frequency to meet the needs of your working environment.

When you change the beep volume, you also change the keyclick volume if the Keypad Clicker command is enabled. The keyclick is the sound that you hear when you press a key on the terminal.

There are three ways to change the beep volume:

- Use the keypad. For help, see the next table.
- Use the TRAKKER Antares 2400 Menu System. From the Main Menu, choose Configuration Menu, Terminal Menu, and then Beeper.
- Use the Beep Volume command. For help, see “Beep Volume” in Chapter 6 of the 2400 Family system manual.

### Changing Beep Volume With the Keypad

Keypad	Do This
39-key or 57-key	Press   .
48-key	Press the green  key, and then press  .

There are five beep volume levels including off. Each time you press the key sequence the beep volume becomes one level louder. If the volume is at the loudest level and you press the key sequence, the beep volume is turned off. If you press the key sequence again, the volume changes to the quietest level.



**Note:** When you use the keypad to change the beep and keyclick volume, the changes are not saved permanently in flash memory. You can save the changes in flash memory later. For help, see “Exiting Screens and Saving Changes” on page 40.

This table lists each audio signal and describes the situations under which they occur.

### Audio Signal Descriptions

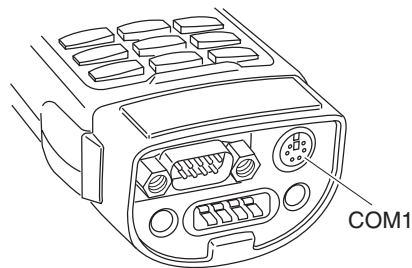
Audio Signal	Situation
High beep	You entered valid data, you entered a valid command, the terminal decoded a label, or the terminal decoded the last row of a two-dimensional bar code.
Low beep (every 15 seconds)	The battery pack is low. You must replace or recharge the battery pack. For help, see “Using the Terminal’s Battery Pack” on page 7.
Three low beeps	You entered or scanned an invalid command or data.

**Audio Signal Descriptions (continued)**

Audio Signal	Situation
Four low beeps	You booted the terminal and the power-on self test (POST) was successful.
Low beep, high beep, low beep, high beep	You booted the terminal and the POST failed. For help, see “Problems While Operating the Terminal” on page 64.
Low beep, high beep	Your 802.1x terminal has been authenticated.
High beep, low beep	Your 802.1x terminal is not authenticated. For help, see “Problems While Configuring 802.1x Security” on page 70.
Click	You pressed a key and the Keypad Clicker command was enabled. To disable the keyclick, see “Keypad Clicker” in Chapter 6 of the 2400 Family system manual.

**Using the Terminal’s Serial Port**

Serial ports, also called COM (communications) ports, are locations from which data can be passed into and out of the terminal. The 243X supports RS-232 serial communications.



243XU008.eps

**243X serial port:** This illustration shows the COM1 serial port.



**Note:** The serial/power connector and the input device connector lead to the same serial port, COM1. Do **not** connect more than one serial device to the 243X.

**COM Port Descriptions**

Port	Description
COM1	Use for serial port communications on the 243X. You can use a serial cable to connect the 243X to another serial device, such as a modem, a PC, or a printer. If you have a serial connector module, you can also use the input device connector as COM1. For help, see “Learning About the Connector Modules” on page 26.
RF (NET)	Use for RF communications on the 2435. The Trakker Antares PSK functions use NET to designate the RF network port.

## Using the Terminal's Scanner



Warning

**Do not look directly into the window area or at a reflection of the laser beam while the laser is scanning. Long-term exposure to the laser beam can damage your vision.**

**Avertissement: Ne regardez pas directement la réflexion d'un rayon laser ou dans la fenêtre du laser lorsque celui-ci est en opération. Si vous regardez trop longtemps un rayon laser, cela peut endommager votre vue.**

You can use the scanner to scan and enter bar code data. When you press the Scan button or one of the side scan buttons, the scanner emits a beam of laser light that is visible on the bar code label as you scan it. The terminal decodes the bar code and enters the data or command you scanned.



**Note:** The Scan button on the keypad and the side scan buttons on the terminal do not activate the tethered input device that may be connected to the terminal.



When you unpack the 243X, these bar code symbologies are enabled:

- Code 39
- Code 128
- PDF 417 (243X terminals configured for decoded scanning with a tethered PDF 417 scanner only)
- UPC/EAN

To scan other bar code symbologies, you must enable them on the 243X. For help, find the symbology in Chapter 6 of the 2400 Family system manual.

This section describes how to scan a bar code label with the integrated scanner and the tethered PDF 417 scanner. For help using the other input devices, see the instructions that ship with the input device. For help connecting and configuring tethered input devices, see “Input Devices” on page 87.

### To scan a bar code label with the scanner

- 1 Press  or  to turn on the terminal.
- 2 Hold the terminal at a slight angle a few inches from the bar code label. The scanner must be pointing toward the label.

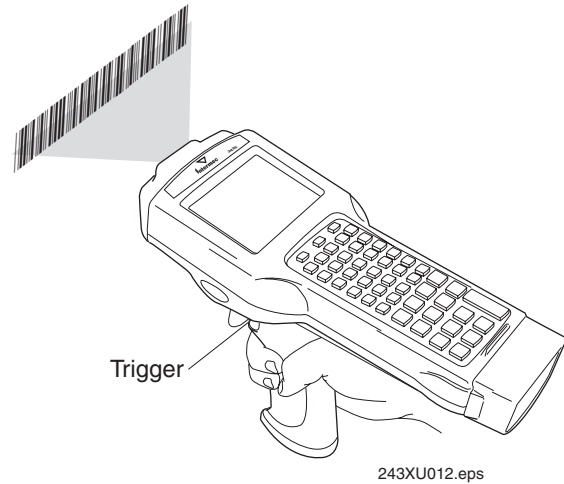
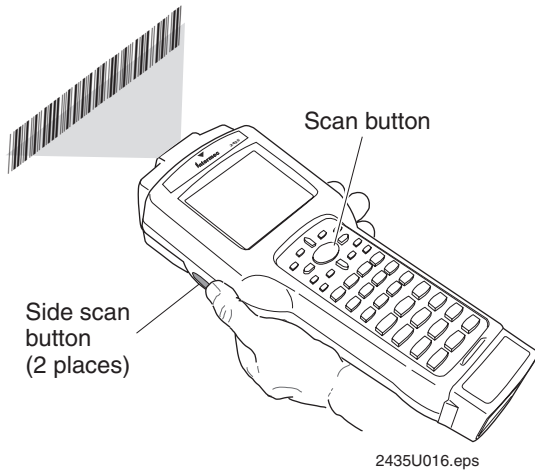


**Note:** If you have a long range or advanced long range scanner, you may need to hold the terminal further away.

3 Push the Scan button on the keypad or one of the side scan buttons on the terminal.

Or,

If you are using a handle, gently pull the trigger.



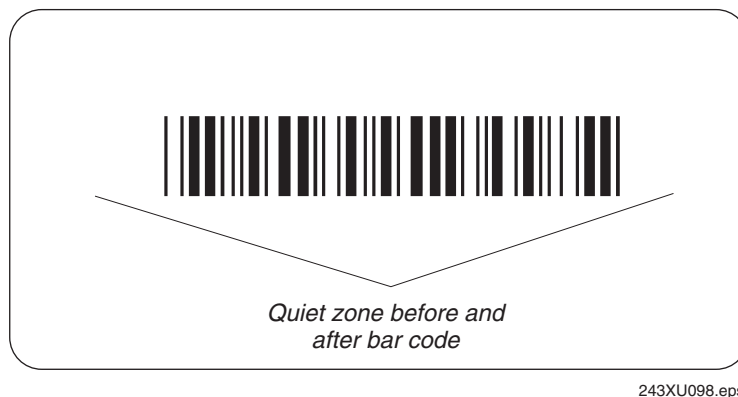
4 Direct the beam so that it falls across all bars in the bar code label. When the terminal successfully reads the label, you will hear a high beep.

The green Good Read LED turns on when you successfully scan a bar code label with the integrated scanner or an input device that is connected to the terminal. This LED turns off after 2 seconds unless you start scanning another label.

5 Release the Scan button.



**Note:** You can configure scanning options to scan multiple bar code labels without pressing the Scan button each time. For help, see “Scanning Options” on page 27.





**Quiet zone:** To successfully read a bar code label, the laser beam in the scan module must see all the bars in a label and a clean, non-printed space, or “quiet zone,” at each end of the label.

Use the following guidelines to achieve a successful scan:

- Hold the terminal so that the scanner is pointing toward the bar code label. Tilt the terminal up or down slightly (20 degrees).
- Optimum scan angles vary with the type and print quality of the bar code label, the distance of the scanner from the label, and the lighting in the area.
- Do not scan the bar code label “straight on.” In a 2-degree conical “dead zone” directly above the label, the laser beam may reflect back into the scanner window and prevent the terminal from reading the label. At certain angles and straight on, you may not see the laser beam.

### To scan a bar code label with the tethered PDF 417 scanner

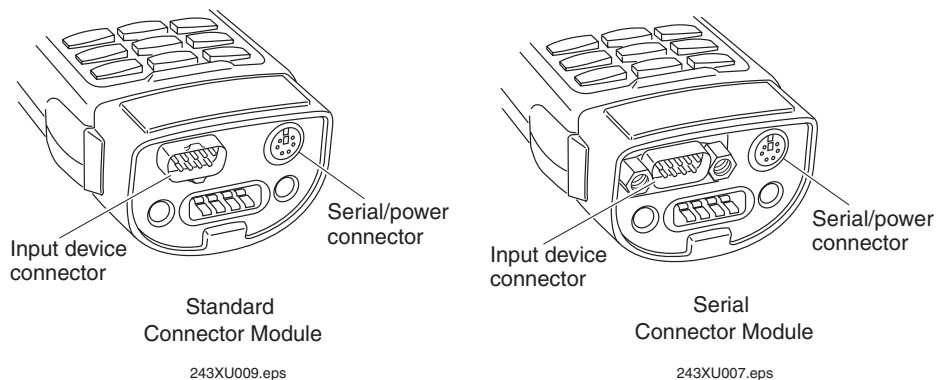
- 1 Press  or  to turn on the terminal.
- 2 Point the scanner slightly above or below the bar code label, and press the scan button or the trigger.
- 3 Pass the beam over the bar code label in a steady sweeping motion.

The terminal emits an audible crackle sound indicating that the terminal is successfully scanning the bar code label.

When you get a successful read with the 243X, the Scanner LEDs at the top of the keypad are lit green for 2 seconds, the terminal beeps, and the laser beam turns off.

## Learning About the Connector Modules

The 243X has two different connector module options.



### Standard Connector Module

The input device connector on the standard connector module supports non-decoded input devices. Non-decoded input devices send the data from the scanned bar code label directly to the 243X. The 243X then translates the data before processing it.



### Serial Connector Module

The input device connector on the serial connector module supports decoded input devices. Decoded input devices translate the data from the scanned bar code label before sending it to the 243X. You can also attach a serial device to this input device connector. For help, see “Connecting to a Serial Device or Network” on page 28.



**Note:** The serial/power connector and the input device connector lead to the same serial port, COM1. Do **not** connect more than one serial device to the 243X.

The 243X supports different bar code symbologies depending on the type of input device connected to the terminal. For a list of these symbologies, see “Bar Code Symbologies” on page 86.

### Connecting an Input Device

- 1 Use the appropriate interface cable to attach an input device to the input device connector on the connector module. For help determining which cable to use, see “Input Devices” on page 87.
- 2 Configure the Scanner Selection command and select the input device that is connected to the terminal. For help determining how to configure the Scanner Selection command, see “Input Devices” on page 87 and “Scanner Selection” in Chapter 6 of the 2400 Family system manual.



**Note:** You must configure the Scanner Selection command. 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.

### Scanning Options

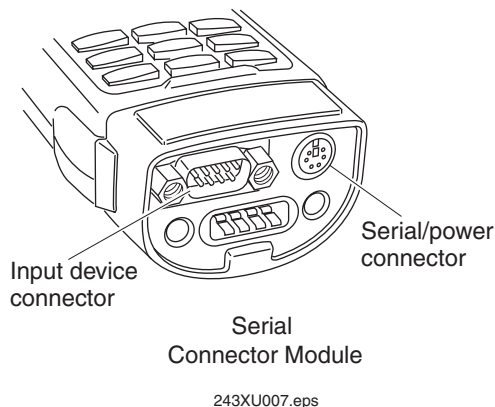
After you connect an input device to the 243X, you can modify the following scanner command options to meet your needs:

- Decode Security
- Scan Ahead
- Scanner Mode
- Scanner Redundancy
- Scanner Selection
- Scanner Timeout
- Scanner Trigger

For more information about these commands, see Chapter 6, “Configuration Command Reference,” in the 2400 Family system manual.

## Connecting to a Serial Device or Network

You can physically connect the 243X to a serial device, such as a host computer or printer, through the serial/power connector using a serial adapter cable. If you have a serial connector module, you can use either the serial/power connector or the input device connector to connect to a serial device.



**Serial connector module:** This illustration shows you which connectors you can use to connect the 243X to a serial device or network.



**Note:** The serial/power connector and the input device connector lead to the same serial port, COM1. Do **not** connect more than one serial device to the 243X.

### To connect the 243X to a serial device using the serial/power connector

- 1 Attach a serial device to the serial adapter cable (P/N 216-807-001) (sold and ordered separately).
- 2 Connect the serial adapter cable to the serial/power connector on the 243X.

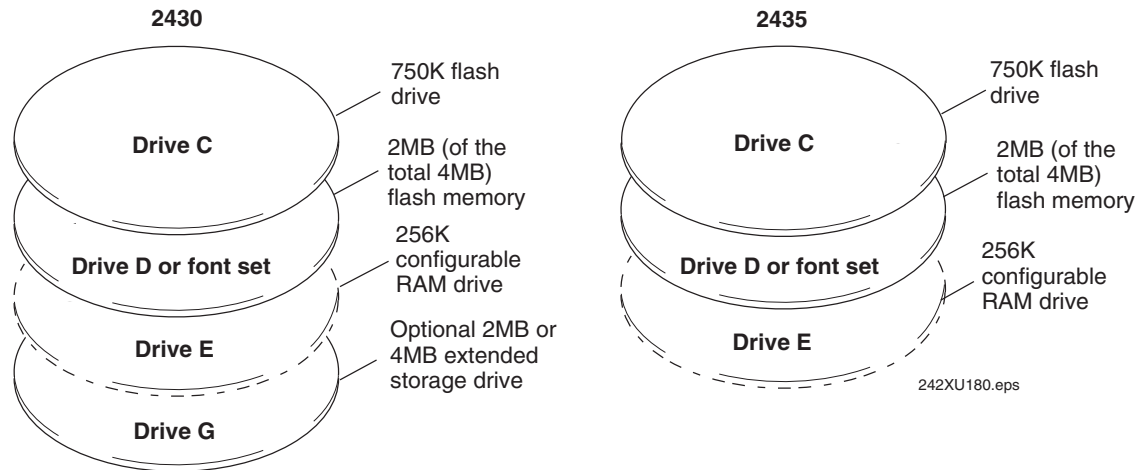
### To connect the 243X to a serial device using the input device connector

- 1 Attach a serial device to the RS-232 null-modem serial cable (P/N 070268) (sold and ordered separately).
- 2 Connect the serial cable to the input device connector on the 243X.

You can transfer data between the 243X and the serial device. For help, see “Using Serial Communications on the Terminal” on page 51.

## Defining the Terminal's Drives

The terminals come with the following memory and drives. On each drive, filenames are customer defined using eight characters with a three-character extension. You cannot define any subdirectories.



**2430 and 2435 drives:** This illustration shows the structure of the terminal drives for the 2430 and the 2435.

### Drive C

Drive C is a 2MB flash drive. You can use up to 750K of this flash drive to store up to 128 files on drive C. Applications must be stored on drive C. You use standard ANSI C library interface definitions to access the information on this drive.

### Drive D or Font Set

Drive D (Font Set) is 2MB drive of flash memory that you can configure as drive D. Use this flash drive to store large lookup tables and data files. You can store up to 128 files. You can also order the flash memory to come pre-loaded with a double-byte font set. To configure this flash memory, see “Flash Memory Configuration” in Chapter 6 of the 2400 Family system manual.



**Note:** If you have a terminal with the 802.1x TTLS security option, drive D is not available to store files or double-byte fonts. For more information about configuring 802.1x security, see “Configuring the 802.1x Security Parameters” on page 58.

### Drive E

Drive E is a configurable RAM drive (up to 256K). The contents of this drive are erased when you boot or reset the terminal. You can store up to 128 files on drive E, and you can access these files using standard ANSI C functions. By default, the RAM drive is not configured and the memory is available for programmable (Malloc) memory allocations. To configure the RAM drive, see “RAM Drive Size” in Chapter 6 of the 2400 Family system manual.

### Drive G (Optional)

Drive G is an optional 2MB or 4MB extended storage drive that is only available on the 2430. Use this drive to store large lookup tables and data files. You can store up to 128 files on drive G, and you can access these files using standard ANSI C functions.

### Malloc or Free Memory

On the terminals, applications are customer defined. You have 512K total RAM that you can use for the application execution space. You can also configure this RAM to be the RAM drive (up to 256K). The remaining RAM is the Malloc/free memory pool.

$$\boxed{\text{Application execution space}} + \boxed{\text{RAM drive (drive E)}} + \boxed{\text{Malloc/free memory pool}} = \boxed{512\text{K RAM}}$$



## **2** Configuring the Terminal

This chapter describes the different methods that you can use to configure the 243X and its memory and drives. It also explains how to configure the terminal using the TRAKKER Antares 2400 Menu System. This chapter covers these topics:

- How to configure the terminal
- Configuring the terminal with the menu system
- Configuring drives and memory on the terminal

## How to Configure the Terminal

You can customize many of the operating characteristics of the 243X 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 these configuration parameters determine how the terminal operates. To learn about each parameter, see Chapter 6, “Configuration Command Reference,” in the 2400 Family system manual.

You can configure the terminals by using any of these methods:

- Use the TRAKKER Antares 2400 Menu System. You can use the menus and screens of the TRAKKER Antares 2400 Menu System to view the current configuration and change the configuration parameters. For help, see “Configuring the Terminal With the Menu System” on page 33.
- 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 and the 2400 Family system manual, or you can create your own bar code labels. For help, see Chapter 2, “Configuring the Terminals,” in the 2400 Family system manual.
- 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 Chapter 2, “Configuring the Terminals,” in the 2400 Family system manual.
- Send commands through the RF port (2435 only). You can change the terminal’s configuration parameters by sending commands through the UDP Plus, TCP/IP, or WTP network. This method lets you configure one or more terminals at a time. For help, see Chapter 2, “Configuring the Terminals,” in the 2400 Family system manual.
- Use the clone application. You can set the terminal’s configuration parameters by using the clone application to copy configuration parameters from one 243X to another 243X. This method is a fast, easy way to configure your new 243X with the same parameters as your existing 243X. For help, see Chapter 2, “Configuring the Terminals,” in the 2400 Family system manual.

## 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.

### Trakker Antares Configurations

Configuration	Description
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 30X, 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. To restore the default configuration, see “Restoring the Terminal’s Default Configuration” in Chapter 2 of the 2400 Family system manual.













## Configuring the Terminal With the Menu System

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

When you are using the menu system, you may not see a parameter until you set a value for another key field. For example, EOM is a key field when you configure the Configurable protocol. That is, several fields are invalid (do not appear) until you enable EOM. You also may not see a parameter if your terminal does not support a particular feature.

**To access the TRAKKER Antares 2400 Menu System**

- Press one of these key combinations:

Keypad	Key Combination
39-key	   
57-key	   
48-key	the orange  key and then   

Or,

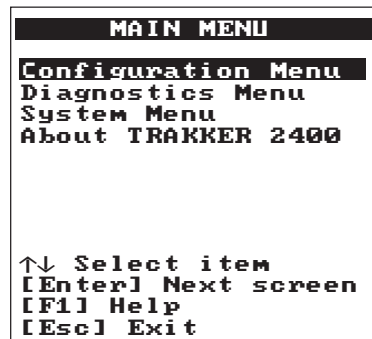
- Scan this bar code:

TRAKKER Antares 2400 Menu System



\*..\*

The Main Menu appears, displaying four menu options.

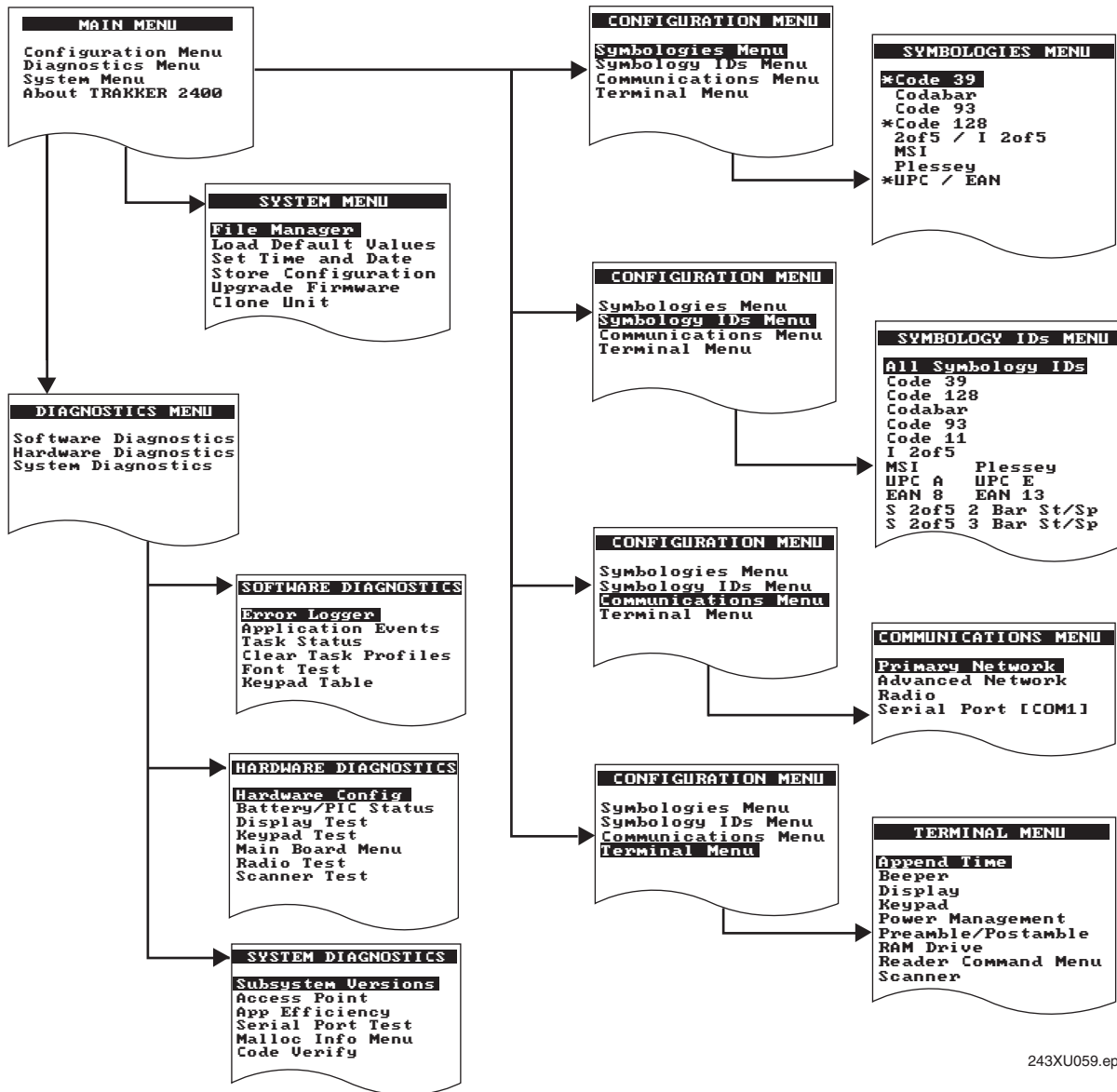


243XU050.eps

**TRAKKER Antares 2400 Menu System**

Menu	Description
Configuration Menu	Choose this menu to configure bar code symbologies, network and communications parameters, serial port parameters, and the terminal’s operating characteristics. In the Symbologies Menu, active symbologies are noted with an asterisk (*).
Diagnostics Menu	Choose this menu to run hardware, software, or system diagnostics to help analyze and fix problems. You can also view battery and system information. For help, see Chapter 4, “Running Diagnostics,” in the 2400 Family system manual.
System Menu	Choose this menu to manage files, load the default configuration, set the time and date, store the terminal’s configuration in flash memory, and upgrade the firmware.
About TRAKKER 2400	Choose this option to see the part number, firmware version, radio, RF protocol (UDP Plus, WTP, or TCP/IP), and security (WEP, 802.1x TTLS, or 802.1x LEAP) that are loaded on the terminal. You may need this information if you are working a problem with an Intermec representative.





243XU059.eps

**TRAKKER Antares 2400 Menu System:** This illustration shows the basic structure of the TRAKKER Antares 2400 Menu System.

## Accessing Online Help

The TRAKKER Antares 2400 Menu System provides online help for the menus and commands.

### Accessing Online Help

To Do This	39-Key or 57-Key Keypad	48-Key Keypad
Access a help screen.	Press <b>F1</b> .	Press the orange <b>□</b> key, and then press <b>F1</b> .
Exit a help screen.	Press <b>Esc</b> .	Press <b>ESC</b> .

## Selecting Menus and Commands

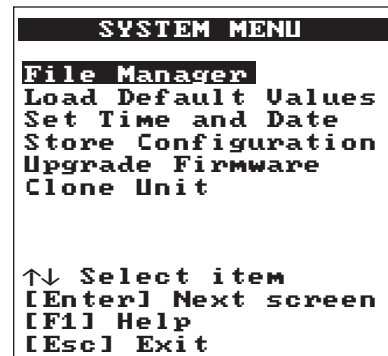
A menu consists of a list of secondary menu items or commands.

### Selecting Menus and Commands

Keypad	Do This
39-key or 57-key	Press <b>↑</b> or <b>↓</b> to select a menu or command, and then press <b>ENTER</b> .
48-key	Press the orange <b>□</b> key and <b>A</b> or <b>B</b> , and then press the Enter key. You can also press <b>↵</b> , and then press the Enter key.



243XU050.eps



243XU051.eps

**Selecting menus and commands:** In this example, from the Main Menu, press **↓** **ENTER**, or press the orange **□** key and **B** twice, and then press the Enter key to display the System Menu.

## Filling In Fields

Screens contain fields into which you can enter data. In the TRAKKER Antares 2400 Menu System, this data configures the terminal. You can press  or  to choose a field on a screen and then enter data.

There are two types of fields: toggle fields and entry fields.

### Using Toggle Fields

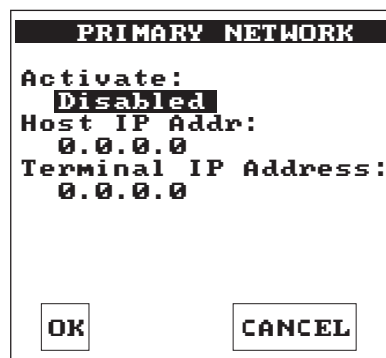
Keypad	Do This
39-key or 57-key	Press <input type="button" value="←"/> , <input type="button" value="→"/> , or <input type="button" value="SPACE"/> to view the options for that field.
48-key	Press the orange <input type="button" value="O"/> key and <input type="button" value="E"/> or <input type="button" value="F"/> , or press <input type="button" value="SPACE"/> .

### To use an entry field

- 1 Type a value into the field.
- 2 Edit the data in an entry field.

Keypad	Do This
39-key or 57-key	Use the <input type="button" value="←"/> , <input type="button" value="→"/> , <input type="button" value="↩"/> , or <input type="button" value="BKSP"/> keys. You can also use the Delete (DEL) and Insert (INS) keys to edit an entry field.
48-key	Press the orange <input type="button" value="O"/> key and <input type="button" value="E"/> or <input type="button" value="F"/> , or press <input type="button" value="SPACE"/> .

For example, the Primary Network screen has toggle and entry fields. The Activate field is a toggle field. Press  or press the orange  key and  to toggle between Disabled and 802.11 DS or OpenAir. The Host IP Address and Terminal IP Address fields are entry fields. You type a value into the field for each IP address.

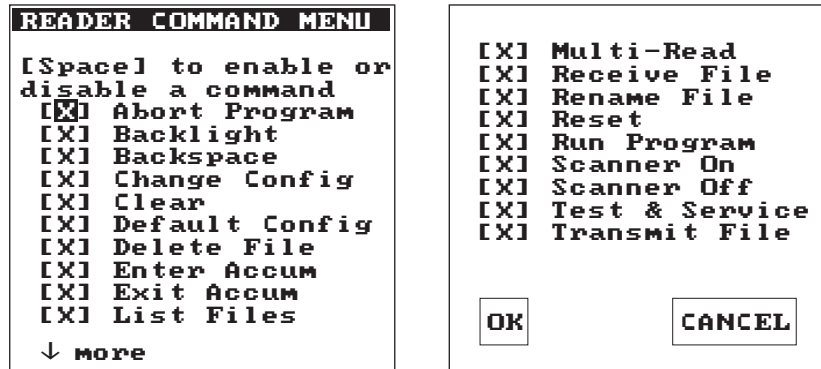


243XU062.eps

**Primary Network screen:** This screen has toggle and entry fields. The Activate field is a toggle field, and the Host IP Addr and Terminal IP Address fields are entry fields.

## Marking Check Boxes

Screens may contain check boxes. Check boxes are used when you can select more than one option at a time. To mark or clear check boxes, press the Space key. For example, press  or  or press the orange  key and  or  to choose the Backspace check box and press the Space key to clear the check box. The Backspace command is now disabled.



243XU053.eps

**Reader Command Menu screen:** This screen contains check boxes that you can use to select more than one option at a time.

## Entering ASCII Control Characters

You can include ASCII control characters in a postamble or preamble by using the TRAKKER Antares 2400 Menu System. For a definition of the postamble or preamble, see Chapter 6, “Configuration Command Reference,” in the 2400 Family system manual.

You can configure the postamble or preamble to be characters from the full or extended ASCII character sets. For example, the Field Exit code (Û) for 5250 terminal emulation is an extended ASCII character that is often configured as the postamble.



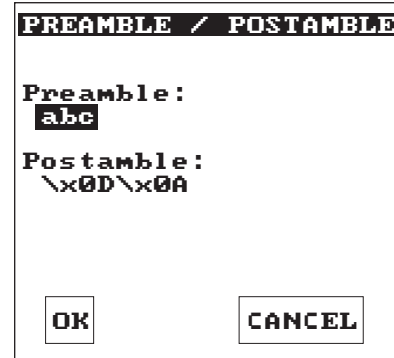
**Note:** For help using the 5250 Field Exit code, see the appropriate TE 2000 guide.

### To enter ASCII characters for a preamble or postamble

- 1 Decide which ASCII control character you want to set for the preamble or postamble. Look up the control character in the “Full ASCII Table” in Appendix B of the 2400 Family system manual and find the two-digit hexadecimal number. For example, ETX in the Full ASCII Table is the hexadecimal value 03.

To enter an extended ASCII character, look up the two-digit hexadecimal number for the character in the “Trakker Antares Terminal Font Set” in Appendix C of the 2400 Family system manual. For example, Û (the 5250 Field Exit code) has the hexadecimal value 9A.

- 2 Use the TRAKKER Antares 2400 Menu System to configure a preamble or postamble. From the Main Menu, choose Configuration Menu.
- 3 From the Configuration Menu, choose Terminal Menu.
- 4 From the Terminal Menu, choose Preamble/Postamble.
- 5 Move the cursor to the field for the preamble or postamble.
- 6 Type the control character, extended ASCII character, or escape character sequence in the preamble or postamble field.



243XU057.eps

- To type a control character or extended ASCII character in the preamble or postamble field, use this syntax:

`\xhh`

where *hh* is the two-digit hexadecimal number for the control character or extended ASCII character. For example, to enter ETX as a preamble, type:

`\x03`

To enter Ü (the 5250 Field Exit code) as the postamble, type:

`\x9A`

- To type an escape character (backslash) in the preamble or postamble field, you must type two backslashes. The application ignores the first backslash (\) character and saves the next characters. For example:

Enter These Characters	Preamble/Postamble Saved
\\	\
\\k	\k
\	no data

- 7 Press the Enter key or choose OK to save your changes and exit the screen.

For help exiting the menu system, see the next two sections, “Exiting Screens and Saving Changes” and “Exiting the Menu System.”

## Exiting Screens and Saving Changes

When you exit a screen, you can save or discard your changes:

### Exiting Screens

Task	Description
To exit a screen and save the changes	Choose OK and press the Enter key. You can also press the Enter key with the cursor positioned anywhere except on the Cancel button.
To exit a screen and discard the changes	Choose Cancel and press the Enter key. You can also press the Esc key with the cursor in any field.

## Exiting the Menu System

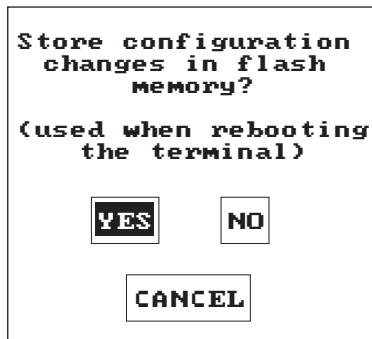
- 1 Press the Esc key until you exit the TRAKKER Antares 2400 Menu System. If you have made any changes to the current configuration, the next screen prompts you to save the configuration parameters that are currently enabled on the terminal to RAM.



243XU052.eps

- 2 Choose Yes and press the Enter key to save your changes in RAM and update the current configuration on the terminal. The Main Menu appears.  
Or,  
Choose No and press the Enter key to exit without changing the configuration. The Main Menu appears.  
Or,  
Choose Cancel and press the Enter key to return to the previous menu or screen.

- From the Main Menu press the Esc key. If you have made any changes, the next screen prompts you to store the changes in flash memory.



243XU054.eps



**Note:** You can also save the current configuration in flash memory by choosing the Store Configuration command from the System Menu. For help, see “Saving Configuration Changes in Flash Memory” in Chapter 2 of the 2400 Family system manual.

- Choose Yes and press the Enter key to save your changes in flash memory. The terminal saves the current configuration as the active configuration. The Exiting TRAKKER Antares 2400 Menu System screen appears.

Choose No and press the Enter key to exit without saving. The terminal continues to use your changes until you boot or reset the terminal. The Exiting TRAKKER Antares 2400 Menu System screen appears.

Choose Cancel and press the Enter key to return to the Main Menu.



243XU055.eps

- Choose OK and press the Enter key to exit the TRAKKER Antares 2400 Menu System.

Choose Cancel and press the Enter key to return to the Main Menu.

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

## Configuring Drives and Memory on the Terminal

The 243X comes with a 750K flash drive (C), 512K RAM reserved for applications, and an additional 2MB extended flash memory. You can customize the terminal to your needs by configuring:

- up to 256K of the 512K RAM as a RAM drive.
- the additional 2MB flash memory of the 4MB flash memory option to either store double-byte fonts or to use as a 2MB drive.

### Configuring the RAM Drive

The 243X has a total of 512K RAM for the application execution space. You can configure up to 256K of the total 512K application execution space as a RAM drive. If the RAM drive is configured, your application execution space is reduced by the amount of the RAM drive.

For example, if your application size is 64K and drive E is configured as a 256K RAM drive, you are using 320K of the 512K application execution space. The application uses the remaining 192K of RAM as a Malloc/free dynamic memory pool.

By default, the RAM drive is not configured and the memory is available for applications. You can configure the size of the RAM drive (E) and use drive E to temporarily store data and files (up to 128 files).

After you disable or configure the RAM drive, you must save the configuration in flash memory and boot the terminal for the change to take effect. For help, see “Saving Configuration Changes in Flash Memory” in Chapter 2 of the 2400 Family system manual.



**Note:** When you boot or reset the terminal, all files on the RAM drive are destroyed.

For help configuring the RAM drive, see “RAM Drive Size” in Chapter 6 of the 2400 Family system manual.

### Configuring Flash Memory

You can use the 2MB extended flash memory either to store double-byte fonts or to use as a 2MB drive. By default, the 2MB of flash memory is configured to store a double-byte font set (up to 2MB maximum).



**Note:** The 4MB flash memory is required for 802.1x TTLS security and is not available to store files or double-byte fonts. For more information about configuring 802.1x TTLS security, see “Configuring 802.1x TTLS Security” on page 59.



If you are not using double-byte fonts, you can configure the 2MB flash memory as a storage drive (D). If you configure the flash memory as drive D, use this drive to store large lookup tables and data files (up to 128 files).

You can only configure the 2MB flash memory 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.

For help configuring flash memory, see “Flash Memory Configuration” in Chapter 6 of the 2400 Family system manual. For help loading double-byte fonts, see “Loading Double-Byte Fonts” in Chapter 2 of the 2400 Family system manual.





## **3** Operating the Terminal in a Network

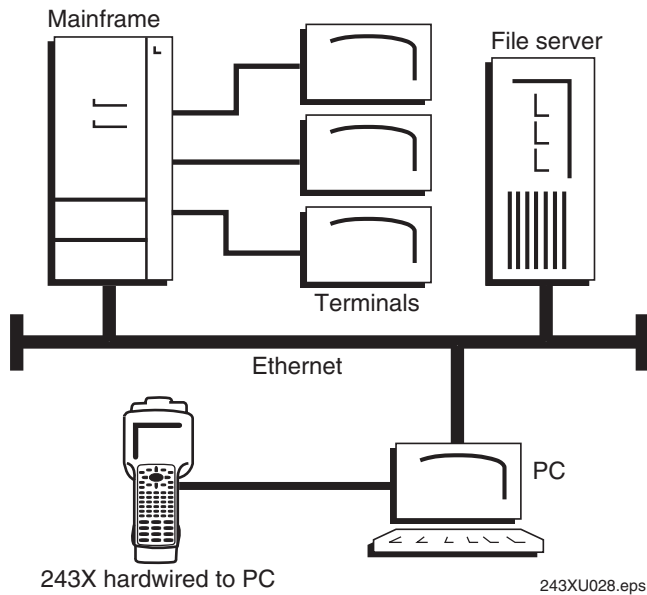
This chapter describes how to install and configure the 243X in a serial or RF network. It also explains how the 243X fits into a particular network and how to use serial or network communications. This chapter covers these topics:

- How the terminals fit in your network
- Using serial communications on the terminals
- Using RF communications on the 2435
- Enabling 802.1x TTLS or LEAP security

## How the Terminals Fit Into Your Network

The 2430 and 2435 are versatile handheld terminals that you can easily add to your network or distributed data collection system.

The terminals have a serial port to transmit data to and receive data from a host computer or PC through RS-232 serial communications.



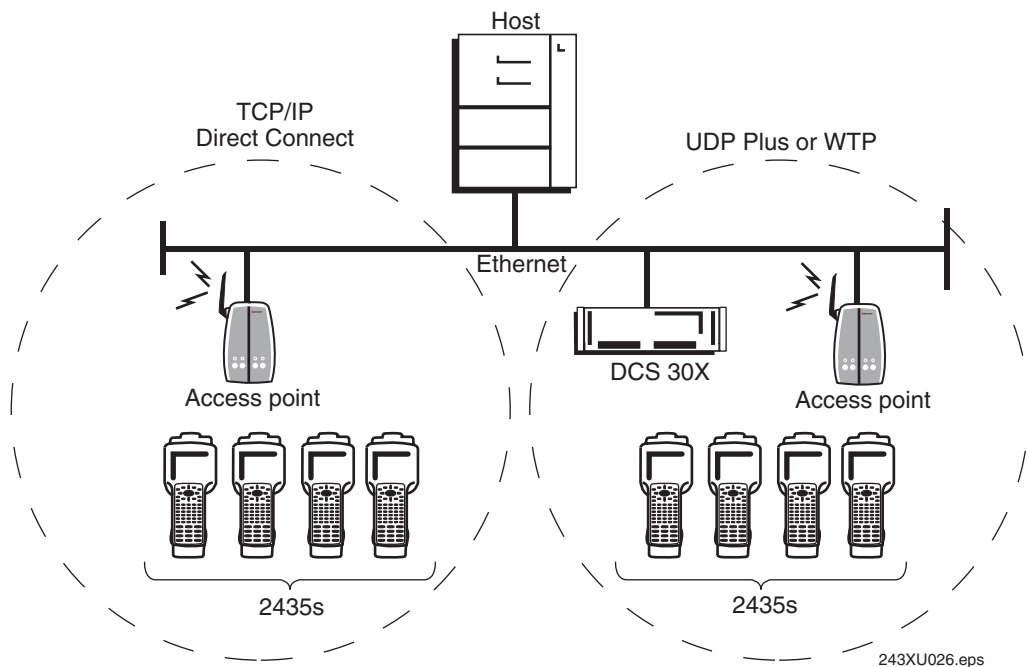
**243X in a wired network:** You can use the 2430 and the 2435 as end devices in your wired network. You can also use the 2435 as an end device in the RF network.

### TCP/IP Direct Connect Network

In a TCP/IP network, the 2435 communicates with a host computer directly using TCP/IP for the RF protocol.

### UDP Plus or WTP Network

In a UDP Plus or WTP network, the 2435 communicates with a host computer through the DCS 30X. The DCS 30X translates UDP Plus and WTP packets on the RF network into TCP/IP packets on the wired network and vice versa.

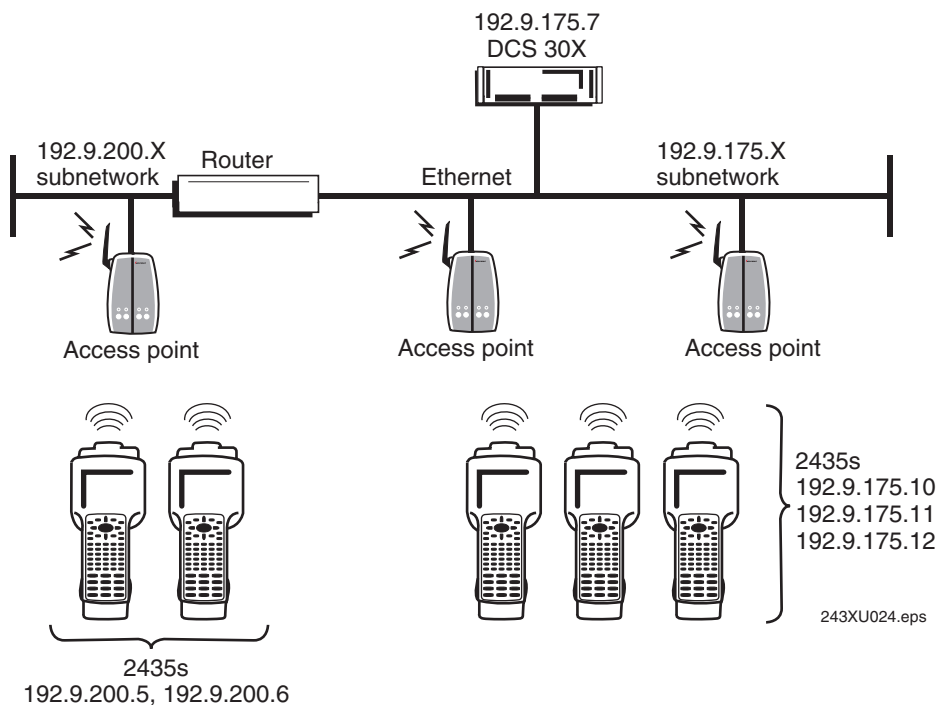


**2435s in a TCP/IP direct connect network, UDP Plus network, or WTP network:** In each of these networks, the access point acts as a bridge to allow communications between the wired network and the RF network.

### Multiple Subnetworks (UDP Plus)

In a UDP Plus network, you can install the 2435 terminals, access points, and DCS 30X as shown in the next illustration. All the terminals and access points in this illustration communicate with the DCS 30X at IP address 192.9.175.7.

If you are using MobileLAN™ access points, a terminal can roam across subnetworks. However, to roam across subnetworks, all terminal IP addresses must belong to the root IP subnet. For more information, see the *MobileLAN access System Manual* (P/N 067150).

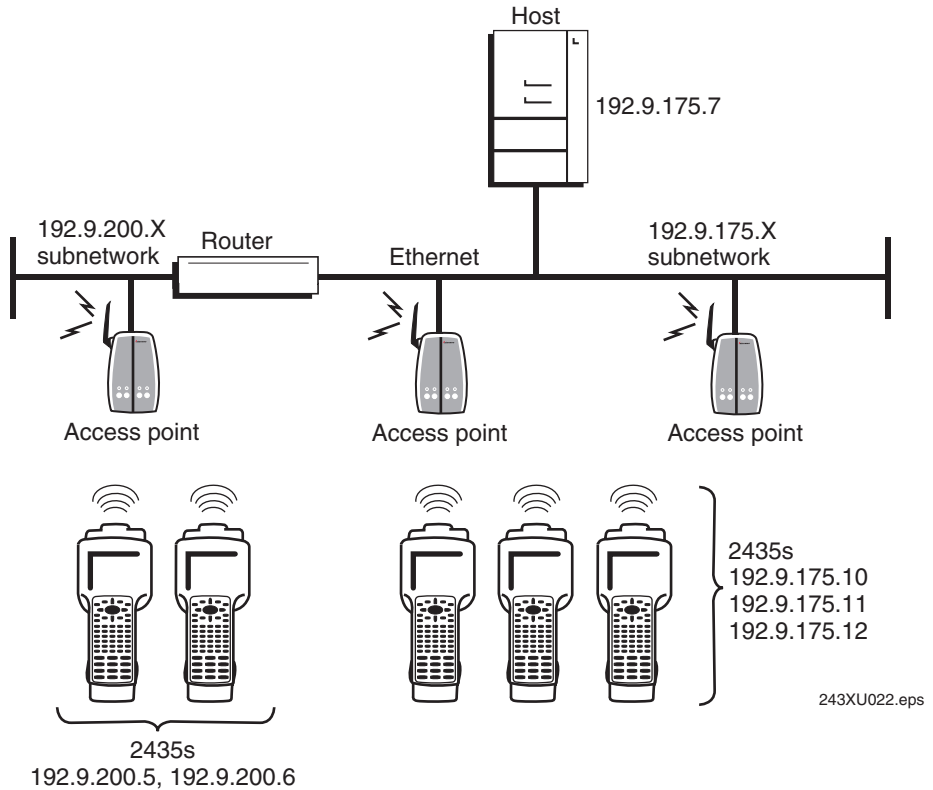


**2435s in multiple subnetworks (UDP Plus):** In this illustration, if you were using MobileLAN access points, the root IP subnet was 192.9.175.X, and all terminals had a terminal IP address of 192.9.175.X, they could roam across subnetworks.

### Multiple Subnetworks (TCP/IP)

In a TCP/IP network, you can install the 2435 terminals and access points as shown in the next illustration. All the terminals and access points in this illustration communicate with the host at IP address 192.9.175.7.

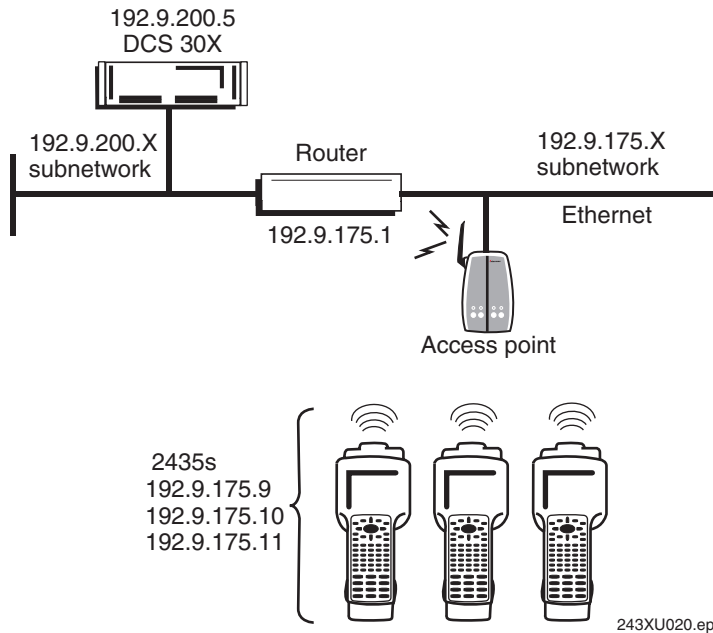
If you are using MobileLAN access points, a terminal can roam across subnetworks. However, to roam across subnetworks, all terminal IP addresses must belong to the root IP subnet. For more information, see the *MobileLAN access System Manual* (P/N 067150).



**2435s in multiple subnetworks (TCP/IP):** In this illustration, if you were using MobileLAN access points, the root IP subnet was 192.9.175.X, and all terminals had a terminal IP address of 192.9.175.X, they could roam across subnetworks.

### Communicating Across Subnetworks (UDP Plus)

You can install the 2435 terminals and access points in one subnetwork and install the DCS 30X or host in another subnetwork. In this network, you must configure additional network parameters (default router and subnet mask).



**2435s communicating across subnetworks (UDP Plus):** In this illustration, the DCS 30X is in a different subnetwork from the terminals.



## Using Serial Communications on the Terminal

The 243X has a serial port to transfer data to and from another device, such as a printer, modem, or PC, using serial communications. Before you can use serial communications, you must perform these steps:

- 1 Connect the terminal to a serial device or network. For help, see “Connecting to a Serial Device or Network” on page 28.
- 2 Choose a communications protocol. For help, see the next section, “Choosing a Communications Protocol.”
- 3 Configure the serial port parameters to allow the terminal to communicate with a host computer or serial device in a wired network. For help configuring the terminal, see Chapter 2, “Configuring the Terminal.”

Depending on the protocol you choose in Step 2, you must set some or all of the serial port parameters to have the terminal communicate with a host computer or serial device in a wired network. The values you set for the terminal’s serial port parameters must match the values set for the host’s (or other device’s) serial port parameters.

### Choosing a Communications Protocol

After you connect the 243X to a host computer or other serial device, you are ready to configure the serial port parameters on the two devices. The terminal uses a communications protocol and XMODEM, XMODEM1K, or YMODEM to handle data communications through the serial ports.

You can configure a different communications protocol for each COM port. The terminal’s built-in file operations use XMODEM, XMODEM1K, or YMODEM for file transfer.

Communications protocols determine exactly how data is transmitted between the terminal and the connected device. Each protocol has parameters you can set, such as baud rate and parity. Both the terminal and the connected device must use the same protocol and parameter settings to communicate properly. For help with protocols, see the *Data Communications Reference Manual* (P/N 044737).

#### Binary Protocol

Binary protocol has no protocol. Characters are sent and received without being altered. The Data Link Escape character (DLE) is **not** inserted before any character, and DLE characters are not stripped out of the incoming data stream. No protocol characters, such as EOM or SOM, are added. Binary mode supports CTS/RTS flow control.

You can configure the following serial port parameters:

- Baud rate
- Data bits
- Parity
- Stop bits
- Flow control

### **Configurable Protocol**

Configurable protocol is based on Intermecc's Polling Mode D protocol except that you have the option to change some of the serial port protocol parameters or remove specific events from the protocol, such as poll or handshake.

You can configure the following serial port parameters:

- Baud rate
- Data bits
- Parity
- Stop bits
- Flow control
- EOM (End of Message)
  - Configuration commands via serial port
  - LRC
  - SOM (Start of Message)
  - Handshake (enabled or disabled)
    - Poll (Polling) (enabled or disabled)
    - Timeout Delay

Configurable protocol uses EOM to determine one of the following serial communications modes.

### **Character mode**

When EOM is disabled, the terminal communicates in Character mode processing each character. Character mode supports both XON/XOFF and CTS/RTS flow control.

### **Frame mode**

When EOM is enabled, the terminal communicates in Frame mode. When a terminal sends a packet, it adds a protocol character. When a terminal receives a packet, it strips any protocol characters before it sends the information to the terminal application. Frame mode supports both

XON/XOFF and CTS/RTS flow control. In Frame mode, you can also configure the following serial port parameters:

- Configuration commands via serial port
- Handshake
- LRC
- SOM

After you enable Handshake, you can define poll and timeout delay.

### **Master Polling Protocol**

Master Polling Mode D protocol requires the terminal to ask the downline serial device for data it may have (polling) and to request to send data to the serial device (selecting). There is no automatic polling, so your application must poll periodically for data.

Before each transmit operation, the terminal issues the SEL sequence for the device addressed and sends the data if an acknowledge is received. Before each receive operation, the terminal issues a poll sequence and waits for data or the RES character (no data is available to send).

You can configure the following serial port parameter:

- Baud rate

### **Point-to-Point Protocol**

Point-to-Point protocol is not directly supported on the terminals. However, you can simulate this protocol by setting the protocol to Configurable and configuring these parameters:

- Baud rate
- Data bits
- Parity
- Stop bits
- Flow control
- EOM (Set EOM1 to \x0D, which is <CR>, and set EOM2 to \x0A, which is <LF>)
- LRC (Disable)
- Handshake (Disable)

With this protocol, you cannot configure values for intercharacter delay, turnaround delay, and timeout delay. This protocol supports CTS/RTS flow control only.

### Polling Mode D Protocol

Polling Mode D protocol requires the host computer to ask the terminal for data it may have (polling) and to request to send data to the terminal (selecting). This protocol uses an RS-232 interface and implements the user interface through reader commands. Polling Mode D also supports XON/XOFF and CTS/RTS flow control.

You can configure the following serial port parameters:

- Baud rate
- Flow control

## Using RF Communications on the 2435



Caution

**Make sure all components with antennas are at least 30 cm (1 ft) apart when power is applied. Failure to comply could result in equipment damage.**

**Attention: Assurez-vous que la distance entre tous les éléments avec antennes soit d'au moins 30 centimètres (un pied) avant de faire la connexion avec l'alimentation électrique, faute de quoi vous risquez d'endommager votre installation.**

The 2435 has an internal antenna to transfer data using RF communications. Before you can use RF communications, you must perform these steps:

- 1 Plan and prepare your network. For help, see the next section, “Planning the Network Connection.”
- 2 (UDP Plus or WTP network only) Configure the DCS 30X. For help, see “Configuring the DCS 30X” on page 55.
- 3 Configure the access points and radios. For help, see “Configuring the Access Points” on page 56.
- 4 Configure the network parameters on each terminal in the network. For help, see “Configuring the 2435 Network Parameters” on page 57.
- 5 (802.1x security) Configure the 802.1x TTLS or LEAP security parameters on each terminal in the network. For help, see “Configuring the 802.1x Security Parameters” on page 58.

The set of network parameters you need to configure depends on whether you install the terminal on the same subnetwork as the DCS 30X (UDP Plus or WTP) or host (TCP/IP) or on a different subnetwork. For help determining which network parameters you must configure, see “Configuring the 2435 Network Parameters” on page 57.

When you begin using the 2435, you need to understand how to use the LEDs to monitor the RF communications. For help, see “Monitoring Network Communications” on page 62.

## Planning the Network Connection

To use the 2435 in the RF network, you need these minimum requirements:

- DCS 30X (UDP Plus or WTP network)
- Access point

When you first consider purchasing a wireless data collection system, an Intermec representative works with you to perform a site survey at your facility. The site survey analyzes the range of radio frequency devices in your facility and determines the placement of the access points. The site survey ensures that the coverage of each access point overlaps to provide uninterrupted wireless access at any location within the building. This manual assumes that a site survey is complete and the access points are installed in your facility.

You need to work with your network administrator to plan and assign the IP address for each device in the RF network. You need to assign and set the IP address for each access point (RF) and each 2435. If you are using a UDP Plus or WTP network, you need to also assign an IP address to the DCS 30X.

## Configuring the DCS 30X

The DCS 30X supports and manages communications with other devices in the UDP Plus or WTP network. When you install and configure the DCS 30X, you identify the host computers and 2435 terminals in your network.

In a UDP Plus network, the terminals communicate using a reliable RF protocol (UDP Plus) through the access points to the DCS 30X. The DCS 30X translates UDP Plus to a reliable wired protocol (TCP/IP) and sends the data to the host. For more information, see the user’s manual for the DCS 30X.

In a WTP network, the terminals communicate to the DCS 30X through the access points connected to the Ethernet network. For more information, see the appropriate TE 2000 manual.



**Note:** You can use a 2435 running TCP/IP and the DCS 30X in a pass-through network. You establish a direct TCP/IP socket connection from the 2435 to the host through the server.

To allow the 2435 to communicate with the DCS 30X, you need to perform these tasks on the server:

- Define the host communications parameters, which includes the physical connection (network adapter cards) to the host.
- Define the host environment parameters, which includes configuring for terminal emulation or client/server applications.
- Configure the UDP Plus or WTP network.
- Assign an IP address to each 2435.

If you are using a DHCP (Dynamic Host Configuration Protocol) server in a TCP/IP network, you can leave the default terminal IP address as 0.0.0.0 to enable the 2435 as a DHCP client. For help, see “DHCP (Terminal)” in Chapter 6 of the 2400 Family system manual.

- Enable all 2435 terminals.

To use dcBrowser, you do not define the host environment parameters. You must:

- create an HTML application.
- configure the dcBrowser gateway.

## **Configuring the Access Points**

Access points act as bridges to provide communications between the wired network and the RF (UDP Plus, WTP, or TCP/IP) networks. After you configure the network, you can collect data anywhere within range of the access points in the wireless network. When you move out of range of one access point, the 2435 automatically searches for other access points to continue the network connection.

If you are out of range of all access points in the network, the data is stored in the terminal’s radio buffer. The Network Connect status icon turns off. You can continue to collect data until the radio buffer is full. When the buffer is full, the application displays a communication timeout status. When you move back into range and network communications are re-established, the data in the radio buffer is transmitted to the access point and you can once again transmit data.

In a TCP/IP direct connect network with a terminal running a terminal emulation application, the application may disconnect from the host if you remain out of communications range too long or if the host sends “Keep Alive” messages while the terminal is in Suspend mode. You may need to restart the application and log back into the host to re-establish a terminal emulation session. In a UDP Plus or WTP network, the session is maintained any time the terminal is out of range or in Suspend mode.

To communicate through the network, all RF terminals and access points must contain the same type of radio, either a WLI Forum OpenAir or an IEEE 802.11b radio. Depending on the radio in the terminal, you must

set certain parameters to the same configuration on both the terminal and the access points.

### **OpenAir Radio**

To use OpenAir radios in your network, you need to configure:

- Domain. On the access points, the Domain parameter is called the LAN ID (Domain) parameter.
- Security Identification (ID). The Network Activate command must be configured to 2.4 GHz RF network before you can save any changes to the security ID parameter.

These parameters must be set to the same values on the terminals and the access points. Each access point is configured with a different channel/subchannel combination.

### **802.11b Radio**

To use 802.11b radios in your network, you need to configure:

- Network Name. On the access points, the Network Name parameter is called the SSID (Network Name) parameter. This parameter is case-sensitive.

On the terminal, you can also set the Network Name parameter to “ANY” or leave the field blank, allowing the terminal to communicate with any access point that has the same radio and is within range. However, Intermec recommends that you define a unique network name.

- WEP Encryption. If you are using 802.1x TTLS or LEAP security, you do not configure WEP Encryption.
- (802.1x TTLS or LEAP security only) User Name and Password. For more information about configuring the terminal for 802.1x security, see “Configuring the 802.1x Security Parameters” on page 58.

The Network Name and WEP Encryption parameters must be set to the same value on the terminals and the access points.

## **Configuring the 2435 Network Parameters**

When you install the 2435 in a network, you need to configure the network parameters that control how the terminal communicates in the network.

The set of network parameters you need to configure depends on whether you install the terminal on the same subnetwork as the DCS 30X or host (TCP/IP) or on a different subnetwork.

You need to configure:

- Network Activate. If you are operating the 2435 in a WTP network, you only need to configure the Network Activate parameter.

- (UDP Plus) Controller IP Address.
- (TCP/IP) Host IP Address.
- Terminal IP Address (Non-DHCP environment only).
- Network Port.
- Default Router (DCS 30X or host on different subnetwork).
- Subnet Mask (DCS 30X or host on different subnetwork).

For help understanding these parameters and their syntax, see Chapter 6, “Configuration Command Reference,” in the 2400 Family system manual. For more information about network connectivity and protocols, see “About Network Connectivity and Protocols” in Chapter 1 of the 2400 Family system manual.

## **Configuring the 802.1x Security Parameters**

Trakker Antares terminals with the 802.1x security option can operate in a protected network that provides secure data transmission. Authentication and authorization is provided using one of these Extensible Authentication Protocol (EAP) types:

- Tunnelled 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.

This section describes how to configure both 802.1x TTLS and LEAP security. It also describes how the BASEDATE.TXT file is used.

### **Learning About BASEDATE.TXT**

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 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 TTLS Security

To use 802.1x TTLS security, you need:

- a PC with the Funk Odyssey™ server software version 1.1 or later. This PC must also be configured with the current date and time, because the server uses these values when it authenticates the terminal.



**Note:** You can also use a MobileLAN access point with software release 1.80 or later as an authentication server. For help, see the *MobileLAN access System Manual* (P/N 067150).

- an Intermec MobileLAN access point with an 802.11b radio and software release 1.80 or later that serves as an authenticator. The authenticator knows the IP address and secret key of the authentication server and translates EAP-TTLS frames to RADIUS frames and vice versa.
- a Trakker Antares terminal. Your terminal must have an 802.11b radio, the 802.1x security option, and firmware version 7.14 or later.



**Note:** The CACERT.PEM file on the terminal's C drive is used for 802.1x TTLS security. Do **not** delete this file from your terminal. If this file is deleted, you will need to download the latest version of firmware to your terminal. For help, see “Upgrading the Firmware” in Chapter 2 of the 2400 Family system manual.

### To enable 802.1x TTLS security on the terminal

#### 1 Make sure that:

- your Funk Odyssey authentication server and MobileLAN access point are properly configured. For help, see the documentation for your authentication server and MobileLAN access point.
- the PC that the authentication server is loaded on is configured with the current date and time.
- your terminal is configured with the primary network, advanced network, and radio parameters.

#### 2 Set the User Name and Password parameters.

- a Scan this bar code label 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 Radio.

- c Scroll to the 802.1x TTLS 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.

- 3 Exit the menu system and save all changes.
- 4 Turn the terminal off and then on again. If you have an application loaded on your terminal, an application screen appears. If you do not have an application loaded on your terminal, a cursor appears in the top left corner of the screen. An AUTHENTICATING message appears on the terminal screen.



**Note:** The terminal takes up to 60 seconds to authenticate; however, this process may take longer if there is interference in RF communications.

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 “Problems While Configuring 802.1x Security” on page 70.

Once you have successfully authenticated your terminal, you need to configure a unique user name, password, and at least one server certificate common name. For help, see Chapter 6, “Configuration Command Reference,” in the 2400 Family system manual.

### 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 802.1x LEAP security on the terminal****1** Make sure that:

- your authentication server is properly configured. For help, see the documentation for your authentication server.
- your Cisco access point is properly configured for LEAP security. For help, see the documentation for your Cisco access point.
- your terminal is configured with the primary network, advanced network, and radio parameters.

**2** 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.

**swt-shasta AP Radio Data Encryption** CISCO SYSTEMS

Cisco 350 Series AP 12.02T1 Uptime: 17 days, 19:23:40

[Map](#) [Help](#)

If VLANs are *not* enabled, set Radio Data Encryption on this page. If VLANs *are* enabled, Radio Data Encryption is set independently for each enabled VLAN through [VLAN Setup](#).

Use of Data Encryption by Stations is: Full Encryption

	<b>Open</b>	<b>Shared</b>	<b>Network-EAP</b>
Accept Authentication Type:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Require EAP:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Transmit With Key	Encryption Key	Key Size
WEP Key 1: <input checked="" type="radio"/>	<input type="text"/>	128 bit
WEP Key 2: <input type="radio"/>	<input type="text"/>	128 bit
WEP Key 3: <input type="radio"/>	<input type="text"/>	not set
WEP Key 4: <input type="radio"/>	<input type="text"/>	not set

Enter 40-bit WEP keys as 10 hexadecimal digits (0-9, a-f, or A-F).  
Enter 128-bit WEP keys as 26 hexadecimal digits (0-9, a-f, or A-F).  
This radio supports Encryption for all Data Rates.

[\[Map\]](#)[\[Login\]](#)[\[Help\]](#)  
 © Copyright 2002 Cisco Systems, Inc. [credits](#)



**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.

- 3** 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.

- 4** Exit the menu system and save all changes.
- 5** 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 “Problems While Configuring 802.1x Security” on page 70.

## **Monitoring Network Communications**

After you configure the 2435 in the RF network, you can use the application on the 2435 to collect and transmit data through network communications. If the 2435 is communicating with your host computer, it will connect to your host computer and begin running the application that shipped on the terminal.

As you use the 2435 to collect data, the Network Connect icon helps you monitor network communications between the 2435 and other devices in the RF network. To learn how to use the Network Connect icon, see “Learning About the Status Icons” on page 20.



# 4 Troubleshooting and Maintaining the Terminal

This chapter lists problems you may encounter while using the terminal and provides some possible solutions. It also describes how to boot or reset the terminal and clean the scanner window and terminal screen. This chapter covers these topics:

- Problems while operating the terminal
- Problems while configuring the terminal
- Problems while configuring 802.1x security
- Problems communicating with RF network devices
- Problems while running applications
- Problems transmitting data through the serial port
- Problems transmitting data through the DCS 30X
- Problems scanning bar code labels
- Booting the terminal
- Troubleshooting a locked up application
- Resetting the terminal
- Cleaning the scanner window and terminal screen

## How to Use This Chapter

If you have any problems using the 243X, use this chapter to find a possible solution.

You can also use the error numbers and messages table and the terminal diagnostics to help analyze and solve problems. For help, see Chapter 4, “Running Diagnostics,” in the *Trakker Antares 2400 Family System Manual* (P/N 071389).

If you have problems with the TE 2000 terminal emulation applications, see the appropriate TE 2000 guide.

If you send the terminal in for service, it is your responsibility to save the terminal data and configuration. Intermec is only responsible for ensuring that the keypad and other hardware features match the original configuration when repairing or replacing your terminal.




## Problems While Operating the Terminal

If you are operating the terminal and have trouble, check these possible problems and solutions.

### Problems While Operating the Terminal

Problem	Solution
You cannot scan bar code labels.	See “Problems Scanning Bar Code Labels” on page 77.
The terminal is booting and you see a message that POST failed.	The screen displays the system that failed POST. Report the error message to your supervisor. Press <b>Esc</b> to exit the error message. The Boot Menu appears. Press <b>1</b> to boot the terminal. Your application appears on the screen. If the terminal still will not boot, contact your local Intermec service representative for help.
You press <b>1/D</b> or <b>1</b> to turn on the terminal and the screen is blank and nothing happens.	The battery pack may not be installed correctly. For help, see “Installing the Battery Pack” on page 9. The battery pack may be discharged. Replace the battery pack with a spare charged battery pack, or charge the battery pack and try again.
You are scanning bar code labels, and the terminal appears to be operating slowly.	The terminal may be configured for the 5x6, 5x8, 6x8, or 12x16 font type. These font type values may cause the 243X to scroll, and therefore operate, more slowly when it displays bar code values on the screen. Change the font type to a value other than 5x6, 5x8, 6x8, or 12x16. For help, see “Display Font Type” or “Display Spacing” in Chapter 6 of the 2400 Family system manual. If the terminal continues to operate slowly, contact your local Intermec service representative for help.
You are sending and receiving information through the network, and the terminal appears to be operating slowly.	The terminal may be configured for the 5x6, 6x8, or 12x16 font type. These font type values may cause the 243X to scroll, and therefore operate, more slowly when it displays information on the screen. Change the font type to a value other than 5x6, 6x8, or 12x16. For help, see “Display Font Type” or “Display Spacing” in Chapter 6 of the 2400 Family system manual. If the terminal continues to operate slowly, contact your local Intermec service representative for help.

**Problems While Operating the Terminal (continued)**

Problem	Solution
<p>You scan a reader command, such as Change Configuration, and nothing happens.</p>	<p>The reader commands are disabled. Scan the Enable Override command shown here to temporarily enable all of the reader commands. You can also enable or disable reader commands with the TRAKKER Antares 2400 Menu System. For help, see “Command Processing” in Chapter 6 of the 2400 Family system manual. When you are finished, remember to disable the override so that your data is not interpreted as a command.</p> <p>Enable Override</p>  <p>*\$+DC3*</p>
<p>The terminal displays the Boot Menu.</p>	<p>The Boot Menu appears if you just upgraded the firmware on the terminal and POST failed. Press <b>1</b> to boot the terminal. Report the problem to your supervisor.</p> <p>If the main battery was removed from the terminal for an extended period of time, when you replace the main battery, the Boot Menu appears. Press <b>1</b> to boot the terminal and continue working.</p> <p>For help, see “Booting the Terminal” on page 78.</p>
<p>You scan a reader command, such as Change Configuration, and nothing happens.</p>	<p>The reader commands are disabled. Scan the Enable Override command shown here to temporarily enable all of the reader commands. You can also enable or disable reader commands with the TRAKKER Antares 2400 Menu System. For help, see “Command Processing” in Chapter 6 of the 2400 Family system manual. When you are finished, remember to disable the override so that your data is not interpreted as a command.</p> <p>Enable Override</p>  <p>*\$+DC3*</p>
<p>You scan a valid bar code label to enter data for your application. The data decoded by the terminal does not match the data encoded in the bar code label.</p>	<p>The terminal may have decoded the bar code label in a symbology other than the label’s actual symbology. Try scanning the bar code label again. Make sure you scan the entire label.</p> <p>To operate the 243X quickly and efficiently, you should enable only the bar code symbologies that you are going to scan. If you enable multiple symbologies, the 243X may, on rare occasions, decode a bar code according to the wrong symbology and produce erroneous results.</p>
<p>You want to restore the terminal’s default configuration so that you can reconfigure the terminal.</p>	<p>Scan this bar code label:</p> <p>Default Configuration</p>  <p>*.+*</p> <p>You can also use the TRAKKER Antares 2400 Menu System. For help, see “Restoring the Terminal’s Default Configuration” in Chapter 2 of the 2400 Family system manual.</p> <p>After you load the default configuration, you may need to set the primary network communications parameters to communicate with other devices in the network.</p>







**Problems While Operating the Terminal (continued)**

Problem	Solution
The terminal appears to be locked up and you cannot enter data.	<p>Try these possible solutions:</p> <ul style="list-style-type: none"> <li>• (2435 only) Wait at least 10 seconds and try again. If the 2435 is still connecting to the DCS 30X or host, it will ignore any input from the keypad or scanner. Make sure the Network Connect status icon is on before continuing.</li> <li>• Scan a bar code label to see if the terminal responds.</li> <li>• Follow the instructions in “Troubleshooting a Locked Up Application” on page 80.</li> <li>• If the terminal will not boot or reset, contact your local Intermec service representative for help.</li> </ul>

**Problems While Configuring the Terminal**


If you have trouble configuring the terminal, check these possible problems and solutions.

**Problems While Configuring the Terminal**

Problem	Possible Solution
On the 2435, you configure the security ID and the changes do not appear to be saved.	You can only set the security ID with the RF network enabled. The Network Activate command must be set to the RF network before you can save any changes to the Security ID command.
You are configuring SOM or EOM in the Configuration Menu and cannot set two characters.	You may have a space in the SOM or EOM field. The space does not show, but it is a valid character. To delete a space from the field, put the cursor in the field and press   , or press the orange  key and then the green  key, or press the green  key and  . Now set the two-character value for SOM or EOM.
You are scanning a configuration command to set one of the serial port parameters and hear three low beeps. For example, you are trying to set EOM or SOM.	<p>The order in which you scan serial port protocol configuration commands is important. Configurable Serial Port (CSP) protocol uses EOM to determine the serial communications mode. When EOM is disabled, the terminal communicates in Character mode. When EOM is enabled, the terminal communicates in Frame mode.</p> <p>To use Frame mode, you need to set EOM first. Next, configure Handshake, Configuration Commands Via Serial Port, LRC, SOM, and then Poll. To use Character mode, you need to disable these same parameters in reverse order.</p> <p>For help, see “Using Serial Communications on the Terminal” on page 51.</p>
You scan or enter an option for the Scanner Selection configuration command and you hear three low beeps.	You may have scanned or entered a Scanner Selection command that does not apply to the type of scanner that you have installed. Try scanning or entering the Scanner Selection command again and select an option for the type of module you have installed.



**Problems While Configuring the Terminal (continued)**

Problem	Possible Solution
<p>You scan a configuration command, such as Keypad Caps Lock, and nothing happens.</p>	<p>One or more reader commands, such as Change Configuration, may be disabled, so that you cannot change the configuration. Enable all of the reader commands and try again.</p> <p>The terminal may be waiting for another command to complete the configuration change. If you started by scanning the Enter Accumulate command, you must finish the command by scanning the Exit Accumulate command. For help, see Chapter 6, “Configuration Command Reference,” in the 2400 Family system manual.</p> <p>Scan Enable Override to temporarily enable all of the reader commands. When you are finished, remember to disable the override so that your data is not interpreted as a command.</p> <p>Enable Override</p>  <p>*\$+DC3*</p>
<p>On the 2435, you scan a configuration command to set one of these parameters and hear three low beeps:</p> <ul style="list-style-type: none"> <li>• Controller IP Address (UDP Plus) or Host IP Address (TCP/IP)</li> <li>• Terminal IP Address</li> <li>• Default Router</li> <li>• Network Activate</li> </ul>	<p>If the Network Activate command is enabled (RF network enabled) and you are configuring the 2435, these IP addresses must define a valid network configuration. For example, an invalid network configuration would be a controller (or host) IP address set to 0.0.0.0 with the network enabled.</p> <p>To set these four parameters, follow these steps:</p> <ol style="list-style-type: none"> <li><b>1</b> Disable the Network Activate (NA) configuration command.</li> <li><b>2</b> Set the terminal IP address and the controller IP address or the host IP address.</li> <li><b>3</b> Set the default router address (if necessary).</li> <li><b>4</b> Enable the Network Activate command.</li> </ol> <p>You can change an IP address with the network enabled as long as it still defines a valid network configuration.</p>
<p>You scan a configuration command, such as Keypad Caps Lock, and you hear three low beeps.</p>	<p>If you are working in the TRAKKER Antares 2400 Menu System, you cannot scan configuration commands. Use the Configuration Menu to change the terminal’s configuration, or exit the menu system to scan configuration commands.</p> <p>Check the command you are trying to scan. Make sure the command is set correctly for the options and network communications you are using with the terminal. For help, see Chapter 6, “Configuration Command Reference,” in the 2400 Family system manual.</p>
<p>You are configuring the serial port and see this error message when exiting the Configuration Menu:</p> <pre>Serial port configuration error. SOM cannot equal EOM. Configuration was not updated.</pre>	<p>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, or XON. You need to change the value of SOM. Choose Serial Port from the Communications Menu.</p> <p>For help, see “Start of Message (SOM)” in Chapter 6, “Configuration Command Reference,” in the 2400 Family system manual.</p>

**Problems While Configuring the Terminal (continued)**

Problem	Possible Solution
<p>You are configuring the serial port and see this error message when exiting the Configuration Menu:</p> <pre>Serial port configuration error. DLE, XON, XOFF are not valid values for either SOM or EOM. Configuration was not updated.</pre>	<p>EOM or SOM cannot be set to any of these values: AFF (ACK), DLE, NEG (NAK), Poll, RES (EOT), REQ (ENQ), SEL, XOFF, or XON. You must change the value of EOM or SOM. Choose Serial Port from the Communications Menu.</p> <p>For help, see “End of Message (EOM)” or “Start of Message (SOM)” in Chapter 6, “Configuration Command Reference,” in the 2400 Family system manual.</p>
<p>You are configuring the serial port and see this error message when exiting the Configuration Menu:</p> <pre>Serial port configuration error. EOM #1 cannot equal EOM #2. Configuration was not updated.</pre>	<p>EOM can be one or two ASCII characters, but the value for the first character cannot be the same as the value for the second character. Also, EOM cannot be set to any of these values: AFF (ACK), DLE, NEG (NAK), Poll, RES (EOT), REQ (ENQ), SEL, XOFF, or XON. You must change the value of EOM #1 or #2. Choose Serial Port from the Communications Menu.</p> <p>For help, see “End of Message (EOM)” in Chapter 6, “Configuration Command Reference,” in the 2400 Family system manual.</p>
<p>You are configuring the serial port and see this error message when exiting the Configuration Menu:</p> <pre>Serial port configuration error. SOM is set. You must also set EOM. Configuration was not updated.</pre>	<p>You must configure a value for EOM before you can set SOM or disable SOM. You need to change the value of SOM. Choose Serial Port from the Communications Menu.</p> <p>Configurable Serial Port (CSP) protocol uses EOM to determine the serial communications mode. When EOM is disabled, the terminal communicates in Character mode. When EOM is enabled, the terminal communicates in Frame mode.</p> <p>To use Frame mode, you need to set EOM first. Next, configure Handshake, Configuration Commands Via Serial Port, LRC, SOM, and then Poll. To use Character mode, you need to disable these same parameters in reverse order. For help, see “Using Serial Communications on the Terminal” on page 51.</p>
<p>You see this error message when exiting the Configuration Menu:</p> <pre>Commandname command failed. Remainder of configuration not updated.</pre>	<p>The two-character name (syntax) of the configuration command that failed is listed on the first line of the error message.</p> <p>Check the command listed in the message. To find the command, use the “Configuration Commands by Syntax” table in Appendix A of the 2400 Family system manual. Make sure the command is set correctly for the options and network communications you are using with the terminal. For help, see Chapter 6, “Configuration Command Reference,” in the 2400 Family system manual. For example, you may see this message:</p> <pre>SS command failed.</pre> <p>There may be a problem with the configuration due to a change made with the Scanner Selection (SS) command.</p>
<p>You are configuring a 243X with the clone application and see an error message.</p>	<p>The server terminal and the client terminal may not have the same hardware or software configuration. Make sure that both terminals have the same hardware configuration, firmware version, and clone application version. For help, see “Configuring the Terminal With the Clone Application” in Chapter 2 of the 2400 Family system manual.</p>

**Problems While Configuring the Terminal (continued)**

<b>Problem</b>	<b>Possible Solution</b>
<p>You are configuring the serial port and see this error message when exiting the Configuration Menu:</p> <p>PG command failed. Configuration was not updated.</p>	<p>PG is the Handshake configuration command. You must change the value of Handshake or set other serial port parameters. Choose Serial Port from the Communications Menu.</p> <p>The order in which you set serial port protocol configuration commands is important. To use Frame mode, you need to set EOM first. Next, configure Handshake, LRC, SOM, and then Poll. To use Character mode, you must disable these parameters in reverse order. For help, see “Using Serial Communications on the Terminal” on page 51.</p>
<p>On the 2435, you see this error message when exiting the Configuration Menu:</p> <p>Network configuration error. Network is enabled. Terminal IP address or Controller (Host) IP address set to an invalid address of 0.x.x.x or 127.x.x.x. Configuration was not updated.</p>	<p>The RF network is enabled and there is a problem with the network configuration. You must change the terminal IP address, the controller IP address (host IP address for a TCP/IP network), or both. Choose Primary Network from the Communications Menu.</p> <p>The terminal IP address or the controller/host IP address is set to 0.x.x.x or 127.x.x.x. These are invalid addresses. Set a valid IP address for the terminal and DCS 30X or host.</p> <p>For help, see “Using RF Communications on the 2435” on page 54. If you cannot fix the addressing problem, check with your network administrator to get the IP address assigned to the terminal and the DCS 30X or host.</p>
<p>On the 2435, you see this error message when exiting the Configuration Menu:</p> <p>Network configuration error. Network is enabled. Terminal IP address and Default Router address set to the same address. Configuration was not updated.</p>	<p>The RF network is enabled and there is a problem with the network configuration. You must change the terminal IP address, the default router address, or both. Choose Primary Network or Advanced Network from the Communications Menu.</p> <p>The terminal IP address and the default router address are both set to the same address. Set a valid IP address for the terminal and the default router.</p> <p>For help, see “Using RF Communications on the 2435” on page 54. If you cannot fix the addressing problem, check with your network administrator to get the IP addresses for each RF network device.</p>
<p>On the 2435, you see this error message when exiting the Configuration Menu:</p> <p>Network configuration error. Network is enabled. Default Router address is not on the terminal’s network. Configuration was not updated.</p>	<p>The RF network is enabled and there is a problem with the network configuration. You must change the default router address. Choose Advanced Network from the Communications Menu.</p> <p>The terminal and DCS 30X (UDP Plus or WTP network) or host (TCP/IP network) are on different networks, and the terminal is not on the same network as the default router. When the terminal is on a different IP subnetwork from the DCS 30X or host, you must set the Default Router and Subnet Mask commands. Set a valid IP address for terminal, DCS 30X or host, and default router.</p> <p>For help, see “Using RF Communications on the 2435” on page 54. If you cannot fix the addressing problem, check with your network administrator to get the IP addresses for each network device.</p>

**Problems While Configuring the Terminal (continued)**

Problem	Possible Solution
<p>On the 2435, you see this error message when exiting the Configuration Menu:</p> <pre>Network configuration error. Network is enabled. Terminal IP address or Controller (Host) IP address set to the same address. Configuration was not updated.</pre>	<p>The RF network is enabled and there is a problem with the network configuration. You must change the terminal IP address, the controller IP address (host IP address for a TCP/IP network), or both. Choose Primary Network from the Communications Menu.</p> <p>The terminal IP address and the controller/host IP address are both set to the same address. Set a valid IP address for the terminal and DCS 30X or host.</p> <p>For help, see “Using RF Communications on the 2435” on page 54. If you cannot fix the addressing problem, check with your network administrator to get the IP address assigned to the terminal and the DCS 30X or host.</p>

**Problems While Configuring 802.1x Security**

If you have trouble configuring the terminal for 802.1x TTLS or LEAP security, check these possible problems and solutions. For more error numbers and messages, see “802.1x Security Error Numbers and Messages” in Chapter 4 of the 2400 Family system manual.

This section references error numbers that are displayed on the Error Logger screen in the TRAKKER Antares 2400 Menu System. To view the Error Logger screen, from the Main Menu, choose Diagnostics Menu, Software Diagnostics, and then Error Logger.

**Problems While Configuring 802.1x Security**

Problem	Possible Solution
<p>You are configuring 802.1x TTLS security. The “AUTHENTICATING” message does not appear on the screen, and the Network Connect status icon is not on.</p>	<p>The terminal may not be communicating with your MobileLAN access point. Make sure that:</p> <ul style="list-style-type: none"> <li>the network name on the terminal is the same as the network name (SSID) of the access point that you are trying to communicate with. The default network name is “INTERMEC.”</li> <li>the Network Activate command is enabled on your terminal.</li> </ul> <p>The 802.1x security network may not be active. Make sure that the Odyssey™ server software is properly loaded and configured on the server PC. For help, see the documentation that shipped with your server software.</p>
<p>You are configuring 802.1x TTLS security. The “AUTHENTICATING” message appears on the screen, but the terminal does not emit a low beep and a high beep to indicate that it is authenticated.</p>	<p>The terminal takes up to 60 seconds to authenticate; however, this process may take longer if there is interference in RF communications. You may need to wait for the authentication process to finish.</p> <p>You may be out of range of the MobileLAN access point that you are trying to communicate with. Try moving closer to the MobileLAN access point.</p>

**Problems While Configuring 802.1x Security (continued)**

Problem	Possible Solution
<p>You are configuring 802.1x TTLS or 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.</p>	<p>Make sure that the terminal IP address, host IP address, subnet mask, and default router are properly configured for your network.</p> <p><b>Note:</b> Do not cold boot the terminal. Cold booting the terminal resets the time and date.</p>
<p>You are configuring 802.1x TTLS security. The “AUTHENTICATING” message does not appear on the screen. The Network Connect status icon turns on, but it does not stay on.</p>	<p>The terminal may not be communicating with the MobileLAN access point that you want it to communicate with. Make sure that the network name on the terminal is the same as the network name of the access point that you are trying to communicate with. The default network name is “INTERMEC.”</p> <p>The MobileLAN access point that you are trying to communicate with may not be communicating with the Odyssey server. Make sure your MobileLAN access point is turned on, properly configured, and has 802.1x security enabled.</p>
<p>You are configuring 802.1x TTLS or LEAP security. The terminal indicates that it is not authenticated by emitting a high beep and a low beep.</p> <p>This error code appears on the Error Logger screen:</p> <p>0x377</p>	<p>Make sure that:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• on an Odyssey server, the user and group are allowed and the group policy is allowed to log in to the Odyssey server. For help, see the documentation that shipped with your Odyssey server software.</li> <li>• 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.</li> <li>• your server is active and that it can communicate with your access point. You can use the PING command to determine communications.</li> <li>• the server software is running on the server PC.</li> <li>• the UDP port (standard RADIUS port, 1812) on your server is active. For help, see the documentation that shipped with your server software.</li> </ul>
<p>You are having trouble downloading the 802.1x TTLS security option.</p> <p>This error code appears on the Error Logger screen:</p> <p>0x037E</p>	<p>802.1x TTLS security requires your terminal to have the 4MB flash memory option. To upgrade your terminal with the 4MB flash option, contact your local Intermec representative.</p>



**Problems While Configuring 802.1x Security (continued)**

Problem	Possible Solution
<p>You are having trouble downloading the 802.1x TTLS security option.</p> <p>This error code appears on the Error Logger screen:</p> <p>0x037E</p>	<p>802.1x TTLS security requires your terminal to have the 4MB flash memory option. Make sure that your terminal has the 4MB flash memory option</p>
<p>You are configuring 802.1x TTLS security. The “AUTHENTICATING” message appears on the screen, but the terminal does not emit a low beep and a high beep to indicate that it is authenticated.</p> <p>This error code appears on the Error Logger screen:</p> <p>0x37B</p>	<p>The authentication process timed out. You may be out of range of the MobileLAN access point that you are trying to communicate with. Try moving closer to the MobileLAN access point.</p>
<p>The terminal indicates that it is not authenticated by emitting a high beep and a low beep.</p> <p>This error code appears on the Error Logger screen:</p> <p>0x542</p>	<p>Neither of the server certificate common names configured on your terminal matches the server certificate common name in the active server certificate on your Odyssey server:</p> <ul style="list-style-type: none"> <li>• Delete both server certificate common names on your terminal to see if you can authenticate without checking the server certificate common name.</li> <li>• Change one or both server certificate common names on your terminal so that they match the server certificate common names in the active server certificate on your Odyssey server.</li> </ul> <p>For help, see “Server Certificate Common Name” in Chapter 6 of the 2400 Family system manual.</p>
<p>The terminal indicates that it is not authenticated by emitting a high beep and a low beep.</p> <p>This error code appears on the Error Logger screen:</p> <p>0x513</p>	<p>The root Certificate Authority certificate on your terminal cannot validate the server certificate:</p> <ul style="list-style-type: none"> <li>• Make sure your Odyssey server is using a server certificate that matches the root certificate loaded on your terminal.</li> <li>• Verify the root certificate in the CACERT.PEM file on your terminal’s C drive.</li> </ul> <p>For help, see the documentation that shipped with your Odyssey server software.</p>




## Problems Communicating With RF Network Devices

If the 2435 is not communicating with other devices in the RF network, check these possible problems.

### Problems Communicating With RF Network Devices

Problem	Possible Solution
<p>The Network Connect status icon is off. The 2435 is not communicating with the access point.</p>	<p>Make sure the access point is turned on and operating. You may also be using the terminal out of range of an access point. Try moving closer to an access point to re-establish communications. If you are using a 21XX access point with firmware release 1.34 or earlier, it may not be able to communicate with the terminal. For help upgrading your access point firmware, see the <i>MobileLAN access System Manual</i> (P/N 067150). In a TCP/IP direct connect network, you cannot scan or enter data when the 2435 is not communicating with an access point or you may lose your TCP session.</p> <p>Make sure the Network Activate command is enabled. For help, see “Network Activate” in Chapter 6 of the 2400 Family system manual.</p> <p>Make sure the 2435 is configured correctly for your network. The radio parameters on the terminal must match the values set for all access points the terminal may communicate with. For help, see “Using RF Communications on the 2435” on page 54.</p> <p>If you have an 802.11b radio, the radio initialization process may have failed. Try resetting the terminal. For help, see “Resetting the Terminal” on page 81.</p> <p>If you have tried these possible solutions and the Network Connect status icon is still off, you may have a defective radio card. For help, contact your local Intermec service representative.</p>
<p>You are sending and receiving information through the network, and the terminal appears to be operating slowly.</p>	<p>The terminal may be configured for the 5x6, 6x8, or 12x16 font type. These font type values may cause the 243X to scroll, and therefore operate, more slowly when it displays information on the screen. Change the font type to a value other than 5x6, 6x8, or 12x16. For help, see “Display Font Type” or “Display Spacing” in Chapter 6 of the 2400 Family system manual. If the terminal continues to operate slowly, contact your local Intermec service representative for help.</p>
<p>The Network Connect status icon is on, but the host computer is not receiving any data from the 2435.</p> <p><b>*</b></p>	<p>In a UDP Plus or WTP network, there may be a problem with the connection between the DCS 30X and the host computer. Check with your network administrator or use the user’s manual for the DCS 30X to troubleshoot any potential problems with the server.</p> <p>In a TCP/IP network, there may be a problem with the connection between the access point and the host computer. Check with your network administrator or use your access point user’s manual to troubleshoot any potential problems with the access point.</p>

**Problems Communicating With RF Network Devices (continued)**

<b>Problem</b>	<b>Possible Solution</b>
<p>The Network Connect status icon blinks on the terminal screen.</p> 	<p>In a UDP Plus or WTP network, the terminal is communicating with an access point, but it is not connected to the DCS 30X. You may need to check the 2435 configuration or make sure the DCS 30X is running and that data collection is started.</p> <p>The 2435 may be out of range of an access point or the access point may have recently been turned off. Make sure the access point is still turned on and the 2435 is with in range.</p> <p>Each device in the network must have a valid IP address. The IP addresses set on the terminal must match the addresses configured on the DCS 30X or host. For help, see “Using RF Communications on the 2435” on page 54.</p>
<p>You are having problems with your 802.11b network coverage.</p>	<p>Make sure that the Medium Density Distribution command on your access point is not enabled. When the Medium Density Distribution command is enabled, the access point distributes values for these RF coverage parameters to your terminal: AP Density, Medium Reservation, and Microwave Robustness. Changes made by your access point are not reflected in the terminal menu system.</p>
<p>The 2435 is connected to the DCS 30X or host computer, and you move to a new site to collect data. The Network Connect status icon was on and now begins to blink or turns off.</p> 	<p>You may have gone out of range of an access point. Try moving closer to an access point or to a different location to re-establish communications. Once you are in range again, the Network Connect status icon will appear and remain on. Any data you collected while you were out of range will be transmitted over the network.</p>
<p>When you turn on the terminal after it was suspended for 10-15 minutes or longer, the terminal can no longer send or receive messages over the network.</p>	<p>The host may have deactivated or lost your current terminal emulation session. In a TCP/IP direct connect network, you need to turn off the “Keep Alive” message (if possible) from the host so that the TCP session is maintained while a terminal is suspended.</p>
<p>The Network Connect status icon is on, but you cannot establish a terminal emulation session with the host computer.</p> 	<p>There may be a problem with the host computer, a problem with the connection between the DCS 30X and the host computer, or a problem with the connection between the access point and the host (TCP/IP). Check with your network administrator to make sure the host is running and allowing users to login to the system.</p>
<p>The Network Connect status icon blinks on the terminal screen and you see this message:</p> <pre>Unable to connect to controller. Error 102.  Unable to establish connection to host. Session ended.</pre>	<p>The 2435 is connected to the access point but is trying to establish communications with the DCS 30X and the host computer. Make sure the terminal is correctly configured for your network. In a UDP Plus or WTP network, make sure the DCS 30X is configured and data collection is started. In a TCP/IP network, make sure the host computer is configured and running.</p> <p>If the network is configured correctly, try shutting down and restarting the DCS 30X to establish communications. You can also reset the terminal. For help, see “Resetting the Terminal” on page 81.</p>



## Problems While Running Applications

If you are running applications on the terminal and have trouble, check these possible problems and solutions.

### Problems While Running Applications

Problem	Possible Solution
There is not enough memory to load a program.	You need to free conventional memory by removing files or applications from drive C. For help, see “Delete File” in Chapter 5 of the 2400 Family system manual.
You see this error message when trying to load a program:  ERROR LOADING MODULE LIBRARY NAME: <libraryname>  FILE NAME: <filename>  where <i>libraryname</i> and <i>filename</i> are the library and files names of the program.	You need to free conventional memory by removing files or applications from drive C. For help, see “Delete File” in Chapter 5 of the 2400 Family system manual.
You see one of these error messages while running a PSK or EZBuilder application:  SCREEN ERROR: 30 Code: 9 Hit any key To exit!  SCREEN ERROR: 31 Code: 3 Hit any key To exit!	You must set the RAM Drive Size configuration command. For help, see “RAM Drive Size” in Chapter 6, “Configuration Command Reference,” in the 2400 Family system manual.
You try to run a DOS application in the TRAKKER Antares 2400 Menu System and see this message:  Not a valid application.	You tried to run a DOS .EXE application from the TRAKKER Antares 2400 Menu System. You can only run .BIN applications in the menu system. To run a DOS .EXE application, enter the filename at the DOS prompt. For help, see “Running DOS Applications and Using ROM-DOS Commands” in Appendix D of the 2400 Family system manual.
A DOS command does not work.	For a list of commands, see “Using ROM-DOS Commands” in Appendix D of the 2400 Family system manual.
The terminal does not boot after you modified the CONFIG.SYS file to configure a ROM-DOS RAM drive.	Correct the error in CONFIG.SYS and use the DOS software tools to recreate drive A with the corrected CONFIG.SYS file.

## Problems Transmitting Data Through the Serial Port

If you are having problems sending or receiving data through the serial port on the terminal, check these possible problems:

- Make sure the terminal is connected to the PC, host computer, or serial device through COM1. For help, see “Connecting to a Serial Device or Network” on page 28.
- Make sure you are using the appropriate cable to connect the terminal to the PC, host, or serial device.
- Make sure the terminal’s serial port parameters are configured to match the serial port configuration on the host computer or serial device. For help, see “Using Serial Communications on the Terminal” on page 51.

## Problems Transmitting Data Through the DCS 30X

If you have a problem while running the application on the terminal in a UDP Plus or WTP network, check these possible communications problems.




### Problems Transmitting Data Through the DCS 30X

Problem	Possible Solution
Transaction Buffer Full.	The buffer holding transactions to be sent to the DCS 30X is full. Stop collecting data with this terminal. Make sure the terminal is communicating with the DCS 30X and let the terminal send all the transactions in the buffer before you continue collecting data.
Sending Buffer Transactions.	This is an information message to tell you that buffered transactions are now being sent to the DCS 30X. You can begin collecting data again once the message clears.
Transaction Aborted.	The transaction just sent to the DCS 30X was not received. Try sending the transaction again.
Transmit Error XX, press Enter.	There is an error transmitting data to the DCS 30X. XX represents the status code error. Note the error code listed in the message and contact your local Intermec service representative for help. Press the Enter key to continue.
Receive Error XX, press Enter.	There is an error receiving data from the DCS 30X. XX represents the status code error. Note the error code listed in the message and contact your local Intermec service representative for help. Press the Enter key to continue.
Shutting down.	The DCS 30X is shutting down. You may continue collecting data and buffer the transactions in the terminal until the DCS 30X starts again or stop collecting data with the terminal.
Controller Shutdown.	The DCS 30X has shut down. You may continue collecting data and buffer the transactions in the terminal until the DCS 30X starts again or stop collecting data with the terminal.

## Problems Scanning Bar Code Labels

If you cannot scan bar code labels or you are having problems with the scanner, check these possible problems.

### Problems Scanning Bar Code Labels

Problem	Possible Solution
<p>You cannot see a red beam of light from the scanner when you press the scan button and aim the scanner at a bar code label.</p> <div data-bbox="638 646 716 758" style="text-align: center;">  <p>Warning</p> </div>	<p>You may be too far away from the bar code label. Try moving closer to the bar code label and scan it again.</p> <p>You may be scanning the bar code label “straight on.” Try changing the scanning angle.</p> <p><b>Do not look directly into the window area or at a reflection of the laser beam while the laser is scanning. Long-term exposure to the laser beam can damage your vision.</b></p> <p><b>Avertissement: Ne regardez pas directement la réflexion d’un rayon laser ou dans la fenêtre du laser lorsque celui-ci est en opération. Si vous regardez trop longtemps un rayon laser, cela peut endommager votre vue.</b></p>
<p>The terminal is turned off.</p>	<p>Make sure the terminal is turned on. Press  or  to turn on the terminal.</p>
<p>The scanner will not read the bar code label.</p>	<p>Ensure the scanner beam covers the entire bar code label in one pass.</p> <p>Make sure the bar code symbology you are scanning is enabled. Use the TRAKKER Antares 2400 Menu System to check the symbologies. On the Symbologies Menu, each symbology that is enabled has an asterisk (*) next to the name of the symbology. If your bar code symbology is disabled, enable it and then try scanning the bar code label again.</p> <p>Make sure that the application you are running on the terminal is expecting input from a bar code. You may need to type this information instead of scanning it.</p> <p>If you are using the advanced long range scanner, 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,” in the 2400 Family system manual.</p> <p>The angle at which you are scanning the bar code label may not be working well, or you may be scanning the label “straight on.” Try scanning the bar code label again, but vary the scanning angle.</p> <p>The bar code label print quality may be poor. To check the quality of the bar code label, try scanning a bar code label that you know scans. Compare the two bar code labels to see if the bar code quality is too low. You may need to replace the label that you cannot scan.</p>



**Problems Scanning Bar Code Labels (continued)**

<b>Problem</b>	<b>Possible Solution</b>
The integrated scanner does not read the bar code labels quickly, or the scanning beam seems to be faint or obscured.	The scanner window may be dirty. Clean the window with a solution of mild soap and water. Wipe dry. Do not allow abrasive material to touch the window.
You have an input device attached to the terminal and it cannot read any bar code labels.	You may not be using an input device that is supported by the 243X. Make sure you are using one of the supported input devices listed in Appendix A, “Specifications.”  Your 243X may not be configured for the input device connected to it. You must configure the Scanner Selection command and select the input device that is connected to the terminal. For help, see “Scanner Selection” in Chapter 6, “Configuration Command Reference,” in the 2400 Family system manual.
The input device connected to the terminal does not appear to work well or read bar code labels very quickly.	Make sure that the Scanner Selection command is set to the specific tethered scanner you have attached. For help, see “Scanner Selection” in Chapter 6, “Configuration Command Reference,” in the 2400 Family system manual.  Check the bar code symbologies you have enabled on the terminal. Enable only the symbologies that you are using.
You try to scan a bar code label with an input device and the integrated scanner on the terminal turns on.	Your 243X may not be configured for the input device connected to it. You must configure the Scanner Selection command and select the 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. For help, see “Scanner Selection” in Chapter 6, “Configuration Command Reference,” in the 2400 Family system manual.
You are scanning bar code labels, and the terminal appears to be operating slowly.	The terminal may be configured for the 5x6, 6x8, or 12x16 font type. These font type values may cause the 243X to scroll, and therefore operate, more slowly when it displays bar code values on the screen. Change the font type to a value other than 5x6, 6x8, or 12x16. For help, see “Display Font Type” or “Display Spacing” in Chapter 6 of the 2400 Family system manual. If the terminal continues to operate slowly, contact your local Intermec service representative for help.
When you release the Scan Button, the Good Read LED does not turn off.	The Good Read LED remains on if you configure the terminal to use edge triggering. If you configure the terminal for level triggering and the Good Read LED remains on, there may be a problem with the LED. Press the Scan Button again without scanning a bar code label. If the LED is still on, contact your local Intermec service representative.





## Booting the Terminal



You seldom need to boot or reset the terminal. When you boot the terminal, it runs through power-on self test (POST) to test each major subsystem. The terminal uses the configuration currently saved in flash memory. After the terminal is finished booting, your application appears on the screen.

You can boot the terminal using these two methods:



- Configure the  key or the  key to boot the terminal when you turn on the terminal.
- Use the Boot Menu.

## Booting the Terminal on Resume

When you press  or  to turn off the terminal, it turns off and goes into Suspend mode. When you press  or  to turn on the terminal, it resumes or boots depending on the terminal configuration.

There are two ways to configure the  key or the  key using the Resume Execution configuration command:

### Resume Execution Not Allowed

Configures the terminal to boot and restart your application each time you press  or  to turn on the terminal. Use this option if you want to restart your application every time you turn on the terminal.

### Resume Execution Allowed

Configures the terminal to resume exactly where it was when you turned off the terminal. Use this option to resume working each time you turn on the terminal.

You can configure the Resume Execution command by using the TRAKKER Antares 2400 Menu System or by scanning these bar code labels. For help, see Chapter 2, “Configuring the Terminal,” or see “Resume Execution” in Chapter 6 of the 2400 Family system manual.

Resume Execution Not Allowed



\*\$+ER0\*

Resume Execution Allowed



\*\$+ER1\*

## Using the Boot Menu

To access the Boot menu, you can:

- upgrade the firmware. For help, see “Upgrading the Firmware” in Chapter 2 of the 2400 Family system manual.
- reset the terminal. For help, see “Resetting the Terminal” on page 81.
- remove the main battery and wait longer than 15 minutes to install a charged main battery. This procedure also performs a destructive reset, which can have unpredictable results.

The Boot Menu contains these commands:

**Boot Menu Commands**

Command	Description
Boot System	Press <b>1</b> to boot the terminal. Once the terminal is finished booting, your application appears on the screen.
Run Loader	Press <b>2</b> to load the terminal firmware. To upgrade or load the firmware, use the Firmware Upgrade option in the TRAKKER Antares 2400 Menu System. For help, see Chapter 2, “Configuring the Terminals,” in the 2400 Family system manual.
Power Down	Press <b>3</b> to turn off the terminal. When you turn on the terminal, the Boot Menu screen appears again if POST passes.

## Troubleshooting a Locked Up Application

If the terminal or application is locked up and the terminal will not respond to any key sequences, try the following to reset the terminal and perform a warm boot.

**To perform a warm boot**

- 1 Press **1/O** or **Ⓚ** to turn off the terminal, and then press **1/O** or **Ⓚ** to turn on the terminal.
- 2 Use the TRAKKER Antares 2400 Menu System to reboot the terminal.

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

TRAKKER Antares 2400 Menu System



\*..\*

- b Choose System Menu, and then choose Upgrade Firmware.
- c Choose OK, choose YES, and then press the Esc key. The Boot Menu appears.
- d Press **1** to boot the terminal.

- 3 Scan the Reset Firmware label to restart the firmware and application.

Reset Firmware



\*..\*

If the terminal or application still will not respond, reset the terminal. For help, continue with the next section.

## Resetting the Terminal

If you performed the steps in “Troubleshooting a Locked Up Application” and the terminal or application is locked up and the terminal will not respond to the Reset Firmware command, follow the steps in this section to reset the terminal.








### To reset the terminal

- Scan the Boot Terminal label to reboot the terminal.



If the terminal will not scan, you can cold boot the terminal and perform a destructive reset. A destructive reset can have unpredictable results.

### To perform a cold boot

- 1 If possible, press  or  to turn off the terminal.
- 2 Press and hold the  key or the  key for approximately 12 seconds. The Good Read LED blinks once and the terminal turns off.
- 3 Press  or  to turn on the terminal. The Boot Menu appears.
- 4 Press  to boot the terminal. Once the terminal has finished booting, your application appears.
- 5 Set the time and date. For help using the TRAKKER Antares 2400 Menu System, see “Configuring the Terminal With the Menu System” on page 33.



## Cleaning the Scanner Window and Terminal Screen

The terminals are built for use in an industrial working environment. You may need to perform these minor maintenance tasks to keep the terminal in good working order:

- Clean the scanner window.
- Clean the terminal screen.

Clean the scanner window and terminal screen as often as needed for the environment in which you are using the terminal.

### To clean the scanner window and terminal screen

- 1 Press  or  to turn off the terminal.
- 2 Use a solution of mild soap and water.

**3** Dip a clean towel or rag in the soap and water solution and wring out the excess solution. Wipe off the scanner window and terminal screen. Do not allow any abrasive material to touch these surfaces.

**4** Wipe dry.




Caution

**There are no user-serviceable parts inside the terminal. Opening the unit will void the warranty and may cause damage to the internal components.**

**Attention: La terminal ne contient pas de pièces révisibles par l'utilisateur. Le fait d'ouvrir l'unité annule la garantie et peut endommager les pièces internes.**





# **A Specifications**

This appendix contains these terminal's physical and environmental specifications:

- Terminal dimensions
- Power specifications
- Electrical specifications
- Temperature and environmental specifications
- Screen
- Accessories
- Keypad options
- Application options
- Connectivity options
- Memory
- 802.11b radio specifications
- OpenAir radio specifications
- Wired data communications
- Bar code symbologies
- Input devices
- Pin assignments

## Physical and Environmental Specifications

### Terminal Dimensions

Length: 25.4 cm (10 in)  
Height: 4.6 cm (1.8 in) at grip  
Width: 10.2 cm (4 in) at screen  
Weight: 708.7 g (25 oz) with battery

### Power Specifications

Operating: Rechargeable 2200 mAh battery pack  
Backup: Rechargeable capacitor

### Electrical Specifications

Models: 2430, 2435  
Electrical rating:  $\overline{\text{---}}$  7,4 to 12V; 1,15 A

### Temperature and Environmental Specifications

Operating the terminal		
Standard 243X:	-20°C to 50°C	-4°F to 122°F
Cold-temperature 243X:	-30°C to 50°C	-22°F to 122°F
Storing the terminal:	-20°C to 50°C	-4°F to 122°F
Charging the terminal:	0°C to 40°C	32°F to 104°F
Relative humidity:	0 to 90% non-condensing	
Environmental rating:	IP54	



**Note:** The cold-temperature option supports excursions into a -30°C (-22°F) environment for limited durations. Using this option severely affects battery life. For more information, see “Using the Terminal’s Battery Pack” on page 7.

### Screen

- CGA-compatible, backlit LCD
- Configurable up to 21 lines by 32 columns



**Note:** If status icons are enabled, the screen is configurable up to 21 lines by 31 characters instead of 21 lines by 32 characters. For more information about the status icons, see “Learning About the Status Icons” on page 20.

### **Accessories**

You can use these accessories (sold and ordered separately) with the 243X:

- Lithium-ion battery pack (P/N 073152)
- Z2400 battery charger (P/N Z2400A)
- Vehicle dock
  - Standard (P/N 071805)
  - Powered (P/N 071695)
- Handle (P/N 067802)
- Holster (P/N 072366)
- AC power supply (P/N 065236)
- AC power supply adapter cable (ships with the 243X) (P/N 071776)
- Serial adapter cable (P/N 216-807-001)
- Cloning cable (P/N 216-909-001)

### **Keypad Options**

- (57-key) Alphanumeric keypad, available with programmable, international, 3270 TE, 5250 TE, or VT/ANSI TE overlays
- (39-key) Alphanumeric keypad, available with programmable, international, 3270 TE, 5250 TE, or VT/ANSI TE overlays
- (48-key) Large alphanumeric keypad, available with programmable, international, 3270 TE, 5250 TE, or VT/ANSI TE overlays

### **Application Options**

- Programmable terminal
- (2435) Data Collection Browser (dcBrowser)
- (2435) TE 2000 terminal emulation

### **Connectivity Options**

- RS-232
- (2435) TCP/IP with DHCP and TFTP support
- (2435) TCP/IP with DHCP and TFTP support and 802.1x TTLS or LEAP security
- (2435) UDP Plus or WTP with 802.1x TTLS or LEAP security
- (2435) UDP Plus with DHCP (Controller) support
- (2435) WTP

### Memory

- 4MB flash memory, configured as a 2MB flash drive, pre-loaded with double-byte fonts, or used for 802.1x TTLS security
- 1MB battery-backed RAM, 512K available for user
- (2410 option) 2MB or 4MB extended storage drive

### 802.11b Radio Specifications

Radio type	Direct sequence, spread spectrum
Channels	11 (North America), 13 (Europe), 4 (France), 1 (Japan)
Data rate	11 Mbps (High), 5.5 Mbps (Medium), 2 Mbps (Standard), 1 Mbps (Low) with automatic fallback for increased range
Range (11 Mbps)	160 m (525 ft) open environment 50 m (165 ft) semi-open environment 24 m (80 ft) closed environment
Frequency band	2.4 to 2.5 GHz world-wide

### OpenAir Radio Specifications

Radio type	Frequency hopping, spread spectrum
Channels	15
Data rate	1.6 Mbps, 0.8 Mbps fallback
Range	Up to 150 m (500 ft) indoors Up to 300 m (1,000 ft) outdoors
Frequency band	2.4 to 2.5 GHz worldwide

### Wired Data Communications

- RS-232C serial port (COM1)
- XMODEM, XMODEM1K, or YMODEM protocol for data transfer
- Protocols: Binary, Configurable Serial Protocol, Master Polling, and Polling Mode D

### Bar Code Symbolgies

- Codabar
- Code 11
- Code 2 of 5
- Code 39
- Code 93
- Code 128
- Interleaved 2 of 5
- MSI
- PDF 417
- Plessey
- UPC/EAN



**Note:** The Code 11 symbology is not supported on 243X terminals with the integrated linear imager. Additionally, Code 11 is only supported on 243X terminals configured for non-decoded scanning. The PDF 417 symbology is only supported on 243X terminals configured for decoded

scanning. For more information, see “Code 11” or “PDF 417” in Chapter 6 of the *Trakker Antares 2400 Family System Manual* (P/N 071389).

## Input Devices

Unless you ordered a terminal with the no scanner option, the 243X comes with an integrated scanner for scanning bar code labels. Additionally, you can attach these Intermec-recommended input devices to the 243X:

- Intermec 1400 linear imager
- Intermec 1551E laser scanners
- Intermec 1553E laser scanners
- Intermec 1800 scanners

After you determine which input device to use, you need to connect it to the 243X using an interface cable and configure the Scanner Selection command on the 243X. The appropriate interface cable and Scanner Selection command value for each input device is listed in the next sections. For more information about the Scanner Selection command, see “Scanner Selection” in Chapter 6 of the 2400 Family system manual.

Intermec is frequently testing and developing new input devices. For an updated list of Intermec-approved input devices for the 243X, see your Intermec sales representative.

### Input Devices for the Standard Connector Module

Use the next table to determine which interface cable and Scanner Selection command value to use for each input device. To learn more about the standard connector module, see “Learning About the Connector Modules” on page 26.

#### ***Input Devices for the Standard Connector Module***

<b>Input Device</b>	<b>Input Device Part Number</b>	<b>Interface Cable Part Number</b>	<b>Scanner Selection Command</b>
1400 linear imager	3-650019-00	3-606030-00	All compatible
1551E	1551E0600	3-606030-00	All compatible
1553E XLR	1553E0603	3-606030-00	All compatible

You can actively switch between the input device and the integrated scanner. If you only want to enable the integrated scanner, set the Scanner Selection command to the value for the specific integrated scanner installed on the 243X. For example, if you have an integrated long range scanner, set the Scanner Selection command to “Intg. L/R.”

## Input Devices for the Serial Connector Module

Use the next table to determine which interface cable and Scanner Selection command value to use for each input device. To learn more about the serial connector module, see “Learning About the Connector Modules” on page 26.

### Input Devices for the Serial Connector Module

Input Device	Input Device Part Number	Interface Cable Part Number	Scanner Selection Command (See Note)
1400 linear imager	3-650019-00	3-606032-03	Integrated
1400 linear imager	3-650019-00	3-606032-03	Intermec 1553
1551E PDF 417	1551E0808	3-606032-03	Integrated
1551E PDF 417	1551E0808	3-606032-03	Intermec 1551E
1551E	1551E0600	3-606032-03	Integrated
1551E	1551E0600	3-606032-03	Intermec 1553
1553E XLR	1553E0603	3-606032-03	Integrated
1553E XLR	1553E0603	3-606032-03	Intermec 1553
1800SR	0-3600394-00	0-364032-00	Serial non-PDF 417
1800VT PDF	0-369039-00	0-364032-00	Serial PDF 417

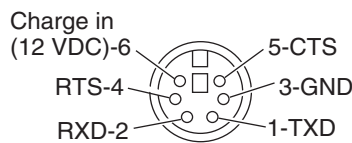


**Note:** The “Integrated” value for the Scanner Selection command refers to the specific integrated scanner installed on the terminal. For example, if you have an integrated long range scanner, the Scanner Selection command should be set to “Intg. L/R.” The Intermec 1551E value indicates PDF 417 capability, and the Intermec 1553 value indicates non-PDF 417 capability.

## Pin Assignments

You can use the pin assignments to make your own serial cables or troubleshoot problems.

### Pin Assignments for COM1

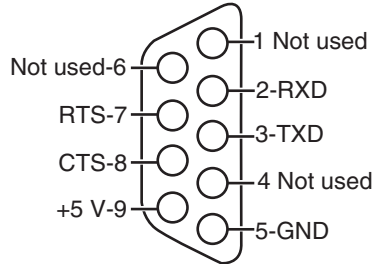


243XU036.eps

**COM1:** This illustration shows the type of connector and the pin assignments for COM1.

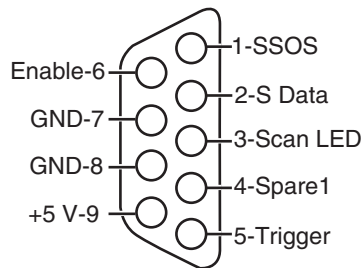
## Pin Assignments for the Input Device Connectors

The following illustrations show the type of connector and pin assignments for the input device connectors on the standard and serial connector modules.



243XU040.eps

### **Serial Connector Module (Decoded Scanner Connector)**



243XU042.eps

### **Standard Connector Module (Non-Decoded Scanner Connector)**








**Symbols and Numbers**

- key, *See* orange □ key or green □ key
- ⇧ key, *See* Shift key
- ⏏ key, *See* Function Right key
- ⏪ key, *See* Function Left key
- ⌘ key, *See* Control key
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
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Trakker Antares 243X Handheld Terminal User's Manual



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